

Tafel der Reduktions-Konstanten  
zur Berechnung scheinbarer Sternörter  
für die Jahre 1830 bis 1860.

Nach Berechnungen auf der Hamburger Sternwarte

herausgegeben von

RICHARD SCHORR.

Hamburg 1907.



Die nachstehende Zusammenstellung der BESSEL'schen Reduktionskonstanten zur Berechnung scheinbarer Sternörter für den Zeitraum von 1830 bis 1860 ist veranlaßt worden durch die Neureduktion der von CARL RÜMKER in den Jahren 1836 bis 1856 am Meridiankreis der Hamburger Sternwarte ausgeführten Fixsternbeobachtungen. Da diese Beobachtungen nicht zonenweise angestellt sind, sondern an den einzelnen Beobachtungsabenden sich häufig über den ganzen sichtbaren Meridian erstrecken, war es unzweckmäßig, der Berechnung der Reduktion auf den Jahresanfang die Pulkowaer Tafeln zugrunde zu legen, da dann für jeden Stern die 8 Sternkonstanten  $a$   $b$   $c$   $d$  und  $a'$   $b'$   $c'$   $d'$  hätten neu berechnet werden müssen. Ich entschloß mich deshalb, die Reduktion auf den Jahresanfang nach den Formeln

$$\begin{aligned}\Delta\alpha &= f + g \sin (G + \alpha) \operatorname{tg} \delta + h \sin (H + \alpha) \sec \delta \\ \Delta\delta &= \quad g \cos (G + \alpha) \quad + h \cos (H + \alpha) \sin \delta + i \cos \delta\end{aligned}$$

auszuführen und die Reduktionsgrößen  $f$ ,  $g$ ,  $h$ ,  $i$ ,  $G$  und  $H$  neu zu berechnen, unter Zugrundelegung der von der Pariser Fundamentalstern-Konferenz im Mai 1896 festgesetzten Werte:<sup>1)</sup>

$$\begin{aligned}\text{Nutationskonstante} &= 9''.21 \\ \text{Aberrationskonstante} &= 20''.47\end{aligned}$$

sowie der Präzessionsgrößen nach S. NEWCOMB.<sup>2)</sup> Um die neuen Tafeln zu ähnlichen Neureduktionen älterer Beobachtungen für einen größeren Zeitraum benutzen zu können, wurde die Berechnung auf die Jahre 1830 bis 1860 ausgedehnt, womit zugleich ein besserer Anschluß an die Ephemeriden des Berliner Jahrbuchs erzielt wird, welche vom Jahre 1861 ab die Nutationskonstante von PETERS und die Aberrationskonstante von W. STRUVE zugrunde legen.

Die Berechnung erfolgte unter Benutzung von BAUSCHINGER's<sup>3)</sup> Tafeln XXXIa bis XXXIe, in welche die von der wahren Sonnenlänge ( $\odot$ )

<sup>1)</sup> Conférence internationale des étoiles fondamentales. Procès-Verbaux. Paris 1896.

<sup>2)</sup> Astronomical Papers prepared for the use of the American Ephemeris and Nautical Almanac. Vol. VIII part I. Washington 1898.

<sup>3)</sup> J. BAUSCHINGER, Tafeln zur theoretischen Astronomie. Leipzig 1901.

und von der Länge des aufsteigenden Knotens der Mondbahn auf der Ekliptik ( $\Omega$ ) abhängigen Glieder der Reduktionskonstanten unter Annahme der oben angegebenen neuen Fundamentalkonstanten nach den folgenden Formeln tabuliert sind:

### Präzession und Nutation.

|                                                                                                  |  |        |
|--------------------------------------------------------------------------------------------------|--|--------|
| $f = f_{\odot} + f_{\Omega}$                                                                     |  |        |
| $g \cos G = (g \cos G)_{\odot} + (g \cos G)_{\Omega}$                                            |  |        |
| $g \sin G = (g \sin G)_{\odot} + (g \sin G)_{\Omega}$                                            |  | Epoche |
| $f_{\odot} = +46''0850 t - 1''1674 \sin 2 \odot + 0''1355 \sin (\odot + 81^{\circ}57')$          |  | 1900   |
| $+ 46.1129 - 1.1676 + 0.1348 \quad 80 \ 42 )$                                                    |  | 2000   |
| $(g \cos G)_{\odot} = +20''0468 t - 0''5064 \sin 2 \odot + 0''0588 \sin (\odot + 81^{\circ}57')$ |  | 1900   |
| $+ 20.0383 - 0.5062 + 0.0584 \quad 80 \ 42 )$                                                    |  | 2000   |
| $(g \sin G)_{\odot} = -0''5519 \cos 2 \odot - 0''0092 \cos (\odot + 281^{\circ}13')$             |  | 1900   |
| $- 0.5516 - 0.0092 \quad 282 \ 56 )$                                                             |  | 2000   |
| $f_{\Omega} = -15''8080 \sin \Omega + 0''1900 \sin 2 \Omega$                                     |  | 1900   |
| $- 15.8256 + 0.1900$                                                                             |  | 2000   |
| $(g \cos G)_{\Omega} = -6''8580 \sin \Omega + 0''0820 \sin 2 \Omega$                             |  | 1900   |
| $- 6.8610 + 0.0820$                                                                              |  | 2000   |
| $(g \sin G)_{\Omega} = -9''2100 \cos \Omega + 0''0895 \cos 2 \Omega$                             |  | 1900   |
| $- 9.2109 + 0.0894$                                                                              |  | 2000   |

### Aberration.

|                                 |                                   |      |
|---------------------------------|-----------------------------------|------|
| $h \cos H = -20''47 \sin \odot$ | $h \sin H = -18''7790 \cos \odot$ | 1900 |
| $- 20.47$                       | $- 18.7809$                       | 2000 |
| $i = -8''1468 \cos \odot$       |                                   | 1900 |
| $- 8.1425$                      |                                   | 2000 |

Hierin bedeutet  $t$  die seit dem Beginn des annus fictus verflossene Zeit, ausgedrückt in Bruchteilen des Jahres. Die von der Mondlänge abhängigen kurzperiodischen Glieder sind in den vorstehenden Formeln nicht enthalten und daher auch in den nachfolgenden Tafeln nicht berücksichtigt.

Die Berechnung der Reduktionskonstanten erfolgte für 12<sup>h</sup> M. Z. Berlin, und zwar wurden die Sonnenglieder in Intervallen von 4 Tagen, die Mondknotenglieder von 32 zu 32 Tagen berechnet und dann von Tag zu Tag interpoliert. Durch durchgreifende Kontrollen wurde die Richtigkeit der Rechnung sichergestellt.

Die Anordnung der nachfolgenden Tafeln unterscheidet sich von der sonst in den astronomischen Jahrbüchern üblichen nur dadurch, daß zur Erleichterung der numerischen Rechnung die Größen  $G$ ,  $H$  und  $f$  in Stunden und Minuten bzw. in Zeitsekunden angegeben und außerdem noch die

bei Benutzung der außerordentlich praktischen, aber anscheinend nur wenig gebrauchten FINLAY'schen Hilfstafeln<sup>1)</sup> erforderlichen Reduktionsgrößen

$$x = \frac{g}{20''.0521} - 1 \qquad y = \frac{h}{18''.5000} - 1$$

aufgenommen sind. Die Berechnung der Reduktion auf den scheinbaren Ort mit Hilfe der FINLAY'schen Tafeln ist nach den hier bereits angeführten 52 000 Rechnungen für die RÜMKER'schen Beobachtungen so außerordentlich bequem, daß es sehr erwünscht wäre, wenn zur Erleichterung des Gebrauchs dieser Tafeln die astronomischen Jahrbücher und Ephemeriden in Zukunft auch die FINLAY'schen Hilfsgrößen  $x$  und  $y$  in die Zusammenstellung der Reduktionskonstanten aufnehmen würden.

Zur Berechnung der Übertragung von Gestirnsörtern auf andere Epochen ist eine Zusammenstellung der Präzessionsgrößen und der mittleren Schiefe der Ekliptik nach S. NEWCOMB für die Jahre 1800 bis 1900 beigelegt worden.

An der Berechnung und Herstellung der nachstehenden Tafeln haben außer dem Unterzeichneten und Herrn Dr. SCHWASSMANN die Herren Dr. GRAFF, MESSOW, BIRKENFELD, KÄGBEIN und BORNSTEIN, an den mehrfach gelesenen Korrekturen auch Herr Dr. DOLBERG teilgenommen.

Hamburg 1907 April.

R. SCHORR.

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<sup>1)</sup> W. H. FINLAY, Star-Correction Tables. Appendix to Cape Meridian Observations 1890.

# Präzession der Aequinoktien und mittlere Schiefe der Ekliptik.

Nach S. Newcomb.

| Trop.<br>Jahr | p        | log $\pi$ | TT        | m''      | m <sup>s</sup>        | n''      | log n''  | log n <sup>s</sup> | $\epsilon$   | Trop.<br>Jahr |
|---------------|----------|-----------|-----------|----------|-----------------------|----------|----------|--------------------|--------------|---------------|
| 1800          | 50".2341 | 9.67371   | 173 2'.29 | 46".0571 | 3 <sup>s</sup> .07048 | 20".0554 | 1.302231 | 0.126140           | 23°27'55".10 | 1800          |
| 1810          | 2363     | 67365     | 173 7.77  | 0599     | 07066                 | 0545     | 302213   | 126122             | 27 50.42     | 1810          |
| 1820          | 2386     | 67359     | 173 13.25 | 0627     | 07085                 | 0537     | 302194   | 126103             | 27 45.73     | 1820          |
| 1830          | 2408     | 67352     | 173 18.73 | 0655     | 07103                 | 0528     | 302176   | 126085             | 27 41.05     | 1830          |
| 1840          | 2431     | 67346     | 173 24.20 | 0683     | 07122                 | 0520     | 302157   | 126066             | 27 36.36     | 1840          |
| 1850          | 2453     | 67340     | 173 29.68 | 0711     | 07141                 | 0511     | 302139   | 126048             | 27 31.68     | 1850          |
| 1860          | 2475     | 67334     | 173 35.16 | 0739     | 07159                 | 0502     | 302120   | 126029             | 27 27.00     | 1860          |
| 1870          | 2497     | 67328     | 173 40.63 | 0767     | 07178                 | 0494     | 302102   | 126011             | 27 22.31     | 1870          |
| 1880          | 2519     | 67321     | 173 46.11 | 0794     | 07196                 | 0485     | 302083   | 125992             | 27 17.63     | 1880          |
| 1890          | 2542     | 67315     | 173 51.58 | 0822     | 07215                 | 0477     | 302065   | 125974             | 27 12.94     | 1890          |
| 1900          | 2564     | 67309     | 173 57.06 | 0850     | 07234                 | 0468     | 302046   | 125955             | 27 8.26      | 1900          |

p = allgemeine Präzession in Länge für ein tropisches Jahr.

$\pi$  = jährliche Änderung der Neigung der Ekliptik gegen die Ekliptik 1850.0.

TT = Länge des aufsteigenden Knotens der Ekliptik auf der Ekliptik 1850.0, gezählt vom Aequinoctium des jeweiligen Datums.

m = jährliche Präzession in Rektaszension.

n = jährliche Präzession in Deklination.

$\epsilon$  = mittlere Schiefe der Ekliptik.

# Tafel der Reduktions-Konstanten zur Berechnung scheinbarer Sternörter

## 1830

| <sup>12<sup>h</sup></sup><br>M. Z. Berlin | f      | x       | y       | g    | G                                | log h  | H                                 | i     |
|-------------------------------------------|--------|---------|---------|------|----------------------------------|--------|-----------------------------------|-------|
| Januar 1                                  | —0.092 | —0.5130 | +0.1031 | 9.77 | 6 <sup>h</sup> 14 <sup>m</sup> 1 | 1.3098 | 23 <sup>h</sup> 19 <sup>m</sup> 1 | —1.57 |
| 2                                         | .082   | .5136   | .1025   | 9.75 | 6 12.6                           | .3096  | 23 15.3                           | 1.71  |
| 3                                         | .072   | .5142   | .1019   | 9.74 | 6 11.1                           | .3093  | 23 11.5                           | 1.85  |
| 4                                         | .062   | .5149   | .1012   | 9.73 | 6 9.5                            | .3090  | 23 7.8                            | 2.00  |
| 5                                         | .052   | .5156   | .1004   | 9.71 | 6 8.0                            | .3087  | 23 4.0                            | 2.14  |
| 6                                         | .042   | .5163   | .0996   | 9.70 | 6 6.5                            | .3084  | 23 0.2                            | 2.28  |
| 7                                         | .032   | .5170   | .0988   | 9.69 | 6 5.0                            | .3081  | 22 56.4                           | 2.41  |
| 8                                         | .022   | .5177   | .0979   | 9.67 | 6 3.5                            | .3077  | 22 52.6                           | 2.55  |
| 9                                         | .013   | .5184   | .0969   | 9.66 | 6 2.0                            | .3073  | 22 48.8                           | 2.69  |
| 10                                        | —0.003 | .5191   | .0959   | 9.64 | 6 0.5                            | .3069  | 22 45.0                           | 2.83  |
| 11                                        | +0.007 | —0.5198 | +0.0948 | 9.63 | 5 59.0                           | 1.3065 | 22 41.2                           | —2.96 |
| 12                                        | .016   | .5205   | .0937   | 9.62 | 5 57.5                           | .3061  | 22 37.4                           | 3.10  |
| 13                                        | .026   | .5212   | .0926   | 9.60 | 5 56.0                           | .3056  | 22 33.5                           | 3.23  |
| 14                                        | .035   | .5219   | .0914   | 9.59 | 5 54.5                           | .3052  | 22 29.7                           | 3.36  |
| 15                                        | .044   | .5227   | .0902   | 9.57 | 5 53.0                           | .3047  | 22 25.9                           | 3.49  |
| 16                                        | .054   | .5234   | .0890   | 9.56 | 5 51.6                           | .3042  | 22 22.0                           | 3.62  |
| 17                                        | .063   | .5242   | .0877   | 9.54 | 5 50.1                           | .3037  | 22 18.2                           | 3.75  |
| 18                                        | .072   | .5249   | .0863   | 9.53 | 5 48.7                           | .3031  | 22 14.3                           | 3.88  |
| 19                                        | .081   | .5257   | .0850   | 9.51 | 5 47.2                           | .3026  | 22 10.4                           | 4.01  |
| 20                                        | .090   | .5264   | .0836   | 9.50 | 5 45.8                           | .3021  | 22 6.5                            | 4.13  |
| 21                                        | +0.099 | —0.5271 | +0.0822 | 9.48 | 5 44.3                           | 1.3015 | 22 2.6                            | —4.26 |
| 22                                        | .108   | .5278   | .0808   | 9.47 | 5 42.9                           | .3009  | 21 58.7                           | 4.38  |
| 23                                        | .116   | .5286   | .0794   | 9.45 | 5 41.5                           | .3003  | 21 54.8                           | 4.50  |
| 24                                        | .125   | .5293   | .0779   | 9.44 | 5 40.1                           | .2997  | 21 50.9                           | 4.62  |
| 25                                        | .134   | .5301   | .0764   | 9.42 | 5 38.7                           | .2991  | 21 46.9                           | 4.74  |
| 26                                        | .142   | .5308   | .0749   | 9.41 | 5 37.3                           | .2985  | 21 43.0                           | 4.86  |
| 27                                        | .150   | .5316   | .0734   | 9.39 | 5 36.0                           | .2979  | 21 39.0                           | 4.97  |
| 28                                        | .158   | .5323   | .0718   | 9.38 | 5 34.6                           | .2973  | 21 35.1                           | 5.09  |
| 29                                        | .167   | .5331   | .0702   | 9.36 | 5 33.3                           | .2966  | 21 31.1                           | 5.20  |
| 30                                        | .175   | .5338   | .0686   | 9.35 | 5 31.9                           | .2960  | 21 27.1                           | 5.31  |

## 1830

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g     | G                                | log h  | H                                 | i      |
|---------------------------------|----|----------------------|---------|---------|-------|----------------------------------|--------|-----------------------------------|--------|
| Januar                          | 31 | +0. <sup>s</sup> 183 | —0.5345 | +0.0670 | 9".33 | 5 <sup>h</sup> 30 <sup>m</sup> 6 | 1.2953 | 21 <sup>h</sup> 23 <sup>m</sup> 1 | —5".42 |
| Februar                         | 1  | .190                 | .5352   | .0654   | 9.32  | 5 29.3                           | .2947  | 21 19.1                           | 5.52   |
|                                 | 2  | .198                 | .5359   | .0638   | 9.31  | 5 28.0                           | .2940  | 21 15.1                           | 5.63   |
|                                 | 3  | .206                 | .5366   | .0622   | 9.29  | 5 26.7                           | .2934  | 21 11.1                           | 5.73   |
|                                 | 4  | .213                 | .5372   | .0606   | 9.28  | 5 25.4                           | .2927  | 21 7.0                            | 5.83   |
|                                 | 5  | .221                 | .5379   | .0590   | 9.27  | 5 24.2                           | .2920  | 21 3.0                            | 5.93   |
|                                 | 6  | .228                 | .5385   | .0573   | 9.25  | 5 22.9                           | .2914  | 20 58.9                           | 6.03   |
|                                 | 7  | .235                 | .5392   | .0557   | 9.24  | 5 21.7                           | .2907  | 20 54.8                           | 6.12   |
|                                 | 8  | .242                 | .5398   | .0541   | 9.23  | 5 20.4                           | .2901  | 20 50.7                           | 6.22   |
|                                 | 9  | .249                 | .5404   | .0525   | 9.22  | 5 19.2                           | .2894  | 20 46.6                           | 6.31   |
|                                 | 10 | +0.256               | —0.5410 | +0.0509 | 9.20  | 5 18.0                           | 1.2887 | 20 42.5                           | —6.40  |
|                                 | 11 | .263                 | .5416   | .0494   | 9.19  | 5 16.9                           | .2881  | 20 38.4                           | 6.49   |
|                                 | 12 | .270                 | .5422   | .0478   | 9.18  | 5 15.7                           | .2874  | 20 34.3                           | 6.58   |
|                                 | 13 | .277                 | .5427   | .0463   | 9.17  | 5 14.5                           | .2868  | 20 30.2                           | 6.66   |
|                                 | 14 | .283                 | .5432   | .0448   | 9.16  | 5 13.4                           | .2862  | 20 26.0                           | 6.74   |
|                                 | 15 | .290                 | .5437   | .0433   | 9.15  | 5 12.2                           | .2855  | 20 21.9                           | 6.82   |
|                                 | 16 | .296                 | .5442   | .0418   | 9.14  | 5 11.1                           | .2849  | 20 17.7                           | 6.90   |
|                                 | 17 | .302                 | .5447   | .0403   | 9.13  | 5 10.0                           | .2843  | 20 13.5                           | 6.97   |
|                                 | 18 | .309                 | .5452   | .0388   | 9.12  | 5 8.9                            | .2837  | 20 9.3                            | 7.05   |
|                                 | 19 | .315                 | .5457   | .0374   | 9.11  | 5 7.8                            | .2831  | 20 5.1                            | 7.12   |
|                                 | 20 | +0.321               | —0.5461 | +0.0360 | 9.10  | 5 6.7                            | 1.2825 | 20 0.9                            | —7.19  |
|                                 | 21 | .327                 | .5465   | .0347   | 9.09  | 5 5.7                            | .2820  | 19 56.7                           | 7.25   |
|                                 | 22 | .333                 | .5469   | .0334   | 9.09  | 5 4.6                            | .2814  | 19 52.5                           | 7.32   |
|                                 | 23 | .338                 | .5472   | .0321   | 9.08  | 5 3.6                            | .2809  | 19 48.2                           | 7.38   |
|                                 | 24 | .344                 | .5475   | .0308   | 9.07  | 5 2.6                            | .2803  | 19 44.0                           | 7.44   |
|                                 | 25 | .350                 | .5478   | .0296   | 9.07  | 5 1.6                            | .2798  | 19 39.7                           | 7.50   |
|                                 | 26 | .355                 | .5481   | .0284   | 9.06  | 5 0.6                            | .2793  | 19 35.5                           | 7.55   |
|                                 | 27 | .361                 | .5484   | .0273   | 9.06  | 4 59.6                           | .2789  | 19 31.2                           | 7.60   |
|                                 | 28 | .366                 | .5486   | .0262   | 9.05  | 4 58.6                           | .2784  | 19 26.9                           | 7.65   |
| März                            | 1  | .372                 | .5488   | .0252   | 9.05  | 4 57.7                           | .2780  | 19 22.6                           | 7.70   |
|                                 | 2  | +0.377               | —0.5490 | +0.0242 | 9.04  | 4 56.7                           | 1.2775 | 19 18.4                           | —7.75  |
|                                 | 3  | .382                 | .5491   | .0232   | 9.04  | 4 55.8                           | .2771  | 19 14.1                           | 7.79   |
|                                 | 4  | .387                 | .5492   | .0223   | 9.04  | 4 54.9                           | .2767  | 19 9.8                            | 7.83   |
|                                 | 5  | .393                 | .5493   | .0214   | 9.04  | 4 54.0                           | .2764  | 19 5.5                            | 7.87   |
|                                 | 6  | .398                 | .5494   | .0206   | 9.04  | 4 53.1                           | .2760  | 19 1.2                            | 7.90   |
|                                 | 7  | .403                 | .5494   | .0198   | 9.04  | 4 52.2                           | .2757  | 18 56.8                           | 7.94   |
|                                 | 8  | .408                 | .5494   | .0191   | 9.04  | 4 51.3                           | .2754  | 18 52.5                           | 7.97   |
|                                 | 9  | .413                 | .5493   | .0185   | 9.04  | 4 50.5                           | .2751  | 18 48.2                           | 8.00   |
|                                 | 10 | .418                 | .5492   | .0179   | 9.04  | 4 49.6                           | .2749  | 18 43.9                           | 8.02   |
|                                 | 11 | .423                 | .5491   | .0174   | 9.04  | 4 48.8                           | .2746  | 18 39.6                           | 8.05   |
|                                 | 12 | +0.428               | —0.5490 | +0.0169 | 9.04  | 4 48.0                           | 1.2744 | 18 35.2                           | —8.07  |
|                                 | 13 | .432                 | .5488   | .0165   | 9.05  | 4 47.1                           | .2743  | 18 30.9                           | 8.09   |
|                                 | 14 | .437                 | .5486   | .0161   | 9.05  | 4 46.3                           | .2741  | 18 26.6                           | 8.10   |
|                                 | 15 | .442                 | .5484   | .0158   | 9.06  | 4 45.5                           | .2740  | 18 22.2                           | 8.12   |
|                                 | 16 | .447                 | .5481   | .0155   | 9.06  | 4 44.7                           | .2738  | 18 17.9                           | 8.13   |
|                                 | 17 | .452                 | .5478   | .0153   | 9.07  | 4 44.0                           | .2738  | 18 13.6                           | 8.14   |
|                                 | 18 | .456                 | .5475   | .0151   | 9.07  | 4 43.2                           | .2737  | 18 9.2                            | 8.14   |
|                                 | 19 | .461                 | .5471   | .0150   | 9.08  | 4 42.4                           | .2736  | 18 4.9                            | 8.15   |
|                                 | 20 | .466                 | .5467   | .0150   | 9.09  | 4 41.7                           | .2736  | 18 0.6                            | 8.15   |
|                                 | 21 | .471                 | .5462   | .0150   | 9.10  | 4 40.9                           | .2736  | 17 56.3                           | 8.15   |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                  | G                                 | log h  | H                                  | i                   |
|---------------------------------|----|----------------------|---------|---------|--------------------|-----------------------------------|--------|------------------------------------|---------------------|
| März                            | 22 | +0 <sup>s</sup> .475 | —0.5457 | +0.0151 | 9 <sup>h</sup> .11 | 4 <sup>h</sup> 40 <sup>m</sup> .2 | 1.2737 | 17 <sup>h</sup> 51 <sup>m</sup> .9 | —8 <sup>h</sup> .14 |
|                                 | 23 | .480                 | .5452   | .0152   | 9.12               | 4 39.4                            | .2737  | 17 47.6                            | 8.14                |
|                                 | 24 | .485                 | .5447   | .0154   | 9.13               | 4 38.7                            | .2738  | 17 43.3                            | 8.13                |
|                                 | 25 | .490                 | .5441   | .0156   | 9.14               | 4 38.0                            | .2739  | 17 39.0                            | 8.12                |
|                                 | 26 | .495                 | .5435   | .0159   | 9.15               | 4 37.3                            | .2740  | 17 34.7                            | 8.11                |
|                                 | 27 | .499                 | .5428   | .0163   | 9.17               | 4 36.5                            | .2742  | 17 30.4                            | 8.09                |
|                                 | 28 | .504                 | .5421   | .0167   | 9.18               | 4 35.8                            | .2744  | 17 26.1                            | 8.07                |
|                                 | 29 | .509                 | .5414   | .0172   | 9.20               | 4 35.1                            | .2746  | 17 21.8                            | 8.05                |
|                                 | 30 | .514                 | .5406   | .0177   | 9.21               | 4 34.4                            | .2748  | 17 17.5                            | 8.03                |
|                                 | 31 | .519                 | .5398   | .0183   | 9.23               | 4 33.7                            | .2750  | 17 13.3                            | 8.01                |
| April                           | 1  | +0.524               | —0.5390 | +0.0189 | 9.25               | 4 33.0                            | 1.2753 | 17 9.0                             | —7.98               |
|                                 | 2  | .529                 | .5381   | .0196   | 9.26               | 4 32.3                            | .2756  | 17 4.7                             | 7.95                |
|                                 | 3  | .534                 | .5372   | .0203   | 9.28               | 4 31.6                            | .2759  | 17 0.5                             | 7.92                |
|                                 | 4  | .539                 | .5362   | .0211   | 9.30               | 4 30.9                            | .2762  | 16 56.3                            | 7.88                |
|                                 | 5  | .544                 | .5352   | .0219   | 9.32               | 4 30.2                            | .2766  | 16 52.0                            | 7.85                |
|                                 | 6  | .549                 | .5342   | .0228   | 9.34               | 4 29.5                            | .2769  | 16 47.8                            | 7.81                |
|                                 | 7  | .554                 | .5332   | .0237   | 9.36               | 4 28.8                            | .2773  | 16 43.6                            | 7.77                |
|                                 | 8  | .560                 | .5321   | .0247   | 9.38               | 4 28.2                            | .2777  | 16 39.4                            | 7.72                |
|                                 | 9  | .565                 | .5310   | .0257   | 9.41               | 4 27.5                            | .2782  | 16 35.2                            | 7.68                |
|                                 | 10 | .570                 | .5298   | .0267   | 9.43               | 4 26.8                            | .2786  | 16 31.0                            | 7.63                |
|                                 | 11 | +0.576               | —0.5286 | +0.0278 | 9.45               | 4 26.1                            | 1.2791 | 16 26.8                            | —7.58               |
|                                 | 12 | .581                 | .5274   | .0289   | 9.48               | 4 25.4                            | .2795  | 16 22.7                            | 7.53                |
|                                 | 13 | .587                 | .5261   | .0301   | 9.50               | 4 24.7                            | .2800  | 16 18.5                            | 7.47                |
|                                 | 14 | .592                 | .5248   | .0313   | 9.53               | 4 24.0                            | .2805  | 16 14.4                            | 7.42                |
|                                 | 15 | .598                 | .5235   | .0325   | 9.55               | 4 23.3                            | .2811  | 16 10.3                            | 7.36                |
|                                 | 16 | .604                 | .5221   | .0338   | 9.58               | 4 22.7                            | .2816  | 16 6.2                             | 7.30                |
|                                 | 17 | .610                 | .5207   | .0351   | 9.61               | 4 22.0                            | .2821  | 16 2.1                             | 7.23                |
|                                 | 18 | .616                 | .5193   | .0364   | 9.64               | 4 21.3                            | .2827  | 15 58.0                            | 7.17                |
|                                 | 19 | .622                 | .5178   | .0377   | 9.67               | 4 20.6                            | .2832  | 15 53.9                            | 7.10                |
|                                 | 20 | .628                 | .5163   | .0391   | 9.70               | 4 19.8                            | .2838  | 15 49.8                            | 7.03                |
|                                 | 21 | +0.634               | —0.5148 | +0.0405 | 9.73               | 4 19.1                            | 1.2844 | 15 45.8                            | —6.96               |
|                                 | 22 | .640                 | .5133   | .0419   | 9.76               | 4 18.4                            | .2850  | 15 41.8                            | 6.89                |
|                                 | 23 | .646                 | .5118   | .0433   | 9.79               | 4 17.7                            | .2856  | 15 37.7                            | 6.81                |
|                                 | 24 | .653                 | .5102   | .0448   | 9.82               | 4 17.0                            | .2862  | 15 33.7                            | 6.74                |
|                                 | 25 | .659                 | .5086   | .0463   | 9.85               | 4 16.3                            | .2868  | 15 29.7                            | 6.66                |
|                                 | 26 | .666                 | .5070   | .0478   | 9.89               | 4 15.5                            | .2874  | 15 25.7                            | 6.58                |
|                                 | 27 | .672                 | .5053   | .0493   | 9.92               | 4 14.8                            | .2881  | 15 21.8                            | 6.49                |
|                                 | 28 | .679                 | .5036   | .0508   | 9.95               | 4 14.0                            | .2887  | 15 17.8                            | 6.41                |
|                                 | 29 | .686                 | .5019   | .0523   | 9.99               | 4 13.3                            | .2893  | 15 13.9                            | 6.32                |
|                                 | 30 | .692                 | .5002   | .0539   | 10.02              | 4 12.5                            | .2899  | 15 9.9                             | 6.24                |
| Mai                             | 1  | +0.699               | —0.4985 | +0.0554 | 10.06              | 4 11.8                            | 1.2906 | 15 6.0                             | —6.15               |
|                                 | 2  | .707                 | .4967   | .0569   | 10.09              | 4 11.0                            | .2912  | 15 2.1                             | 6.06                |
|                                 | 3  | .714                 | .4949   | .0584   | 10.13              | 4 10.2                            | .2918  | 14 58.2                            | 5.96                |
|                                 | 4  | .721                 | .4931   | .0600   | 10.16              | 4 9.5                             | .2925  | 14 54.4                            | 5.87                |
|                                 | 5  | .728                 | .4913   | .0615   | 10.20              | 4 8.7                             | .2931  | 14 50.5                            | 5.77                |
|                                 | 6  | .735                 | .4895   | .0630   | 10.24              | 4 7.9                             | .2937  | 14 46.7                            | 5.67                |
|                                 | 7  | .743                 | .4876   | .0645   | 10.28              | 4 7.1                             | .2944  | 14 42.8                            | 5.57                |
|                                 | 8  | .750                 | .4857   | .0661   | 10.31              | 4 6.3                             | .2950  | 14 39.0                            | 5.47                |
|                                 | 9  | .758                 | .4838   | .0676   | 10.35              | 4 5.5                             | .2956  | 14 35.2                            | 5.37                |
|                                 | 10 | .766                 | .4818   | .0692   | 10.39              | 4 4.7                             | .2962  | 14 31.4                            | 5.27                |

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| <sup>12<sup>h</sup></sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                             | log h  | H                                 | i     |
|-------------------------------------------|----|--------|---------|---------|-------|-------------------------------|--------|-----------------------------------|-------|
| Mai                                       | 11 | +0.774 | —0.4799 | +0.0707 | 10.43 | 4 <sup>h</sup> 3 <sup>m</sup> | 1.2968 | 14 <sup>h</sup> 27 <sup>m</sup> 6 | —5.16 |
|                                           | 12 | .782   | .4779   | .0722   | 10.47 | 4 3.1                         | .2974  | 14 23.8                           | 5.05  |
|                                           | 13 | .790   | .4760   | .0737   | 10.51 | 4 2.3                         | .2980  | 14 20.1                           | 4.95  |
|                                           | 14 | .798   | .4740   | .0752   | 10.55 | 4 1.4                         | .2986  | 14 16.3                           | 4.84  |
|                                           | 15 | .806   | .4720   | .0766   | 10.59 | 4 0.6                         | .2992  | 14 12.6                           | 4.72  |
|                                           | 16 | .814   | .4700   | .0780   | 10.63 | 3 59.8                        | .2998  | 14 8.8                            | 4.61  |
|                                           | 17 | .822   | .4680   | .0794   | 10.67 | 3 58.9                        | .3003  | 14 5.1                            | 4.50  |
|                                           | 18 | .831   | .4660   | .0807   | 10.71 | 3 58.0                        | .3009  | 14 1.4                            | 4.39  |
|                                           | 19 | .839   | .4640   | .0821   | 10.75 | 3 57.2                        | .3014  | 13 57.7                           | 4.27  |
|                                           | 20 | .848   | .4619   | .0834   | 10.79 | 3 56.3                        | .3020  | 13 54.1                           | 4.15  |
|                                           | 21 | +0.856 | —0.4599 | +0.0847 | 10.83 | 3 55.4                        | 1.3025 | 13 50.4                           | —4.03 |
|                                           | 22 | .865   | .4579   | .0860   | 10.87 | 3 54.5                        | .3030  | 13 46.7                           | 3.91  |
|                                           | 23 | .874   | .4559   | .0873   | 10.91 | 3 53.7                        | .3035  | 13 43.1                           | 3.79  |
|                                           | 24 | .883   | .4538   | .0885   | 10.95 | 3 52.8                        | .3040  | 13 39.4                           | 3.67  |
|                                           | 25 | .892   | .4518   | .0897   | 10.99 | 3 51.9                        | .3045  | 13 35.8                           | 3.55  |
|                                           | 26 | .901   | .4497   | .0908   | 11.03 | 3 51.0                        | .3049  | 13 32.2                           | 3.43  |
|                                           | 27 | .910   | .4477   | .0919   | 11.08 | 3 50.1                        | .3054  | 13 28.6                           | 3.30  |
|                                           | 28 | .919   | .4456   | .0930   | 11.12 | 3 49.2                        | .3058  | 13 24.9                           | 3.18  |
|                                           | 29 | .928   | .4436   | .0941   | 11.16 | 3 48.3                        | .3062  | 13 21.3                           | 3.05  |
|                                           | 30 | .937   | .4415   | .0951   | 11.20 | 3 47.4                        | .3066  | 13 17.7                           | 2.93  |
| Juni                                      | 31 | +0.946 | —0.4394 | +0.0961 | 11.24 | 3 46.5                        | 1.3070 | 13 14.2                           | —2.80 |
|                                           | 1  | .955   | .4373   | .0970   | 11.28 | 3 45.5                        | .3074  | 13 10.6                           | 2.67  |
|                                           | 2  | .965   | .4352   | .0979   | 11.33 | 3 44.6                        | .3077  | 13 7.0                            | 2.54  |
|                                           | 3  | .974   | .4331   | .0988   | 11.37 | 3 43.7                        | .3081  | 13 3.5                            | 2.41  |
|                                           | 4  | .984   | .4311   | .0996   | 11.41 | 3 42.7                        | .3084  | 12 59.9                           | 2.28  |
|                                           | 5  | 0.993  | .4290   | .1004   | 11.45 | 3 41.8                        | .3087  | 12 56.3                           | 2.15  |
|                                           | 6  | 1.003  | .4270   | .1011   | 11.49 | 3 40.8                        | .3090  | 12 52.8                           | 2.02  |
|                                           | 7  | .012   | .4249   | .1018   | 11.53 | 3 39.9                        | .3093  | 12 49.3                           | 1.89  |
|                                           | 8  | .022   | .4229   | .1024   | 11.57 | 3 38.9                        | .3095  | 12 45.7                           | 1.75  |
|                                           | 9  | .032   | .4209   | .1030   | 11.61 | 3 38.0                        | .3097  | 12 42.2                           | 1.62  |
|                                           | 10 | +1.042 | —0.4189 | +0.1035 | 11.65 | 3 37.0                        | 1.3100 | 12 38.7                           | —1.49 |
|                                           | 11 | .051   | .4168   | .1040   | 11.69 | 3 36.0                        | .3102  | 12 35.1                           | 1.35  |
|                                           | 12 | .061   | .4148   | .1045   | 11.73 | 3 35.1                        | .3103  | 12 31.6                           | 1.22  |
|                                           | 13 | .071   | .4128   | .1049   | 11.77 | 3 34.1                        | .3105  | 12 28.1                           | 1.08  |
|                                           | 14 | .081   | .4108   | .1053   | 11.81 | 3 33.1                        | .3106  | 12 24.6                           | 0.95  |
|                                           | 15 | .090   | .4088   | .1056   | 11.85 | 3 32.1                        | .3108  | 12 21.1                           | 0.81  |
|                                           | 16 | .100   | .4068   | .1059   | 11.89 | 3 31.1                        | .3109  | 12 17.6                           | 0.68  |
|                                           | 17 | .110   | .4049   | .1061   | 11.93 | 3 30.2                        | .3110  | 12 14.1                           | 0.54  |
|                                           | 18 | .120   | .4029   | .1063   | 11.97 | 3 29.2                        | .3110  | 12 10.6                           | 0.41  |
|                                           | 19 | .130   | .4010   | .1064   | 12.01 | 3 28.2                        | .3111  | 12 7.1                            | 0.27  |
|                                           | 20 | +1.140 | —0.3991 | +0.1065 | 12.05 | 3 27.2                        | 1.3111 | 12 3.6                            | —0.14 |
|                                           | 21 | .150   | .3972   | .1065   | 12.09 | 3 26.2                        | .3111  | 12 0.1                            | 0.00  |
|                                           | 22 | .160   | .3953   | .1065   | 12.12 | 3 25.2                        | .3111  | 11 56.6                           | +0.13 |
|                                           | 23 | .169   | .3934   | .1064   | 12.16 | 3 24.2                        | .3111  | 11 53.1                           | 0.27  |
|                                           | 24 | .179   | .3915   | .1063   | 12.20 | 3 23.3                        | .3110  | 11 49.6                           | 0.40  |
|                                           | 25 | .189   | .3897   | .1061   | 12.24 | 3 22.3                        | .3110  | 11 46.1                           | 0.54  |
|                                           | 26 | .199   | .3878   | .1059   | 12.27 | 3 21.3                        | .3109  | 11 42.6                           | 0.67  |
|                                           | 27 | .209   | .3860   | .1056   | 12.31 | 3 20.3                        | .3108  | 11 39.1                           | 0.81  |
|                                           | 28 | .219   | .3842   | .1053   | 12.35 | 3 19.3                        | .3106  | 11 35.6                           | 0.94  |
|                                           | 29 | .229   | .3824   | .1049   | 12.38 | 3 18.3                        | .3105  | 11 32.1                           | 1.08  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g      | G                                | log h  | H                                 | i      |
|---------------------------------|----|----------------------|---------|---------|--------|----------------------------------|--------|-----------------------------------|--------|
| Juni                            | 30 | +1. <sup>s</sup> 238 | —0.3806 | +0.1045 | 12."42 | 3 <sup>h</sup> 17 <sup>m</sup> 3 | 1.3104 | 11 <sup>h</sup> 28 <sup>m</sup> 6 | +1."21 |
| Juli                            | 1  | .248                 | .3789   | .1041   | 12.45  | 3 16.3                           | .3102  | 11 25.0                           | 1.35   |
|                                 | 2  | .258                 | .3771   | .1036   | 12.49  | 3 15.3                           | .3100  | 11 21.5                           | 1.48   |
|                                 | 3  | .268                 | .3754   | .1031   | 12.52  | 3 14.4                           | .3098  | 11 18.0                           | 1.61   |
|                                 | 4  | .277                 | .3737   | .1025   | 12.56  | 3 13.4                           | .3095  | 11 14.5                           | 1.75   |
|                                 | 5  | .287                 | .3720   | .1018   | 12.59  | 3 12.4                           | .3093  | 11 11.0                           | 1.88   |
|                                 | 6  | .297                 | .3703   | .1011   | 12.63  | 3 11.4                           | .3090  | 11 7.4                            | 2.01   |
|                                 | 7  | .306                 | .3686   | .1004   | 12.66  | 3 10.4                           | .3087  | 11 3.9                            | 2.14   |
|                                 | 8  | .316                 | .3669   | .0996   | 12.69  | 3 9.5                            | .3084  | 11 0.4                            | 2.27   |
|                                 | 9  | .325                 | .3653   | .0988   | 12.73  | 3 8.5                            | .3081  | 10 56.8                           | 2.40   |
|                                 | 10 | +1.335               | —0.3637 | +0.0980 | 12.76  | 3 7.5                            | 1.3078 | 10 53.3                           | +2.53  |
|                                 | 11 | .344                 | .3621   | .0971   | 12.79  | 3 6.6                            | .3074  | 10 49.7                           | 2.66   |
|                                 | 12 | .353                 | .3605   | .0962   | 12.82  | 3 5.6                            | .3070  | 10 46.1                           | 2.79   |
|                                 | 13 | .363                 | .3590   | .0952   | 12.85  | 3 4.6                            | .3067  | 10 42.6                           | 2.91   |
|                                 | 14 | .372                 | .3574   | .0942   | 12.89  | 3 3.7                            | .3063  | 10 39.0                           | 3.04   |
|                                 | 15 | .381                 | .3559   | .0932   | 12.92  | 3 2.7                            | .3059  | 10 35.4                           | 3.17   |
|                                 | 16 | .390                 | .3544   | .0921   | 12.95  | 3 1.8                            | .3054  | 10 31.8                           | 3.29   |
|                                 | 17 | .399                 | .3529   | .0910   | 12.98  | 3 0.8                            | .3050  | 10 28.2                           | 3.41   |
|                                 | 18 | .408                 | .3514   | .0898   | 13.00  | 2 59.9                           | .3045  | 10 24.6                           | 3.54   |
|                                 | 19 | .417                 | .3500   | .0886   | 13.03  | 2 59.0                           | .3041  | 10 21.0                           | 3.66   |
|                                 | 20 | +1.426               | —0.3486 | +0.0874 | 13.06  | 2 58.0                           | 1.3036 | 10 17.4                           | +3.78  |
|                                 | 21 | .435                 | .3472   | .0862   | 13.09  | 2 57.1                           | .3031  | 10 13.8                           | 3.90   |
|                                 | 22 | .443                 | .3458   | .0849   | 13.12  | 2 56.2                           | .3026  | 10 10.1                           | 4.02   |
|                                 | 23 | .452                 | .3444   | .0836   | 13.15  | 2 55.3                           | .3021  | 10 6.5                            | 4.14   |
|                                 | 24 | .460                 | .3430   | .0823   | 13.17  | 2 54.4                           | .3015  | 10 2.8                            | 4.25   |
|                                 | 25 | .469                 | .3417   | .0809   | 13.20  | 2 53.5                           | .3010  | 9 59.1                            | 4.37   |
|                                 | 26 | .477                 | .3404   | .0796   | 13.23  | 2 52.6                           | .3004  | 9 55.5                            | 4.48   |
|                                 | 27 | .486                 | .3391   | .0782   | 13.25  | 2 51.7                           | .2999  | 9 51.8                            | 4.60   |
|                                 | 28 | .494                 | .3378   | .0768   | 13.28  | 2 50.8                           | .2993  | 9 48.1                            | 4.71   |
|                                 | 29 | .502                 | .3365   | .0754   | 13.30  | 2 49.9                           | .2987  | 9 44.4                            | 4.82   |
|                                 | 30 | +1.510               | —0.3352 | +0.0740 | 13.33  | 2 49.1                           | 1.2982 | 9 40.6                            | +4.93  |
| August                          | 31 | .518                 | .3339   | .0725   | 13.36  | 2 48.2                           | .2976  | 9 36.9                            | 5.03   |
|                                 | 1  | .526                 | .3327   | .0710   | 13.38  | 2 47.3                           | .2970  | 9 33.2                            | 5.14   |
|                                 | 2  | .534                 | .3315   | .0695   | 13.40  | 2 46.5                           | .2964  | 9 29.4                            | 5.24   |
|                                 | 3  | .541                 | .3303   | .0680   | 13.43  | 2 45.6                           | .2958  | 9 25.6                            | 5.35   |
|                                 | 4  | .549                 | .3291   | .0665   | 13.45  | 2 44.8                           | .2951  | 9 21.9                            | 5.45   |
|                                 | 5  | .557                 | .3279   | .0650   | 13.48  | 2 44.0                           | .2945  | 9 18.1                            | 5.55   |
|                                 | 6  | .564                 | .3268   | .0635   | 13.50  | 2 43.2                           | .2939  | 9 14.3                            | 5.65   |
|                                 | 7  | .572                 | .3256   | .0620   | 13.52  | 2 42.4                           | .2933  | 9 10.5                            | 5.75   |
|                                 | 8  | .579                 | .3245   | .0605   | 13.54  | 2 41.6                           | .2927  | 9 6.6                             | 5.84   |
|                                 | 9  | +1.586               | —0.3234 | +0.0590 | 13.57  | 2 40.8                           | 1.2920 | 9 2.8                             | +5.94  |
|                                 | 10 | .593                 | .3223   | .0574   | 13.59  | 2 40.0                           | .2914  | 8 58.9                            | 6.03   |
|                                 | 11 | .600                 | .3212   | .0559   | 13.61  | 2 39.2                           | .2908  | 8 55.1                            | 6.12   |
|                                 | 12 | .607                 | .3201   | .0543   | 13.63  | 2 38.5                           | .2901  | 8 51.2                            | 6.21   |
|                                 | 13 | .614                 | .3190   | .0528   | 13.65  | 2 37.7                           | .2895  | 8 47.3                            | 6.30   |
|                                 | 14 | .621                 | .3180   | .0513   | 13.68  | 2 37.0                           | .2889  | 8 43.4                            | 6.38   |
|                                 | 15 | .628                 | .3169   | .0498   | 13.70  | 2 36.2                           | .2883  | 8 39.5                            | 6.47   |
|                                 | 16 | .634                 | .3159   | .0483   | 13.72  | 2 35.5                           | .2877  | 8 35.6                            | 6.55   |
|                                 | 17 | .641                 | .3149   | .0468   | 13.74  | 2 34.8                           | .2870  | 8 31.6                            | 6.63   |
|                                 | 18 | .647                 | .3139   | .0454   | 13.76  | 2 34.1                           | .2864  | 8 27.7                            | 6.71   |

## 1830

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g      | G                                 | log h  | H                                 | i      |
|---------------------------------|----|----------------------|---------|---------|--------|-----------------------------------|--------|-----------------------------------|--------|
| August                          | 19 | +1. <sup>s</sup> 654 | —0.3129 | +0.0439 | 13."78 | 2 <sup>h</sup> 33. <sup>m</sup> 4 | 1.2858 | 8 <sup>h</sup> 23. <sup>m</sup> 7 | +6."79 |
|                                 | 20 | .660                 | .3119   | .0425   | 13.80  | 2 32.7                            | .2852  | 8 19.7                            | 6.86   |
|                                 | 21 | .666                 | .3109   | .0411   | 13.82  | 2 32.0                            | .2846  | 8 15.7                            | 6.94   |
|                                 | 22 | .673                 | .3099   | .0397   | 13.84  | 2 31.4                            | .2841  | 8 11.7                            | 7.01   |
|                                 | 23 | .679                 | .3089   | .0383   | 13.86  | 2 30.7                            | .2835  | 8 7.7                             | 7.08   |
|                                 | 24 | .685                 | .3079   | .0369   | 13.88  | 2 30.1                            | .2829  | 8 3.7                             | 7.14   |
|                                 | 25 | .691                 | .3069   | .0356   | 13.90  | 2 29.5                            | .2824  | 7 59.7                            | 7.21   |
|                                 | 26 | .696                 | .3059   | .0343   | 13.92  | 2 28.9                            | .2818  | 7 55.6                            | 7.27   |
|                                 | 27 | .702                 | .3049   | .0331   | 13.94  | 2 28.2                            | .2813  | 7 51.5                            | 7.33   |
|                                 | 28 | .708                 | .3039   | .0319   | 13.96  | 2 27.6                            | .2808  | 7 47.5                            | 7.39   |
| Septbr.                         | 29 | +1.714               | —0.3029 | +0.0307 | 13.98  | 2 27.1                            | 1.2803 | 7 43.4                            | +7.45  |
|                                 | 30 | .719                 | .3020   | .0295   | 14.00  | 2 26.5                            | .2798  | 7 39.3                            | 7.50   |
|                                 | 31 | .725                 | .3010   | .0284   | 14.02  | 2 25.9                            | .2793  | 7 35.2                            | 7.55   |
|                                 | 1  | .730                 | .3001   | .0273   | 14.04  | 2 25.4                            | .2788  | 7 31.0                            | 7.60   |
|                                 | 2  | .736                 | .2991   | .0263   | 14.06  | 2 24.8                            | .2784  | 7 26.9                            | 7.65   |
|                                 | 3  | .741                 | .2981   | .0253   | 14.07  | 2 24.3                            | .2780  | 7 22.8                            | 7.70   |
|                                 | 4  | .746                 | .2971   | .0243   | 14.09  | 2 23.8                            | .2776  | 7 18.6                            | 7.74   |
|                                 | 5  | .752                 | .2961   | .0234   | 14.11  | 2 23.3                            | .2772  | 7 14.5                            | 7.79   |
|                                 | 6  | .757                 | .2951   | .0225   | 14.13  | 2 22.8                            | .2768  | 7 10.3                            | 7.83   |
|                                 | 7  | .762                 | .2941   | .0216   | 14.15  | 2 22.3                            | .2764  | 7 6.1                             | 7.86   |
|                                 | 8  | +1.767               | —0.2931 | +0.0208 | 14.17  | 2 21.8                            | 1.2761 | 7 1.9                             | +7.90  |
|                                 | 9  | .772                 | .2921   | .0200   | 14.19  | 2 21.4                            | .2758  | 6 57.7                            | 7.93   |
|                                 | 10 | .777                 | .2911   | .0193   | 14.21  | 2 20.9                            | .2755  | 6 53.5                            | 7.96   |
|                                 | 11 | .782                 | .2900   | .0187   | 14.24  | 2 20.5                            | .2752  | 6 49.3                            | 7.99   |
|                                 | 12 | .787                 | .2890   | .0181   | 14.26  | 2 20.0                            | .2749  | 6 45.1                            | 8.02   |
|                                 | 13 | .792                 | .2879   | .0175   | 14.28  | 2 19.6                            | .2747  | 6 40.9                            | 8.04   |
|                                 | 14 | .797                 | .2869   | .0170   | 14.30  | 2 19.2                            | .2745  | 6 36.6                            | 8.06   |
|                                 | 15 | .802                 | .2858   | .0166   | 14.32  | 2 18.8                            | .2743  | 6 32.4                            | 8.08   |
|                                 | 16 | .807                 | .2847   | .0162   | 14.34  | 2 18.4                            | .2741  | 6 28.1                            | 8.10   |
|                                 | 17 | .812                 | .2836   | .0159   | 14.37  | 2 18.0                            | .2740  | 6 23.9                            | 8.11   |
|                                 | 18 | +1.817               | —0.2825 | +0.0156 | 14.39  | 2 17.7                            | 1.2739 | 6 19.6                            | +8.12  |
|                                 | 19 | .821                 | .2813   | .0154   | 14.41  | 2 17.3                            | .2738  | 6 15.4                            | 8.13   |
|                                 | 20 | .826                 | .2802   | .0152   | 14.43  | 2 17.0                            | .2737  | 6 11.1                            | 8.14   |
|                                 | 21 | .831                 | .2790   | .0151   | 14.46  | 2 16.6                            | .2737  | 6 6.8                             | 8.15   |
|                                 | 22 | .836                 | .2778   | .0150   | 14.48  | 2 16.3                            | .2736  | 6 2.6                             | 8.15   |
|                                 | 23 | .841                 | .2766   | .0150   | 14.51  | 2 16.0                            | .2736  | 5 58.3                            | 8.15   |
|                                 | 24 | .845                 | .2754   | .0150   | 14.53  | 2 15.7                            | .2737  | 5 54.0                            | 8.15   |
|                                 | 25 | .850                 | .2741   | .0151   | 14.56  | 2 15.4                            | .2737  | 5 49.7                            | 8.14   |
|                                 | 26 | .855                 | .2729   | .0153   | 14.58  | 2 15.1                            | .2738  | 5 45.5                            | 8.14   |
|                                 | 27 | .860                 | .2716   | .0155   | 14.61  | 2 14.8                            | .2739  | 5 41.2                            | 8.13   |
| Oktbr.                          | 28 | +1.865               | —0.2703 | +0.0158 | 14.63  | 2 14.5                            | 1.2740 | 5 36.9                            | +8.11  |
|                                 | 29 | .870                 | .2689   | .0161   | 14.66  | 2 14.2                            | .2741  | 5 32.6                            | 8.10   |
|                                 | 30 | .874                 | .2675   | .0165   | 14.69  | 2 14.0                            | .2743  | 5 28.3                            | 8.08   |
|                                 | 1  | .879                 | .2661   | .0170   | 14.72  | 2 13.7                            | .2745  | 5 24.1                            | 8.06   |
|                                 | 2  | .884                 | .2647   | .0175   | 14.74  | 2 13.5                            | .2747  | 5 19.8                            | 8.04   |
|                                 | 3  | .889                 | .2632   | .0180   | 14.77  | 2 13.3                            | .2749  | 5 15.5                            | 8.02   |
|                                 | 4  | .894                 | .2618   | .0186   | 14.80  | 2 13.0                            | .2752  | 5 11.2                            | 7.99   |
|                                 | 5  | .899                 | .2603   | .0192   | 14.83  | 2 12.8                            | .2755  | 5 7.0                             | 7.96   |
|                                 | 6  | .904                 | .2588   | .0199   | 14.86  | 2 12.6                            | .2758  | 5 2.7                             | 7.93   |
|                                 | 7  | .909                 | .2572   | .0207   | 14.89  | 2 12.4                            | .2761  | 4 58.4                            | 7.90   |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                | log h  | H                                | i     |
|---------------------------------|----|--------|---------|---------|-------|----------------------------------|--------|----------------------------------|-------|
| Oktbr.                          | 8  | +1.915 | —0.2556 | +0.0215 | 14.93 | 2 <sup>h</sup> 12 <sup>m</sup> 2 | 1.2764 | 4 <sup>h</sup> 54 <sup>m</sup> 2 | +7.87 |
|                                 | 9  | .920   | .2540   | .0224   | 14.96 | 2 12.0                           | .2768  | 4 49.9                           | 7.83  |
|                                 | 10 | .925   | .2524   | .0233   | 14.99 | 2 11.8                           | .2772  | 4 45.7                           | 7.79  |
|                                 | 11 | .930   | .2507   | .0243   | 15.02 | 2 11.6                           | .2776  | 4 41.4                           | 7.74  |
|                                 | 12 | .936   | .2490   | .0253   | 15.06 | 2 11.4                           | .2780  | 4 37.2                           | 7.70  |
|                                 | 13 | .941   | .2473   | .0263   | 15.09 | 2 11.2                           | .2784  | 4 33.0                           | 7.65  |
|                                 | 14 | .947   | .2455   | .0274   | 15.13 | 2 11.1                           | .2789  | 4 28.7                           | 7.60  |
|                                 | 15 | .952   | .2437   | .0285   | 15.16 | 2 10.9                           | .2794  | 4 24.5                           | 7.55  |
|                                 | 16 | .958   | .2419   | .0297   | 15.20 | 2 10.7                           | .2799  | 4 20.3                           | 7.50  |
|                                 | 17 | .964   | .2401   | .0309   | 15.24 | 2 10.6                           | .2804  | 4 16.1                           | 7.44  |
|                                 | 18 | +1.970 | —0.2382 | +0.0321 | 15.28 | 2 10.4                           | 1.2809 | 4 11.9                           | +7.38 |
|                                 | 19 | .975   | .2363   | .0334   | 15.31 | 2 10.3                           | .2814  | 4 7.7                            | 7.32  |
|                                 | 20 | .981   | .2343   | .0347   | 15.35 | 2 10.1                           | .2820  | 4 3.5                            | 7.26  |
|                                 | 21 | .987   | .2323   | .0360   | 15.39 | 2 9.9                            | .2825  | 3 59.3                           | 7.19  |
|                                 | 22 | .993   | .2303   | .0373   | 15.43 | 2 9.8                            | .2831  | 3 55.2                           | 7.12  |
|                                 | 23 | 1.999  | .2282   | .0387   | 15.48 | 2 9.6                            | .2837  | 3 51.0                           | 7.05  |
|                                 | 24 | 2.005  | .2261   | .0401   | 15.52 | 2 9.5                            | .2843  | 3 46.9                           | 6.98  |
|                                 | 25 | .011   | .2240   | .0416   | 15.56 | 2 9.3                            | .2849  | 3 42.7                           | 6.91  |
|                                 | 26 | .018   | .2219   | .0431   | 15.60 | 2 9.2                            | .2855  | 3 38.6                           | 6.83  |
|                                 | 27 | .025   | .2197   | .0446   | 15.65 | 2 9.0                            | .2861  | 3 34.5                           | 6.75  |
|                                 | 28 | +2.032 | —0.2175 | +0.0461 | 15.69 | 2 8.9                            | 1.2867 | 3 30.4                           | +6.67 |
|                                 | 29 | .038   | .2152   | .0476   | 15.74 | 2 8.7                            | .2874  | 3 26.3                           | 6.59  |
|                                 | 30 | .045   | .2129   | .0491   | 15.78 | 2 8.5                            | .2880  | 3 22.2                           | 6.50  |
|                                 | 31 | .052   | .2106   | .0507   | 15.83 | 2 8.4                            | .2887  | 3 18.1                           | 6.42  |
| Novbr.                          | 1  | .059   | .2083   | .0523   | 15.88 | 2 8.2                            | .2893  | 3 14.0                           | 6.33  |
|                                 | 2  | .066   | .2059   | .0539   | 15.92 | 2 8.1                            | .2900  | 3 9.9                            | 6.24  |
|                                 | 3  | .073   | .2035   | .0555   | 15.97 | 2 7.9                            | .2906  | 3 5.9                            | 6.14  |
|                                 | 4  | .080   | .2011   | .0571   | 16.02 | 2 7.7                            | .2913  | 3 1.9                            | 6.05  |
|                                 | 5  | .088   | .1987   | .0587   | 16.07 | 2 7.5                            | .2919  | 2 57.8                           | 5.95  |
|                                 | 6  | .095   | .1962   | .0603   | 16.12 | 2 7.4                            | .2926  | 2 53.8                           | 5.85  |
|                                 | 7  | +2.103 | —0.1937 | +0.0619 | 16.17 | 2 7.2                            | 1.2932 | 2 49.8                           | +5.75 |
|                                 | 8  | .110   | .1912   | .0635   | 16.22 | 2 7.0                            | .2939  | 2 45.8                           | 5.65  |
|                                 | 9  | .118   | .1886   | .0651   | 16.27 | 2 6.8                            | .2945  | 2 41.8                           | 5.55  |
|                                 | 10 | .126   | .1860   | .0667   | 16.32 | 2 6.6                            | .2952  | 2 37.8                           | 5.44  |
|                                 | 11 | .134   | .1834   | .0683   | 16.37 | 2 6.4                            | .2958  | 2 33.9                           | 5.33  |
|                                 | 12 | .142   | .1808   | .0698   | 16.43 | 2 6.2                            | .2965  | 2 29.9                           | 5.22  |
|                                 | 13 | .150   | .1781   | .0714   | 16.48 | 2 6.0                            | .2971  | 2 25.9                           | 5.11  |
|                                 | 14 | .158   | .1754   | .0729   | 16.53 | 2 5.8                            | .2977  | 2 22.0                           | 4.00  |
|                                 | 15 | .167   | .1727   | .0744   | 16.59 | 2 5.6                            | .2983  | 2 18.1                           | 4.89  |
|                                 | 16 | .175   | .1700   | .0759   | 16.64 | 2 5.4                            | .2990  | 2 14.2                           | 4.77  |
|                                 | 17 | +2.184 | —0.1672 | +0.0774 | 16.70 | 2 5.2                            | 1.2996 | 2 10.2                           | +4.66 |
|                                 | 18 | .192   | .1644   | .0789   | 16.75 | 2 5.0                            | .3002  | 2 6.3                            | 4.54  |
|                                 | 19 | .201   | .1616   | .0804   | 16.81 | 2 4.7                            | .3007  | 2 2.4                            | 4.42  |
|                                 | 20 | .210   | .1588   | .0818   | 16.87 | 2 4.5                            | .3013  | 1 58.6                           | 4.30  |
|                                 | 21 | .219   | .1560   | .0832   | 16.92 | 2 4.2                            | .3019  | 1 54.7                           | 4.17  |
|                                 | 22 | .228   | .1531   | .0846   | 16.98 | 2 4.0                            | .3024  | 1 50.8                           | 4.05  |
|                                 | 23 | .237   | .1503   | .0860   | 17.04 | 2 3.7                            | .3030  | 1 47.0                           | 3.92  |
|                                 | 24 | .246   | .1474   | .0873   | 17.10 | 2 3.5                            | .3035  | 1 43.1                           | 3.80  |
|                                 | 25 | .255   | .1445   | .0886   | 17.15 | 2 3.2                            | .3040  | 1 39.3                           | 3.67  |
|                                 | 26 | .264   | .1416   | .0898   | 17.21 | 2 2.9                            | .3045  | 1 35.4                           | 3.54  |

## 1830

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|----------------------------------|--------|-----------------------------------|---------------------|
| Novbr.                          | 27 | +2 <sup>s</sup> .274 | —0.1387 | +0.0910 | 17 <sup>h</sup> .27 | 2 <sup>h</sup> 2 <sup>m</sup> .6 | 1.3050 | 1 <sup>h</sup> 31 <sup>m</sup> .6 | +3 <sup>h</sup> .41 |
|                                 | 28 | .283                 | .1357   | .0922   | 17.33               | 2 2.3                            | .3055  | 1 27.8                            | 3.28                |
|                                 | 29 | .293                 | .1328   | .0933   | 17.39               | 2 2.0                            | .3059  | 1 24.0                            | 3.14                |
|                                 | 30 | .302                 | .1298   | .0944   | 17.45               | 2 1.7                            | .3064  | 1 20.2                            | 3.01                |
| Dezbr.                          | 1  | .312                 | .1269   | .0955   | 17.51               | 2 1.4                            | .3068  | 1 16.2                            | 2.88                |
|                                 | 2  | .322                 | .1239   | .0965   | 17.57               | 2 1.1                            | .3072  | 1 12.6                            | 2.74                |
|                                 | 3  | .332                 | .1210   | .0975   | 17.63               | 2 0.8                            | .3076  | 1 8.8                             | 2.60                |
|                                 | 4  | .342                 | .1180   | .0984   | 17.69               | 2 0.4                            | .3079  | 1 5.0                             | 2.47                |
|                                 | 5  | .352                 | .1150   | .0993   | 17.75               | 2 0.1                            | .3083  | 1 1.2                             | 2.33                |
|                                 | 6  | .362                 | .1120   | .1001   | 17.81               | 1 59.7                           | .3086  | 0 57.4                            | 2.19                |
|                                 | 7  | +2.372               | —0.1090 | +0.1009 | 17.87               | 1 59.4                           | 1.3089 | 0 53.7                            | +2.05               |
|                                 | 8  | .382                 | .1060   | .1017   | 17.93               | 1 59.0                           | .3092  | 0 49.9                            | 1.91                |
|                                 | 9  | .392                 | .1030   | .1024   | 17.99               | 1 58.7                           | .3095  | 0 46.1                            | 1.77                |
|                                 | 10 | .402                 | .1001   | .1030   | 18.04               | 1 58.3                           | .3097  | 0 42.4                            | 1.63                |
|                                 | 11 | .412                 | .0971   | .1036   | 18.10               | 1 57.9                           | .3100  | 0 38.6                            | 1.49                |
|                                 | 12 | .422                 | .0941   | .1041   | 18.16               | 1 57.5                           | .3102  | 0 34.9                            | 1.34                |
|                                 | 13 | .433                 | .0911   | .1046   | 18.22               | 1 57.2                           | .3104  | 0 31.1                            | 1.20                |
|                                 | 14 | .443                 | .0882   | .1050   | 18.28               | 1 56.8                           | .3105  | 0 27.4                            | 1.06                |
|                                 | 15 | .453                 | .0852   | .1054   | 18.34               | 1 56.4                           | .3107  | 0 23.6                            | 0.91                |
|                                 | 16 | .464                 | .0823   | .1057   | 18.40               | 1 55.9                           | .3108  | 0 19.9                            | 0.77                |
|                                 | 17 | +2.474               | —0.0793 | +0.1060 | 18.46               | 1 55.5                           | 1.3109 | 0 16.2                            | +0.63               |
|                                 | 18 | .485                 | .0764   | .1062   | 18.52               | 1 55.1                           | .3110  | 0 12.4                            | 0.48                |
|                                 | 19 | .495                 | .0734   | .1064   | 18.58               | 1 54.7                           | .3110  | 0 8.7                             | 0.34                |
|                                 | 20 | .506                 | .0705   | .1065   | 18.64               | 1 54.3                           | .3111  | 0 4.9                             | 0.19                |
|                                 | 21 | .516                 | .0676   | .1065   | 18.70               | 1 53.8                           | .3111  | 0 1.2                             | +0.05               |
|                                 | 22 | .526                 | .0647   | .1065   | 18.75               | 1 53.4                           | .3111  | 23 57.5                           | —0.10               |
|                                 | 23 | .537                 | .0618   | .1064   | 18.81               | 1 53.0                           | .3111  | 23 53.7                           | 0.24                |
|                                 | 24 | .547                 | .0590   | .1063   | 18.87               | 1 52.5                           | .3110  | 23 50.0                           | 0.39                |
|                                 | 25 | .558                 | .0561   | .1061   | 18.93               | 1 52.1                           | .3110  | 23 46.2                           | 0.53                |
|                                 | 26 | .568                 | .0533   | .1059   | 18.98               | 1 51.6                           | .3109  | 23 42.5                           | 0.68                |
|                                 | 27 | +2.579               | —0.0505 | +0.1056 | 19.04               | 1 51.1                           | 1.3108 | 23 38.8                           | —0.82               |
|                                 | 28 | .589                 | .0477   | .1053   | 19.09               | 1 50.7                           | .3106  | 23 35.0                           | 0.96                |
|                                 | 29 | .599                 | .0449   | .1049   | 19.15               | 1 50.2                           | .3105  | 23 31.3                           | 1.11                |
|                                 | 30 | .610                 | .0421   | .1045   | 19.21               | 1 49.7                           | .3103  | 23 27.5                           | 1.25                |
|                                 | 31 | .620                 | .0393   | .1041   | 19.26               | 1 49.2                           | .3101  | 23 23.7                           | 1.40                |

## 1831

|        |    |                      |         |         |                    |                                   |        |                                    |                     |
|--------|----|----------------------|---------|---------|--------------------|-----------------------------------|--------|------------------------------------|---------------------|
| Januar | 1  | —0 <sup>s</sup> .441 | —0.5370 | +0.1034 | 9 <sup>h</sup> .28 | 7 <sup>h</sup> 12 <sup>m</sup> .0 | 1.3099 | 23 <sup>h</sup> 20 <sup>m</sup> .0 | —1 <sup>h</sup> .54 |
|        | 2  | .431                 | .5386   | .1028   | 9.25               | 7 10.5                            | .3097  | 23 16.2                            | 1.68                |
|        | 3  | .420                 | .5402   | .1021   | 9.22               | 7 9.0                             | .3094  | 23 12.5                            | 1.82                |
|        | 4  | .410                 | .5418   | .1014   | 9.19               | 7 7.5                             | .3091  | 23 8.7                             | 1.96                |
|        | 5  | .400                 | .5434   | .1006   | 9.15               | 7 6.1                             | .3088  | 23 4.9                             | 2.10                |
|        | 6  | .390                 | .5450   | .0998   | 9.12               | 7 4.6                             | .3085  | 23 1.1                             | 2.24                |
|        | 7  | .380                 | .5466   | .0990   | 9.09               | 7 3.1                             | .3082  | 22 57.3                            | 2.38                |
|        | 8  | .370                 | .5482   | .0981   | 9.06               | 7 1.7                             | .3078  | 22 53.5                            | 2.52                |
|        | 9  | .360                 | .5498   | .0971   | 9.03               | 7 0.2                             | .3074  | 22 49.7                            | 2.66                |
|        | 10 | .350                 | .5514   | .0961   | 8.99               | 6 58.7                            | .3070  | 22 45.9                            | 2.79                |

## 1831

| <sup>12h</sup><br>M. Z. Berlin | f                    | x       | y       | g                  | G                                 | log h  | H                                  | i                   |
|--------------------------------|----------------------|---------|---------|--------------------|-----------------------------------|--------|------------------------------------|---------------------|
| Januar 11                      | —0 <sup>s</sup> .341 | —0.5530 | +0.0951 | 8 <sup>h</sup> .96 | 6 <sup>h</sup> 57 <sup>m</sup> .3 | 1.3066 | 22 <sup>h</sup> 42 <sup>m</sup> .1 | —2 <sup>h</sup> .93 |
| 12                             | .331                 | .5546   | .0940   | 8.93               | 6 55.8                            | .3062  | 22 38.3                            | 3.06                |
| 13                             | .321                 | .5562   | .0929   | 8.90               | 6 54.3                            | .3057  | 22 34.5                            | 3.20                |
| 14                             | .312                 | .5579   | .0917   | 8.86               | 6 52.9                            | .3053  | 22 30.6                            | 3.33                |
| 15                             | .302                 | .5595   | .0905   | 8.83               | 6 51.4                            | .3048  | 22 26.8                            | 3.46                |
| 16                             | .293                 | .5611   | .0893   | 8.80               | 6 50.0                            | .3043  | 22 22.9                            | 3.59                |
| 17                             | .283                 | .5627   | .0880   | 8.77               | 6 48.5                            | .3038  | 22 19.1                            | 3.72                |
| 18                             | .274                 | .5644   | .0867   | 8.73               | 6 47.1                            | .3033  | 22 15.2                            | 3.85                |
| 19                             | .265                 | .5660   | .0854   | 8.70               | 6 45.7                            | .3027  | 22 11.3                            | 3.98                |
| 20                             | .256                 | .5676   | .0840   | 8.67               | 6 44.2                            | .3022  | 22 7.5                             | 4.10                |
| 21                             | —0.247               | —0.5692 | +0.0826 | 8.64               | 6 42.8                            | 1.3016 | 22 3.6                             | —4.23               |
| 22                             | .238                 | .5708   | .0811   | 8.61               | 6 41.4                            | .3011  | 21 59.7                            | 4.35                |
| 23                             | .229                 | .5724   | .0797   | 8.57               | 6 40.0                            | .3005  | 21 55.7                            | 4.47                |
| 24                             | .220                 | .5739   | .0782   | 8.54               | 6 38.6                            | .2999  | 21 51.8                            | 4.59                |
| 25                             | .212                 | .5755   | .0767   | 8.51               | 6 37.2                            | .2993  | 21 47.9                            | 4.71                |
| 26                             | .203                 | .5770   | .0752   | 8.48               | 6 35.8                            | .2987  | 21 43.9                            | 4.83                |
| 27                             | .195                 | .5786   | .0737   | 8.45               | 6 34.4                            | .2981  | 21 40.0                            | 4.95                |
| 28                             | .187                 | .5801   | .0722   | 8.42               | 6 33.0                            | .2974  | 21 36.0                            | 5.06                |
| 29                             | .178                 | .5817   | .0706   | 8.39               | 6 31.7                            | .2968  | 21 32.1                            | 5.17                |
| 30                             | .170                 | .5832   | .0690   | 8.36               | 6 30.3                            | .2961  | 21 28.1                            | 5.28                |
| Februar 31                     | —0.162               | —0.5847 | +0.0674 | 8.33               | 6 29.0                            | 1.2955 | 21 24.1                            | —5.39               |
| 1                              | .154                 | .5862   | .0658   | 8.30               | 6 27.6                            | .2948  | 21 20.1                            | 5.50                |
| 2                              | .146                 | .5876   | .0642   | 8.27               | 6 26.3                            | .2942  | 21 16.1                            | 5.60                |
| 3                              | .138                 | .5891   | .0625   | 8.24               | 6 25.0                            | .2935  | 21 12.0                            | 5.71                |
| 4                              | .131                 | .5906   | .0609   | 8.21               | 6 23.6                            | .2929  | 21 8.0                             | 5.81                |
| 5                              | .123                 | .5920   | .0593   | 8.18               | 6 22.3                            | .2922  | 21 4.0                             | 5.91                |
| 6                              | .116                 | .5934   | .0577   | 8.15               | 6 21.0                            | .2915  | 20 59.9                            | 6.01                |
| 7                              | .108                 | .5948   | .0561   | 8.12               | 6 19.7                            | .2909  | 20 55.8                            | 6.10                |
| 8                              | .101                 | .5962   | .0545   | 8.10               | 6 18.5                            | .2902  | 20 51.7                            | 6.20                |
| 9                              | .094                 | .5975   | .0529   | 8.07               | 6 17.2                            | .2896  | 20 47.6                            | 6.29                |
| 10                             | —0.087               | —0.5988 | +0.0513 | 8.04               | 6 15.9                            | 1.2889 | 20 43.5                            | —6.38               |
| 11                             | .080                 | .6001   | .0497   | 8.02               | 6 14.7                            | .2883  | 20 39.4                            | 6.47                |
| 12                             | .073                 | .6014   | .0481   | 7.99               | 6 13.5                            | .2876  | 20 35.3                            | 6.56                |
| 13                             | .066                 | .6027   | .0466   | 7.97               | 6 12.2                            | .2870  | 20 31.2                            | 6.64                |
| 14                             | .059                 | .6039   | .0451   | 7.94               | 6 11.0                            | .2863  | 20 27.0                            | 6.72                |
| 15                             | .053                 | .6051   | .0436   | 7.92               | 6 9.8                             | .2857  | 20 22.9                            | 6.80                |
| 16                             | .046                 | .6063   | .0421   | 7.89               | 6 8.5                             | .2851  | 20 18.7                            | 6.88                |
| 17                             | .040                 | .6075   | .0406   | 7.87               | 6 7.3                             | .2845  | 20 14.5                            | 6.96                |
| 18                             | .034                 | .6087   | .0391   | 7.85               | 6 6.2                             | .2839  | 20 10.3                            | 7.03                |
| 19                             | .027                 | .6098   | .0377   | 7.83               | 6 5.0                             | .2833  | 20 6.1                             | 7.10                |
| 20                             | —0.021               | —0.6109 | +0.0363 | 7.80               | 6 3.8                             | 1.2827 | 20 1.9                             | —7.17               |
| 21                             | .015                 | .6119   | .0350   | 7.78               | 6 2.6                             | .2821  | 19 57.7                            | 7.24                |
| 22                             | .009                 | .6129   | .0337   | 7.76               | 6 1.5                             | .2816  | 19 53.5                            | 7.30                |
| 23                             | —0.003               | .6138   | .0324   | 7.74               | 6 0.3                             | .2810  | 19 49.3                            | 7.36                |
| 24                             | +0.003               | .6148   | .0311   | 7.72               | 5 59.2                            | .2805  | 19 45.0                            | 7.42                |
| 25                             | .009                 | .6157   | .0299   | 7.70               | 5 58.1                            | .2800  | 19 40.8                            | 7.48                |
| 26                             | .014                 | .6166   | .0287   | 7.69               | 5 56.9                            | .2795  | 19 36.5                            | 7.54                |
| 27                             | .020                 | .6175   | .0276   | 7.67               | 5 55.8                            | .2790  | 19 32.2                            | 7.59                |
| 28                             | .025                 | .6183   | .0265   | 7.65               | 5 54.7                            | .2785  | 19 28.0                            | 7.64                |
| März 1                         | .031                 | .6191   | .0254   | 7.64               | 5 53.6                            | .2781  | 19 23.7                            | 7.69                |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                 | G                                | log h  | H                                  | i                  |
|---------------------------------|----|----------------------|---------|---------|-------------------|----------------------------------|--------|------------------------------------|--------------------|
| März                            | 2  | +0. <sup>s</sup> 036 | —0.6199 | +0.0244 | 7 <sup>"</sup> 62 | 5 <sup>h</sup> 52 <sup>m</sup> 5 | 1.2776 | 19 <sup>h</sup> 19 <sup>m</sup> .4 | —7 <sup>"</sup> 74 |
|                                 | 3  | .042                 | .6206   | .0234   | 7.61              | 5 51.5                           | .2772  | 19 15.1                            | 7.78               |
|                                 | 4  | .047                 | .6213   | .0225   | 7.59              | 5 50.4                           | .2768  | 19 10.8                            | 7.82               |
|                                 | 5  | .052                 | .6220   | .0216   | 7.58              | 5 49.3                           | .2765  | 19 6.5                             | 7.86               |
|                                 | 6  | .058                 | .6226   | .0208   | 7.57              | 5 48.3                           | .2761  | 19 2.2                             | 7.89               |
|                                 | 7  | .063                 | .6232   | .0201   | 7.56              | 5 47.2                           | .2758  | 18 57.9                            | 7.93               |
|                                 | 8  | .068                 | .6237   | .0194   | 7.55              | 5 46.2                           | .2755  | 18 53.6                            | 7.96               |
|                                 | 9  | .073                 | .6242   | .0187   | 7.54              | 5 45.1                           | .2752  | 18 49.3                            | 7.99               |
|                                 | 10 | .078                 | .6247   | .0181   | 7.53              | 5 44.1                           | .2749  | 18 44.9                            | 8.02               |
|                                 | 11 | .083                 | .6251   | .0176   | 7.52              | 5 43.1                           | .2747  | 18 40.6                            | 8.04               |
|                                 | 12 | +0.088               | —0.6255 | +0.0171 | 7.51              | 5 42.1                           | 1.2745 | 18 36.3                            | —8.06              |
|                                 | 13 | .093                 | .6258   | .0166   | 7.50              | 5 41.0                           | .2743  | 18 32.0                            | 8.08               |
|                                 | 14 | .098                 | .6261   | .0162   | 7.50              | 5 40.0                           | .2741  | 18 27.6                            | 8.10               |
|                                 | 15 | .103                 | .6264   | .0158   | 7.49              | 5 39.0                           | .2740  | 18 23.3                            | 8.11               |
|                                 | 16 | .108                 | .6267   | .0155   | 7.48              | 5 38.0                           | .2739  | 18 19.0                            | 8.12               |
|                                 | 17 | .113                 | .6269   | .0153   | 7.48              | 5 37.0                           | .2738  | 18 14.6                            | 8.13               |
|                                 | 18 | .118                 | .6271   | .0151   | 7.48              | 5 36.0                           | .2737  | 18 10.3                            | 8.14               |
|                                 | 19 | .123                 | .6272   | .0150   | 7.47              | 5 35.0                           | .2736  | 18 6.0                             | 8.15               |
|                                 | 20 | .128                 | .6273   | .0150   | 7.47              | 5 34.0                           | .2736  | 18 1.6                             | 8.15               |
|                                 | 21 | .133                 | .6273   | .0150   | 7.47              | 5 33.0                           | .2736  | 17 57.3                            | 8.15               |
|                                 | 22 | +0.138               | —0.6273 | +0.0151 | 7.47              | 5 32.1                           | 1.2736 | 17 53.0                            | —8.15              |
|                                 | 23 | .143                 | .6273   | .0152   | 7.47              | 5 31.1                           | .2737  | 17 48.7                            | 8.14               |
|                                 | 24 | .147                 | .6272   | .0154   | 7.48              | 5 30.1                           | .2738  | 17 44.4                            | 8.13               |
|                                 | 25 | .152                 | .6271   | .0156   | 7.48              | 5 29.1                           | .2739  | 17 40.1                            | 8.12               |
|                                 | 26 | .157                 | .6270   | .0159   | 7.48              | 5 28.1                           | .2740  | 17 35.7                            | 8.11               |
|                                 | 27 | .162                 | .6268   | .0163   | 7.48              | 5 27.1                           | .2742  | 17 31.4                            | 8.10               |
|                                 | 28 | .167                 | .6266   | .0167   | 7.49              | 5 26.1                           | .2743  | 17 27.2                            | 8.08               |
|                                 | 29 | .172                 | .6263   | .0171   | 7.49              | 5 25.2                           | .2745  | 17 22.9                            | 8.06               |
|                                 | 30 | .177                 | .6260   | .0176   | 7.50              | 5 24.2                           | .2747  | 17 18.6                            | 8.04               |
|                                 | 31 | .182                 | .6256   | .0181   | 7.51              | 5 23.2                           | .2750  | 17 14.3                            | 8.01               |
| April                           | 1  | +0.187               | —0.6252 | +0.0187 | 7.51              | 5 22.2                           | 1.2752 | 17 10.0                            | —7.99              |
|                                 | 2  | .192                 | .6248   | .0194   | 7.52              | 5 21.2                           | .2755  | 17 5.8                             | 7.96               |
|                                 | 3  | .197                 | .6243   | .0201   | 7.53              | 5 20.2                           | .2758  | 17 1.5                             | 7.93               |
|                                 | 4  | .203                 | .6238   | .0209   | 7.54              | 5 19.2                           | .2761  | 16 57.3                            | 7.89               |
|                                 | 5  | .208                 | .6233   | .0217   | 7.55              | 5 18.2                           | .2765  | 16 53.0                            | 7.86               |
|                                 | 6  | .213                 | .6227   | .0226   | 7.57              | 5 17.2                           | .2769  | 16 48.8                            | 7.82               |
|                                 | 7  | .219                 | .6221   | .0235   | 7.58              | 5 16.2                           | .2772  | 16 44.6                            | 7.78               |
|                                 | 8  | .224                 | .6214   | .0245   | 7.59              | 5 15.2                           | .2776  | 16 40.4                            | 7.73               |
|                                 | 9  | .229                 | .6207   | .0255   | 7.60              | 5 14.2                           | .2781  | 16 36.2                            | 7.69               |
|                                 | 10 | .235                 | .6200   | .0265   | 7.62              | 5 13.2                           | .2785  | 16 32.0                            | 7.64               |
|                                 | 11 | +0.240               | —0.6193 | +0.0276 | 7.63              | 5 12.2                           | 1.2790 | 16 27.8                            | —7.59              |
|                                 | 12 | .246                 | .6185   | .0287   | 7.65              | 5 11.2                           | .2794  | 16 23.7                            | 7.54               |
|                                 | 13 | .252                 | .6177   | .0298   | 7.67              | 5 10.2                           | .2799  | 16 19.5                            | 7.49               |
|                                 | 14 | .257                 | .6168   | .0310   | 7.68              | 5 9.1                            | .2804  | 16 15.4                            | 7.43               |
|                                 | 15 | .263                 | .6159   | .0322   | 7.70              | 5 8.1                            | .2809  | 16 11.3                            | 7.37               |
|                                 | 16 | .269                 | .6149   | .0334   | 7.72              | 5 7.1                            | .2814  | 16 7.2                             | 7.31               |
|                                 | 17 | .275                 | .6140   | .0347   | 7.74              | 5 6.0                            | .2820  | 16 3.1                             | 7.25               |
|                                 | 18 | .281                 | .6130   | .0360   | 7.76              | 5 5.0                            | .2825  | 15 59.0                            | 7.19               |
|                                 | 19 | .287                 | .6120   | .0373   | 7.78              | 5 3.9                            | .2831  | 15 54.9                            | 7.12               |
|                                 | 20 | .293                 | .6110   | .0387   | 7.80              | 5 2.8                            | .2837  | 15 50.8                            | 7.05               |

## 1831

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                  | G                               | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|--------------------|---------------------------------|--------|-----------------------------------|---------------------|
| April                           | 21 | +0. <sup>s</sup> 300 | —0.6099 | +0.0401 | 7. <sup>h</sup> 82 | 5 <sup>h</sup> 1 <sup>m</sup> 7 | 1.2842 | 15 <sup>h</sup> 46 <sup>m</sup> 8 | —6. <sup>h</sup> 98 |
|                                 | 22 | .306                 | .6088   | .0415   | 7.84               | 5 0.6                           | .2848  | 15 42.7                           | 6.91                |
|                                 | 23 | .312                 | .6077   | .0429   | 7.87               | 4 59.5                          | .2854  | 15 38.7                           | 6.83                |
|                                 | 24 | .319                 | .6065   | .0444   | 7.89               | 4 58.4                          | .2860  | 15 34.7                           | 6.76                |
|                                 | 25 | .325                 | .6053   | .0459   | 7.91               | 4 57.3                          | .2867  | 15 30.7                           | 6.68                |
|                                 | 26 | .332                 | .6041   | .0474   | 7.94               | 4 56.2                          | .2873  | 15 26.7                           | 6.60                |
|                                 | 27 | .339                 | .6029   | .0489   | 7.96               | 4 55.1                          | .2879  | 15 22.7                           | 6.51                |
|                                 | 28 | .345                 | .6016   | .0505   | 7.99               | 4 54.0                          | .2885  | 15 18.8                           | 6.43                |
|                                 | 29 | .352                 | .6004   | .0520   | 8.01               | 4 52.9                          | .2892  | 15 14.8                           | 6.34                |
|                                 | 30 | .359                 | .5991   | .0535   | 8.04               | 4 51.7                          | .2898  | 15 10.9                           | 6.26                |
| Mai                             | 1  | +0.366               | —0.5978 | +0.0550 | 8.07               | 4 50.6                          | 1.2904 | 15 7.0                            | —6.17               |
|                                 | 2  | .374                 | .5964   | .0565   | 8.09               | 4 49.4                          | .2911  | 15 3.1                            | 6.08                |
|                                 | 3  | .381                 | .5951   | .0580   | 8.12               | 4 48.3                          | .2917  | 14 59.2                           | 5.99                |
|                                 | 4  | .388                 | .5937   | .0596   | 8.15               | 4 47.1                          | .2923  | 14 55.3                           | 5.89                |
|                                 | 5  | .395                 | .5923   | .0611   | 8.17               | 4 45.9                          | .2930  | 14 51.4                           | 5.80                |
|                                 | 6  | .403                 | .5908   | .0627   | 8.20               | 4 44.8                          | .2936  | 14 47.6                           | 5.70                |
|                                 | 7  | .410                 | .5894   | .0643   | 8.23               | 4 43.6                          | .2942  | 14 43.8                           | 5.60                |
|                                 | 8  | .418                 | .5879   | .0658   | 8.26               | 4 42.4                          | .2948  | 14 39.9                           | 5.50                |
|                                 | 9  | .426                 | .5864   | .0673   | 8.29               | 4 41.2                          | .2954  | 14 36.1                           | 5.40                |
|                                 | 10 | .434                 | .5849   | .0688   | 8.32               | 4 40.0                          | .2961  | 14 32.3                           | 5.29                |
|                                 | 11 | +0.442               | —0.5834 | +0.0703 | 8.35               | 4 38.8                          | 1.2967 | 14 28.5                           | —5.19               |
|                                 | 12 | .450                 | .5818   | .0718   | 8.38               | 4 37.6                          | .2973  | 14 24.7                           | 5.08                |
|                                 | 13 | .458                 | .5803   | .0733   | 8.42               | 4 36.4                          | .2979  | 14 21.0                           | 4.97                |
|                                 | 14 | .466                 | .5787   | .0747   | 8.45               | 4 35.2                          | .2985  | 14 17.2                           | 4.86                |
|                                 | 15 | .474                 | .5771   | .0762   | 8.48               | 4 33.9                          | .2991  | 14 13.5                           | 4.75                |
|                                 | 16 | .483                 | .5755   | .0776   | 8.51               | 4 32.7                          | .2996  | 14 9.7                            | 4.64                |
|                                 | 17 | .491                 | .5739   | .0790   | 8.54               | 4 31.4                          | .3002  | 14 6.0                            | 4.53                |
|                                 | 18 | .500                 | .5723   | .0804   | 8.57               | 4 30.2                          | .3008  | 14 2.3                            | 4.41                |
|                                 | 19 | .508                 | .5707   | .0818   | 8.61               | 4 28.9                          | .3013  | 13 58.6                           | 4.30                |
|                                 | 20 | .517                 | .5691   | .0831   | 8.64               | 4 27.6                          | .3018  | 13 54.9                           | 4.18                |
|                                 | 21 | +0.526               | —0.5675 | +0.0844 | 8.67               | 4 26.3                          | 1.3024 | 13 51.3                           | —4.06               |
|                                 | 22 | .534                 | .5659   | .0857   | 8.71               | 4 25.1                          | .3029  | 13 47.6                           | 3.94                |
|                                 | 23 | .543                 | .5643   | .0870   | 8.74               | 4 23.8                          | .3034  | 13 43.9                           | 3.82                |
|                                 | 24 | .552                 | .5626   | .0882   | 8.77               | 4 22.5                          | .3039  | 13 40.3                           | 3.70                |
|                                 | 25 | .561                 | .5609   | .0894   | 8.80               | 4 21.2                          | .3043  | 13 36.7                           | 3.58                |
|                                 | 26 | .570                 | .5592   | .0906   | 8.84               | 4 19.9                          | .3048  | 13 33.0                           | 3.46                |
|                                 | 27 | .580                 | .5575   | .0917   | 8.87               | 4 18.7                          | .3053  | 13 29.4                           | 3.33                |
|                                 | 28 | .589                 | .5558   | .0928   | 8.91               | 4 17.4                          | .3057  | 13 25.8                           | 3.21                |
|                                 | 29 | .598                 | .5542   | .0939   | 8.94               | 4 16.0                          | .3061  | 13 22.2                           | 3.08                |
|                                 | 30 | .607                 | .5525   | .0949   | 8.97               | 4 14.7                          | .3065  | 13 18.6                           | 2.96                |
| Juni                            | 31 | +0.617               | —0.5508 | +0.0959 | 9.01               | 4 13.4                          | 1.3069 | 13 15.0                           | —2.83               |
|                                 | 1  | .626                 | .5491   | .0968   | 9.04               | 4 12.1                          | .3073  | 13 11.4                           | 2.70                |
|                                 | 2  | .636                 | .5474   | .0977   | 9.08               | 4 10.8                          | .3077  | 13 7.9                            | 2.57                |
|                                 | 3  | .645                 | .5457   | .0986   | 9.11               | 4 9.4                           | .3080  | 13 4.3                            | 2.44                |
|                                 | 4  | .655                 | .5440   | .0994   | 9.14               | 4 8.1                           | .3083  | 13 0.8                            | 2.31                |
|                                 | 5  | .665                 | .5423   | .1002   | 9.18               | 4 6.8                           | .3086  | 12 57.2                           | 2.18                |
|                                 | 6  | .674                 | .5407   | .1009   | 9.21               | 4 5.4                           | .3089  | 12 53.7                           | 2.05                |
|                                 | 7  | .684                 | .5390   | .1016   | 9.25               | 4 4.1                           | .3092  | 12 50.1                           | 1.92                |
|                                 | 8  | .694                 | .5373   | .1023   | 9.28               | 4 2.8                           | .3095  | 12 46.6                           | 1.79                |
|                                 | 9  | .704                 | .5356   | .1029   | 9.31               | 4 1.4                           | .3097  | 12 43.0                           | 1.65                |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f       | x       | y       | g     | G                               | log h  | H                                 | i     |
|---------------------------------|----|---------|---------|---------|-------|---------------------------------|--------|-----------------------------------|-------|
| Juni                            | 10 | +0.8714 | -0.5340 | +0.1034 | 9.35  | 4 <sup>h</sup> 0 <sup>m</sup> 0 | 1.3099 | 12 <sup>h</sup> 39 <sup>m</sup> 5 | -1.52 |
|                                 | 11 | .723    | .5323   | .1039   | 9.38  | 3 58.7                          | .3101  | 12 36.0                           | 1.39  |
|                                 | 12 | .733    | .5306   | .1044   | 9.41  | 3 57.3                          | .3103  | 12 32.5                           | 1.25  |
|                                 | 13 | .743    | .5289   | .1048   | 9.45  | 3 56.0                          | .3105  | 12 29.0                           | 1.12  |
|                                 | 14 | .753    | .5272   | .1052   | 9.48  | 3 54.7                          | .3106  | 12 25.4                           | 0.98  |
|                                 | 15 | .763    | .5255   | .1055   | 9.51  | 3 53.3                          | .3107  | 12 21.9                           | 0.85  |
|                                 | 16 | .773    | .5239   | .1058   | 9.55  | 3 52.0                          | .3108  | 12 18.4                           | 0.71  |
|                                 | 17 | .783    | .5222   | .1060   | 9.58  | 3 50.6                          | .3109  | 12 14.9                           | 0.58  |
|                                 | 18 | .793    | .5205   | .1062   | 9.61  | 3 49.3                          | .3110  | 12 11.4                           | 0.44  |
|                                 | 19 | .803    | .5189   | .1063   | 9.65  | 3 47.9                          | .3111  | 12 7.9                            | 0.31  |
|                                 | 20 | +0.813  | -0.5173 | +0.1064 | 9.68  | 3 46.6                          | 1.3111 | 12 4.4                            | -0.17 |
|                                 | 21 | .823    | .5157   | .1065   | 9.71  | 3 45.2                          | .3111  | 12 0.9                            | -0.04 |
|                                 | 22 | .834    | .5141   | .1065   | 9.74  | 3 43.8                          | .3111  | 11 57.4                           | +0.10 |
|                                 | 23 | .844    | .5125   | .1065   | 9.77  | 3 42.5                          | .3111  | 11 53.9                           | 0.23  |
|                                 | 24 | .854    | .5109   | .1064   | 9.81  | 3 41.1                          | .3110  | 11 50.4                           | 0.37  |
|                                 | 25 | .864    | .5094   | .1062   | 9.84  | 3 39.8                          | .3110  | 11 46.9                           | 0.51  |
|                                 | 26 | .874    | .5078   | .1060   | 9.87  | 3 38.4                          | .3109  | 11 43.4                           | 0.64  |
|                                 | 27 | .884    | .5062   | .1057   | 9.90  | 3 37.1                          | .3108  | 11 39.9                           | 0.78  |
|                                 | 28 | .894    | .5046   | .1054   | 9.93  | 3 35.7                          | .3107  | 11 36.4                           | 0.91  |
|                                 | 29 | .904    | .5031   | .1050   | 9.96  | 3 34.4                          | .3105  | 11 32.9                           | 1.05  |
| Juli                            | 30 | +0.914  | -0.5015 | +0.1046 | 9.99  | 3 33.1                          | 1.3104 | 11 29.4                           | +1.18 |
|                                 | 1  | .923    | .5000   | .1042   | 10.02 | 3 31.7                          | .3102  | 11 25.9                           | 1.31  |
|                                 | 2  | .933    | .4985   | .1037   | 10.05 | 3 30.4                          | .3100  | 11 22.4                           | 1.45  |
|                                 | 3  | .943    | .4970   | .1032   | 10.08 | 3 29.1                          | .3098  | 11 18.9                           | 1.58  |
|                                 | 4  | .953    | .4955   | .1026   | 10.11 | 3 27.7                          | .3096  | 11 15.3                           | 1.71  |
|                                 | 5  | .963    | .4941   | .1020   | 10.14 | 3 26.4                          | .3093  | 11 11.8                           | 1.85  |
|                                 | 6  | .973    | .4926   | .1013   | 10.17 | 3 25.1                          | .3091  | 11 8.3                            | 1.98  |
|                                 | 7  | .982    | .4912   | .1006   | 10.20 | 3 23.8                          | .3088  | 11 4.8                            | 2.11  |
|                                 | 8  | 0.992   | .4898   | .0998   | 10.23 | 3 22.5                          | .3085  | 11 1.2                            | 2.24  |
|                                 | 9  | 1.002   | .4884   | .0990   | 10.26 | 3 21.2                          | .3082  | 10 57.7                           | 2.37  |
|                                 | 10 | +1.011  | -0.4870 | +0.0982 | 10.29 | 3 19.9                          | 1.3079 | 10 54.1                           | +2.50 |
|                                 | 11 | .021    | .4856   | .0973   | 10.31 | 3 18.6                          | .3075  | 10 50.6                           | 2.63  |
|                                 | 12 | .030    | .4842   | .0964   | 10.34 | 3 17.3                          | .3071  | 10 47.0                           | 2.76  |
|                                 | 13 | .040    | .4829   | .0954   | 10.37 | 3 16.0                          | .3068  | 10 43.4                           | 2.88  |
|                                 | 14 | .049    | .4815   | .0944   | 10.40 | 3 14.7                          | .3064  | 10 39.9                           | 3.01  |
|                                 | 15 | .059    | .4802   | .0934   | 10.42 | 3 13.5                          | .3060  | 10 36.3                           | 3.14  |
|                                 | 16 | .068    | .4789   | .0923   | 10.45 | 3 12.2                          | .3055  | 10 32.7                           | 3.26  |
|                                 | 17 | .077    | .4776   | .0912   | 10.48 | 3 11.0                          | .3051  | 10 29.1                           | 3.38  |
|                                 | 18 | .086    | .4763   | .0901   | 10.50 | 3 9.7                           | .3046  | 10 25.5                           | 3.51  |
|                                 | 19 | .095    | .4750   | .0889   | 10.53 | 3 8.5                           | .3042  | 10 21.9                           | 3.63  |
|                                 | 20 | +1.104  | -0.4737 | +0.0877 | 10.55 | 3 7.3                           | 1.3037 | 10 18.3                           | +3.75 |
|                                 | 21 | .113    | .4725   | .0865   | 10.58 | 3 6.1                           | .3032  | 10 14.6                           | 3.87  |
|                                 | 22 | .122    | .4712   | .0853   | 10.60 | 3 4.8                           | .3027  | 10 11.0                           | 3.99  |
|                                 | 23 | .131    | .4700   | .0840   | 10.63 | 3 3.6                           | .3022  | 10 7.3                            | 4.11  |
|                                 | 24 | .140    | .4688   | .0827   | 10.65 | 3 2.4                           | .3016  | 10 3.7                            | 4.23  |
|                                 | 25 | .148    | .4676   | .0813   | 10.68 | 3 1.2                           | .3011  | 10 0.0                            | 4.34  |
|                                 | 26 | .157    | .4664   | .0799   | 10.70 | 3 0.1                           | .3006  | 9 56.4                            | 4.46  |
|                                 | 27 | .165    | .4652   | .0785   | 10.72 | 2 58.9                          | .3000  | 9 52.7                            | 4.57  |
|                                 | 28 | .174    | .4640   | .0771   | 10.75 | 2 57.7                          | .2995  | 9 49.0                            | 4.68  |
|                                 | 29 | .182    | .4629   | .0757   | 10.77 | 2 56.6                          | .2989  | 9 45.3                            | 4.79  |

## 1831

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                 | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|-----------------------------------|--------|-----------------------------------|---------------------|
| Juli                            | 30 | +1. <sup>s</sup> 190 | —0.4617 | +0.0743 | 10. <sup>h</sup> 79 | 2 <sup>h</sup> 55. <sup>m</sup> 4 | 1.2983 | 9 <sup>h</sup> 41. <sup>m</sup> 5 | +4. <sup>h</sup> 90 |
|                                 | 31 | .199                 | .4606   | .0729   | 10.82               | 2 54.3                            | .2977  | 9 37.8                            | 5.01                |
| August                          | 1  | .207                 | .4595   | .0714   | 10.84               | 2 53.1                            | .2971  | 9 34.1                            | 5.11                |
|                                 | 2  | .215                 | .4584   | .0699   | 10.86               | 2 52.0                            | .2965  | 9 30.3                            | 5.22                |
|                                 | 3  | .223                 | .4573   | .0684   | 10.88               | 2 50.9                            | .2959  | 9 26.6                            | 5.32                |
|                                 | 4  | .230                 | .4562   | .0669   | 10.90               | 2 49.8                            | .2953  | 9 22.8                            | 5.43                |
|                                 | 5  | .238                 | .4551   | .0654   | 10.93               | 2 48.8                            | .2947  | 9 19.0                            | 5.53                |
|                                 | 6  | .246                 | .4540   | .0639   | 10.95               | 2 47.7                            | .2941  | 9 15.2                            | 5.63                |
|                                 | 7  | .254                 | .4529   | .0623   | 10.97               | 2 46.6                            | .2934  | 9 11.4                            | 5.73                |
|                                 | 8  | .261                 | .4519   | .0608   | 10.99               | 2 45.6                            | .2928  | 9 7.6                             | 5.82                |
|                                 | 9  | +1.268               | —0.4508 | +0.0592 | 11.01               | 2 44.5                            | 1.2922 | 9 3.7                             | +5.92               |
|                                 | 10 | .276                 | .4498   | .0577   | 11.03               | 2 43.5                            | .2916  | 8 59.9                            | 6.01                |
|                                 | 11 | .283                 | .4488   | .0562   | 11.05               | 2 42.5                            | .2909  | 8 56.0                            | 6.10                |
|                                 | 12 | .290                 | .4478   | .0547   | 11.07               | 2 41.5                            | .2903  | 8 52.1                            | 6.19                |
|                                 | 13 | .297                 | .4468   | .0531   | 11.09               | 2 40.5                            | .2897  | 8 48.3                            | 6.28                |
|                                 | 14 | .304                 | .4458   | .0516   | 11.11               | 2 39.5                            | .2890  | 8 44.4                            | 6.36                |
|                                 | 15 | .311                 | .4448   | .0501   | 11.13               | 2 38.6                            | .2884  | 8 40.4                            | 6.45                |
|                                 | 16 | .318                 | .4438   | .0486   | 11.15               | 2 37.6                            | .2878  | 8 36.5                            | 6.53                |
|                                 | 17 | .325                 | .4428   | .0471   | 11.17               | 2 36.7                            | .2872  | 8 32.6                            | 6.61                |
|                                 | 18 | .331                 | .4419   | .0457   | 11.19               | 2 35.7                            | .2866  | 8 28.6                            | 6.69                |
|                                 | 19 | +1.338               | —0.4409 | +0.0442 | 11.21               | 2 34.8                            | 1.2860 | 8 24.7                            | +6.77               |
|                                 | 20 | .344                 | .4400   | .0428   | 11.23               | 2 33.9                            | .2854  | 8 20.7                            | 6.84                |
|                                 | 21 | .351                 | .4390   | .0414   | 11.25               | 2 33.0                            | .2848  | 8 16.7                            | 6.92                |
|                                 | 22 | .357                 | .4381   | .0400   | 11.27               | 2 32.2                            | .2842  | 8 12.7                            | 6.99                |
|                                 | 23 | .364                 | .4371   | .0386   | 11.29               | 2 31.3                            | .2836  | 8 8.7                             | 7.06                |
|                                 | 24 | .370                 | .4362   | .0373   | 11.31               | 2 30.5                            | .2831  | 8 4.7                             | 7.13                |
|                                 | 25 | .376                 | .4352   | .0359   | 11.33               | 2 29.6                            | .2825  | 8 0.6                             | 7.19                |
|                                 | 26 | .382                 | .4342   | .0346   | 11.34               | 2 28.8                            | .2820  | 7 56.6                            | 7.26                |
|                                 | 27 | .388                 | .4333   | .0333   | 11.36               | 2 28.0                            | .2814  | 7 52.5                            | 7.32                |
|                                 | 28 | .394                 | .4323   | .0321   | 11.38               | 2 27.2                            | .2809  | 7 48.4                            | 7.38                |
|                                 | 29 | +1.400               | —0.4314 | +0.0309 | 11.40               | 2 26.5                            | 1.2804 | 7 44.4                            | +7.43               |
|                                 | 30 | .406                 | .4304   | .0297   | 11.42               | 2 25.7                            | .2799  | 7 40.3                            | 7.49                |
|                                 | 31 | .411                 | .4295   | .0286   | 11.44               | 2 25.0                            | .2794  | 7 36.2                            | 7.54                |
| Septbr.                         | 1  | .417                 | .4285   | .0275   | 11.46               | 2 24.2                            | .2790  | 7 32.0                            | 7.59                |
|                                 | 2  | .423                 | .4275   | .0264   | 11.48               | 2 23.5                            | .2785  | 7 27.9                            | 7.64                |
|                                 | 3  | .428                 | .4265   | .0254   | 11.50               | 2 22.8                            | .2781  | 7 23.8                            | 7.69                |
|                                 | 4  | .434                 | .4256   | .0244   | 11.52               | 2 22.1                            | .2777  | 7 19.6                            | 7.73                |
|                                 | 5  | .439                 | .4246   | .0235   | 11.54               | 2 21.4                            | .2773  | 7 15.5                            | 7.78                |
|                                 | 6  | .445                 | .4237   | .0226   | 11.56               | 2 20.8                            | .2769  | 7 11.3                            | 7.82                |
|                                 | 7  | .450                 | .4227   | .0218   | 11.58               | 2 20.1                            | .2765  | 7 7.1                             | 7.85                |
|                                 | 8  | +1.455               | —0.4217 | +0.0210 | 11.60               | 2 19.5                            | 1.2762 | 7 3.0                             | +7.89               |
|                                 | 9  | .460                 | .4207   | .0202   | 11.62               | 2 18.9                            | .2758  | 6 58.8                            | 7.92                |
|                                 | 10 | .466                 | .4197   | .0195   | 11.64               | 2 18.3                            | .2755  | 6 54.5                            | 7.95                |
|                                 | 11 | .471                 | .4186   | .0189   | 11.66               | 2 17.7                            | .2753  | 6 50.3                            | 7.98                |
|                                 | 12 | .476                 | .4176   | .0183   | 11.68               | 2 17.1                            | .2750  | 6 46.1                            | 8.01                |
|                                 | 13 | .481                 | .4165   | .0177   | 11.70               | 2 16.5                            | .2748  | 6 41.9                            | 8.04                |
|                                 | 14 | .486                 | .4155   | .0172   | 11.72               | 2 16.0                            | .2746  | 6 37.7                            | 8.06                |
|                                 | 15 | .491                 | .4144   | .0168   | 11.74               | 2 15.5                            | .2744  | 6 33.4                            | 8.08                |
|                                 | 16 | .496                 | .4133   | .0164   | 11.76               | 2 14.9                            | .2742  | 6 29.2                            | 8.09                |
|                                 | 17 | .501                 | .4122   | .0160   | 11.79               | 2 14.4                            | .2740  | 6 24.9                            | 8.11                |

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| <sup>12h</sup><br>M. Z. Berlin | f      | x       | y       | g     | G                   | log h  | H                   | i     |
|--------------------------------|--------|---------|---------|-------|---------------------|--------|---------------------|-------|
| Septbr. 18                     | +1.506 | −0.4111 | +0.0157 | 11.81 | 2 <sup>h</sup> 13.9 | 1.2739 | 6 <sup>h</sup> 20.7 | +8.12 |
| 19                             | .511   | .4100   | .0154   | 11.83 | 2 13.5              | .2738  | 6 16.4              | 8.13  |
| 20                             | .516   | .4089   | .0152   | 11.85 | 2 13.0              | .2737  | 6 12.1              | 8.14  |
| 21                             | .521   | .4077   | .0151   | 11.88 | 2 12.5              | .2737  | 6 7.9               | 8.15  |
| 22                             | .526   | .4065   | .0150   | 11.90 | 2 12.1              | .2736  | 6 3.6               | 8.15  |
| 23                             | .531   | .4053   | .0150   | 11.92 | 2 11.7              | .2736  | 5 59.3              | 8.15  |
| 24                             | .536   | .4041   | .0150   | 11.95 | 2 11.2              | .2736  | 5 55.1              | 8.15  |
| 25                             | .541   | .4028   | .0151   | 11.97 | 2 10.8              | .2737  | 5 50.8              | 8.14  |
| 26                             | .546   | .4015   | .0152   | 12.00 | 2 10.4              | .2737  | 5 46.5              | 8.14  |
| 27                             | .551   | .4002   | .0154   | 12.03 | 2 10.0              | .2738  | 5 42.2              | 8.13  |
| 28                             | +1.556 | −0.3989 | +0.0157 | 12.05 | 2 9.6               | 1.2739 | 5 37.9              | +8.12 |
| 29                             | .561   | .3976   | .0160   | 12.08 | 2 9.3               | .2741  | 5 33.6              | 8.10  |
| 30                             | .566   | .3962   | .0164   | 12.11 | 2 8.9               | .2742  | 5 29.4              | 8.09  |
| Oktbr. 1                       | .571   | .3948   | .0169   | 12.13 | 2 8.6               | .2744  | 5 25.1              | 8.07  |
| 2                              | .577   | .3934   | .0174   | 12.16 | 2 8.2               | .2746  | 5 20.8              | 8.05  |
| 3                              | .582   | .3920   | .0179   | 12.19 | 2 7.9               | .2749  | 5 16.5              | 8.03  |
| 4                              | .587   | .3906   | .0185   | 12.22 | 2 7.6               | .2751  | 5 12.3              | 8.00  |
| 5                              | .592   | .3891   | .0191   | 12.25 | 2 7.3               | .2754  | 5 8.0               | 7.97  |
| 6                              | .597   | .3876   | .0198   | 12.28 | 2 7.0               | .2757  | 5 3.7               | 7.94  |
| 7                              | .603   | .3860   | .0205   | 12.31 | 2 6.7               | .2760  | 4 59.5              | 7.91  |
| 8                              | +1.608 | −0.3844 | +0.0213 | 12.34 | 2 6.4               | 1.2763 | 4 55.2              | +7.87 |
| 9                              | .613   | .3828   | .0222   | 12.37 | 2 6.1               | .2767  | 4 50.9              | 7.84  |
| 10                             | .619   | .3812   | .0231   | 12.41 | 2 5.9               | .2771  | 4 46.7              | 7.80  |
| 11                             | .624   | .3795   | .0240   | 12.44 | 2 5.6               | .2775  | 4 42.4              | 7.76  |
| 12                             | .630   | .3778   | .0250   | 12.47 | 2 5.4               | .2779  | 4 38.2              | 7.71  |
| 13                             | .635   | .3761   | .0260   | 12.51 | 2 5.1               | .2783  | 4 34.0              | 7.66  |
| 14                             | .641   | .3744   | .0271   | 12.54 | 2 4.8               | .2788  | 4 29.7              | 7.62  |
| 15                             | .647   | .3726   | .0282   | 12.58 | 2 4.6               | .2792  | 4 25.5              | 7.56  |
| 16                             | .653   | .3708   | .0294   | 12.62 | 2 4.4               | .2797  | 4 21.3              | 7.51  |
| 17                             | .658   | .3689   | .0306   | 12.65 | 2 4.1               | .2802  | 4 17.1              | 7.45  |
| 18                             | +1.664 | −0.3670 | +0.0318 | 12.69 | 2 3.9               | 1.2808 | 4 12.9              | +7.39 |
| 19                             | .670   | .3651   | .0331   | 12.73 | 2 3.7               | .2813  | 4 8.7               | 7.33  |
| 20                             | .677   | .3632   | .0344   | 12.77 | 2 3.5               | .2818  | 4 4.5               | 7.27  |
| 21                             | .683   | .3612   | .0357   | 12.81 | 2 3.3               | .2824  | 4 0.3               | 7.21  |
| 22                             | .689   | .3592   | .0370   | 12.85 | 2 3.0               | .2830  | 3 56.2              | 7.14  |
| 23                             | .695   | .3571   | .0384   | 12.89 | 2 2.8               | .2835  | 3 52.0              | 7.07  |
| 24                             | .702   | .3550   | .0398   | 12.93 | 2 2.6               | .2841  | 3 47.9              | 7.00  |
| 25                             | .708   | .3529   | .0413   | 12.98 | 2 2.4               | .2847  | 3 43.7              | 6.92  |
| 26                             | .715   | .3508   | .0427   | 13.02 | 2 2.2               | .2853  | 3 39.6              | 6.85  |
| 27                             | .722   | .3486   | .0442   | 13.06 | 2 2.0               | .2860  | 3 35.5              | 6.77  |
| 28                             | +1.728 | −0.3464 | +0.0457 | 13.11 | 2 1.8               | 1.2866 | 3 31.3              | +6.69 |
| 29                             | .735   | .3441   | .0472   | 13.15 | 2 1.6               | .2872  | 3 27.2              | 6.61  |
| 30                             | .742   | .3418   | .0487   | 13.20 | 2 1.3               | .2879  | 3 23.2              | 6.52  |
| 31                             | .749   | .3395   | .0503   | 13.24 | 2 1.1               | .2885  | 3 19.1              | 6.44  |
| Novbr. 1                       | .756   | .3372   | .0519   | 13.29 | 2 0.9               | .2891  | 3 15.0              | 6.35  |
| 2                              | .763   | .3348   | .0535   | 13.34 | 2 0.7               | .2898  | 3 10.9              | 6.26  |
| 3                              | .771   | .3324   | .0551   | 13.38 | 2 0.5               | .2905  | 3 6.9               | 6.17  |
| 4                              | .778   | .3300   | .0567   | 13.43 | 2 0.3               | .2911  | 3 2.8               | 6.07  |
| 5                              | .786   | .3275   | .0583   | 13.48 | 2 0.1               | .2918  | 2 58.8              | 5.98  |
| 6                              | .793   | .3250   | .0599   | 13.53 | 1 59.8              | .2924  | 2 54.8              | 5.88  |

## 1831

| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                 | log h  | H                                 | i     |
|---------------------------------|----|--------|---------|---------|-------|-----------------------------------|--------|-----------------------------------|-------|
| Novbr.                          | 7  | +1.801 | —0.3225 | +0.0615 | 13.58 | 1 <sup>h</sup> 59 <sup>m</sup> .6 | 1.2931 | 2 <sup>h</sup> 50 <sup>m</sup> .8 | +5.78 |
|                                 | 8  | .809   | .3200   | .0631   | 13.64 | 1 59.4                            | .2937  | 2 46.8                            | 5.68  |
|                                 | 9  | .817   | .3175   | .0647   | 13.69 | 1 59.1                            | .2944  | 2 42.8                            | 5.57  |
|                                 | 10 | .825   | .3149   | .0663   | 13.74 | 1 58.9                            | .2950  | 2 38.8                            | 5.47  |
|                                 | 11 | .833   | .3123   | .0679   | 13.79 | 1 58.6                            | .2957  | 2 34.8                            | 5.36  |
|                                 | 12 | .841   | .3096   | .0694   | 13.84 | 1 58.4                            | .2963  | 2 30.9                            | 5.25  |
|                                 | 13 | .860   | .3069   | .0710   | 13.90 | 1 58.1                            | .2970  | 2 26.9                            | 5.14  |
|                                 | 14 | .868   | .3041   | .0725   | 13.95 | 1 57.9                            | .2976  | 2 23.0                            | 5.03  |
|                                 | 15 | .876   | .3014   | .0741   | 14.01 | 1 57.6                            | .2982  | 2 19.0                            | 4.92  |
|                                 | 16 | .875   | .2986   | .0756   | 14.06 | 1 57.4                            | .2988  | 2 15.1                            | 4.80  |
|                                 | 17 | +1.884 | —0.2959 | +0.0771 | 14.12 | 1 57.1                            | 1.2994 | 2 11.2                            | +4.68 |
|                                 | 18 | .892   | .2931   | .0785   | 14.17 | 1 56.8                            | .3000  | 2 7.3                             | 4.57  |
|                                 | 19 | .901   | .2903   | .0800   | 14.23 | 1 56.5                            | .3006  | 2 3.4                             | 4.45  |
|                                 | 20 | .910   | .2875   | .0814   | 14.29 | 1 56.2                            | .3012  | 1 59.5                            | 4.33  |
|                                 | 21 | .919   | .2846   | .0828   | 14.34 | 1 55.9                            | .3017  | 1 55.6                            | 4.20  |
|                                 | 22 | .929   | .2817   | .0842   | 14.40 | 1 55.6                            | .3023  | 1 51.8                            | 4.08  |
|                                 | 23 | .938   | .2788   | .0856   | 14.46 | 1 55.3                            | .3028  | 1 47.9                            | 3.95  |
|                                 | 24 | .947   | .2759   | .0869   | 14.52 | 1 55.0                            | .3034  | 1 44.0                            | 3.83  |
|                                 | 25 | .957   | .2730   | .0882   | 14.58 | 1 54.6                            | .3039  | 1 40.2                            | 3.70  |
|                                 | 26 | .966   | .2700   | .0895   | 14.64 | 1 54.3                            | .3044  | 1 36.4                            | 3.57  |
|                                 | 27 | +1.976 | —0.2671 | +0.0907 | 14.70 | 1 54.0                            | 1.3049 | 1 32.5                            | +3.44 |
|                                 | 28 | .985   | .2641   | .0919   | 14.76 | 1 53.6                            | .3054  | 1 28.7                            | 3.31  |
|                                 | 29 | 1.995  | .2611   | .0931   | 14.82 | 1 53.3                            | .3058  | 1 24.9                            | 3.18  |
|                                 | 30 | 2.005  | .2581   | .0942   | 14.88 | 1 52.9                            | .3063  | 1 21.1                            | 3.04  |
| Dezbr.                          | 1  | .015   | .2551   | .0953   | 14.94 | 1 52.5                            | .3067  | 1 17.3                            | 2.91  |
|                                 | 2  | .025   | .2521   | .0963   | 15.00 | 1 52.1                            | .3071  | 1 13.5                            | 2.77  |
|                                 | 3  | .035   | .2491   | .0973   | 15.06 | 1 51.8                            | .3075  | 1 9.7                             | 2.64  |
|                                 | 4  | .045   | .2461   | .0982   | 15.12 | 1 51.4                            | .3079  | 1 5.9                             | 2.50  |
|                                 | 5  | .055   | .2430   | .0991   | 15.18 | 1 51.0                            | .3082  | 1 2.1                             | 2.36  |
|                                 | 6  | .065   | .2400   | .0999   | 15.24 | 1 50.6                            | .3085  | 0 58.3                            | 2.22  |
|                                 | 7  | +2.075 | —0.2370 | +0.1007 | 15.30 | 1 50.2                            | 1.3088 | 0 54.6                            | +2.08 |
|                                 | 8  | .086   | .2340   | .1014   | 15.36 | 1 49.7                            | .3091  | 0 50.8                            | 1.94  |
|                                 | 9  | .096   | .2309   | .1021   | 15.42 | 1 49.3                            | .3094  | 0 47.0                            | 1.80  |
|                                 | 10 | .106   | .2279   | .1028   | 15.48 | 1 48.9                            | .3097  | 0 43.3                            | 1.66  |
|                                 | 11 | .117   | .2248   | .1034   | 15.54 | 1 48.4                            | .3099  | 0 39.5                            | 1.52  |
|                                 | 12 | .127   | .2217   | .1040   | 15.61 | 1 48.0                            | .3101  | 0 35.8                            | 1.38  |
|                                 | 13 | .138   | .2187   | .1045   | 15.67 | 1 47.5                            | .3103  | 0 32.0                            | 1.24  |
|                                 | 14 | .148   | .2156   | .1049   | 15.73 | 1 47.1                            | .3105  | 0 28.3                            | 1.09  |
|                                 | 15 | .159   | .2125   | .1053   | 15.79 | 1 46.6                            | .3106  | 0 24.5                            | 0.95  |
|                                 | 16 | .169   | .2095   | .1056   | 15.85 | 1 46.1                            | .3108  | 0 20.8                            | 0.81  |
|                                 | 17 | +2.180 | —0.2065 | +0.1059 | 15.91 | 1 45.7                            | 1.3109 | 0 17.1                            | +0.66 |
|                                 | 18 | .190   | .2035   | .1061   | 15.97 | 1 45.2                            | .3110  | 0 13.3                            | 0.52  |
|                                 | 19 | .201   | .2005   | .1063   | 16.03 | 1 44.7                            | .3110  | 0 9.6                             | 0.37  |
|                                 | 20 | .212   | .1975   | .1064   | 16.09 | 1 44.2                            | .3111  | 0 5.9                             | 0.23  |
|                                 | 21 | .222   | .1945   | .1065   | 16.15 | 1 43.7                            | .3111  | 0 2.1                             | +0.08 |
|                                 | 22 | .233   | .1916   | .1065   | 16.21 | 1 43.2                            | .3111  | 23 58.4                           | —0.06 |
|                                 | 23 | .244   | .1886   | .1065   | 16.27 | 1 42.7                            | .3111  | 23 54.6                           | 0.21  |
|                                 | 24 | .254   | .1857   | .1064   | 16.33 | 1 42.2                            | .3111  | 23 50.9                           | 0.35  |
|                                 | 25 | .265   | .1827   | .1062   | 16.39 | 1 41.6                            | .3110  | 23 47.2                           | 0.50  |
|                                 | 26 | .276   | .1798   | .1060   | 16.45 | 1 41.1                            | .3109  | 23 43.4                           | 0.64  |

## 1831

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                   | x       | y       | g                  | G'                               | log h  | H                                 | i                  |
|---------------------------------|----|---------------------|---------|---------|--------------------|----------------------------------|--------|-----------------------------------|--------------------|
| Dezbr.                          | 27 | +2 <sup>s</sup> 286 | —0.1769 | +0.1057 | 16 <sup>h</sup> 50 | 1 <sup>h</sup> 40 <sup>m</sup> 6 | 1.3108 | 23 <sup>h</sup> 39 <sup>m</sup> 7 | —0 <sup>h</sup> 79 |
|                                 | 28 | .297                | .1740   | .1054   | 16.56              | 1 40.0                           | .3107  | 23 35.9                           | 0.93               |
|                                 | 29 | .307                | .1711   | .1050   | 16.62              | 1 39.5                           | .3105  | 23 32.2                           | 1.07               |
|                                 | 30 | .318                | .1682   | .1046   | 16.68              | 1 39.0                           | .3104  | 23 28.4                           | 1.22               |
|                                 | 31 | .328                | .1653   | .1042   | 16.74              | 1 38.4                           | .3102  | 23 24.7                           | 1.36               |

## 1832

|         |    |                     |         |         |                   |                                  |        |                                   |                    |
|---------|----|---------------------|---------|---------|-------------------|----------------------------------|--------|-----------------------------------|--------------------|
| Januar  | 1  | —0 <sup>s</sup> 732 | —0.5795 | +0.1035 | 8 <sup>h</sup> 43 | 8 <sup>h</sup> 17 <sup>m</sup> 6 | 1.3100 | 23 <sup>h</sup> 20 <sup>m</sup> 9 | —1 <sup>h</sup> 50 |
|         | 2  | .722                | .5820   | .1029   | 8.38              | 8 16.3                           | .3097  | 23 17.1                           | 1.64               |
|         | 3  | .711                | .5845   | .1022   | 8.33              | 8 15.0                           | .3095  | 23 13.4                           | 1.79               |
|         | 4  | .701                | .5870   | .1015   | 8.28              | 8 13.7                           | .3092  | 23 9.6                            | 1.93               |
|         | 5  | .690                | .5895   | .1008   | 8.23              | 8 12.4                           | .3089  | 23 5.8                            | 2.07               |
|         | 6  | .680                | .5920   | .1000   | 8.18              | 8 11.1                           | .3086  | 23 2.0                            | 2.21               |
|         | 7  | .670                | .5945   | .0992   | 8.13              | 8 9.7                            | .3082  | 22 58.3                           | 2.35               |
|         | 8  | .660                | .5970   | .0983   | 8.08              | 8 8.4                            | .3079  | 22 54.5                           | 2.48               |
|         | 9  | .650                | .5995   | .0974   | 8.03              | 8 7.1                            | .3075  | 22 50.7                           | 2.62               |
|         | 10 | .640                | .6020   | .0964   | 7.98              | 8 5.8                            | .3071  | 22 46.9                           | 2.76               |
|         | 11 | —0.630              | —0.6045 | +0.0954 | 7.93              | 8 4.4                            | 1.3067 | 22 43.0                           | —2.90              |
|         | 12 | .620                | .6070   | .0943   | 7.88              | 8 3.1                            | .3063  | 22 39.2                           | 3.03               |
|         | 13 | .610                | .6095   | .0932   | 7.83              | 8 1.8                            | .3059  | 22 35.4                           | 3.16               |
|         | 14 | .600                | .6120   | .0920   | 7.78              | 8 0.5                            | .3054  | 22 31.6                           | 3.30               |
|         | 15 | .590                | .6145   | .0908   | 7.73              | 7 59.2                           | .3049  | 22 27.7                           | 3.43               |
|         | 16 | .581                | .6170   | .0896   | 7.68              | 7 57.9                           | .3044  | 22 23.9                           | 3.56               |
|         | 17 | .571                | .6195   | .0883   | 7.63              | 7 56.6                           | .3039  | 22 20.0                           | 3.69               |
|         | 18 | .562                | .6220   | .0870   | 7.58              | 7 55.3                           | .3034  | 22 16.2                           | 3.82               |
|         | 19 | .552                | .6244   | .0856   | 7.53              | 7 54.0                           | .3029  | 22 12.3                           | 3.95               |
|         | 20 | .543                | .6269   | .0843   | 7.48              | 7 52.7                           | .3023  | 22 8.4                            | 4.07               |
|         | 21 | —0.534              | —0.6293 | +0.0829 | 7.43              | 7 51.4                           | 1.3018 | 22 4.5                            | —4.20              |
|         | 22 | .525                | .6318   | .0815   | 7.38              | 7 50.1                           | .3012  | 22 0.6                            | 4.32               |
|         | 23 | .515                | .6342   | .0800   | 7.33              | 7 48.8                           | .3006  | 21 56.7                           | 4.44               |
|         | 24 | .506                | .6367   | .0786   | 7.29              | 7 47.5                           | .3000  | 21 52.8                           | 4.56               |
|         | 25 | .498                | .6391   | .0771   | 7.24              | 7 46.2                           | .2994  | 21 48.8                           | 4.68               |
|         | 26 | .489                | .6415   | .0756   | 7.19              | 7 45.0                           | .2988  | 21 44.9                           | 4.80               |
|         | 27 | .480                | .6438   | .0741   | 7.14              | 7 43.7                           | .2982  | 21 41.0                           | 4.92               |
|         | 28 | .472                | .6462   | .0726   | 7.09              | 7 42.4                           | .2976  | 21 37.0                           | 5.03               |
|         | 29 | .463                | .6485   | .0710   | 7.05              | 7 41.1                           | .2969  | 21 33.0                           | 5.14               |
|         | 30 | .455                | .6508   | .0694   | 7.00              | 7 39.9                           | .2963  | 21 29.0                           | 5.26               |
|         | 31 | —0.446              | —0.6531 | +0.0678 | 6.95              | 7 38.6                           | 1.2957 | 21 25.1                           | —5.37              |
| Februar | 1  | .438                | .6554   | .0662   | 6.91              | 7 37.3                           | .2950  | 21 21.1                           | 5.47               |
|         | 2  | .430                | .6577   | .0646   | 6.86              | 7 36.1                           | .2944  | 21 17.0                           | 5.58               |
|         | 3  | .422                | .6600   | .0630   | 6.82              | 7 34.8                           | .2937  | 21 13.0                           | 5.68               |
|         | 4  | .414                | .6623   | .0613   | 6.77              | 7 33.6                           | .2930  | 21 9.0                            | 5.78               |
|         | 5  | .406                | .6645   | .0597   | 6.73              | 7 32.4                           | .2924  | 21 4.9                            | 5.88               |
|         | 6  | .399                | .6667   | .0581   | 6.69              | 7 31.1                           | .2917  | 21 0.9                            | 5.98               |
|         | 7  | .391                | .6688   | .0565   | 6.64              | 7 29.9                           | .2910  | 20 56.8                           | 6.08               |
|         | 8  | .384                | .6709   | .0549   | 6.60              | 7 28.7                           | .2904  | 20 52.7                           | 6.17               |
|         | 9  | .376                | .6730   | .0533   | 6.56              | 7 27.4                           | .2897  | 20 48.6                           | 6.27               |

## 1832

| <sup>12</sup> <sub>h</sub><br>M. Z. Berlin | f      | x       | y       | g    | G                                | log h  | H                                 | i     |
|--------------------------------------------|--------|---------|---------|------|----------------------------------|--------|-----------------------------------|-------|
| Februar 10                                 | —0.369 | —0.6750 | +0.0517 | 6.52 | 7 <sup>h</sup> 26 <sup>m</sup> 2 | 1.2891 | 20 <sup>h</sup> 44 <sup>m</sup> 5 | —6.36 |
| 11                                         | .362   | .6770   | .0501   | 6.48 | 7 25.0                           | .2884  | 20 40.4                           | 6.45  |
| 12                                         | .354   | .6790   | .0486   | 6.44 | 7 23.8                           | .2878  | 20 36.3                           | 6.53  |
| 13                                         | .347   | .6810   | .0470   | 6.40 | 7 22.6                           | .2871  | 20 32.2                           | 6.62  |
| 14                                         | .340   | .6829   | .0455   | 6.36 | 7 21.4                           | .2865  | 20 28.0                           | 6.70  |
| 15                                         | .334   | .6848   | .0440   | 6.32 | 7 20.1                           | .2859  | 20 23.9                           | 6.78  |
| 16                                         | .327   | .6867   | .0425   | 6.28 | 7 18.9                           | .2852  | 20 19.7                           | 6.86  |
| 17                                         | .320   | .6886   | .0410   | 6.24 | 7 17.7                           | .2846  | 20 15.5                           | 6.94  |
| 18                                         | .314   | .6904   | .0396   | 6.21 | 7 16.5                           | .2840  | 20 11.3                           | 7.01  |
| 19                                         | .307   | .6922   | .0381   | 6.17 | 7 15.3                           | .2834  | 20 7.2                            | 7.08  |
| 20                                         | —0.301 | —0.6940 | +0.0367 | 6.14 | 7 14.1                           | 1.2828 | 20 3.0                            | —7.15 |
| 21                                         | .294   | .6958   | .0353   | 6.10 | 7 12.9                           | .2823  | 19 58.7                           | 7.22  |
| 22                                         | .288   | .6975   | .0340   | 6.07 | 7 11.7                           | .2817  | 19 54.5                           | 7.29  |
| 23                                         | .282   | .6992   | .0327   | 6.03 | 7 10.5                           | .2811  | 19 50.3                           | 7.35  |
| 24                                         | .276   | .7008   | .0314   | 6.00 | 7 9.3                            | .2806  | 19 46.0                           | 7.41  |
| 25                                         | .270   | .7024   | .0302   | 5.97 | 7 8.1                            | .2801  | 19 41.8                           | 7.47  |
| 26                                         | .264   | .7039   | .0290   | 5.94 | 7 6.9                            | .2796  | 19 37.5                           | 7.52  |
| 27                                         | .258   | .7054   | .0278   | 5.91 | 7 5.7                            | .2791  | 19 33.3                           | 7.58  |
| 28                                         | .252   | .7068   | .0267   | 5.88 | 7 4.5                            | .2786  | 19 29.0                           | 7.63  |
| 29                                         | .246   | .7082   | .0256   | 5.85 | 7 3.3                            | .2782  | 19 24.7                           | 7.68  |
| März 1                                     | —0.241 | —0.7096 | +0.0246 | 5.82 | 7 2.1                            | 1.2777 | 19 20.4                           | —7.72 |
| 2                                          | .235   | .7110   | .0236   | 5.79 | 7 0.9                            | .2773  | 19 16.2                           | 7.77  |
| 3                                          | .229   | .7124   | .0227   | 5.77 | 6 59.6                           | .2769  | 19 11.9                           | 7.81  |
| 4                                          | .224   | .7137   | .0218   | 5.74 | 6 58.4                           | .2766  | 19 7.6                            | 7.85  |
| 5                                          | .218   | .7149   | .0210   | 5.72 | 6 57.2                           | .2762  | 19 3.2                            | 7.89  |
| 6                                          | .213   | .7161   | .0202   | 5.69 | 6 56.0                           | .2759  | 18 58.9                           | 7.92  |
| 7                                          | .208   | .7172   | .0195   | 5.67 | 6 54.7                           | .2756  | 18 54.6                           | 7.95  |
| 8                                          | .202   | .7183   | .0188   | 5.65 | 6 53.5                           | .2753  | 18 50.3                           | 7.98  |
| 9                                          | .197   | .7194   | .0182   | 5.63 | 6 52.3                           | .2750  | 18 46.0                           | 8.01  |
| 10                                         | .192   | .7205   | .0177   | 5.61 | 6 51.0                           | .2747  | 18 41.7                           | 8.03  |
| 11                                         | —0.186 | —0.7215 | +0.0172 | 5.58 | 6 49.7                           | 1.2745 | 18 37.3                           | —8.06 |
| 12                                         | .181   | .7225   | .0167   | 5.56 | 6 48.5                           | .2743  | 18 33.0                           | 8.08  |
| 13                                         | .176   | .7234   | .0163   | 5.55 | 6 47.2                           | .2742  | 18 28.7                           | 8.09  |
| 14                                         | .171   | .7243   | .0159   | 5.53 | 6 45.9                           | .2740  | 18 24.3                           | 8.11  |
| 15                                         | .166   | .7251   | .0156   | 5.51 | 6 44.6                           | .2739  | 18 20.0                           | 8.12  |
| 16                                         | .161   | .7259   | .0154   | 5.50 | 6 43.3                           | .2738  | 18 15.7                           | 8.13  |
| 17                                         | .155   | .7266   | .0152   | 5.48 | 6 42.0                           | .2737  | 18 11.3                           | 8.14  |
| 18                                         | .150   | .7273   | .0151   | 5.47 | 6 40.7                           | .2737  | 18 7.0                            | 8.15  |
| 19                                         | .145   | .7280   | .0150   | 5.45 | 6 39.4                           | .2736  | 18 2.7                            | 8.15  |
| 20                                         | .140   | .7286   | .0150   | 5.44 | 6 38.1                           | .2736  | 17 58.4                           | 8.15  |
| 21                                         | —0.135 | —0.7292 | +0.0150 | 5.43 | 6 36.7                           | 1.2736 | 17 54.0                           | —8.15 |
| 22                                         | .130   | .7297   | .0151   | 5.42 | 6 35.3                           | .2737  | 17 49.7                           | 8.14  |
| 23                                         | .125   | .7302   | .0153   | 5.41 | 6 34.0                           | .2738  | 17 45.4                           | 8.13  |
| 24                                         | .120   | .7307   | .0155   | 5.40 | 6 32.6                           | .2739  | 17 41.1                           | 8.12  |
| 25                                         | .114   | .7311   | .0158   | 5.39 | 6 31.2                           | .2740  | 17 36.8                           | 8.11  |
| 26                                         | .109   | .7315   | .0162   | 5.38 | 6 29.8                           | .2741  | 17 32.5                           | 8.10  |
| 27                                         | .104   | .7318   | .0166   | 5.38 | 6 28.3                           | .2743  | 17 28.2                           | 8.08  |
| 28                                         | .099   | .7321   | .0170   | 5.37 | 6 26.9                           | .2745  | 17 23.9                           | 8.06  |
| 29                                         | .094   | .7323   | .0175   | 5.37 | 6 25.5                           | .2747  | 17 19.6                           | 8.04  |
| 30                                         | .088   | .7325   | .0180   | 5.36 | 6 24.0                           | .2749  | 17 15.3                           | 8.02  |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f       | x       | y       | g    | G                                | log h  | H                                 | i     |
|---------------------------------|----|---------|---------|---------|------|----------------------------------|--------|-----------------------------------|-------|
| März                            | 31 | —0.8083 | —0.7327 | +0.0186 | 5.36 | 6 <sup>h</sup> 22 <sup>m</sup> 5 | 1.2752 | 17 <sup>h</sup> 11 <sup>m</sup> 1 | —7.99 |
| April                           | 1  | .078    | .7329   | .0192   | 5.36 | 6 21.0                           | .2754  | 17 6.8                            | 7.96  |
|                                 | 2  | .072    | .7330   | .0199   | 5.35 | 6 19.5                           | .2757  | 17 2.6                            | 7.93  |
|                                 | 3  | .067    | .7331   | .0207   | 5.35 | 6 18.0                           | .2761  | 16 58.3                           | 7.90  |
|                                 | 4  | .061    | .7331   | .0215   | 5.35 | 6 16.5                           | .2764  | 16 54.1                           | 7.87  |
|                                 | 5  | .056    | .7331   | .0224   | 5.35 | 6 15.0                           | .2768  | 16 49.9                           | 7.83  |
|                                 | 6  | .050    | .7330   | .0233   | 5.35 | 6 13.4                           | .2772  | 16 45.6                           | 7.79  |
|                                 | 7  | .045    | .7329   | .0242   | 5.36 | 6 11.8                           | .2776  | 16 41.4                           | 7.75  |
|                                 | 8  | .039    | .7327   | .0252   | 5.36 | 6 10.2                           | .2780  | 16 37.2                           | 7.70  |
|                                 | 9  | .033    | .7325   | .0262   | 5.36 | 6 8.6                            | .2784  | 16 33.0                           | 7.65  |
|                                 | 10 | —0.028  | —0.7323 | +0.0273 | 5.37 | 6 7.0                            | 1.2789 | 16 28.9                           | —7.60 |
|                                 | 11 | .022    | .7321   | .0284   | 5.37 | 6 5.4                            | .2793  | 16 24.7                           | 7.55  |
|                                 | 12 | .016    | .7318   | .0295   | 5.38 | 6 3.8                            | .2798  | 16 20.5                           | 7.50  |
|                                 | 13 | .010    | .7315   | .0307   | 5.38 | 6 2.1                            | .2803  | 16 16.4                           | 7.44  |
|                                 | 14 | —0.004  | .7311   | .0319   | 5.39 | 6 0.5                            | .2808  | 16 12.3                           | 7.38  |
|                                 | 15 | +0.002  | .7307   | .0331   | 5.40 | 5 58.8                           | .2813  | 16 8.1                            | 7.32  |
|                                 | 16 | .008    | .7303   | .0344   | 5.41 | 5 57.1                           | .2819  | 16 4.0                            | 7.26  |
|                                 | 17 | .014    | .7298   | .0357   | 5.42 | 5 55.4                           | .2824  | 16 0.0                            | 7.20  |
|                                 | 18 | .021    | .7293   | .0370   | 5.43 | 5 53.7                           | .2830  | 15 55.9                           | 7.13  |
|                                 | 19 | .027    | .7288   | .0384   | 5.44 | 5 51.9                           | .2835  | 15 51.8                           | 7.07  |
|                                 | 20 | +0.033  | —0.7282 | +0.0398 | 5.45 | 5 50.1                           | 1.2841 | 15 47.8                           | —7.00 |
|                                 | 21 | .040    | .7276   | .0412   | 5.46 | 5 48.3                           | .2847  | 15 43.7                           | 6.92  |
|                                 | 22 | .047    | .7270   | .0426   | 5.47 | 5 46.5                           | .2853  | 15 39.7                           | 6.85  |
|                                 | 23 | .053    | .7263   | .0440   | 5.49 | 5 44.7                           | .2859  | 15 35.7                           | 6.78  |
|                                 | 24 | .060    | .7256   | .0455   | 5.50 | 5 42.9                           | .2865  | 15 31.7                           | 6.70  |
|                                 | 25 | .067    | .7249   | .0470   | 5.51 | 5 41.1                           | .2871  | 15 27.7                           | 6.62  |
|                                 | 26 | .074    | .7242   | .0485   | 5.53 | 5 39.2                           | .2877  | 15 23.7                           | 6.54  |
|                                 | 27 | .081    | .7235   | .0500   | 5.54 | 5 37.4                           | .2884  | 15 19.7                           | 6.45  |
|                                 | 28 | .088    | .7227   | .0516   | 5.56 | 5 35.5                           | .2890  | 15 15.8                           | 6.37  |
|                                 | 29 | .095    | .7219   | .0531   | 5.58 | 5 33.6                           | .2896  | 15 11.8                           | 6.28  |
| Mai                             | 30 | +0.102  | —0.7211 | +0.0547 | 5.59 | 5 31.7                           | 1.2903 | 15 7.9                            | —6.19 |
|                                 | 1  | .110    | .7202   | .0562   | 5.61 | 5 29.9                           | .2909  | 15 4.0                            | 6.10  |
|                                 | 2  | .117    | .7193   | .0578   | 5.63 | 5 28.0                           | .2915  | 15 0.1                            | 6.01  |
|                                 | 3  | .125    | .7184   | .0593   | 5.65 | 5 26.1                           | .2922  | 14 56.2                           | 5.91  |
|                                 | 4  | .132    | .7174   | .0608   | 5.67 | 5 24.1                           | .2928  | 14 52.4                           | 5.82  |
|                                 | 5  | .140    | .7165   | .0624   | 5.69 | 5 22.2                           | .2934  | 14 48.5                           | 5.72  |
|                                 | 6  | .148    | .7155   | .0639   | 5.71 | 5 20.3                           | .2941  | 14 44.7                           | 5.62  |
|                                 | 7  | .156    | .7145   | .0654   | 5.73 | 5 18.3                           | .2947  | 14 40.9                           | 5.52  |
|                                 | 8  | .164    | .7134   | .0669   | 5.75 | 5 16.4                           | .2953  | 14 37.0                           | 5.42  |
|                                 | 9  | .172    | .7123   | .0684   | 5.77 | 5 14.4                           | .2959  | 14 33.2                           | 5.32  |
|                                 | 10 | +0.180  | —0.7112 | +0.0699 | 5.79 | 5 12.5                           | 1.2965 | 14 29.4                           | —5.21 |
|                                 | 11 | .188    | .7101   | .0714   | 5.81 | 5 10.5                           | .2971  | 14 25.7                           | 5.11  |
|                                 | 12 | .197    | .7089   | .0729   | 5.84 | 5 8.5                            | .2977  | 14 21.9                           | 5.00  |
|                                 | 13 | .205    | .7078   | .0744   | 5.86 | 5 6.5                            | .2983  | 14 18.1                           | 4.89  |
|                                 | 14 | .213    | .7066   | .0758   | 5.88 | 5 4.4                            | .2989  | 14 14.4                           | 4.78  |
|                                 | 15 | .222    | .7054   | .0773   | 5.91 | 5 2.4                            | .2995  | 14 10.6                           | 4.67  |
|                                 | 16 | .231    | .7042   | .0787   | 5.93 | 5 0.4                            | .3001  | 14 6.9                            | 4.55  |
|                                 | 17 | .239    | .7030   | .0801   | 5.96 | 4 58.4                           | .3006  | 14 3.2                            | 4.44  |
|                                 | 18 | .248    | .7017   | .0814   | 5.98 | 4 56.4                           | .3012  | 13 59.5                           | 4.33  |
|                                 | 19 | .257    | .7005   | .0828   | 6.01 | 4 54.3                           | .3017  | 13 55.8                           | 4.21  |

## 1832

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g    | G                                 | log h  | H                                  | i     |
|---------------------------------|----|----------------------|---------|---------|------|-----------------------------------|--------|------------------------------------|-------|
| Mai                             | 20 | +0. <sup>s</sup> 266 | —0.6992 | +0.0841 | 6.03 | 4 <sup>h</sup> 52. <sup>m</sup> 3 | 1.3022 | 13 <sup>h</sup> 52. <sup>m</sup> 2 | —4.09 |
|                                 | 21 | .275                 | .6979   | .0854   | 6.06 | 4 50.2                            | .3027  | 13 48.5                            | 3.97  |
|                                 | 22 | .284                 | .6966   | .0867   | 6.08 | 4 48.2                            | .3032  | 13 44.8                            | 3.85  |
|                                 | 23 | .293                 | .6953   | .0879   | 6.11 | 4 46.1                            | .3037  | 13 41.2                            | 3.73  |
|                                 | 24 | .303                 | .6940   | .0891   | 6.14 | 4 44.1                            | .3042  | 13 37.5                            | 3.61  |
|                                 | 25 | .312                 | .6927   | .0903   | 6.16 | 4 42.1                            | .3047  | 13 33.9                            | 3.49  |
|                                 | 26 | .322                 | .6913   | .0914   | 6.19 | 4 40.0                            | .3051  | 13 30.3                            | 3.36  |
|                                 | 27 | .331                 | .6899   | .0925   | 6.22 | 4 38.0                            | .3056  | 13 26.7                            | 3.24  |
|                                 | 28 | .340                 | .6885   | .0936   | 6.25 | 4 35.9                            | .3060  | 13 23.1                            | 3.11  |
|                                 | 29 | .350                 | .6871   | .0946   | 6.27 | 4 33.9                            | .3064  | 13 19.5                            | 2.99  |
| Juni                            | 30 | +0.359               | —0.6857 | +0.0956 | 6.30 | 4 31.8                            | 1.3068 | 13 15.9                            | —2.86 |
|                                 | 31 | .369                 | .6843   | .0966   | 6.33 | 4 29.8                            | .3072  | 13 12.3                            | 2.73  |
|                                 | 1  | .379                 | .6828   | .0975   | 6.36 | 4 27.7                            | .3076  | 13 8.7                             | 2.60  |
|                                 | 2  | .389                 | .6814   | .0984   | 6.39 | 4 25.7                            | .3079  | 13 5.2                             | 2.47  |
|                                 | 3  | .399                 | .6799   | .0992   | 6.42 | 4 23.6                            | .3082  | 13 1.6                             | 2.34  |
|                                 | 4  | .408                 | .6785   | .1000   | 6.45 | 4 21.6                            | .3086  | 12 58.1                            | 2.21  |
|                                 | 5  | .418                 | .6770   | .1007   | 6.48 | 4 19.5                            | .3089  | 12 54.5                            | 2.08  |
|                                 | 6  | .428                 | .6756   | .1014   | 6.51 | 4 17.5                            | .3091  | 12 51.0                            | 1.95  |
|                                 | 7  | .438                 | .6741   | .1021   | 6.54 | 4 15.4                            | .3094  | 12 47.4                            | 1.82  |
|                                 | 8  | .449                 | .6726   | .1027   | 6.57 | 4 13.4                            | .3096  | 12 43.9                            | 1.69  |
|                                 | 9  | +0.459               | —0.6711 | +0.1033 | 6.60 | 4 11.3                            | 1.3099 | 12 40.4                            | —1.55 |
|                                 | 10 | .469                 | .6696   | .1038   | 6.63 | 4 9.3                             | .3101  | 12 36.8                            | 1.42  |
|                                 | 11 | .479                 | .6680   | .1043   | 6.66 | 4 7.2                             | .3103  | 12 33.3                            | 1.28  |
|                                 | 12 | .489                 | .6665   | .1047   | 6.69 | 4 5.2                             | .3104  | 12 29.8                            | 1.15  |
|                                 | 13 | .499                 | .6650   | .1051   | 6.72 | 4 3.2                             | .3106  | 12 26.3                            | 1.02  |
|                                 | 14 | .509                 | .6635   | .1054   | 6.75 | 4 1.1                             | .3107  | 12 22.8                            | 0.88  |
|                                 | 15 | .520                 | .6620   | .1057   | 6.78 | 3 59.1                            | .3108  | 12 19.3                            | 0.75  |
|                                 | 16 | .530                 | .6605   | .1060   | 6.81 | 3 57.1                            | .3109  | 12 15.8                            | 0.61  |
|                                 | 17 | .540                 | .6590   | .1062   | 6.84 | 3 55.1                            | .3110  | 12 12.3                            | 0.48  |
|                                 | 18 | .551                 | .6574   | .1063   | 6.87 | 3 53.1                            | .3111  | 12 8.8                             | 0.34  |
|                                 | 19 | +0.561               | —0.6559 | +0.1064 | 6.90 | 3 51.1                            | 1.3111 | 12 5.3                             | —0.20 |
|                                 | 20 | .571                 | .6544   | .1065   | 6.93 | 3 49.1                            | .3111  | 12 1.8                             | —0.07 |
|                                 | 21 | .581                 | .6529   | .1065   | 6.96 | 3 47.1                            | .3111  | 11 58.3                            | +0.07 |
|                                 | 22 | .592                 | .6513   | .1064   | 6.99 | 3 45.1                            | .3111  | 11 54.8                            | 0.20  |
|                                 | 23 | .602                 | .6498   | .1063   | 7.02 | 3 43.1                            | .3111  | 11 51.3                            | 0.34  |
|                                 | 24 | .612                 | .6483   | .1062   | 7.05 | 3 41.2                            | .3110  | 11 47.8                            | 0.47  |
|                                 | 25 | .622                 | .6468   | .1060   | 7.08 | 3 39.2                            | .3109  | 11 44.3                            | 0.61  |
|                                 | 26 | .633                 | .6452   | .1057   | 7.11 | 3 37.3                            | .3108  | 11 40.8                            | 0.74  |
|                                 | 27 | .643                 | .6437   | .1054   | 7.14 | 3 35.3                            | .3107  | 11 37.3                            | 0.88  |
|                                 | 28 | .653                 | .6422   | .1051   | 7.17 | 3 33.4                            | .3106  | 11 33.8                            | 1.01  |
| Juli                            | 29 | +0.663               | —0.6407 | +0.1047 | 7.20 | 3 31.5                            | 1.3104 | 11 30.2                            | +1.15 |
|                                 | 30 | .674                 | .6391   | .1043   | 7.24 | 3 29.6                            | .3103  | 11 26.7                            | 1.28  |
|                                 | 1  | .684                 | .6376   | .1039   | 7.27 | 3 27.7                            | .3101  | 11 23.2                            | 1.42  |
|                                 | 2  | .694                 | .6361   | .1034   | 7.30 | 3 25.8                            | .3099  | 11 19.7                            | 1.55  |
|                                 | 3  | .704                 | .6346   | .1028   | 7.33 | 3 23.9                            | .3097  | 11 16.2                            | 1.68  |
|                                 | 4  | .714                 | .6331   | .1022   | 7.36 | 3 22.0                            | .3094  | 11 12.7                            | 1.82  |
|                                 | 5  | .724                 | .6316   | .1015   | 7.39 | 3 20.1                            | .3091  | 11 9.1                             | 1.95  |
|                                 | 6  | .734                 | .6302   | .1008   | 7.42 | 3 18.2                            | .3089  | 11 5.6                             | 2.08  |
|                                 | 7  | .744                 | .6287   | .1000   | 7.45 | 3 16.4                            | .3086  | 11 2.1                             | 2.21  |
|                                 | 8  | .754                 | .6272   | .0992   | 7.48 | 3 14.6                            | .3083  | 10 58.5                            | 2.34  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g    | G                                | log h  | H                                 | i     |
|---------------------------------|----|--------|---------|---------|------|----------------------------------|--------|-----------------------------------|-------|
| Juli                            | 9  | +0.764 | -0.6257 | +0.0984 | 7.50 | 3 <sup>h</sup> 12 <sup>m</sup> 7 | 1.3079 | 10 <sup>h</sup> 55 <sup>m</sup> 0 | +2.47 |
|                                 | 10 | .774   | .6242   | .0975   | 7.53 | 3 10.9                           | .3076  | 10 51.4                           | 2.60  |
|                                 | 11 | .783   | .6228   | .0966   | 7.56 | 3 9.1                            | .3072  | 10 47.9                           | 2.73  |
|                                 | 12 | .793   | .6213   | .0957   | 7.59 | 3 7.3                            | .3068  | 10 44.3                           | 2.85  |
|                                 | 13 | .803   | .6199   | .0947   | 7.62 | 3 5.5                            | .3064  | 10 40.7                           | 2.98  |
|                                 | 14 | .812   | .6184   | .0937   | 7.65 | 3 3.8                            | .3060  | 10 37.1                           | 3.10  |
|                                 | 15 | .822   | .6170   | .0926   | 7.68 | 3 2.0                            | .3056  | 10 33.6                           | 3.23  |
|                                 | 16 | .831   | .6155   | .0915   | 7.71 | 3 0.3                            | .3052  | 10 30.0                           | 3.35  |
|                                 | 17 | .841   | .6141   | .0903   | 7.74 | 2 58.5                           | .3047  | 10 26.4                           | 3.48  |
|                                 | 18 | .850   | .6126   | .0892   | 7.77 | 2 56.8                           | .3043  | 10 22.8                           | 3.60  |
|                                 | 19 | +0.859 | -0.6112 | +0.0880 | 7.79 | 2 55.1                           | 1.3038 | 10 19.1                           | +3.72 |
|                                 | 20 | .869   | .6098   | .0868   | 7.82 | 2 53.5                           | .3033  | 10 15.5                           | 3.84  |
|                                 | 21 | .878   | .6084   | .0856   | 7.85 | 2 51.8                           | .3028  | 10 11.9                           | 3.96  |
|                                 | 22 | .887   | .6070   | .0843   | 7.88 | 2 50.1                           | .3023  | 10 8.2                            | 4.08  |
|                                 | 23 | .896   | .6057   | .0830   | 7.91 | 2 48.5                           | .3018  | 10 4.6                            | 4.20  |
|                                 | 24 | .905   | .6043   | .0817   | 7.93 | 2 46.9                           | .3012  | 10 0.9                            | 4.31  |
|                                 | 25 | .914   | .6029   | .0803   | 7.96 | 2 45.2                           | .3007  | 9 57.2                            | 4.43  |
|                                 | 26 | .923   | .6015   | .0789   | 7.99 | 2 43.6                           | .3001  | 9 53.5                            | 4.54  |
|                                 | 27 | .931   | .6002   | .0775   | 8.02 | 2 42.0                           | .2996  | 9 49.8                            | 4.65  |
|                                 | 28 | .940   | .5988   | .0761   | 8.04 | 2 40.4                           | .2990  | 9 46.1                            | 4.76  |
| August                          | 29 | +0.948 | -0.5975 | +0.0747 | 8.07 | 2 38.9                           | 1.2984 | 9 42.4                            | +4.87 |
|                                 | 30 | .957   | .5961   | .0733   | 8.10 | 2 37.3                           | .2979  | 9 38.7                            | 4.98  |
|                                 | 31 | .965   | .5948   | .0718   | 8.12 | 2 35.8                           | .2973  | 9 35.0                            | 5.09  |
|                                 | 1  | .973   | .5935   | .0703   | 8.15 | 2 34.3                           | .2967  | 9 31.2                            | 5.19  |
|                                 | 2  | .982   | .5922   | .0688   | 8.18 | 2 32.8                           | .2960  | 9 27.5                            | 5.30  |
|                                 | 3  | .990   | .5909   | .0673   | 8.20 | 2 31.3                           | .2954  | 9 23.7                            | 5.40  |
|                                 | 4  | 0.998  | .5896   | .0658   | 8.23 | 2 29.9                           | .2948  | 9 19.9                            | 5.50  |
|                                 | 5  | 1.006  | .5883   | .0643   | 8.25 | 2 28.5                           | .2942  | 9 16.1                            | 5.60  |
|                                 | 6  | .014   | .5871   | .0628   | 8.28 | 2 27.0                           | .2936  | 9 12.3                            | 5.70  |
|                                 | 7  | .021   | .5859   | .0612   | 8.31 | 2 25.6                           | .2930  | 9 8.5                             | 5.80  |
|                                 | 8  | +1.029 | -0.5846 | +0.0597 | 8.33 | 2 24.3                           | 1.2923 | 9 4.6                             | +5.89 |
|                                 | 9  | .037   | .5833   | .0581   | 8.36 | 2 22.9                           | .2917  | 9 0.8                             | 5.99  |
|                                 | 10 | .044   | .5820   | .0566   | 8.38 | 2 21.5                           | .2911  | 8 56.9                            | 6.08  |
|                                 | 11 | .052   | .5807   | .0550   | 8.41 | 2 20.2                           | .2904  | 8 53.1                            | 6.17  |
|                                 | 12 | .059   | .5795   | .0535   | 8.43 | 2 18.9                           | .2898  | 8 49.2                            | 6.26  |
|                                 | 13 | .066   | .5782   | .0520   | 8.46 | 2 17.6                           | .2892  | 8 45.3                            | 6.34  |
|                                 | 14 | .073   | .5770   | .0505   | 8.48 | 2 16.3                           | .2886  | 8 41.4                            | 6.43  |
|                                 | 15 | .080   | .5758   | .0490   | 8.51 | 2 15.0                           | .2879  | 8 37.5                            | 6.51  |
|                                 | 16 | .087   | .5746   | .0475   | 8.53 | 2 13.8                           | .2873  | 8 33.5                            | 6.59  |
|                                 | 17 | .094   | .5734   | .0460   | 8.55 | 2 12.6                           | .2867  | 8 29.6                            | 6.67  |
|                                 | 18 | +1.101 | -0.5722 | +0.0446 | 8.58 | 2 11.4                           | 1.2861 | 8 25.6                            | +6.75 |
|                                 | 19 | .108   | .5710   | .0431   | 8.60 | 2 10.2                           | .2855  | 8 21.7                            | 6.83  |
|                                 | 20 | .115   | .5698   | .0417   | 8.63 | 2 9.0                            | .2849  | 8 17.7                            | 6.90  |
|                                 | 21 | .121   | .5686   | .0403   | 8.65 | 2 7.9                            | .2843  | 8 13.7                            | 6.97  |
|                                 | 22 | .128   | .5673   | .0390   | 8.68 | 2 6.7                            | .2838  | 8 9.7                             | 7.04  |
|                                 | 23 | .135   | .5661   | .0376   | 8.70 | 2 5.6                            | .2832  | 8 5.6                             | 7.11  |
|                                 | 24 | .141   | .5649   | .0363   | 8.72 | 2 4.5                            | .2826  | 8 1.6                             | 7.18  |
|                                 | 25 | .147   | .5637   | .0350   | 8.75 | 2 3.5                            | .2821  | 7 57.6                            | 7.24  |
|                                 | 26 | .154   | .5626   | .0337   | 8.77 | 2 2.4                            | .2816  | 7 53.5                            | 7.30  |
|                                 | 27 | .160   | .5614   | .0324   | 8.79 | 2 1.4                            | .2810  | 7 49.4                            | 7.36  |

## 1832

| 12 <sup>h</sup><br>M. Z. Berlin | f                    | x       | y       | g                 | G                                | log h  | H                                 | i                   |
|---------------------------------|----------------------|---------|---------|-------------------|----------------------------------|--------|-----------------------------------|---------------------|
| August 28                       | +1 <sup>s</sup> .166 | -0.5602 | +0.0312 | 8 <sup>h</sup> 82 | 2 <sup>h</sup> 0 <sup>m</sup> .4 | 1.2805 | 7 <sup>h</sup> 45 <sup>m</sup> .3 | +7 <sup>h</sup> .42 |
| 29                              | .172                 | .5590   | .0300   | 8.84              | 1 59.4                           | .2800  | 7 41.3                            | 7.48                |
| 30                              | .178                 | .5578   | .0289   | 8.87              | 1 58.4                           | .2795  | 7 37.2                            | 7.53                |
| 31                              | .184                 | .5566   | .0278   | 8.89              | 1 57.5                           | .2791  | 7 33.0                            | 7.58                |
| Septbr. 1                       | .190                 | .5554   | .0267   | 8.91              | 1 56.6                           | .2786  | 7 28.9                            | 7.63                |
| 2                               | .196                 | .5542   | .0257   | 8.94              | 1 55.7                           | .2782  | 7 24.8                            | 7.68                |
| 3                               | .202                 | .5530   | .0247   | 8.96              | 1 54.8                           | .2778  | 7 20.6                            | 7.72                |
| 4                               | .207                 | .5518   | .0237   | 8.99              | 1 53.9                           | .2774  | 7 16.5                            | 7.76                |
| 5                               | .213                 | .5506   | .0228   | 9.01              | 1 53.0                           | .2770  | 7 12.3                            | 7.80                |
| 6                               | .219                 | .5494   | .0220   | 9.03              | 1 52.1                           | .2766  | 7 8.1                             | 7.84                |
| 7                               | +1.224               | -0.5482 | +0.0212 | 9.06              | 1 51.3                           | 1.2763 | 7 4.0                             | +7.88               |
| 8                               | .230                 | .5470   | .0204   | 9.08              | 1 50.6                           | .2759  | 6 59.8                            | 7.91                |
| 9                               | .235                 | .5458   | .0197   | 9.11              | 1 49.9                           | .2756  | 6 55.6                            | 7.95                |
| 10                              | .241                 | .5446   | .0190   | 9.13              | 1 49.1                           | .2753  | 6 51.4                            | 7.98                |
| 11                              | .246                 | .5433   | .0184   | 9.16              | 1 48.4                           | .2751  | 6 47.1                            | 8.00                |
| 12                              | .251                 | .5421   | .0178   | 9.18              | 1 47.7                           | .2748  | 6 42.9                            | 8.03                |
| 13                              | .257                 | .5408   | .0173   | 9.21              | 1 47.0                           | .2746  | 6 38.7                            | 8.05                |
| 14                              | .262                 | .5395   | .0168   | 9.23              | 1 46.3                           | .2744  | 6 34.4                            | 8.07                |
| 15                              | .267                 | .5382   | .0164   | 9.26              | 1 45.6                           | .2742  | 6 30.2                            | 8.09                |
| 16                              | .273                 | .5369   | .0160   | 9.29              | 1 45.0                           | .2741  | 6 26.0                            | 8.11                |
| 17                              | +1.278               | -0.5356 | +0.0157 | 9.31              | 1 44.4                           | 1.2739 | 6 21.7                            | +8.12               |
| 18                              | .283                 | .5343   | .0154   | 9.34              | 1 43.8                           | .2738  | 6 17.4                            | 8.13                |
| 19                              | .289                 | .5329   | .0152   | 9.37              | 1 43.2                           | .2738  | 6 13.2                            | 8.14                |
| 20                              | .294                 | .5316   | .0151   | 9.39              | 1 42.6                           | .2737  | 6 8.9                             | 8.14                |
| 21                              | .299                 | .5302   | .0150   | 9.42              | 1 42.1                           | .2737  | 6 4.6                             | 8.15                |
| 22                              | .304                 | .5289   | .0150   | 9.45              | 1 41.6                           | .2736  | 6 0.4                             | 8.15                |
| 23                              | .310                 | .5275   | .0150   | 9.47              | 1 41.1                           | .2736  | 5 56.1                            | 8.15                |
| 24                              | .315                 | .5261   | .0151   | 9.50              | 1 40.6                           | .2737  | 5 51.8                            | 8.14                |
| 25                              | .320                 | .5247   | .0152   | 9.53              | 1 40.1                           | .2737  | 5 47.5                            | 8.14                |
| 26                              | .325                 | .5232   | .0154   | 9.56              | 1 39.6                           | .2738  | 5 43.3                            | 8.13                |
| 27                              | +1.331               | -0.5217 | +0.0156 | 9.59              | 1 39.2                           | 1.2739 | 5 39.0                            | +8.12               |
| 28                              | .336                 | .5202   | .0159   | 9.62              | 1 38.7                           | .2740  | 5 34.7                            | 8.11                |
| 29                              | .341                 | .5187   | .0163   | 9.65              | 1 38.3                           | .2742  | 5 30.4                            | 8.09                |
| 30                              | .347                 | .5172   | .0167   | 9.68              | 1 37.9                           | .2744  | 5 26.1                            | 8.07                |
| Oktr. 1                         | .352                 | .5156   | .0172   | 9.71              | 1 37.5                           | .2746  | 5 21.8                            | 8.05                |
| 2                               | .357                 | .5140   | .0177   | 9.74              | 1 37.2                           | .2748  | 5 17.6                            | 8.03                |
| 3                               | .363                 | .5124   | .0183   | 9.78              | 1 36.8                           | .2750  | 5 13.3                            | 8.01                |
| 4                               | .368                 | .5108   | .0189   | 9.81              | 1 36.5                           | .2753  | 5 9.0                             | 7.98                |
| 5                               | .374                 | .5091   | .0196   | 9.84              | 1 36.1                           | .2756  | 5 4.8                             | 7.95                |
| 6                               | .379                 | .5074   | .0203   | 9.88              | 1 35.8                           | .2759  | 5 0.5                             | 7.92                |
| 7                               | +1.385               | -0.5057 | +0.0211 | 9.91              | 1 35.5                           | 1.2763 | 4 56.2                            | +7.88               |
| 8                               | .391                 | .5040   | .0220   | 9.94              | 1 35.2                           | .2766  | 4 52.0                            | 7.85                |
| 9                               | .396                 | .5023   | .0229   | 9.98              | 1 34.9                           | .2770  | 4 47.7                            | 7.81                |
| 10                              | .402                 | .5005   | .0238   | 10.02             | 1 34.6                           | .2774  | 4 43.5                            | 7.77                |
| 11                              | .408                 | .4987   | .0248   | 10.05             | 1 34.4                           | .2778  | 4 39.2                            | 7.72                |
| 12                              | .414                 | .4968   | .0258   | 10.09             | 1 34.1                           | .2782  | 4 35.0                            | 7.68                |
| 13                              | .420                 | .4949   | .0269   | 10.13             | 1 33.9                           | .2787  | 4 30.8                            | 7.63                |
| 14                              | .426                 | .4930   | .0280   | 10.16             | 1 33.6                           | .2791  | 4 26.5                            | 7.58                |
| 15                              | .432                 | .4911   | .0291   | 10.20             | 1 33.4                           | .2796  | 4 22.3                            | 7.52                |
| 16                              | .438                 | .4892   | .0303   | 10.24             | 1 33.2                           | .2801  | 4 18.1                            | 7.47                |

| <sup>12h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                | log h  | H                                | i                  |
|--------------------------------|----|----------------------|---------|---------|---------------------|----------------------------------|--------|----------------------------------|--------------------|
| Oktbr.                         | 17 | +1 <sup>s</sup> .444 | —0.4872 | +0.0315 | 10 <sup>h</sup> .28 | 1 <sup>h</sup> 33 <sup>m</sup> 0 | 1.2806 | 4 <sup>h</sup> 13 <sup>m</sup> 9 | +7 <sup>h</sup> 41 |
|                                | 18 | .450                 | .4852   | .0327   | 10.32               | 1 32.7                           | .2812  | 4 9.7                            | 7.35               |
|                                | 19 | .457                 | .4831   | .0340   | 10.36               | 1 32.5                           | .2817  | 4 5.5                            | 7.29               |
|                                | 20 | .463                 | .4810   | .0353   | 10.41               | 1 32.3                           | .2823  | 4 1.4                            | 7.22               |
|                                | 21 | .469                 | .4789   | .0367   | 10.45               | 1 32.2                           | .2828  | 3 57.2                           | 7.16               |
|                                | 22 | .476                 | .4768   | .0381   | 10.49               | 1 32.0                           | .2834  | 3 53.0                           | 7.09               |
|                                | 23 | .483                 | .4746   | .0395   | 10.54               | 1 31.8                           | .2840  | 3 48.9                           | 7.02               |
|                                | 24 | .490                 | .4724   | .0409   | 10.58               | 1 31.6                           | .2846  | 3 44.7                           | 6.94               |
|                                | 25 | .496                 | .4701   | .0424   | 10.62               | 1 31.4                           | .2852  | 3 40.6                           | 6.87               |
|                                | 26 | .503                 | .4678   | .0439   | 10.67               | 1 31.2                           | .2858  | 3 36.5                           | 6.79               |
|                                | 27 | +1.510               | —0.4655 | +0.0454 | 10.72               | 1 31.1                           | 1.2864 | 3 32.3                           | +6.71              |
|                                | 28 | .517                 | .4632   | .0469   | 10.76               | 1 30.9                           | .2871  | 3 28.2                           | 6.63               |
|                                | 29 | .525                 | .4608   | .0484   | 10.81               | 1 30.7                           | .2877  | 3 24.1                           | 6.54               |
|                                | 30 | .532                 | .4584   | .0499   | 10.86               | 1 30.6                           | .2883  | 3 20.1                           | 6.46               |
|                                | 31 | .539                 | .4560   | .0515   | 10.91               | 1 30.4                           | .2890  | 3 16.0                           | 6.37               |
| Novbr.                         | 1  | .547                 | .4535   | .0531   | 10.96               | 1 30.2                           | .2896  | 3 11.9                           | 6.28               |
|                                | 2  | .554                 | .4510   | .0547   | 11.01               | 1 30.1                           | .2903  | 3 7.9                            | 6.19               |
|                                | 3  | .562                 | .4485   | .0563   | 11.06               | 1 29.9                           | .2910  | 3 3.8                            | 6.10               |
|                                | 4  | .570                 | .4459   | .0579   | 11.11               | 1 29.7                           | .2916  | 2 59.8                           | 6.00               |
|                                | 5  | .578                 | .4433   | .0595   | 11.16               | 1 29.5                           | .2923  | 2 55.8                           | 5.90               |
|                                | 6  | +1.586               | —0.4406 | +0.0611 | 11.21               | 1 29.3                           | 1.2929 | 2 51.7                           | +5.80              |
|                                | 7  | .594                 | .4380   | .0627   | 11.27               | 1 29.1                           | .2936  | 2 47.7                           | 5.70               |
|                                | 8  | .602                 | .4353   | .0643   | 11.32               | 1 28.9                           | .2942  | 2 43.7                           | 5.60               |
|                                | 9  | .610                 | .4326   | .0659   | 11.37               | 1 28.7                           | .2949  | 2 39.8                           | 5.49               |
|                                | 10 | .619                 | .4299   | .0675   | 11.43               | 1 28.5                           | .2955  | 2 35.8                           | 5.39               |
|                                | 11 | .627                 | .4272   | .0691   | 11.49               | 1 28.3                           | .2962  | 2 31.8                           | 5.28               |
|                                | 12 | .636                 | .4244   | .0706   | 11.54               | 1 28.1                           | .2968  | 2 27.9                           | 5.17               |
|                                | 13 | .644                 | .4216   | .0722   | 11.60               | 1 27.9                           | .2974  | 2 23.9                           | 5.06               |
|                                | 14 | .653                 | .4187   | .0737   | 11.66               | 1 27.7                           | .2980  | 2 20.0                           | 4.94               |
|                                | 15 | .662                 | .4158   | .0752   | 11.71               | 1 27.5                           | .2987  | 2 16.1                           | 4.83               |
|                                | 16 | +1.671               | —0.4129 | +0.0767 | 11.77               | 1 27.3                           | 1.2993 | 2 12.1                           | +4.71              |
|                                | 17 | .680                 | .4100   | .0782   | 11.83               | 1 27.0                           | .2999  | 2 8.2                            | 4.59               |
|                                | 18 | .689                 | .4071   | .0796   | 11.89               | 1 26.8                           | .3004  | 2 4.3                            | 4.48               |
|                                | 19 | .698                 | .4041   | .0811   | 11.95               | 1 26.5                           | .3010  | 2 0.5                            | 4.35               |
|                                | 20 | .707                 | .4011   | .0825   | 12.01               | 1 26.3                           | .3016  | 1 56.6                           | 4.23               |
|                                | 21 | .717                 | .3981   | .0839   | 12.07               | 1 26.0                           | .3022  | 1 52.7                           | 4.11               |
|                                | 22 | .726                 | .3950   | .0853   | 12.13               | 1 25.7                           | .3027  | 1 48.8                           | 3.98               |
|                                | 23 | .736                 | .3919   | .0866   | 12.19               | 1 25.5                           | .3032  | 1 45.0                           | 3.86               |
|                                | 24 | .746                 | .3888   | .0879   | 12.26               | 1 25.2                           | .3038  | 1 41.1                           | 3.73               |
|                                | 25 | .755                 | .3857   | .0892   | 12.32               | 1 24.9                           | .3043  | 1 37.3                           | 3.60               |
|                                | 26 | +1.765               | —0.3826 | +0.0904 | 12.38               | 1 24.6                           | 1.3048 | 1 33.5                           | +3.47              |
| Dezbr.                         | 27 | .775                 | .3795   | .0916   | 12.44               | 1 24.3                           | .3052  | 1 29.7                           | 3.34               |
|                                | 28 | .785                 | .3763   | .0928   | 12.51               | 1 24.0                           | .3057  | 1 25.8                           | 3.21               |
|                                | 29 | .795                 | .3732   | .0939   | 12.57               | 1 23.6                           | .3062  | 1 22.0                           | 3.08               |
|                                | 30 | .805                 | .3700   | .0950   | 12.63               | 1 23.3                           | .3066  | 1 18.2                           | 2.94               |
|                                | 1  | .816                 | .3668   | .0960   | 12.70               | 1 23.0                           | .3070  | 1 14.4                           | 2.81               |
|                                | 2  | .826                 | .3636   | .0970   | 12.76               | 1 22.6                           | .3074  | 1 10.6                           | 2.67               |
|                                | 3  | .836                 | .3604   | .0979   | 12.83               | 1 22.3                           | .3078  | 1 6.8                            | 2.53               |
|                                | 4  | .846                 | .3571   | .0988   | 12.89               | 1 21.9                           | .3081  | 1 3.1                            | 2.40               |
|                                | 5  | .857                 | .3539   | .0997   | 12.96               | 1 21.5                           | .3084  | 0 59.3                           | 2.26               |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                 | log h  | H                                 | i      |
|---------------------------------|----|--------|---------|---------|-------|-----------------------------------|--------|-----------------------------------|--------|
| Dezbr.                          | 6  | +1.867 | —0.3506 | +0.1005 | 13.02 | 1 <sup>h</sup> 21 <sup>m</sup> .1 | 1.3088 | 0 <sup>h</sup> 55 <sup>m</sup> .5 | +2".12 |
|                                 | 7  | .878   | .3474   | .1013   | 13.09 | 1 20.8                            | .3091  | 0 51.7                            | 1.98   |
|                                 | 8  | .889   | .3441   | .1020   | 13.15 | 1 20.4                            | .3093  | 0 48.0                            | 1.84   |
|                                 | 9  | .899   | .3409   | .1027   | 13.22 | 1 19.9                            | .3096  | 0 44.2                            | 1.70   |
|                                 | 10 | .910   | .3376   | .1033   | 13.28 | 1 19.5                            | .3098  | 0 40.4                            | 1.55   |
|                                 | 11 | .921   | .3343   | .1038   | 13.35 | 1 19.1                            | .3101  | 0 36.7                            | 1.41   |
|                                 | 12 | .931   | .3310   | .1043   | 13.41 | 1 18.7                            | .3103  | 0 32.9                            | 1.27   |
|                                 | 13 | .942   | .3277   | .1048   | 13.48 | 1 18.3                            | .3104  | 0 29.2                            | 1.13   |
|                                 | 14 | .953   | .3245   | .1052   | 13.55 | 1 17.8                            | .3106  | 0 25.5                            | 0.98   |
|                                 | 15 | .964   | .3212   | .1056   | 13.61 | 1 17.4                            | .3107  | 0 21.7                            | 0.84   |
|                                 | 16 | +1.975 | —0.3180 | +0.1059 | 13.68 | 1 16.9                            | 1.3109 | 0 18.0                            | +0.70  |
|                                 | 17 | .986   | .3147   | .1061   | 13.74 | 1 16.4                            | .3110  | 0 14.2                            | 0.55   |
|                                 | 18 | 1.997  | .3115   | .1063   | 13.81 | 1 16.0                            | .3110  | 0 10.5                            | 0.41   |
|                                 | 19 | 2.007  | .3082   | .1064   | 13.87 | 1 15.5                            | .3111  | 0 6.8                             | 0.26   |
|                                 | 20 | .018   | .3050   | .1064   | 13.94 | 1 15.0                            | .3111  | 0 3.0                             | +0.12  |
|                                 | 21 | .029   | .3017   | .1064   | 14.00 | 1 14.5                            | .3111  | 23 59.3                           | —0.03  |
|                                 | 22 | .040   | .2985   | .1064   | 14.07 | 1 14.0                            | .3111  | 23 55.5                           | 0.17   |
|                                 | 23 | .051   | .2952   | .1063   | 14.13 | 1 13.5                            | .3111  | 23 51.8                           | 0.32   |
|                                 | 24 | .062   | .2920   | .1062   | 14.20 | 1 13.0                            | .3110  | 23 48.1                           | 0.46   |
|                                 | 25 | .073   | .2888   | .1060   | 14.26 | 1 12.5                            | .3109  | 23 44.3                           | 0.61   |
|                                 | 26 | +2.084 | —0.2856 | +0.1058 | 14.33 | 1 12.0                            | 1.3108 | 23 40.6                           | —0.75  |
|                                 | 27 | .095   | .2824   | .1055   | 14.39 | 1 11.4                            | .3107  | 23 36.8                           | 0.90   |
|                                 | 28 | .106   | .2792   | .1051   | 14.45 | 1 10.9                            | .3106  | 23 33.1                           | 1.04   |
|                                 | 29 | .117   | .2760   | .1047   | 14.52 | 1 10.4                            | .3104  | 23 29.3                           | 1.18   |
|                                 | 30 | .127   | .2729   | .1042   | 14.58 | 1 9.8                             | .3102  | 23 25.6                           | 1.33   |
|                                 | 31 | .138   | .2698   | .1037   | 14.64 | 1 9.3                             | .3100  | 23 21.8                           | 1.47   |

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|        |    |        |         |         |      |                                   |        |                                    |        |
|--------|----|--------|---------|---------|------|-----------------------------------|--------|------------------------------------|--------|
| Januar | 1  | —0.822 | —0.6305 | +0.1031 | 7.41 | 9 <sup>h</sup> 36 <sup>m</sup> .5 | 1.3098 | 23 <sup>h</sup> 18 <sup>m</sup> .1 | —1".61 |
|        | 2  | .911   | .6338   | .1024   | 7.34 | 9 35.6                            | .3095  | 23 14.3                            | 1.75   |
|        | 3  | .901   | .6371   | .1017   | 7.28 | 9 34.7                            | .3092  | 23 10.5                            | 1.89   |
|        | 4  | .890   | .6403   | .1010   | 7.21 | 9 33.9                            | .3090  | 23 6.7                             | 2.03   |
|        | 5  | .880   | .6436   | .1002   | 7.15 | 9 33.0                            | .3086  | 23 3.0                             | 2.17   |
|        | 6  | .869   | .6469   | .0994   | 7.08 | 9 32.2                            | .3083  | 22 59.2                            | 2.31   |
|        | 7  | .858   | .6502   | .0985   | 7.01 | 9 31.3                            | .3080  | 22 55.4                            | 2.45   |
|        | 8  | .848   | .6534   | .0976   | 6.95 | 9 30.5                            | .3076  | 22 51.6                            | 2.59   |
|        | 9  | .838   | .6567   | .0966   | 6.88 | 9 29.6                            | .3072  | 22 47.8                            | 2.73   |
|        | 10 | .827   | .6600   | .0956   | 6.82 | 9 28.8                            | .3068  | 22 44.0                            | 2.86   |
|        | 11 | —0.817 | —0.6633 | +0.0945 | 6.75 | 9 27.9                            | 1.3064 | 22 40.1                            | —3.00  |
|        | 12 | .807   | .6665   | .0934   | 6.69 | 9 27.1                            | .3060  | 22 36.3                            | 3.13   |
|        | 13 | .797   | .6698   | .0923   | 6.62 | 9 26.3                            | .3055  | 22 32.5                            | 3.27   |
|        | 14 | .787   | .6730   | .0911   | 6.56 | 9 25.5                            | .3050  | 22 28.7                            | 3.40   |
|        | 15 | .777   | .6763   | .0899   | 6.49 | 9 24.7                            | .3045  | 22 24.8                            | 3.53   |
|        | 16 | .767   | .6795   | .0886   | 6.43 | 9 24.0                            | .3040  | 22 21.0                            | 3.66   |
|        | 17 | .757   | .6827   | .0873   | 6.36 | 9 23.2                            | .3035  | 22 17.1                            | 3.79   |
|        | 18 | .748   | .6859   | .0860   | 6.30 | 9 22.4                            | .3030  | 22 13.2                            | 3.92   |
|        | 19 | .738   | .6891   | .0847   | 6.23 | 9 21.6                            | .3025  | 22 9.3                             | 4.04   |
|        | 20 | .728   | .6923   | .0833   | 6.17 | 9 20.9                            | .3019  | 22 5.4                             | 4.17   |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f       | x       | y       | g    | G                                | log h  | H                                | i     |
|---------------------------------|----|---------|---------|---------|------|----------------------------------|--------|----------------------------------|-------|
| Januar                          | 21 | —0.8719 | —0.6955 | +0.0819 | 6.11 | 9 <sup>h</sup> 20 <sup>m</sup> 1 | 1.3013 | 22 <sup>h</sup> 1 <sup>m</sup> 5 | —4.29 |
|                                 | 22 | .710    | .6987   | .0804   | 6.04 | 9 19.4                           | .3008  | 21 57.6                          | 4.41  |
|                                 | 23 | .700    | .7019   | .0790   | 5.98 | 9 18.6                           | .3002  | 21 53.7                          | 4.53  |
|                                 | 24 | .691    | .7050   | .0775   | 5.92 | 9 17.9                           | .2996  | 21 49.8                          | 4.65  |
|                                 | 25 | .682    | .7081   | .0760   | 5.85 | 9 17.2                           | .2990  | 21 45.9                          | 4.77  |
|                                 | 26 | .673    | .7112   | .0745   | 5.79 | 9 16.5                           | .2984  | 21 41.9                          | 4.89  |
|                                 | 27 | .664    | .7143   | .0730   | 5.73 | 9 15.8                           | .2977  | 21 37.9                          | 5.00  |
|                                 | 28 | .655    | .7173   | .0714   | 5.67 | 9 15.1                           | .2971  | 21 34.0                          | 5.12  |
|                                 | 29 | .647    | .7204   | .0698   | 5.61 | 9 14.4                           | .2965  | 21 30.0                          | 5.23  |
|                                 | 30 | .638    | .7234   | .0682   | 5.55 | 9 13.7                           | .2958  | 21 26.0                          | 5.34  |
| Februar                         | 31 | —0.630  | —0.7264 | +0.0666 | 5.49 | 9 13.0                           | 1.2952 | 21 22.0                          | —5.45 |
|                                 | 1  | .621    | .7293   | .0650   | 5.43 | 9 12.3                           | .2945  | 21 18.0                          | 5.55  |
|                                 | 2  | .613    | .7322   | .0633   | 5.37 | 9 11.6                           | .2939  | 21 14.0                          | 5.66  |
|                                 | 3  | .604    | .7351   | .0617   | 5.31 | 9 11.0                           | .2932  | 21 10.0                          | 5.76  |
|                                 | 4  | .596    | .7380   | .0601   | 5.25 | 9 10.3                           | .2925  | 21 5.9                           | 5.86  |
|                                 | 5  | .588    | .7408   | .0585   | 5.20 | 9 9.6                            | .2919  | 21 1.9                           | 5.96  |
|                                 | 6  | .581    | .7437   | .0569   | 5.14 | 9 9.0                            | .2912  | 20 57.8                          | 6.06  |
|                                 | 7  | .573    | .7465   | .0553   | 5.08 | 9 8.3                            | .2905  | 20 53.7                          | 6.15  |
|                                 | 8  | .565    | .7493   | .0537   | 5.03 | 9 7.7                            | .2899  | 20 49.6                          | 6.25  |
|                                 | 9  | .557    | .7520   | .0521   | 4.97 | 9 7.0                            | .2892  | 20 45.5                          | 6.34  |
|                                 | 10 | —0.550  | —0.7547 | +0.0505 | 4.92 | 9 6.4                            | 1.2886 | 20 41.4                          | —6.43 |
|                                 | 11 | .542    | .7573   | .0490   | 4.86 | 9 5.7                            | .2879  | 20 37.3                          | 6.51  |
|                                 | 12 | .535    | .7600   | .0474   | 4.81 | 9 5.1                            | .2873  | 20 33.2                          | 6.60  |
|                                 | 13 | .528    | .7626   | .0459   | 4.76 | 9 4.4                            | .2866  | 20 29.0                          | 6.68  |
|                                 | 14 | .521    | .7652   | .0443   | 4.71 | 9 3.8                            | .2860  | 20 24.9                          | 6.76  |
|                                 | 15 | .514    | .7678   | .0428   | 4.66 | 9 3.1                            | .2854  | 20 20.7                          | 6.84  |
|                                 | 16 | .507    | .7703   | .0413   | 4.61 | 9 2.4                            | .2848  | 20 16.6                          | 6.92  |
|                                 | 17 | .500    | .7728   | .0399   | 4.56 | 9 1.7                            | .2842  | 20 12.4                          | 6.99  |
|                                 | 18 | .493    | .7753   | .0385   | 4.51 | 9 1.1                            | .2836  | 20 8.2                           | 7.07  |
|                                 | 19 | .486    | .7777   | .0371   | 4.46 | 9 0.4                            | .2830  | 20 4.0                           | 7.14  |
| März                            | 20 | —0.479  | —0.7801 | +0.0357 | 4.41 | 8 59.7                           | 1.2824 | 19 59.8                          | —7.20 |
|                                 | 21 | .473    | .7825   | .0344   | 4.36 | 8 59.0                           | .2818  | 19 55.5                          | 7.27  |
|                                 | 22 | .466    | .7848   | .0331   | 4.32 | 8 58.3                           | .2813  | 19 51.3                          | 7.33  |
|                                 | 23 | .460    | .7870   | .0318   | 4.27 | 8 57.5                           | .2807  | 19 47.1                          | 7.40  |
|                                 | 24 | .454    | .7893   | .0305   | 4.22 | 8 56.8                           | .2802  | 19 42.8                          | 7.46  |
|                                 | 25 | .447    | .7915   | .0293   | 4.18 | 8 56.0                           | .2797  | 19 38.6                          | 7.51  |
|                                 | 26 | .441    | .7937   | .0281   | 4.14 | 8 55.2                           | .2792  | 19 34.3                          | 7.57  |
|                                 | 27 | .435    | .7959   | .0270   | 4.09 | 8 54.4                           | .2787  | 19 30.0                          | 7.62  |
|                                 | 28 | .429    | .7980   | .0259   | 4.05 | 8 53.6                           | .2783  | 19 25.8                          | 7.67  |
|                                 | 1  | .423    | .8001   | .0249   | 4.01 | 8 52.8                           | .2778  | 19 21.5                          | 7.71  |
|                                 | 2  | —0.417  | —0.8021 | +0.0239 | 3.97 | 8 51.9                           | 1.2774 | 19 17.2                          | —7.76 |
|                                 | 3  | .411    | .8041   | .0230   | 3.93 | 8 51.1                           | .2770  | 19 12.9                          | 7.80  |
|                                 | 4  | .405    | .8061   | .0221   | 3.89 | 8 50.2                           | .2767  | 19 8.6                           | 7.84  |
|                                 | 5  | .400    | .8080   | .0212   | 3.85 | 8 49.2                           | .2763  | 19 4.3                           | 7.88  |
|                                 | 6  | .394    | .8099   | .0204   | 3.81 | 8 48.2                           | .2759  | 19 0.0                           | 7.91  |
|                                 | 7  | .388    | .8118   | .0196   | 3.77 | 8 47.2                           | .2756  | 18 55.7                          | 7.95  |
|                                 | 8  | .383    | .8136   | .0189   | 3.74 | 8 46.2                           | .2753  | 18 51.3                          | 7.98  |
|                                 | 9  | .377    | .8154   | .0183   | 3.70 | 8 45.1                           | .2751  | 18 47.0                          | 8.00  |
|                                 | 10 | .371    | .8172   | .0177   | 3.67 | 8 44.0                           | .2748  | 18 42.7                          | 8.03  |
|                                 | 11 | .366    | .8189   | .0172   | 3.63 | 8 42.9                           | .2746  | 18 38.4                          | 8.05  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                  | G                                 | log h  | H                                  | i                   |
|---------------------------------|----|----------------------|---------|---------|--------------------|-----------------------------------|--------|------------------------------------|---------------------|
| März                            | 12 | —0 <sup>s</sup> .360 | —0.8206 | +0.0167 | 3 <sup>h</sup> .60 | 8 <sup>h</sup> 41 <sup>m</sup> .7 | 1.2744 | 18 <sup>h</sup> 34 <sup>m</sup> .1 | —8 <sup>h</sup> .07 |
|                                 | 13 | .355                 | .8223   | .0163   | 3.56               | 8 40.5                            | .2742  | 18 29.7                            | 8.09                |
|                                 | 14 | .349                 | .8239   | .0160   | 3.53               | 8 39.3                            | .2741  | 18 25.4                            | 8.11                |
|                                 | 15 | .344                 | .8254   | .0157   | 3.50               | 8 38.0                            | .2739  | 18 21.1                            | 8.12                |
|                                 | 16 | .338                 | .8270   | .0155   | 3.47               | 8 36.7                            | .2738  | 18 16.7                            | 8.13                |
|                                 | 17 | .333                 | .8285   | .0153   | 3.44               | 8 35.3                            | .2737  | 18 12.4                            | 8.14                |
|                                 | 18 | .327                 | .8300   | .0151   | 3.41               | 8 33.9                            | .2737  | 18 8.1                             | 8.14                |
|                                 | 19 | .322                 | .8315   | .0150   | 3.38               | 8 32.4                            | .2736  | 18 3.7                             | 8.15                |
|                                 | 20 | .317                 | .8329   | .0150   | 3.35               | 8 30.8                            | .2736  | 17 59.4                            | 8.15                |
|                                 | 21 | .311                 | .8343   | .0150   | 3.32               | 8 29.2                            | .2736  | 17 55.1                            | 8.15                |
|                                 | 22 | —0.306               | —0.8357 | +0.0151 | 3.30               | 8 27.5                            | 1.2737 | 17 50.8                            | —8.14               |
|                                 | 23 | .301                 | .8370   | .0152   | 3.27               | 8 25.8                            | .2737  | 17 46.4                            | 8.14                |
|                                 | 24 | .295                 | .8383   | .0154   | 3.24               | 8 24.0                            | .2738  | 17 42.1                            | 8.13                |
|                                 | 25 | .290                 | .8395   | .0157   | 3.22               | 8 22.2                            | .2739  | 17 37.8                            | 8.12                |
|                                 | 26 | .284                 | .8407   | .0160   | 3.19               | 8 20.3                            | .2741  | 17 33.5                            | 8.10                |
|                                 | 27 | .279                 | .8419   | .0164   | 3.17               | 8 18.4                            | .2743  | 17 29.2                            | 8.09                |
|                                 | 28 | .273                 | .8431   | .0168   | 3.15               | 8 16.4                            | .2744  | 17 24.9                            | 8.07                |
|                                 | 29 | .268                 | .8442   | .0173   | 3.12               | 8 14.3                            | .2746  | 17 20.6                            | 8.05                |
|                                 | 30 | .262                 | .8453   | .0178   | 3.10               | 8 12.1                            | .2748  | 17 16.4                            | 8.02                |
|                                 | 31 | .257                 | .8463   | .0184   | 3.08               | 8 9.9                             | .2751  | 17 12.1                            | 8.00                |
| April                           | 1  | —0.251               | —0.8473 | +0.0190 | 3.06               | 8 7.6                             | 1.2754 | 17 7.8                             | —7.97               |
|                                 | 2  | .245                 | .8483   | .0197   | 3.04               | 8 5.2                             | .2757  | 17 3.6                             | 7.94                |
|                                 | 3  | .240                 | .8492   | .0205   | 3.02               | 8 2.8                             | .2760  | 16 59.3                            | 7.91                |
|                                 | 4  | .234                 | .8501   | .0213   | 3.00               | 8 0.4                             | .2763  | 16 55.1                            | 7.87                |
|                                 | 5  | .228                 | .8510   | .0221   | 2.99               | 7 57.8                            | .2767  | 16 50.9                            | 7.84                |
|                                 | 6  | .222                 | .8518   | .0230   | 2.97               | 7 55.1                            | .2771  | 16 46.7                            | 7.80                |
|                                 | 7  | .216                 | .8526   | .0239   | 2.95               | 7 52.4                            | .2775  | 16 42.4                            | 7.76                |
|                                 | 8  | .210                 | .8534   | .0249   | 2.94               | 7 49.6                            | .2779  | 16 38.2                            | 7.71                |
|                                 | 9  | .204                 | .8541   | .0259   | 2.93               | 7 46.8                            | .2783  | 16 34.1                            | 7.66                |
|                                 | 10 | .198                 | .8548   | .0270   | 2.91               | 7 43.9                            | .2787  | 16 29.9                            | 7.61                |
|                                 | 11 | —0.192               | —0.8555 | +0.0281 | 2.90               | 7 40.9                            | 1.2792 | 16 25.7                            | —7.56               |
|                                 | 12 | .186                 | .8561   | .0292   | 2.89               | 7 37.9                            | .2797  | 16 21.5                            | 7.51                |
|                                 | 13 | .180                 | .8567   | .0304   | 2.87               | 7 34.8                            | .2802  | 16 17.4                            | 7.46                |
|                                 | 14 | .174                 | .8572   | .0316   | 2.86               | 7 31.6                            | .2807  | 16 13.3                            | 7.40                |
|                                 | 15 | .167                 | .8577   | .0328   | 2.85               | 7 28.3                            | .2812  | 16 9.2                             | 7.34                |
|                                 | 16 | .161                 | .8581   | .0341   | 2.84               | 7 24.9                            | .2817  | 16 5.0                             | 7.28                |
|                                 | 17 | .154                 | .8585   | .0354   | 2.84               | 7 21.5                            | .2823  | 16 0.9                             | 7.22                |
|                                 | 18 | .148                 | .8589   | .0367   | 2.83               | 7 18.0                            | .2828  | 15 56.9                            | 7.15                |
|                                 | 19 | .141                 | .8593   | .0380   | 2.82               | 7 14.5                            | .2834  | 15 52.8                            | 7.08                |
|                                 | 20 | .134                 | .8596   | .0394   | 2.82               | 7 10.9                            | .2840  | 15 48.7                            | 7.01                |
|                                 | 21 | —0.127               | —0.8599 | +0.0408 | 2.81               | 7 7.2                             | 1.2845 | 15 44.7                            | —6.94               |
|                                 | 22 | .120                 | .8601   | .0422   | 2.81               | 7 3.5                             | .2851  | 15 40.7                            | 6.87                |
|                                 | 23 | .113                 | .8603   | .0437   | 2.80               | 6 59.7                            | .2857  | 15 36.6                            | 6.79                |
|                                 | 24 | .106                 | .8604   | .0452   | 2.80               | 6 55.8                            | .2864  | 15 32.6                            | 6.72                |
|                                 | 25 | .099                 | .8605   | .0467   | 2.80               | 6 51.9                            | .2870  | 15 28.6                            | 6.64                |
|                                 | 26 | .092                 | .8605   | .0482   | 2.80               | 6 47.9                            | .2876  | 15 24.7                            | 6.56                |
|                                 | 27 | .085                 | .8605   | .0498   | 2.80               | 6 43.9                            | .2882  | 15 20.7                            | 6.47                |
|                                 | 28 | .077                 | .8604   | .0513   | 2.80               | 6 39.9                            | .2889  | 15 16.7                            | 6.39                |
|                                 | 29 | .070                 | .8603   | .0528   | 2.80               | 6 35.8                            | .2895  | 15 12.8                            | 6.30                |
|                                 | 30 | .062                 | .8602   | .0543   | 2.80               | 6 31.7                            | .2901  | 15 8.9                             | 6.21                |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f       | x       | y       | g    | G                                | log h  | H                                | i     |
|---------------------------------|----|---------|---------|---------|------|----------------------------------|--------|----------------------------------|-------|
| Mai                             | 1  | —0.°055 | —0.8600 | +0.0559 | 2"81 | 6 <sup>h</sup> 27 <sup>m</sup> 5 | 1.2908 | 15 <sup>h</sup> 5 <sup>m</sup> 0 | —6"12 |
|                                 | 2  | .047    | .8598   | .0574   | 2.81 | 6 23.3                           | .2914  | 15 1.1                           | 6.03  |
|                                 | 3  | .039    | .8595   | .0589   | 2.82 | 6 19.1                           | .2920  | 14 57.2                          | 5.94  |
|                                 | 4  | .031    | .8592   | .0604   | 2.82 | 6 14.9                           | .2927  | 14 53.3                          | 5.84  |
|                                 | 5  | .023    | .8589   | .0620   | 2.83 | 6 10.6                           | .2933  | 14 49.5                          | 5.75  |
|                                 | 6  | .015    | .8585   | .0635   | 2.84 | 6 6.3                            | .2939  | 14 45.6                          | 5.65  |
|                                 | 7  | —0.007  | .8580   | .0650   | 2.85 | 6 2.0                            | .2945  | 14 41.8                          | 5.55  |
|                                 | 8  | +0.001  | .8575   | .0665   | 2.86 | 5 57.7                           | .2951  | 14 38.0                          | 5.45  |
|                                 | 9  | .009    | .8569   | .0681   | 2.87 | 5 53.3                           | .2958  | 14 34.2                          | 5.34  |
|                                 | 10 | .018    | .8562   | .0696   | 2.88 | 5 49.0                           | .2964  | 14 30.4                          | 5.24  |
|                                 | 11 | +0.026  | —0.8555 | +0.0711 | 2.90 | 5 44.6                           | 1.2970 | 14 26.6                          | —5.13 |
|                                 | 12 | .035    | .8548   | .0726   | 2.91 | 5 40.3                           | .2976  | 14 22.8                          | 5.03  |
|                                 | 13 | .044    | .8541   | .0741   | 2.93 | 5 35.9                           | .2982  | 14 19.0                          | 4.92  |
|                                 | 14 | .052    | .8533   | .0755   | 2.94 | 5 31.5                           | .2988  | 14 15.3                          | 4.80  |
|                                 | 15 | .061    | .8525   | .0769   | 2.96 | 5 27.1                           | .2993  | 14 11.6                          | 4.69  |
|                                 | 16 | .070    | .8516   | .0783   | 2.98 | 5 22.8                           | .2999  | 14 7.8                           | 4.58  |
|                                 | 17 | .079    | .8507   | .0797   | 2.99 | 5 18.4                           | .3005  | 14 4.1                           | 4.47  |
|                                 | 18 | .088    | .8497   | .0810   | 3.01 | 5 14.1                           | .3010  | 14 0.4                           | 4.35  |
|                                 | 19 | .097    | .8487   | .0824   | 3.03 | 5 9.8                            | .3016  | 13 56.7                          | 4.24  |
|                                 | 20 | .107    | .8476   | .0837   | 3.06 | 5 5.5                            | .3021  | 13 53.0                          | 4.12  |
|                                 | 21 | +0.116  | —0.8465 | +0.0850 | 3.08 | 5 1.2                            | 1.3026 | 13 49.4                          | —4.00 |
|                                 | 22 | .125    | .8453   | .0863   | 3.10 | 4 57.0                           | .3031  | 13 45.7                          | 3.88  |
|                                 | 23 | .135    | .8441   | .0876   | 3.13 | 4 52.8                           | .3036  | 13 42.1                          | 3.76  |
|                                 | 24 | .144    | .8429   | .0888   | 3.15 | 4 48.6                           | .3041  | 13 38.4                          | 3.64  |
|                                 | 25 | .154    | .8416   | .0900   | 3.18 | 4 44.4                           | .3046  | 13 34.8                          | 3.52  |
|                                 | 26 | .164    | .8403   | .0911   | 3.20 | 4 40.3                           | .3050  | 13 31.2                          | 3.39  |
|                                 | 27 | .174    | .8389   | .0922   | 3.23 | 4 36.2                           | .3055  | 13 27.6                          | 3.27  |
|                                 | 28 | .183    | .8375   | .0933   | 3.26 | 4 32.1                           | .3059  | 13 24.0                          | 3.14  |
|                                 | 29 | .193    | .8361   | .0944   | 3.29 | 4 28.1                           | .3063  | 13 20.3                          | 3.02  |
|                                 | 30 | .203    | .8346   | .0954   | 3.32 | 4 24.1                           | .3067  | 13 16.8                          | 2.89  |
| Juni                            | 31 | +0.213  | —0.8331 | +0.0964 | 3.35 | 4 20.1                           | 1.3071 | 13 13.2                          | —2.76 |
|                                 | 1  | .223    | .8315   | .0973   | 3.38 | 4 16.2                           | .3075  | 13 9.6                           | 2.63  |
|                                 | 2  | .233    | .8299   | .0982   | 3.41 | 4 12.3                           | .3078  | 13 6.0                           | 2.51  |
|                                 | 3  | .243    | .8283   | .0990   | 3.44 | 4 8.5                            | .3082  | 13 2.5                           | 2.38  |
|                                 | 4  | .254    | .8267   | .0998   | 3.47 | 4 4.7                            | .3085  | 12 58.9                          | 2.25  |
|                                 | 5  | .264    | .8250   | .1006   | 3.51 | 4 0.9                            | .3088  | 12 55.4                          | 2.11  |
|                                 | 6  | .274    | .8233   | .1013   | 3.54 | 3 57.1                           | .3091  | 12 51.8                          | 1.98  |
|                                 | 7  | .285    | .8215   | .1020   | 3.58 | 3 53.4                           | .3093  | 12 48.3                          | 1.85  |
|                                 | 8  | .295    | .8197   | .1026   | 3.62 | 3 49.7                           | .3096  | 12 44.8                          | 1.72  |
|                                 | 9  | .305    | .8179   | .1032   | 3.65 | 3 46.1                           | .3098  | 12 41.2                          | 1.58  |
|                                 | 10 | +0.316  | —0.8161 | +0.1037 | 3.69 | 3 42.5                           | 1.3100 | 12 37.7                          | —1.45 |
|                                 | 11 | .326    | .8142   | .1042   | 3.73 | 3 39.0                           | .3102  | 12 34.2                          | 1.32  |
|                                 | 12 | .337    | .8123   | .1046   | 3.76 | 3 35.5                           | .3104  | 12 30.7                          | 1.18  |
|                                 | 13 | .347    | .8104   | .1050   | 3.80 | 3 32.0                           | .3105  | 12 27.2                          | 1.05  |
|                                 | 14 | .358    | .8085   | .1053   | 3.84 | 3 28.6                           | .3107  | 12 23.6                          | 0.91  |
|                                 | 15 | .368    | .8065   | .1056   | 3.88 | 3 25.3                           | .3108  | 12 20.1                          | 0.78  |
|                                 | 16 | .379    | .8046   | .1059   | 3.92 | 3 21.9                           | .3109  | 12 16.6                          | 0.64  |
|                                 | 17 | .389    | .8026   | .1061   | 3.96 | 3 18.6                           | .3110  | 12 13.1                          | 0.51  |
|                                 | 18 | .400    | .8006   | .1063   | 4.00 | 3 15.4                           | .3110  | 12 9.6                           | 0.37  |
|                                 | 19 | .410    | .7986   | .1064   | 4.04 | 3 12.2                           | .3111  | 12 6.1                           | 0.24  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g    | G                               | log h  | H                                | i     |
|---------------------------------|----|--------|---------|---------|------|---------------------------------|--------|----------------------------------|-------|
| Juni                            | 20 | +0.421 | -0.7966 | +0.1065 | 4.08 | 3 <sup>h</sup> 9 <sup>m</sup> 0 | 1.3111 | 12 <sup>h</sup> 2 <sup>m</sup> 6 | -0.10 |
|                                 | 21 | .432   | .7945   | .1065   | 4.12 | 3 5.9                           | .3111  | 11 59.1                          | +0.03 |
|                                 | 22 | .442   | .7924   | .1065   | 4.16 | 3 2.8                           | .3111  | 11 55.6                          | 0.17  |
|                                 | 23 | .453   | .7903   | .1064   | 4.20 | 2 59.7                          | .3111  | 11 52.1                          | 0.30  |
|                                 | 24 | .463   | .7882   | .1063   | 4.25 | 2 56.7                          | .3110  | 11 48.6                          | 0.44  |
|                                 | 25 | .474   | .7861   | .1061   | 4.29 | 2 53.7                          | .3109  | 11 45.1                          | 0.57  |
|                                 | 26 | .485   | .7840   | .1058   | 4.33 | 2 50.8                          | .3108  | 11 41.6                          | 0.71  |
|                                 | 27 | .495   | .7818   | .1055   | 4.37 | 2 47.9                          | .3107  | 11 38.1                          | 0.84  |
|                                 | 28 | .506   | .7797   | .1052   | 4.42 | 2 45.0                          | .3106  | 11 34.6                          | 0.98  |
|                                 | 29 | .516   | .7775   | .1048   | 4.46 | 2 42.2                          | .3105  | 11 31.1                          | 1.11  |
| Juli                            | 30 | +0.527 | -0.7753 | +0.1044 | 4.51 | 2 39.4                          | 1.3103 | 11 27.6                          | +1.25 |
|                                 | 1  | .537   | .7731   | .1039   | 4.55 | 2 36.7                          | .3101  | 11 24.1                          | 1.38  |
|                                 | 2  | .548   | .7709   | .1034   | 4.59 | 2 33.9                          | .3099  | 11 20.6                          | 1.52  |
|                                 | 3  | .558   | .7687   | .1029   | 4.64 | 2 31.3                          | .3097  | 11 17.0                          | 1.65  |
|                                 | 4  | .568   | .7665   | .1023   | 4.68 | 2 28.6                          | .3095  | 11 13.5                          | 1.78  |
|                                 | 5  | .579   | .7643   | .1016   | 4.73 | 2 26.0                          | .3092  | 11 10.0                          | 1.92  |
|                                 | 6  | .589   | .7621   | .1009   | 4.77 | 2 23.5                          | .3089  | 11 6.5                           | 2.05  |
|                                 | 7  | .599   | .7599   | .1002   | 4.81 | 2 20.9                          | .3086  | 11 2.9                           | 2.18  |
|                                 | 8  | .610   | .7577   | .0994   | 4.86 | 2 18.4                          | .3083  | 10 59.4                          | 2.31  |
|                                 | 9  | .620   | .7555   | .0986   | 4.90 | 2 15.9                          | .3080  | 10 55.8                          | 2.44  |
|                                 | 10 | +0.630 | -0.7533 | +0.0977 | 4.95 | 2 13.5                          | 1.3077 | 10 52.3                          | +2.57 |
|                                 | 11 | .640   | .7511   | .0968   | 4.99 | 2 11.1                          | .3073  | 10 48.7                          | 2.69  |
|                                 | 12 | .650   | .7488   | .0959   | 5.03 | 2 8.7                           | .3069  | 10 45.2                          | 2.82  |
|                                 | 13 | .660   | .7466   | .0949   | 5.08 | 2 6.3                           | .3065  | 10 41.6                          | 2.95  |
|                                 | 14 | .670   | .7444   | .0939   | 5.12 | 2 4.0                           | .3061  | 10 38.0                          | 3.07  |
|                                 | 15 | .680   | .7422   | .0928   | 5.17 | 2 1.8                           | .3057  | 10 34.4                          | 3.20  |
|                                 | 16 | .689   | .7400   | .0917   | 5.21 | 1 59.5                          | .3053  | 10 30.8                          | 3.32  |
|                                 | 17 | .699   | .7378   | .0906   | 5.26 | 1 57.3                          | .3049  | 10 27.2                          | 3.45  |
|                                 | 18 | .709   | .7356   | .0895   | 5.30 | 1 55.1                          | .3044  | 10 23.6                          | 3.57  |
|                                 | 19 | .718   | .7334   | .0883   | 5.35 | 1 53.0                          | .3039  | 10 20.0                          | 3.69  |
|                                 | 20 | +0.728 | -0.7313 | +0.0871 | 5.39 | 1 50.9                          | 1.3035 | 10 16.4                          | +3.81 |
|                                 | 21 | .738   | .7291   | .0859   | 5.43 | 1 48.8                          | .3030  | 10 12.8                          | 3.93  |
|                                 | 22 | .747   | .7269   | .0846   | 5.48 | 1 46.7                          | .3025  | 10 9.1                           | 4.05  |
| August                          | 23 | .756   | .7247   | .0833   | 5.52 | 1 44.7                          | .3019  | 10 5.5                           | 4.17  |
|                                 | 24 | .766   | .7225   | .0820   | 5.56 | 1 42.7                          | .3014  | 10 1.8                           | 4.29  |
|                                 | 25 | .775   | .7203   | .0806   | 5.61 | 1 40.7                          | .3008  | 9 58.1                           | 4.40  |
|                                 | 26 | .784   | .7181   | .0792   | 5.65 | 1 38.8                          | .3003  | 9 54.4                           | 4.51  |
|                                 | 27 | .793   | .7159   | .0778   | 5.70 | 1 36.9                          | .2997  | 9 50.7                           | 4.63  |
|                                 | 28 | .802   | .7137   | .0764   | 5.74 | 1 35.0                          | .2992  | 9 47.0                           | 4.74  |
|                                 | 29 | .811   | .7116   | .0750   | 5.78 | 1 33.1                          | .2986  | 9 43.3                           | 4.85  |
|                                 | 30 | +0.819 | -0.7095 | +0.0736 | 5.83 | 1 31.3                          | 1.2980 | 9 39.6                           | +4.95 |
|                                 | 31 | .828   | .7074   | .0721   | 5.87 | 1 29.5                          | .2974  | 9 35.9                           | 5.06  |
|                                 | 1  | .837   | .7053   | .0706   | 5.91 | 1 27.7                          | .2968  | 9 32.1                           | 5.17  |
|                                 | 2  | .845   | .7032   | .0691   | 5.95 | 1 25.9                          | .2962  | 9 28.4                           | 5.27  |
|                                 | 3  | .854   | .7011   | .0676   | 5.99 | 1 24.2                          | .2956  | 9 24.6                           | 5.38  |
|                                 | 4  | .862   | .6990   | .0661   | 6.03 | 1 22.5                          | .2950  | 9 20.8                           | 5.48  |
|                                 | 5  | .870   | .6969   | .0645   | 6.08 | 1 20.9                          | .2944  | 9 17.0                           | 5.58  |
|                                 | 6  | .879   | .6949   | .0630   | 6.12 | 1 19.2                          | .2937  | 9 13.2                           | 5.68  |
|                                 | 7  | .887   | .6928   | .0615   | 6.16 | 1 17.6                          | .2931  | 9 9.4                            | 5.77  |
|                                 | 8  | .895   | .6908   | .0600   | 6.20 | 1 16.1                          | .2925  | 9 5.6                            | 5.87  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                 | G                                 | log h  | H                                | i                   |
|---------------------------------|----|----------------------|---------|---------|-------------------|-----------------------------------|--------|----------------------------------|---------------------|
| August                          | 9  | +0 <sup>s</sup> .903 | -0.6888 | +0.0584 | 6 <sup>h</sup> 24 | 1 <sup>h</sup> 14 <sup>m</sup> .5 | 1.2919 | 9 <sup>h</sup> 1 <sup>m</sup> .7 | +5 <sup>s</sup> .96 |
|                                 | 10 | .911                 | .6868   | .0569   | 6.28              | 1 13.0                            | .2912  | 8 57.9                           | 6.06                |
|                                 | 11 | .918                 | .6848   | .0554   | 6.32              | 1 11.5                            | .2906  | 8 54.0                           | 6.15                |
|                                 | 12 | .926                 | .6828   | .0539   | 6.36              | 1 10.0                            | .2900  | 8 50.1                           | 6.24                |
|                                 | 13 | .934                 | .6808   | .0524   | 6.40              | 1 8.6                             | .2893  | 8 46.2                           | 6.32                |
|                                 | 14 | .941                 | .6789   | .0509   | 6.44              | 1 7.2                             | .2887  | 8 42.3                           | 6.41                |
|                                 | 15 | .949                 | .6769   | .0494   | 6.48              | 1 5.8                             | .2881  | 8 38.4                           | 6.49                |
|                                 | 16 | .956                 | .6750   | .0479   | 6.52              | 1 4.4                             | .2875  | 8 34.5                           | 6.57                |
|                                 | 17 | .963                 | .6730   | .0464   | 6.56              | 1 3.1                             | .2869  | 8 30.5                           | 6.65                |
|                                 | 18 | .970                 | .6711   | .0450   | 6.59              | 1 1.8                             | .2863  | 8 26.6                           | 6.73                |
|                                 | 19 | +0.978               | -0.6692 | +0.0435 | 6.63              | 1 0.5                             | 1.2857 | 8 22.6                           | +6.81               |
|                                 | 20 | .985                 | .6673   | .0421   | 6.67              | 0 59.3                            | .2851  | 8 18.6                           | 6.88                |
|                                 | 21 | .992                 | .6654   | .0407   | 6.71              | 0 58.0                            | .2845  | 8 14.6                           | 6.95                |
|                                 | 22 | 0.999                | .6636   | .0393   | 6.75              | 0 56.8                            | .2839  | 8 10.6                           | 7.02                |
|                                 | 23 | 1.005                | .6617   | .0379   | 6.78              | 0 55.7                            | .2833  | 8 6.6                            | 7.09                |
|                                 | 24 | .012                 | .6599   | .0366   | 6.82              | 0 54.5                            | .2828  | 8 2.6                            | 7.16                |
|                                 | 25 | .019                 | .6580   | .0353   | 6.86              | 0 53.4                            | .2822  | 7 58.5                           | 7.23                |
|                                 | 26 | .025                 | .6562   | .0340   | 6.89              | 0 52.4                            | .2817  | 7 54.5                           | 7.29                |
|                                 | 27 | .032                 | .6544   | .0327   | 6.93              | 0 51.3                            | .2812  | 7 50.4                           | 7.35                |
|                                 | 28 | .038                 | .6526   | .0315   | 6.97              | 0 50.3                            | .2806  | 7 46.3                           | 7.41                |
| Septbr.                         | 29 | +1.045               | -0.6508 | +0.0303 | 7.00              | 0 49.3                            | 1.2801 | 7 42.2                           | +7.46               |
|                                 | 30 | .051                 | .6490   | .0292   | 7.04              | 0 48.3                            | .2797  | 7 38.1                           | 7.52                |
|                                 | 31 | .057                 | .6472   | .0281   | 7.07              | 0 47.4                            | .2792  | 7 34.0                           | 7.57                |
|                                 | 1  | .064                 | .6455   | .0270   | 7.11              | 0 46.4                            | .2787  | 7 29.9                           | 7.62                |
|                                 | 2  | .070                 | .6437   | .0259   | 7.14              | 0 45.5                            | .2783  | 7 25.8                           | 7.66                |
|                                 | 3  | .076                 | .6420   | .0249   | 7.18              | 0 44.6                            | .2779  | 7 21.6                           | 7.71                |
|                                 | 4  | .082                 | .6402   | .0239   | 7.21              | 0 43.8                            | .2775  | 7 17.5                           | 7.75                |
|                                 | 5  | .088                 | .6385   | .0230   | 7.25              | 0 43.0                            | .2771  | 7 13.3                           | 7.79                |
|                                 | 6  | .094                 | .6367   | .0221   | 7.28              | 0 42.2                            | .2767  | 7 9.1                            | 7.83                |
|                                 | 7  | .100                 | .6350   | .0213   | 7.32              | 0 41.4                            | .2763  | 7 5.0                            | 7.87                |
|                                 | 8  | +1.106               | -0.6333 | +0.0205 | 7.35              | 0 40.7                            | 1.2760 | 7 0.8                            | +7.90               |
|                                 | 9  | .111                 | .6316   | .0198   | 7.39              | 0 40.0                            | .2757  | 6 56.6                           | 7.94                |
|                                 | 10 | .117                 | .6298   | .0191   | 7.42              | 0 39.3                            | .2754  | 6 52.4                           | 7.97                |
|                                 | 11 | .123                 | .6281   | .0185   | 7.46              | 0 38.6                            | .2751  | 6 48.2                           | 8.00                |
|                                 | 12 | .129                 | .6264   | .0179   | 7.49              | 0 38.0                            | .2749  | 6 43.9                           | 8.02                |
|                                 | 13 | .134                 | .6247   | .0174   | 7.53              | 0 37.3                            | .2747  | 6 39.7                           | 8.05                |
|                                 | 14 | .140                 | .6230   | .0169   | 7.56              | 0 36.8                            | .2745  | 6 35.5                           | 8.07                |
|                                 | 15 | .146                 | .6213   | .0165   | 7.59              | 0 36.2                            | .2743  | 6 31.2                           | 8.09                |
|                                 | 16 | .151                 | .6196   | .0161   | 7.63              | 0 35.6                            | .2741  | 6 27.0                           | 8.10                |
|                                 | 17 | .157                 | .6179   | .0158   | 7.66              | 0 35.1                            | .2740  | 6 22.7                           | 8.12                |
|                                 | 18 | +1.163               | -0.6162 | +0.0156 | 7.70              | 0 34.6                            | 1.2739 | 6 18.5                           | +8.13               |
|                                 | 19 | .168                 | .6145   | .0154   | 7.73              | 0 34.2                            | .2738  | 6 14.2                           | 8.14                |
|                                 | 20 | .174                 | .6128   | .0152   | 7.77              | 0 33.7                            | .2737  | 6 9.9                            | 8.14                |
|                                 | 21 | .179                 | .6110   | .0151   | 7.80              | 0 33.3                            | .2737  | 6 5.7                            | 8.15                |
|                                 | 22 | .185                 | .6093   | .0150   | 7.84              | 0 32.8                            | .2736  | 6 1.4                            | 8.15                |
|                                 | 23 | .190                 | .6075   | .0150   | 7.87              | 0 32.4                            | .2736  | 5 57.1                           | 8.15                |
|                                 | 24 | .196                 | .6058   | .0151   | 7.91              | 0 32.1                            | .2737  | 5 52.9                           | 8.15                |
|                                 | 25 | .201                 | .6040   | .0152   | 7.94              | 0 31.7                            | .2737  | 5 48.6                           | 8.14                |
|                                 | 26 | .207                 | .6023   | .0154   | 7.98              | 0 31.4                            | .2738  | 5 44.3                           | 8.13                |
|                                 | 27 | .213                 | .6005   | .0156   | 8.01              | 0 31.1                            | .2739  | 5 40.0                           | 8.12                |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                  | G                                 | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|--------------------|-----------------------------------|--------|-----------------------------------|---------------------|
| Septbr.                         | 28 | +1 <sup>s</sup> .218 | -0.5987 | +0.0159 | 8 <sup>m</sup> .05 | 0 <sup>h</sup> 30 <sup>m</sup> .8 | 1.2740 | 5 <sup>h</sup> 35 <sup>m</sup> .7 | +8 <sup>m</sup> .11 |
|                                 | 29 | .224                 | .5969   | .0162   | 8.08               | 0 30.5                            | .2742  | 5 31.4                            | 8.10                |
|                                 | 30 | .230                 | .5951   | .0166   | 8.12               | 0 30.3                            | .2743  | 5 27.2                            | 8.08                |
| Oktbr.                          | 1  | .235                 | .5932   | .0171   | 8.16               | 0 30.1                            | .2745  | 5 22.9                            | 8.06                |
|                                 | 2  | .241                 | .5914   | .0176   | 8.19               | 0 29.9                            | .2747  | 5 18.6                            | 8.04                |
|                                 | 3  | .247                 | .5895   | .0182   | 8.23               | 0 29.7                            | .2750  | 5 14.3                            | 8.01                |
|                                 | 4  | .252                 | .5877   | .0188   | 8.27               | 0 29.5                            | .2752  | 5 10.1                            | 7.98                |
|                                 | 5  | .258                 | .5858   | .0195   | 8.30               | 0 29.4                            | .2755  | 5 5.8                             | 7.95                |
|                                 | 6  | .264                 | .5839   | .0202   | 8.34               | 0 29.2                            | .2758  | 5 1.5                             | 7.92                |
|                                 | 7  | .270                 | .5820   | .0210   | 8.38               | 0 29.1                            | .2762  | 4 57.3                            | 7.89                |
|                                 | 8  | +1.276               | -0.5801 | +0.0218 | 8.42               | 0 29.0                            | 1.2765 | 4 53.0                            | +7.85               |
|                                 | 9  | .282                 | .5781   | .0227   | 8.46               | 0 28.9                            | .2769  | 4 48.8                            | 7.82                |
|                                 | 10 | .288                 | .5762   | .0236   | 8.50               | 0 28.9                            | .2773  | 4 44.5                            | 7.78                |
|                                 | 11 | .294                 | .5742   | .0245   | 8.54               | 0 28.8                            | .2777  | 4 40.3                            | 7.73                |
|                                 | 12 | .300                 | .5722   | .0255   | 8.58               | 0 28.7                            | .2781  | 4 36.0                            | 7.69                |
|                                 | 13 | .307                 | .5701   | .0266   | 8.62               | 0 28.7                            | .2786  | 4 31.8                            | 7.64                |
|                                 | 14 | .313                 | .5681   | .0277   | 8.66               | 0 28.7                            | .2790  | 4 27.6                            | 7.59                |
|                                 | 15 | .319                 | .5660   | .0288   | 8.70               | 0 28.7                            | .2795  | 4 23.3                            | 7.54                |
|                                 | 16 | .326                 | .5639   | .0300   | 8.74               | 0 28.7                            | .2800  | 4 19.1                            | 7.48                |
|                                 | 17 | .332                 | .5617   | .0312   | 8.79               | 0 28.7                            | .2805  | 4 14.9                            | 7.42                |
|                                 | 18 | +1.339               | -0.5596 | +0.0324 | 8.83               | 0 28.8                            | 1.2810 | 4 10.7                            | +7.36               |
|                                 | 19 | .345                 | .5574   | .0337   | 8.87               | 0 28.8                            | .2816  | 4 6.5                             | 7.30                |
|                                 | 20 | .352                 | .5552   | .0350   | 8.92               | 0 28.8                            | .2821  | 4 2.4                             | 7.24                |
|                                 | 21 | .359                 | .5530   | .0363   | 8.96               | 0 28.9                            | .2827  | 3 58.2                            | 7.17                |
|                                 | 22 | .366                 | .5507   | .0377   | 9.01               | 0 28.9                            | .2833  | 3 54.0                            | 7.10                |
|                                 | 23 | .373                 | .5484   | .0391   | 9.06               | 0 29.0                            | .2838  | 3 49.9                            | 7.03                |
|                                 | 24 | .380                 | .5460   | .0405   | 9.10               | 0 29.1                            | .2844  | 3 45.7                            | 6.96                |
|                                 | 25 | .387                 | .5436   | .0420   | 9.15               | 0 29.1                            | .2851  | 3 41.6                            | 6.88                |
|                                 | 26 | .394                 | .5412   | .0435   | 9.20               | 0 29.2                            | .2857  | 3 37.4                            | 6.81                |
|                                 | 27 | .401                 | .5388   | .0450   | 9.25               | 0 29.3                            | .2863  | 3 33.3                            | 6.73                |
|                                 | 28 | +1.409               | -0.5364 | +0.0465 | 9.30               | 0 29.4                            | 1.2869 | 3 29.2                            | +6.65               |
|                                 | 29 | .416                 | .5339   | .0481   | 9.35               | 0 29.5                            | .2875  | 3 25.1                            | 6.56                |
|                                 | 30 | .424                 | .5314   | .0495   | 9.40               | 0 29.6                            | .2882  | 3 21.1                            | 6.48                |
|                                 | 31 | .432                 | .5288   | .0511   | 9.45               | 0 29.6                            | .2888  | 3 17.0                            | 6.39                |
| Novbr.                          | 1  | .439                 | .5262   | .0527   | 9.50               | 0 29.7                            | .2895  | 3 12.9                            | 6.30                |
|                                 | 2  | .447                 | .5236   | .0543   | 9.55               | 0 29.8                            | .2901  | 3 8.8                             | 6.21                |
|                                 | 3  | .455                 | .5210   | .0559   | 9.61               | 0 29.9                            | .2908  | 3 4.8                             | 6.12                |
|                                 | 4  | .463                 | .5183   | .0575   | 9.66               | 0 30.0                            | .2915  | 3 0.8                             | 6.02                |
|                                 | 5  | .471                 | .5156   | .0591   | 9.71               | 0 30.1                            | .2921  | 2 56.7                            | 5.93                |
|                                 | 6  | .480                 | .5129   | .0607   | 9.77               | 0 30.2                            | .2928  | 2 52.7                            | 5.83                |
|                                 | 7  | +1.488               | -0.5101 | +0.0623 | 9.82               | 0 30.3                            | 1.2934 | 2 48.7                            | +5.73               |
|                                 | 8  | .497                 | .5073   | .0639   | 9.88               | 0 30.4                            | .2941  | 2 44.7                            | 5.62                |
|                                 | 9  | .505                 | .5045   | .0655   | 9.94               | 0 30.4                            | .2947  | 2 40.7                            | 5.52                |
|                                 | 10 | .514                 | .5016   | .0671   | 9.99               | 0 30.5                            | .2954  | 2 36.7                            | 5.41                |
|                                 | 11 | .523                 | .4987   | .0687   | 10.05              | 0 30.6                            | .2960  | 2 32.8                            | 5.31                |
|                                 | 12 | .531                 | .4958   | .0703   | 10.11              | 0 30.6                            | .2967  | 2 28.8                            | 5.20                |
|                                 | 13 | .540                 | .4929   | .0718   | 10.17              | 0 30.7                            | .2973  | 2 24.9                            | 5.08                |
|                                 | 14 | .549                 | .4899   | .0733   | 10.23              | 0 30.8                            | .2979  | 2 20.9                            | 4.97                |
|                                 | 15 | .559                 | .4869   | .0748   | 10.29              | 0 30.8                            | .2985  | 2 17.0                            | 4.86                |
|                                 | 16 | .568                 | .4838   | .0763   | 10.35              | 0 30.9                            | .2991  | 2 13.1                            | 4.74                |

## 1833

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                 | log h  | H                                | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|-----------------------------------|--------|----------------------------------|---------------------|
| Novbr.                          | 17 | +1 <sup>s</sup> .577 | —0.4807 | +0.0778 | 10 <sup>h</sup> .41 | 0 <sup>h</sup> 30 <sup>m</sup> .9 | 1.2997 | 2 <sup>h</sup> 9 <sup>m</sup> .2 | +4 <sup>h</sup> .62 |
|                                 | 18 | .587                 | .4776   | .0792   | 10.48               | 0 30.9                            | .3003  | 2 5.3                            | 4.50                |
|                                 | 19 | .596                 | .4745   | .0807   | 10.54               | 0 31.0                            | .3009  | 2 1.4                            | 4.38                |
|                                 | 20 | .606                 | .4713   | .0821   | 10.60               | 0 31.0                            | .3015  | 1 57.5                           | 4.26                |
|                                 | 21 | .615                 | .4681   | .0835   | 10.67               | 0 31.0                            | .3020  | 1 53.6                           | 4.14                |
|                                 | 22 | .625                 | .4648   | .0849   | 10.73               | 0 31.0                            | .3026  | 1 49.8                           | 4.01                |
|                                 | 23 | .635                 | .4616   | .0863   | 10.79               | 0 30.9                            | .3031  | 1 45.9                           | 3.89                |
|                                 | 24 | .645                 | .4583   | .0876   | 10.86               | 0 30.9                            | .3036  | 1 42.1                           | 3.76                |
|                                 | 25 | .655                 | .4550   | .0889   | 10.93               | 0 30.9                            | .3041  | 1 38.2                           | 3.63                |
|                                 | 26 | .665                 | .4517   | .0901   | 10.99               | 0 30.8                            | .3046  | 1 34.4                           | 3.50                |
|                                 | 27 | +1.676               | —0.4484 | +0.0913 | 11.06               | 0 30.8                            | 1.3051 | 1 30.6                           | +3.37               |
|                                 | 28 | .686                 | .4450   | .0925   | 11.13               | 0 30.7                            | .3056  | 1 26.8                           | 3.24                |
|                                 | 29 | .696                 | .4416   | .0936   | 11.20               | 0 30.6                            | .3060  | 1 22.9                           | 3.11                |
|                                 | 30 | .707                 | .4382   | .0947   | 11.26               | 0 30.6                            | .3065  | 1 19.1                           | 2.97                |
| Dezbr.                          | 1  | .717                 | .4348   | .0958   | 11.33               | 0 30.5                            | .3069  | 1 15.3                           | 2.84                |
|                                 | 2  | .728                 | .4314   | .0968   | 11.40               | 0 30.4                            | .3073  | 1 11.5                           | 2.70                |
|                                 | 3  | .738                 | .4280   | .0977   | 11.47               | 0 30.3                            | .3077  | 1 7.7                            | 2.57                |
|                                 | 4  | .749                 | .4245   | .0986   | 11.54               | 0 30.1                            | .3080  | 1 4.0                            | 2.43                |
|                                 | 5  | .760                 | .4210   | .0995   | 11.61               | 0 30.0                            | .3084  | 1 0.2                            | 2.29                |
|                                 | 6  | .771                 | .4175   | .1003   | 11.68               | 0 29.9                            | .3087  | 0 56.4                           | 2.15                |
|                                 | 7  | +1.781               | —0.4140 | +0.1011 | 11.75               | 0 29.7                            | 1.3090 | 0 52.6                           | 2.01                |
|                                 | 8  | .792                 | .4105   | .1018   | 11.82               | 0 29.5                            | .3093  | 0 48.9                           | 1.87                |
|                                 | 9  | .803                 | .4070   | .1025   | 11.89               | 0 29.4                            | .3095  | 0 45.1                           | 1.73                |
|                                 | 10 | .814                 | .4034   | .1031   | 11.96               | 0 29.2                            | .3098  | 0 41.4                           | 1.59                |
|                                 | 11 | .825                 | .3999   | .1037   | 12.03               | 0 29.0                            | .3100  | 0 37.6                           | 1.45                |
|                                 | 12 | .836                 | .3963   | .1042   | 12.11               | 0 28.8                            | .3102  | 0 33.9                           | 1.30                |
|                                 | 13 | .848                 | .3927   | .1047   | 12.18               | 0 28.5                            | .3104  | 0 30.1                           | 1.16                |
|                                 | 14 | .859                 | .3891   | .1051   | 12.25               | 0 28.3                            | .3106  | 0 26.4                           | 1.02                |
|                                 | 15 | .870                 | .3855   | .1055   | 12.32               | 0 28.1                            | .3107  | 0 22.6                           | 0.88                |
|                                 | 16 | .881                 | .3819   | .1058   | 12.39               | 0 27.8                            | .3108  | 0 18.9                           | 0.73                |
|                                 | 17 | +1.892               | —0.3783 | +0.1060 | 12.47               | 0 27.6                            | 1.3109 | 0 15.2                           | +0.59               |
|                                 | 18 | .903                 | .3747   | .1062   | 12.54               | 0 27.3                            | .3110  | 0 11.4                           | 0.44                |
|                                 | 19 | .915                 | .3711   | .1063   | 12.61               | 0 27.0                            | .3111  | 0 7.7                            | 0.30                |
|                                 | 20 | .926                 | .3675   | .1064   | 12.68               | 0 26.7                            | .3111  | 0 3.9                            | 0.15                |
|                                 | 21 | .937                 | .3640   | .1064   | 12.75               | 0 26.4                            | .3111  | 0 0.2                            | +0.01               |
|                                 | 22 | .948                 | .3604   | .1064   | 12.83               | 0 26.1                            | .3111  | 23 56.5                          | —0.14               |
|                                 | 23 | .960                 | .3568   | .1063   | 12.90               | 0 25.8                            | .3111  | 23 52.7                          | 0.28                |
|                                 | 24 | .971                 | .3532   | .1062   | 12.97               | 0 25.5                            | .3110  | 23 49.0                          | 0.43                |
|                                 | 25 | .982                 | .3496   | .1060   | 13.04               | 0 25.1                            | .3110  | 23 45.2                          | 0.57                |
|                                 | 26 | 1.993                | .3461   | .1058   | 13.11               | 0 24.8                            | .3109  | 23 41.5                          | 0.72                |
|                                 | 27 | +2.005               | —0.3425 | +0.1055 | 13.18               | 0 24.4                            | 1.3108 | 23 37.7                          | —0.86               |
|                                 | 28 | .016                 | .3390   | .1052   | 13.25               | 0 24.1                            | .3106  | 23 34.0                          | 1.00                |
|                                 | 29 | .027                 | .3354   | .1048   | 13.33               | 0 23.7                            | .3105  | 23 30.2                          | 1.15                |
|                                 | 30 | .038                 | .3319   | .1044   | 13.40               | 0 23.4                            | .3103  | 23 26.5                          | 1.29                |
|                                 | 31 | .049                 | .3284   | .1040   | 13.47               | 0 23.0                            | .3101  | 23 22.7                          | 1.43                |

## 1834

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                   | x       | y       | g    | G                                  | log h  | H                                  | i                   |
|---------------------------------|----|---------------------|---------|---------|------|------------------------------------|--------|------------------------------------|---------------------|
| Januar                          | 1  | —1 <sup>s</sup> 011 | —0.6652 | +0.1032 | 6.71 | 11 <sup>h</sup> 14 <sup>m</sup> .2 | 1.3098 | 23 <sup>h</sup> 19 <sup>m</sup> .0 | —1 <sup>s</sup> .58 |
|                                 | 2  | 1.000               | .6689   | .1026   | 6.64 | 11 14.3                            | .3096  | 23 15.2                            | 1.72                |
|                                 | 3  | 0.989               | .6726   | .1019   | 6.57 | 11 14.4                            | .3093  | 23 11.4                            | 1.86                |
|                                 | 4  | .978                | .6762   | .1012   | 6.49 | 11 14.5                            | .3090  | 23 7.7                             | 2.00                |
|                                 | 5  | .967                | .6799   | .1004   | 6.42 | 11 14.6                            | .3087  | 23 3.9                             | 2.14                |
|                                 | 6  | .956                | .6835   | .0996   | 6.35 | 11 14.8                            | .3084  | 23 0.1                             | 2.28                |
|                                 | 7  | .945                | .6872   | .0987   | 6.27 | 11 15.0                            | .3081  | 22 56.3                            | 2.42                |
|                                 | 8  | .934                | .6908   | .0978   | 6.20 | 11 15.2                            | .3077  | 22 52.5                            | 2.56                |
|                                 | 9  | .924                | .6944   | .0968   | 6.13 | 11 15.5                            | .3073  | 22 48.7                            | 2.69                |
|                                 | 10 | .913                | .6980   | .0958   | 6.06 | 11 15.7                            | .3069  | 22 44.9                            | 2.83                |
|                                 | 11 | —0.903              | —0.7016 | +0.0948 | 5.98 | 11 16.0                            | 1.3065 | 22 41.1                            | —2.97               |
|                                 | 12 | .892                | .7051   | .0937   | 5.91 | 11 16.4                            | .3061  | 22 37.3                            | 3.10                |
|                                 | 13 | .882                | .7087   | .0926   | 5.84 | 11 16.7                            | .3056  | 22 33.4                            | 3.23                |
|                                 | 14 | .871                | .7122   | .0914   | 5.77 | 11 17.1                            | .3052  | 22 29.6                            | 3.37                |
|                                 | 15 | .861                | .7157   | .0902   | 5.70 | 11 17.5                            | .3047  | 22 25.7                            | 3.50                |
|                                 | 16 | .851                | .7192   | .0889   | 5.63 | 11 18.0                            | .3042  | 22 21.9                            | 3.63                |
|                                 | 17 | .840                | .7227   | .0876   | 5.56 | 11 18.5                            | .3037  | 22 18.0                            | 3.76                |
|                                 | 18 | .830                | .7261   | .0863   | 5.49 | 11 19.0                            | .3031  | 22 14.2                            | 3.88                |
|                                 | 19 | .821                | .7295   | .0850   | 5.42 | 11 19.6                            | .3026  | 22 10.3                            | 4.01                |
|                                 | 20 | .811                | .7329   | .0836   | 5.36 | 11 20.2                            | .3020  | 22 6.4                             | 4.14                |
|                                 | 21 | —0.801              | —0.7363 | +0.0822 | 5.29 | 11 20.8                            | 1.3015 | 22 2.5                             | —4.26               |
|                                 | 22 | .791                | .7396   | .0808   | 5.22 | 11 21.5                            | .3009  | 21 58.6                            | 4.38                |
|                                 | 23 | .782                | .7429   | .0793   | 5.15 | 11 22.2                            | .3003  | 21 54.7                            | 4.50                |
|                                 | 24 | .772                | .7462   | .0778   | 5.09 | 11 22.9                            | .2997  | 21 50.8                            | 4.62                |
|                                 | 25 | .763                | .7495   | .0763   | 5.02 | 11 23.7                            | .2991  | 21 46.8                            | 4.74                |
|                                 | 26 | .753                | .7527   | .0748   | 4.96 | 11 24.5                            | .2985  | 21 42.9                            | 4.86                |
|                                 | 27 | .744                | .7559   | .0733   | 4.89 | 11 25.3                            | .2979  | 21 38.9                            | 4.98                |
|                                 | 28 | .735                | .7590   | .0717   | 4.83 | 11 26.2                            | .2973  | 21 35.0                            | 5.09                |
|                                 | 29 | .726                | .7621   | .0702   | 4.77 | 11 27.1                            | .2966  | 21 31.0                            | 5.20                |
|                                 | 30 | .717                | .7652   | .0686   | 4.71 | 11 28.1                            | .2960  | 21 27.0                            | 5.31                |
| Februar                         | 31 | —0.708              | —0.7683 | +0.0670 | 4.65 | 11 29.0                            | 1.2953 | 21 23.0                            | —5.42               |
|                                 | 1  | .699                | .7713   | .0654   | 4.58 | 11 30.0                            | .2947  | 21 19.0                            | 5.53                |
|                                 | 2  | .690                | .7743   | .0638   | 4.52 | 11 31.0                            | .2940  | 21 15.0                            | 5.63                |
|                                 | 3  | .682                | .7773   | .0621   | 4.47 | 11 32.1                            | .2933  | 21 10.9                            | 5.74                |
|                                 | 4  | .673                | .7802   | .0605   | 4.41 | 11 33.2                            | .2927  | 21 6.9                             | 5.84                |
|                                 | 5  | .665                | .7831   | .0589   | 4.35 | 11 34.3                            | .2920  | 21 2.8                             | 5.94                |
|                                 | 6  | .657                | .7859   | .0573   | 4.29 | 11 35.5                            | .2914  | 20 58.8                            | 6.03                |
|                                 | 7  | .649                | .7887   | .0557   | 4.24 | 11 36.7                            | .2907  | 20 54.7                            | 6.13                |
|                                 | 8  | .641                | .7914   | .0541   | 4.18 | 11 38.0                            | .2900  | 20 50.6                            | 6.22                |
|                                 | 9  | .633                | .7941   | .0525   | 4.13 | 11 39.2                            | .2894  | 20 46.5                            | 6.31                |
|                                 | 10 | —0.625              | —0.7968 | +0.0509 | 4.08 | 11 40.5                            | 1.2887 | 20 42.4                            | —6.40               |
|                                 | 11 | .617                | .7994   | .0493   | 4.02 | 11 41.8                            | .2881  | 20 38.3                            | 6.49                |
|                                 | 12 | .609                | .8020   | .0477   | 3.97 | 11 43.1                            | .2874  | 20 34.2                            | 6.58                |
|                                 | 13 | .602                | .8046   | .0462   | 3.92 | 11 44.4                            | .2868  | 20 30.0                            | 6.66                |
|                                 | 14 | .594                | .8071   | .0447   | 3.87 | 11 45.8                            | .2862  | 20 25.9                            | 6.74                |
|                                 | 15 | .587                | .8096   | .0432   | 3.82 | 11 47.2                            | .2855  | 20 21.7                            | 6.82                |
|                                 | 16 | .579                | .8121   | .0417   | 3.77 | 11 48.7                            | .2849  | 20 17.6                            | 6.90                |
|                                 | 17 | .572                | .8145   | .0403   | 3.72 | 11 50.1                            | .2843  | 20 13.4                            | 6.98                |
|                                 | 18 | .565                | .8168   | .0389   | 3.67 | 11 51.6                            | .2837  | 20 9.2                             | 7.05                |
|                                 | 19 | .558                | .8191   | .0375   | 3.63 | 11 53.1                            | .2831  | 20 5.0                             | 7.12                |

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| <sup>12h</sup><br>M. Z. Berlin | f      | x       | y       | g    | G                    | log h  | H                   | i     |
|--------------------------------|--------|---------|---------|------|----------------------|--------|---------------------|-------|
| Februar 20                     | —0.551 | —0.8214 | +0.0361 | 3.58 | 11 <sup>h</sup> 54.6 | 1.2825 | 20 <sup>h</sup> 0.8 | —7.19 |
| 21                             | .544   | .8237   | .0347   | 3.53 | 11 56.1              | .2820  | 19 56.6             | 7.25  |
| 22                             | .537   | .8260   | .0333   | 3.49 | 11 57.7              | .2814  | 19 52.3             | 7.32  |
| 23                             | .530   | .8282   | .0320   | 3.44 | 11 59.3              | .2809  | 19 48.1             | 7.38  |
| 24                             | .524   | .8304   | .0307   | 3.40 | 12 0.8               | .2803  | 19 43.9             | 7.44  |
| 25                             | .517   | .8326   | .0295   | 3.36 | 12 2.4               | .2798  | 19 39.6             | 7.50  |
| 26                             | .511   | .8347   | .0283   | 3.31 | 12 4.0               | .2793  | 19 35.4             | 7.55  |
| 27                             | .504   | .8367   | .0272   | 3.27 | 12 5.6               | .2788  | 19 31.1             | 7.60  |
| 28                             | .498   | .8388   | .0261   | 3.23 | 12 7.2               | .2784  | 19 26.8             | 7.65  |
| März 1                         | .491   | .8408   | .0251   | 3.19 | 12 8.8               | .2779  | 19 22.5             | 7.70  |
| 2                              | —0.485 | —0.8429 | +0.0241 | 3.15 | 12 10.3              | 1.2775 | 19 18.2             | —7.75 |
| 3                              | .479   | .8449   | .0231   | 3.11 | 12 11.9              | .2771  | 19 13.9             | 7.79  |
| 4                              | .473   | .8469   | .0222   | 3.07 | 12 13.5              | .2767  | 19 9.6              | 7.83  |
| 5                              | .467   | .8488   | .0214   | 3.03 | 12 15.0              | .2764  | 19 5.3              | 7.87  |
| 6                              | .461   | .8507   | .0206   | 2.99 | 12 16.6              | .2760  | 19 1.0              | 7.90  |
| 7                              | .455   | .8526   | .0199   | 2.96 | 12 18.2              | .2757  | 18 56.7             | 7.94  |
| 8                              | .449   | .8545   | .0192   | 2.92 | 12 19.8              | .2754  | 18 52.4             | 7.97  |
| 9                              | .443   | .8563   | .0185   | 2.88 | 12 21.3              | .2751  | 18 48.1             | 8.00  |
| 10                             | .437   | .8582   | .0179   | 2.85 | 12 22.9              | .2749  | 18 43.8             | 8.02  |
| 11                             | .431   | .8600   | .0173   | 2.81 | 12 24.4              | .2746  | 18 39.4             | 8.05  |
| 12                             | —0.425 | —0.8618 | +0.0168 | 2.77 | 12 26.0              | 1.2744 | 18 35.1             | —8.07 |
| 13                             | .419   | .8636   | .0164   | 2.74 | 12 27.5              | .2742  | 18 30.8             | 8.09  |
| 14                             | .413   | .8653   | .0160   | 2.70 | 12 28.9              | .2741  | 18 26.4             | 8.10  |
| 15                             | .407   | .8671   | .0157   | 2.66 | 12 30.4              | .2740  | 18 22.1             | 8.12  |
| 16                             | .402   | .8689   | .0155   | 2.63 | 12 31.8              | .2739  | 18 17.8             | 8.13  |
| 17                             | .396   | .8707   | .0153   | 2.59 | 12 33.3              | .2738  | 18 13.4             | 8.14  |
| 18                             | .390   | .8724   | .0151   | 2.56 | 12 34.7              | .2737  | 18 9.1              | 8.14  |
| 19                             | .384   | .8742   | .0150   | 2.52 | 12 36.1              | .2736  | 18 4.8              | 8.15  |
| 20                             | .379   | .8760   | .0150   | 2.48 | 12 37.5              | .2736  | 18 0.4              | 8.15  |
| 21                             | .373   | .8778   | .0150   | 2.45 | 12 38.8              | .2736  | 17 56.1             | 8.15  |
| 22                             | —0.367 | —0.8795 | +0.0151 | 2.41 | 12 40.1              | 1.2737 | 17 51.8             | —8.14 |
| 23                             | .361   | .8813   | .0153   | 2.38 | 12 41.4              | .2737  | 17 47.5             | 8.14  |
| 24                             | .356   | .8831   | .0155   | 2.34 | 12 42.7              | .2738  | 17 43.2             | 8.13  |
| 25                             | .350   | .8849   | .0157   | 2.31 | 12 44.0              | .2739  | 17 38.9             | 8.12  |
| 26                             | .344   | .8867   | .0160   | 2.27 | 12 45.2              | .2740  | 17 34.6             | 8.11  |
| 27                             | .338   | .8885   | .0163   | 2.23 | 12 46.4              | .2742  | 17 30.3             | 8.09  |
| 28                             | .332   | .8903   | .0167   | 2.20 | 12 47.5              | .2744  | 17 26.0             | 8.07  |
| 29                             | .327   | .8922   | .0172   | 2.16 | 12 48.7              | .2746  | 17 21.7             | 8.05  |
| 30                             | .321   | .8940   | .0177   | 2.12 | 12 49.9              | .2748  | 17 17.4             | 8.03  |
| 31                             | .315   | .8959   | .0183   | 2.09 | 12 51.0              | .2750  | 17 13.1             | 8.01  |
| April 1                        | —0.309 | —0.8978 | +0.0189 | 2.05 | 12 52.1              | 1.2753 | 17 8.9              | —7.98 |
| 2                              | .303   | .8997   | .0196   | 2.01 | 12 53.2              | .2756  | 17 4.6              | 7.95  |
| 3                              | .297   | .9016   | .0203   | 1.97 | 12 54.3              | .2759  | 17 0.4              | 7.92  |
| 4                              | .291   | .9035   | .0211   | 1.93 | 12 55.4              | .2762  | 16 56.1             | 7.88  |
| 5                              | .285   | .9054   | .0219   | 1.90 | 12 56.4              | .2766  | 16 51.9             | 7.85  |
| 6                              | .279   | .9074   | .0228   | 1.86 | 12 57.5              | .2770  | 16 47.7             | 7.81  |
| 7                              | .273   | .9094   | .0237   | 1.82 | 12 58.5              | .2774  | 16 43.5             | 7.77  |
| 8                              | .266   | .9114   | .0247   | 1.78 | 12 59.5              | .2778  | 16 39.3             | 7.72  |
| 9                              | .260   | .9134   | .0257   | 1.74 | 13 0.5               | .2782  | 16 35.1             | 7.68  |
| 10                             | .254   | .9154   | .0268   | 1.70 | 13 1.5               | .2786  | 16 30.9             | 7.63  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                  | G                                 | log h  | H                                  | i                   |
|---------------------------------|----|----------------------|---------|---------|--------------------|-----------------------------------|--------|------------------------------------|---------------------|
| April                           | 11 | —0 <sup>s</sup> .247 | —0.9175 | +0.0279 | 1 <sup>m</sup> .65 | 13 <sup>h</sup> 2 <sup>m</sup> .5 | 1.2791 | 16 <sup>h</sup> 26 <sup>m</sup> .7 | —7 <sup>s</sup> .58 |
|                                 | 12 | .241                 | .9196   | .0290   | 1.61               | 13 3.5                            | .2796  | 16 22.6                            | 7.52                |
|                                 | 13 | .234                 | .9217   | .0301   | 1.57               | 13 4.5                            | .2801  | 16 18.4                            | 7.47                |
|                                 | 14 | .228                 | .9238   | .0313   | 1.53               | 13 5.5                            | .2806  | 16 14.3                            | 7.41                |
|                                 | 15 | .221                 | .9259   | .0325   | 1.48               | 13 6.5                            | .2811  | 16 10.1                            | 7.35                |
|                                 | 16 | .214                 | .9281   | .0338   | 1.44               | 13 7.5                            | .2816  | 16 6.0                             | 7.29                |
|                                 | 17 | .207                 | .9303   | .0351   | 1.40               | 13 8.5                            | .2821  | 16 1.9                             | 7.23                |
|                                 | 18 | .200                 | .9326   | .0364   | 1.35               | 13 9.6                            | .2827  | 15 57.8                            | 7.17                |
|                                 | 19 | .193                 | .9349   | .0377   | 1.31               | 13 10.7                           | .2832  | 15 53.8                            | 7.10                |
|                                 | 20 | .186                 | .9372   | .0391   | 1.26               | 13 11.9                           | .2838  | 15 49.7                            | 7.03                |
|                                 | 21 | —0.179               | —0.9395 | +0.0405 | 1.21               | 13 13.3                           | 1.2844 | 15 45.7                            | —6.96               |
|                                 | 22 | .172                 | .9419   | .0419   | 1.16               | 13 14.8                           | .2850  | 15 41.6                            | 6.89                |
|                                 | 23 | .165                 | .9443   | .0433   | 1.12               | 13 16.4                           | .2856  | 15 37.6                            | 6.81                |
|                                 | 24 | .157                 | .9467   | .0448   | 1.07               | 13 18.1                           | .2862  | 15 33.6                            | 6.74                |
|                                 | 25 | .150                 | .9492   | .0463   | 1.02               | 13 19.9                           | .2868  | 15 29.6                            | 6.66                |
|                                 | 26 | .142                 | .9516   | .0478   | 0.97               | 13 21.8                           | .2874  | 15 25.6                            | 6.58                |
|                                 | 27 | .135                 | .9541   | .0493   | 0.92               | 13 23.8                           | .2881  | 15 21.6                            | 6.49                |
|                                 | 28 | .127                 | .9566   | .0508   | 0.87               | 13 26.2                           | .2887  | 15 17.7                            | 6.41                |
|                                 | 29 | .119                 | .9592   | .0523   | 0.82               | 13 29.0                           | .2893  | 15 13.7                            | 6.32                |
|                                 | 30 | .112                 | .9617   | .0539   | 0.77               | 13 32.2                           | .2900  | 15 9.8                             | 6.23                |
| Mai                             | 1  | —0.104               | —0.9642 | +0.0554 | 0.72               | 13 35.9                           | 1.2906 | 15 5.9                             | —6.14               |
|                                 | 2  | .095                 | .9668   | .0569   | 0.67               | 13 40.2                           | .2912  | 15 2.0                             | 6.05                |
|                                 | 3  | .087                 | .9694   | .0585   | 0.61               | 13 45.3                           | .2919  | 14 58.1                            | 5.96                |
|                                 | 4  | .079                 | .9721   | .0600   | 0.56               | 13 51.3                           | .2925  | 14 54.2                            | 5.87                |
|                                 | 5  | .071                 | .9747   | .0616   | 0.51               | 13 58.6                           | .2931  | 14 50.4                            | 5.77                |
|                                 | 6  | .063                 | .9773   | .0631   | 0.46               | 14 7.7                            | .2937  | 14 46.5                            | 5.67                |
|                                 | 7  | .054                 | .9798   | .0647   | 0.40               | 14 19.5                           | .2944  | 14 42.7                            | 5.57                |
|                                 | 8  | .046                 | .9824   | .0662   | 0.35               | 14 34.9                           | .2950  | 14 38.9                            | 5.47                |
|                                 | 9  | .037                 | .9848   | .0677   | 0.30               | 14 55.7                           | .2956  | 14 35.1                            | 5.37                |
|                                 | 10 | .028                 | .9871   | .0692   | 0.26               | 15 24.5                           | .2962  | 14 31.3                            | 5.26                |
|                                 | 11 | —0.019               | —0.9892 | +0.0707 | 0.22               | 16 5.7                            | 1.2968 | 14 27.5                            | —5.16               |
|                                 | 12 | .010                 | .9906   | .0722   | 0.19               | 17 3.3                            | .2974  | 14 23.7                            | 5.05                |
|                                 | 13 | —0.001               | .9914   | .0737   | 0.17               | 18 16.0                           | .2980  | 14 19.9                            | 4.94                |
|                                 | 14 | +0.008               | .9911   | .0751   | 0.18               | 19 35.3                           | .2986  | 14 16.2                            | 4.83                |
|                                 | 15 | .017                 | .9899   | .0766   | 0.20               | 20 43.1                           | .2992  | 14 12.5                            | 4.72                |
|                                 | 16 | .026                 | .9880   | .0780   | 0.24               | 21 31.8                           | .2998  | 14 8.7                             | 4.61                |
|                                 | 17 | .035                 | .9856   | .0794   | 0.29               | 22 7.3                            | .3004  | 14 5.0                             | 4.50                |
|                                 | 18 | .045                 | .9830   | .0807   | 0.34               | 22 31.5                           | .3009  | 14 1.3                             | 4.38                |
|                                 | 19 | .054                 | .9803   | .0821   | 0.40               | 22 48.9                           | .3014  | 13 57.6                            | 4.27                |
|                                 | 20 | .064                 | .9774   | .0834   | 0.45               | 23 2.3                            | .3020  | 13 53.9                            | 4.15                |
|                                 | 21 | +0.073               | —0.9744 | +0.0847 | 0.51               | 23 12.7                           | 1.3025 | 13 50.3                            | —4.03               |
|                                 | 22 | .083                 | .9714   | .0860   | 0.57               | 23 20.8                           | .3030  | 13 46.6                            | 3.91                |
|                                 | 23 | .093                 | .9683   | .0873   | 0.64               | 23 27.2                           | .3035  | 13 42.9                            | 3.79                |
|                                 | 24 | .103                 | .9651   | .0885   | 0.70               | 23 32.3                           | .3040  | 13 39.3                            | 3.67                |
|                                 | 25 | .113                 | .9620   | .0897   | 0.76               | 23 36.5                           | .3045  | 13 35.7                            | 3.55                |
|                                 | 26 | .123                 | .9588   | .0909   | 0.83               | 23 39.9                           | .3049  | 13 32.1                            | 3.42                |
|                                 | 27 | .133                 | .9555   | .0920   | 0.89               | 23 42.8                           | .3054  | 13 28.4                            | 3.30                |
|                                 | 28 | .143                 | .9523   | .0931   | 0.96               | 23 45.2                           | .3058  | 13 24.8                            | 3.17                |
|                                 | 29 | .153                 | .9490   | .0942   | 1.02               | 23 47.2                           | .3062  | 13 21.2                            | 3.05                |
|                                 | 30 | .163                 | .9457   | .0952   | 1.09               | 23 48.9                           | .3066  | 13 17.6                            | 2.92                |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g    | G                                 | log h  | H                                 | i     |
|---------------------------------|----|--------|---------|---------|------|-----------------------------------|--------|-----------------------------------|-------|
| Mai                             | 31 | +0.174 | -0.9424 | +0.0962 | 1.16 | 23 <sup>h</sup> 50 <sup>m</sup> 3 | 1.3070 | 13 <sup>h</sup> 14 <sup>m</sup> 0 | -2.79 |
| Juni                            | 1  | .184   | .9390   | .0971   | 1.22 | 23 51.5                           | .3074  | 13 10.5                           | 2.67  |
|                                 | 2  | .194   | .9356   | .0980   | 1.29 | 23 52.4                           | .3078  | 13 6.9                            | 2.54  |
|                                 | 3  | .205   | .9322   | .0988   | 1.36 | 23 53.1                           | .3081  | 13 3.3                            | 2.41  |
|                                 | 4  | .215   | .9288   | .0996   | 1.43 | 23 53.6                           | .3084  | 12 59.8                           | 2.28  |
|                                 | 5  | .226   | .9254   | .1004   | 1.50 | 23 54.0                           | .3087  | 12 56.2                           | 2.15  |
|                                 | 6  | .236   | .9220   | .1011   | 1.56 | 23 54.4                           | .3090  | 12 52.7                           | 2.01  |
|                                 | 7  | .247   | .9185   | .1018   | 1.63 | 23 54.7                           | .3093  | 12 49.1                           | 1.88  |
|                                 | 8  | .258   | .9150   | .1024   | 1.70 | 23 54.9                           | .3095  | 12 45.6                           | 1.75  |
|                                 | 9  | .269   | .9116   | .1030   | 1.77 | 23 54.8                           | .3098  | 12 42.1                           | 1.62  |
|                                 | 10 | +0.279 | -0.9081 | +0.1035 | 1.84 | 23 54.8                           | 1.3100 | 12 38.6                           | -1.48 |
|                                 | 11 | .290   | .9046   | .1040   | 1.91 | 23 54.7                           | .3102  | 12 35.0                           | 1.35  |
|                                 | 12 | .301   | .9011   | .1045   | 1.98 | 23 54.6                           | .3103  | 12 31.5                           | 1.22  |
|                                 | 13 | .312   | .8975   | .1049   | 2.06 | 23 54.4                           | .3105  | 12 28.0                           | 1.08  |
|                                 | 14 | .322   | .8940   | .1053   | 2.13 | 23 54.1                           | .3106  | 12 24.5                           | 0.95  |
|                                 | 15 | .333   | .8904   | .1056   | 2.20 | 23 53.8                           | .3108  | 12 21.0                           | 0.81  |
|                                 | 16 | .344   | .8869   | .1059   | 2.27 | 23 53.5                           | .3109  | 12 17.5                           | 0.68  |
|                                 | 17 | .355   | .8833   | .1061   | 2.34 | 23 53.1                           | .3110  | 12 14.0                           | 0.54  |
|                                 | 18 | .366   | .8798   | .1063   | 2.41 | 23 52.7                           | .3110  | 12 10.5                           | 0.40  |
|                                 | 19 | .377   | .8762   | .1064   | 2.48 | 23 52.3                           | .3111  | 12 7.0                            | 0.27  |
|                                 | 20 | +0.388 | -0.8726 | +0.1065 | 2.55 | 23 51.9                           | 1.3111 | 12 3.5                            | -0.13 |
|                                 | 21 | .399   | .8690   | .1065   | 2.63 | 23 51.4                           | .3111  | 12 0.0                            | 0.00  |
|                                 | 22 | .410   | .8655   | .1065   | 2.70 | 23 50.8                           | .3111  | 11 56.5                           | +0.14 |
|                                 | 23 | .421   | .8619   | .1064   | 2.77 | 23 50.3                           | .3111  | 11 53.0                           | 0.27  |
|                                 | 24 | .432   | .8584   | .1063   | 2.84 | 23 49.7                           | .3110  | 11 49.5                           | 0.41  |
|                                 | 25 | .443   | .8548   | .1061   | 2.91 | 23 49.1                           | .3110  | 11 46.0                           | 0.54  |
|                                 | 26 | .453   | .8513   | .1059   | 2.98 | 23 48.5                           | .3109  | 11 42.5                           | 0.68  |
|                                 | 27 | .464   | .8477   | .1056   | 3.05 | 23 47.9                           | .3108  | 11 39.0                           | 0.81  |
|                                 | 28 | .475   | .8441   | .1053   | 3.13 | 23 47.2                           | .3106  | 11 35.5                           | 0.95  |
|                                 | 29 | .486   | .8405   | .1049   | 3.20 | 23 46.6                           | .3105  | 11 31.9                           | 1.08  |
| Juli                            | 30 | +0.497 | -0.8369 | +0.1045 | 3.27 | 23 45.9                           | 1.3103 | 11 28.4                           | +1.22 |
|                                 | 1  | .508   | .8333   | .1041   | 3.34 | 23 45.3                           | .3102  | 11 24.9                           | 1.35  |
|                                 | 2  | .518   | .8297   | .1036   | 3.41 | 23 44.6                           | .3100  | 11 21.4                           | 1.49  |
|                                 | 3  | .529   | .8262   | .1031   | 3.48 | 23 43.9                           | .3098  | 11 17.9                           | 1.62  |
|                                 | 4  | .540   | .8227   | .1025   | 3.55 | 23 43.2                           | .3095  | 11 14.4                           | 1.75  |
|                                 | 5  | .551   | .8192   | .1018   | 3.63 | 23 42.5                           | .3093  | 11 10.8                           | 1.88  |
|                                 | 6  | .561   | .8157   | .1011   | 3.70 | 23 41.8                           | .3090  | 11 7.3                            | 2.02  |
|                                 | 7  | .572   | .8122   | .1004   | 3.77 | 23 41.0                           | .3087  | 11 3.8                            | 2.15  |
|                                 | 8  | .583   | .8087   | .0996   | 3.84 | 23 40.3                           | .3084  | 11 0.2                            | 2.28  |
|                                 | 9  | .593   | .8052   | .0988   | 3.91 | 23 39.6                           | .3081  | 10 56.7                           | 2.41  |
|                                 | 10 | +0.604 | -0.8017 | +0.0980 | 3.98 | 23 38.8                           | 1.3078 | 10 53.1                           | +2.54 |
|                                 | 11 | .614   | .7983   | .0971   | 4.05 | 23 38.1                           | .3074  | 10 49.6                           | 2.66  |
|                                 | 12 | .624   | .7948   | .0962   | 4.12 | 23 37.3                           | .3070  | 10 46.0                           | 2.79  |
|                                 | 13 | .635   | .7914   | .0952   | 4.18 | 23 36.6                           | .3066  | 10 42.5                           | 2.92  |
|                                 | 14 | .645   | .7879   | .0942   | 4.25 | 23 35.8                           | .3062  | 10 38.9                           | 3.04  |
|                                 | 15 | .655   | .7845   | .0931   | 4.32 | 23 35.1                           | .3058  | 10 35.3                           | 3.17  |
|                                 | 16 | .665   | .7811   | .0920   | 4.39 | 23 34.3                           | .3054  | 10 31.7                           | 3.29  |
|                                 | 17 | .675   | .7777   | .0909   | 4.46 | 23 33.6                           | .3050  | 10 28.1                           | 3.42  |
|                                 | 18 | .685   | .7743   | .0898   | 4.52 | 23 32.8                           | .3045  | 10 24.5                           | 3.54  |
|                                 | 19 | .695   | .7710   | .0886   | 4.59 | 23 32.1                           | .3040  | 10 20.9                           | 3.66  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g    | G                                 | log h  | H                                 | i     |
|---------------------------------|----|----------------------|---------|---------|------|-----------------------------------|--------|-----------------------------------|-------|
| Juli                            | 20 | +0. <sup>s</sup> 705 | —0.7677 | +0.0874 | 4.66 | 23 <sup>h</sup> 31 <sup>m</sup> 3 | 1.3036 | 10 <sup>h</sup> 17 <sup>m</sup> 3 | +3.78 |
|                                 | 21 | .715                 | .7644   | .0862   | 4.72 | 23 30.6                           | .3031  | 10 13.6                           | 3.90  |
|                                 | 22 | .725                 | .7611   | .0849   | 4.79 | 23 29.8                           | .3026  | 10 10.0                           | 4.02  |
|                                 | 23 | .734                 | .7578   | .0836   | 4.86 | 23 29.1                           | .3020  | 10 6.3                            | 4.14  |
|                                 | 24 | .744                 | .7545   | .0823   | 4.92 | 23 28.4                           | .3015  | 10 2.7                            | 4.26  |
|                                 | 25 | .754                 | .7513   | .0809   | 4.99 | 23 27.6                           | .3010  | 9 59.0                            | 4.37  |
|                                 | 26 | .763                 | .7481   | .0796   | 5.05 | 23 26.9                           | .3004  | 9 55.3                            | 4.49  |
|                                 | 27 | .772                 | .7449   | .0782   | 5.11 | 23 26.2                           | .2999  | 9 51.6                            | 4.60  |
|                                 | 28 | .782                 | .7417   | .0768   | 5.18 | 23 25.5                           | .2993  | 9 47.9                            | 4.71  |
|                                 | 29 | .791                 | .7386   | .0754   | 5.24 | 23 24.7                           | .2987  | 9 44.2                            | 4.82  |
| August                          | 30 | +0.800               | —0.7354 | +0.0740 | 5.31 | 23 24.0                           | 1.2981 | 9 40.5                            | +4.93 |
|                                 | 31 | .809                 | .7323   | .0725   | 5.37 | 23 23.3                           | .2976  | 9 36.8                            | 5.04  |
|                                 | 1  | .818                 | .7292   | .0710   | 5.43 | 23 22.6                           | .2970  | 9 33.0                            | 5.14  |
|                                 | 2  | .827                 | .7261   | .0695   | 5.49 | 23 21.9                           | .2963  | 9 29.3                            | 5.25  |
|                                 | 3  | .836                 | .7230   | .0680   | 5.55 | 23 21.2                           | .2957  | 9 25.5                            | 5.35  |
|                                 | 4  | .844                 | .7200   | .0665   | 5.61 | 23 20.5                           | .2951  | 9 21.7                            | 5.45  |
|                                 | 5  | .853                 | .7170   | .0650   | 5.67 | 23 19.8                           | .2945  | 9 17.9                            | 5.55  |
|                                 | 6  | .862                 | .7141   | .0634   | 5.73 | 23 19.2                           | .2939  | 9 14.1                            | 5.65  |
|                                 | 7  | .870                 | .7111   | .0619   | 5.79 | 23 18.5                           | .2933  | 9 10.3                            | 5.75  |
|                                 | 8  | .878                 | .7082   | .0604   | 5.85 | 23 17.9                           | .2926  | 9 6.5                             | 5.85  |
|                                 | 9  | +0.887               | —0.7053 | +0.0588 | 5.91 | 23 17.2                           | 1.2920 | 9 2.7                             | +5.94 |
|                                 | 10 | .895                 | .7024   | .0573   | 5.97 | 23 16.6                           | .2914  | 8 58.8                            | 6.03  |
|                                 | 11 | .903                 | .6995   | .0558   | 6.02 | 23 16.0                           | .2908  | 8 54.9                            | 6.12  |
|                                 | 12 | .911                 | .6967   | .0543   | 6.08 | 23 15.4                           | .2901  | 8 51.1                            | 6.21  |
|                                 | 13 | .919                 | .6939   | .0528   | 6.14 | 23 14.8                           | .2895  | 8 47.2                            | 6.30  |
|                                 | 14 | .927                 | .6911   | .0513   | 6.19 | 23 14.2                           | .2889  | 8 43.3                            | 6.39  |
|                                 | 15 | .935                 | .6883   | .0498   | 6.25 | 23 13.7                           | .2883  | 8 39.4                            | 6.47  |
|                                 | 16 | .942                 | .6856   | .0483   | 6.30 | 23 13.1                           | .2876  | 8 35.4                            | 6.55  |
|                                 | 17 | .950                 | .6829   | .0468   | 6.36 | 23 12.5                           | .2870  | 8 31.5                            | 6.63  |
|                                 | 18 | .958                 | .6803   | .0453   | 6.41 | 23 12.0                           | .2864  | 8 27.5                            | 6.71  |
|                                 | 19 | +0.965               | —0.6776 | +0.0438 | 6.46 | 23 11.5                           | 1.2858 | 8 23.6                            | +6.79 |
|                                 | 20 | .972                 | .6750   | .0424   | 6.52 | 23 11.0                           | .2852  | 8 19.6                            | 6.86  |
|                                 | 21 | .980                 | .6724   | .0410   | 6.57 | 23 10.4                           | .2846  | 8 15.6                            | 6.94  |
|                                 | 22 | .987                 | .6699   | .0396   | 6.62 | 23 10.0                           | .2840  | 8 11.6                            | 7.01  |
|                                 | 23 | 0.994                | .6673   | .0382   | 6.67 | 23 9.5                            | .2835  | 8 7.6                             | 7.08  |
|                                 | 24 | 1.001                | .6648   | .0369   | 6.72 | 23 9.0                            | .2829  | 8 3.6                             | 7.14  |
|                                 | 25 | .008                 | .6623   | .0356   | 6.77 | 23 8.6                            | .2824  | 7 59.5                            | 7.21  |
|                                 | 26 | .015                 | .6599   | .0343   | 6.82 | 23 8.2                            | .2818  | 7 55.5                            | 7.27  |
|                                 | 27 | .022                 | .6574   | .0330   | 6.87 | 23 7.8                            | .2813  | 7 51.4                            | 7.33  |
|                                 | 28 | .029                 | .6550   | .0318   | 6.92 | 23 7.4                            | .2808  | 7 47.3                            | 7.39  |
| Septbr.                         | 29 | +1.036               | —0.6526 | +0.0306 | 6.97 | 23 7.0                            | 1.2803 | 7 43.2                            | +7.45 |
|                                 | 30 | .042                 | .6502   | .0294   | 7.01 | 23 6.6                            | .2798  | 7 39.1                            | 7.50  |
|                                 | 31 | .049                 | .6478   | .0283   | 7.06 | 23 6.2                            | .2793  | 7 35.0                            | 7.55  |
|                                 | 1  | .055                 | .6455   | .0272   | 7.11 | 23 5.9                            | .2788  | 7 30.9                            | 7.60  |
|                                 | 2  | .062                 | .6432   | .0262   | 7.15 | 23 5.6                            | .2784  | 7 26.8                            | 7.65  |
|                                 | 3  | .068                 | .6310   | .0252   | 7.20 | 23 5.3                            | .2780  | 7 22.6                            | 7.70  |
|                                 | 4  | .075                 | .6387   | .0242   | 7.24 | 23 5.0                            | .2776  | 7 18.5                            | 7.74  |
|                                 | 5  | .081                 | .6365   | .0233   | 7.29 | 23 4.8                            | .2772  | 7 14.3                            | 7.79  |
|                                 | 6  | .087                 | .6343   | .0224   | 7.33 | 23 4.5                            | .2768  | 7 10.2                            | 7.83  |
|                                 | 7  | .094                 | .6321   | .0216   | 7.38 | 23 4.3                            | .2764  | 7 6.0                             | 7.86  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g    | G                                | log h  | H                               | i     |
|---------------------------------|----|--------|---------|---------|------|----------------------------------|--------|---------------------------------|-------|
| Septbr.                         | 8  | +1.100 | —0.6290 | +0.0208 | 7.42 | 23 <sup>h</sup> 4 <sup>m</sup> 0 | 1.2761 | 7 <sup>h</sup> 1 <sup>m</sup> 8 | +7.90 |
|                                 | 9  | .106   | .6278   | .0200   | 7.46 | 23 3.8                           | .2758  | 6 57.6                          | 7.93  |
|                                 | 10 | .112   | .6256   | .0193   | 7.51 | 23 3.6                           | .2755  | 6 53.4                          | 7.96  |
|                                 | 11 | .118   | .6235   | .0186   | 7.55 | 23 3.5                           | .2752  | 6 49.2                          | 7.99  |
|                                 | 12 | .124   | .6214   | .0180   | 7.59 | 23 3.3                           | .2749  | 6 45.0                          | 8.02  |
|                                 | 13 | .130   | .6193   | .0175   | 7.63 | 23 3.2                           | .2747  | 6 40.7                          | 8.04  |
|                                 | 14 | .136   | .6172   | .0170   | 7.67 | 23 3.1                           | .2745  | 6 36.5                          | 8.06  |
|                                 | 15 | .142   | .6152   | .0166   | 7.72 | 23 3.0                           | .2743  | 6 32.3                          | 8.08  |
|                                 | 16 | .148   | .6132   | .0162   | 7.76 | 23 2.9                           | .2741  | 6 28.0                          | 8.10  |
|                                 | 17 | .154   | .6112   | .0159   | 7.80 | 23 2.9                           | .2740  | 6 23.8                          | 8.11  |
|                                 | 18 | +1.160 | —0.6092 | +0.0156 | 7.84 | 23 2.8                           | 1.2739 | 6 19.5                          | +8.12 |
|                                 | 19 | .166   | .6072   | .0154   | 7.88 | 23 2.8                           | .2738  | 6 15.2                          | 8.13  |
|                                 | 20 | .172   | .6052   | .0152   | 7.92 | 23 2.8                           | .2737  | 6 11.0                          | 8.14  |
|                                 | 21 | .178   | .6032   | .0151   | 7.96 | 23 2.8                           | .2737  | 6 6.7                           | 8.15  |
|                                 | 22 | .184   | .6012   | .0150   | 8.00 | 23 2.8                           | .2736  | 6 2.4                           | 8.15  |
|                                 | 23 | .190   | .5993   | .0150   | 8.04 | 23 2.8                           | .2736  | 5 58.2                          | 8.15  |
|                                 | 24 | .195   | .5973   | .0150   | 8.07 | 23 2.9                           | .2737  | 5 53.9                          | 8.15  |
|                                 | 25 | .201   | .5954   | .0151   | 8.11 | 23 2.9                           | .2737  | 5 49.6                          | 8.14  |
|                                 | 26 | .207   | .5934   | .0153   | 8.15 | 23 3.0                           | .2738  | 5 45.3                          | 8.14  |
|                                 | 27 | .213   | .5915   | .0155   | 8.19 | 23 3.2                           | .2739  | 5 41.0                          | 8.13  |
|                                 | 28 | +1.219 | —0.5895 | +0.0158 | 8.23 | 23 3.3                           | 1.2740 | 5 36.8                          | +8.11 |
|                                 | 29 | .225   | .5876   | .0161   | 8.27 | 23 3.4                           | .2741  | 5 32.5                          | 8.10  |
|                                 | 30 | .231   | .5857   | .0165   | 8.31 | 23 3.6                           | .2743  | 5 28.2                          | 8.08  |
| Oktbr.                          | 1  | .237   | .5837   | .0169   | 8.35 | 23 3.8                           | .2745  | 5 23.9                          | 8.06  |
|                                 | 2  | .243   | .5818   | .0174   | 8.39 | 23 4.0                           | .2747  | 5 19.6                          | 8.04  |
|                                 | 3  | .249   | .5798   | .0180   | 8.43 | 23 4.2                           | .2749  | 5 15.4                          | 8.02  |
|                                 | 4  | .255   | .5779   | .0186   | 8.46 | 23 4.4                           | .2752  | 5 11.1                          | 7.99  |
|                                 | 5  | .261   | .5759   | .0193   | 8.50 | 23 4.7                           | .2755  | 5 6.8                           | 7.96  |
|                                 | 6  | .267   | .5740   | .0200   | 8.54 | 23 4.9                           | .2758  | 5 2.6                           | 7.93  |
|                                 | 7  | .274   | .5720   | .0208   | 8.58 | 23 5.2                           | .2761  | 4 58.3                          | 7.90  |
|                                 | 8  | +1.280 | —0.5701 | +0.0216 | 8.62 | 23 5.5                           | 1.2764 | 4 54.0                          | +7.86 |
|                                 | 9  | .286   | .5681   | .0225   | 8.66 | 23 5.8                           | .2768  | 4 49.8                          | 7.83  |
|                                 | 10 | .293   | .5661   | .0234   | 8.70 | 23 6.1                           | .2772  | 4 45.5                          | 7.79  |
|                                 | 11 | .299   | .5641   | .0243   | 8.74 | 23 6.4                           | .2776  | 4 41.3                          | 7.74  |
|                                 | 12 | .306   | .5621   | .0253   | 8.78 | 23 6.8                           | .2780  | 4 37.0                          | 7.70  |
|                                 | 13 | .312   | .5600   | .0263   | 8.82 | 23 7.1                           | .2784  | 4 32.8                          | 7.65  |
|                                 | 14 | .319   | .5580   | .0274   | 8.86 | 23 7.5                           | .2789  | 4 28.6                          | 7.60  |
|                                 | 15 | .325   | .5559   | .0285   | 8.90 | 23 7.9                           | .2794  | 4 24.4                          | 7.55  |
|                                 | 16 | .332   | .5538   | .0297   | 8.95 | 23 8.2                           | .2799  | 4 20.2                          | 7.49  |
|                                 | 17 | .339   | .5517   | .0309   | 8.99 | 23 8.6                           | .2804  | 4 16.0                          | 7.44  |
|                                 | 18 | +1.346 | —0.5496 | +0.0321 | 9.03 | 23 9.0                           | 1.2809 | 4 11.8                          | +7.38 |
|                                 | 19 | .353   | .5475   | .0334   | 9.07 | 23 9.5                           | .2814  | 4 7.6                           | 7.32  |
|                                 | 20 | .360   | .5453   | .0347   | 9.12 | 23 9.9                           | .2820  | 4 3.4                           | 7.25  |
|                                 | 21 | .367   | .5431   | .0360   | 9.16 | 23 10.3                          | .2825  | 3 59.2                          | 7.19  |
|                                 | 22 | .374   | .5409   | .0374   | 9.20 | 23 10.8                          | .2831  | 3 55.0                          | 7.12  |
|                                 | 23 | .381   | .5387   | .0388   | 9.25 | 23 11.2                          | .2837  | 3 50.9                          | 7.05  |
|                                 | 24 | .389   | .5364   | .0402   | 9.29 | 23 11.7                          | .2843  | 3 46.7                          | 6.98  |
|                                 | 25 | .396   | .5341   | .0417   | 9.34 | 23 12.1                          | .2849  | 3 42.6                          | 6.90  |
|                                 | 26 | .404   | .5318   | .0431   | 9.39 | 23 12.6                          | .2855  | 3 38.5                          | 6.83  |
|                                 | 27 | .411   | .5295   | .0446   | 9.43 | 23 13.1                          | .2861  | 3 34.3                          | 6.75  |

## 1834

| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                  | log h  | H                                 | i     |
|---------------------------------|----|--------|---------|---------|-------|------------------------------------|--------|-----------------------------------|-------|
| Oktbr.                          | 28 | +1.419 | —0.5272 | +0.0461 | 9.48  | 23 <sup>h</sup> 13 <sup>m</sup> .6 | 1.2868 | 3 <sup>h</sup> 30 <sup>m</sup> .2 | +6.67 |
|                                 | 29 | .427   | .5248   | .0477   | 9.53  | 23 14.1                            | .2874  | 3 26.1                            | 6.59  |
|                                 | 30 | .435   | .5224   | .0402   | 9.58  | 23 14.6                            | .2880  | 3 22.0                            | 6.50  |
|                                 | 31 | .443   | .5199   | .0508   | 9.63  | 23 15.1                            | .2887  | 3 18.0                            | 6.41  |
|                                 | 1  | .451   | .5174   | .0523   | 9.68  | 23 15.6                            | .2893  | 3 13.9                            | 6.33  |
| Novbr.                          | 2  | .459   | .5149   | .0539   | 9.73  | 23 16.0                            | .2900  | 3 9.8                             | 6.23  |
|                                 | 3  | .467   | .5124   | .0555   | 9.78  | 23 16.5                            | .2906  | 3 5.8                             | 6.14  |
|                                 | 4  | .476   | .5098   | .0571   | 9.83  | 23 17.0                            | .2913  | 3 1.7                             | 6.05  |
|                                 | 5  | .484   | .5072   | .0587   | 9.88  | 23 17.5                            | .2920  | 2 57.7                            | 5.95  |
|                                 | 6  | .493   | .5046   | .0603   | 9.93  | 23 18.0                            | .2926  | 2 53.7                            | 5.85  |
|                                 | 7  | +1.501 | —0.5019 | +0.0619 | 9.99  | 23 18.5                            | 1.2933 | 2 49.7                            | +5.75 |
|                                 | 8  | .510   | .4992   | .0635   | 10.04 | 23 18.9                            | .2939  | 2 45.7                            | 5.65  |
|                                 | 9  | .519   | .4965   | .0651   | 10.10 | 23 19.4                            | .2946  | 2 41.7                            | 5.55  |
|                                 | 10 | .528   | .4937   | .0667   | 10.15 | 23 19.9                            | .2952  | 2 37.7                            | 5.44  |
|                                 | 11 | .537   | .4909   | .0683   | 10.21 | 23 20.4                            | .2959  | 2 33.7                            | 5.33  |
|                                 | 12 | .546   | .4881   | .0699   | 10.26 | 23 20.8                            | .2965  | 2 29.8                            | 5.22  |
|                                 | 13 | .555   | .4852   | .0715   | 10.32 | 23 21.3                            | .2971  | 2 25.8                            | 5.11  |
|                                 | 14 | .565   | .4822   | .0730   | 10.38 | 23 21.8                            | .2977  | 2 21.9                            | 5.00  |
|                                 | 15 | .574   | .4793   | .0745   | 10.44 | 23 22.2                            | .2984  | 2 18.0                            | 4.89  |
|                                 | 16 | .584   | .4763   | .0760   | 10.50 | 23 22.7                            | .2990  | 2 14.0                            | 4.77  |
|                                 | 17 | +1.593 | —0.4733 | +0.0775 | 10.56 | 23 23.1                            | 1.2996 | 2 10.1                            | +4.65 |
|                                 | 18 | .603   | .4703   | .0789   | 10.62 | 23 23.5                            | .3002  | 2 6.2                             | 4.53  |
|                                 | 19 | .613   | .4672   | .0804   | 10.68 | 23 24.0                            | .3007  | 2 2.3                             | 4.41  |
|                                 | 20 | .623   | .4641   | .0818   | 10.75 | 23 24.4                            | .3013  | 1 58.4                            | 4.29  |
|                                 | 21 | .633   | .4610   | .0832   | 10.81 | 23 24.8                            | .3019  | 1 54.6                            | 4.17  |
|                                 | 22 | .643   | .4578   | .0846   | 10.87 | 23 25.2                            | .3024  | 1 50.7                            | 4.05  |
|                                 | 23 | .654   | .4546   | .0860   | 10.94 | 23 25.5                            | .3030  | 1 46.9                            | 3.92  |
|                                 | 24 | .664   | .4513   | .0873   | 11.00 | 23 25.9                            | .3035  | 1 43.0                            | 3.79  |
|                                 | 25 | .674   | .4480   | .0886   | 11.07 | 23 26.3                            | .3040  | 1 39.2                            | 3.66  |
|                                 | 26 | .684   | .4447   | .0898   | 11.13 | 23 26.6                            | .3045  | 1 35.3                            | 3.53  |
| Dezbr.                          | 27 | +1.695 | —0.4414 | +0.0910 | 11.20 | 23 27.0                            | 1.3050 | 1 31.5                            | +3.40 |
|                                 | 28 | .705   | .4380   | .0922   | 11.27 | 23 27.3                            | .3055  | 1 27.7                            | 3.27  |
|                                 | 29 | .716   | .4346   | .0933   | 11.34 | 23 27.6                            | .3059  | 1 23.9                            | 3.14  |
|                                 | 30 | .727   | .4311   | .0944   | 11.41 | 23 27.9                            | .3064  | 1 20.0                            | 3.01  |
|                                 | 1  | .738   | .4277   | .0955   | 11.48 | 23 28.2                            | .3068  | 1 16.2                            | 2.87  |
|                                 | 2  | .749   | .4242   | .0965   | 11.55 | 23 28.5                            | .3072  | 1 12.4                            | 2.74  |
|                                 | 3  | .760   | .4207   | .0975   | 11.62 | 23 28.8                            | .3076  | 1 8.7                             | 2.60  |
|                                 | 4  | .771   | .4172   | .0984   | 11.69 | 23 29.0                            | .3079  | 1 4.9                             | 2.46  |
|                                 | 5  | .782   | .4137   | .0993   | 11.76 | 23 29.3                            | .3083  | 1 1.1                             | 2.33  |
|                                 | 6  | .793   | .4101   | .1001   | 11.83 | 23 29.5                            | .3086  | 0 57.3                            | 2.19  |
|                                 | 7  | +1.804 | —0.4065 | +0.1009 | 11.90 | 23 29.7                            | 1.3089 | 0 53.6                            | +2.05 |
|                                 | 8  | .815   | .4029   | .1017   | 11.97 | 23 29.9                            | .3092  | 0 49.8                            | 1.91  |
|                                 | 9  | .826   | .3993   | .1024   | 12.05 | 23 30.1                            | .3095  | 0 46.0                            | 1.77  |
|                                 | 10 | .838   | .3956   | .1030   | 12.12 | 23 30.3                            | .3097  | 0 42.3                            | 1.62  |
|                                 | 11 | .849   | .3919   | .1036   | 12.19 | 23 30.5                            | .3100  | 0 38.5                            | 1.48  |
|                                 | 12 | .860   | .3882   | .1041   | 12.27 | 23 30.6                            | .3102  | 0 34.8                            | 1.34  |
|                                 | 13 | .872   | .3845   | .1046   | 12.34 | 23 30.8                            | .3104  | 0 31.0                            | 1.20  |
|                                 | 14 | .883   | .3808   | .1050   | 12.42 | 23 30.9                            | .3105  | 0 27.3                            | 1.05  |
|                                 | 15 | .895   | .3771   | .1054   | 12.49 | 23 31.0                            | .3107  | 0 23.5                            | 0.91  |
|                                 | 16 | .906   | .3734   | .1057   | 12.57 | 23 31.1                            | .3108  | 0 19.8                            | 0.77  |

## 1834

| 12 <sup>h</sup><br>M. Z. Berlin |    | f       | x       | y       | g     | G                                 | log h  | H                                | i     |
|---------------------------------|----|---------|---------|---------|-------|-----------------------------------|--------|----------------------------------|-------|
| Dezbr.                          | 17 | +1.8918 | —0.3697 | +0.1060 | 12.64 | 23 <sup>h</sup> 31 <sup>m</sup> 2 | 1.3109 | 0 <sup>h</sup> 16 <sup>m</sup> 0 | +0.62 |
|                                 | 18 | .929    | .3659   | .1062   | 12.72 | 23 31.2                           | .3110  | 0 12.3                           | 0.48  |
|                                 | 19 | .941    | .3621   | .1064   | 12.79 | 23 31.3                           | .3111  | 0 8.6                            | 0.33  |
|                                 | 20 | .953    | .3583   | .1065   | 12.87 | 23 31.3                           | .3111  | 0 4.8                            | 0.19  |
|                                 | 21 | .964    | .3545   | .1065   | 12.94 | 23 31.3                           | .3111  | 0 1.1                            | +0.04 |
|                                 | 22 | .976    | .3507   | .1065   | 13.02 | 23 31.4                           | .3111  | 23 57.4                          | —0.10 |
|                                 | 23 | .987    | .3469   | .1064   | 13.10 | 23 31.4                           | .3111  | 23 53.6                          | 0.25  |
|                                 | 24 | 1.999   | .3431   | .1063   | 13.17 | 23 31.4                           | .3110  | 23 49.9                          | 0.39  |
|                                 | 25 | 2.010   | .3393   | .1061   | 13.25 | 23 31.4                           | .3110  | 23 46.1                          | 0.54  |
|                                 | 26 | .022    | .3355   | .1059   | 13.32 | 23 31.3                           | .3109  | 23 42.4                          | 0.68  |
|                                 | 27 | +2.034  | —0.3317 | +0.1056 | 13.40 | 23 31.3                           | 1.3108 | 23 38.6                          | —0.83 |
|                                 | 28 | .045    | .3279   | .1053   | 13.48 | 23 31.2                           | .3106  | 23 34.9                          | 0.97  |
|                                 | 29 | .057    | .3241   | .1049   | 13.55 | 23 31.2                           | .3105  | 23 31.1                          | 1.11  |
|                                 | 30 | .068    | .3204   | .1045   | 13.63 | 23 31.1                           | .3103  | 23 27.4                          | 1.26  |
|                                 | 31 | .079    | .3167   | .1041   | 13.71 | 23 31.0                           | .3101  | 23 23.6                          | 1.40  |

## 1835

|        |    |         |         |         |      |                                  |        |                                   |       |
|--------|----|---------|---------|---------|------|----------------------------------|--------|-----------------------------------|-------|
| Januar | 1  | —0.8980 | —0.6701 | +0.1033 | 6.62 | 13 <sup>h</sup> 1 <sup>m</sup> 1 | 1.3099 | 23 <sup>h</sup> 10 <sup>m</sup> 9 | —1.54 |
|        | 2  | .969    | .6734   | .1027   | 6.55 | 13 2.3                           | .3096  | 23 16.1                           | 1.68  |
|        | 3  | .958    | .6767   | .1021   | 6.48 | 13 3.6                           | .3094  | 23 12.4                           | 1.82  |
|        | 4  | .946    | .6800   | .1014   | 6.42 | 13 4.9                           | .3091  | 23 8.6                            | 1.97  |
|        | 5  | .935    | .6833   | .1006   | 6.35 | 13 6.2                           | .3088  | 23 4.8                            | 2.11  |
|        | 6  | .924    | .6865   | .0998   | 6.29 | 13 7.6                           | .3085  | 23 1.0                            | 2.25  |
|        | 7  | .912    | .6897   | .0990   | 6.22 | 13 9.1                           | .3082  | 22 57.2                           | 2.38  |
|        | 8  | .901    | .6929   | .0981   | 6.16 | 13 10.6                          | .3078  | 22 53.4                           | 2.52  |
|        | 9  | .890    | .6960   | .0971   | 6.10 | 13 12.1                          | .3074  | 22 49.6                           | 2.66  |
|        | 10 | .879    | .6990   | .0961   | 6.04 | 13 13.7                          | .3070  | 22 45.8                           | 2.80  |
|        | 11 | —0.869  | —0.7020 | +0.0951 | 5.97 | 13 15.4                          | 1.3066 | 22 42.0                           | —2.93 |
|        | 12 | .858    | .7050   | .0940   | 5.91 | 13 17.0                          | .3062  | 22 38.2                           | 3.07  |
|        | 13 | .847    | .7079   | .0928   | 5.85 | 13 18.7                          | .3057  | 22 34.4                           | 3.20  |
|        | 14 | .836    | .7108   | .0916   | 5.80 | 13 20.5                          | .3053  | 22 30.5                           | 3.33  |
|        | 15 | .826    | .7137   | .0904   | 5.74 | 13 22.3                          | .3048  | 22 26.7                           | 3.46  |
|        | 16 | .815    | .7165   | .0892   | 5.68 | 13 24.2                          | .3043  | 22 22.8                           | 3.60  |
|        | 17 | .805    | .7193   | .0880   | 5.63 | 13 26.1                          | .3038  | 22 19.0                           | 3.73  |
|        | 18 | .794    | .7220   | .0867   | 5.57 | 13 28.1                          | .3033  | 22 15.1                           | 3.85  |
|        | 19 | .784    | .7246   | .0854   | 5.52 | 13 30.1                          | .3027  | 22 11.2                           | 3.98  |
|        | 20 | .774    | .7272   | .0840   | 5.47 | 13 32.1                          | .3022  | 22 7.3                            | 4.11  |
|        | 21 | —0.764  | —0.7297 | +0.0826 | 5.42 | 13 34.2                          | 1.3016 | 22 3.5                            | —4.23 |
|        | 22 | .753    | .7322   | .0811   | 5.37 | 13 36.3                          | .3010  | 21 59.6                           | 4.35  |
|        | 23 | .743    | .7346   | .0797   | 5.32 | 13 38.5                          | .3005  | 21 55.6                           | 4.48  |
|        | 24 | .734    | .7370   | .0782   | 5.27 | 13 40.7                          | .2999  | 21 51.7                           | 4.60  |
|        | 25 | .724    | .7393   | .0767   | 5.23 | 13 43.0                          | .2993  | 21 47.8                           | 4.72  |
|        | 26 | .714    | .7416   | .0752   | 5.18 | 13 45.3                          | .2987  | 21 43.8                           | 4.83  |
|        | 27 | .705    | .7438   | .0737   | 5.14 | 13 47.6                          | .2980  | 21 39.9                           | 4.95  |
|        | 28 | .695    | .7459   | .0721   | 5.10 | 13 49.9                          | .2974  | 21 35.9                           | 5.06  |
|        | 29 | .686    | .7480   | .0706   | 5.05 | 13 52.3                          | .2968  | 21 31.9                           | 5.18  |
|        | 30 | .676    | .7500   | .0690   | 5.01 | 13 54.7                          | .2961  | 21 28.0                           | 5.29  |

## 1835

| <sup>12h</sup><br>M. Z. Berlin | f      | x       | y       | g    | G                                 | log h  | H                                 | i     |
|--------------------------------|--------|---------|---------|------|-----------------------------------|--------|-----------------------------------|-------|
| Januar 31                      | —0.667 | —0.7519 | +0.0674 | 4.97 | 13 <sup>h</sup> 57 <sup>m</sup> 2 | 1.2955 | 21 <sup>h</sup> 24 <sup>m</sup> 0 | —5.40 |
| Februar 1                      | .658   | .7538   | .0658   | 4.94 | 13 59.7                           | .2948  | 21 20.0                           | 5.50  |
| 2                              | .649   | .7556   | .0641   | 4.90 | 14 2.2                            | .2942  | 21 16.0                           | 5.61  |
| 3                              | .640   | .7574   | .0625   | 4.86 | 14 4.7                            | .2935  | 21 11.9                           | 5.71  |
| 4                              | .631   | .7591   | .0609   | 4.83 | 14 7.2                            | .2928  | 21 7.9                            | 5.81  |
| 5                              | .622   | .7608   | .0593   | 4.80 | 14 9.8                            | .2922  | 21 3.8                            | 5.91  |
| 6                              | .614   | .7624   | .0577   | 4.76 | 14 12.3                           | .2915  | 20 59.8                           | 6.01  |
| 7                              | .605   | .7639   | .0561   | 4.73 | 14 14.9                           | .2909  | 20 55.7                           | 6.11  |
| 8                              | .597   | .7654   | .0545   | 4.70 | 14 17.5                           | .2902  | 20 51.6                           | 6.20  |
| 9                              | .589   | .7669   | .0529   | 4.67 | 14 20.1                           | .2895  | 20 47.5                           | 6.29  |
| 10                             | —0.580 | —0.7683 | +0.0513 | 4.65 | 14 22.7                           | 1.2889 | 20 43.4                           | —6.38 |
| 11                             | .572   | .7696   | .0497   | 4.62 | 14 25.4                           | .2882  | 20 39.3                           | 6.47  |
| 12                             | .564   | .7709   | .0481   | 4.59 | 14 28.0                           | .2876  | 20 35.2                           | 6.56  |
| 13                             | .556   | .7722   | .0466   | 4.57 | 14 30.6                           | .2870  | 20 31.0                           | 6.64  |
| 14                             | .548   | .7734   | .0451   | 4.54 | 14 33.3                           | .2863  | 20 26.9                           | 6.73  |
| 15                             | .541   | .7745   | .0436   | 4.52 | 14 35.9                           | .2857  | 20 22.7                           | 6.81  |
| 16                             | .533   | .7756   | .0421   | 4.50 | 14 38.5                           | .2851  | 20 18.6                           | 6.88  |
| 17                             | .526   | .7767   | .0406   | 4.48 | 14 41.2                           | .2845  | 20 14.4                           | 6.96  |
| 18                             | .518   | .7777   | .0392   | 4.46 | 14 43.8                           | .2839  | 20 10.2                           | 7.03  |
| 19                             | .511   | .7787   | .0378   | 4.44 | 14 46.4                           | .2833  | 20 6.0                            | 7.10  |
| 20                             | —0.503 | —0.7797 | +0.0364 | 4.42 | 14 49.0                           | 1.2827 | 20 1.8                            | —7.17 |
| 21                             | .496   | .7806   | .0350   | 4.40 | 14 51.6                           | .2821  | 19 57.6                           | 7.24  |
| 22                             | .489   | .7815   | .0337   | 4.38 | 14 54.2                           | .2815  | 19 53.4                           | 7.30  |
| 23                             | .482   | .7823   | .0324   | 4.36 | 14 56.8                           | .2810  | 19 49.1                           | 7.37  |
| 24                             | .475   | .7832   | .0311   | 4.35 | 14 59.3                           | .2805  | 19 44.9                           | 7.43  |
| 25                             | .468   | .7840   | .0298   | 4.33 | 15 1.9                            | .2799  | 19 40.6                           | 7.48  |
| 26                             | .461   | .7848   | .0286   | 4.31 | 15 4.4                            | .2794  | 19 36.4                           | 7.54  |
| 27                             | .454   | .7855   | .0275   | 4.30 | 15 6.9                            | .2790  | 19 32.1                           | 7.59  |
| 28                             | .447   | .7863   | .0264   | 4.29 | 15 9.4                            | .2785  | 19 27.8                           | 7.64  |
| März 1                         | .441   | .7870   | .0254   | 4.27 | 15 11.9                           | .2780  | 19 23.6                           | 7.69  |
| 2                              | —0.434 | —0.7877 | +0.0244 | 4.26 | 15 14.3                           | 1.2776 | 19 19.3                           | —7.74 |
| 3                              | .427   | .7884   | .0234   | 4.24 | 15 16.8                           | .2772  | 19 15.0                           | 7.78  |
| 4                              | .421   | .7891   | .0225   | 4.23 | 15 19.2                           | .2768  | 19 10.7                           | 7.82  |
| 5                              | .415   | .7897   | .0216   | 4.22 | 15 21.6                           | .2765  | 19 6.4                            | 7.86  |
| 6                              | .408   | .7904   | .0208   | 4.20 | 15 24.0                           | .2761  | 19 2.1                            | 7.90  |
| 7                              | .402   | .7910   | .0201   | 4.19 | 15 26.3                           | .2758  | 18 57.8                           | 7.93  |
| 8                              | .396   | .7916   | .0194   | 4.18 | 15 28.6                           | .2755  | 18 53.5                           | 7.96  |
| 9                              | .389   | .7922   | .0187   | 4.17 | 15 31.0                           | .2752  | 18 49.1                           | 7.99  |
| 10                             | .383   | .7929   | .0181   | 4.15 | 15 33.3                           | .2749  | 18 44.8                           | 8.02  |
| 11                             | .377   | .7935   | .0175   | 4.14 | 15 35.6                           | .2747  | 18 40.5                           | 8.04  |
| 12                             | —0.371 | —0.7941 | +0.0170 | 4.13 | 15 37.8                           | 1.2745 | 18 36.2                           | —8.06 |
| 13                             | .364   | .7947   | .0165   | 4.12 | 15 40.1                           | .2743  | 18 31.8                           | 8.08  |
| 14                             | .358   | .7953   | .0161   | 4.10 | 15 42.3                           | .2741  | 18 27.5                           | 8.10  |
| 15                             | .352   | .7959   | .0158   | 4.09 | 15 44.5                           | .2740  | 18 23.2                           | 8.11  |
| 16                             | .346   | .7965   | .0155   | 4.08 | 15 46.8                           | .2739  | 18 18.8                           | 8.12  |
| 17                             | .340   | .7971   | .0153   | 4.07 | 15 49.0                           | .2738  | 18 14.5                           | 8.13  |
| 18                             | .334   | .7977   | .0151   | 4.05 | 15 51.2                           | .2737  | 18 10.2                           | 8.14  |
| 19                             | .328   | .7984   | .0150   | 4.04 | 15 53.4                           | .2736  | 18 5.8                            | 8.15  |
| 20                             | .322   | .7991   | .0150   | 4.03 | 15 55.5                           | .2736  | 18 1.5                            | 8.15  |
| 21                             | .316   | .7998   | .0150   | 4.01 | 15 57.7                           | .2736  | 17 57.2                           | 8.15  |

## 1835

| <sup>12h</sup><br>M. Z. Berlin |    | f      | x       | y       | g    | G                                 | log h  | H                                 | i     |
|--------------------------------|----|--------|---------|---------|------|-----------------------------------|--------|-----------------------------------|-------|
| März                           | 22 | —0.310 | —0.8005 | +0.0151 | 4.00 | 15 <sup>h</sup> 59 <sup>m</sup> 9 | 1.2737 | 17 <sup>h</sup> 52 <sup>m</sup> 9 | —8.15 |
|                                | 23 | .304   | .8012   | .0152   | 3.99 | 16 2.0                            | .2737  | 17 48.5                           | 8.14  |
|                                | 24 | .297   | .8019   | .0154   | 3.97 | 16 4.2                            | .2738  | 17 44.2                           | 8.13  |
|                                | 25 | .291   | .8026   | .0156   | 3.96 | 16 6.3                            | .2739  | 17 39.9                           | 8.12  |
|                                | 26 | .285   | .8033   | .0159   | 3.94 | 16 8.5                            | .2740  | 17 35.6                           | 8.11  |
|                                | 27 | .279   | .8041   | .0163   | 3.93 | 16 10.7                           | .2742  | 17 31.3                           | 8.09  |
|                                | 28 | .273   | .8048   | .0167   | 3.91 | 16 12.9                           | .2743  | 17 27.0                           | 8.08  |
|                                | 29 | .267   | .8056   | .0171   | 3.90 | 16 15.1                           | .2745  | 17 22.7                           | 8.06  |
|                                | 30 | .261   | .8064   | .0176   | 3.88 | 16 17.3                           | .2747  | 17 18.4                           | 8.04  |
|                                | 31 | .255   | .8072   | .0181   | 3.87 | 16 19.5                           | .2750  | 17 14.2                           | 8.01  |
| April                          | 1  | —0.248 | —0.8080 | +0.0187 | 3.85 | 16 21.7                           | 1.2752 | 17 9.9                            | —7.99 |
|                                | 2  | .242   | .8088   | .0194   | 3.83 | 16 24.0                           | .2755  | 17 5.7                            | 7.96  |
|                                | 3  | .236   | .8096   | .0201   | 3.82 | 16 26.2                           | .2758  | 17 1.4                            | 7.93  |
|                                | 4  | .229   | .8105   | .0209   | 3.80 | 16 28.5                           | .2762  | 16 57.2                           | 7.89  |
|                                | 5  | .223   | .8113   | .0217   | 3.78 | 16 30.8                           | .2765  | 16 52.9                           | 7.86  |
|                                | 6  | .217   | .8122   | .0226   | 3.76 | 16 33.1                           | .2769  | 16 48.7                           | 7.82  |
|                                | 7  | .210   | .8131   | .0235   | 3.75 | 16 35.5                           | .2773  | 16 44.5                           | 7.78  |
|                                | 8  | .203   | .8140   | .0245   | 3.73 | 16 37.8                           | .2777  | 16 40.3                           | 7.73  |
|                                | 9  | .197   | .8149   | .0255   | 3.71 | 16 40.3                           | .2781  | 16 36.1                           | 7.69  |
|                                | 10 | .190   | .8158   | .0265   | 3.69 | 16 42.7                           | .2785  | 16 31.9                           | 7.64  |
|                                | 11 | —0.183 | —0.8167 | +0.0276 | 3.67 | 16 45.2                           | 1.2790 | 16 27.7                           | —7.59 |
|                                | 12 | .177   | .8177   | .0287   | 3.66 | 16 47.7                           | .2795  | 16 23.6                           | 7.54  |
|                                | 13 | .170   | .8186   | .0298   | 3.64 | 16 50.3                           | .2799  | 16 19.4                           | 7.48  |
|                                | 14 | .163   | .8196   | .0310   | 3.62 | 16 52.9                           | .2804  | 16 15.3                           | 7.43  |
|                                | 15 | .156   | .8205   | .0322   | 3.60 | 16 55.6                           | .2809  | 16 11.1                           | 7.37  |
|                                | 16 | .149   | .8215   | .0334   | 3.58 | 16 58.2                           | .2815  | 16 7.0                            | 7.31  |
|                                | 17 | .142   | .8224   | .0347   | 3.56 | 17 1.0                            | .2820  | 16 2.9                            | 7.25  |
|                                | 18 | .135   | .8233   | .0360   | 3.54 | 17 3.8                            | .2825  | 15 58.8                           | 7.18  |
|                                | 19 | .127   | .8243   | .0373   | 3.52 | 17 6.7                            | .2831  | 15 54.8                           | 7.12  |
|                                | 20 | .120   | .8252   | .0387   | 3.51 | 17 9.6                            | .2837  | 15 50.7                           | 7.05  |
|                                | 21 | —0.112 | —0.8261 | +0.0401 | 3.49 | 17 12.6                           | 1.2842 | 15 46.6                           | —6.98 |
|                                | 22 | .105   | .8270   | .0415   | 3.47 | 17 15.7                           | .2848  | 15 42.6                           | 6.91  |
|                                | 23 | .097   | .8279   | .0429   | 3.45 | 17 18.8                           | .2854  | 15 38.6                           | 6.83  |
|                                | 24 | .090   | .8288   | .0444   | 3.43 | 17 22.0                           | .2861  | 15 34.6                           | 6.75  |
|                                | 25 | .082   | .8297   | .0459   | 3.42 | 17 25.3                           | .2867  | 15 30.6                           | 6.68  |
|                                | 26 | .074   | .8305   | .0474   | 3.40 | 17 28.6                           | .2873  | 15 26.6                           | 6.60  |
|                                | 27 | .066   | .8313   | .0489   | 3.38 | 17 32.0                           | .2879  | 15 22.6                           | 6.51  |
|                                | 28 | .058   | .8321   | .0504   | 3.37 | 17 35.4                           | .2886  | 15 18.6                           | 6.43  |
|                                | 29 | .050   | .8329   | .0519   | 3.35 | 17 38.9                           | .2892  | 15 14.7                           | 6.34  |
|                                | 30 | .042   | .8336   | .0535   | 3.34 | 17 42.5                           | .2898  | 15 10.8                           | 6.25  |
| Mai                            | 1  | —0.034 | —0.8343 | +0.0550 | 3.32 | 17 46.2                           | 1.2905 | 15 6.8                            | —6.17 |
|                                | 2  | .025   | .8349   | .0566   | 3.31 | 17 49.9                           | .2911  | 15 2.9                            | 6.08  |
|                                | 3  | .017   | .8355   | .0582   | 3.30 | 17 53.7                           | .2917  | 14 59.1                           | 5.98  |
|                                | 4  | —0.008 | .8361   | .0597   | 3.29 | 17 57.6                           | .2923  | 14 55.2                           | 5.89  |
|                                | 5  | 0.000  | .8366   | .0613   | 3.27 | 18 1.5                            | .2930  | 14 51.3                           | 5.79  |
|                                | 6  | +0.009 | .8371   | .0628   | 3.26 | 18 5.4                            | .2936  | 14 47.5                           | 5.69  |
|                                | 7  | .017   | .8376   | .0643   | 3.26 | 18 9.4                            | .2942  | 14 43.6                           | 5.60  |
|                                | 8  | .026   | .8380   | .0658   | 3.25 | 18 13.5                           | .2948  | 14 39.8                           | 5.50  |
|                                | 9  | .035   | .8383   | .0673   | 3.24 | 18 17.7                           | .2955  | 14 36.0                           | 5.39  |
|                                | 10 | .044   | .8386   | .0688   | 3.24 | 18 21.9                           | .2961  | 14 32.2                           | 5.29  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                  | G                                  | log h  | H                                  | i                   |
|---------------------------------|----|----------------------|---------|---------|--------------------|------------------------------------|--------|------------------------------------|---------------------|
| Mai                             | 11 | +0. <sup>s</sup> 053 | —0.8388 | +0.0703 | 3. <sup>"</sup> 23 | 18 <sup>h</sup> 26 <sup>m</sup> .2 | 1.2967 | 14 <sup>h</sup> 28 <sup>m</sup> .4 | —5. <sup>"</sup> 19 |
|                                 | 12 | .063                 | .8389   | .0718   | 3.23               | 18 30.5                            | .2973  | 14 24.6                            | 5.08                |
|                                 | 13 | .072                 | .8390   | .0733   | 3.23               | 18 34.9                            | .2979  | 14 20.9                            | 4.97                |
|                                 | 14 | .081                 | .8390   | .0747   | 3.23               | 18 39.4                            | .2985  | 14 17.1                            | 4.86                |
|                                 | 15 | .091                 | .8389   | .0762   | 3.23               | 18 43.8                            | .2991  | 14 13.4                            | 4.75                |
|                                 | 16 | .100                 | .8387   | .0776   | 3.23               | 18 48.3                            | .2996  | 14 9.6                             | 4.64                |
|                                 | 17 | .110                 | .8385   | .0790   | 3.24               | 18 52.8                            | .3002  | 14 5.9                             | 4.52                |
|                                 | 18 | .120                 | .8382   | .0804   | 3.24               | 18 57.3                            | .3008  | 14 2.2                             | 4.41                |
|                                 | 19 | .129                 | .8378   | .0818   | 3.25               | 19 1.7                             | .3013  | 13 58.5                            | 4.30                |
|                                 | 20 | .139                 | .8373   | .0831   | 3.26               | 19 6.2                             | .3018  | 13 54.8                            | 4.18                |
|                                 | 21 | +0.149               | —0.8367 | +0.0844 | 3.27               | 19 10.8                            | 1.3024 | 13 51.1                            | —4.06               |
|                                 | 22 | .159                 | .8361   | .0857   | 3.29               | 19 15.3                            | .3029  | 13 47.5                            | 3.94                |
|                                 | 23 | .169                 | .8354   | .0870   | 3.30               | 19 19.8                            | .3034  | 13 43.8                            | 3.82                |
|                                 | 24 | .179                 | .8346   | .0882   | 3.32               | 19 24.2                            | .3039  | 13 40.2                            | 3.70                |
|                                 | 25 | .190                 | .8337   | .0894   | 3.34               | 19 28.7                            | .3044  | 13 36.6                            | 3.58                |
|                                 | 26 | .200                 | .8327   | .0906   | 3.36               | 19 33.1                            | .3048  | 13 32.9                            | 3.45                |
|                                 | 27 | .210                 | .8316   | .0917   | 3.38               | 19 37.4                            | .3053  | 13 29.3                            | 3.33                |
|                                 | 28 | .221                 | .8304   | .0928   | 3.40               | 19 41.7                            | .3057  | 13 25.7                            | 3.21                |
|                                 | 29 | .231                 | .8292   | .0939   | 3.42               | 19 46.0                            | .3061  | 13 22.1                            | 3.08                |
|                                 | 30 | .242                 | .8279   | .0949   | 3.45               | 19 50.3                            | .3066  | 13 18.5                            | 2.95                |
| Juni                            | 31 | +0.252               | —0.8265 | +0.0959 | 3.48               | 19 54.5                            | 1.3070 | 13 14.9                            | —2.83               |
|                                 | 1  | .263                 | .8250   | .0969   | 3.51               | 19 58.6                            | .3073  | 13 11.3                            | 2.70                |
|                                 | 2  | .274                 | .8234   | .0978   | 3.54               | 20 2.6                             | .3077  | 13 7.8                             | 2.57                |
|                                 | 3  | .284                 | .8217   | .0986   | 3.57               | 20 6.6                             | .3080  | 13 4.2                             | 2.44                |
|                                 | 4  | .295                 | .8199   | .0994   | 3.61               | 20 10.5                            | .3083  | 13 0.6                             | 2.31                |
|                                 | 5  | .306                 | .8180   | .1002   | 3.65               | 20 14.3                            | .3086  | 12 57.1                            | 2.18                |
|                                 | 6  | .317                 | .8161   | .1009   | 3.69               | 20 18.0                            | .3089  | 12 53.5                            | 2.05                |
|                                 | 7  | .328                 | .8141   | .1016   | 3.73               | 20 21.7                            | .3092  | 12 50.0                            | 1.91                |
|                                 | 8  | .339                 | .8120   | .1023   | 3.77               | 20 25.2                            | .3095  | 12 46.5                            | 1.78                |
|                                 | 9  | .350                 | .8099   | .1029   | 3.81               | 20 28.7                            | .3097  | 12 42.9                            | 1.65                |
|                                 | 10 | +0.361               | —0.8077 | +0.1035 | 3.86               | 20 32.1                            | 1.3099 | 12 39.4                            | —1.52               |
|                                 | 11 | .372                 | .8054   | .1040   | 3.90               | 20 35.4                            | .3101  | 12 35.9                            | 1.38                |
|                                 | 12 | .383                 | .8030   | .1045   | 3.95               | 20 38.6                            | .3103  | 12 32.4                            | 1.25                |
|                                 | 13 | .394                 | .8006   | .1049   | 4.00               | 20 41.7                            | .3105  | 12 28.9                            | 1.11                |
|                                 | 14 | .405                 | .7981   | .1052   | 4.05               | 20 44.7                            | .3106  | 12 25.3                            | 0.98                |
|                                 | 15 | .416                 | .7956   | .1055   | 4.10               | 20 47.7                            | .3107  | 12 21.8                            | 0.84                |
|                                 | 16 | .428                 | .7930   | .1058   | 4.15               | 20 50.5                            | .3108  | 12 18.3                            | 0.71                |
|                                 | 17 | .439                 | .7903   | .1060   | 4.20               | 20 53.3                            | .3109  | 12 14.8                            | 0.57                |
|                                 | 18 | .450                 | .7876   | .1062   | 4.26               | 20 55.9                            | .3110  | 12 11.3                            | 0.44                |
|                                 | 19 | .461                 | .7848   | .1063   | 4.31               | 20 58.5                            | .3111  | 12 7.8                             | 0.30                |
|                                 | 20 | +0.473               | —0.7820 | +0.1064 | 4.37               | 21 1.0                             | 1.3111 | 12 4.3                             | —0.17               |
|                                 | 21 | .484                 | .7791   | .1065   | 4.43               | 21 3.4                             | .3111  | 12 0.8                             | —0.03               |
|                                 | 22 | .495                 | .7762   | .1065   | 4.49               | 21 5.7                             | .3111  | 11 57.3                            | +0.10               |
|                                 | 23 | .506                 | .7732   | .1065   | 4.55               | 21 8.0                             | .3111  | 11 53.8                            | 0.24                |
|                                 | 24 | .518                 | .7702   | .1064   | 4.61               | 21 10.1                            | .3111  | 11 50.3                            | 0.37                |
|                                 | 25 | .529                 | .7672   | .1062   | 4.67               | 21 12.2                            | .3110  | 11 46.8                            | 0.51                |
|                                 | 26 | .540                 | .7642   | .1060   | 4.73               | 21 14.2                            | .3109  | 11 43.3                            | 0.64                |
|                                 | 27 | .551                 | .7611   | .1057   | 4.79               | 21 16.1                            | .3108  | 11 39.8                            | 0.78                |
|                                 | 28 | .562                 | .7580   | .1054   | 4.85               | 21 18.0                            | .3107  | 11 36.3                            | 0.91                |
|                                 | 29 | .574                 | .7548   | .1050   | 4.92               | 21 19.8                            | .3105  | 11 32.8                            | 1.05                |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g    | G                                 | log h  | H                                 | i     |
|---------------------------------|----|--------|---------|---------|------|-----------------------------------|--------|-----------------------------------|-------|
| Juni                            | 30 | +0.585 | -0.7516 | +0.1046 | 4.98 | 21 <sup>h</sup> 21 <sup>m</sup> 5 | 1.3104 | 11 <sup>h</sup> 29 <sup>m</sup> 3 | +1.18 |
| Juli                            | 1  | .596   | .7483   | .1042   | 5.05 | 21 23.2                           | .3102  | 11 25.8                           | 1.32  |
|                                 | 2  | .607   | .7450   | .1037   | 5.11 | 21 24.8                           | .3100  | 11 22.3                           | 1.45  |
|                                 | 3  | .618   | .7418   | .1032   | 5.18 | 21 26.3                           | .3098  | 11 18.7                           | 1.59  |
|                                 | 4  | .629   | .7385   | .1026   | 5.24 | 21 27.7                           | .3096  | 11 15.2                           | 1.72  |
|                                 | 5  | .640   | .7352   | .1020   | 5.31 | 21 29.1                           | .3093  | 11 11.7                           | 1.85  |
|                                 | 6  | .651   | .7319   | .1013   | 5.37 | 21 30.4                           | .3091  | 11 8.2                            | 1.98  |
|                                 | 7  | .662   | .7286   | .1006   | 5.44 | 21 31.6                           | .3088  | 11 4.6                            | 2.12  |
|                                 | 8  | .673   | .7253   | .0998   | 5.51 | 21 32.8                           | .3085  | 11 1.1                            | 2.25  |
|                                 | 9  | .684   | .7219   | .0990   | 5.58 | 21 34.0                           | .3082  | 10 57.6                           | 2.38  |
|                                 | 10 | +0.695 | -0.7186 | +0.0982 | 5.64 | 21 35.1                           | 1.3078 | 10 54.0                           | +2.50 |
|                                 | 11 | .705   | .7152   | .0973   | 5.71 | 21 36.2                           | .3075  | 10 50.4                           | 2.63  |
|                                 | 12 | .716   | .7118   | .0964   | 5.78 | 21 37.2                           | .3071  | 10 46.9                           | 2.76  |
|                                 | 13 | .727   | .7084   | .0954   | 5.85 | 21 38.2                           | .3068  | 10 43.3                           | 2.89  |
|                                 | 14 | .737   | .7050   | .0944   | 5.92 | 21 39.1                           | .3063  | 10 39.7                           | 3.01  |
|                                 | 15 | .748   | .7016   | .0934   | 5.98 | 21 40.0                           | .3059  | 10 36.2                           | 3.14  |
|                                 | 16 | .758   | .6982   | .0923   | 6.05 | 21 40.8                           | .3055  | 10 32.6                           | 3.26  |
|                                 | 17 | .769   | .6948   | .0912   | 6.12 | 21 41.6                           | .3051  | 10 29.0                           | 3.39  |
|                                 | 18 | .779   | .6914   | .0901   | 6.19 | 21 42.4                           | .3046  | 10 25.4                           | 3.51  |
|                                 | 19 | .789   | .6881   | .0889   | 6.25 | 21 43.1                           | .3042  | 10 21.8                           | 3.63  |
|                                 | 20 | +0.799 | -0.6847 | +0.0877 | 6.32 | 21 43.8                           | 1.3037 | 10 18.1                           | +3.75 |
|                                 | 21 | .810   | .6814   | .0864   | 6.39 | 21 44.4                           | .3032  | 10 14.5                           | 3.87  |
|                                 | 22 | .820   | .6780   | .0852   | 6.46 | 21 45.0                           | .3027  | 10 10.9                           | 3.99  |
|                                 | 23 | .830   | .6747   | .0839   | 6.52 | 21 45.6                           | .3022  | 10 7.2                            | 4.11  |
|                                 | 24 | .840   | .6713   | .0826   | 6.59 | 21 46.2                           | .3016  | 10 3.6                            | 4.23  |
|                                 | 25 | .850   | .6680   | .0812   | 6.66 | 21 46.7                           | .3011  | 9 59.9                            | 4.35  |
|                                 | 26 | .859   | .6647   | .0799   | 6.72 | 21 47.2                           | .3005  | 9 56.2                            | 4.46  |
|                                 | 27 | .869   | .6614   | .0785   | 6.79 | 21 47.7                           | .3000  | 9 52.5                            | 4.57  |
|                                 | 28 | .879   | .6581   | .0771   | 6.86 | 21 48.2                           | .2994  | 9 48.8                            | 4.68  |
|                                 | 29 | .888   | .6548   | .0757   | 6.92 | 21 48.6                           | .2989  | 9 45.1                            | 4.79  |
|                                 | 30 | +0.897 | -0.6515 | +0.0743 | 6.99 | 21 49.0                           | 1.2983 | 9 41.4                            | +4.90 |
| August                          | 31 | .907   | .6482   | .0729   | 7.05 | 21 49.4                           | .2977  | 9 37.7                            | 5.01  |
|                                 | 1  | .916   | .6450   | .0714   | 7.12 | 21 49.7                           | .2971  | 9 33.9                            | 5.12  |
|                                 | 2  | .926   | .6418   | .0699   | 7.18 | 21 50.1                           | .2965  | 9 30.2                            | 5.22  |
|                                 | 3  | .935   | .6386   | .0684   | 7.25 | 21 50.4                           | .2959  | 9 26.4                            | 5.33  |
|                                 | 4  | .944   | .6354   | .0668   | 7.31 | 21 50.8                           | .2953  | 9 22.7                            | 5.43  |
|                                 | 5  | .953   | .6323   | .0653   | 7.37 | 21 51.1                           | .2947  | 9 18.9                            | 5.53  |
|                                 | 6  | .962   | .6292   | .0638   | 7.44 | 21 51.3                           | .2940  | 9 15.1                            | 5.63  |
|                                 | 7  | .970   | .6261   | .0623   | 7.50 | 21 51.6                           | .2934  | 9 11.3                            | 5.73  |
|                                 | 8  | .979   | .6230   | .0608   | 7.56 | 21 51.8                           | .2928  | 9 7.4                             | 5.82  |
|                                 | 9  | +0.988 | -0.6199 | +0.0592 | 7.62 | 21 52.1                           | 1.2922 | 9 3.6                             | +5.92 |
|                                 | 10 | 0.996  | .6168   | .0577   | 7.68 | 21 52.3                           | .2915  | 8 59.8                            | 6.01  |
|                                 | 11 | 1.005  | .6138   | .0562   | 7.74 | 21 52.5                           | .2909  | 8 55.9                            | 6.10  |
|                                 | 12 | .013   | .6108   | .0547   | 7.80 | 21 52.7                           | .2903  | 8 52.0                            | 6.19  |
|                                 | 13 | .021   | .6078   | .0531   | 7.86 | 21 52.9                           | .2896  | 8 48.1                            | 6.28  |
|                                 | 14 | .029   | .6049   | .0516   | 7.92 | 21 53.1                           | .2890  | 8 44.2                            | 6.37  |
|                                 | 15 | .037   | .6020   | .0501   | 7.98 | 21 53.3                           | .2884  | 8 40.3                            | 6.45  |
|                                 | 16 | .045   | .5991   | .0486   | 8.04 | 21 53.4                           | .2878  | 8 36.4                            | 6.53  |
|                                 | 17 | .053   | .5962   | .0471   | 8.10 | 21 53.6                           | .2872  | 8 32.5                            | 6.61  |
|                                 | 18 | .061   | .5934   | .0457   | 8.15 | 21 53.8                           | .2866  | 8 28.5                            | 6.69  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x                     | y                     | g                  | G                                  | log h                | H                                 | i                   |
|---------------------------------|----|----------------------|-----------------------|-----------------------|--------------------|------------------------------------|----------------------|-----------------------------------|---------------------|
| August                          | 19 | +1. <sup>s</sup> 069 | —0. <sup>s</sup> 5906 | +0. <sup>s</sup> 0442 | 8. <sup>s</sup> 21 | 21 <sup>h</sup> 53. <sup>m</sup> 9 | 1. <sup>s</sup> 2860 | 8 <sup>h</sup> 24. <sup>m</sup> 5 | +6. <sup>s</sup> 77 |
|                                 | 20 | .077                 | .5878                 | .0428                 | 8.26               | 21 54.1                            | .2854                | 8 20.6                            | 6.85                |
|                                 | 21 | .084                 | .5850                 | .0413                 | 8.32               | 21 54.2                            | .2848                | 8 16.6                            | 6.92                |
|                                 | 22 | .092                 | .5823                 | .0399                 | 8.37               | 21 54.3                            | .2842                | 8 12.6                            | 6.99                |
|                                 | 23 | .100                 | .5796                 | .0385                 | 8.43               | 21 54.5                            | .2836                | 8 8.6                             | 7.06                |
|                                 | 24 | .107                 | .5770                 | .0372                 | 8.48               | 21 54.6                            | .2830                | 8 4.5                             | 7.13                |
|                                 | 25 | .114                 | .5744                 | .0359                 | 8.53               | 21 54.8                            | .2825                | 8 0.5                             | 7.19                |
|                                 | 26 | .122                 | .5718                 | .0346                 | 8.59               | 21 54.9                            | .2819                | 7 56.4                            | 7.26                |
|                                 | 27 | .129                 | .5692                 | .0333                 | 8.64               | 21 55.1                            | .2814                | 7 52.4                            | 7.32                |
|                                 | 28 | .136                 | .5667                 | .0321                 | 8.69               | 21 55.2                            | .2809                | 7 48.3                            | 7.38                |
|                                 | 29 | +1.143               | —0. <sup>s</sup> 5641 | +0. <sup>s</sup> 0309 | 8.74               | 21 55.4                            | 1. <sup>s</sup> 2804 | 7 44.2                            | +7.44               |
|                                 | 30 | .150                 | .5616                 | .0297                 | 8.79               | 21 55.5                            | .2799                | 7 40.1                            | 7.49                |
|                                 | 31 | .157                 | .5591                 | .0286                 | 8.84               | 21 55.7                            | .2794                | 7 36.0                            | 7.54                |
| Septbr.                         | 1  | .164                 | .5567                 | .0275                 | 8.89               | 21 55.8                            | .2789                | 7 31.9                            | 7.59                |
|                                 | 2  | .171                 | .5543                 | .0264                 | 8.94               | 21 56.0                            | .2785                | 7 27.8                            | 7.64                |
|                                 | 3  | .177                 | .5519                 | .0254                 | 8.98               | 21 56.1                            | .2781                | 7 23.6                            | 7.69                |
|                                 | 4  | .184                 | .5495                 | .0244                 | 9.03               | 21 56.3                            | .2777                | 7 19.5                            | 7.73                |
|                                 | 5  | .191                 | .5472                 | .0235                 | 9.08               | 21 56.5                            | .2773                | 7 15.3                            | 7.78                |
|                                 | 6  | .197                 | .5449                 | .0226                 | 9.12               | 21 56.6                            | .2769                | 7 11.2                            | 7.82                |
|                                 | 7  | .204                 | .5427                 | .0218                 | 9.17               | 21 56.8                            | .2765                | 7 7.0                             | 7.85                |
|                                 | 8  | +1.211               | —0. <sup>s</sup> 5404 | +0. <sup>s</sup> 0210 | 9.21               | 21 57.0                            | 1. <sup>s</sup> 2762 | 7 2.8                             | +7.89               |
|                                 | 9  | .217                 | .5382                 | .0202                 | 9.26               | 21 57.2                            | .2758                | 6 58.6                            | 7.92                |
|                                 | 10 | .223                 | .5360                 | .0195                 | 9.30               | 21 57.4                            | .2755                | 6 54.4                            | 7.95                |
|                                 | 11 | .230                 | .5339                 | .0188                 | 9.35               | 21 57.6                            | .2753                | 6 50.2                            | 7.98                |
|                                 | 12 | .236                 | .5317                 | .0182                 | 9.39               | 21 57.8                            | .2750                | 6 46.0                            | 8.01                |
|                                 | 13 | .243                 | .5296                 | .0176                 | 9.43               | 21 58.1                            | .2748                | 6 41.8                            | 8.04                |
|                                 | 14 | .249                 | .5275                 | .0171                 | 9.48               | 21 58.3                            | .2745                | 6 37.5                            | 8.06                |
|                                 | 15 | .255                 | .5254                 | .0167                 | 9.52               | 21 58.5                            | .2743                | 6 33.3                            | 8.08                |
|                                 | 16 | .261                 | .5233                 | .0163                 | 9.56               | 21 58.8                            | .2742                | 6 29.0                            | 8.09                |
|                                 | 17 | .268                 | .5213                 | .0160                 | 9.60               | 21 59.0                            | .2740                | 6 24.8                            | 8.11                |
|                                 | 18 | +1.274               | —0. <sup>s</sup> 5193 | +0. <sup>s</sup> 0157 | 9.64               | 21 59.3                            | 1. <sup>s</sup> 2739 | 6 20.5                            | +8.12               |
|                                 | 19 | .280                 | .5173                 | .0154                 | 9.68               | 21 59.6                            | .2738                | 6 16.3                            | 8.13                |
|                                 | 20 | .286                 | .5153                 | .0152                 | 9.72               | 21 59.9                            | .2737                | 6 12.0                            | 8.14                |
|                                 | 21 | .293                 | .5133                 | .0151                 | 9.76               | 22 0.2                             | .2737                | 6 7.7                             | 8.15                |
|                                 | 22 | .299                 | .5113                 | .0150                 | 9.80               | 22 0.5                             | .2736                | 6 3.5                             | 8.15                |
|                                 | 23 | .305                 | .5094                 | .0150                 | 9.84               | 22 0.8                             | .2736                | 5 59.2                            | 8.15                |
|                                 | 24 | .311                 | .5075                 | .0150                 | 9.88               | 22 1.1                             | .2736                | 5 54.9                            | 8.15                |
|                                 | 25 | .317                 | .5056                 | .0151                 | 9.91               | 22 1.5                             | .2737                | 5 50.6                            | 8.14                |
|                                 | 26 | .323                 | .5037                 | .0152                 | 9.95               | 22 1.8                             | .2737                | 5 46.4                            | 8.14                |
|                                 | 27 | .330                 | .5018                 | .0154                 | 9.99               | 22 2.2                             | .2738                | 5 42.1                            | 8.13                |
|                                 | 28 | +1.336               | —0. <sup>s</sup> 4999 | +0. <sup>s</sup> 0157 | 10.03              | 22 2.6                             | 1. <sup>s</sup> 2739 | 5 37.8                            | +8.12               |
|                                 | 29 | .342                 | .4980                 | .0160                 | 10.06              | 22 2.9                             | .2741                | 5 33.5                            | 8.10                |
|                                 | 30 | .348                 | .4961                 | .0164                 | 10.10              | 22 3.3                             | .2742                | 5 29.2                            | 8.09                |
| Oktbr.                          | 1  | .355                 | .4943                 | .0169                 | 10.14              | 22 3.7                             | .2744                | 5 25.0                            | 8.07                |
|                                 | 2  | .361                 | .4924                 | .0174                 | 10.18              | 22 4.1                             | .2746                | 5 20.7                            | 8.05                |
|                                 | 3  | .367                 | .4906                 | .0179                 | 10.21              | 22 4.6                             | .2749                | 5 16.4                            | 8.02                |
|                                 | 4  | .374                 | .4887                 | .0185                 | 10.25              | 22 5.0                             | .2751                | 5 12.1                            | 8.00                |
|                                 | 5  | .380                 | .4869                 | .0192                 | 10.29              | 22 5.5                             | .2754                | 5 7.9                             | 7.97                |
|                                 | 6  | .387                 | .4851                 | .0199                 | 10.32              | 22 6.0                             | .2757                | 5 3.6                             | 7.94                |
|                                 | 7  | .393                 | .4833                 | .0206                 | 10.36              | 22 6.4                             | .2760                | 4 59.3                            | 7.91                |

## 1835

| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                | log h  | H                                | i     |
|---------------------------------|----|--------|---------|---------|-------|----------------------------------|--------|----------------------------------|-------|
| Oktbr.                          | 8  | +1.400 | -0.4815 | +0.0214 | 10.40 | 22 <sup>h</sup> 6 <sup>m</sup> 9 | 1.2763 | 4 <sup>h</sup> 55 <sup>m</sup> 1 | +7.87 |
|                                 | 9  | .406   | .4797   | .0222   | 10.43 | 22 7.4                           | .2767  | 4 50.8                           | 7.84  |
|                                 | 10 | .413   | .4778   | .0231   | 10.47 | 22 7.9                           | .2771  | 4 46.6                           | 7.80  |
|                                 | 11 | .420   | .4760   | .0240   | 10.51 | 22 8.4                           | .2775  | 4 42.3                           | 7.75  |
|                                 | 12 | .426   | .4741   | .0250   | 10.54 | 22 9.0                           | .2779  | 4 38.1                           | 7.71  |
|                                 | 13 | .433   | .4723   | .0260   | 10.58 | 22 9.5                           | .2783  | 4 33.8                           | 7.66  |
|                                 | 14 | .440   | .4704   | .0271   | 10.62 | 22 10.1                          | .2788  | 4 29.6                           | 7.61  |
|                                 | 15 | .447   | .4686   | .0282   | 10.66 | 22 10.6                          | .2793  | 4 25.4                           | 7.56  |
|                                 | 16 | .454   | .4667   | .0294   | 10.69 | 22 11.2                          | .2798  | 4 21.2                           | 7.51  |
|                                 | 17 | .461   | .4648   | .0306   | 10.73 | 22 11.8                          | .2803  | 4 17.0                           | 7.45  |
|                                 | 18 | +1.468 | -0.4629 | +0.0318 | 10.77 | 22 12.3                          | 1.2808 | 4 12.8                           | +7.39 |
|                                 | 19 | .476   | .4609   | .0331   | 10.81 | 22 12.9                          | .2813  | 4 8.6                            | 7.33  |
|                                 | 20 | .483   | .4590   | .0344   | 10.85 | 22 13.5                          | .2819  | 4 4.4                            | 7.27  |
|                                 | 21 | .490   | .4570   | .0358   | 10.89 | 22 14.2                          | .2824  | 4 0.2                            | 7.20  |
|                                 | 22 | .498   | .4550   | .0371   | 10.93 | 22 14.8                          | .2830  | 3 56.1                           | 7.14  |
|                                 | 23 | .505   | .4530   | .0385   | 10.97 | 22 15.4                          | .2836  | 3 51.9                           | 7.07  |
|                                 | 24 | .513   | .4510   | .0399   | 11.01 | 22 16.1                          | .2841  | 3 47.7                           | 7.00  |
|                                 | 25 | .521   | .4489   | .0414   | 11.05 | 22 16.7                          | .2847  | 3 43.6                           | 6.92  |
|                                 | 26 | .529   | .4468   | .0428   | 11.09 | 22 17.4                          | .2854  | 3 39.4                           | 6.85  |
|                                 | 27 | .536   | .4447   | .0443   | 11.13 | 22 18.0                          | .2860  | 3 35.3                           | 6.77  |
|                                 | 28 | +1.544 | -0.4426 | +0.0458 | 11.18 | 22 18.7                          | 1.2866 | 3 31.2                           | +6.69 |
|                                 | 29 | .552   | .4405   | .0473   | 11.22 | 22 19.4                          | .2872  | 3 27.1                           | 6.61  |
|                                 | 30 | .561   | .4383   | .0488   | 11.26 | 22 20.0                          | .2879  | 3 23.0                           | 6.52  |
|                                 | 31 | .569   | .4361   | .0504   | 11.31 | 22 20.7                          | .2885  | 3 18.9                           | 6.43  |
| Novbr.                          | 1  | .577   | .4339   | .0520   | 11.35 | 22 21.4                          | .2892  | 3 14.9                           | 6.35  |
|                                 | 2  | .586   | .4316   | .0536   | 11.40 | 22 22.1                          | .2898  | 3 10.8                           | 6.26  |
|                                 | 3  | .594   | .4293   | .0552   | 11.44 | 22 22.7                          | .2905  | 3 6.8                            | 6.16  |
|                                 | 4  | .603   | .4270   | .0568   | 11.49 | 22 23.4                          | .2911  | 3 2.7                            | 6.07  |
|                                 | 5  | .612   | .4247   | .0583   | 11.54 | 22 24.1                          | .2918  | 2 58.7                           | 5.97  |
|                                 | 6  | .620   | .4223   | .0599   | 11.58 | 22 24.8                          | .2924  | 2 54.6                           | 5.88  |
|                                 | 7  | +1.629 | -0.4199 | +0.0615 | 11.63 | 22 25.5                          | 1.2931 | 2 50.6                           | +5.78 |
|                                 | 8  | .638   | .4174   | .0631   | 11.68 | 22 26.1                          | .2938  | 2 46.6                           | 5.67  |
|                                 | 9  | .648   | .4149   | .0647   | 11.73 | 22 26.8                          | .2944  | 2 42.6                           | 5.57  |
|                                 | 10 | .657   | .4124   | .0663   | 11.78 | 22 27.5                          | .2951  | 2 38.7                           | 5.47  |
|                                 | 11 | .666   | .4098   | .0679   | 11.83 | 22 28.2                          | .2957  | 2 34.7                           | 5.36  |
|                                 | 12 | .676   | .4072   | .0695   | 11.89 | 22 28.8                          | .2963  | 2 30.7                           | 5.25  |
|                                 | 13 | .685   | .4046   | .0711   | 11.94 | 22 29.5                          | .2970  | 2 26.8                           | 5.14  |
|                                 | 14 | .695   | .4019   | .0726   | 11.99 | 22 30.2                          | .2976  | 2 22.9                           | 5.03  |
|                                 | 15 | .704   | .3992   | .0741   | 12.05 | 22 30.9                          | .2982  | 2 18.9                           | 4.91  |
|                                 | 16 | .714   | .3965   | .0756   | 12.10 | 22 31.5                          | .2988  | 2 15.0                           | 4.80  |
|                                 | 17 | +1.724 | -0.3937 | +0.0771 | 12.16 | 22 32.2                          | 1.2994 | 2 11.1                           | +4.68 |
|                                 | 18 | .734   | .3909   | .0786   | 12.21 | 22 32.8                          | .3000  | 2 7.2                            | 4.56  |
|                                 | 19 | .744   | .3881   | .0801   | 12.27 | 22 33.5                          | .3006  | 2 3.3                            | 4.44  |
|                                 | 20 | .754   | .3852   | .0815   | 12.33 | 22 34.1                          | .3012  | 1 59.4                           | 4.32  |
|                                 | 21 | .765   | .3823   | .0829   | 12.39 | 22 34.8                          | .3017  | 1 55.5                           | 4.20  |
|                                 | 22 | .775   | .3793   | .0843   | 12.45 | 22 35.4                          | .3023  | 1 51.7                           | 4.08  |
|                                 | 23 | .786   | .3763   | .0857   | 12.51 | 22 36.0                          | .3029  | 1 47.8                           | 3.95  |
|                                 | 24 | .796   | .3732   | .0870   | 12.57 | 22 36.6                          | .3034  | 1 43.9                           | 3.82  |
|                                 | 25 | .807   | .3701   | .0883   | 12.63 | 22 37.2                          | .3039  | 1 40.1                           | 3.70  |
|                                 | 26 | .817   | .3670   | .0896   | 12.69 | 22 37.8                          | .3044  | 1 36.3                           | 3.57  |

## 1835

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                   | x       | y       | g                  | G                                 | log h  | H                                | i                  |
|---------------------------------|----|---------------------|---------|---------|--------------------|-----------------------------------|--------|----------------------------------|--------------------|
| Novbr.                          | 27 | +1 <sup>s</sup> 828 | —0.3639 | +0.0908 | 12 <sup>"</sup> 76 | 22 <sup>h</sup> 38 <sup>m</sup> 4 | 1.3049 | 1 <sup>h</sup> 32 <sup>m</sup> 4 | +3 <sup>"</sup> 44 |
|                                 | 28 | .839                | .3607   | .0920   | 12.82              | 22 38.9                           | .3054  | 1 28.6                           | 3.30               |
|                                 | 29 | .850                | .3575   | .0931   | 12.88              | 22 39.5                           | .3058  | 1 24.8                           | 3.17               |
|                                 | 30 | .861                | .3542   | .0942   | 12.95              | 22 40.0                           | .3063  | 1 21.0                           | 3.04               |
| Dezbr.                          | 1  | .872                | .3509   | .0953   | 13.02              | 22 40.6                           | .3067  | 1 17.2                           | 2.90               |
|                                 | 2  | .883                | .3476   | .0963   | 13.08              | 22 41.1                           | .3071  | 1 13.4                           | 2.77               |
|                                 | 3  | .895                | .3443   | .0973   | 13.15              | 22 41.6                           | .3075  | 1 9.6                            | 2.63               |
|                                 | 4  | .906                | .3409   | .0982   | 13.22              | 22 42.1                           | .3079  | 1 5.8                            | 2.50               |
|                                 | 5  | .917                | .3375   | .0991   | 13.29              | 22 42.6                           | .3082  | 1 2.0                            | 2.36               |
|                                 | 6  | .929                | .3340   | .0999   | 13.35              | 22 43.1                           | .3085  | 0 58.2                           | 2.22               |
|                                 | 7  | +1.940              | —0.3305 | +0.1007 | 13.42              | 22 43.6                           | 1.3088 | 0 54.5                           | +2.08              |
|                                 | 8  | .952                | .3270   | .1014   | 13.49              | 22 44.0                           | .3091  | 0 50.7                           | 1.94               |
|                                 | 9  | .963                | .3235   | .1021   | 13.57              | 22 44.5                           | .3094  | 0 46.9                           | 1.80               |
|                                 | 10 | .975                | .3199   | .1028   | 13.64              | 22 44.9                           | .3097  | 0 43.2                           | 1.66               |
|                                 | 11 | .986                | .3163   | .1034   | 13.71              | 22 45.3                           | .3099  | 0 39.4                           | 1.52               |
|                                 | 12 | 1.998               | .3127   | .1039   | 13.78              | 22 45.7                           | .3101  | 0 35.7                           | 1.37               |
|                                 | 13 | 2.010               | .3091   | .1044   | 13.85              | 22 46.1                           | .3103  | 0 31.9                           | 1.23               |
|                                 | 14 | .021                | .3055   | .1049   | 13.93              | 22 46.5                           | .3105  | 0 28.2                           | 1.09               |
|                                 | 15 | .033                | .3018   | .1053   | 14.00              | 22 46.9                           | .3106  | 0 24.4                           | 0.95               |
|                                 | 16 | .045                | .2981   | .1057   | 14.07              | 22 47.2                           | .3108  | 0 20.7                           | 0.80               |
|                                 | 17 | +2.057              | —0.2944 | +0.1060 | 14.15              | 22 47.5                           | 1.3109 | 0 17.0                           | +0.66              |
|                                 | 18 | .069                | .2907   | .1062   | 14.22              | 22 47.9                           | .3110  | 0 13.2                           | 0.51               |
|                                 | 19 | .080                | .2870   | .1063   | 14.30              | 22 48.2                           | .3111  | 0 9.5                            | 0.37               |
|                                 | 20 | .092                | .2832   | .1064   | 14.37              | 22 48.5                           | .3111  | 0 5.7                            | 0.22               |
|                                 | 21 | .104                | .2794   | .1065   | 14.45              | 22 48.7                           | .3111  | 0 2.0                            | +0.08              |
|                                 | 22 | .116                | .2756   | .1065   | 14.52              | 22 49.0                           | .3111  | 23 58.3                          | —0.07              |
|                                 | 23 | .128                | .2718   | .1065   | 14.60              | 22 49.3                           | .3111  | 23 54.5                          | 0.21               |
|                                 | 24 | .140                | .2680   | .1064   | 14.68              | 22 49.5                           | .3111  | 23 50.8                          | 0.36               |
|                                 | 25 | .152                | .2642   | .1062   | 14.75              | 22 49.7                           | .3110  | 23 47.0                          | 0.50               |
|                                 | 26 | .164                | .2604   | .1060   | 14.83              | 22 50.0                           | .3109  | 23 43.3                          | 0.65               |
|                                 | 27 | +2.175              | —0.2566 | +0.1057 | 14.91              | 22 50.2                           | 1.3108 | 23 39.6                          | —0.79              |
|                                 | 28 | .187                | .2528   | .1054   | 14.98              | 22 50.3                           | .3107  | 23 35.8                          | 0.93               |
|                                 | 29 | .199                | .2490   | .1050   | 15.06              | 22 50.5                           | .3105  | 23 32.1                          | 1.08               |
|                                 | 30 | .211                | .2451   | .1046   | 15.14              | 22 50.7                           | .3104  | 23 28.3                          | 1.22               |
|                                 | 31 | .223                | .2412   | .1042   | 15.21              | 22 50.9                           | .3102  | 23 24.5                          | 1.36               |

## 1836

|        |    |                     |         |         |                   |                                   |        |                                   |                    |
|--------|----|---------------------|---------|---------|-------------------|-----------------------------------|--------|-----------------------------------|--------------------|
| Januar | 1  | —0 <sup>s</sup> 837 | —0.6465 | +0.1035 | 7 <sup>"</sup> 09 | 14 <sup>h</sup> 39 <sup>m</sup> 1 | 1.3099 | 23 <sup>h</sup> 20 <sup>m</sup> 8 | —1 <sup>"</sup> 51 |
|        | 2  | .825                | .6489   | .1029   | 7.04              | 14 41.1                           | .3097  | 23 17.0                           | 1.65               |
|        | 3  | .814                | .6513   | .1022   | 6.99              | 14 43.1                           | .3094  | 23 13.3                           | 1.79               |
|        | 4  | .802                | .6536   | .1015   | 6.94              | 14 45.1                           | .3092  | 23 9.5                            | 1.93               |
|        | 5  | .790                | .6559   | .1008   | 6.90              | 14 47.1                           | .3089  | 23 5.7                            | 2.07               |
|        | 6  | .779                | .6581   | .1000   | 6.86              | 14 49.2                           | .3086  | 23 1.9                            | 2.21               |
|        | 7  | .767                | .6602   | .0992   | 6.81              | 14 51.3                           | .3082  | 22 58.1                           | 2.35               |
|        | 8  | .756                | .6623   | .0983   | 6.77              | 14 53.5                           | .3079  | 22 54.4                           | 2.49               |
|        | 9  | .745                | .6643   | .0974   | 6.73              | 14 55.7                           | .3075  | 22 50.6                           | 2.63               |
|        | 10 | .733                | .6663   | .0964   | 6.69              | 14 57.9                           | .3071  | 22 46.7                           | 2.76               |

## 1836

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                 | G                                 | log h  | H                                  | i                   |
|---------------------------------|----|----------------------|---------|---------|-------------------|-----------------------------------|--------|------------------------------------|---------------------|
| Januar                          | 11 | —0. <sup>s</sup> 722 | —0.6682 | +0.0953 | 6 <sup>h</sup> 65 | 15 <sup>h</sup> 0 <sup>m</sup> .2 | 1.3067 | 22 <sup>h</sup> 42 <sup>m</sup> .9 | —2 <sup>h</sup> .90 |
|                                 | 12 | .711                 | .6700   | .0942   | 6.62              | 15 2.4                            | .3063  | 22 39.1                            | 3.03                |
|                                 | 13 | .700                 | .6718   | .0931   | 6.58              | 15 4.7                            | .3058  | 22 35.3                            | 3.17                |
|                                 | 14 | .689                 | .6735   | .0920   | 6.55              | 15 7.1                            | .3054  | 22 31.5                            | 3.30                |
|                                 | 15 | .678                 | .6751   | .0908   | 6.51              | 15 9.4                            | .3049  | 22 27.6                            | 3.43                |
|                                 | 16 | .667                 | .6767   | .0896   | 6.48              | 15 11.8                           | .3044  | 22 23.8                            | 3.56                |
|                                 | 17 | .656                 | .6782   | .0883   | 6.45              | 15 14.2                           | .3039  | 22 19.9                            | 3.69                |
|                                 | 18 | .646                 | .6796   | .0870   | 6.42              | 15 16.6                           | .3034  | 22 16.0                            | 3.82                |
|                                 | 19 | .635                 | .6809   | .0857   | 6.40              | 15 19.0                           | .3029  | 22 12.2                            | 3.95                |
|                                 | 20 | .625                 | .6822   | .0843   | 6.37              | 15 21.5                           | .3023  | 22 8.3                             | 4.08                |
|                                 | 21 | —0.614               | —0.6834 | +0.0829 | 6.35              | 15 23.9                           | 1.3018 | 22 4.4                             | —4.20               |
|                                 | 22 | .604                 | .6846   | .0815   | 6.32              | 15 26.4                           | .3012  | 22 0.5                             | 4.32                |
|                                 | 23 | .594                 | .6857   | .0800   | 6.30              | 15 28.9                           | .3006  | 21 56.6                            | 4.45                |
|                                 | 24 | .583                 | .6867   | .0785   | 6.28              | 15 31.4                           | .3000  | 21 52.7                            | 4.57                |
|                                 | 25 | .573                 | .6877   | .0770   | 6.26              | 15 33.9                           | .2994  | 21 48.7                            | 4.69                |
|                                 | 26 | .563                 | .6886   | .0755   | 6.25              | 15 36.3                           | .2988  | 21 44.8                            | 4.80                |
|                                 | 27 | .553                 | .6894   | .0740   | 6.23              | 15 38.8                           | .2982  | 21 40.8                            | 4.92                |
|                                 | 28 | .544                 | .6901   | .0725   | 6.21              | 15 41.3                           | .2976  | 21 36.9                            | 5.04                |
|                                 | 29 | .534                 | .6908   | .0710   | 6.20              | 15 43.8                           | .2969  | 21 32.9                            | 5.15                |
|                                 | 30 | .524                 | .6915   | .0694   | 6.19              | 15 46.2                           | .2963  | 21 28.9                            | 5.26                |
| Februar                         | 31 | —0.515               | —0.6921 | +0.0678 | 6.17              | 15 48.7                           | 1.2956 | 21 24.9                            | —5.37               |
|                                 | 1  | .505                 | .6927   | .0662   | 6.16              | 15 51.2                           | .2950  | 21 20.9                            | 5.48                |
|                                 | 2  | .496                 | .6932   | .0646   | 6.15              | 15 53.6                           | .2943  | 21 16.9                            | 5.58                |
|                                 | 3  | .487                 | .6936   | .0629   | 6.14              | 15 56.0                           | .2937  | 21 12.9                            | 5.69                |
|                                 | 4  | .477                 | .6940   | .0613   | 6.14              | 15 58.4                           | .2930  | 21 8.9                             | 5.79                |
|                                 | 5  | .468                 | .6943   | .0597   | 6.13              | 16 0.8                            | .2923  | 21 4.8                             | 5.89                |
|                                 | 6  | .460                 | .6946   | .0581   | 6.12              | 16 3.2                            | .2917  | 21 0.8                             | 5.99                |
|                                 | 7  | .451                 | .6948   | .0565   | 6.12              | 16 5.6                            | .2910  | 20 56.7                            | 6.08                |
|                                 | 8  | .442                 | .6950   | .0549   | 6.11              | 16 7.9                            | .2904  | 20 52.6                            | 6.18                |
|                                 | 9  | .434                 | .6952   | .0533   | 6.11              | 16 10.2                           | .2897  | 20 48.5                            | 6.27                |
|                                 | 10 | —0.425               | —0.6953 | +0.0517 | 6.11              | 16 12.5                           | 1.2890 | 20 44.4                            | —6.36               |
|                                 | 11 | .416                 | .6954   | .0501   | 6.11              | 16 14.8                           | .2884  | 20 40.3                            | 6.45                |
|                                 | 12 | .408                 | .6954   | .0486   | 6.11              | 16 17.0                           | .2877  | 20 36.2                            | 6.54                |
|                                 | 13 | .400                 | .6954   | .0470   | 6.11              | 16 19.3                           | .2871  | 20 32.1                            | 6.62                |
|                                 | 14 | .392                 | .6954   | .0455   | 6.11              | 16 21.5                           | .2865  | 20 27.9                            | 6.70                |
|                                 | 15 | .384                 | .6954   | .0439   | 6.11              | 16 23.7                           | .2858  | 20 23.7                            | 6.78                |
|                                 | 16 | .376                 | .6953   | .0424   | 6.11              | 16 25.9                           | .2852  | 20 19.6                            | 6.86                |
|                                 | 17 | .368                 | .6952   | .0409   | 6.11              | 16 28.0                           | .2846  | 20 15.4                            | 6.94                |
|                                 | 18 | .360                 | .6951   | .0395   | 6.11              | 16 30.1                           | .2840  | 20 11.2                            | 7.01                |
|                                 | 19 | .352                 | .6950   | .0381   | 6.12              | 16 32.2                           | .2834  | 20 7.0                             | 7.08                |
|                                 | 20 | —0.345               | —0.6948 | +0.0367 | 6.12              | 16 34.3                           | 1.2828 | 20 2.8                             | —7.15               |
|                                 | 21 | .337                 | .6946   | .0353   | 6.12              | 16 36.3                           | .2823  | 19 58.6                            | 7.22                |
|                                 | 22 | .330                 | .6944   | .0340   | 6.13              | 16 38.3                           | .2817  | 19 54.4                            | 7.29                |
|                                 | 23 | .322                 | .6942   | .0327   | 6.13              | 16 40.3                           | .2811  | 19 50.2                            | 7.35                |
|                                 | 24 | .315                 | .6940   | .0314   | 6.14              | 16 42.2                           | .2806  | 19 45.9                            | 7.41                |
|                                 | 25 | .308                 | .6938   | .0301   | 6.14              | 16 44.2                           | .2801  | 19 41.7                            | 7.47                |
|                                 | 26 | .300                 | .6935   | .0289   | 6.15              | 16 46.1                           | .2796  | 19 37.4                            | 7.53                |
|                                 | 27 | .293                 | .6933   | .0278   | 6.15              | 16 48.0                           | .2791  | 19 33.1                            | 7.58                |
|                                 | 28 | .286                 | .6930   | .0267   | 6.16              | 16 49.8                           | .2786  | 19 28.9                            | 7.63                |
|                                 | 29 | .279                 | .6927   | .0256   | 6.16              | 16 51.7                           | .2781  | 19 24.6                            | 7.68                |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                  | G                                  | log h  | H                                  | i                   |
|---------------------------------|----|----------------------|---------|---------|--------------------|------------------------------------|--------|------------------------------------|---------------------|
| März                            | 1  | —0 <sup>s</sup> .272 | —0.6925 | +0.0246 | 6 <sup>h</sup> .17 | 16 <sup>h</sup> 53 <sup>m</sup> .5 | 1.2777 | 19 <sup>h</sup> 20 <sup>m</sup> .3 | —7 <sup>h</sup> .73 |
|                                 | 2  | .265                 | .6922   | .0236   | 6.17               | 16 55.2                            | .2773  | 19 16.0                            | 7.77                |
|                                 | 3  | .259                 | .6920   | .0227   | 6.17               | 16 57.0                            | .2769  | 19 11.7                            | 7.81                |
|                                 | 4  | .252                 | .6918   | .0218   | 6.18               | 16 58.7                            | .2766  | 19 7.4                             | 7.85                |
|                                 | 5  | .245                 | .6916   | .0210   | 6.18               | 17 0.5                             | .2762  | 19 3.1                             | 7.89                |
|                                 | 6  | .239                 | .6914   | .0202   | 6.19               | 17 2.2                             | .2759  | 18 58.8                            | 7.92                |
|                                 | 7  | .232                 | .6912   | .0195   | 6.19               | 17 3.9                             | .2756  | 18 54.5                            | 7.95                |
|                                 | 8  | .226                 | .6910   | .0188   | 6.20               | 17 5.6                             | .2753  | 18 50.2                            | 7.98                |
|                                 | 9  | .219                 | .6908   | .0182   | 6.20               | 17 7.2                             | .2750  | 18 45.9                            | 8.01                |
|                                 | 10 | .213                 | .6906   | .0176   | 6.20               | 17 8.9                             | .2747  | 18 41.5                            | 8.04                |
|                                 | 11 | —0.206               | —0.6905 | +0.0171 | 6.21               | 17 10.5                            | 1.2745 | 18 37.2                            | —8.06               |
|                                 | 12 | .200                 | .6903   | .0166   | 6.21               | 17 12.1                            | .2743  | 18 32.9                            | 8.08                |
|                                 | 13 | .193                 | .6902   | .0162   | 6.21               | 17 13.7                            | .2742  | 18 28.5                            | 8.10                |
|                                 | 14 | .187                 | .6900   | .0159   | 6.22               | 17 15.3                            | .2740  | 18 24.2                            | 8.11                |
|                                 | 15 | .180                 | .6899   | .0156   | 6.22               | 17 16.9                            | .2739  | 18 19.9                            | 8.12                |
|                                 | 16 | .174                 | .6898   | .0154   | 6.22               | 17 18.5                            | .2738  | 18 15.5                            | 8.13                |
|                                 | 17 | .168                 | .6897   | .0152   | 6.22               | 17 20.0                            | .2737  | 18 11.2                            | 8.14                |
|                                 | 18 | .161                 | .6897   | .0151   | 6.22               | 17 21.6                            | .2737  | 18 6.9                             | 8.15                |
|                                 | 19 | .155                 | .6897   | .0150   | 6.22               | 17 23.1                            | .2736  | 18 2.6                             | 8.15                |
|                                 | 20 | .149                 | .6897   | .0150   | 6.22               | 17 24.6                            | .2736  | 17 58.2                            | 8.15                |
| April                           | 21 | —0.142               | —0.6897 | +0.0150 | 6.22               | 17 26.2                            | 1.2736 | 17 53.9                            | —8.15               |
|                                 | 22 | .136                 | .6897   | .0151   | 6.22               | 17 27.7                            | .2737  | 17 49.6                            | 8.14                |
|                                 | 23 | .130                 | .6897   | .0153   | 6.22               | 17 29.2                            | .2738  | 17 45.3                            | 8.13                |
|                                 | 24 | .123                 | .6897   | .0155   | 6.22               | 17 30.8                            | .2739  | 17 41.0                            | 8.12                |
|                                 | 25 | .117                 | .6898   | .0158   | 6.22               | 17 32.3                            | .2740  | 17 36.6                            | 8.11                |
|                                 | 26 | .111                 | .6899   | .0162   | 6.22               | 17 33.9                            | .2741  | 17 32.3                            | 8.10                |
|                                 | 27 | .104                 | .6901   | .0166   | 6.21               | 17 35.4                            | .2743  | 17 28.0                            | 8.08                |
|                                 | 28 | .098                 | .6902   | .0170   | 6.21               | 17 37.0                            | .2745  | 17 23.8                            | 8.06                |
|                                 | 29 | .091                 | .6904   | .0175   | 6.21               | 17 38.5                            | .2747  | 17 19.5                            | 8.04                |
|                                 | 30 | .085                 | .6906   | .0180   | 6.20               | 17 40.1                            | .2749  | 17 15.2                            | 8.02                |
|                                 | 31 | —0.078               | —0.6908 | +0.0186 | 6.20               | 17 41.7                            | 1.2752 | 17 10.9                            | —7.99               |
|                                 | 1  | .072                 | .6910   | .0192   | 6.20               | 17 43.3                            | .2754  | 17 6.7                             | 7.96                |
|                                 | 2  | .065                 | .6912   | .0199   | 6.19               | 17 44.8                            | .2757  | 17 2.4                             | 7.93                |
|                                 | 3  | .059                 | .6914   | .0207   | 6.19               | 17 46.4                            | .2761  | 16 58.2                            | 7.90                |
|                                 | 4  | .052                 | .6917   | .0215   | 6.18               | 17 48.0                            | .2764  | 16 54.0                            | 7.86                |
|                                 | 5  | .045                 | .6919   | .0224   | 6.17               | 17 49.6                            | .2768  | 16 49.7                            | 7.83                |
|                                 | 6  | .038                 | .6922   | .0233   | 6.17               | 17 51.3                            | .2772  | 16 45.5                            | 7.79                |
|                                 | 7  | .032                 | .6925   | .0242   | 6.16               | 17 52.9                            | .2776  | 16 41.3                            | 7.74                |
|                                 | 8  | .025                 | .6928   | .0252   | 6.16               | 17 54.6                            | .2780  | 16 37.1                            | 7.70                |
|                                 | 9  | .018                 | .6931   | .0262   | 6.15               | 17 56.3                            | .2784  | 16 32.9                            | 7.65                |
|                                 | 10 | —0.011               | —0.6935 | +0.0273 | 6.15               | 17 57.9                            | 1.2789 | 16 28.7                            | —7.60               |
|                                 | 11 | —0.004               | .6938   | .0284   | 6.14               | 17 59.6                            | .2793  | 16 24.6                            | 7.55                |
|                                 | 12 | +0.003               | .6941   | .0296   | 6.13               | 18 1.4                             | .2798  | 16 20.4                            | 7.50                |
|                                 | 13 | .010                 | .6945   | .0308   | 6.13               | 18 3.1                             | .2803  | 16 16.3                            | 7.44                |
|                                 | 14 | .018                 | .6948   | .0320   | 6.12               | 18 4.9                             | .2808  | 16 12.1                            | 7.38                |
|                                 | 15 | .025                 | .6952   | .0332   | 6.11               | 18 6.7                             | .2813  | 16 8.0                             | 7.32                |
|                                 | 16 | .032                 | .6955   | .0344   | 6.11               | 18 8.5                             | .2819  | 16 3.9                             | 7.26                |
|                                 | 17 | .040                 | .6959   | .0357   | 6.10               | 18 10.3                            | .2824  | 15 59.8                            | 7.20                |
|                                 | 18 | .047                 | .6962   | .0370   | 6.09               | 18 12.1                            | .2830  | 15 55.7                            | 7.13                |
|                                 | 19 | .055                 | .6966   | .0384   | 6.09               | 18 14.1                            | .2835  | 15 51.7                            | 7.06                |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f       | x       | y       | g    | G                                 | log h  | H                                 | i     |
|---------------------------------|----|---------|---------|---------|------|-----------------------------------|--------|-----------------------------------|-------|
| April                           | 20 | +0.8063 | —0.6969 | +0.0398 | 6.08 | 18 <sup>h</sup> 16 <sup>m</sup> 0 | 1.2841 | 15 <sup>h</sup> 47 <sup>m</sup> 6 | —6.99 |
|                                 | 21 | .070    | .6972   | .0412   | 6.07 | 18 17.9                           | .2847  | 15 43.6                           | 6.92  |
|                                 | 22 | .078    | .6975   | .0426   | 6.07 | 18 19.9                           | .2853  | 15 39.6                           | 6.85  |
|                                 | 23 | .086    | .6978   | .0441   | 6.06 | 18 21.9                           | .2859  | 15 35.5                           | 6.77  |
|                                 | 24 | .094    | .6980   | .0456   | 6.05 | 18 23.9                           | .2865  | 15 31.5                           | 6.70  |
|                                 | 25 | .102    | .6983   | .0471   | 6.05 | 18 25.9                           | .2871  | 15 27.5                           | 6.62  |
|                                 | 26 | .110    | .6985   | .0486   | 6.04 | 18 28.0                           | .2878  | 15 23.6                           | 6.53  |
|                                 | 27 | .119    | .6988   | .0501   | 6.04 | 18 30.1                           | .2884  | 15 19.6                           | 6.45  |
|                                 | 28 | .127    | .6990   | .0516   | 6.04 | 18 32.2                           | .2890  | 15 15.6                           | 6.36  |
|                                 | 29 | .135    | .6992   | .0532   | 6.03 | 18 34.3                           | .2897  | 15 11.7                           | 6.28  |
| Mai                             | 30 | +0.144  | —0.6993 | +0.0547 | 6.03 | 18 36.5                           | 1.2903 | 15 7.8                            | —6.19 |
|                                 | 1  | .152    | .6994   | .0563   | 6.03 | 18 38.6                           | .2909  | 15 3.9                            | 6.10  |
|                                 | 2  | .161    | .6995   | .0578   | 6.02 | 18 40.8                           | .2916  | 15 0.0                            | 6.00  |
|                                 | 3  | .170    | .6996   | .0594   | 6.02 | 18 43.0                           | .2922  | 14 56.1                           | 5.91  |
|                                 | 4  | .179    | .6996   | .0609   | 6.02 | 18 45.3                           | .2928  | 14 52.3                           | 5.82  |
|                                 | 5  | .188    | .6996   | .0625   | 6.02 | 18 47.6                           | .2934  | 14 48.4                           | 5.72  |
|                                 | 6  | .197    | .6996   | .0640   | 6.02 | 18 49.9                           | .2941  | 14 44.6                           | 5.62  |
|                                 | 7  | .206    | .6995   | .0655   | 6.02 | 18 52.2                           | .2947  | 14 40.7                           | 5.52  |
|                                 | 8  | .215    | .6994   | .0670   | 6.03 | 18 54.5                           | .2953  | 14 36.9                           | 5.42  |
|                                 | 9  | .224    | .6993   | .0685   | 6.03 | 18 56.9                           | .2959  | 14 33.1                           | 5.32  |
|                                 | 10 | +0.234  | —0.6991 | +0.0700 | 6.03 | 18 59.2                           | 1.2965 | 14 29.3                           | —5.21 |
|                                 | 11 | .243    | .6989   | .0715   | 6.04 | 19 1.6                            | .2971  | 14 25.5                           | 5.10  |
|                                 | 12 | .253    | .6986   | .0730   | 6.04 | 19 4.0                            | .2977  | 14 21.8                           | 5.00  |
|                                 | 13 | .262    | .6983   | .0745   | 6.05 | 19 6.4                            | .2983  | 14 18.0                           | 4.89  |
|                                 | 14 | .272    | .6979   | .0759   | 6.06 | 19 8.8                            | .2989  | 14 14.3                           | 4.77  |
|                                 | 15 | .282    | .6975   | .0773   | 6.07 | 19 11.3                           | .2995  | 14 10.5                           | 4.66  |
|                                 | 16 | .291    | .6970   | .0787   | 6.08 | 19 13.7                           | .3001  | 14 6.8                            | 4.55  |
|                                 | 17 | .301    | .6965   | .0801   | 6.09 | 19 16.2                           | .3006  | 14 3.1                            | 4.44  |
|                                 | 18 | .311    | .6959   | .0815   | 6.10 | 19 18.6                           | .3012  | 13 59.4                           | 4.32  |
|                                 | 19 | .321    | .6952   | .0828   | 6.11 | 19 21.0                           | .3017  | 13 55.7                           | 4.21  |
|                                 | 20 | +0.332  | —0.6945 | +0.0841 | 6.13 | 19 23.5                           | 1.3022 | 13 52.0                           | —4.09 |
|                                 | 21 | .342    | .6937   | .0854   | 6.14 | 19 26.0                           | .3028  | 13 48.4                           | 3.97  |
|                                 | 22 | .352    | .6929   | .0867   | 6.16 | 19 28.4                           | .3033  | 13 44.7                           | 3.85  |
|                                 | 23 | .363    | .6920   | .0879   | 6.17 | 19 30.9                           | .3038  | 13 41.1                           | 3.73  |
|                                 | 24 | .373    | .6911   | .0891   | 6.19 | 19 33.4                           | .3042  | 13 37.4                           | 3.60  |
|                                 | 25 | .384    | .6901   | .0903   | 6.21 | 19 35.8                           | .3047  | 13 33.8                           | 3.48  |
|                                 | 26 | .395    | .6891   | .0914   | 6.23 | 19 38.2                           | .3052  | 13 30.2                           | 3.36  |
|                                 | 27 | .405    | .6880   | .0925   | 6.26 | 19 40.6                           | .3056  | 13 26.6                           | 3.24  |
|                                 | 28 | .416    | .6868   | .0936   | 6.28 | 19 43.0                           | .3060  | 13 23.0                           | 3.11  |
|                                 | 29 | .427    | .6855   | .0947   | 6.31 | 19 45.5                           | .3064  | 13 19.4                           | 2.98  |
| Juni                            | 30 | +0.437  | —0.6842 | +0.0957 | 6.33 | 19 47.9                           | 1.3068 | 13 15.8                           | —2.86 |
|                                 | 31 | .448    | .6828   | .0967   | 6.36 | 19 50.2                           | .3072  | 13 12.2                           | 2.73  |
|                                 | 1  | .459    | .6814   | .0976   | 6.39 | 19 52.6                           | .3076  | 13 8.6                            | 2.60  |
|                                 | 2  | .470    | .6799   | .0985   | 6.42 | 19 54.9                           | .3079  | 13 5.1                            | 2.47  |
|                                 | 3  | .481    | .6784   | .0993   | 6.45 | 19 57.2                           | .3083  | 13 1.5                            | 2.34  |
|                                 | 4  | .492    | .6768   | .1001   | 6.48 | 19 59.5                           | .3086  | 12 58.0                           | 2.21  |
|                                 | 5  | .504    | .6751   | .1008   | 6.52 | 20 1.8                            | .3089  | 12 54.4                           | 2.08  |
|                                 | 6  | .515    | .6733   | .1015   | 6.55 | 20 4.1                            | .3091  | 12 50.9                           | 1.95  |
|                                 | 7  | .526    | .6715   | .1021   | 6.59 | 20 6.3                            | .3094  | 12 47.3                           | 1.81  |
|                                 | 8  | .537    | .6696   | .1027   | 6.62 | 20 8.5                            | .3096  | 12 43.8                           | 1.68  |

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| <sup>12<sup>h</sup></sup> |    | f                    | x       | y       | g     | G                                 | log h  | H                                 | i      |
|---------------------------|----|----------------------|---------|---------|-------|-----------------------------------|--------|-----------------------------------|--------|
| M. Z. Berlin              |    |                      |         |         |       |                                   |        |                                   |        |
| Juni                      | 9  | +0. <sup>s</sup> 549 | —0.6677 | +0.1033 | 6".66 | 20 <sup>h</sup> 10 <sup>m</sup> 7 | 1.3099 | 12 <sup>h</sup> 40 <sup>m</sup> 2 | —1".55 |
|                           | 10 | .560                 | .6657   | .1038   | 6.70  | 20 12.8                           | .3101  | 12 36.7                           | 1.41   |
|                           | 11 | .571                 | .6636   | .1043   | 6.75  | 20 14.9                           | .3103  | 12 33.2                           | 1.28   |
|                           | 12 | .583                 | .6615   | .1047   | 6.79  | 20 16.9                           | .3104  | 12 29.7                           | 1.15   |
|                           | 13 | .594                 | .6593   | .1051   | 6.83  | 20 19.0                           | .3106  | 12 26.2                           | 1.01   |
|                           | 14 | .605                 | .6571   | .1054   | 6.88  | 20 21.0                           | .3107  | 12 22.7                           | 0.88   |
|                           | 15 | .617                 | .6548   | .1057   | 6.92  | 20 23.0                           | .3108  | 12 19.1                           | 0.74   |
|                           | 16 | .628                 | .6525   | .1060   | 6.97  | 20 24.9                           | .3109  | 12 15.6                           | 0.61   |
|                           | 17 | .640                 | .6501   | .1062   | 7.02  | 20 26.8                           | .3110  | 12 12.1                           | 0.47   |
|                           | 18 | .651                 | .6477   | .1063   | 7.06  | 20 28.7                           | .3111  | 12 8.6                            | 0.34   |
|                           | 19 | +0.663               | —0.6452 | +0.1064 | 7.11  | 20 30.5                           | 1.3111 | 12 5.1                            | —0.20  |
|                           | 20 | .674                 | .6427   | .1065   | 7.16  | 20 32.3                           | .3111  | 12 1.6                            | —0.06  |
|                           | 21 | .686                 | .6402   | .1065   | 7.22  | 20 34.0                           | .3111  | 11 58.2                           | +0.07  |
|                           | 22 | .697                 | .6376   | .1064   | 7.27  | 20 35.7                           | .3111  | 11 54.7                           | 0.21   |
|                           | 23 | .709                 | .6349   | .1063   | 7.32  | 20 37.4                           | .3111  | 11 51.2                           | 0.34   |
|                           | 24 | .720                 | .6322   | .1062   | 7.37  | 20 39.1                           | .3110  | 11 47.7                           | 0.48   |
|                           | 25 | .732                 | .6295   | .1060   | 7.43  | 20 40.7                           | .3109  | 11 44.2                           | 0.61   |
|                           | 26 | .743                 | .6267   | .1057   | 7.49  | 20 42.3                           | .3108  | 11 40.7                           | 0.75   |
|                           | 27 | .755                 | .6239   | .1054   | 7.54  | 20 43.8                           | .3107  | 11 37.1                           | 0.88   |
|                           | 28 | .766                 | .6211   | .1051   | 7.60  | 20 45.3                           | .3106  | 11 33.6                           | 1.02   |
|                           | 29 | +0.778               | —0.6182 | +0.1047 | 7.66  | 20 46.8                           | 1.3104 | 11 30.1                           | +1.15  |
|                           | 30 | .789                 | .6153   | .1043   | 7.71  | 20 48.2                           | .3103  | 11 26.6                           | 1.29   |
| Juli                      | 1  | .800                 | .6123   | .1038   | 7.77  | 20 49.6                           | .3101  | 11 23.1                           | 1.42   |
|                           | 2  | .812                 | .6094   | .1033   | 7.83  | 20 50.9                           | .3099  | 11 19.6                           | 1.55   |
|                           | 3  | .823                 | .6064   | .1028   | 7.89  | 20 52.2                           | .3097  | 11 16.1                           | 1.69   |
|                           | 4  | .834                 | .6034   | .1022   | 7.95  | 20 53.5                           | .3094  | 11 12.5                           | 1.82   |
|                           | 5  | .846                 | .6004   | .1015   | 8.01  | 20 54.7                           | .3091  | 11 9.0                            | 1.95   |
|                           | 6  | .857                 | .5974   | .1008   | 8.07  | 20 55.9                           | .3089  | 11 5.5                            | 2.08   |
|                           | 7  | .868                 | .5943   | .1000   | 8.13  | 20 57.1                           | .3086  | 11 2.0                            | 2.21   |
|                           | 8  | .879                 | .5912   | .0992   | 8.20  | 20 58.3                           | .3083  | 10 58.4                           | 2.34   |
|                           | 9  | +0.890               | —0.5881 | +0.0984 | 8.26  | 20 59.4                           | 1.3079 | 10 54.9                           | +2.47  |
|                           | 10 | .901                 | .5850   | .0975   | 8.32  | 21 0.5                            | .3076  | 10 51.3                           | 2.60   |
|                           | 11 | .912                 | .5818   | .0966   | 8.39  | 21 1.5                            | .3072  | 10 47.7                           | 2.73   |
|                           | 12 | .923                 | .5787   | .0956   | 8.45  | 21 2.5                            | .3068  | 10 44.2                           | 2.86   |
|                           | 13 | .934                 | .5755   | .0946   | 8.51  | 21 3.5                            | .3064  | 10 40.6                           | 2.98   |
|                           | 14 | .945                 | .5723   | .0936   | 8.58  | 21 4.4                            | .3060  | 10 37.0                           | 3.11   |
|                           | 15 | .955                 | .5691   | .0925   | 8.64  | 21 5.4                            | .3056  | 10 33.4                           | 3.23   |
|                           | 16 | .966                 | .5659   | .0914   | 8.70  | 21 6.3                            | .3052  | 10 29.9                           | 3.36   |
|                           | 17 | .977                 | .5627   | .0903   | 8.77  | 21 7.1                            | .3047  | 10 26.3                           | 3.48   |
|                           | 18 | .987                 | .5595   | .0892   | 8.83  | 21 8.0                            | .3043  | 10 22.6                           | 3.60   |
|                           | 19 | +0.998               | —0.5563 | +0.0880 | 8.90  | 21 8.8                            | 1.3038 | 10 19.0                           | +3.72  |
|                           | 20 | 1.008                | .5532   | .0868   | 8.96  | 21 9.6                            | .3033  | 10 15.4                           | 3.84   |
|                           | 21 | .019                 | .5500   | .0856   | 9.02  | 21 10.3                           | .3028  | 10 11.8                           | 3.96   |
|                           | 22 | .029                 | .5468   | .0843   | 9.09  | 21 11.1                           | .3023  | 10 8.1                            | 4.08   |
|                           | 23 | .039                 | .5436   | .0830   | 9.15  | 21 11.8                           | .3018  | 10 4.4                            | 4.20   |
|                           | 24 | .049                 | .5404   | .0817   | 9.22  | 21 12.5                           | .3012  | 10 0.8                            | 4.32   |
|                           | 25 | .059                 | .5372   | .0803   | 9.28  | 21 13.1                           | .3007  | 9 57.1                            | 4.43   |
|                           | 26 | .069                 | .5340   | .0789   | 9.34  | 21 13.8                           | .3001  | 9 53.4                            | 4.55   |
|                           | 27 | .079                 | .5308   | .0775   | 9.41  | 21 14.4                           | .2996  | 9 49.7                            | 4.66   |
|                           | 28 | .089                 | .5276   | .0761   | 9.47  | 21 15.0                           | .2990  | 9 46.0                            | 4.77   |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f       | x       | y       | g     | G                                 | log h  | H                                | i     |
|---------------------------------|----|---------|---------|---------|-------|-----------------------------------|--------|----------------------------------|-------|
| Juli                            | 29 | +1.8099 | —0.5245 | +0.0746 | 9.53  | 21 <sup>h</sup> 15 <sup>m</sup> 6 | 1.2984 | 9 <sup>h</sup> 42 <sup>m</sup> 3 | +4.88 |
|                                 | 30 | .108    | .5213   | .0732   | 9.60  | 21 16.1                           | .2979  | 9 38.6                           | 4.98  |
|                                 | 31 | .118    | .5182   | .0717   | 9.66  | 21 16.7                           | .2973  | 9 34.8                           | 5.09  |
| August                          | 1  | .127    | .5151   | .0702   | 9.72  | 21 17.2                           | .2966  | 9 31.1                           | 5.20  |
|                                 | 2  | .137    | .5120   | .0687   | 9.79  | 21 17.7                           | .2960  | 9 27.3                           | 5.30  |
|                                 | 3  | .146    | .5089   | .0672   | 9.85  | 21 18.2                           | .2954  | 9 23.6                           | 5.41  |
|                                 | 4  | .155    | .5058   | .0657   | 9.91  | 21 18.7                           | .2948  | 9 19.8                           | 5.51  |
|                                 | 5  | .164    | .5027   | .0641   | 9.97  | 21 19.2                           | .2942  | 9 16.0                           | 5.61  |
|                                 | 6  | .174    | .4997   | .0626   | 10.03 | 21 19.6                           | .2936  | 9 12.2                           | 5.70  |
|                                 | 7  | .183    | .4967   | .0611   | 10.09 | 21 20.0                           | .2930  | 9 8.4                            | 5.80  |
|                                 | 8  | +1.191  | —0.4937 | +0.0596 | 10.15 | 21 20.5                           | 1.2923 | 9 4.5                            | +5.90 |
|                                 | 9  | .200    | .4907   | .0580   | 10.21 | 21 20.9                           | .2917  | 9 0.7                            | 5.99  |
|                                 | 10 | .209    | .4877   | .0565   | 10.27 | 21 21.3                           | .2911  | 8 56.8                           | 6.08  |
|                                 | 11 | .217    | .4848   | .0550   | 10.33 | 21 21.7                           | .2904  | 8 52.9                           | 6.17  |
|                                 | 12 | .226    | .4819   | .0535   | 10.39 | 21 22.1                           | .2898  | 8 49.1                           | 6.26  |
|                                 | 13 | .235    | .4790   | .0520   | 10.45 | 21 22.4                           | .2892  | 8 45.2                           | 6.35  |
|                                 | 14 | .243    | .4762   | .0505   | 10.50 | 21 22.8                           | .2885  | 8 41.3                           | 6.43  |
|                                 | 15 | .251    | .4733   | .0490   | 10.56 | 21 23.1                           | .2879  | 8 37.3                           | 6.51  |
|                                 | 16 | .259    | .4705   | .0475   | 10.62 | 21 23.5                           | .2873  | 8 33.4                           | 6.59  |
|                                 | 17 | .268    | .4677   | .0460   | 10.67 | 21 23.8                           | .2867  | 8 29.5                           | 6.67  |
|                                 | 18 | +1.276  | —0.4649 | +0.0446 | 10.73 | 21 24.1                           | 1.2861 | 8 25.5                           | +6.75 |
|                                 | 19 | .284    | .4622   | .0431   | 10.78 | 21 24.5                           | .2855  | 8 21.5                           | 6.83  |
|                                 | 20 | .292    | .4595   | .0417   | 10.84 | 21 24.8                           | .2849  | 8 17.5                           | 6.90  |
|                                 | 21 | .299    | .4568   | .0403   | 10.89 | 21 25.1                           | .2843  | 8 13.5                           | 6.97  |
|                                 | 22 | .307    | .4542   | .0389   | 10.94 | 21 25.4                           | .2837  | 8 9.5                            | 7.04  |
|                                 | 23 | .315    | .4516   | .0375   | 11.00 | 21 25.7                           | .2832  | 8 5.5                            | 7.11  |
|                                 | 24 | .322    | .4490   | .0362   | 11.05 | 21 26.0                           | .2826  | 8 1.5                            | 7.18  |
|                                 | 25 | .330    | .4464   | .0349   | 11.10 | 21 26.3                           | .2821  | 7 57.4                           | 7.24  |
|                                 | 26 | .337    | .4439   | .0336   | 11.15 | 21 26.6                           | .2815  | 7 53.4                           | 7.31  |
|                                 | 27 | .345    | .4414   | .0324   | 11.20 | 21 26.9                           | .2810  | 7 49.3                           | 7.37  |
| Septbr.                         | 28 | +1.352  | —0.4389 | +0.0312 | 11.25 | 21 27.2                           | 1.2805 | 7 45.2                           | +7.42 |
|                                 | 29 | .359    | .4364   | .0300   | 11.30 | 21 27.4                           | .2800  | 7 41.1                           | 7.48  |
|                                 | 30 | .367    | .4340   | .0289   | 11.35 | 21 27.7                           | .2795  | 7 37.0                           | 7.53  |
|                                 | 31 | .374    | .4316   | .0278   | 11.40 | 21 28.0                           | .2791  | 7 32.9                           | 7.58  |
|                                 | 1  | .381    | .4292   | .0267   | 11.44 | 21 28.3                           | .2786  | 7 28.8                           | 7.63  |
|                                 | 2  | .388    | .4268   | .0257   | 11.49 | 21 28.6                           | .2782  | 7 24.6                           | 7.68  |
|                                 | 3  | .395    | .4245   | .0247   | 11.54 | 21 28.9                           | .2778  | 7 20.5                           | 7.72  |
|                                 | 4  | .402    | .4222   | .0237   | 11.58 | 21 29.2                           | .2774  | 7 16.3                           | 7.77  |
|                                 | 5  | .409    | .4200   | .0228   | 11.63 | 21 29.5                           | .2770  | 7 12.2                           | 7.81  |
|                                 | 6  | .416    | .4178   | .0219   | 11.67 | 21 29.7                           | .2766  | 7 8.0                            | 7.84  |
|                                 | 7  | +1.422  | —0.4156 | +0.0211 | 11.72 | 21 30.0                           | 1.2762 | 7 3.8                            | +7.88 |
|                                 | 8  | .429    | .4134   | .0203   | 11.76 | 21 30.3                           | .2759  | 6 59.6                           | 7.91  |
|                                 | 9  | .436    | .4113   | .0196   | 11.80 | 21 30.6                           | .2756  | 6 55.4                           | 7.95  |
|                                 | 10 | .442    | .4092   | .0190   | 11.85 | 21 30.9                           | .2753  | 6 51.2                           | 7.98  |
|                                 | 11 | .449    | .4071   | .0184   | 11.89 | 21 31.2                           | .2751  | 6 47.0                           | 8.01  |
|                                 | 12 | .456    | .4050   | .0178   | 11.93 | 21 31.5                           | .2748  | 6 42.8                           | 8.03  |
|                                 | 13 | .462    | .4029   | .0173   | 11.97 | 21 31.9                           | .2746  | 6 38.6                           | 8.05  |
|                                 | 14 | .469    | .4009   | .0168   | 12.01 | 21 32.2                           | .2744  | 6 34.3                           | 8.07  |
|                                 | 15 | .475    | .3989   | .0164   | 12.05 | 21 32.5                           | .2742  | 6 30.1                           | 8.09  |
|                                 | 16 | .482    | .3969   | .0160   | 12.09 | 21 32.9                           | .2741  | 6 25.8                           | 8.11  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                  | G                                  | log h  | H                                 | i                  |
|---------------------------------|----|----------------------|---------|---------|--------------------|------------------------------------|--------|-----------------------------------|--------------------|
| Septbr.                         | 17 | +1 <sup>s</sup> .488 | —0.3949 | +0.0157 | 12 <sup>h</sup> 13 | 21 <sup>h</sup> 33 <sup>m</sup> .2 | 1.2739 | 6 <sup>h</sup> 21 <sup>m</sup> .6 | +8 <sup>h</sup> 12 |
|                                 | 18 | .495                 | .3930   | .0154   | 12.17              | 21 33.5                            | .2738  | 6 17.3                            | 8.13               |
|                                 | 19 | .501                 | .3911   | .0152   | 12.21              | 21 33.9                            | .2738  | 6 13.0                            | 8.14               |
|                                 | 20 | .508                 | .3892   | .0151   | 12.25              | 21 34.3                            | .2737  | 6 8.8                             | 8.14               |
|                                 | 21 | .514                 | .3873   | .0150   | 12.29              | 21 34.6                            | .2737  | 6 4.5                             | 8.15               |
|                                 | 22 | .520                 | .3854   | .0150   | 12.32              | 21 35.0                            | .2736  | 6 0.2                             | 8.15               |
|                                 | 23 | .527                 | .3836   | .0150   | 12.36              | 21 35.4                            | .2736  | 5 56.0                            | 8.15               |
|                                 | 24 | .533                 | .3817   | .0151   | 12.40              | 21 35.8                            | .2737  | 5 51.7                            | 8.14               |
|                                 | 25 | .540                 | .3799   | .0152   | 12.43              | 21 36.2                            | .2737  | 5 47.4                            | 8.14               |
|                                 | 26 | .546                 | .3781   | .0154   | 12.47              | 21 36.6                            | .2738  | 5 43.1                            | 8.13               |
|                                 | 27 | +1.553               | —0.3763 | +0.0156 | 12.51              | 21 37.0                            | 1.2739 | 5 38.8                            | +8.12              |
|                                 | 28 | .559                 | .3745   | .0159   | 12.54              | 21 37.4                            | .2740  | 5 34.5                            | 8.11               |
|                                 | 29 | .566                 | .3728   | .0163   | 12.58              | 21 37.9                            | .2742  | 5 30.3                            | 8.09               |
|                                 | 30 | .572                 | .3710   | .0167   | 12.61              | 21 38.3                            | .2744  | 5 26.0                            | 8.07               |
| Oktbr.                          | 1  | .579                 | .3693   | .0172   | 12.65              | 21 38.7                            | .2746  | 5 21.7                            | 8.05               |
|                                 | 2  | .585                 | .3675   | .0177   | 12.68              | 21 39.2                            | .2748  | 5 17.4                            | 8.03               |
|                                 | 3  | .592                 | .3658   | .0183   | 12.72              | 21 39.7                            | .2751  | 5 13.2                            | 8.00               |
|                                 | 4  | .599                 | .3640   | .0189   | 12.75              | 21 40.1                            | .2753  | 5 8.9                             | 7.98               |
|                                 | 5  | .605                 | .3623   | .0196   | 12.79              | 21 40.6                            | .2756  | 5 4.6                             | 7.95               |
|                                 | 6  | .612                 | .3606   | .0203   | 12.82              | 21 41.1                            | .2759  | 5 0.4                             | 7.91               |
|                                 | 7  | +1.619               | —0.3589 | +0.0211 | 12.85              | 21 41.6                            | 1.2763 | 4 56.1                            | +7.88              |
|                                 | 8  | .625                 | .3572   | .0220   | 12.89              | 21 42.1                            | .2766  | 4 51.9                            | 7.84               |
|                                 | 9  | .632                 | .3555   | .0229   | 12.92              | 21 42.7                            | .2770  | 4 47.6                            | 7.80               |
|                                 | 10 | .639                 | .3538   | .0238   | 12.96              | 21 43.2                            | .2774  | 4 43.3                            | 7.76               |
|                                 | 11 | .646                 | .3521   | .0248   | 12.99              | 21 43.7                            | .2778  | 4 39.1                            | 7.72               |
|                                 | 12 | .654                 | .3504   | .0258   | 13.03              | 21 44.3                            | .2782  | 4 34.9                            | 7.67               |
|                                 | 13 | .661                 | .3486   | .0269   | 13.06              | 21 44.8                            | .2787  | 4 30.6                            | 7.62               |
|                                 | 14 | .668                 | .3469   | .0280   | 13.10              | 21 45.4                            | .2791  | 4 26.4                            | 7.57               |
|                                 | 15 | .675                 | .3451   | .0291   | 13.13              | 21 46.0                            | .2796  | 4 22.2                            | 7.52               |
|                                 | 16 | .682                 | .3434   | .0303   | 13.17              | 21 46.6                            | .2801  | 4 18.0                            | 7.46               |
|                                 | 17 | +1.690               | —0.3416 | +0.0315 | 13.20              | 21 47.2                            | 1.2807 | 4 13.8                            | +7.41              |
|                                 | 18 | .697                 | .3398   | .0328   | 13.24              | 21 47.8                            | .2812  | 4 9.6                             | 7.35               |
|                                 | 19 | .705                 | .3380   | .0341   | 13.27              | 21 48.4                            | .2817  | 4 5.4                             | 7.28               |
|                                 | 20 | .712                 | .3362   | .0354   | 13.31              | 21 49.0                            | .2823  | 4 1.2                             | 7.22               |
|                                 | 21 | .720                 | .3344   | .0367   | 13.35              | 21 49.6                            | .2828  | 3 57.1                            | 7.15               |
|                                 | 22 | .728                 | .3326   | .0381   | 13.38              | 21 50.2                            | .2834  | 3 52.9                            | 7.08               |
|                                 | 23 | .736                 | .3307   | .0395   | 13.42              | 21 50.9                            | .2840  | 3 48.8                            | 7.01               |
|                                 | 24 | .744                 | .3288   | .0409   | 13.46              | 21 51.5                            | .2846  | 3 44.6                            | 6.94               |
|                                 | 25 | .752                 | .3269   | .0424   | 13.50              | 21 52.2                            | .2852  | 3 40.4                            | 6.86               |
|                                 | 26 | .760                 | .3250   | .0439   | 13.53              | 21 52.8                            | .2858  | 3 36.3                            | 6.79               |
|                                 | 27 | +1.768               | —0.3230 | +0.0454 | 13.57              | 21 53.5                            | 1.2865 | 3 32.2                            | +6.71              |
|                                 | 28 | .776                 | .3211   | .0469   | 13.61              | 21 54.1                            | .2871  | 3 28.1                            | 6.63               |
|                                 | 29 | .785                 | .3191   | .0484   | 13.65              | 21 54.8                            | .2877  | 3 24.0                            | 6.54               |
|                                 | 30 | .793                 | .3171   | .0500   | 13.69              | 21 55.5                            | .2884  | 3 19.9                            | 6.46               |
|                                 | 31 | .802                 | .3150   | .0516   | 13.74              | 21 56.1                            | .2890  | 3 15.9                            | 6.37               |
| Novbr.                          | 1  | .810                 | .3129   | .0532   | 13.78              | 21 56.8                            | .2897  | 3 11.8                            | 6.28               |
|                                 | 2  | .810                 | .3108   | .0548   | 13.82              | 21 57.6                            | .2903  | 3 7.7                             | 6.19               |
|                                 | 3  | .828                 | .3087   | .0564   | 13.86              | 21 58.2                            | .2910  | 3 3.7                             | 6.09               |
|                                 | 4  | .837                 | .3065   | .0580   | 13.91              | 21 58.9                            | .2916  | 2 59.7                            | 6.00               |
|                                 | 5  | .846                 | .3043   | .0595   | 13.95              | 21 59.6                            | .2923  | 2 55.6                            | 5.90               |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                 | log h  | H                                 | i     |
|---------------------------------|----|--------|---------|---------|-------|-----------------------------------|--------|-----------------------------------|-------|
| Novbr.                          | 6  | +1.855 | —0.3020 | +0.0611 | 13.99 | 22 <sup>h</sup> 0 <sup>m</sup> .2 | 1.2929 | 2 <sup>h</sup> 51 <sup>m</sup> .6 | +5.80 |
|                                 | 7  | .864   | .2998   | .0627   | 14.04 | 22 0.9                            | .2936  | 2 47.6                            | 5.70  |
|                                 | 8  | .874   | .2975   | .0643   | 14.09 | 22 1.6                            | .2942  | 2 43.6                            | 5.60  |
|                                 | 9  | .883   | .2952   | .0659   | 14.13 | 22 2.3                            | .2949  | 2 39.6                            | 5.49  |
|                                 | 10 | .893   | .2929   | .0675   | 14.18 | 22 3.0                            | .2955  | 2 35.7                            | 5.39  |
|                                 | 11 | .902   | .2905   | .0691   | 14.23 | 22 3.7                            | .2962  | 2 31.7                            | 5.28  |
|                                 | 12 | .912   | .2881   | .0707   | 14.28 | 22 4.4                            | .2968  | 2 27.7                            | 5.17  |
|                                 | 13 | .922   | .2856   | .0722   | 14.33 | 22 5.0                            | .2974  | 2 23.8                            | 5.05  |
|                                 | 14 | .932   | .2831   | .0737   | 14.38 | 22 5.7                            | .2981  | 2 19.9                            | 4.94  |
|                                 | 15 | .942   | .2805   | .0752   | 14.43 | 22 6.4                            | .2987  | 2 15.9                            | 4.83  |
|                                 | 16 | +1.952 | —0.2779 | +0.0767 | 14.48 | 22 7.1                            | 1.2993 | 2 12.0                            | +4.71 |
|                                 | 17 | .962   | .2753   | .0782   | 14.53 | 22 7.8                            | .2999  | 2 8.1                             | 4.59  |
|                                 | 18 | .972   | .2726   | .0796   | 14.58 | 22 8.5                            | .3005  | 2 4.2                             | 4.47  |
|                                 | 19 | .983   | .2699   | .0811   | 14.64 | 22 9.1                            | .3010  | 2 0.3                             | 4.35  |
|                                 | 20 | 1.993  | .2672   | .0825   | 14.69 | 22 9.8                            | .3016  | 1 56.5                            | 4.23  |
|                                 | 21 | 2.004  | .2644   | .0839   | 14.75 | 22 10.5                           | .3022  | 1 52.6                            | 4.11  |
|                                 | 22 | .015   | .2615   | .0853   | 14.81 | 22 11.1                           | .3027  | 1 48.7                            | 3.98  |
|                                 | 23 | .025   | .2586   | .0866   | 14.87 | 22 11.8                           | .3033  | 1 44.9                            | 3.85  |
|                                 | 24 | .036   | .2557   | .0879   | 14.92 | 22 12.4                           | .3038  | 1 41.0                            | 3.73  |
|                                 | 25 | .047   | .2528   | .0892   | 14.98 | 22 13.1                           | .3043  | 1 37.2                            | 3.60  |
|                                 | 26 | +2.058 | —0.2498 | +0.0904 | 15.04 | 22 13.7                           | 1.3048 | 1 33.4                            | +3.47 |
|                                 | 27 | .069   | .2468   | .0916   | 15.10 | 22 14.3                           | .3053  | 1 29.5                            | 3.34  |
|                                 | 28 | .080   | .2437   | .0928   | 15.16 | 22 14.9                           | .3057  | 1 25.7                            | 3.20  |
|                                 | 29 | .092   | .2406   | .0940   | 15.23 | 22 15.5                           | .3062  | 1 21.9                            | 3.07  |
|                                 | 30 | .103   | .2375   | .0951   | 15.29 | 22 16.1                           | .3066  | 1 18.1                            | 2.94  |
| Dezbr.                          | 1  | .114   | .2344   | .0961   | 15.35 | 22 16.7                           | .3070  | 1 14.3                            | 2.80  |
|                                 | 2  | .126   | .2312   | .0971   | 15.42 | 22 17.3                           | .3074  | 1 10.5                            | 2.67  |
|                                 | 3  | .137   | .2280   | .0980   | 15.48 | 22 17.8                           | .3078  | 1 6.7                             | 2.53  |
|                                 | 4  | .149   | .2247   | .0989   | 15.55 | 22 18.4                           | .3081  | 1 2.9                             | 2.39  |
|                                 | 5  | .160   | .2214   | .0997   | 15.61 | 22 19.0                           | .3084  | 0 59.2                            | 2.26  |
|                                 | 6  | +2.172 | —0.2181 | +0.1005 | 15.68 | 22 19.5                           | 1.3088 | 0 55.4                            | +2.12 |
|                                 | 7  | .184   | .2147   | .1013   | 15.75 | 22 20.0                           | .3091  | 0 51.6                            | 1.97  |
|                                 | 8  | .196   | .2113   | .1020   | 15.81 | 22 20.6                           | .3093  | 0 47.9                            | 1.83  |
|                                 | 9  | .208   | .2079   | .1027   | 15.88 | 22 21.1                           | .3096  | 0 44.1                            | 1.69  |
|                                 | 10 | .219   | .2044   | .1033   | 15.95 | 22 21.6                           | .3098  | 0 40.3                            | 1.55  |
|                                 | 11 | .231   | .2009   | .1038   | 16.02 | 22 22.1                           | .3101  | 0 36.6                            | 1.41  |
|                                 | 12 | .243   | .1974   | .1043   | 16.09 | 22 22.5                           | .3103  | 0 32.8                            | 1.27  |
|                                 | 13 | .255   | .1939   | .1048   | 16.16 | 22 23.0                           | .3104  | 0 29.1                            | 1.12  |
|                                 | 14 | .267   | .1903   | .1052   | 16.23 | 22 23.4                           | .3106  | 0 25.3                            | 0.98  |
|                                 | 15 | .279   | .1868   | .1056   | 16.31 | 22 23.9                           | .3107  | 0 21.6                            | 0.84  |
|                                 | 16 | +2.291 | —0.1832 | +0.1059 | 16.38 | 22 24.3                           | 1.3109 | 0 17.9                            | +0.69 |
|                                 | 17 | .303   | .1796   | .1061   | 16.45 | 22 24.7                           | .3110  | 0 14.1                            | 0.55  |
|                                 | 18 | .315   | .1759   | .1063   | 16.52 | 22 25.1                           | .3110  | 0 10.4                            | 0.40  |
|                                 | 19 | .327   | .1722   | .1064   | 16.60 | 22 25.5                           | .3111  | 0 6.7                             | 0.26  |
|                                 | 20 | .339   | .1685   | .1064   | 16.67 | 22 25.9                           | .3111  | 0 2.9                             | +0.11 |
|                                 | 21 | .352   | .1648   | .1064   | 16.75 | 22 26.3                           | .3111  | 23 59.2                           | —0.03 |
|                                 | 22 | .364   | .1610   | .1064   | 16.82 | 22 26.6                           | .3111  | 23 55.4                           | 0.18  |
|                                 | 23 | .376   | .1573   | .1063   | 16.90 | 22 27.0                           | .3111  | 23 51.7                           | 0.32  |
|                                 | 24 | .388   | .1536   | .1062   | 16.97 | 22 27.3                           | .3110  | 23 48.0                           | 0.47  |
|                                 | 25 | .400   | .1499   | .1060   | 17.05 | 22 27.6                           | .3109  | 23 44.2                           | 0.61  |

## 1836

| $12^h$<br>M. Z. Berlin | f                   | x       | y       | g                  | G                                 | log h  | H                                 | i                  |
|------------------------|---------------------|---------|---------|--------------------|-----------------------------------|--------|-----------------------------------|--------------------|
| Dezbr. 26              | +2 <sup>s</sup> 412 | -0.1461 | +0.1058 | 17 <sup>m</sup> 12 | 22 <sup>h</sup> 27 <sup>m</sup> 9 | 1.3108 | 23 <sup>h</sup> 40 <sup>m</sup> 5 | -0 <sup>m</sup> 76 |
| 27                     | .424                | .1423   | .1055   | 17.20              | 22 28.2                           | .3107  | 23 36.7                           | 0.90               |
| 28                     | .436                | .1385   | .1051   | 17.27              | 22 28.5                           | .3106  | 23 33.0                           | 1.04               |
| 29                     | .448                | .1347   | .1047   | 17.35              | 22 28.8                           | .3104  | 23 29.2                           | 1.19               |
| 30                     | .460                | .1309   | .1042   | 17.43              | 22 29.1                           | .3102  | 23 25.5                           | 1.33               |
| 31                     | .472                | .1271   | .1037   | 17.50              | 22 29.3                           | .3100  | 23 21.7                           | 1.47               |

## 1837

|         |    |                     |         |         |                   |                                  |        |                                   |                    |
|---------|----|---------------------|---------|---------|-------------------|----------------------------------|--------|-----------------------------------|--------------------|
| Januar  | 1  | -0 <sup>s</sup> 587 | -0.6128 | +0.1030 | 7 <sup>m</sup> 76 | 16 <sup>h</sup> 2 <sup>m</sup> 0 | 1.3098 | 23 <sup>h</sup> 18 <sup>m</sup> 0 | -1 <sup>m</sup> 61 |
|         | 2  | .575                | .6141   | .1024   | 7.74              | 16 4.2                           | .3095  | 23 14.2                           | 1.75               |
|         | 3  | .564                | .6153   | .1017   | 7.71              | 16 6.4                           | .3092  | 23 10.4                           | 1.90               |
|         | 4  | .552                | .6165   | .1010   | 7.69              | 16 8.6                           | .3089  | 23 6.6                            | 2.04               |
|         | 5  | .540                | .6176   | .1002   | 7.67              | 16 10.8                          | .3086  | 23 2.8                            | 2.18               |
|         | 6  | .528                | .6186   | .0994   | 7.65              | 16 13.1                          | .3083  | 22 59.1                           | 2.32               |
|         | 7  | .517                | .6196   | .0985   | 7.63              | 16 15.3                          | .3080  | 22 55.3                           | 2.45               |
|         | 8  | .505                | .6205   | .0976   | 7.61              | 16 17.6                          | .3076  | 22 51.5                           | 2.59               |
|         | 9  | .494                | .6213   | .0966   | 7.59              | 16 19.8                          | .3072  | 22 47.7                           | 2.73               |
|         | 10 | .482                | .6221   | .0956   | 7.58              | 16 22.1                          | .3068  | 22 43.9                           | 2.87               |
|         | 11 | -0.471              | -0.6228 | +0.0945 | 7.56              | 16 24.4                          | 1.3064 | 22 40.0                           | -3.00              |
|         | 12 | .459                | .6234   | .0934   | 7.55              | 16 26.7                          | .3060  | 22 36.2                           | 3.14               |
|         | 13 | .448                | .6239   | .0923   | 7.54              | 16 29.0                          | .3055  | 22 32.4                           | 3.27               |
|         | 14 | .437                | .6244   | .0911   | 7.53              | 16 31.2                          | .3050  | 22 28.6                           | 3.40               |
|         | 15 | .426                | .6248   | .0899   | 7.52              | 16 33.5                          | .3045  | 22 24.7                           | 3.53               |
|         | 16 | .415                | .6251   | .0886   | 7.52              | 16 35.8                          | .3040  | 22 20.8                           | 3.66               |
|         | 17 | .404                | .6254   | .0873   | 7.51              | 16 38.0                          | .3035  | 22 17.0                           | 3.79               |
|         | 18 | .393                | .6256   | .0860   | 7.51              | 16 40.3                          | .3030  | 22 13.1                           | 3.92               |
|         | 19 | .382                | .6258   | .0847   | 7.50              | 16 42.5                          | .3025  | 22 9.2                            | 4.04               |
|         | 20 | .372                | .6259   | .0833   | 7.50              | 16 44.8                          | .3019  | 22 5.3                            | 4.17               |
|         | 21 | -0.361              | -0.6260 | +0.0819 | 7.50              | 16 47.0                          | 1.3013 | 22 1.4                            | -4.29              |
|         | 22 | .351                | .6260   | .0804   | 7.50              | 16 49.2                          | .3007  | 21 57.5                           | 4.42               |
|         | 23 | .340                | .6259   | .0789   | 7.50              | 16 51.4                          | .3002  | 21 53.6                           | 4.54               |
|         | 24 | .330                | .6258   | .0774   | 7.50              | 16 53.6                          | .2996  | 21 49.7                           | 4.66               |
|         | 25 | .320                | .6256   | .0759   | 7.51              | 16 55.7                          | .2990  | 21 45.7                           | 4.77               |
|         | 26 | .309                | .6253   | .0744   | 7.51              | 16 57.9                          | .2983  | 21 41.8                           | 4.89               |
|         | 27 | .299                | .6250   | .0729   | 7.52              | 17 0.0                           | .2977  | 21 37.8                           | 5.01               |
|         | 28 | .289                | .6247   | .0713   | 7.53              | 17 2.1                           | .2971  | 21 33.9                           | 5.12               |
|         | 29 | .280                | .6243   | .0698   | 7.53              | 17 4.2                           | .2965  | 21 29.9                           | 5.23               |
|         | 30 | .270                | .6239   | .0682   | 7.54              | 17 6.3                           | .2958  | 21 25.9                           | 5.34               |
|         | 31 | -0.260              | -0.6234 | +0.0666 | 7.55              | 17 8.3                           | 1.2952 | 21 21.9                           | -5.45              |
| Februar | 1  | .251                | .6229   | .0650   | 7.56              | 17 10.3                          | .2945  | 21 17.9                           | 5.56               |
|         | 2  | .241                | .6224   | .0634   | 7.57              | 17 12.3                          | .2938  | 21 13.9                           | 5.66               |
|         | 3  | .232                | .6218   | .0618   | 7.58              | 17 14.2                          | .2932  | 21 9.8                            | 5.76               |
|         | 4  | .222                | .6212   | .0602   | 7.59              | 17 16.2                          | .2925  | 21 5.8                            | 5.86               |
|         | 5  | .213                | .6206   | .0585   | 7.61              | 17 18.1                          | .2918  | 21 1.7                            | 5.96               |
|         | 6  | .204                | .6199   | .0568   | 7.62              | 17 20.0                          | .2912  | 20 57.7                           | 6.06               |
|         | 7  | .195                | .6192   | .0552   | 7.64              | 17 21.8                          | .2905  | 20 53.6                           | 6.15               |
|         | 8  | .186                | .6185   | .0536   | 7.65              | 17 23.6                          | .2899  | 20 49.5                           | 6.25               |
|         | 9  | .178                | .6178   | .0520   | 7.66              | 17 25.4                          | .2892  | 20 45.4                           | 6.34               |

| <sup>12<sup>h</sup></sup><br>M. Z. Berlin | f                    | x       | y       | g     | G                                  | log h  | H                                  | i'     |
|-------------------------------------------|----------------------|---------|---------|-------|------------------------------------|--------|------------------------------------|--------|
| Februar 10                                | —0. <sup>s</sup> 169 | —0.6171 | +0.0504 | 7".68 | 17 <sup>h</sup> 27. <sup>m</sup> 2 | 1.2886 | 20 <sup>h</sup> 41. <sup>m</sup> 3 | —6".43 |
| 11                                        | .160                 | .6163   | .0489   | 7.69  | 17 29.0                            | .2879  | 20 37.2                            | 6.51   |
| 12                                        | .152                 | .6155   | .0474   | 7.71  | 17 30.7                            | .2873  | 20 33.1                            | 6.60   |
| 13                                        | .143                 | .6147   | .0459   | 7.73  | 17 32.4                            | .2866  | 20 28.9                            | 6.68   |
| 14                                        | .135                 | .6139   | .0444   | 7.74  | 17 34.1                            | .2860  | 20 24.8                            | 6.76   |
| 15                                        | .127                 | .6130   | .0429   | 7.76  | 17 35.7                            | .2854  | 20 20.6                            | 6.84   |
| 16                                        | .119                 | .6122   | .0414   | 7.78  | 17 37.3                            | .2848  | 20 16.4                            | 6.92   |
| 17                                        | .111                 | .6113   | .0399   | 7.79  | 17 38.9                            | .2842  | 20 12.2                            | 7.00   |
| 18                                        | .103                 | .6104   | .0384   | 7.81  | 17 40.5                            | .2836  | 20 8.1                             | 7.07   |
| 19                                        | .095                 | .6095   | .0370   | 7.83  | 17 42.1                            | .2830  | 20 3.9                             | 7.14   |
| 20                                        | —0.087               | —0.6087 | +0.0356 | 7.85  | 17 43.6                            | 1.2824 | 19 59.6                            | —7.21  |
| 21                                        | .079                 | .6078   | .0343   | 7.86  | 17 45.1                            | .2818  | 19 55.4                            | 7.27   |
| 22                                        | .072                 | .6069   | .0330   | 7.88  | 17 46.6                            | .2813  | 19 51.2                            | 7.34   |
| 23                                        | .064                 | .6061   | .0317   | 7.90  | 17 48.1                            | .2807  | 19 46.9                            | 7.40   |
| 24                                        | .057                 | .6052   | .0304   | 7.91  | 17 49.5                            | .2802  | 19 42.7                            | 7.46   |
| 25                                        | .049                 | .6044   | .0292   | 7.93  | 17 50.9                            | .2797  | 19 38.4                            | 7.51   |
| 26                                        | .042                 | .6035   | .0281   | 7.95  | 17 52.3                            | .2792  | 19 34.2                            | 7.57   |
| 27                                        | .035                 | .6027   | .0270   | 7.97  | 17 53.7                            | .2787  | 19 29.9                            | 7.62   |
| 28                                        | .028                 | .6019   | .0259   | 7.98  | 17 55.1                            | .2783  | 19 25.6                            | 7.67   |
| März 1                                    | .020                 | .6011   | .0249   | 8.00  | 17 56.4                            | .2778  | 19 21.4                            | 7.72   |
| 2                                         | —0.013               | —0.6003 | +0.0239 | 8.01  | 17 57.8                            | 1.2774 | 19 17.1                            | —7.76  |
| 3                                         | —0.006               | .5996   | .0229   | 8.03  | 17 59.1                            | .2770  | 19 12.8                            | 7.80   |
| 4                                         | +0.001               | .5988   | .0220   | 8.04  | 18 0.4                             | .2767  | 19 8.5                             | 7.84   |
| 5                                         | .007                 | .5981   | .0212   | 8.06  | 18 1.7                             | .2763  | 19 4.2                             | 7.88   |
| 6                                         | .014                 | .5973   | .0204   | 8.07  | 18 3.0                             | .2759  | 18 59.9                            | 7.91   |
| 7                                         | .021                 | .5966   | .0196   | 8.09  | 18 4.2                             | .2756  | 18 55.5                            | 7.95   |
| 8                                         | .028                 | .5959   | .0189   | 8.10  | 18 5.4                             | .2753  | 18 51.2                            | 7.98   |
| 9                                         | .035                 | .5953   | .0183   | 8.11  | 18 6.7                             | .2751  | 18 46.9                            | 8.00   |
| 10                                        | .041                 | .5947   | .0177   | 8.13  | 18 7.9                             | .2748  | 18 42.6                            | 8.03   |
| 11                                        | .048                 | .5941   | .0172   | 8.14  | 18 9.1                             | .2746  | 18 38.3                            | 8.05   |
| 12                                        | +0.055               | —0.5935 | +0.0167 | 8.15  | 18 10.4                            | 1.2744 | 18 33.9                            | —8.07  |
| 13                                        | .061                 | .5929   | .0163   | 8.16  | 18 11.6                            | .2742  | 18 29.6                            | 8.09   |
| 14                                        | .068                 | .5923   | .0160   | 8.17  | 18 12.8                            | .2741  | 18 25.3                            | 8.11   |
| 15                                        | .075                 | .5917   | .0157   | 8.19  | 18 13.9                            | .2739  | 18 20.9                            | 8.12   |
| 16                                        | .081                 | .5912   | .0155   | 8.20  | 18 15.1                            | .2738  | 18 16.6                            | 8.13   |
| 17                                        | .088                 | .5907   | .0153   | 8.21  | 18 16.3                            | .2737  | 18 12.3                            | 8.14   |
| 18                                        | .094                 | .5902   | .0151   | 8.22  | 18 17.5                            | .2737  | 18 7.9                             | 8.14   |
| 19                                        | .101                 | .5898   | .0150   | 8.23  | 18 18.7                            | .2736  | 18 3.6                             | 8.15   |
| 20                                        | .107                 | .5894   | .0150   | 8.23  | 18 19.8                            | .2736  | 17 59.3                            | 8.15   |
| 21                                        | .114                 | .5890   | .0150   | 8.24  | 18 21.0                            | .2736  | 17 55.0                            | 8.15   |
| 22                                        | +0.121               | —0.5886 | +0.0151 | 8.25  | 18 22.2                            | 1.2737 | 17 50.6                            | —8.14  |
| 23                                        | .127                 | .5882   | .0153   | 8.26  | 18 23.3                            | .2737  | 17 46.3                            | 8.14   |
| 24                                        | .134                 | .5879   | .0155   | 8.26  | 18 24.5                            | .2738  | 17 42.0                            | 8.13   |
| 25                                        | .140                 | .5876   | .0158   | 8.27  | 18 25.7                            | .2740  | 17 37.7                            | 8.11   |
| 26                                        | .147                 | .5873   | .0161   | 8.27  | 18 26.9                            | .2741  | 17 33.4                            | 8.10   |
| 27                                        | .153                 | .5871   | .0165   | 8.28  | 18 28.0                            | .2743  | 17 29.1                            | 8.08   |
| 28                                        | .160                 | .5868   | .0169   | 8.28  | 18 29.2                            | .2744  | 17 24.8                            | 8.07   |
| 29                                        | .167                 | .5866   | .0174   | 8.29  | 18 30.4                            | .2746  | 17 20.5                            | 8.05   |
| 30                                        | .173                 | .5864   | .0179   | 8.29  | 18 31.6                            | .2748  | 17 16.2                            | 8.02   |
| 31                                        | .180                 | .5862   | .0184   | 8.30  | 18 32.8                            | .2751  | 17 12.0                            | 8.00   |

## 1837

| <sup>12h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g     | G                                  | log h  | H                                 | i      |
|--------------------------------|----|----------------------|---------|---------|-------|------------------------------------|--------|-----------------------------------|--------|
| April                          | 1  | +0. <sup>s</sup> 187 | —0.5860 | +0.0190 | 8".30 | 18 <sup>h</sup> 34 <sup>m</sup> .1 | 1.2754 | 17 <sup>h</sup> 7 <sup>m</sup> .7 | —7".97 |
|                                | 2  | .194                 | .5858   | .0197   | 8.30  | 18 35.3                            | .2757  | 17 3.5                            | 7.94   |
|                                | 3  | .200                 | .5856   | .0205   | 8.31  | 18 36.5                            | .2760  | 16 59.2                           | 7.91   |
|                                | 4  | .207                 | .5855   | .0213   | 8.31  | 18 37.7                            | .2763  | 16 55.0                           | 7.87   |
|                                | 5  | .214                 | .5854   | .0222   | 8.31  | 18 39.0                            | .2767  | 16 50.7                           | 7.84   |
|                                | 6  | .221                 | .5853   | .0231   | 8.32  | 18 40.2                            | .2771  | 16 46.5                           | 7.80   |
|                                | 7  | .228                 | .5852   | .0240   | 8.32  | 18 41.5                            | .2775  | 16 42.3                           | 7.75   |
|                                | 8  | .235                 | .5851   | .0250   | 8.32  | 18 42.8                            | .2779  | 16 38.1                           | 7.71   |
|                                | 9  | .242                 | .5850   | .0260   | 8.32  | 18 44.1                            | .2783  | 16 33.9                           | 7.66   |
|                                | 10 | .249                 | .5849   | .0271   | 8.32  | 18 45.4                            | .2788  | 16 29.7                           | 7.61   |
|                                | 11 | +0.257               | —0.5848 | +0.0282 | 8.32  | 18 46.7                            | 1.2792 | 16 25.6                           | —7.56  |
|                                | 12 | .264                 | .5848   | .0293   | 8.32  | 18 48.0                            | .2797  | 16 21.4                           | 7.51   |
|                                | 13 | .271                 | .5848   | .0305   | 8.33  | 18 49.4                            | .2802  | 16 17.3                           | 7.45   |
|                                | 14 | .279                 | .5848   | .0317   | 8.33  | 18 50.8                            | .2807  | 16 13.1                           | 7.40   |
|                                | 15 | .286                 | .5848   | .0329   | 8.33  | 18 52.1                            | .2812  | 16 9.0                            | 7.34   |
|                                | 16 | .294                 | .5847   | .0341   | 8.33  | 18 53.5                            | .2817  | 16 4.9                            | 7.28   |
|                                | 17 | .301                 | .5847   | .0354   | 8.33  | 18 54.9                            | .2823  | 16 0.8                            | 7.21   |
|                                | 18 | .309                 | .5846   | .0367   | 8.33  | 18 56.3                            | .2828  | 15 56.7                           | 7.15   |
|                                | 19 | .317                 | .5845   | .0381   | 8.33  | 18 57.8                            | .2834  | 15 52.7                           | 7.08   |
|                                | 20 | .325                 | .5844   | .0395   | 8.33  | 18 59.2                            | .2840  | 15 48.6                           | 7.01   |
|                                | 21 | +0.333               | —0.5843 | +0.0409 | 8.33  | 19 0.7                             | 1.2845 | 15 44.6                           | —6.94  |
|                                | 22 | .341                 | .5842   | .0423   | 8.34  | 19 2.2                             | .2851  | 15 40.5                           | 6.87   |
|                                | 23 | .349                 | .5841   | .0437   | 8.34  | 19 3.7                             | .2858  | 15 36.5                           | 6.79   |
|                                | 24 | .357                 | .5840   | .0452   | 8.34  | 19 5.2                             | .2864  | 15 32.5                           | 6.71   |
|                                | 25 | .365                 | .5839   | .0467   | 8.34  | 19 6.7                             | .2870  | 15 28.5                           | 6.63   |
|                                | 26 | .374                 | .5837   | .0482   | 8.35  | 19 8.2                             | .2876  | 15 24.5                           | 6.55   |
|                                | 27 | .382                 | .5836   | .0497   | 8.35  | 19 9.8                             | .2882  | 15 20.6                           | 6.47   |
|                                | 28 | .391                 | .5834   | .0512   | 8.35  | 19 11.4                            | .2889  | 15 16.6                           | 6.38   |
|                                | 29 | .399                 | .5832   | .0528   | 8.36  | 19 13.0                            | .2895  | 15 12.7                           | 6.30   |
|                                | 30 | .408                 | .5829   | .0543   | 8.36  | 19 14.5                            | .2901  | 15 8.7                            | 6.21   |
| Mai                            | 1  | +0.417               | —0.5826 | +0.0559 | 8.37  | 19 16.1                            | 1.2908 | 15 4.8                            | —6.12  |
|                                | 2  | .426                 | .5823   | .0574   | 8.38  | 19 17.8                            | .2914  | 15 0.9                            | 6.03   |
|                                | 3  | .434                 | .5820   | .0590   | 8.38  | 19 19.4                            | .2920  | 14 57.0                           | 5.93   |
|                                | 4  | .443                 | .5816   | .0605   | 8.39  | 19 21.0                            | .2927  | 14 53.2                           | 5.84   |
|                                | 5  | .452                 | .5813   | .0621   | 8.40  | 19 22.7                            | .2933  | 14 49.3                           | 5.74   |
|                                | 6  | .462                 | .5809   | .0636   | 8.40  | 19 24.4                            | .2939  | 14 45.5                           | 5.64   |
|                                | 7  | .471                 | .5805   | .0651   | 8.41  | 19 26.1                            | .2945  | 14 41.7                           | 5.54   |
|                                | 8  | .480                 | .5800   | .0666   | 8.42  | 19 27.8                            | .2952  | 14 37.9                           | 5.44   |
|                                | 9  | .490                 | .5795   | .0681   | 8.43  | 19 29.5                            | .2958  | 14 34.0                           | 5.34   |
|                                | 10 | .499                 | .5789   | .0696   | 8.44  | 19 31.2                            | .2964  | 14 30.2                           | 5.24   |
|                                | 11 | +0.509               | —0.5783 | +0.0711 | 8.45  | 19 32.9                            | 1.2970 | 14 26.5                           | —5.13  |
|                                | 12 | .519                 | .5777   | .0726   | 8.47  | 19 34.6                            | .2976  | 14 22.7                           | 5.02   |
|                                | 13 | .529                 | .5770   | .0741   | 8.48  | 19 36.4                            | .2982  | 14 18.9                           | 4.91   |
|                                | 14 | .538                 | .5763   | .0755   | 8.49  | 19 38.1                            | .2988  | 14 15.2                           | 4.80   |
|                                | 15 | .548                 | .5756   | .0769   | 8.51  | 19 39.9                            | .2994  | 14 11.4                           | 4.69   |
|                                | 16 | .558                 | .5748   | .0783   | 8.52  | 19 41.6                            | .2999  | 14 7.7                            | 4.58   |
|                                | 17 | .568                 | .5739   | .0797   | 8.54  | 19 43.4                            | .3005  | 14 4.0                            | 4.46   |
|                                | 18 | .579                 | .5730   | .0811   | 8.56  | 19 45.1                            | .3010  | 14 0.3                            | 4.35   |
|                                | 19 | .589                 | .5721   | .0825   | 8.58  | 19 46.9                            | .3016  | 13 56.6                           | 4.24   |
|                                | 20 | .599                 | .5711   | .0838   | 8.60  | 19 48.6                            | .3021  | 13 52.9                           | 4.12   |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f       | x       | y       | g     | G                                  | log h  | H                                  | i     |
|---------------------------------|----|---------|---------|---------|-------|------------------------------------|--------|------------------------------------|-------|
| Mai                             | 21 | +0.5610 | -0.5701 | +0.0851 | 8.62  | 19 <sup>h</sup> 50 <sup>m</sup> .4 | 1.3026 | 13 <sup>h</sup> 49 <sup>m</sup> .2 | -4.00 |
|                                 | 22 | .620    | .5690   | .0864   | 8.64  | 19 52.1                            | .3031  | 13 45.6                            | 3.88  |
|                                 | 23 | .631    | .5679   | .0876   | 8.66  | 19 53.9                            | .3036  | 13 41.9                            | 3.76  |
|                                 | 24 | .642    | .5667   | .0888   | 8.69  | 19 55.6                            | .3041  | 13 38.3                            | 3.63  |
|                                 | 25 | .652    | .5654   | .0900   | 8.71  | 19 57.3                            | .3046  | 13 34.7                            | 3.51  |
|                                 | 26 | .663    | .5641   | .0911   | 8.74  | 19 59.1                            | .3050  | 13 31.1                            | 3.39  |
|                                 | 27 | .674    | .5628   | .0922   | 8.77  | 20 0.8                             | .3055  | 13 27.5                            | 3.27  |
|                                 | 28 | .685    | .5614   | .0933   | 8.79  | 20 2.5                             | .3059  | 13 23.8                            | 3.14  |
|                                 | 29 | .696    | .5599   | .0944   | 8.82  | 20 4.2                             | .3064  | 13 20.2                            | 3.02  |
|                                 | 30 | .707    | .5584   | .0955   | 8.85  | 20 5.9                             | .3068  | 13 16.6                            | 2.89  |
| Juni                            | 31 | +0.718  | -0.5569 | +0.0965 | 8.89  | 20 7.6                             | 1.3072 | 13 13.1                            | -2.76 |
|                                 | 1  | .729    | .5553   | .0974   | 8.92  | 20 9.3                             | .3075  | 13 9.5                             | 2.63  |
|                                 | 2  | .740    | .5537   | .0983   | 8.95  | 20 11.0                            | .3079  | 13 5.9                             | 2.50  |
|                                 | 3  | .751    | .5520   | .0991   | 8.98  | 20 12.7                            | .3082  | 13 2.4                             | 2.37  |
|                                 | 4  | .763    | .5502   | .0999   | 9.02  | 20 14.3                            | .3085  | 12 58.8                            | 2.24  |
|                                 | 5  | .774    | .5484   | .1006   | 9.06  | 20 16.0                            | .3088  | 12 55.3                            | 2.11  |
|                                 | 6  | .785    | .5465   | .1013   | 9.09  | 20 17.6                            | .3091  | 12 51.7                            | 1.98  |
|                                 | 7  | .797    | .5445   | .1020   | 9.13  | 20 19.2                            | .3093  | 12 48.2                            | 1.85  |
|                                 | 8  | .808    | .5425   | .1026   | 9.17  | 20 20.8                            | .3096  | 12 44.6                            | 1.71  |
|                                 | 9  | .820    | .5405   | .1032   | 9.21  | 20 22.3                            | .3098  | 12 41.1                            | 1.58  |
|                                 | 10 | +0.831  | -0.5384 | +0.1038 | 9.25  | 20 23.9                            | 1.3100 | 12 37.6                            | -1.45 |
|                                 | 11 | .843    | .5363   | .1043   | 9.30  | 20 25.4                            | .3102  | 12 34.1                            | 1.31  |
|                                 | 12 | .854    | .5341   | .1047   | 9.34  | 20 26.9                            | .3104  | 12 30.6                            | 1.18  |
|                                 | 13 | .866    | .5319   | .1051   | 9.39  | 20 28.4                            | .3106  | 12 27.0                            | 1.04  |
|                                 | 14 | .878    | .5296   | .1054   | 9.43  | 20 29.9                            | .3107  | 12 23.5                            | 0.91  |
|                                 | 15 | .889    | .5272   | .1057   | 9.48  | 20 31.4                            | .3108  | 12 20.0                            | 0.78  |
|                                 | 16 | .901    | .5248   | .1059   | 9.53  | 20 32.8                            | .3109  | 12 16.5                            | 0.64  |
|                                 | 17 | .912    | .5224   | .1061   | 9.58  | 20 34.2                            | .3110  | 12 13.0                            | 0.50  |
|                                 | 18 | .924    | .5200   | .1063   | 9.62  | 20 35.6                            | .3110  | 12 9.5                             | 0.37  |
|                                 | 19 | .936    | .5175   | .1064   | 9.67  | 20 37.0                            | .3111  | 12 6.0                             | 0.23  |
|                                 | 20 | +0.948  | -0.5150 | +0.1065 | 9.73  | 20 38.3                            | 1.3111 | 12 2.5                             | -0.10 |
|                                 | 21 | .959    | .5124   | .1065   | 9.78  | 20 39.6                            | .3111  | 11 59.0                            | +0.04 |
|                                 | 22 | .971    | .5098   | .1065   | 9.83  | 20 40.9                            | .3111  | 11 55.5                            | 0.17  |
|                                 | 23 | .983    | .5071   | .1064   | 9.88  | 20 42.2                            | .3111  | 11 52.0                            | 0.31  |
|                                 | 24 | 0.994   | .5044   | .1063   | 9.94  | 20 43.5                            | .3110  | 11 48.5                            | 0.44  |
|                                 | 25 | 1.006   | .5017   | .1061   | 9.99  | 20 44.7                            | .3109  | 11 45.0                            | 0.58  |
|                                 | 26 | .018    | .4989   | .1058   | 10.05 | 20 45.9                            | .3108  | 11 41.5                            | 0.71  |
|                                 | 27 | .029    | .4961   | .1055   | 10.10 | 20 47.1                            | .3107  | 11 38.0                            | 0.85  |
|                                 | 28 | .041    | .4933   | .1052   | 10.16 | 20 48.2                            | .3106  | 11 34.5                            | 0.98  |
|                                 | 29 | .053    | .4905   | .1048   | 10.22 | 20 49.4                            | .3105  | 11 31.0                            | 1.12  |
| Juli                            | 30 | +1.064  | -0.4877 | +0.1044 | 10.27 | 20 50.5                            | 1.3103 | 11 27.5                            | +1.25 |
|                                 | 1  | .076    | .4848   | .1040   | 10.33 | 20 51.6                            | .3101  | 11 24.0                            | 1.39  |
|                                 | 2  | .087    | .4819   | .1035   | 10.39 | 20 52.6                            | .3099  | 11 20.4                            | 1.52  |
|                                 | 3  | .099    | .4789   | .1029   | 10.45 | 20 53.7                            | .3097  | 11 16.9                            | 1.65  |
|                                 | 4  | .110    | .4759   | .1023   | 10.51 | 20 54.7                            | .3095  | 11 13.4                            | 1.79  |
|                                 | 5  | .122    | .4728   | .1016   | 10.57 | 20 55.7                            | .3092  | 11 9.9                             | 1.92  |
|                                 | 6  | .133    | .4698   | .1009   | 10.63 | 20 56.6                            | .3089  | 11 6.4                             | 2.05  |
|                                 | 7  | .144    | .4667   | .1002   | 10.69 | 20 57.6                            | .3086  | 11 2.8                             | 2.18  |
|                                 | 8  | .156    | .4637   | .0994   | 10.75 | 20 58.5                            | .3083  | 10 59.3                            | 2.31  |
|                                 | 9  | .167    | .4606   | .0986   | 10.82 | 20 59.4                            | .3080  | 10 55.7                            | 2.44  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                   | log h  | H                    | i     |
|---------------------------------|----|--------|---------|---------|-------|---------------------|--------|----------------------|-------|
| Juli                            | 10 | +1.178 | —0.4575 | +0.0977 | 10.88 | 21 <sup>h</sup> 0.3 | 1.3077 | 10 <sup>h</sup> 52.2 | +2.57 |
|                                 | 11 | .189   | .4544   | .0968   | 10.94 | 21 1.1              | .3073  | 10 48.6              | 2.70  |
|                                 | 12 | .201   | .4513   | .0959   | 11.00 | 21 2.0              | .3069  | 10 45.0              | 2.83  |
|                                 | 13 | .212   | .4482   | .0949   | 11.06 | 21 2.8              | .3065  | 10 41.5              | 2.95  |
|                                 | 14 | .223   | .4451   | .0939   | 11.13 | 21 3.6              | .3061  | 10 37.9              | 3.08  |
|                                 | 15 | .233   | .4419   | .0928   | 11.19 | 21 4.3              | .3057  | 10 34.3              | 3.20  |
|                                 | 16 | .244   | .4388   | .0917   | 11.25 | 21 5.1              | .3053  | 10 30.7              | 3.33  |
|                                 | 17 | .255   | .4356   | .0906   | 11.32 | 21 5.8              | .3048  | 10 27.1              | 3.45  |
|                                 | 18 | .266   | .4325   | .0895   | 11.38 | 21 6.5              | .3044  | 10 23.5              | 3.57  |
|                                 | 19 | .276   | .4293   | .0883   | 11.44 | 21 7.2              | .3039  | 10 19.9              | 3.70  |
|                                 | 20 | +1.287 | —0.4261 | +0.0871 | 11.51 | 21 7.9              | 1.3034 | 10 16.3              | +3.82 |
|                                 | 21 | .298   | .4230   | .0859   | 11.57 | 21 8.5              | .3030  | 10 12.6              | 3.94  |
|                                 | 22 | .308   | .4198   | .0846   | 11.63 | 21 9.1              | .3024  | 10 9.0               | 4.05  |
|                                 | 23 | .319   | .4167   | .0833   | 11.70 | 21 9.8              | .3019  | 10 5.3               | 4.17  |
|                                 | 24 | .329   | .4135   | .0820   | 11.76 | 21 10.4             | .3014  | 10 1.7               | 4.29  |
|                                 | 25 | .339   | .4104   | .0806   | 11.82 | 21 10.9             | .3008  | 9 58.0               | 4.40  |
|                                 | 26 | .349   | .4073   | .0792   | 11.88 | 21 11.5             | .3003  | 9 54.3               | 4.52  |
|                                 | 27 | .359   | .4042   | .0778   | 11.95 | 21 12.1             | .2997  | 9 50.6               | 4.63  |
|                                 | 28 | .369   | .4010   | .0764   | 12.01 | 21 12.6             | .2991  | 9 46.9               | 4.74  |
|                                 | 29 | .379   | .3979   | .0750   | 12.07 | 21 13.1             | .2986  | 9 43.2               | 4.85  |
|                                 | 30 | +1.389 | —0.3948 | +0.0736 | 12.13 | 21 13.7             | 1.2980 | 9 39.5               | +4.96 |
|                                 | 31 | .399   | .3917   | .0721   | 12.20 | 21 14.2             | .2974  | 9 35.8               | 5.07  |
| August                          | 1  | .409   | .3886   | .0706   | 12.26 | 21 14.6             | .2968  | 9 32.0               | 5.17  |
|                                 | 2  | .418   | .3856   | .0691   | 12.32 | 21 15.1             | .2962  | 9 28.3               | 5.28  |
|                                 | 3  | .428   | .3825   | .0676   | 12.38 | 21 15.6             | .2956  | 9 24.5               | 5.38  |
|                                 | 4  | .437   | .3795   | .0661   | 12.44 | 21 16.0             | .2950  | 9 20.7               | 5.48  |
|                                 | 5  | .447   | .3765   | .0645   | 12.50 | 21 16.4             | .2943  | 9 16.9               | 5.58  |
|                                 | 6  | .456   | .3735   | .0630   | 12.56 | 21 16.8             | .2937  | 9 13.1               | 5.68  |
|                                 | 7  | .465   | .3705   | .0615   | 12.62 | 21 17.2             | .2931  | 9 9.3                | 5.78  |
|                                 | 8  | .474   | .3675   | .0600   | 12.68 | 21 17.6             | .2925  | 9 5.5                | 5.87  |
|                                 | 9  | +1.483 | —0.3646 | +0.0584 | 12.74 | 21 18.0             | 1.2918 | 9 1.6                | +5.97 |
|                                 | 10 | .492   | .3617   | .0569   | 12.80 | 21 18.4             | .2912  | 8 57.8               | 6.06  |
|                                 | 11 | .501   | .3588   | .0554   | 12.86 | 21 18.8             | .2906  | 8 53.9               | 6.15  |
|                                 | 12 | .509   | .3559   | .0539   | 12.91 | 21 19.2             | .2899  | 8 50.0               | 6.24  |
|                                 | 13 | .518   | .3530   | .0524   | 12.97 | 21 19.5             | .2893  | 8 46.1               | 6.33  |
|                                 | 14 | .527   | .3502   | .0509   | 13.03 | 21 19.9             | .2887  | 8 42.2               | 6.41  |
|                                 | 15 | .535   | .3474   | .0494   | 13.08 | 21 20.2             | .2881  | 8 38.3               | 6.50  |
|                                 | 16 | .544   | .3446   | .0479   | 13.14 | 21 20.5             | .2875  | 8 34.4               | 6.58  |
|                                 | 17 | .552   | .3418   | .0464   | 13.20 | 21 20.9             | .2868  | 8 30.4               | 6.66  |
|                                 | 18 | .560   | .3391   | .0449   | 13.25 | 21 21.2             | .2862  | 8 26.5               | 6.73  |
|                                 | 19 | +1.568 | —0.3364 | +0.0434 | 13.31 | 21 21.5             | 1.2856 | 8 22.5               | +6.81 |
|                                 | 20 | .576   | .3337   | .0420   | 13.36 | 21 21.8             | .2850  | 8 18.5               | 6.88  |
|                                 | 21 | .584   | .3310   | .0406   | 13.41 | 21 22.1             | .2845  | 8 14.5               | 6.96  |
|                                 | 22 | .592   | .3284   | .0393   | 13.46 | 21 22.4             | .2839  | 8 10.5               | 7.03  |
|                                 | 23 | .600   | .3258   | .0379   | 13.52 | 21 22.7             | .2833  | 8 6.5                | 7.10  |
|                                 | 24 | .608   | .3233   | .0366   | 13.57 | 21 23.0             | .2828  | 8 2.4                | 7.16  |
|                                 | 25 | .616   | .3207   | .0353   | 13.62 | 21 23.3             | .2822  | 7 58.4               | 7.23  |
|                                 | 26 | .624   | .3182   | .0340   | 13.67 | 21 23.6             | .2817  | 7 54.3               | 7.29  |
|                                 | 27 | .631   | .3157   | .0327   | 13.72 | 21 23.9             | .2811  | 7 50.3               | 7.35  |
|                                 | 28 | .639   | .3133   | .0315   | 13.77 | 21 24.2             | .2806  | 7 46.2               | 7.41  |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f       | x       | y       | g     | G                    | log h  | H                   | i     |
|---------------------------------|----|---------|---------|---------|-------|----------------------|--------|---------------------|-------|
| August                          | 29 | +1.8646 | —0.3109 | +0.0303 | 13.82 | 21 <sup>h</sup> 24.5 | 1.2801 | 7 <sup>h</sup> 42.1 | +7.46 |
|                                 | 30 | .654    | .3085   | .0292   | 13.87 | 21 24.7              | .2796  | 7 38.0              | 7.52  |
|                                 | 31 | .661    | .3061   | .0281   | 13.91 | 21 25.0              | .2792  | 7 33.9              | 7.57  |
| Septbr.                         | 1  | .668    | .3038   | .0270   | 13.96 | 21 25.3              | .2787  | 7 29.8              | 7.62  |
|                                 | 2  | .675    | .3015   | .0259   | 14.01 | 21 25.6              | .2783  | 7 25.6              | 7.67  |
|                                 | 3  | .683    | .2992   | .0249   | 14.05 | 21 25.9              | .2779  | 7 21.5              | 7.71  |
|                                 | 4  | .690    | .2969   | .0239   | 14.10 | 21 26.2              | .2775  | 7 17.3              | 7.76  |
|                                 | 5  | .697    | .2947   | .0230   | 14.14 | 21 26.5              | .2771  | 7 13.2              | 7.80  |
|                                 | 6  | .704    | .2925   | .0221   | 14.19 | 21 26.7              | .2767  | 7 9.0               | 7.83  |
|                                 | 7  | .711    | .2903   | .0213   | 14.23 | 21 27.0              | .2763  | 7 4.8               | 7.87  |
|                                 | 8  | +1.717  | —0.2882 | +0.0205 | 14.27 | 21 27.3              | 1.2760 | 7 0.7               | +7.90 |
|                                 | 9  | .724    | .2861   | .0198   | 14.31 | 21 27.6              | .2757  | 6 56.5              | 7.94  |
|                                 | 10 | .731    | .2840   | .0191   | 14.36 | 21 27.9              | .2754  | 6 52.3              | 7.97  |
|                                 | 11 | .738    | .2820   | .0185   | 14.40 | 21 28.2              | .2751  | 6 48.0              | 8.00  |
|                                 | 12 | .745    | .2800   | .0179   | 14.44 | 21 28.6              | .2749  | 6 43.8              | 8.03  |
|                                 | 13 | .751    | .2780   | .0174   | 14.48 | 21 28.9              | .2746  | 6 39.6              | 8.05  |
|                                 | 14 | .758    | .2760   | .0169   | 14.52 | 21 29.2              | .2744  | 6 35.4              | 8.07  |
|                                 | 15 | .765    | .2740   | .0165   | 14.56 | 21 29.5              | .2743  | 6 31.1              | 8.09  |
|                                 | 16 | .772    | .2720   | .0161   | 14.60 | 21 29.8              | .2741  | 6 26.9              | 8.10  |
|                                 | 17 | .778    | .2701   | .0158   | 14.64 | 21 30.1              | .2740  | 6 22.6              | 8.12  |
|                                 | 18 | +1.785  | —0.2682 | +0.0156 | 14.67 | 21 30.5              | 1.2739 | 6 18.3              | +8.13 |
|                                 | 19 | .791    | .2663   | .0154   | 14.71 | 21 30.8              | .2738  | 6 14.1              | 8.14  |
|                                 | 20 | .798    | .2644   | .0152   | 14.75 | 21 31.2              | .2737  | 6 9.8               | 8.14  |
|                                 | 21 | .805    | .2626   | .0151   | 14.79 | 21 31.5              | .2737  | 6 5.5               | 8.15  |
|                                 | 22 | .811    | .2608   | .0150   | 14.82 | 21 31.9              | .2736  | 6 1.3               | 8.15  |
|                                 | 23 | .818    | .2590   | .0150   | 14.86 | 21 32.2              | .2736  | 5 57.0              | 8.15  |
|                                 | 24 | .824    | .2572   | .0151   | 14.89 | 21 32.6              | .2737  | 5 52.7              | 8.15  |
|                                 | 25 | .831    | .2554   | .0152   | 14.93 | 21 33.0              | .2737  | 5 48.4              | 8.14  |
|                                 | 26 | .838    | .2536   | .0154   | 14.97 | 21 33.4              | .2738  | 5 44.2              | 8.13  |
|                                 | 27 | .844    | .2519   | .0156   | 15.00 | 21 33.7              | .2739  | 5 39.9              | 8.12  |
|                                 | 28 | +1.851  | —0.2501 | +0.0159 | 15.04 | 21 34.1              | 1.2740 | 5 35.6              | +8.11 |
|                                 | 29 | .858    | .2484   | .0162   | 15.07 | 21 34.5              | .2742  | 5 31.3              | 8.10  |
|                                 | 30 | .864    | .2466   | .0166   | 15.11 | 21 35.0              | .2743  | 5 27.0              | 8.08  |
| Oktbr.                          | 1  | .871    | .2449   | .0171   | 15.14 | 21 35.4              | .2745  | 5 22.7              | 8.06  |
|                                 | 2  | .878    | .2432   | .0176   | 15.17 | 21 35.8              | .2748  | 5 18.5              | 8.04  |
|                                 | 3  | .884    | .2415   | .0182   | 15.21 | 21 36.2              | .2750  | 5 14.2              | 8.01  |
|                                 | 4  | .891    | .2398   | .0188   | 15.24 | 21 36.7              | .2753  | 5 9.9               | 7.98  |
|                                 | 5  | .898    | .2382   | .0195   | 15.27 | 21 37.1              | .2756  | 5 5.7               | 7.95  |
|                                 | 6  | .905    | .2365   | .0202   | 15.31 | 21 37.6              | .2759  | 5 1.4               | 7.92  |
|                                 | 7  | .912    | .2349   | .0210   | 15.34 | 21 38.1              | .2762  | 4 57.1              | 7.89  |
|                                 | 8  | +1.919  | —0.2332 | +0.0218 | 15.37 | 21 38.5              | 1.2765 | 4 52.9              | +7.85 |
|                                 | 9  | .926    | .2316   | .0227   | 15.41 | 21 39.0              | .2769  | 4 48.6              | 7.82  |
|                                 | 10 | .933    | .2299   | .0236   | 15.44 | 21 39.5              | .2773  | 4 44.4              | 7.78  |
|                                 | 11 | .940    | .2282   | .0245   | 15.48 | 21 40.0              | .2777  | 4 40.1              | 7.73  |
|                                 | 12 | .948    | .2266   | .0255   | 15.51 | 21 40.5              | .2781  | 4 35.9              | 7.69  |
|                                 | 13 | .955    | .2249   | .0266   | 15.54 | 21 41.0              | .2786  | 4 31.7              | 7.64  |
|                                 | 14 | .962    | .2232   | .0277   | 15.58 | 21 41.5              | .2790  | 4 27.4              | 7.59  |
|                                 | 15 | .969    | .2215   | .0288   | 15.61 | 21 42.1              | .2795  | 4 23.2              | 7.53  |
|                                 | 16 | .977    | .2198   | .0300   | 15.64 | 21 42.6              | .2800  | 4 19.0              | 7.48  |
|                                 | 17 | .984    | .2181   | .0312   | 15.68 | 21 43.1              | .2805  | 4 14.8              | 7.42  |

## 1837

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                   | x       | y       | g                  | G                                 | log h  | H                                | i                  |
|---------------------------------|----|---------------------|---------|---------|--------------------|-----------------------------------|--------|----------------------------------|--------------------|
| Oktbr.                          | 18 | +1 <sup>s</sup> 992 | —0.2164 | +0.0325 | 15 <sup>h</sup> 71 | 21 <sup>h</sup> 43 <sup>m</sup> 7 | 1.2811 | 4 <sup>h</sup> 10 <sup>m</sup> 6 | +7 <sup>h</sup> 36 |
|                                 | 19 | 2.000               | .2146   | .0338   | 15.75              | 21 44.2                           | .2816  | 4 6.4                            | 7.30               |
|                                 | 20 | .007                | .2129   | .0351   | 15.78              | 21 44.8                           | .2821  | 4 2.3                            | 7.23               |
|                                 | 21 | .015                | .2111   | .0364   | 15.82              | 21 45.4                           | .2827  | 3 58.1                           | 7.17               |
|                                 | 22 | .023                | .2093   | .0378   | 15.85              | 21 45.9                           | .2833  | 3 53.9                           | 7.10               |
|                                 | 23 | .031                | .2075   | .0392   | 15.89              | 21 46.5                           | .2839  | 3 49.8                           | 7.03               |
|                                 | 24 | .039                | .2057   | .0406   | 15.93              | 21 47.1                           | .2845  | 3 45.6                           | 6.96               |
|                                 | 25 | .047                | .2039   | .0420   | 15.96              | 21 47.7                           | .2851  | 3 41.5                           | 6.88               |
|                                 | 26 | .056                | .2021   | .0435   | 16.00              | 21 48.3                           | .2857  | 3 37.3                           | 6.80               |
|                                 | 27 | .064                | .2002   | .0450   | 16.04              | 21 48.9                           | .2863  | 3 33.2                           | 6.73               |
|                                 | 28 | +2.072              | —0.1983 | +0.0465 | 16.08              | 21 49.5                           | 1.2869 | 3 29.1                           | +6.64              |
|                                 | 29 | .081                | .1963   | .0481   | 16.12              | 21 50.1                           | .2876  | 3 25.0                           | 6.56               |
|                                 | 30 | .090                | .1944   | .0496   | 16.15              | 21 50.7                           | .2882  | 3 20.9                           | 6.48               |
|                                 | 31 | .098                | .1924   | .0512   | 16.19              | 21 51.4                           | .2888  | 3 16.9                           | 6.39               |
| Novbr.                          | 1  | .107                | .1904   | .0528   | 16.23              | 21 52.0                           | .2895  | 3 12.8                           | 6.30               |
|                                 | 2  | .116                | .1884   | .0544   | 16.27              | 21 52.6                           | .2902  | 3 8.7                            | 6.21               |
|                                 | 3  | .125                | .1864   | .0560   | 16.31              | 21 53.2                           | .2908  | 3 4.7                            | 6.11               |
|                                 | 4  | .134                | .1843   | .0576   | 16.36              | 21 53.8                           | .2915  | 3 0.6                            | 6.02               |
|                                 | 5  | .143                | .1821   | .0592   | 16.40              | 21 54.5                           | .2921  | 2 56.6                           | 5.92               |
|                                 | 6  | .153                | .1799   | .0608   | 16.44              | 21 55.1                           | .2928  | 2 52.6                           | 5.82               |
|                                 | 7  | +2.162              | —0.1777 | +0.0624 | 16.49              | 21 55.7                           | 1.2934 | 2 48.6                           | +5.72              |
|                                 | 8  | .171                | .1755   | .0640   | 16.53              | 21 56.4                           | .2941  | 2 44.6                           | 5.62               |
|                                 | 9  | .181                | .1733   | .0656   | 16.58              | 21 57.0                           | .2947  | 2 40.6                           | 5.52               |
|                                 | 10 | .191                | .1710   | .0672   | 16.62              | 21 57.7                           | .2954  | 2 36.6                           | 5.41               |
|                                 | 11 | .200                | .1687   | .0688   | 16.67              | 21 58.3                           | .2960  | 2 32.7                           | 5.30               |
|                                 | 12 | .210                | .1663   | .0703   | 16.72              | 21 58.9                           | .2967  | 2 28.7                           | 5.19               |
|                                 | 13 | .220                | .1639   | .0718   | 16.76              | 21 59.6                           | .2973  | 2 24.8                           | 5.08               |
|                                 | 14 | .230                | .1615   | .0733   | 16.81              | 22 0.2                            | .2979  | 2 20.8                           | 4.97               |
|                                 | 15 | .240                | .1590   | .0748   | 16.86              | 22 0.9                            | .2985  | 2 16.9                           | 4.85               |
|                                 | 16 | .251                | .1565   | .0763   | 16.91              | 22 1.5                            | .2991  | 2 13.0                           | 4.74               |
|                                 | 17 | +2.261              | —0.1540 | +0.0778 | 16.96              | 22 2.1                            | 1.2997 | 2 9.1                            | +4.62              |
|                                 | 18 | .271                | .1514   | .0793   | 17.02              | 22 2.8                            | .3003  | 2 5.2                            | 4.50               |
|                                 | 19 | .282                | .1488   | .0808   | 17.07              | 22 3.4                            | .3009  | 2 1.3                            | 4.38               |
|                                 | 20 | .292                | .1461   | .0822   | 17.12              | 22 4.0                            | .3015  | 1 57.4                           | 4.26               |
|                                 | 21 | .303                | .1434   | .0836   | 17.18              | 22 4.6                            | .3020  | 1 53.5                           | 4.14               |
|                                 | 22 | .314                | .1406   | .0850   | 17.23              | 22 5.2                            | .3026  | 1 49.7                           | 4.01               |
|                                 | 23 | .325                | .1378   | .0863   | 17.29              | 22 5.9                            | .3031  | 1 45.8                           | 3.88               |
|                                 | 24 | .336                | .1350   | .0876   | 17.35              | 22 6.5                            | .3036  | 1 42.0                           | 3.76               |
|                                 | 25 | .347                | .1321   | .0889   | 17.40              | 22 7.1                            | .3042  | 1 38.1                           | 3.63               |
|                                 | 26 | .358                | .1292   | .0901   | 17.46              | 22 7.7                            | .3047  | 1 34.3                           | 3.50               |
|                                 | 27 | +2.369              | —0.1263 | +0.0913 | 17.52              | 22 8.2                            | 1.3051 | 1 30.5                           | +3.37              |
|                                 | 28 | .381                | .1233   | .0925   | 17.58              | 22 8.8                            | .3056  | 1 26.7                           | 3.24               |
|                                 | 29 | .392                | .1203   | .0936   | 17.64              | 22 9.4                            | .3061  | 1 22.8                           | 3.10               |
| Dezbr.                          | 30 | .404                | .1172   | .0947   | 17.70              | 22 10.0                           | .3065  | 1 19.0                           | 2.97               |
|                                 | 1  | .415                | .1141   | .0958   | 17.76              | 22 10.5                           | .3069  | 1 15.2                           | 2.83               |
|                                 | 2  | .427                | .1110   | .0968   | 17.83              | 22 11.1                           | .3073  | 1 11.4                           | 2.70               |
|                                 | 3  | .438                | .1079   | .0977   | 17.89              | 22 11.7                           | .3077  | 1 7.6                            | 2.56               |
|                                 | 4  | .450                | .1047   | .0986   | 17.95              | 22 12.2                           | .3080  | 1 3.9                            | 2.43               |
|                                 | 5  | .462                | .1015   | .0995   | 18.02              | 22 12.7                           | .3084  | 1 0.1                            | 2.29               |
|                                 | 6  | .473                | .0982   | .1003   | 18.08              | 22 13.3                           | .3087  | 0 56.3                           | 2.15               |

## 1837

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                  | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|------------------------------------|--------|-----------------------------------|---------------------|
| Dezbr.                          | 7  | +2 <sup>s</sup> .485 | —0.0949 | +0.1011 | 18 <sup>h</sup> .15 | 22 <sup>h</sup> 13 <sup>m</sup> .8 | 1.3090 | 0 <sup>h</sup> 52 <sup>m</sup> .5 | +2 <sup>h</sup> .01 |
|                                 | 8  | .497                 | .0916   | .1018   | 18.22               | 22 14.3                            | .3093  | 0 48.8                            | 1.87                |
|                                 | 9  | .509                 | .0882   | .1025   | 18.28               | 22 14.8                            | .3095  | 0 45.0                            | 1.73                |
|                                 | 10 | .521                 | .0848   | .1031   | 18.35               | 22 15.3                            | .3098  | 0 41.2                            | 1.58                |
|                                 | 11 | .533                 | .0814   | .1037   | 18.42               | 22 15.8                            | .3100  | 0 37.5                            | 1.44                |
|                                 | 12 | .545                 | .0780   | .1042   | 18.49               | 22 16.2                            | .3102  | 0 33.7                            | 1.30                |
|                                 | 13 | .557                 | .0745   | .1047   | 18.56               | 22 16.7                            | .3104  | 0 30.0                            | 1.16                |
|                                 | 14 | .569                 | .0710   | .1051   | 18.63               | 22 17.1                            | .3106  | 0 26.2                            | 1.02                |
|                                 | 15 | .582                 | .0675   | .1055   | 18.70               | 22 17.6                            | .3107  | 0 22.5                            | 0.87                |
|                                 | 16 | .594                 | .0639   | .1058   | 18.77               | 22 18.0                            | .3108  | 0 18.8                            | 0.73                |
|                                 | 17 | +2.606               | —0.0603 | +0.1061 | 18.84               | 22 18.4                            | 1.3109 | 0 15.0                            | +0.58               |
|                                 | 18 | .618                 | .0567   | .1063   | 18.91               | 22 18.8                            | .3110  | 0 11.3                            | 0.44                |
|                                 | 19 | .630                 | .0531   | .1064   | 18.99               | 22 19.2                            | .3111  | 0 7.6                             | 0.29                |
|                                 | 20 | .643                 | .0494   | .1064   | 19.06               | 22 19.6                            | .3111  | 0 3.8                             | +0.15               |
|                                 | 21 | .655                 | .0458   | .1064   | 19.13               | 22 20.0                            | .3111  | 0 0.1                             | 0.00                |
|                                 | 22 | .667                 | .0421   | .1064   | 19.21               | 22 20.4                            | .3111  | 23 56.3                           | —0.14               |
|                                 | 23 | .680                 | .0384   | .1063   | 19.28               | 22 20.7                            | .3111  | 23 52.6                           | 0.29                |
|                                 | 24 | .692                 | .0347   | .1062   | 19.36               | 22 21.1                            | .3110  | 23 48.9                           | 0.43                |
|                                 | 25 | .704                 | .0310   | .1060   | 19.43               | 22 21.4                            | .3110  | 23 45.1                           | 0.58                |
|                                 | 26 | .716                 | .0273   | .1058   | 19.50               | 22 21.8                            | .3109  | 23 41.4                           | 0.72                |
|                                 | 27 | +2.728               | —0.0236 | +0.1055 | 19.58               | 22 22.1                            | 1.3108 | 23 37.6                           | —0.86               |
|                                 | 28 | .741                 | .0198   | .1052   | 19.65               | 22 22.4                            | .3106  | 23 33.9                           | 1.01                |
|                                 | 29 | .753                 | .0161   | .1048   | 19.73               | 22 22.7                            | .3105  | 23 30.1                           | 1.15                |
|                                 | 30 | .765                 | .0123   | .1044   | 19.80               | 22 23.0                            | .3103  | 23 26.4                           | 1.29                |
|                                 | 31 | .777                 | .0085   | .1040   | 19.88               | 22 23.3                            | .3101  | 23 22.6                           | 1.44                |

## 1838

|        |    |                      |         |         |                    |                                   |        |                                    |                     |
|--------|----|----------------------|---------|---------|--------------------|-----------------------------------|--------|------------------------------------|---------------------|
| Januar | 1  | —0 <sup>s</sup> .282 | —0.5832 | +0.1032 | 8 <sup>h</sup> .36 | 17 <sup>h</sup> 9 <sup>m</sup> .2 | 1.3098 | 23 <sup>h</sup> 18 <sup>m</sup> .9 | —1 <sup>h</sup> .58 |
|        | 2  | .270                 | .5835   | .1026   | 8.35               | 17 11.4                           | .3096  | 23 15.1                            | 1.72                |
|        | 3  | .258                 | .5837   | .1019   | 8.35               | 17 13.5                           | .3093  | 23 11.3                            | 1.86                |
|        | 4  | .246                 | .5839   | .1012   | 8.34               | 17 15.7                           | .3090  | 23 7.5                             | 2.00                |
|        | 5  | .234                 | .5840   | .1004   | 8.34               | 17 17.8                           | .3087  | 23 3.8                             | 2.14                |
|        | 6  | .222                 | .5841   | .0996   | 8.34               | 17 20.0                           | .3084  | 23 0.0                             | 2.28                |
|        | 7  | .211                 | .5841   | .0987   | 8.34               | 17 22.1                           | .3081  | 22 56.2                            | 2.42                |
|        | 8  | .199                 | .5840   | .0978   | 8.34               | 17 24.3                           | .3077  | 22 52.4                            | 2.56                |
|        | 9  | .187                 | .5839   | .0968   | 8.34               | 17 26.4                           | .3073  | 22 48.6                            | 2.70                |
|        | 10 | .176                 | .5837   | .0958   | 8.35               | 17 28.5                           | .3069  | 22 44.8                            | 2.83                |
|        | 11 | —0.164               | —0.5834 | +0.0948 | 8.35               | 17 30.6                           | 1.3065 | 22 41.0                            | —2.97               |
|        | 12 | .153                 | .5831   | .0937   | 8.36               | 17 32.7                           | .3061  | 22 37.1                            | 3.10                |
|        | 13 | .141                 | .5827   | .0926   | 8.37               | 17 34.8                           | .3056  | 22 33.3                            | 3.24                |
|        | 14 | .130                 | .5822   | .0914   | 8.38               | 17 36.8                           | .3051  | 22 29.5                            | 3.37                |
|        | 15 | .119                 | .5817   | .0902   | 8.39               | 17 38.9                           | .3047  | 22 25.6                            | 3.50                |
|        | 16 | .107                 | .5811   | .0889   | 8.40               | 17 40.9                           | .3042  | 22 21.8                            | 3.63                |
|        | 17 | .096                 | .5804   | .0876   | 8.41               | 17 42.9                           | .3036  | 22 17.9                            | 3.76                |
|        | 18 | .085                 | .5797   | .0863   | 8.43               | 17 44.9                           | .3031  | 22 14.0                            | 3.89                |
|        | 19 | .074                 | .5790   | .0850   | 8.44               | 17 46.9                           | .3026  | 22 10.2                            | 4.01                |
|        | 20 | .064                 | .5782   | .0836   | 8.46               | 17 48.8                           | .3020  | 22 6.3                             | 4.14                |

## 1838

| 12 <sup>h</sup><br>M. Z. Berlin |    | f       | x       | y       | g    | G                                  | log h  | H                                 | i     |
|---------------------------------|----|---------|---------|---------|------|------------------------------------|--------|-----------------------------------|-------|
| Januar                          | 21 | —0.8053 | —0.5774 | +0.0822 | 8.47 | 17 <sup>h</sup> 50 <sup>m</sup> .7 | 1.3015 | 22 <sup>h</sup> 2 <sup>m</sup> .4 | —4.26 |
|                                 | 22 | .042    | .5765   | .0807   | 8.49 | 17 52.6                            | .3009  | 21 58.5                           | 4.39  |
|                                 | 23 | .032    | .5756   | .0793   | 8.51 | 17 54.5                            | .3003  | 21 54.6                           | 4.51  |
|                                 | 24 | .021    | .5746   | .0778   | 8.53 | 17 56.4                            | .2997  | 21 50.6                           | 4.63  |
|                                 | 25 | .011    | .5736   | .0763   | 8.55 | 17 58.2                            | .2991  | 21 46.7                           | 4.75  |
|                                 | 26 | —0.001  | .5726   | .0748   | 8.57 | 18 0.0                             | .2985  | 21 42.8                           | 4.86  |
|                                 | 27 | +0.010  | .5715   | .0733   | 8.59 | 18 1.8                             | .2979  | 21 38.8                           | 4.98  |
|                                 | 28 | .020    | .5704   | .0717   | 8.61 | 18 3.5                             | .2972  | 21 34.8                           | 5.09  |
|                                 | 29 | .030    | .5693   | .0701   | 8.64 | 18 5.3                             | .2966  | 21 30.9                           | 5.21  |
|                                 | 30 | .040    | .5681   | .0685   | 8.66 | 18 7.0                             | .2960  | 21 26.9                           | 5.32  |
| Februar                         | 31 | +0.050  | —0.5669 | +0.0669 | 8.68 | 18 8.7                             | 1.2953 | 21 22.9                           | —5.42 |
|                                 | 1  | .059    | .5657   | .0653   | 8.71 | 18 10.3                            | .2946  | 21 18.9                           | 5.53  |
|                                 | 2  | .069    | .5645   | .0637   | 8.73 | 18 11.9                            | .2940  | 21 14.9                           | 5.64  |
|                                 | 3  | .078    | .5632   | .0621   | 8.76 | 18 13.5                            | .2933  | 21 10.8                           | 5.74  |
|                                 | 4  | .088    | .5619   | .0605   | 8.78 | 18 15.1                            | .2927  | 21 6.8                            | 5.84  |
|                                 | 5  | .097    | .5606   | .0589   | 8.81 | 18 16.6                            | .2920  | 21 2.7                            | 5.94  |
|                                 | 6  | .106    | .5593   | .0572   | 8.84 | 18 18.1                            | .2913  | 20 58.7                           | 6.04  |
|                                 | 7  | .115    | .5580   | .0556   | 8.86 | 18 19.6                            | .2907  | 20 54.6                           | 6.13  |
|                                 | 8  | .124    | .5567   | .0540   | 8.89 | 18 21.1                            | .2900  | 20 50.5                           | 6.22  |
|                                 | 9  | .133    | .5553   | .0524   | 8.92 | 18 22.5                            | .2894  | 20 46.4                           | 6.32  |
|                                 | 10 | +0.142  | —0.5540 | +0.0508 | 8.94 | 18 23.9                            | 1.2887 | 20 42.3                           | —6.41 |
|                                 | 11 | .151    | .5526   | .0493   | 8.97 | 18 25.3                            | .2881  | 20 38.2                           | 6.49  |
|                                 | 12 | .160    | .5513   | .0477   | 9.00 | 18 26.7                            | .2874  | 20 34.1                           | 6.58  |
|                                 | 13 | .168    | .5499   | .0462   | 9.02 | 18 28.0                            | .2868  | 20 29.9                           | 6.66  |
|                                 | 14 | .177    | .5485   | .0447   | 9.05 | 18 29.4                            | .2862  | 20 25.8                           | 6.74  |
|                                 | 15 | .185    | .5471   | .0432   | 9.08 | 18 30.7                            | .2855  | 20 21.6                           | 6.82  |
|                                 | 16 | .193    | .5457   | .0417   | 9.11 | 18 31.9                            | .2849  | 20 17.4                           | 6.90  |
|                                 | 17 | .201    | .5444   | .0402   | 9.13 | 18 33.2                            | .2843  | 20 13.2                           | 6.98  |
|                                 | 18 | .210    | .5430   | .0387   | 9.16 | 18 34.5                            | .2837  | 20 9.1                            | 7.05  |
|                                 | 19 | .218    | .5417   | .0373   | 9.19 | 18 35.7                            | .2831  | 20 4.9                            | 7.12  |
| März                            | 20 | +0.225  | —0.5404 | +0.0359 | 9.22 | 18 36.9                            | 1.2825 | 20 0.7                            | —7.19 |
|                                 | 21 | .233    | .5391   | .0346   | 9.24 | 18 38.1                            | .2820  | 19 56.4                           | 7.26  |
|                                 | 22 | .241    | .5378   | .0333   | 9.27 | 18 39.2                            | .2814  | 19 52.2                           | 7.32  |
|                                 | 23 | .249    | .5365   | .0320   | 9.29 | 18 40.4                            | .2808  | 19 48.0                           | 7.38  |
|                                 | 24 | .256    | .5352   | .0307   | 9.32 | 18 41.5                            | .2803  | 19 43.7                           | 7.44  |
|                                 | 25 | .264    | .5340   | .0295   | 9.34 | 18 42.6                            | .2798  | 19 39.5                           | 7.50  |
|                                 | 26 | .271    | .5327   | .0283   | 9.37 | 18 43.7                            | .2793  | 19 35.2                           | 7.55  |
|                                 | 27 | .279    | .5315   | .0272   | 9.39 | 18 44.8                            | .2788  | 19 31.0                           | 7.61  |
|                                 | 28 | .286    | .5303   | .0261   | 9.42 | 18 45.9                            | .2784  | 19 26.7                           | 7.66  |
|                                 | 1  | .293    | .5291   | .0251   | 9.44 | 18 46.9                            | .2779  | 19 22.4                           | 7.70  |
|                                 | 2  | +0.301  | —0.5279 | +0.0241 | 9.47 | 18 48.0                            | 1.2775 | 19 18.1                           | —7.75 |
|                                 | 3  | .308    | .5268   | .0232   | 9.49 | 18 49.0                            | .2771  | 19 13.8                           | 7.79  |
|                                 | 4  | .315    | .5257   | .0223   | 9.51 | 18 50.1                            | .2767  | 19 9.5                            | 7.83  |
|                                 | 5  | .322    | .5246   | .0215   | 9.53 | 18 51.1                            | .2764  | 19 5.2                            | 7.87  |
|                                 | 6  | .329    | .5235   | .0207   | 9.55 | 18 52.1                            | .2760  | 19 0.9                            | 7.91  |
|                                 | 7  | .336    | .5224   | .0199   | 9.58 | 18 53.1                            | .2757  | 18 56.6                           | 7.94  |
|                                 | 8  | .343    | .5214   | .0192   | 9.60 | 18 54.1                            | .2754  | 18 52.3                           | 7.97  |
|                                 | 9  | .350    | .5204   | .0185   | 9.62 | 18 55.1                            | .2751  | 18 47.9                           | 8.00  |
|                                 | 10 | .357    | .5194   | .0179   | 9.64 | 18 56.1                            | .2749  | 18 43.6                           | 8.02  |
|                                 | 11 | .363    | .5185   | .0174   | 9.65 | 18 57.0                            | .2746  | 18 39.3                           | 8.05  |

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| <sup>12h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                 | log h  | H                                 | i     |
|--------------------------------|----|--------|---------|---------|-------|-----------------------------------|--------|-----------------------------------|-------|
| März                           | 12 | +0.370 | -0.5176 | +0.0169 | 9.67  | 18 <sup>h</sup> 58 <sup>m</sup> 0 | 1.2744 | 18 <sup>h</sup> 35 <sup>m</sup> 0 | -8.07 |
|                                | 13 | .377   | .5167   | .0165   | 9.69  | 18 59.0                           | .2742  | 18 30.6                           | 8.09  |
|                                | 14 | .384   | .5158   | .0161   | 9.71  | 18 59.9                           | .2741  | 18 26.3                           | 8.10  |
|                                | 15 | .390   | .5150   | .0158   | 9.73  | 19 0.9                            | .2740  | 18 22.0                           | 8.12  |
|                                | 16 | .397   | .5141   | .0155   | 9.74  | 19 1.9                            | .2739  | 18 17.6                           | 8.13  |
|                                | 17 | .404   | .5133   | .0153   | 9.76  | 19 2.8                            | .2738  | 18 13.3                           | 8.14  |
|                                | 18 | .411   | .5125   | .0151   | 9.77  | 19 3.8                            | .2737  | 18 9.0                            | 8.14  |
|                                | 19 | .417   | .5118   | .0150   | 9.79  | 19 4.7                            | .2736  | 18 4.7                            | 8.15  |
|                                | 20 | .424   | .5110   | .0150   | 9.81  | 19 5.7                            | .2736  | 18 0.3                            | 8.15  |
|                                | 21 | .431   | .5103   | .0150   | 9.82  | 19 6.7                            | .2736  | 17 56.0                           | 8.15  |
|                                | 22 | +0.437 | -0.5096 | +0.0151 | 9.83  | 19 7.6                            | 1.2737 | 17 51.7                           | -8.14 |
|                                | 23 | .444   | .5090   | .0152   | 9.85  | 19 8.6                            | .2737  | 17 47.4                           | 8.14  |
|                                | 24 | .451   | .5083   | .0154   | 9.86  | 19 9.6                            | .2738  | 17 43.1                           | 8.13  |
|                                | 25 | .457   | .5077   | .0157   | 9.87  | 19 10.5                           | .2739  | 17 38.7                           | 8.12  |
|                                | 26 | .464   | .5071   | .0160   | 9.88  | 19 11.5                           | .2741  | 17 34.4                           | 8.10  |
|                                | 27 | .471   | .5065   | .0163   | 9.89  | 19 12.5                           | .2742  | 17 30.1                           | 8.09  |
|                                | 28 | .477   | .5059   | .0167   | 9.91  | 19 13.5                           | .2744  | 17 25.8                           | 8.07  |
|                                | 29 | .484   | .5054   | .0172   | 9.92  | 19 14.5                           | .2746  | 17 21.5                           | 8.05  |
|                                | 30 | .491   | .5049   | .0177   | 9.93  | 19 15.5                           | .2748  | 17 17.3                           | 8.03  |
|                                | 31 | .498   | .5044   | .0183   | 9.94  | 19 16.5                           | .2750  | 17 13.0                           | 8.00  |
| April                          | 1  | +0.505 | -0.5039 | +0.0189 | 9.95  | 19 17.5                           | 1.2753 | 17 8.8                            | -7.98 |
|                                | 2  | .511   | .5034   | .0196   | 9.96  | 19 18.5                           | .2756  | 17 4.5                            | 7.95  |
|                                | 3  | .518   | .5029   | .0204   | 9.97  | 19 19.6                           | .2759  | 17 0.2                            | 7.92  |
|                                | 4  | .525   | .5025   | .0212   | 9.97  | 19 20.6                           | .2763  | 16 56.0                           | 7.88  |
|                                | 5  | .532   | .5021   | .0220   | 9.98  | 19 21.6                           | .2766  | 16 51.8                           | 7.85  |
|                                | 6  | .539   | .5017   | .0229   | 9.99  | 19 22.7                           | .2770  | 16 47.5                           | 7.81  |
|                                | 7  | .547   | .5012   | .0238   | 10.00 | 19 23.8                           | .2774  | 16 43.3                           | 7.76  |
|                                | 8  | .554   | .5008   | .0248   | 10.01 | 19 24.8                           | .2778  | 16 39.1                           | 7.72  |
|                                | 9  | .561   | .5004   | .0258   | 10.02 | 19 25.9                           | .2782  | 16 34.9                           | 7.67  |
|                                | 10 | .568   | .5000   | .0268   | 10.03 | 19 27.0                           | .2787  | 16 30.8                           | 7.63  |
|                                | 11 | +0.576 | -0.4996 | +0.0279 | 10.03 | 19 28.1                           | 1.2791 | 16 26.6                           | -7.58 |
|                                | 12 | .583   | .4992   | .0290   | 10.04 | 19 29.2                           | .2796  | 16 22.4                           | 7.52  |
|                                | 13 | .590   | .4989   | .0302   | 10.05 | 19 30.3                           | .2801  | 16 18.3                           | 7.47  |
|                                | 14 | .598   | .4985   | .0314   | 10.06 | 19 31.5                           | .2806  | 16 14.1                           | 7.41  |
|                                | 15 | .605   | .4982   | .0326   | 10.06 | 19 32.6                           | .2811  | 16 10.0                           | 7.35  |
|                                | 16 | .613   | .4978   | .0338   | 10.07 | 19 33.8                           | .2816  | 16 5.9                            | 7.29  |
|                                | 17 | .621   | .4974   | .0351   | 10.08 | 19 35.0                           | .2821  | 16 1.8                            | 7.23  |
|                                | 18 | .629   | .4970   | .0364   | 10.09 | 19 36.2                           | .2827  | 15 57.7                           | 7.16  |
|                                | 19 | .637   | .4966   | .0377   | 10.09 | 19 37.4                           | .2833  | 15 53.7                           | 7.10  |
|                                | 20 | .645   | .4961   | .0391   | 10.10 | 19 38.6                           | .2838  | 15 49.6                           | 7.03  |
|                                | 21 | +0.653 | -0.4957 | +0.0405 | 10.11 | 19 39.8                           | 1.2844 | 15 45.5                           | -6.96 |
|                                | 22 | .661   | .4952   | .0419   | 10.12 | 19 41.0                           | .2850  | 15 41.5                           | 6.88  |
|                                | 23 | .669   | .4948   | .0434   | 10.13 | 19 42.3                           | .2856  | 15 37.5                           | 6.81  |
|                                | 24 | .677   | .4943   | .0449   | 10.14 | 19 43.5                           | .2862  | 15 33.5                           | 6.73  |
|                                | 25 | .686   | .4938   | .0464   | 10.15 | 19 44.8                           | .2868  | 15 29.5                           | 6.65  |
|                                | 26 | .694   | .4933   | .0479   | 10.16 | 19 46.1                           | .2875  | 15 25.5                           | 6.57  |
|                                | 27 | .702   | .4928   | .0495   | 10.17 | 19 47.3                           | .2881  | 15 21.5                           | 6.49  |
|                                | 28 | .711   | .4922   | .0510   | 10.18 | 19 48.6                           | .2887  | 15 17.6                           | 6.41  |
|                                | 29 | .720   | .4916   | .0525   | 10.19 | 19 49.9                           | .2894  | 15 13.6                           | 6.32  |
|                                | 30 | .728   | .4910   | .0540   | 10.21 | 19 51.2                           | .2900  | 15 9.7                            | 6.23  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                 | log h  | H                                | i     |
|---------------------------------|----|--------|---------|---------|-------|-----------------------------------|--------|----------------------------------|-------|
| Mai                             | 1  | +0.737 | —0.4904 | +0.0556 | 10.22 | 19 <sup>h</sup> 52 <sup>m</sup> 6 | 1.2906 | 15 <sup>h</sup> 5 <sup>m</sup> 8 | —6.14 |
|                                 | 2  | .746   | .4898   | .0571   | 10.23 | 19 53.9                           | .2913  | 15 1.9                           | 6.05  |
|                                 | 3  | .755   | .4891   | .0586   | 10.24 | 19 55.2                           | .2919  | 14 58.0                          | 5.96  |
|                                 | 4  | .764   | .4884   | .0601   | 10.26 | 19 56.6                           | .2925  | 14 54.1                          | 5.86  |
|                                 | 5  | .774   | .4877   | .0617   | 10.27 | 19 57.9                           | .2931  | 14 50.3                          | 5.77  |
|                                 | 6  | .783   | .4869   | .0632   | 10.29 | 19 59.3                           | .2938  | 14 46.4                          | 5.67  |
|                                 | 7  | .792   | .4861   | .0647   | 10.31 | 20 0.6                            | .2944  | 14 42.6                          | 5.57  |
|                                 | 8  | .802   | .4852   | .0662   | 10.32 | 20 2.0                            | .2950  | 14 38.8                          | 5.47  |
|                                 | 9  | .811   | .4843   | .0677   | 10.34 | 20 3.4                            | .2956  | 14 35.0                          | 5.37  |
|                                 | 10 | .821   | .4834   | .0692   | 10.36 | 20 4.8                            | .2962  | 14 31.2                          | 5.26  |
|                                 | 11 | +0.831 | —0.4825 | +0.0707 | 10.38 | 20 6.2                            | 1.2969 | 14 27.4                          | —5.16 |
|                                 | 12 | .840   | .4815   | .0722   | 10.40 | 20 7.6                            | .2975  | 14 23.6                          | 5.05  |
|                                 | 13 | .850   | .4805   | .0737   | 10.42 | 20 9.0                            | .2981  | 14 19.8                          | 4.94  |
|                                 | 14 | .860   | .4794   | .0751   | 10.44 | 20 10.4                           | .2986  | 14 16.1                          | 4.83  |
|                                 | 15 | .870   | .4783   | .0766   | 10.46 | 20 11.8                           | .2992  | 14 12.3                          | 4.72  |
|                                 | 16 | .880   | .4772   | .0780   | 10.48 | 20 13.2                           | .2998  | 14 8.6                           | 4.60  |
|                                 | 17 | .891   | .4760   | .0794   | 10.51 | 20 14.6                           | .3004  | 14 4.9                           | 4.49  |
|                                 | 18 | .901   | .4748   | .0808   | 10.53 | 20 16.0                           | .3009  | 14 1.2                           | 4.38  |
|                                 | 19 | .911   | .4735   | .0822   | 10.56 | 20 17.4                           | .3015  | 13 57.5                          | 4.26  |
|                                 | 20 | .922   | .4722   | .0835   | 10.58 | 20 18.8                           | .3020  | 13 53.8                          | 4.15  |
|                                 | 21 | +0.932 | —0.4708 | +0.0848 | 10.61 | 20 20.2                           | 1.3025 | 13 50.1                          | —4.03 |
|                                 | 22 | .943   | .4694   | .0861   | 10.64 | 20 21.6                           | .3030  | 13 46.5                          | 3.91  |
|                                 | 23 | .954   | .4679   | .0873   | 10.67 | 20 23.0                           | .3035  | 13 42.8                          | 3.78  |
|                                 | 24 | .964   | .4664   | .0885   | 10.70 | 20 24.3                           | .3040  | 13 39.2                          | 3.66  |
|                                 | 25 | .975   | .4649   | .0897   | 10.73 | 20 25.7                           | .3045  | 13 35.6                          | 3.54  |
|                                 | 26 | .986   | .4633   | .0909   | 10.76 | 20 27.1                           | .3049  | 13 31.9                          | 3.42  |
|                                 | 27 | 0.997  | .4617   | .0920   | 10.79 | 20 28.5                           | .3054  | 13 28.3                          | 3.29  |
|                                 | 28 | 1.008  | .4600   | .0931   | 10.83 | 20 29.8                           | .3058  | 13 24.7                          | 3.17  |
|                                 | 29 | .019   | .4583   | .0942   | 10.86 | 20 31.2                           | .3063  | 13 21.1                          | 3.04  |
|                                 | 30 | .030   | .4565   | .0952   | 10.90 | 20 32.5                           | .3067  | 13 17.5                          | 2.92  |
| Juni                            | 31 | +1.041 | —0.4547 | +0.0962 | 10.94 | 20 33.9                           | 1.3071 | 13 13.9                          | —2.79 |
|                                 | 1  | .052   | .4528   | .0971   | 10.97 | 20 35.2                           | .3074  | 13 10.3                          | 2.66  |
|                                 | 2  | .064   | .4509   | .0980   | 11.01 | 20 36.5                           | .3078  | 13 6.8                           | 2.53  |
|                                 | 3  | .075   | .4489   | .0988   | 11.05 | 20 37.8                           | .3081  | 13 3.2                           | 2.40  |
|                                 | 4  | .086   | .4469   | .0996   | 11.09 | 20 39.1                           | .3084  | 12 59.7                          | 2.27  |
|                                 | 5  | .098   | .4448   | .1004   | 11.13 | 20 40.4                           | .3087  | 12 56.1                          | 2.14  |
|                                 | 6  | .109   | .4427   | .1011   | 11.18 | 20 41.7                           | .3090  | 12 52.6                          | 2.01  |
|                                 | 7  | .121   | .4405   | .1018   | 11.22 | 20 42.9                           | .3093  | 12 49.0                          | 1.88  |
|                                 | 8  | .132   | .4383   | .1025   | 11.26 | 20 44.2                           | .3095  | 12 45.5                          | 1.74  |
|                                 | 9  | .144   | .4360   | .1031   | 11.31 | 20 45.4                           | .3098  | 12 42.0                          | 1.61  |
|                                 | 10 | +1.156 | —0.4337 | +0.1037 | 11.36 | 20 46.6                           | 1.3100 | 12 38.4                          | —1.48 |
|                                 | 11 | .167   | .4313   | .1042   | 11.40 | 20 47.8                           | .3102  | 12 34.9                          | 1.34  |
|                                 | 12 | .179   | .4289   | .1046   | 11.45 | 20 49.0                           | .3104  | 12 31.4                          | 1.21  |
|                                 | 13 | .190   | .4265   | .1050   | 11.50 | 20 50.2                           | .3105  | 12 27.9                          | 1.08  |
|                                 | 14 | .202   | .4240   | .1053   | 11.55 | 20 51.4                           | .3106  | 12 24.4                          | 0.94  |
|                                 | 15 | .214   | .4215   | .1056   | 11.60 | 20 52.5                           | .3108  | 12 20.8                          | 0.81  |
|                                 | 16 | .226   | .4190   | .1059   | 11.65 | 20 53.6                           | .3109  | 12 17.3                          | 0.67  |
|                                 | 17 | .237   | .4164   | .1061   | 11.70 | 20 54.7                           | .3110  | 12 13.8                          | 0.54  |
|                                 | 18 | .249   | .4138   | .1063   | 11.75 | 20 55.8                           | .3110  | 12 10.3                          | 0.40  |
|                                 | 19 | .261   | .4112   | .1064   | 11.81 | 20 56.9                           | .3111  | 12 6.8                           | 0.26  |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                 | log h  | H                                | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|-----------------------------------|--------|----------------------------------|---------------------|
| Juni                            | 20 | +1. <sup>s</sup> 273 | —0.4085 | +0.1065 | 11. <sup>h</sup> 86 | 20 <sup>h</sup> 58 <sup>m</sup> 0 | 1.3111 | 12 <sup>h</sup> 3 <sup>m</sup> 3 | —0. <sup>h</sup> 13 |
|                                 | 21 | .285                 | .4058   | .1065   | 11.92               | 20 59.0                           | .3111  | 11 59.8                          | +0.01               |
|                                 | 22 | .296                 | .4030   | .1065   | 11.97               | 21 0.0                            | .3111  | 11 56.4                          | 0.14                |
|                                 | 23 | .308                 | .4002   | .1064   | 12.03               | 21 1.0                            | .3111  | 11 52.9                          | 0.28                |
|                                 | 24 | .320                 | .3974   | .1063   | 12.08               | 21 2.0                            | .3110  | 11 49.3                          | 0.41                |
|                                 | 25 | .332                 | .3945   | .1061   | 12.14               | 21 3.0                            | .3110  | 11 45.9                          | 0.55                |
|                                 | 26 | .343                 | .3916   | .1059   | 12.20               | 21 4.0                            | .3109  | 11 42.3                          | 0.68                |
|                                 | 27 | .355                 | .3887   | .1056   | 12.26               | 21 4.9                            | .3108  | 11 38.8                          | 0.82                |
|                                 | 28 | .367                 | .3858   | .1053   | 12.32               | 21 5.8                            | .3106  | 11 35.3                          | 0.95                |
|                                 | 29 | .379                 | .3828   | .1049   | 12.38               | 21 6.7                            | .3105  | 11 31.8                          | 1.09                |
| Juli                            | 30 | +1.390               | —0.3798 | +0.1045 | 12.44               | 21 7.6                            | 1.3103 | 11 28.3                          | +1.22               |
|                                 | 1  | .402                 | .3768   | .1041   | 12.50               | 21 8.5                            | .3102  | 11 24.8                          | 1.36                |
|                                 | 2  | .413                 | .3738   | .1036   | 12.56               | 21 9.3                            | .3100  | 11 21.3                          | 1.49                |
|                                 | 3  | .425                 | .3707   | .1031   | 12.62               | 21 10.1                           | .3098  | 11 17.8                          | 1.62                |
|                                 | 4  | .437                 | .3676   | .1025   | 12.68               | 21 10.9                           | .3095  | 11 14.2                          | 1.76                |
|                                 | 5  | .448                 | .3645   | .1018   | 12.74               | 21 11.7                           | .3093  | 11 10.7                          | 1.89                |
|                                 | 6  | .460                 | .3614   | .1011   | 12.80               | 21 12.5                           | .3090  | 11 7.2                           | 2.02                |
|                                 | 7  | .471                 | .3583   | .1004   | 12.87               | 21 13.2                           | .3087  | 11 3.7                           | 2.15                |
|                                 | 8  | .483                 | .3552   | .0996   | 12.93               | 21 13.9                           | .3084  | 11 0.1                           | 2.28                |
|                                 | 9  | .494                 | .3520   | .0988   | 12.99               | 21 14.7                           | .3081  | 10 56.6                          | 2.41                |
|                                 | 10 | +1.505               | —0.3489 | +0.0980 | 13.06               | 21 15.4                           | 1.3078 | 10 53.0                          | +2.54               |
|                                 | 11 | .517                 | .3457   | .0971   | 13.12               | 21 16.1                           | .3074  | 10 49.5                          | 2.67                |
|                                 | 12 | .528                 | .3426   | .0962   | 13.18               | 21 16.7                           | .3070  | 10 45.9                          | 2.80                |
|                                 | 13 | .539                 | .3394   | .0952   | 13.25               | 21 17.4                           | .3066  | 10 42.3                          | 2.92                |
|                                 | 14 | .550                 | .3362   | .0942   | 13.31               | 21 18.0                           | .3062  | 10 38.7                          | 3.05                |
|                                 | 15 | .561                 | .3330   | .0931   | 13.38               | 21 18.6                           | .3058  | 10 35.2                          | 3.17                |
|                                 | 16 | .572                 | .3298   | .0920   | 13.44               | 21 19.2                           | .3054  | 10 31.6                          | 3.30                |
|                                 | 17 | .583                 | .3266   | .0909   | 13.50               | 21 19.8                           | .3050  | 10 28.0                          | 3.42                |
|                                 | 18 | .594                 | .3234   | .0898   | 13.57               | 21 20.4                           | .3045  | 10 24.4                          | 3.54                |
|                                 | 19 | .604                 | .3202   | .0886   | 13.63               | 21 20.9                           | .3040  | 10 20.8                          | 3.67                |
|                                 | 20 | +1.615               | —0.3170 | +0.0874 | 13.69               | 21 21.5                           | 1.3035 | 10 17.1                          | +3.79               |
|                                 | 21 | .626                 | .3138   | .0862   | 13.76               | 21 22.0                           | .3031  | 10 13.5                          | 3.91                |
|                                 | 22 | .637                 | .3106   | .0849   | 13.82               | 21 22.5                           | .3026  | 10 9.9                           | 4.03                |
|                                 | 23 | .647                 | .3075   | .0836   | 13.89               | 21 23.0                           | .3020  | 10 6.2                           | 4.14                |
|                                 | 24 | .657                 | .3043   | .0823   | 13.95               | 21 23.5                           | .3015  | 10 2.5                           | 4.26                |
|                                 | 25 | .668                 | .3011   | .0809   | 14.01               | 21 24.0                           | .3009  | 9 58.9                           | 4.38                |
|                                 | 26 | .678                 | .2979   | .0795   | 14.08               | 21 24.5                           | .3004  | 9 55.2                           | 4.49                |
|                                 | 27 | .688                 | .2948   | .0781   | 14.14               | 21 24.9                           | .2998  | 9 51.5                           | 4.60                |
|                                 | 28 | .698                 | .2917   | .0767   | 14.20               | 21 25.3                           | .2993  | 9 47.8                           | 4.71                |
|                                 | 29 | .708                 | .2886   | .0753   | 14.27               | 21 25.8                           | .2987  | 9 44.1                           | 4.82                |
| August                          | 30 | +1.718               | —0.2855 | +0.0739 | 14.33               | 21 26.2                           | 1.2981 | 9 40.4                           | +4.93               |
|                                 | 31 | .728                 | .2824   | .0725   | 14.39               | 21 26.6                           | .2975  | 9 36.7                           | 5.04                |
|                                 | 1  | .738                 | .2793   | .0710   | 14.45               | 21 27.0                           | .2969  | 9 32.9                           | 5.15                |
|                                 | 2  | .748                 | .2762   | .0695   | 14.51               | 21 27.4                           | .2963  | 9 29.2                           | 5.25                |
|                                 | 3  | .757                 | .2731   | .0680   | 14.57               | 21 27.8                           | .2957  | 9 25.4                           | 5.36                |
|                                 | 4  | .767                 | .2701   | .0664   | 14.64               | 21 28.1                           | .2951  | 9 21.6                           | 5.46                |
|                                 | 5  | .776                 | .2671   | .0649   | 14.70               | 21 28.5                           | .2945  | 9 17.8                           | 5.56                |
|                                 | 6  | .786                 | .2641   | .0634   | 14.76               | 21 28.8                           | .2939  | 9 14.0                           | 5.66                |
|                                 | 7  | .795                 | .2611   | .0619   | 14.81               | 21 29.1                           | .2933  | 9 10.2                           | 5.75                |
|                                 | 8  | .804                 | .2582   | .0604   | 14.87               | 21 29.5                           | .2926  | 9 6.4                            | 5.85                |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                 | log h  | H                               | i     |
|---------------------------------|----|--------|---------|---------|-------|-----------------------------------|--------|---------------------------------|-------|
| August                          | 9  | +1.813 | —0.2553 | +0.0588 | 14.93 | 21 <sup>h</sup> 29 <sup>m</sup> 8 | 1.2920 | 9 <sup>h</sup> 2 <sup>m</sup> 5 | +5.94 |
|                                 | 10 | .822   | .2524   | .0573   | 14.99 | 21 30.1                           | .2914  | 8 58.7                          | 6.04  |
|                                 | 11 | .831   | .2495   | .0557   | 15.05 | 21 30.4                           | .2907  | 8 54.8                          | 6.13  |
|                                 | 12 | .840   | .2466   | .0542   | 15.11 | 21 30.7                           | .2901  | 8 50.9                          | 6.22  |
|                                 | 13 | .849   | .2437   | .0527   | 15.16 | 21 31.0                           | .2895  | 8 47.0                          | 6.30  |
|                                 | 14 | .858   | .2409   | .0512   | 15.22 | 21 31.3                           | .2889  | 8 43.1                          | 6.39  |
|                                 | 15 | .866   | .2381   | .0497   | 15.28 | 21 31.6                           | .2882  | 8 39.2                          | 6.47  |
|                                 | 16 | .875   | .2353   | .0482   | 15.33 | 21 31.9                           | .2876  | 8 35.3                          | 6.56  |
|                                 | 17 | .883   | .2326   | .0467   | 15.39 | 21 32.2                           | .2870  | 8 31.4                          | 6.64  |
|                                 | 18 | .891   | .2299   | .0452   | 15.44 | 21 32.4                           | .2864  | 8 27.4                          | 6.72  |
|                                 | 19 | +1.900 | —0.2272 | +0.0438 | 15.50 | 21 32.7                           | 1.2858 | 8 23.4                          | +6.79 |
|                                 | 20 | .908   | .2245   | .0424   | 15.55 | 21 33.0                           | .2852  | 8 19.5                          | 6.87  |
|                                 | 21 | .916   | .2218   | .0410   | 15.60 | 21 33.2                           | .2846  | 8 15.5                          | 6.94  |
|                                 | 22 | .924   | .2192   | .0396   | 15.66 | 21 33.5                           | .2840  | 8 11.5                          | 7.01  |
|                                 | 23 | .932   | .2166   | .0382   | 15.71 | 21 33.7                           | .2835  | 8 7.5                           | 7.08  |
|                                 | 24 | .940   | .2141   | .0369   | 15.76 | 21 34.0                           | .2829  | 8 3.5                           | 7.15  |
|                                 | 25 | .948   | .2116   | .0356   | 15.81 | 21 34.2                           | .2823  | 7 59.4                          | 7.21  |
|                                 | 26 | .956   | .2091   | .0343   | 15.86 | 21 34.5                           | .2818  | 7 55.3                          | 7.28  |
|                                 | 27 | .963   | .2066   | .0330   | 15.91 | 21 34.7                           | .2813  | 7 51.3                          | 7.34  |
|                                 | 28 | .971   | .2042   | .0318   | 15.96 | 21 35.0                           | .2807  | 7 47.2                          | 7.39  |
|                                 | 29 | +1.978 | —0.2018 | +0.0306 | 16.01 | 21 35.2                           | 1.2802 | 7 43.1                          | +7.45 |
|                                 | 30 | .986   | .1994   | .0294   | 16.05 | 21 35.5                           | .2798  | 7 39.0                          | 7.50  |
|                                 | 31 | 1.993  | .1970   | .0283   | 16.10 | 21 35.7                           | .2793  | 7 34.9                          | 7.56  |
| Septbr.                         | 1  | 2.001  | .1947   | .0272   | 16.15 | 21 36.0                           | .2788  | 7 30.8                          | 7.61  |
|                                 | 2  | .008   | .1924   | .0261   | 16.19 | 21 36.2                           | .2784  | 7 26.6                          | 7.66  |
|                                 | 3  | .015   | .1901   | .0251   | 16.24 | 21 36.5                           | .2780  | 7 22.5                          | 7.70  |
|                                 | 4  | .023   | .1879   | .0241   | 16.28 | 21 36.7                           | .2775  | 7 18.3                          | 7.75  |
|                                 | 5  | .030   | .1857   | .0232   | 16.33 | 21 37.0                           | .2771  | 7 14.2                          | 7.79  |
|                                 | 6  | .037   | .1835   | .0223   | 16.37 | 21 37.2                           | .2768  | 7 10.0                          | 7.83  |
|                                 | 7  | .044   | .1813   | .0215   | 16.42 | 21 37.5                           | .2764  | 7 5.9                           | 7.86  |
|                                 | 8  | +2.051 | —0.1792 | +0.0207 | 16.46 | 21 37.8                           | 1.2761 | 7 1.7                           | +7.90 |
|                                 | 9  | .058   | .1771   | .0200   | 16.50 | 21 38.0                           | .2758  | 6 57.5                          | 7.93  |
|                                 | 10 | .065   | .1750   | .0193   | 16.54 | 21 38.3                           | .2755  | 6 53.3                          | 7.96  |
|                                 | 11 | .072   | .1729   | .0187   | 16.58 | 21 38.6                           | .2752  | 6 49.1                          | 7.99  |
|                                 | 12 | .078   | .1709   | .0181   | 16.62 | 21 38.8                           | .2749  | 6 44.8                          | 8.02  |
|                                 | 13 | .085   | .1689   | .0175   | 16.66 | 21 39.1                           | .2747  | 6 40.6                          | 8.04  |
|                                 | 14 | .092   | .1669   | .0170   | 16.70 | 21 39.4                           | .2745  | 6 36.4                          | 8.06  |
|                                 | 15 | .099   | .1650   | .0166   | 16.74 | 21 39.7                           | .2743  | 6 32.1                          | 8.08  |
|                                 | 16 | .106   | .1630   | .0162   | 16.78 | 21 40.0                           | .2741  | 6 27.9                          | 8.10  |
|                                 | 17 | .112   | .1611   | .0159   | 16.82 | 21 40.3                           | .2740  | 6 23.6                          | 8.11  |
|                                 | 18 | +2.119 | —0.1592 | +0.0156 | 16.86 | 21 40.6                           | 1.2739 | 6 19.4                          | +8.12 |
|                                 | 19 | .126   | .1573   | .0154   | 16.90 | 21 40.9                           | .2738  | 6 15.1                          | 8.13  |
|                                 | 20 | .132   | .1554   | .0152   | 16.93 | 21 41.2                           | .2737  | 6 10.8                          | 8.14  |
|                                 | 21 | .139   | .1536   | .0151   | 16.97 | 21 41.5                           | .2737  | 6 6.6                           | 8.15  |
|                                 | 22 | .146   | .1518   | .0150   | 17.01 | 21 41.8                           | .2736  | 6 2.3                           | 8.15  |
|                                 | 23 | .152   | .1500   | .0150   | 17.04 | 21 42.1                           | .2736  | 5 58.0                          | 8.15  |
|                                 | 24 | .159   | .1482   | .0150   | 17.08 | 21 42.5                           | .2737  | 5 53.8                          | 8.15  |
|                                 | 25 | .166   | .1464   | .0151   | 17.12 | 21 42.8                           | .2737  | 5 49.5                          | 8.14  |
|                                 | 26 | .172   | .1446   | .0153   | 17.15 | 21 43.2                           | .2738  | 5 45.2                          | 8.14  |
|                                 | 27 | .179   | .1429   | .0155   | 17.19 | 21 43.5                           | .2739  | 5 40.9                          | 8.13  |

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| <sup>12<sup>h</sup></sup><br>M. Z. Berlin | f                    | x       | y       | g                   | G                                  | log h  | H                                 | i                   |
|-------------------------------------------|----------------------|---------|---------|---------------------|------------------------------------|--------|-----------------------------------|---------------------|
| Septbr. 28                                | +2 <sup>s</sup> .186 | —0.1411 | +0.0158 | 17 <sup>h</sup> .22 | 21 <sup>h</sup> 43 <sup>m</sup> .9 | 1.2740 | 5 <sup>h</sup> 36 <sup>m</sup> .6 | +8 <sup>h</sup> .11 |
| 29                                        | .193                 | .1394   | .0161   | 17.26               | 21 44.2                            | .2741  | 5 32.3                            | 8.10                |
| 30                                        | .199                 | .1377   | .0165   | 17.29               | 21 44.6                            | .2743  | 5 28.1                            | 8.08                |
| Oktbr. 1                                  | .206                 | .1360   | .0169   | 17.33               | 21 45.0                            | .2745  | 5 23.8                            | 8.06                |
| 2                                         | .213                 | .1343   | .0174   | 17.36               | 21 45.4                            | .2747  | 5 19.5                            | 8.04                |
| 3                                         | .220                 | .1326   | .0180   | 17.39               | 21 45.8                            | .2749  | 5 15.2                            | 8.02                |
| 4                                         | .227                 | .1309   | .0186   | 17.43               | 21 46.2                            | .2752  | 5 11.0                            | 7.99                |
| 5                                         | .233                 | .1293   | .0193   | 17.46               | 21 46.6                            | .2755  | 5 6.7                             | 7.96                |
| 6                                         | .240                 | .1276   | .0200   | 17.49               | 21 47.0                            | .2758  | 5 2.4                             | 7.93                |
| 7                                         | .247                 | .1259   | .0208   | 17.53               | 21 47.4                            | .2761  | 4 58.2                            | 7.90                |
| 8                                         | +2.255               | —0.1243 | +0.0216 | 17.56               | 21 47.8                            | 1.2765 | 4 53.9                            | +7.86               |
| 9                                         | .262                 | .1226   | .0225   | 17.59               | 21 48.3                            | .2768  | 4 49.7                            | 7.83                |
| 10                                        | .269                 | .1209   | .0234   | 17.63               | 21 48.7                            | .2772  | 4 45.4                            | 7.79                |
| 11                                        | .276                 | .1192   | .0243   | 17.66               | 21 49.1                            | .2776  | 4 41.1                            | 7.74                |
| 12                                        | .283                 | .1175   | .0253   | 17.70               | 21 49.6                            | .2780  | 4 36.9                            | 7.70                |
| 13                                        | .290                 | .1158   | .0263   | 17.73               | 21 50.1                            | .2784  | 4 32.7                            | 7.65                |
| 14                                        | .298                 | .1141   | .0274   | 17.76               | 21 50.5                            | .2789  | 4 28.5                            | 7.60                |
| 15                                        | .305                 | .1124   | .0285   | 17.80               | 21 51.0                            | .2794  | 4 24.2                            | 7.55                |
| 16                                        | .313                 | .1107   | .0297   | 17.83               | 21 51.5                            | .2799  | 4 20.0                            | 7.49                |
| 17                                        | .320                 | .1090   | .0310   | 17.87               | 21 52.0                            | .2804  | 4 15.8                            | 7.43                |
| 18                                        | +2.328               | —0.1073 | +0.0322 | 17.90               | 21 52.5                            | 1.2809 | 4 11.6                            | +7.37               |
| 19                                        | .336                 | .1055   | .0335   | 17.94               | 21 53.0                            | .2815  | 4 7.4                             | 7.31                |
| 20                                        | .343                 | .1037   | .0348   | 17.97               | 21 53.5                            | .2820  | 4 3.3                             | 7.25                |
| 21                                        | .351                 | .1019   | .0361   | 18.01               | 21 54.0                            | .2826  | 3 59.1                            | 7.19                |
| 22                                        | .359                 | .1001   | .0374   | 18.04               | 21 54.5                            | .2831  | 3 54.9                            | 7.12                |
| 23                                        | .367                 | .0983   | .0388   | 18.08               | 21 55.0                            | .2837  | 3 50.8                            | 7.05                |
| 24                                        | .375                 | .0965   | .0402   | 18.12               | 21 55.5                            | .2843  | 3 46.6                            | 6.97                |
| 25                                        | .384                 | .0946   | .0417   | 18.15               | 21 56.1                            | .2849  | 3 42.5                            | 6.90                |
| 26                                        | .392                 | .0927   | .0432   | 18.19               | 21 56.6                            | .2855  | 3 38.3                            | 6.82                |
| 27                                        | .400                 | .0908   | .0447   | 18.23               | 21 57.2                            | .2861  | 3 34.2                            | 6.75                |
| 28                                        | +2.409               | —0.0889 | +0.0462 | 18.27               | 21 57.7                            | 1.2868 | 3 30.1                            | +6.67               |
| 29                                        | .417                 | .0870   | .0477   | 18.31               | 21 58.3                            | .2874  | 3 26.0                            | 6.58                |
| 30                                        | .426                 | .0850   | .0492   | 18.35               | 21 58.8                            | .2880  | 3 21.9                            | 6.50                |
| 31                                        | .435                 | .0830   | .0508   | 18.39               | 21 59.4                            | .2887  | 3 17.8                            | 6.41                |
| Novbr. 1                                  | .443                 | .0810   | .0524   | 18.43               | 21 59.9                            | .2893  | 3 13.8                            | 6.32                |
| 2                                         | .452                 | .0790   | .0540   | 18.47               | 22 0.5                             | .2900  | 3 9.7                             | 6.23                |
| 3                                         | .462                 | .0769   | .0556   | 18.51               | 22 1.1                             | .2907  | 3 5.6                             | 6.14                |
| 4                                         | .471                 | .0748   | .0572   | 18.55               | 22 1.6                             | .2913  | 3 1.6                             | 6.04                |
| 5                                         | .480                 | .0727   | .0588   | 18.60               | 22 2.2                             | .2920  | 2 57.6                            | 5.95                |
| 6                                         | .489                 | .0705   | .0604   | 18.64               | 22 2.8                             | .2926  | 2 53.6                            | 5.85                |
| 7                                         | +2.499               | —0.0683 | +0.0620 | 18.68               | 22 3.3                             | 1.2933 | 2 49.5                            | +5.75               |
| 8                                         | .508                 | .0660   | .0636   | 18.73               | 22 3.9                             | .2939  | 2 45.6                            | 5.65                |
| 9                                         | .518                 | .0637   | .0652   | 18.77               | 22 4.5                             | .2946  | 2 41.6                            | 5.54                |
| 10                                        | .527                 | .0614   | .0668   | 18.82               | 22 5.1                             | .2952  | 2 37.6                            | 5.44                |
| 11                                        | .537                 | .0590   | .0684   | 18.87               | 22 5.6                             | .2959  | 2 33.6                            | 5.33                |
| 12                                        | .547                 | .0566   | .0699   | 18.92               | 22 6.2                             | .2965  | 2 29.7                            | 5.22                |
| 13                                        | .557                 | .0542   | .0714   | 18.96               | 22 6.8                             | .2971  | 2 25.7                            | 5.11                |
| 14                                        | .567                 | .0518   | .0729   | 19.01               | 22 7.4                             | .2978  | 2 21.8                            | 5.00                |
| 15                                        | .577                 | .0493   | .0744   | 19.06               | 22 7.9                             | .2984  | 2 17.8                            | 4.88                |
| 16                                        | .588                 | .0468   | .0760   | 19.11               | 22 8.5                             | .2990  | 2 13.9                            | 4.77                |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                 | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|-----------------------------------|--------|-----------------------------------|---------------------|
| Novbr.                          | 17 | +2 <sup>s</sup> .598 | −0.0442 | +0.0775 | 19 <sup>m</sup> .17 | 22 <sup>h</sup> 9 <sup>m</sup> .1 | 1.2996 | 2 <sup>h</sup> 10 <sup>m</sup> .0 | +4 <sup>m</sup> .65 |
|                                 | 18 | .609                 | .0416   | .0789   | 19.22               | 22 9.7                            | .3002  | 2 6.1                             | 4.53                |
|                                 | 19 | .619                 | .0390   | .0804   | 19.27               | 22 10.2                           | .3008  | 2 2.2                             | 4.41                |
|                                 | 20 | .630                 | .0363   | .0818   | 19.32               | 22 10.8                           | .3013  | 1 58.3                            | 4.29                |
|                                 | 21 | .641                 | .0336   | .0832   | 19.38               | 22 11.4                           | .3019  | 1 54.5                            | 4.17                |
|                                 | 22 | .651                 | .0308   | .0846   | 19.43               | 22 11.9                           | .3025  | 1 50.6                            | 4.04                |
|                                 | 23 | .662                 | .0280   | .0860   | 19.49               | 22 12.5                           | .3030  | 1 46.8                            | 3.92                |
|                                 | 24 | .673                 | .0252   | .0873   | 19.55               | 22 13.0                           | .3035  | 1 42.9                            | 3.79                |
|                                 | 25 | .684                 | .0223   | .0886   | 19.60               | 22 13.6                           | .3040  | 1 39.1                            | 3.66                |
|                                 | 26 | .696                 | .0194   | .0899   | 19.66               | 22 14.1                           | .3045  | 1 35.2                            | 3.53                |
|                                 | 27 | +2.707               | −0.0164 | +0.0911 | 19.72               | 22 14.6                           | 1.3050 | 1 31.4                            | +3.40               |
|                                 | 28 | .718                 | .0134   | .0923   | 19.78               | 22 15.2                           | .3055  | 1 27.6                            | 3.27                |
| Dezbr.                          | 29 | .730                 | .0104   | .0934   | 19.84               | 22 15.7                           | .3059  | 1 23.8                            | 3.14                |
|                                 | 30 | .741                 | .0073   | .0945   | 19.90               | 22 16.2                           | .3064  | 1 19.9                            | 3.00                |
|                                 | 1  | .753                 | .0042   | .0956   | 19.97               | 22 16.7                           | .3068  | 1 16.1                            | 2.87                |
|                                 | 2  | .764                 | −0.0011 | .0966   | 20.03               | 22 17.2                           | .3072  | 1 12.3                            | 2.73                |
|                                 | 3  | .776                 | +0.0020 | .0975   | 20.09               | 22 17.7                           | .3076  | 1 8.5                             | 2.60                |
|                                 | 4  | .788                 | .0052   | .0984   | 20.16               | 22 18.2                           | .3079  | 1 4.8                             | 2.46                |
|                                 | 5  | .799                 | .0084   | .0993   | 20.22               | 22 18.7                           | .3083  | 1 1.0                             | 2.32                |
|                                 | 6  | .811                 | .0117   | .1001   | 20.29               | 22 19.2                           | .3086  | 0 57.2                            | 2.18                |
|                                 | 7  | +2.823               | +0.0150 | +0.1009 | 20.35               | 22 19.7                           | 1.3089 | 0 53.4                            | +2.04               |
|                                 | 8  | .835                 | .0183   | .1017   | 20.42               | 22 20.1                           | .3092  | 0 49.7                            | 1.90                |
|                                 | 9  | .847                 | .0217   | .1024   | 20.49               | 22 20.6                           | .3095  | 0 45.9                            | 1.76                |
|                                 | 10 | .859                 | .0251   | .1030   | 20.56               | 22 21.0                           | .3097  | 0 42.2                            | 1.62                |
|                                 | 11 | .871                 | .0285   | .1036   | 20.62               | 22 21.5                           | .3100  | 0 38.4                            | 1.48                |
|                                 | 12 | .883                 | .0319   | .1041   | 20.69               | 22 21.9                           | .3102  | 0 34.6                            | 1.34                |
|                                 | 13 | .895                 | .0354   | .1046   | 20.76               | 22 22.3                           | .3104  | 0 30.9                            | 1.19                |
|                                 | 14 | .908                 | .0389   | .1050   | 20.83               | 22 22.8                           | .3105  | 0 27.2                            | 1.05                |
|                                 | 15 | .920                 | .0424   | .1054   | 20.90               | 22 23.2                           | .3107  | 0 23.4                            | 0.91                |
|                                 | 16 | .932                 | .0459   | .1057   | 20.97               | 22 23.6                           | .3108  | 0 19.7                            | 0.76                |
|                                 | 17 | +2.944               | +0.0495 | +0.1060 | 21.05               | 22 23.9                           | 1.3109 | 0 15.9                            | +0.62               |
|                                 | 18 | .957                 | .0531   | .1062   | 21.12               | 22 24.3                           | .3110  | 0 12.2                            | 0.48                |
|                                 | 19 | .969                 | .0567   | .1064   | 21.19               | 22 24.7                           | .3111  | 0 8.5                             | 0.33                |
|                                 | 20 | .981                 | .0604   | .1065   | 21.26               | 22 25.1                           | .3111  | 0 4.7                             | 0.18                |
|                                 | 21 | 2.993                | .0640   | .1065   | 21.34               | 22 25.4                           | .3111  | 0 1.0                             | +0.04               |
|                                 | 22 | 3.006                | .0677   | .1065   | 21.41               | 22 25.8                           | .3111  | 23 57.3                           | −0.11               |
|                                 | 23 | .018                 | .0714   | .1064   | 21.48               | 22 26.1                           | .3111  | 23 53.5                           | 0.25                |
|                                 | 24 | .030                 | .0751   | .1063   | 21.56               | 22 26.4                           | .3110  | 23 49.8                           | 0.40                |
|                                 | 25 | .043                 | .0788   | .1061   | 21.63               | 22 26.7                           | .3110  | 23 46.0                           | 0.54                |
|                                 | 26 | .055                 | .0825   | .1059   | 21.71               | 22 27.0                           | .3109  | 23 42.3                           | 0.69                |
|                                 | 27 | +3.067               | +0.0862 | +0.1056 | 21.78               | 22 27.3                           | 1.3108 | 23 38.5                           | −0.83               |
|                                 | 28 | .079                 | .0900   | .1053   | 21.86               | 22 27.6                           | .3107  | 23 34.8                           | 0.97                |
|                                 | 29 | .092                 | .0937   | .1049   | 21.93               | 22 27.9                           | .3105  | 23 31.0                           | 1.12                |
|                                 | 30 | .104                 | .0975   | .1045   | 22.01               | 22 28.2                           | .3103  | 23 27.3                           | 1.26                |
|                                 | 31 | .116                 | .1013   | .1041   | 22.08               | 22 28.4                           | .3101  | 23 23.5                           | 1.40                |

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| <sup>12<sup>h</sup></sup><br>M. Z. Berlin |    | f       | x       | y       | g     | G                   | log h  | H                    | i     |
|-------------------------------------------|----|---------|---------|---------|-------|---------------------|--------|----------------------|-------|
| Januar                                    | 1  | +0.8057 | —0.5709 | +0.1033 | 8.60  | 18 <sup>h</sup> 9.8 | 1.3099 | 23 <sup>h</sup> 19.8 | —1.54 |
|                                           | 2  | .069    | .5703   | .1027   | 8.62  | 18 11.9             | .3096  | 23 16.0              | 1.69  |
|                                           | 3  | .081    | .5697   | .1021   | 8.63  | 18 14.0             | .3094  | 23 12.2              | 1.83  |
|                                           | 4  | .093    | .5690   | .1014   | 8.64  | 18 16.0             | .3091  | 23 8.5               | 1.97  |
|                                           | 5  | .105    | .5682   | .1007   | 8.66  | 18 18.1             | .3088  | 23 4.7               | 2.11  |
|                                           | 6  | .117    | .5674   | .0999   | 8.67  | 18 20.1             | .3085  | 23 0.9               | 2.25  |
|                                           | 7  | .128    | .5665   | .0990   | 8.69  | 18 22.1             | .3082  | 22 57.1              | 2.39  |
|                                           | 8  | .140    | .5656   | .0981   | 8.71  | 18 24.1             | .3078  | 22 53.3              | 2.53  |
|                                           | 9  | .152    | .5646   | .0972   | 8.73  | 18 26.0             | .3074  | 22 49.5              | 2.66  |
|                                           | 10 | .164    | .5636   | .0962   | 8.75  | 18 28.0             | .3070  | 22 45.7              | 2.80  |
|                                           | 11 | +0.175  | —0.5625 | +0.0951 | 8.77  | 18 29.9             | 1.3066 | 22 41.9              | —2.94 |
|                                           | 12 | .187    | .5613   | .0940   | 8.80  | 18 31.8             | .3062  | 22 38.1              | 3.07  |
|                                           | 13 | .198    | .5601   | .0929   | 8.82  | 18 33.6             | .3057  | 22 34.3              | 3.20  |
|                                           | 14 | .210    | .5589   | .0917   | 8.85  | 18 35.5             | .3052  | 22 30.4              | 3.34  |
|                                           | 15 | .221    | .5576   | .0905   | 8.87  | 18 37.3             | .3048  | 22 26.6              | 3.47  |
|                                           | 16 | .232    | .5562   | .0892   | 8.90  | 18 39.1             | .3043  | 22 22.7              | 3.60  |
|                                           | 17 | .243    | .5548   | .0879   | 8.93  | 18 40.9             | .3038  | 22 18.9              | 3.73  |
|                                           | 18 | .254    | .5533   | .0866   | 8.96  | 18 42.6             | .3033  | 22 15.0              | 3.86  |
|                                           | 19 | .265    | .5518   | .0853   | 8.99  | 18 44.4             | .3027  | 22 11.1              | 3.98  |
|                                           | 20 | .276    | .5503   | .0839   | 9.02  | 18 46.1             | .3022  | 22 7.2               | 4.11  |
|                                           | 21 | +0.287  | —0.5488 | +0.0825 | 9.05  | 18 47.7             | 1.3016 | 22 3.3               | —4.23 |
|                                           | 22 | .298    | .5472   | .0811   | 9.08  | 18 49.4             | .3010  | 21 59.4              | 4.36  |
|                                           | 23 | .308    | .5456   | .0796   | 9.11  | 18 51.0             | .3004  | 21 55.5              | 4.48  |
|                                           | 24 | .319    | .5439   | .0781   | 9.14  | 18 52.6             | .2998  | 21 51.6              | 4.60  |
|                                           | 25 | .329    | .5422   | .0766   | 9.18  | 18 54.1             | .2992  | 21 47.7              | 4.72  |
|                                           | 26 | .340    | .5405   | .0751   | 9.21  | 18 55.6             | .2986  | 21 43.7              | 4.84  |
|                                           | 27 | .350    | .5388   | .0736   | 9.25  | 18 57.1             | .2980  | 21 39.8              | 4.95  |
|                                           | 28 | .360    | .5371   | .0721   | 9.28  | 18 58.6             | .2974  | 21 35.8              | 5.07  |
|                                           | 29 | .370    | .5354   | .0705   | 9.32  | 19 0.1              | .2968  | 21 31.8              | 5.18  |
|                                           | 30 | .380    | .5336   | .0689   | 9.35  | 19 1.5              | .2961  | 21 27.9              | 5.29  |
| Februar                                   | 31 | +0.390  | —0.5318 | +0.0673 | 9.39  | 19 2.9              | 1.2955 | 21 23.9              | —5.40 |
|                                           | 1  | .400    | .5300   | .0657   | 9.42  | 19 4.3              | .2948  | 21 19.9              | 5.51  |
|                                           | 2  | .410    | .5282   | .0641   | 9.46  | 19 5.6              | .2942  | 21 15.8              | 5.61  |
|                                           | 3  | .419    | .5264   | .0625   | 9.50  | 19 6.9              | .2935  | 21 11.8              | 5.71  |
|                                           | 4  | .429    | .5246   | .0609   | 9.53  | 19 8.2              | .2928  | 21 7.8               | 5.81  |
|                                           | 5  | .438    | .5228   | .0593   | 9.57  | 19 9.5              | .2922  | 21 3.7               | 5.91  |
|                                           | 6  | .447    | .5210   | .0577   | 9.60  | 19 10.7             | .2915  | 20 59.7              | 6.01  |
|                                           | 7  | .456    | .5191   | .0561   | 9.64  | 19 11.9             | .2908  | 20 55.6              | 6.11  |
|                                           | 8  | .466    | .5173   | .0545   | 9.68  | 19 13.1             | .2902  | 20 51.5              | 6.20  |
|                                           | 9  | .475    | .5155   | .0529   | 9.71  | 19 14.3             | .2895  | 20 47.4              | 6.29  |
|                                           | 10 | +0.483  | —0.5137 | +0.0513 | 9.75  | 19 15.5             | 1.2889 | 20 43.3              | —6.38 |
|                                           | 11 | .492    | .5119   | .0497   | 9.79  | 19 16.6             | .2882  | 20 39.2              | 6.47  |
|                                           | 12 | .501    | .5101   | .0481   | 9.82  | 19 17.7             | .2876  | 20 35.1              | 6.56  |
|                                           | 13 | .510    | .5083   | .0466   | 9.86  | 19 18.8             | .2870  | 20 30.9              | 6.64  |
|                                           | 14 | .518    | .5065   | .0451   | 9.89  | 19 19.9             | .2863  | 20 26.8              | 6.73  |
|                                           | 15 | .527    | .5048   | .0436   | 9.93  | 19 20.9             | .2857  | 20 22.6              | 6.81  |
|                                           | 16 | .535    | .5030   | .0421   | 9.96  | 19 22.0             | .2851  | 20 18.4              | 6.88  |
|                                           | 17 | .543    | .5013   | .0406   | 10.00 | 19 23.0             | .2845  | 20 14.3              | 6.96  |
|                                           | 18 | .551    | .4995   | .0391   | 10.04 | 19 24.0             | .2839  | 20 10.1              | 7.03  |
|                                           | 19 | .559    | .4978   | .0377   | 10.07 | 19 25.0             | .2833  | 20 5.9               | 7.10  |

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| <sup>12h</sup><br>M. Z. Berlin | f      | x       | y       | g     | G                                 | log h  | H                                | i     |
|--------------------------------|--------|---------|---------|-------|-----------------------------------|--------|----------------------------------|-------|
| Februar 20                     | +0.567 | —0.4961 | +0.0363 | 10.10 | 19 <sup>h</sup> 26 <sup>m</sup> 0 | 1.2827 | 20 <sup>h</sup> 1 <sup>m</sup> 7 | —7.17 |
| 21                             | .575   | .4944   | .0350   | 10.14 | 19 26.9                           | .2821  | 19 57.5                          | 7.24  |
| 22                             | .583   | .4927   | .0336   | 10.17 | 19 27.9                           | .2815  | 19 53.2                          | 7.30  |
| 23                             | .591   | .4911   | .0323   | 10.20 | 19 28.8                           | .2810  | 19 49.0                          | 7.37  |
| 24                             | .598   | .4895   | .0310   | 10.24 | 19 29.7                           | .2804  | 19 44.8                          | 7.43  |
| 25                             | .606   | .4880   | .0298   | 10.27 | 19 30.6                           | .2799  | 19 40.5                          | 7.49  |
| 26                             | .614   | .4864   | .0286   | 10.30 | 19 31.5                           | .2794  | 19 36.2                          | 7.54  |
| 27                             | .621   | .4848   | .0275   | 10.33 | 19 32.4                           | .2789  | 19 32.0                          | 7.59  |
| 28                             | .628   | .4833   | .0264   | 10.36 | 19 33.3                           | .2785  | 19 27.7                          | 7.64  |
| März 1                         | .636   | .4818   | .0254   | 10.39 | 19 34.2                           | .2780  | 19 23.4                          | 7.69  |
| 2                              | +0.643 | —0.4804 | +0.0244 | 10.42 | 19 35.0                           | 1.2776 | 19 19.1                          | —7.74 |
| 3                              | .650   | .4790   | .0234   | 10.45 | 19 35.9                           | .2772  | 19 14.9                          | 7.78  |
| 4                              | .657   | .4776   | .0225   | 10.48 | 19 36.7                           | .2768  | 19 10.6                          | 7.82  |
| 5                              | .664   | .4762   | .0217   | 10.50 | 19 37.5                           | .2765  | 19 6.3                           | 7.86  |
| 6                              | .671   | .4748   | .0209   | 10.53 | 19 38.4                           | .2761  | 19 2.0                           | 7.90  |
| 7                              | .678   | .4734   | .0201   | 10.56 | 19 39.2                           | .2758  | 18 57.6                          | 7.93  |
| 8                              | .685   | .4721   | .0194   | 10.58 | 19 40.0                           | .2755  | 18 53.3                          | 7.96  |
| 9                              | .692   | .4708   | .0187   | 10.61 | 19 40.8                           | .2752  | 18 49.0                          | 7.99  |
| 10                             | .699   | .4695   | .0181   | 10.64 | 19 41.7                           | .2749  | 18 44.7                          | 8.02  |
| 11                             | .706   | .4683   | .0175   | 10.66 | 19 42.5                           | .2747  | 18 40.4                          | 8.04  |
| 12                             | +0.713 | —0.4671 | +0.0170 | 10.68 | 19 43.3                           | 1.2745 | 18 36.0                          | —8.06 |
| 13                             | .720   | .4659   | .0165   | 10.71 | 19 44.1                           | .2743  | 18 31.7                          | 8.08  |
| 14                             | .727   | .4647   | .0161   | 10.73 | 19 44.9                           | .2741  | 18 27.4                          | 8.10  |
| 15                             | .733   | .4636   | .0158   | 10.75 | 19 45.7                           | .2740  | 18 23.0                          | 8.11  |
| 16                             | .740   | .4625   | .0156   | 10.78 | 19 46.5                           | .2739  | 18 18.7                          | 8.12  |
| 17                             | .747   | .4615   | .0154   | 10.80 | 19 47.3                           | .2738  | 18 14.4                          | 8.13  |
| 18                             | .754   | .4605   | .0152   | 10.82 | 19 48.2                           | .2737  | 18 10.0                          | 8.14  |
| 19                             | .760   | .4595   | .0151   | 10.84 | 19 49.0                           | .2737  | 18 5.7                           | 8.15  |
| 20                             | .767   | .4585   | .0150   | 10.86 | 19 49.8                           | .2736  | 18 1.4                           | 8.15  |
| 21                             | .774   | .4575   | .0150   | 10.88 | 19 50.6                           | .2736  | 17 57.0                          | 8.15  |
| 22                             | +0.780 | —0.4565 | +0.0151 | 10.90 | 19 51.4                           | 1.2737 | 17 52.7                          | —8.14 |
| 23                             | .787   | .4556   | .0152   | 10.92 | 19 52.3                           | .2737  | 17 48.4                          | 8.14  |
| 24                             | .794   | .4547   | .0154   | 10.93 | 19 53.1                           | .2738  | 17 44.1                          | 8.13  |
| 25                             | .800   | .4538   | .0156   | 10.95 | 19 53.9                           | .2739  | 17 39.8                          | 8.12  |
| 26                             | .807   | .4529   | .0159   | 10.97 | 19 54.8                           | .2740  | 17 35.5                          | 8.11  |
| 27                             | .814   | .4521   | .0162   | 10.99 | 19 55.6                           | .2742  | 17 31.2                          | 8.09  |
| 28                             | .821   | .4513   | .0166   | 11.00 | 19 56.5                           | .2744  | 17 26.9                          | 8.08  |
| 29                             | .827   | .4505   | .0171   | 11.02 | 19 57.4                           | .2745  | 17 22.6                          | 8.06  |
| 30                             | .834   | .4496   | .0176   | 11.04 | 19 58.2                           | .2747  | 17 18.3                          | 8.03  |
| 31                             | .841   | .4488   | .0181   | 11.05 | 19 59.1                           | .2750  | 17 14.0                          | 8.01  |
| April 1                        | +0.848 | —0.4480 | +0.0187 | 11.07 | 20 0.0                            | 1.2752 | 17 9.8                           | —7.98 |
| 2                              | .855   | .4472   | .0194   | 11.08 | 20 0.9                            | .2755  | 17 5.5                           | 7.95  |
| 3                              | .862   | .4464   | .0202   | 11.10 | 20 1.8                            | .2758  | 17 1.3                           | 7.92  |
| 4                              | .869   | .4457   | .0210   | 11.11 | 20 2.7                            | .2762  | 16 57.0                          | 7.89  |
| 5                              | .876   | .4450   | .0218   | 11.13 | 20 3.6                            | .2765  | 16 52.8                          | 7.86  |
| 6                              | .883   | .4443   | .0227   | 11.14 | 20 4.6                            | .2769  | 16 48.6                          | 7.82  |
| 7                              | .890   | .4435   | .0236   | 11.16 | 20 5.5                            | .2773  | 16 44.4                          | 7.77  |
| 8                              | .897   | .4428   | .0245   | 11.17 | 20 6.4                            | .2777  | 16 40.1                          | 7.73  |
| 9                              | .904   | .4421   | .0255   | 11.19 | 20 7.4                            | .2781  | 16 35.9                          | 7.69  |
| 10                             | .911   | .4414   | .0265   | 11.20 | 20 8.4                            | .2785  | 16 31.8                          | 7.64  |

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| <sup>12h</sup><br>M. Z. Berlin |    | f       | x       | y       | g     | G                                 | log h  | H                                  | i     |
|--------------------------------|----|---------|---------|---------|-------|-----------------------------------|--------|------------------------------------|-------|
| April                          | 11 | +0.8919 | -0.4407 | +0.0276 | 11.21 | 20 <sup>h</sup> 9 <sup>m</sup> .3 | 1.2790 | 16 <sup>h</sup> 27 <sup>m</sup> .6 | -7.59 |
|                                | 12 | .926    | .4401   | .0287   | 11.23 | 20 10.3                           | .2795  | 16 23.4                            | 7.54  |
|                                | 13 | .934    | .4394   | .0299   | 11.24 | 20 11.3                           | .2800  | 16 19.3                            | 7.48  |
|                                | 14 | .941    | .4387   | .0311   | 11.26 | 20 12.3                           | .2805  | 16 15.1                            | 7.43  |
|                                | 15 | .949    | .4380   | .0323   | 11.27 | 20 13.3                           | .2810  | 16 11.0                            | 7.37  |
|                                | 16 | .956    | .4373   | .0336   | 11.28 | 20 14.3                           | .2815  | 16 6.9                             | 7.31  |
|                                | 17 | .964    | .4366   | .0348   | 11.30 | 20 15.4                           | .2820  | 16 2.8                             | 7.25  |
|                                | 18 | .972    | .4358   | .0361   | 11.31 | 20 16.4                           | .2826  | 15 58.7                            | 7.18  |
|                                | 19 | .980    | .4351   | .0374   | 11.33 | 20 17.5                           | .2831  | 15 54.6                            | 7.12  |
|                                | 20 | .988    | .4343   | .0388   | 11.34 | 20 18.5                           | .2837  | 15 50.6                            | 7.05  |
|                                | 21 | +0.996  | -0.4335 | +0.0402 | 11.36 | 20 19.6                           | 1.2843 | 15 46.5                            | -6.98 |
|                                | 22 | 1.004   | .4327   | .0416   | 11.38 | 20 20.7                           | .2849  | 15 42.5                            | 6.90  |
|                                | 23 | .012    | .4319   | .0430   | 11.39 | 20 21.8                           | .2855  | 15 38.4                            | 6.83  |
|                                | 24 | .021    | .4310   | .0445   | 11.41 | 20 22.9                           | .2861  | 15 34.4                            | 6.75  |
|                                | 25 | .029    | .4302   | .0460   | 11.43 | 20 24.0                           | .2867  | 15 30.4                            | 6.67  |
|                                | 26 | .037    | .4293   | .0475   | 11.44 | 20 25.1                           | .2873  | 15 26.4                            | 6.59  |
|                                | 27 | .046    | .4284   | .0490   | 11.46 | 20 26.2                           | .2879  | 15 22.5                            | 6.51  |
|                                | 28 | .054    | .4275   | .0505   | 11.48 | 20 27.3                           | .2886  | 15 18.5                            | 6.43  |
|                                | 29 | .063    | .4266   | .0520   | 11.50 | 20 28.4                           | .2892  | 15 14.6                            | 6.34  |
|                                | 30 | .072    | .4256   | .0536   | 11.52 | 20 29.6                           | .2898  | 15 10.6                            | 6.25  |
| Mai                            | 1  | +1.081  | -0.4246 | +0.0551 | 11.54 | 20 30.7                           | 1.2905 | 15 6.7                             | -6.16 |
|                                | 2  | .090    | .4236   | .0566   | 11.56 | 20 31.9                           | .2911  | 15 2.8                             | 6.07  |
|                                | 3  | .099    | .4225   | .0581   | 11.58 | 20 33.0                           | .2917  | 14 58.9                            | 5.98  |
|                                | 4  | .108    | .4214   | .0597   | 11.60 | 20 34.2                           | .2924  | 14 55.1                            | 5.88  |
|                                | 5  | .117    | .4203   | .0612   | 11.62 | 20 35.4                           | .2930  | 14 51.2                            | 5.79  |
|                                | 6  | .126    | .4192   | .0628   | 11.65 | 20 36.5                           | .2936  | 14 47.4                            | 5.69  |
|                                | 7  | .135    | .4181   | .0643   | 11.67 | 20 37.7                           | .2942  | 14 43.5                            | 5.59  |
|                                | 8  | .145    | .4169   | .0659   | 11.69 | 20 38.9                           | .2949  | 14 39.7                            | 5.49  |
|                                | 9  | .154    | .4156   | .0674   | 11.72 | 20 40.1                           | .2955  | 14 35.9                            | 5.39  |
|                                | 10 | .164    | .4143   | .0689   | 11.74 | 20 41.3                           | .2961  | 14 32.0                            | 5.29  |
|                                | 11 | +1.174  | -0.4130 | +0.0704 | 11.77 | 20 42.4                           | 1.2967 | 14 28.2                            | -5.18 |
|                                | 12 | .184    | .4116   | .0719   | 11.80 | 20 43.6                           | .2973  | 14 24.5                            | 5.07  |
|                                | 13 | .193    | .4102   | .0734   | 11.82 | 20 44.8                           | .2979  | 14 20.7                            | 4.96  |
|                                | 14 | .203    | .4088   | .0748   | 11.85 | 20 46.0                           | .2985  | 14 17.0                            | 4.85  |
|                                | 15 | .213    | .4074   | .0763   | 11.88 | 20 47.2                           | .2991  | 14 13.2                            | 4.74  |
|                                | 16 | .223    | .4059   | .0777   | 11.91 | 20 48.4                           | .2997  | 14 9.5                             | 4.63  |
|                                | 17 | .234    | .4044   | .0791   | 11.94 | 20 49.6                           | .3002  | 14 5.8                             | 4.52  |
|                                | 18 | .244    | .4028   | .0804   | 11.98 | 20 50.7                           | .3008  | 14 2.1                             | 4.41  |
|                                | 19 | .254    | .4011   | .0818   | 12.01 | 20 51.9                           | .3013  | 13 58.4                            | 4.29  |
|                                | 20 | .265    | .3994   | .0831   | 12.04 | 20 53.1                           | .3019  | 13 54.7                            | 4.17  |
|                                | 21 | +1.275  | -0.3977 | +0.0844 | 12.08 | 20 54.3                           | 1.3024 | 13 51.0                            | -4.05 |
|                                | 22 | .286    | .3959   | .0857   | 12.11 | 20 55.4                           | .3029  | 13 47.4                            | 3.93  |
|                                | 23 | .296    | .3941   | .0870   | 12.15 | 20 56.6                           | .3034  | 13 43.7                            | 3.81  |
|                                | 24 | .307    | .3922   | .0882   | 12.19 | 20 57.7                           | .3039  | 13 40.1                            | 3.69  |
|                                | 25 | .318    | .3903   | .0894   | 12.23 | 20 58.9                           | .3044  | 13 36.4                            | 3.57  |
|                                | 26 | .329    | .3884   | .0906   | 12.26 | 21 0.0                            | .3048  | 13 32.8                            | 3.45  |
|                                | 27 | .340    | .3864   | .0917   | 12.30 | 21 1.2                            | .3053  | 13 29.2                            | 3.33  |
|                                | 28 | .351    | .3844   | .0928   | 12.34 | 21 2.3                            | .3057  | 13 25.6                            | 3.20  |
|                                | 29 | .362    | .3823   | .0939   | 12.39 | 21 3.4                            | .3062  | 13 22.0                            | 3.08  |
|                                | 30 | .373    | .3802   | .0949   | 12.43 | 21 4.6                            | .3066  | 13 18.4                            | 2.95  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                 | log h  | H                                  | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|-----------------------------------|--------|------------------------------------|---------------------|
| Mai                             | 31 | +1 <sup>s</sup> .384 | —0.3780 | +0.0959 | 12 <sup>h</sup> .47 | 21 <sup>h</sup> 5 <sup>m</sup> .7 | 1.3070 | 13 <sup>h</sup> 14 <sup>m</sup> .8 | —2 <sup>h</sup> .82 |
| Juni                            | 1  | .395                 | .3758   | .0969   | 12.52               | 21 6.8                            | .3073  | 13 11.2                            | 2.69                |
|                                 | 2  | .406                 | .3736   | .0978   | 12.56               | 21 7.8                            | .3077  | 13 7.6                             | 2.56                |
|                                 | 3  | .418                 | .3713   | .0987   | 12.61               | 21 8.9                            | .3080  | 13 4.1                             | 2.43                |
|                                 | 4  | .429                 | .3690   | .0995   | 12.65               | 21 10.0                           | .3083  | 13 0.5                             | 2.30                |
|                                 | 5  | .441                 | .3666   | .1002   | 12.70               | 21 11.0                           | .3086  | 12 57.0                            | 2.17                |
|                                 | 6  | .452                 | .3642   | .1009   | 12.75               | 21 12.1                           | .3089  | 12 53.4                            | 2.04                |
|                                 | 7  | .464                 | .3618   | .1016   | 12.80               | 21 13.1                           | .3092  | 12 49.9                            | 1.91                |
|                                 | 8  | .475                 | .3593   | .1023   | 12.85               | 21 14.1                           | .3095  | 12 46.3                            | 1.78                |
|                                 | 9  | .487                 | .3567   | .1029   | 12.90               | 21 15.1                           | .3097  | 12 42.8                            | 1.64                |
|                                 | 10 | +1.498               | —0.3541 | +0.1035 | 12.95               | 21 16.1                           | 1.3099 | 12 39.3                            | —1.51               |
|                                 | 11 | .510                 | .3515   | .1040   | 13.00               | 21 17.1                           | .3101  | 12 35.8                            | 1.38                |
|                                 | 12 | .522                 | .3489   | .1045   | 13.06               | 21 18.1                           | .3103  | 12 32.3                            | 1.24                |
|                                 | 13 | .533                 | .3462   | .1049   | 13.11               | 21 19.0                           | .3105  | 12 28.7                            | 1.11                |
|                                 | 14 | .545                 | .3435   | .1053   | 13.16               | 21 20.0                           | .3106  | 12 25.2                            | 0.97                |
|                                 | 15 | .557                 | .3407   | .1056   | 13.22               | 21 20.9                           | .3107  | 12 21.7                            | 0.84                |
|                                 | 16 | .568                 | .3379   | .1058   | 13.27               | 21 21.8                           | .3108  | 12 18.2                            | 0.70                |
|                                 | 17 | .580                 | .3351   | .1060   | 13.33               | 21 22.7                           | .3109  | 12 14.7                            | 0.57                |
|                                 | 18 | .592                 | .3323   | .1062   | 13.39               | 21 23.6                           | .3110  | 12 11.2                            | 0.43                |
|                                 | 19 | .604                 | .3294   | .1063   | 13.45               | 21 24.4                           | .3111  | 12 7.7                             | 0.30                |
|                                 | 20 | +1.615               | —0.3265 | +0.1064 | 13.51               | 21 25.3                           | 1.3111 | 12 4.2                             | —0.16               |
|                                 | 21 | .627                 | .3235   | .1065   | 13.56               | 21 26.1                           | .3111  | 12 0.7                             | —0.03               |
|                                 | 22 | .639                 | .3206   | .1065   | 13.62               | 21 26.9                           | .3111  | 11 57.2                            | +0.11               |
|                                 | 23 | .651                 | .3176   | .1064   | 13.68               | 21 27.7                           | .3111  | 11 53.7                            | 0.24                |
|                                 | 24 | .663                 | .3146   | .1063   | 13.74               | 21 28.5                           | .3111  | 11 50.2                            | 0.38                |
|                                 | 25 | .674                 | .3115   | .1062   | 13.81               | 21 29.3                           | .3110  | 11 46.7                            | 0.51                |
|                                 | 26 | .686                 | .3084   | .1060   | 13.87               | 21 30.1                           | .3109  | 11 43.2                            | 0.65                |
|                                 | 27 | .698                 | .3053   | .1057   | 13.93               | 21 30.8                           | .3108  | 11 39.7                            | 0.78                |
|                                 | 28 | .710                 | .3022   | .1054   | 13.99               | 21 31.6                           | .3107  | 11 36.3                            | 0.92                |
|                                 | 29 | .721                 | .2991   | .1050   | 14.05               | 21 32.3                           | .3105  | 11 32.7                            | 1.05                |
| Juli                            | 30 | +1.733               | —0.2960 | +0.1046 | 14.12               | 21 33.0                           | 1.3104 | 11 29.2                            | +1.19               |
|                                 | 1  | .745                 | .2928   | .1042   | 14.18               | 21 33.7                           | .3102  | 11 25.7                            | 1.32                |
|                                 | 2  | .756                 | .2896   | .1037   | 14.25               | 21 34.3                           | .3100  | 11 22.1                            | 1.46                |
|                                 | 3  | .768                 | .2864   | .1032   | 14.31               | 21 35.0                           | .3098  | 11 18.6                            | 1.59                |
|                                 | 4  | .779                 | .2832   | .1026   | 14.37               | 21 35.6                           | .3096  | 11 15.1                            | 1.72                |
|                                 | 5  | .791                 | .2800   | .1020   | 14.44               | 21 36.2                           | .3093  | 11 11.6                            | 1.86                |
|                                 | 6  | .802                 | .2768   | .1013   | 14.50               | 21 36.8                           | .3091  | 11 8.1                             | 1.99                |
|                                 | 7  | .814                 | .2735   | .1005   | 14.57               | 21 37.4                           | .3088  | 11 4.5                             | 2.12                |
|                                 | 8  | .825                 | .2703   | .0998   | 14.63               | 21 38.0                           | .3085  | 11 1.0                             | 2.25                |
|                                 | 9  | .837                 | .2670   | .0990   | 14.70               | 21 38.6                           | .3082  | 10 57.4                            | 2.38                |
|                                 | 10 | +1.848               | —0.2638 | +0.0982 | 14.76               | 21 39.1                           | 1.3078 | 10 53.9                            | +2.51               |
|                                 | 11 | .859                 | .2605   | .0973   | 14.83               | 21 39.7                           | .3075  | 10 50.3                            | 2.64                |
|                                 | 12 | .871                 | .2572   | .0964   | 14.89               | 21 40.2                           | .3071  | 10 46.8                            | 2.77                |
|                                 | 13 | .882                 | .2539   | .0954   | 14.96               | 21 40.7                           | .3067  | 10 43.2                            | 2.89                |
|                                 | 14 | .893                 | .2506   | .0944   | 15.03               | 21 41.2                           | .3063  | 10 39.6                            | 3.02                |
|                                 | 15 | .904                 | .2473   | .0933   | 15.09               | 21 41.7                           | .3059  | 10 36.0                            | 3.14                |
|                                 | 16 | .915                 | .2440   | .0923   | 15.16               | 21 42.1                           | .3055  | 10 32.5                            | 3.27                |
|                                 | 17 | .926                 | .2408   | .0912   | 15.22               | 21 42.6                           | .3051  | 10 28.9                            | 3.39                |
|                                 | 18 | .936                 | .2376   | .0901   | 15.29               | 21 43.0                           | .3046  | 10 25.3                            | 3.51                |
|                                 | 19 | .947                 | .2344   | .0889   | 15.35               | 21 43.5                           | .3042  | 10 21.7                            | 3.64                |

## 1839

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                  | log h  | H                                  | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|------------------------------------|--------|------------------------------------|---------------------|
| Juli                            | 20 | +1 <sup>s</sup> .958 | —0.2311 | +0.0877 | 15 <sup>"</sup> .42 | 21 <sup>h</sup> 43 <sup>m</sup> .9 | 1.3037 | 10 <sup>h</sup> 18 <sup>m</sup> .0 | +3 <sup>"</sup> .76 |
|                                 | 21 | .969                 | .2279   | .0865   | 15.48               | 21 44.3                            | .3032  | 10 14.4                            | 3.88                |
|                                 | 22 | .979                 | .2246   | .0852   | 15.55               | 21 44.7                            | .3027  | 10 10.8                            | 4.00                |
|                                 | 23 | 1.990                | .2214   | .0839   | 15.61               | 21 45.1                            | .3022  | 10 7.1                             | 4.12                |
|                                 | 24 | 2.000                | .2182   | .0826   | 15.68               | 21 45.5                            | .3016  | 10 3.4                             | 4.23                |
|                                 | 25 | .011                 | .2150   | .0812   | 15.74               | 21 45.8                            | .3011  | 9 59.8                             | 4.35                |
|                                 | 26 | .021                 | .2118   | .0798   | 15.80               | 21 46.2                            | .3005  | 9 56.1                             | 4.46                |
|                                 | 27 | .031                 | .2086   | .0784   | 15.87               | 21 46.5                            | .3000  | 9 52.4                             | 4.58                |
|                                 | 28 | .041                 | .2054   | .0770   | 15.93               | 21 46.9                            | .2994  | 9 48.7                             | 4.69                |
|                                 | 29 | .051                 | .2022   | .0756   | 16.00               | 21 47.2                            | .2989  | 9 45.0                             | 4.80                |
| August                          | 30 | +2.061               | —0.1990 | +0.0742 | 16.06               | 21 47.5                            | 1.2983 | 9 41.3                             | +4.91               |
|                                 | 31 | .071                 | .1959   | .0728   | 16.12               | 21 47.9                            | .2977  | 9 37.6                             | 5.01                |
|                                 | 1  | .081                 | .1928   | .0714   | 16.19               | 21 48.2                            | .2971  | 9 33.8                             | 5.12                |
|                                 | 2  | .091                 | .1897   | .0699   | 16.25               | 21 48.5                            | .2965  | 9 30.1                             | 5.23                |
|                                 | 3  | .100                 | .1866   | .0684   | 16.31               | 21 48.7                            | .2959  | 9 26.3                             | 5.33                |
|                                 | 4  | .110                 | .1836   | .0668   | 16.37               | 21 49.0                            | .2952  | 9 22.5                             | 5.43                |
|                                 | 5  | .119                 | .1806   | .0653   | 16.43               | 21 49.3                            | .2946  | 9 18.7                             | 5.53                |
|                                 | 6  | .129                 | .1776   | .0637   | 16.49               | 21 49.6                            | .2940  | 9 14.9                             | 5.63                |
|                                 | 7  | .138                 | .1746   | .0622   | 16.55               | 21 49.8                            | .2934  | 9 11.1                             | 5.73                |
|                                 | 8  | .147                 | .1716   | .0607   | 16.61               | 21 50.1                            | .2928  | 9 7.3                              | 5.83                |
|                                 | 9  | +2.156               | —0.1686 | +0.0592 | 16.67               | 21 50.3                            | 1.2921 | 9 3.5                              | +5.92               |
|                                 | 10 | .165                 | .1657   | .0576   | 16.73               | 21 50.6                            | .2915  | 8 59.6                             | 6.01                |
|                                 | 11 | .174                 | .1628   | .0561   | 16.79               | 21 50.8                            | .2909  | 8 55.8                             | 6.11                |
|                                 | 12 | .183                 | .1600   | .0546   | 16.84               | 21 51.0                            | .2903  | 8 51.9                             | 6.20                |
|                                 | 13 | .192                 | .1571   | .0531   | 16.90               | 21 51.3                            | .2896  | 8 48.0                             | 6.28                |
|                                 | 14 | .200                 | .1542   | .0515   | 16.96               | 21 51.5                            | .2890  | 8 44.1                             | 6.37                |
|                                 | 15 | .209                 | .1514   | .0500   | 17.02               | 21 51.7                            | .2884  | 8 40.2                             | 6.46                |
|                                 | 16 | .218                 | .1486   | .0485   | 17.07               | 21 51.9                            | .2878  | 8 36.3                             | 6.54                |
|                                 | 17 | .226                 | .1459   | .0470   | 17.13               | 21 52.1                            | .2871  | 8 32.3                             | 6.62                |
|                                 | 18 | .234                 | .1432   | .0456   | 17.18               | 21 52.3                            | .2865  | 8 28.4                             | 6.70                |
|                                 | 19 | +2.243               | —0.1405 | +0.0441 | 17.23               | 21 52.5                            | 1.2859 | 8 24.4                             | +6.77               |
|                                 | 20 | .251                 | .1379   | .0427   | 17.29               | 21 52.7                            | .2853  | 8 20.4                             | 6.85                |
|                                 | 21 | .259                 | .1352   | .0413   | 17.34               | 21 53.0                            | .2848  | 8 16.4                             | 6.92                |
|                                 | 22 | .267                 | .1326   | .0399   | 17.39               | 21 53.2                            | .2842  | 8 12.4                             | 6.99                |
|                                 | 23 | .275                 | .1300   | .0385   | 17.45               | 21 53.4                            | .2836  | 8 8.4                              | 7.06                |
|                                 | 24 | .283                 | .1274   | .0372   | 17.50               | 21 53.6                            | .2830  | 8 4.4                              | 7.13                |
|                                 | 25 | .291                 | .1249   | .0358   | 17.55               | 21 53.8                            | .2825  | 8 0.3                              | 7.20                |
|                                 | 26 | .298                 | .1224   | .0345   | 17.60               | 21 54.0                            | .2819  | 7 56.3                             | 7.26                |
|                                 | 27 | .306                 | .1200   | .0332   | 17.65               | 21 54.2                            | .2814  | 7 52.2                             | 7.32                |
|                                 | 28 | .314                 | .1176   | .0320   | 17.69               | 21 54.4                            | .2809  | 7 48.2                             | 7.38                |
| Septbr.                         | 29 | +2.321               | —0.1152 | +0.0308 | 17.74               | 21 54.6                            | 1.2804 | 7 44.1                             | +7.44               |
|                                 | 30 | .329                 | .1128   | .0297   | 17.79               | 21 54.8                            | .2799  | 7 40.0                             | 7.49                |
|                                 | 31 | .336                 | .1104   | .0286   | 17.84               | 21 55.0                            | .2794  | 7 35.9                             | 7.54                |
|                                 | 1  | .344                 | .1081   | .0275   | 17.88               | 21 55.2                            | .2789  | 7 31.8                             | 7.59                |
|                                 | 2  | .351                 | .1058   | .0264   | 17.93               | 21 55.4                            | .2785  | 7 27.6                             | 7.64                |
|                                 | 3  | .358                 | .1035   | .0254   | 17.98               | 21 55.6                            | .2781  | 7 23.5                             | 7.69                |
|                                 | 4  | .365                 | .1013   | .0244   | 18.02               | 21 55.8                            | .2776  | 7 19.3                             | 7.74                |
|                                 | 5  | .372                 | .0991   | .0235   | 18.06               | 21 56.0                            | .2772  | 7 15.2                             | 7.78                |
|                                 | 6  | .380                 | .0969   | .0226   | 18.11               | 21 56.2                            | .2769  | 7 11.0                             | 7.82                |
|                                 | 7  | .387                 | .0948   | .0217   | 18.15               | 21 56.4                            | .2765  | 7 6.9                              | 7.85                |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                  | log h  | H                                | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|------------------------------------|--------|----------------------------------|---------------------|
| Septbr.                         | 8  | +2 <sup>s</sup> .394 | —0.0926 | +0.0209 | 18 <sup>h</sup> .19 | 21 <sup>h</sup> 56 <sup>m</sup> .6 | 1.2762 | 7 <sup>h</sup> 2 <sup>m</sup> .7 | +7 <sup>s</sup> .89 |
|                                 | 9  | .401                 | .0905   | .0201   | 18.24               | 21 56.9                            | .2758  | 6 58.5                           | 7.92                |
|                                 | 10 | .407                 | .0884   | .0194   | 18.28               | 21 57.1                            | .2755  | 6 54.3                           | 7.96                |
|                                 | 11 | .414                 | .0864   | .0187   | 18.32               | 21 57.3                            | .2752  | 6 50.1                           | 7.99                |
|                                 | 12 | .421                 | .0844   | .0181   | 18.36               | 21 57.5                            | .2750  | 6 45.8                           | 8.01                |
|                                 | 13 | .428                 | .0824   | .0176   | 18.40               | 21 57.8                            | .2747  | 6 41.6                           | 8.04                |
|                                 | 14 | .435                 | .0804   | .0171   | 18.44               | 21 58.0                            | .2745  | 6 37.4                           | 8.06                |
|                                 | 15 | .441                 | .0784   | .0167   | 18.48               | 21 58.3                            | .2743  | 6 33.2                           | 8.08                |
|                                 | 16 | .448                 | .0764   | .0163   | 18.52               | 21 58.5                            | .2742  | 6 28.9                           | 8.09                |
|                                 | 17 | .455                 | .0745   | .0160   | 18.56               | 21 58.8                            | .2740  | 6 24.7                           | 8.11                |
|                                 | 18 | +2.462               | —0.0726 | +0.0157 | 18.60               | 21 59.0                            | 1.2739 | 6 20.4                           | +8.12               |
|                                 | 19 | .468                 | .0707   | .0154   | 18.63               | 21 59.3                            | .2738  | 6 16.1                           | 8.13                |
|                                 | 20 | .475                 | .0688   | .0152   | 18.67               | 21 59.6                            | .2737  | 6 11.9                           | 8.14                |
|                                 | 21 | .482                 | .0670   | .0151   | 18.71               | 21 59.8                            | .2737  | 6 7.6                            | 8.15                |
|                                 | 22 | .488                 | .0651   | .0150   | 18.75               | 22 0.1                             | .2736  | 6 3.3                            | 8.15                |
|                                 | 23 | .495                 | .0633   | .0150   | 18.78               | 22 0.4                             | .2736  | 5 59.1                           | 8.15                |
|                                 | 24 | .501                 | .0615   | .0150   | 18.82               | 22 0.7                             | .2736  | 5 54.8                           | 8.15                |
|                                 | 25 | .508                 | .0597   | .0151   | 18.86               | 22 1.0                             | .2737  | 5 50.5                           | 8.14                |
|                                 | 26 | .515                 | .0579   | .0152   | 18.89               | 22 1.3                             | .2737  | 5 46.2                           | 8.14                |
|                                 | 27 | .521                 | .0561   | .0154   | 18.93               | 22 1.6                             | .2738  | 5 41.9                           | 8.13                |
|                                 | 28 | +2.528               | —0.0543 | +0.0157 | 18.96               | 22 1.9                             | 1.2739 | 5 37.6                           | +8.12               |
|                                 | 29 | .535                 | .0526   | .0160   | 19.00               | 22 2.2                             | .2741  | 5 33.4                           | 8.10                |
|                                 | 30 | .541                 | .0508   | .0164   | 19.03               | 22 2.6                             | .2742  | 5 29.1                           | 8.09                |
| Oktbr.                          | 1  | .548                 | .0491   | .0168   | 19.07               | 22 2.9                             | .2744  | 5 24.8                           | 8.07                |
|                                 | 2  | .555                 | .0473   | .0173   | 19.10               | 22 3.3                             | .2746  | 5 20.5                           | 8.05                |
|                                 | 3  | .562                 | .0456   | .0179   | 19.14               | 22 3.6                             | .2749  | 5 16.3                           | 8.02                |
|                                 | 4  | .568                 | .0438   | .0185   | 19.17               | 22 4.0                             | .2751  | 5 12.0                           | 8.00                |
|                                 | 5  | .575                 | .0421   | .0192   | 19.21               | 22 4.3                             | .2754  | 5 7.7                            | 7.97                |
|                                 | 6  | .582                 | .0404   | .0199   | 19.24               | 22 4.7                             | .2757  | 5 3.5                            | 7.94                |
|                                 | 7  | .589                 | .0387   | .0206   | 19.27               | 22 5.1                             | .2760  | 4 59.2                           | 7.90                |
|                                 | 8  | +2.596               | —0.0370 | +0.0214 | 19.31               | 22 5.4                             | 1.2763 | 4 54.9                           | +7.87               |
|                                 | 9  | .603                 | .0353   | .0222   | 19.34               | 22 5.8                             | .2767  | 4 50.7                           | 7.83                |
|                                 | 10 | .610                 | .0335   | .0231   | 19.38               | 22 6.2                             | .2771  | 4 46.4                           | 7.79                |
|                                 | 11 | .618                 | .0318   | .0240   | 19.41               | 22 6.6                             | .2775  | 4 42.2                           | 7.75                |
|                                 | 12 | .625                 | .0301   | .0250   | 19.45               | 22 7.0                             | .2779  | 4 37.9                           | 7.71                |
|                                 | 13 | .632                 | .0284   | .0260   | 19.48               | 22 7.5                             | .2783  | 4 33.7                           | 7.66                |
|                                 | 14 | .639                 | .0266   | .0271   | 19.52               | 22 7.9                             | .2788  | 4 29.5                           | 7.61                |
|                                 | 15 | .647                 | .0249   | .0283   | 19.55               | 22 8.3                             | .2793  | 4 25.3                           | 7.56                |
|                                 | 16 | .654                 | .0232   | .0295   | 19.59               | 22 8.7                             | .2798  | 4 21.0                           | 7.50                |
|                                 | 17 | .662                 | .0214   | .0307   | 19.62               | 22 9.2                             | .2803  | 4 16.8                           | 7.45                |
|                                 | 18 | +2.669               | —0.0196 | +0.0319 | 19.66               | 22 9.6                             | 1.2808 | 4 12.6                           | +7.39               |
|                                 | 19 | .677                 | .0178   | .0332   | 19.70               | 22 10.0                            | .2813  | 4 8.5                            | 7.33                |
|                                 | 20 | .685                 | .0160   | .0345   | 19.73               | 22 10.5                            | .2819  | 4 4.3                            | 7.27                |
|                                 | 21 | .692                 | .0141   | .0358   | 19.77               | 22 11.0                            | .2824  | 4 0.1                            | 7.20                |
|                                 | 22 | .700                 | .0122   | .0371   | 19.81               | 22 11.4                            | .2830  | 3 55.9                           | 7.13                |
|                                 | 23 | .708                 | .0103   | .0385   | 19.85               | 22 11.9                            | .2836  | 3 51.8                           | 7.06                |
|                                 | 24 | .716                 | .0084   | .0399   | 19.88               | 22 12.4                            | .2842  | 3 47.6                           | 6.99                |
|                                 | 25 | .725                 | .0064   | .0413   | 19.92               | 22 12.9                            | .2848  | 3 43.5                           | 6.92                |
|                                 | 26 | .733                 | .0045   | .0428   | 19.96               | 22 13.3                            | .2854  | 3 39.3                           | 6.84                |
|                                 | 27 | .741                 | .0025   | .0443   | 20.00               | 22 13.8                            | .2860  | 3 35.2                           | 6.76                |

## 1839

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                  | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|------------------------------------|--------|-----------------------------------|---------------------|
| Oktbr.                          | 28 | +2 <sup>s</sup> .750 | —0.0005 | +0.0458 | 20 <sup>h</sup> .04 | 22 <sup>h</sup> 14 <sup>m</sup> .3 | 1.2866 | 3 <sup>h</sup> 31 <sup>m</sup> .1 | +6 <sup>s</sup> .68 |
|                                 | 29 | .758                 | +0.0015 | .0473   | 20.08               | 22 14.8                            | .2873  | 3 27.0                            | 6.60                |
|                                 | 30 | .767                 | .0035   | .0488   | 20.12               | 22 15.3                            | .2879  | 3 22.9                            | 6.52                |
|                                 | 31 | .775                 | .0056   | .0504   | 20.16               | 22 15.8                            | .2885  | 3 18.8                            | 6.43                |
| Novbr.                          | 1  | .784                 | .0077   | .0520   | 20.21               | 22 16.3                            | .2892  | 3 14.8                            | 6.34                |
|                                 | 2  | .793                 | .0098   | .0536   | 20.25               | 22 16.8                            | .2898  | 3 10.7                            | 6.25                |
|                                 | 3  | .802                 | .0120   | .0552   | 20.29               | 22 17.3                            | .2905  | 3 6.6                             | 6.16                |
|                                 | 4  | .811                 | .0142   | .0568   | 20.34               | 22 17.8                            | .2912  | 3 2.6                             | 6.07                |
|                                 | 5  | .820                 | .0164   | .0584   | 20.38               | 22 18.3                            | .2918  | 2 58.5                            | 5.97                |
|                                 | 6  | .830                 | .0187   | .0600   | 20.43               | 22 18.8                            | .2925  | 2 54.5                            | 5.87                |
|                                 | 7  | +2.839               | +0.0210 | +0.0616 | 20.47               | 22 19.4                            | 1.2931 | 2 50.5                            | +5.77               |
|                                 | 8  | .848                 | .0234   | .0632   | 20.52               | 22 19.9                            | .2938  | 2 46.5                            | 5.67                |
|                                 | 9  | .858                 | .0257   | .0648   | 20.57               | 22 20.4                            | .2944  | 2 42.5                            | 5.57                |
|                                 | 10 | .868                 | .0281   | .0664   | 20.61               | 22 20.9                            | .2951  | 2 38.5                            | 5.46                |
|                                 | 11 | .877                 | .0305   | .0680   | 20.66               | 22 21.4                            | .2957  | 2 34.6                            | 5.36                |
|                                 | 12 | .887                 | .0330   | .0695   | 20.71               | 22 21.9                            | .2964  | 2 30.6                            | 5.25                |
|                                 | 13 | .897                 | .0355   | .0711   | 20.76               | 22 22.4                            | .2970  | 2 26.7                            | 5.14                |
|                                 | 14 | .907                 | .0380   | .0726   | 20.81               | 22 22.9                            | .2976  | 2 22.7                            | 5.02                |
|                                 | 15 | .917                 | .0405   | .0741   | 20.86               | 22 23.5                            | .2982  | 2 18.8                            | 4.91                |
|                                 | 16 | .927                 | .0431   | .0756   | 20.92               | 22 24.0                            | .2988  | 2 14.9                            | 4.79                |
|                                 | 17 | +2.938               | +0.0457 | +0.0771 | 20.97               | 22 24.5                            | 1.2994 | 2 11.0                            | +4.68               |
|                                 | 18 | .948                 | .0484   | .0786   | 21.02               | 22 25.0                            | .3000  | 2 7.1                             | 4.56                |
|                                 | 19 | .958                 | .0511   | .0801   | 21.08               | 22 25.5                            | .3006  | 2 3.2                             | 4.44                |
|                                 | 20 | .969                 | .0539   | .0815   | 21.13               | 22 26.0                            | .3012  | 1 59.3                            | 4.32                |
|                                 | 21 | .980                 | .0567   | .0829   | 21.19               | 22 26.5                            | .3018  | 1 55.4                            | 4.20                |
|                                 | 22 | 2.991                | .0595   | .0843   | 21.25               | 22 27.0                            | .3023  | 1 51.5                            | 4.07                |
|                                 | 23 | 3.002                | .0624   | .0857   | 21.30               | 22 27.5                            | .3029  | 1 47.7                            | 3.95                |
|                                 | 24 | .013                 | .0653   | .0870   | 21.36               | 22 28.0                            | .3034  | 1 43.8                            | 3.82                |
|                                 | 25 | .024                 | .0682   | .0883   | 21.42               | 22 28.5                            | .3039  | 1 40.0                            | 3.69                |
|                                 | 26 | .035                 | .0712   | .0896   | 21.48               | 22 28.9                            | .3044  | 1 36.2                            | 3.56                |
| Dezbr.                          | 27 | +3.046               | +0.0742 | +0.0908 | 21.54               | 22 29.4                            | 1.3049 | 1 32.3                            | +3.43               |
|                                 | 28 | .057                 | .0773   | .0920   | 21.60               | 22 29.9                            | .3054  | 1 28.5                            | 3.30                |
|                                 | 29 | .068                 | .0804   | .0931   | 21.66               | 22 30.4                            | .3058  | 1 24.7                            | 3.17                |
|                                 | 30 | .080                 | .0835   | .0942   | 21.73               | 22 30.8                            | .3063  | 1 20.9                            | 3.03                |
|                                 | 1  | .091                 | .0867   | .0953   | 21.79               | 22 31.3                            | .3067  | 1 17.1                            | 2.90                |
|                                 | 2  | .103                 | .0899   | .0963   | 21.85               | 22 31.7                            | .3071  | 1 13.3                            | 2.77                |
|                                 | 3  | .114                 | .0931   | .0973   | 21.92               | 22 32.2                            | .3075  | 1 9.5                             | 2.63                |
|                                 | 4  | .126                 | .0964   | .0982   | 21.98               | 22 32.6                            | .3079  | 1 5.7                             | 2.49                |
|                                 | 5  | .138                 | .0997   | .0991   | 22.05               | 22 33.0                            | .3082  | 1 1.9                             | 2.36                |
|                                 | 6  | .150                 | .1030   | .0999   | 22.12               | 22 33.4                            | .3085  | 0 58.1                            | 2.22                |
|                                 | 7  | +3.161               | +0.1063 | +0.1007 | 22.18               | 22 33.9                            | 1.3088 | 0 54.4                            | +2.08               |
|                                 | 8  | .173                 | .1097   | .1014   | 22.25               | 22 34.3                            | .3091  | 0 50.6                            | 1.94                |
|                                 | 9  | .185                 | .1131   | .1021   | 22.32               | 22 34.7                            | .3094  | 0 46.8                            | 1.79                |
|                                 | 10 | .197                 | .1166   | .1028   | 22.39               | 22 35.1                            | .3097  | 0 43.1                            | 1.65                |
|                                 | 11 | .209                 | .1200   | .1034   | 22.46               | 22 35.4                            | .3099  | 0 39.3                            | 1.51                |
|                                 | 12 | .221                 | .1235   | .1040   | 22.53               | 22 35.8                            | .3101  | 0 35.6                            | 1.37                |
|                                 | 13 | .233                 | .1270   | .1045   | 22.60               | 22 36.2                            | .3103  | 0 31.8                            | 1.23                |
|                                 | 14 | .245                 | .1305   | .1049   | 22.67               | 22 36.6                            | .3105  | 0 28.1                            | 1.09                |
|                                 | 15 | .257                 | .1340   | .1053   | 22.74               | 22 36.9                            | .3107  | 0 24.3                            | 0.94                |
|                                 | 16 | .270                 | .1376   | .1056   | 22.81               | 22 37.3                            | .3108  | 0 20.6                            | 0.80                |

## 1839

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                   | x       | y       | g                  | G                                 | log h  | H                                | i                   |
|---------------------------------|----|---------------------|---------|---------|--------------------|-----------------------------------|--------|----------------------------------|---------------------|
| Dezbr.                          | 17 | +3 <sup>s</sup> 282 | +0.1412 | +0.1059 | 22 <sup>m</sup> 88 | 22 <sup>h</sup> 37 <sup>m</sup> 6 | 1.3109 | 0 <sup>h</sup> 16 <sup>m</sup> 9 | +0 <sup>m</sup> .66 |
|                                 | 18 | .294                | .1448   | .1062   | 22.96              | 22 37.9                           | .3110  | 0 13.1                           | 0.51                |
|                                 | 19 | .306                | .1484   | .1064   | 23.03              | 22 38.3                           | .3111  | 0 9.4                            | 0.36                |
|                                 | 20 | .319                | .1521   | .1065   | 23.10              | 22 38.6                           | .3111  | 0 5.6                            | 0.22                |
|                                 | 21 | .331                | .1558   | .1065   | 23.18              | 22 38.9                           | .3111  | 0 1.9                            | +0.07               |
|                                 | 22 | .343                | .1595   | .1065   | 23.25              | 22 39.2                           | .3111  | 23 58.2                          | —0.07               |
|                                 | 23 | .355                | .1632   | .1064   | 23.33              | 22 39.5                           | .3111  | 23 54.4                          | 0.22                |
|                                 | 24 | .368                | .1669   | .1063   | 23.40              | 22 39.7                           | .3111  | 23 50.7                          | 0.36                |
|                                 | 25 | .380                | .1706   | .1062   | 23.47              | 22 40.0                           | .3110  | 23 46.9                          | 0.51                |
|                                 | 26 | .392                | .1744   | .1060   | 23.55              | 22 40.3                           | .3109  | 23 43.2                          | 0.65                |
|                                 | 27 | +3.404              | +0.1781 | +0.1057 | 23.62              | 22 40.5                           | 1.3108 | 23 39.4                          | —0.79               |
|                                 | 28 | .416                | .1819   | .1054   | 23.70              | 22 40.8                           | .3107  | 23 35.7                          | 0.94                |
|                                 | 29 | .429                | .1856   | .1050   | 23.77              | 22 41.0                           | .3105  | 23 31.9                          | 1.08                |
|                                 | 30 | .441                | .1894   | .1046   | 23.85              | 22 41.3                           | .3104  | 23 28.2                          | 1.22                |
|                                 | 31 | .453                | .1932   | .1042   | 23.92              | 22 41.5                           | .3102  | 23 24.4                          | 1.37                |

## 1840

|        |    |                      |         |         |                    |                                    |        |                                    |                     |
|--------|----|----------------------|---------|---------|--------------------|------------------------------------|--------|------------------------------------|---------------------|
| Januar | 1  | +0 <sup>s</sup> .394 | —0.5792 | +0.1035 | 8 <sup>m</sup> .44 | 19 <sup>h</sup> 10 <sup>m</sup> .7 | 1.3099 | 23 <sup>h</sup> 20 <sup>m</sup> .7 | —1 <sup>m</sup> .51 |
|        | 2  | .406                 | .5777   | .1029   | 8.47               | 19 12.7                            | .3097  | 23 16.9                            | 1.65                |
|        | 3  | .418                 | .5762   | .1022   | 8.50               | 19 14.7                            | .3094  | 23 13.2                            | 1.79                |
|        | 4  | .429                 | .5747   | .1015   | 8.53               | 19 16.6                            | .3092  | 23 9.4                             | 1.93                |
|        | 5  | .441                 | .5731   | .1008   | 8.56               | 19 18.5                            | .3089  | 23 5.6                             | 2.07                |
|        | 6  | .453                 | .5715   | .1000   | 8.59               | 19 20.4                            | .3086  | 23 1.8                             | 2.21                |
|        | 7  | .465                 | .5698   | .0991   | 8.63               | 19 22.2                            | .3082  | 22 58.0                            | 2.35                |
|        | 8  | .477                 | .5681   | .0982   | 8.66               | 19 24.0                            | .3079  | 22 54.2                            | 2.49                |
|        | 9  | .489                 | .5663   | .0973   | 8.70               | 19 25.8                            | .3075  | 22 50.4                            | 2.63                |
|        | 10 | .500                 | .5645   | .0963   | 8.73               | 19 27.6                            | .3071  | 22 46.6                            | 2.77                |
|        | 11 | +0.512               | —0.5626 | +0.0953 | 8.77               | 19 29.3                            | 1.3067 | 22 42.8                            | —2.90               |
|        | 12 | .523                 | .5607   | .0942   | 8.81               | 19 31.0                            | .3063  | 22 39.0                            | 3.04                |
|        | 13 | .534                 | .5587   | .0931   | 8.85               | 19 32.7                            | .3058  | 22 35.2                            | 3.17                |
|        | 14 | .546                 | .5567   | .0919   | 8.89               | 19 34.3                            | .3054  | 22 31.3                            | 3.30                |
|        | 15 | .557                 | .5546   | .0907   | 8.93               | 19 35.9                            | .3049  | 22 27.5                            | 3.44                |
|        | 16 | .568                 | .5526   | .0895   | 8.97               | 19 37.5                            | .3044  | 22 23.7                            | 3.57                |
|        | 17 | .580                 | .5505   | .0882   | 9.01               | 19 39.0                            | .3039  | 22 19.8                            | 3.70                |
|        | 18 | .591                 | .5484   | .0869   | 9.05               | 19 40.6                            | .3034  | 22 15.9                            | 3.83                |
|        | 19 | .602                 | .5462   | .0856   | 9.10               | 19 42.1                            | .3029  | 22 12.0                            | 3.95                |
|        | 20 | .613                 | .5441   | .0843   | 9.14               | 19 43.5                            | .3023  | 22 8.2                             | 4.08                |
|        | 21 | +0.623               | —0.5419 | +0.0829 | 9.18               | 19 44.9                            | 1.3018 | 22 4.3                             | —4.20               |
|        | 22 | .634                 | .5397   | .0815   | 9.23               | 19 46.3                            | .3012  | 22 0.4                             | 4.33                |
|        | 23 | .644                 | .5375   | .0800   | 9.27               | 19 47.7                            | .3006  | 21 56.5                            | 4.45                |
|        | 24 | .655                 | .5353   | .0785   | 9.32               | 19 49.0                            | .3000  | 21 52.6                            | 4.57                |
|        | 25 | .665                 | .5331   | .0770   | 9.36               | 19 50.3                            | .2994  | 21 48.6                            | 4.69                |
|        | 26 | .676                 | .5308   | .0755   | 9.41               | 19 51.6                            | .2988  | 21 44.7                            | 4.81                |
|        | 27 | .686                 | .5285   | .0740   | 9.45               | 19 52.8                            | .2982  | 21 40.7                            | 4.92                |
|        | 28 | .696                 | .5262   | .0725   | 9.50               | 19 54.1                            | .2976  | 21 36.8                            | 5.04                |
|        | 29 | .706                 | .5239   | .0709   | 9.55               | 19 55.3                            | .2969  | 21 32.8                            | 5.15                |
|        | 30 | .716                 | .5216   | .0693   | 9.59               | 19 56.4                            | .2963  | 21 28.8                            | 5.26                |

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| <sup>12</sup> <sub>h</sub><br>M. Z. Berlin | f                    | x       | y       | g                  | G                                  | log h  | H                                  | i                   |
|--------------------------------------------|----------------------|---------|---------|--------------------|------------------------------------|--------|------------------------------------|---------------------|
| Januar 31                                  | +0. <sup>s</sup> 726 | —0.5193 | +0.0677 | 9. <sup>h</sup> 64 | 19 <sup>h</sup> 57. <sup>m</sup> 6 | 1.2956 | 21 <sup>h</sup> 24. <sup>m</sup> 8 | —5. <sup>s</sup> 37 |
| Februar 1                                  | .736                 | .5170   | .0661   | 9.68               | 19 58.7                            | .2950  | 21 20.8                            | 5.48                |
| 2                                          | .745                 | .5148   | .0645   | 9.73               | 19 59.8                            | .2943  | 21 16.8                            | 5.59                |
| 3                                          | .755                 | .5125   | .0628   | 9.77               | 20 0.9                             | .2937  | 21 12.8                            | 5.69                |
| 4                                          | .764                 | .5103   | .0612   | 9.82               | 20 1.9                             | .2930  | 21 8.7                             | 5.79                |
| 5                                          | .774                 | .5080   | .0596   | 9.86               | 20 2.9                             | .2923  | 21 4.7                             | 5.89                |
| 6                                          | .783                 | .5058   | .0580   | 9.91               | 20 3.9                             | .2917  | 21 0.6                             | 5.99                |
| 7                                          | .792                 | .5035   | .0564   | 9.95               | 20 4.9                             | .2910  | 20 56.6                            | 6.09                |
| 8                                          | .801                 | .5013   | .0548   | 10.00              | 20 5.9                             | .2903  | 20 52.5                            | 6.18                |
| 9                                          | .810                 | .4991   | .0532   | 10.04              | 20 6.8                             | .2897  | 20 48.4                            | 6.27                |
| 10                                         | +0.819               | —0.4969 | +0.0516 | 10.09              | 20 7.8                             | 1.2890 | 20 44.3                            | —6.36               |
| 11                                         | .828                 | .4947   | .0500   | 10.13              | 20 8.7                             | .2884  | 20 40.2                            | 6.45                |
| 12                                         | .836                 | .4926   | .0485   | 10.17              | 20 9.5                             | .2877  | 20 36.1                            | 6.54                |
| 13                                         | .845                 | .4905   | .0470   | 10.22              | 20 10.4                            | .2871  | 20 31.9                            | 6.62                |
| 14                                         | .853                 | .4884   | .0455   | 10.26              | 20 11.3                            | .2865  | 20 27.8                            | 6.71                |
| 15                                         | .862                 | .4863   | .0439   | 10.30              | 20 12.1                            | .2858  | 20 23.6                            | 6.79                |
| 16                                         | .870                 | .4842   | .0424   | 10.34              | 20 12.9                            | .2852  | 20 19.5                            | 6.86                |
| 17                                         | .878                 | .4821   | .0409   | 10.39              | 20 13.7                            | .2846  | 20 15.3                            | 6.94                |
| 18                                         | .886                 | .4800   | .0395   | 10.43              | 20 14.5                            | .2840  | 20 11.1                            | 7.01                |
| 19                                         | .894                 | .4779   | .0381   | 10.47              | 20 15.3                            | .2834  | 20 6.9                             | 7.09                |
| 20                                         | +0.902               | —0.4759 | +0.0367 | 10.51              | 20 16.1                            | 1.2828 | 20 2.7                             | —7.16               |
| 21                                         | .910                 | .4739   | .0353   | 10.55              | 20 16.9                            | .2823  | 19 58.5                            | 7.22                |
| 22                                         | .918                 | .4720   | .0340   | 10.59              | 20 17.6                            | .2817  | 19 54.3                            | 7.29                |
| 23                                         | .926                 | .4701   | .0327   | 10.62              | 20 18.4                            | .2811  | 19 50.0                            | 7.35                |
| 24                                         | .933                 | .4683   | .0314   | 10.66              | 20 19.1                            | .2806  | 19 45.8                            | 7.41                |
| 25                                         | .941                 | .4664   | .0301   | 10.70              | 20 19.9                            | .2801  | 19 41.5                            | 7.47                |
| 26                                         | .948                 | .4646   | .0280   | 10.74              | 20 20.6                            | .2796  | 19 37.3                            | 7.53                |
| 27                                         | .956                 | .4628   | .0278   | 10.77              | 20 21.3                            | .2791  | 19 33.0                            | 7.58                |
| 28                                         | .963                 | .4610   | .0267   | 10.81              | 20 22.0                            | .2786  | 19 28.7                            | 7.63                |
| 29                                         | .970                 | .4592   | .0256   | 10.84              | 20 22.7                            | .2781  | 19 24.5                            | 7.68                |
| März 1                                     | +0.977               | —0.4575 | +0.0246 | 10.88              | 20 23.4                            | 1.2777 | 19 20.2                            | —7.73               |
| 2                                          | .985                 | .4558   | .0237   | 10.91              | 20 24.1                            | .2773  | 19 15.9                            | 7.77                |
| 3                                          | .992                 | .4541   | .0228   | 10.95              | 20 24.8                            | .2769  | 19 11.6                            | 7.81                |
| 4                                          | 0.999                | .4524   | .0219   | 10.98              | 20 25.5                            | .2766  | 19 7.3                             | 7.85                |
| 5                                          | 1.006                | .4508   | .0211   | 11.01              | 20 26.1                            | .2762  | 19 3.0                             | 7.89                |
| 6                                          | .013                 | .4492   | .0203   | 11.04              | 20 26.8                            | .2759  | 18 58.7                            | 7.92                |
| 7                                          | .019                 | .4476   | .0196   | 11.08              | 20 27.5                            | .2756  | 18 54.4                            | 7.95                |
| 8                                          | .026                 | .4461   | .0189   | 11.11              | 20 28.2                            | .2753  | 18 50.0                            | 7.98                |
| 9                                          | .033                 | .4446   | .0182   | 11.14              | 20 28.9                            | .2750  | 18 45.7                            | 8.01                |
| 10                                         | .040                 | .4431   | .0176   | 11.17              | 20 29.6                            | .2748  | 18 41.4                            | 8.04                |
| 11                                         | +1.047               | —0.4417 | +0.0171 | 11.19              | 20 30.3                            | 1.2745 | 18 37.1                            | —8.06               |
| 12                                         | .053                 | .4403   | .0166   | 11.22              | 20 30.9                            | .2743  | 18 32.7                            | 8.08                |
| 13                                         | .060                 | .4389   | .0162   | 11.25              | 20 31.6                            | .2742  | 18 28.4                            | 8.10                |
| 14                                         | .067                 | .4375   | .0159   | 11.28              | 20 32.3                            | .2740  | 18 24.1                            | 8.11                |
| 15                                         | .073                 | .4361   | .0156   | 11.31              | 20 33.0                            | .2739  | 18 19.7                            | 8.12                |
| 16                                         | .080                 | .4348   | .0154   | 11.33              | 20 33.7                            | .2738  | 18 15.4                            | 8.13                |
| 17                                         | .087                 | .4335   | .0152   | 11.36              | 20 34.4                            | .2737  | 18 11.1                            | 8.14                |
| 18                                         | .093                 | .4322   | .0150   | 11.38              | 20 35.1                            | .2737  | 18 6.7                             | 8.15                |
| 19                                         | .100                 | .4310   | .0149   | 11.41              | 20 35.8                            | .2736  | 18 2.4                             | 8.15                |
| 20                                         | .107                 | .4298   | .0149   | 11.43              | 20 36.5                            | .2736  | 17 58.1                            | 8.15                |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                  | log h  | H                                  | i     |
|---------------------------------|----|--------|---------|---------|-------|------------------------------------|--------|------------------------------------|-------|
| März                            | 21 | +1.113 | -0.4286 | +0.0150 | 11.46 | 20 <sup>h</sup> 37 <sup>m</sup> .2 | 1.2737 | 17 <sup>h</sup> 53 <sup>m</sup> .8 | -8.15 |
|                                 | 22 | .120   | .4274   | .0151   | 11.48 | 20 38.0                            | .2737  | 17 49.5                            | 8.14  |
|                                 | 23 | .126   | .4262   | .0153   | 11.50 | 20 38.7                            | .2738  | 17 45.1                            | 8.13  |
|                                 | 24 | .133   | .4250   | .0156   | 11.53 | 20 39.4                            | .2739  | 17 40.8                            | 8.12  |
|                                 | 25 | .140   | .4239   | .0159   | 11.55 | 20 40.2                            | .2740  | 17 36.5                            | 8.11  |
|                                 | 26 | .146   | .4228   | .0162   | 11.57 | 20 40.9                            | .2742  | 17 32.2                            | 8.10  |
|                                 | 27 | .153   | .4217   | .0166   | 11.60 | 20 41.7                            | .2743  | 17 27.9                            | 8.08  |
|                                 | 28 | .160   | .4207   | .0170   | 11.62 | 20 42.4                            | .2745  | 17 23.6                            | 8.06  |
|                                 | 29 | .166   | .4196   | .0175   | 11.64 | 20 43.2                            | .2747  | 17 19.3                            | 8.04  |
|                                 | 30 | .173   | .4185   | .0180   | 11.66 | 20 44.0                            | .2749  | 17 15.1                            | 8.02  |
| April                           | 31 | +1.180 | -0.4174 | +0.0186 | 11.68 | 20 44.8                            | 1.2752 | 17 10.8                            | -7.99 |
|                                 | 1  | .187   | .4163   | .0192   | 11.70 | 20 45.6                            | .2754  | 17 6.6                             | 7.96  |
|                                 | 2  | .194   | .4153   | .0199   | 11.73 | 20 46.4                            | .2757  | 17 2.3                             | 7.93  |
|                                 | 3  | .200   | .4143   | .0207   | 11.75 | 20 47.2                            | .2761  | 16 58.1                            | 7.90  |
|                                 | 4  | .207   | .4133   | .0216   | 11.77 | 20 48.0                            | .2764  | 16 53.8                            | 7.86  |
|                                 | 5  | .214   | .4122   | .0225   | 11.79 | 20 48.8                            | .2768  | 16 49.6                            | 7.83  |
|                                 | 6  | .221   | .4112   | .0234   | 11.81 | 20 49.7                            | .2772  | 16 45.4                            | 7.79  |
|                                 | 7  | .228   | .4101   | .0243   | 11.83 | 20 50.5                            | .2776  | 16 41.2                            | 7.74  |
|                                 | 8  | .235   | .4091   | .0253   | 11.85 | 20 51.4                            | .2780  | 16 37.0                            | 7.70  |
|                                 | 9  | .243   | .4080   | .0263   | 11.87 | 20 52.3                            | .2784  | 16 32.8                            | 7.65  |
|                                 | 10 | +1.250 | -0.4070 | +0.0274 | 11.89 | 20 53.2                            | 1.2789 | 16 28.6                            | -7.60 |
|                                 | 11 | .257   | .4060   | .0285   | 11.91 | 20 54.0                            | .2794  | 16 24.4                            | 7.55  |
|                                 | 12 | .264   | .4050   | .0296   | 11.93 | 20 54.9                            | .2798  | 16 20.3                            | 7.49  |
|                                 | 13 | .272   | .4040   | .0308   | 11.95 | 20 55.8                            | .2803  | 16 16.1                            | 7.44  |
|                                 | 14 | .279   | .4029   | .0320   | 11.97 | 20 56.7                            | .2808  | 16 12.0                            | 7.38  |
|                                 | 15 | .287   | .4018   | .0332   | 11.99 | 20 57.6                            | .2814  | 16 7.9                             | 7.32  |
|                                 | 16 | .294   | .4007   | .0345   | 12.02 | 20 58.6                            | .2819  | 16 3.8                             | 7.26  |
|                                 | 17 | .302   | .3996   | .0358   | 12.04 | 20 59.5                            | .2824  | 15 59.7                            | 7.20  |
|                                 | 18 | .310   | .3985   | .0371   | 12.06 | 21 0.4                             | .2830  | 15 55.6                            | 7.13  |
|                                 | 19 | .318   | .3974   | .0385   | 12.08 | 21 1.4                             | .2835  | 15 51.5                            | 7.06  |
|                                 | 20 | +1.326 | -0.3962 | +0.0399 | 12.11 | 21 2.4                             | 1.2841 | 15 47.5                            | -6.99 |
| Mai                             | 21 | .334   | .3951   | .0413   | 12.13 | 21 3.3                             | .2847  | 15 43.5                            | 6.92  |
|                                 | 22 | .342   | .3939   | .0427   | 12.15 | 21 4.3                             | .2853  | 15 39.4                            | 6.85  |
|                                 | 23 | .350   | .3927   | .0441   | 12.18 | 21 5.3                             | .2859  | 15 35.4                            | 6.77  |
|                                 | 24 | .358   | .3915   | .0456   | 12.20 | 21 6.3                             | .2865  | 15 31.4                            | 6.69  |
|                                 | 25 | .367   | .3902   | .0471   | 12.23 | 21 7.2                             | .2872  | 15 27.4                            | 6.61  |
|                                 | 26 | .375   | .3889   | .0486   | 12.25 | 21 8.2                             | .2878  | 15 23.4                            | 6.53  |
|                                 | 27 | .384   | .3876   | .0501   | 12.28 | 21 9.2                             | .2884  | 15 19.5                            | 6.45  |
|                                 | 28 | .392   | .3863   | .0517   | 12.31 | 21 10.2                            | .2890  | 15 15.5                            | 6.36  |
|                                 | 29 | .401   | .3849   | .0532   | 12.33 | 21 11.3                            | .2897  | 15 11.6                            | 6.27  |
|                                 | 30 | +1.409 | -0.3835 | +0.0548 | 12.36 | 21 12.3                            | 1.2903 | 15 7.7                             | -6.18 |
|                                 | 1  | .418   | .3821   | .0564   | 12.39 | 21 13.3                            | .2910  | 15 3.8                             | 6.09  |
|                                 | 2  | .427   | .3807   | .0579   | 12.42 | 21 14.3                            | .2916  | 14 59.9                            | 6.00  |
|                                 | 3  | .436   | .3792   | .0594   | 12.45 | 21 15.3                            | .2922  | 14 56.0                            | 5.91  |
|                                 | 4  | .445   | .3777   | .0609   | 12.48 | 21 16.3                            | .2928  | 14 52.1                            | 5.81  |
|                                 | 5  | .454   | .3762   | .0625   | 12.51 | 21 17.3                            | .2935  | 14 48.3                            | 5.71  |
|                                 | 6  | .464   | .3746   | .0640   | 12.54 | 21 18.4                            | .2941  | 14 44.4                            | 5.62  |
|                                 | 7  | .473   | .3730   | .0655   | 12.57 | 21 19.4                            | .2947  | 14 40.6                            | 5.52  |
|                                 | 8  | .482   | .3714   | .0670   | 12.60 | 21 20.4                            | .2953  | 14 36.8                            | 5.41  |
|                                 | 9  | .492   | .3697   | .0685   | 12.64 | 21 21.5                            | .2960  | 14 33.0                            | 5.31  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                 | log h  | H                                 | i     |
|---------------------------------|----|--------|---------|---------|-------|-----------------------------------|--------|-----------------------------------|-------|
| Mai                             | 10 | +1.502 | —0.3680 | +0.0700 | 12.67 | 21 <sup>h</sup> 22 <sup>m</sup> 5 | 1.2966 | 14 <sup>h</sup> 29 <sup>m</sup> 2 | —5.21 |
|                                 | 11 | .511   | .3663   | .0715   | 12.71 | 21 23.5                           | .2972  | 14 25.4                           | 5.10  |
|                                 | 12 | .521   | .3645   | .0730   | 12.74 | 21 24.6                           | .2978  | 14 21.6                           | 4.99  |
|                                 | 13 | .531   | .3627   | .0745   | 12.78 | 21 25.6                           | .2984  | 14 17.9                           | 4.88  |
|                                 | 14 | .541   | .3608   | .0759   | 12.82 | 21 26.6                           | .2989  | 14 14.1                           | 4.77  |
|                                 | 15 | .551   | .3589   | .0773   | 12.86 | 21 27.7                           | .2995  | 14 10.4                           | 4.66  |
|                                 | 16 | .561   | .3569   | .0787   | 12.89 | 21 28.7                           | .3001  | 14 6.7                            | 4.54  |
|                                 | 17 | .571   | .3549   | .0801   | 12.93 | 21 29.7                           | .3006  | 14 3.0                            | 4.43  |
|                                 | 18 | .581   | .3529   | .0814   | 12.97 | 21 30.7                           | .3012  | 13 59.3                           | 4.32  |
|                                 | 19 | .591   | .3508   | .0828   | 13.02 | 21 31.7                           | .3017  | 13 55.6                           | 4.20  |
|                                 | 20 | +1.602 | —0.3487 | +0.0841 | 13.06 | 21 32.7                           | 1.3022 | 13 51.9                           | —4.08 |
|                                 | 21 | .612   | .3466   | .0854   | 13.10 | 21 33.7                           | .3028  | 13 48.2                           | 3.96  |
|                                 | 22 | .623   | .3444   | .0867   | 13.15 | 21 34.6                           | .3033  | 13 44.6                           | 3.84  |
|                                 | 23 | .634   | .3422   | .0879   | 13.19 | 21 35.6                           | .3038  | 13 40.9                           | 3.72  |
|                                 | 24 | .644   | .3399   | .0891   | 13.24 | 21 36.6                           | .3042  | 13 37.3                           | 3.60  |
|                                 | 25 | .655   | .3376   | .0903   | 13.28 | 21 37.6                           | .3047  | 13 33.7                           | 3.48  |
|                                 | 26 | .666   | .3353   | .0914   | 13.33 | 21 38.5                           | .3052  | 13 30.1                           | 3.36  |
|                                 | 27 | .677   | .3329   | .0925   | 13.38 | 21 39.5                           | .3056  | 13 26.5                           | 3.23  |
|                                 | 28 | .688   | .3305   | .0936   | 13.42 | 21 40.4                           | .3060  | 13 22.9                           | 3.11  |
|                                 | 29 | .699   | .3280   | .0947   | 13.47 | 21 41.3                           | .3065  | 13 19.3                           | 2.98  |
|                                 | 30 | +1.710 | —0.3255 | +0.0957 | 13.52 | 21 42.3                           | 1.3069 | 13 15.7                           | —2.85 |
|                                 | 31 | .721   | .3230   | .0967   | 13.58 | 21 43.2                           | .3073  | 13 12.1                           | 2.72  |
| Juni                            | 1  | .732   | .3204   | .0976   | 13.63 | 21 44.1                           | .3076  | 13 8.5                            | 2.59  |
|                                 | 2  | .743   | .3178   | .0985   | 13.68 | 21 45.0                           | .3080  | 13 4.9                            | 2.47  |
|                                 | 3  | .754   | .3152   | .0993   | 13.73 | 21 45.8                           | .3083  | 13 1.4                            | 2.34  |
|                                 | 4  | .766   | .3125   | .1001   | 13.79 | 21 46.7                           | .3086  | 12 57.8                           | 2.20  |
|                                 | 5  | .777   | .3098   | .1008   | 13.84 | 21 47.6                           | .3089  | 12 54.3                           | 2.07  |
|                                 | 6  | .789   | .3070   | .1015   | 13.90 | 21 48.4                           | .3092  | 12 50.7                           | 1.94  |
|                                 | 7  | .800   | .3042   | .1022   | 13.95 | 21 49.3                           | .3094  | 12 47.2                           | 1.81  |
|                                 | 8  | .812   | .3014   | .1028   | 14.01 | 21 50.1                           | .3097  | 12 43.6                           | 1.68  |
|                                 | 9  | +1.823 | —0.2985 | +0.1034 | 14.07 | 21 50.9                           | 1.3099 | 12 40.1                           | —1.54 |
|                                 | 10 | .835   | .2956   | .1039   | 14.12 | 21 51.7                           | .3101  | 12 36.6                           | 1.41  |
|                                 | 11 | .846   | .2927   | .1044   | 14.18 | 21 52.5                           | .3103  | 12 33.1                           | 1.28  |
|                                 | 12 | .858   | .2897   | .1048   | 14.24 | 21 53.2                           | .3105  | 12 29.6                           | 1.14  |
|                                 | 13 | .869   | .2867   | .1052   | 14.30 | 21 54.0                           | .3106  | 12 26.1                           | 1.01  |
|                                 | 14 | .881   | .2837   | .1055   | 14.36 | 21 54.7                           | .3107  | 12 22.5                           | 0.87  |
|                                 | 15 | .892   | .2807   | .1058   | 14.42 | 21 55.5                           | .3108  | 12 19.0                           | 0.74  |
|                                 | 16 | .904   | .2776   | .1060   | 14.49 | 21 56.2                           | .3109  | 12 15.5                           | 0.60  |
|                                 | 17 | .916   | .2745   | .1062   | 14.55 | 21 56.9                           | .3110  | 12 12.0                           | 0.47  |
|                                 | 18 | .927   | .2714   | .1063   | 14.61 | 21 57.6                           | .3111  | 12 8.5                            | 0.33  |
|                                 | 19 | +1.939 | —0.2683 | +0.1064 | 14.67 | 21 58.2                           | 1.3111 | 12 5.0                            | —0.19 |
|                                 | 20 | .951   | .2651   | .1065   | 14.74 | 21 58.9                           | .3111  | 12 1.5                            | —0.06 |
|                                 | 21 | .962   | .2618   | .1065   | 14.80 | 21 59.6                           | .3111  | 11 58.0                           | +0.08 |
|                                 | 22 | .974   | .2586   | .1064   | 14.87 | 22 0.2                            | .3111  | 11 54.6                           | 0.21  |
|                                 | 23 | .986   | .2554   | .1063   | 14.93 | 22 0.8                            | .3111  | 11 51.1                           | 0.35  |
|                                 | 24 | 1.998  | .2522   | .1062   | 15.00 | 22 1.4                            | .3110  | 11 47.6                           | 0.48  |
|                                 | 25 | 2.009  | .2489   | .1060   | 15.06 | 22 2.0                            | .3109  | 11 44.0                           | 0.62  |
|                                 | 26 | .021   | .2457   | .1057   | 15.13 | 22 2.6                            | .3108  | 11 40.5                           | 0.75  |
|                                 | 27 | .032   | .2424   | .1054   | 15.19 | 22 3.2                            | .3107  | 11 37.0                           | 0.89  |
|                                 | 28 | .044   | .2391   | .1051   | 15.26 | 22 3.7                            | .3106  | 11 33.5                           | 1.02  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g      | G                                 | log h  | H                                  | i      |
|---------------------------------|----|----------------------|---------|---------|--------|-----------------------------------|--------|------------------------------------|--------|
| Juni                            | 29 | +2. <sup>s</sup> 056 | —0.2358 | +0.1047 | 15".32 | 22 <sup>h</sup> 4 <sup>m</sup> .3 | 1.3104 | 11 <sup>h</sup> 30 <sup>m</sup> .0 | +1".16 |
|                                 | 30 | .067                 | .2325   | .1043   | 15.39  | 22 4.8                            | .3103  | 11 26.5                            | 1.29   |
| Juli                            | 1  | .079                 | .2291   | .1039   | 15.46  | 22 5.3                            | .3101  | 11 23.0                            | 1.42   |
|                                 | 2  | .090                 | .2258   | .1034   | 15.53  | 22 5.8                            | .3099  | 11 19.5                            | 1.56   |
|                                 | 3  | .102                 | .2224   | .1028   | 15.59  | 22 6.3                            | .3097  | 11 16.0                            | 1.69   |
|                                 | 4  | .113                 | .2190   | .1022   | 15.66  | 22 6.8                            | .3094  | 11 12.4                            | 1.83   |
|                                 | 5  | .125                 | .2156   | .1015   | 15.73  | 22 7.2                            | .3091  | 11 8.9                             | 1.96   |
|                                 | 6  | .136                 | .2123   | .1008   | 15.80  | 22 7.7                            | .3088  | 11 5.4                             | 2.09   |
|                                 | 7  | .147                 | .2089   | .1000   | 15.86  | 22 8.1                            | .3085  | 11 1.8                             | 2.22   |
|                                 | 8  | .159                 | .2055   | .0992   | 15.93  | 22 8.5                            | .3082  | 10 58.3                            | 2.35   |
|                                 | 9  | +2.170               | —0.2021 | +0.0984 | 16.00  | 22 8.9                            | 1.3079 | 10 54.7                            | +2.48  |
|                                 | 10 | .181                 | .1987   | .0975   | 16.07  | 22 9.3                            | .3076  | 10 51.2                            | 2.61   |
|                                 | 11 | .192                 | .1954   | .0966   | 16.13  | 22 9.7                            | .3072  | 10 47.6                            | 2.73   |
|                                 | 12 | .203                 | .1920   | .0956   | 16.20  | 22 10.1                           | .3068  | 10 44.1                            | 2.86   |
|                                 | 13 | .214                 | .1887   | .0946   | 16.27  | 22 10.5                           | .3064  | 10 40.5                            | 2.99   |
|                                 | 14 | .225                 | .1853   | .0936   | 16.34  | 22 10.8                           | .3060  | 10 36.9                            | 3.11   |
|                                 | 15 | .236                 | .1820   | .0925   | 16.40  | 22 11.2                           | .3056  | 10 33.3                            | 3.24   |
|                                 | 16 | .247                 | .1786   | .0914   | 16.47  | 22 11.5                           | .3052  | 10 29.7                            | 3.36   |
|                                 | 17 | .257                 | .1753   | .0903   | 16.54  | 22 11.8                           | .3047  | 10 26.1                            | 3.49   |
|                                 | 18 | .268                 | .1720   | .0892   | 16.60  | 22 12.2                           | .3043  | 10 22.5                            | 3.61   |
|                                 | 19 | +2.279               | —0.1687 | +0.0880 | 16.67  | 22 12.5                           | 1.3038 | 10 18.9                            | +3.73  |
|                                 | 20 | .289                 | .1654   | .0868   | 16.74  | 22 12.7                           | .3033  | 10 15.3                            | 3.85   |
|                                 | 21 | .300                 | .1621   | .0855   | 16.80  | 22 13.0                           | .3028  | 10 11.6                            | 3.97   |
|                                 | 22 | .310                 | .1588   | .0842   | 16.87  | 22 13.3                           | .3023  | 10 8.0                             | 4.09   |
|                                 | 23 | .321                 | .1555   | .0829   | 16.93  | 22 13.6                           | .3018  | 10 4.3                             | 4.20   |
|                                 | 24 | .331                 | .1522   | .0816   | 17.00  | 22 13.8                           | .3012  | 10 0.7                             | 4.32   |
|                                 | 25 | .341                 | .1490   | .0802   | 17.06  | 22 14.1                           | .3007  | 9 57.0                             | 4.44   |
|                                 | 26 | .351                 | .1458   | .0788   | 17.13  | 22 14.3                           | .3001  | 9 53.3                             | 4.55   |
|                                 | 27 | .361                 | .1426   | .0774   | 17.19  | 22 14.6                           | .2995  | 9 49.6                             | 4.66   |
|                                 | 28 | .371                 | .1394   | .0760   | 17.26  | 22 14.8                           | .2990  | 9 45.9                             | 4.77   |
|                                 | 29 | +2.381               | —0.1362 | +0.0746 | 17.32  | 22 15.0                           | 1.2984 | 9 42.2                             | +4.88  |
|                                 | 30 | .391                 | .1330   | .0732   | 17.38  | 22 15.2                           | .2978  | 9 38.5                             | 4.99   |
|                                 | 31 | .401                 | .1299   | .0717   | 17.45  | 22 15.5                           | .2972  | 9 34.7                             | 5.09   |
| August                          | 1  | .410                 | .1268   | .0702   | 17.51  | 22 15.7                           | .2966  | 9 31.0                             | 5.20   |
|                                 | 2  | .420                 | .1237   | .0687   | 17.57  | 22 15.8                           | .2960  | 9 27.2                             | 5.31   |
|                                 | 3  | .429                 | .1206   | .0672   | 17.63  | 22 16.0                           | .2954  | 9 23.4                             | 5.41   |
|                                 | 4  | .439                 | .1176   | .0657   | 17.69  | 22 16.2                           | .2948  | 9 19.7                             | 5.51   |
|                                 | 5  | .448                 | .1146   | .0642   | 17.75  | 22 16.4                           | .2942  | 9 15.9                             | 5.61   |
|                                 | 6  | .457                 | .1116   | .0627   | 17.81  | 22 16.6                           | .2936  | 9 12.1                             | 5.71   |
|                                 | 7  | .466                 | .1086   | .0612   | 17.87  | 22 16.7                           | .2929  | 9 8.2                              | 5.80   |
|                                 | 8  | +2.475               | —0.1057 | +0.0596 | 17.93  | 22 16.9                           | 1.2923 | 9 4.4                              | +5.90  |
|                                 | 9  | .484                 | .1027   | .0580   | 17.99  | 22 17.1                           | .2917  | 9 0.6                              | 5.99   |
|                                 | 10 | .493                 | .0998   | .0565   | 18.05  | 22 17.2                           | .2910  | 8 56.7                             | 6.08   |
|                                 | 11 | .502                 | .0969   | .0549   | 18.11  | 22 17.4                           | .2904  | 8 52.8                             | 6.17   |
|                                 | 12 | .510                 | .0941   | .0534   | 18.16  | 22 17.5                           | .2898  | 8 48.9                             | 6.26   |
|                                 | 13 | .519                 | .0913   | .0519   | 18.22  | 22 17.7                           | .2892  | 8 45.0                             | 6.35   |
|                                 | 14 | .527                 | .0885   | .0504   | 18.28  | 22 17.8                           | .2885  | 8 41.1                             | 6.43   |
|                                 | 15 | .536                 | .0857   | .0489   | 18.33  | 22 18.0                           | .2879  | 8 37.2                             | 6.52   |
|                                 | 16 | .544                 | .0830   | .0474   | 18.39  | 22 18.1                           | .2873  | 8 33.3                             | 6.60   |
|                                 | 17 | .552                 | .0803   | .0459   | 18.44  | 22 18.3                           | .2867  | 8 29.3                             | 6.68   |

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| <sup>12h</sup><br>M. Z. Berlin |    | f                   | x       | y       | g                  | G                                 | log h  | H                                | i                  |
|--------------------------------|----|---------------------|---------|---------|--------------------|-----------------------------------|--------|----------------------------------|--------------------|
| August                         | 18 | +2 <sup>s</sup> 561 | —0.0776 | +0.0444 | 18 <sup>h</sup> 50 | 22 <sup>h</sup> 18 <sup>m</sup> 4 | 1.2861 | 8 <sup>h</sup> 25 <sup>m</sup> 4 | +6 <sup>s</sup> 75 |
|                                | 19 | .569                | .0749   | .0430   | 18.55              | 22 18.6                           | .2855  | 8 21.4                           | 6.83               |
|                                | 20 | .577                | .0723   | .0416   | 18.60              | 22 18.7                           | .2849  | 8 17.4                           | 6.90               |
|                                | 21 | .585                | .0697   | .0402   | 18.65              | 22 18.8                           | .2843  | 8 13.4                           | 6.98               |
|                                | 22 | .593                | .0671   | .0389   | 18.71              | 22 19.0                           | .2837  | 8 9.4                            | 7.05               |
|                                | 23 | .601                | .0646   | .0375   | 18.76              | 22 19.1                           | .2832  | 8 5.4                            | 7.11               |
|                                | 24 | .608                | .0621   | .0362   | 18.81              | 22 19.3                           | .2826  | 8 1.3                            | 7.18               |
|                                | 25 | .616                | .0597   | .0349   | 18.85              | 22 19.4                           | .2821  | 7 57.3                           | 7.25               |
|                                | 26 | .623                | .0573   | .0336   | 18.90              | 22 19.5                           | .2815  | 7 53.2                           | 7.31               |
|                                | 27 | .631                | .0549   | .0323   | 18.95              | 22 19.7                           | .2810  | 7 49.1                           | 7.37               |
|                                | 28 | +2.638              | —0.0525 | +0.0311 | 19.00              | 22 19.8                           | 1.2805 | 7 45.1                           | +7.42              |
|                                | 29 | .646                | .0501   | .0299   | 19.05              | 22 20.0                           | .2800  | 7 41.0                           | 7.48               |
|                                | 30 | .653                | .0477   | .0288   | 19.09              | 22 20.1                           | .2795  | 7 36.9                           | 7.53               |
|                                | 31 | .660                | .0454   | .0277   | 19.14              | 22 20.3                           | .2791  | 7 32.8                           | 7.58               |
| Septbr.                        | 1  | .668                | .0431   | .0267   | 19.19              | 22 20.4                           | .2786  | 7 28.6                           | 7.63               |
|                                | 2  | .675                | .0408   | .0257   | 19.23              | 22 20.6                           | .2782  | 7 24.5                           | 7.68               |
|                                | 3  | .682                | .0386   | .0247   | 19.28              | 22 20.7                           | .2777  | 7 20.3                           | 7.72               |
|                                | 4  | .689                | .0364   | .0237   | 19.32              | 22 20.9                           | .2773  | 7 16.2                           | 7.77               |
|                                | 5  | .696                | .0342   | .0228   | 19.37              | 22 21.1                           | .2770  | 7 12.0                           | 7.81               |
|                                | 6  | .703                | .0321   | .0219   | 19.41              | 22 21.2                           | .2766  | 7 7.9                            | 7.84               |
|                                | 7  | +2.710              | —0.0300 | +0.0211 | 19.45              | 22 21.4                           | 1.2762 | 7 3.7                            | +7.88              |
|                                | 8  | .716                | .0279   | .0203   | 19.49              | 22 21.6                           | .2759  | 6 59.5                           | 7.91               |
|                                | 9  | .723                | .0258   | .0196   | 19.54              | 22 21.8                           | .2756  | 6 55.3                           | 7.95               |
|                                | 10 | .730                | .0237   | .0190   | 19.58              | 22 21.9                           | .2753  | 6 51.1                           | 7.98               |
|                                | 11 | .737                | .0217   | .0184   | 19.62              | 22 22.1                           | .2750  | 6 46.9                           | 8.01               |
|                                | 12 | .743                | .0197   | .0178   | 19.66              | 22 22.3                           | .2748  | 6 42.7                           | 8.03               |
|                                | 13 | .750                | .0177   | .0173   | 19.70              | 22 22.5                           | .2746  | 6 38.4                           | 8.05               |
|                                | 14 | .757                | .0157   | .0169   | 19.74              | 22 22.7                           | .2744  | 6 34.2                           | 8.07               |
|                                | 15 | .763                | .0137   | .0165   | 19.78              | 22 22.9                           | .2742  | 6 30.0                           | 8.09               |
|                                | 16 | .770                | .0117   | .0161   | 19.82              | 22 23.1                           | .2741  | 6 25.7                           | 8.11               |
|                                | 17 | +2.776              | —0.0098 | +0.0158 | 19.85              | 22 23.3                           | 1.2740 | 6 21.4                           | +8.12              |
|                                | 18 | .783                | .0079   | .0156   | 19.89              | 22 23.6                           | .2739  | 6 17.2                           | 8.13               |
|                                | 19 | .790                | .0060   | .0154   | 19.93              | 22 23.8                           | .2738  | 6 12.9                           | 8.14               |
|                                | 20 | .796                | .0041   | .0152   | 19.97              | 22 24.0                           | .2737  | 6 8.6                            | 8.14               |
|                                | 21 | .803                | .0023   | .0151   | 20.01              | 22 24.3                           | .2737  | 6 4.4                            | 8.15               |
|                                | 22 | .809                | —0.0004 | .0150   | 20.04              | 22 24.5                           | .2736  | 6 0.1                            | 8.15               |
|                                | 23 | .816                | +       | .0150   | 20.08              | 22 24.8                           | .2736  | 5 55.8                           | 8.15               |
|                                | 24 | .822                | .0033   | .0151   | 20.12              | 22 25.0                           | .2737  | 5 51.5                           | 8.14               |
|                                | 25 | .829                | .0051   | .0152   | 20.15              | 22 25.3                           | .2737  | 5 47.3                           | 8.14               |
|                                | 26 | .835                | .0069   | .0154   | 20.19              | 22 25.5                           | .2738  | 5 43.0                           | 8.13               |
|                                | 27 | +2.842              | +0.0087 | +0.0156 | 20.23              | 22 25.8                           | 1.2739 | 5 38.7                           | +8.12              |
|                                | 28 | .848                | .0105   | .0159   | 20.26              | 22 26.1                           | .2740  | 5 34.4                           | 8.11               |
|                                | 29 | .855                | .0123   | .0163   | 20.30              | 22 26.4                           | .2742  | 5 30.1                           | 8.09               |
|                                | 30 | .861                | .0141   | .0168   | 20.33              | 22 26.7                           | .2744  | 5 25.8                           | 8.07               |
| Oktbr.                         | 1  | .868                | .0159   | .0173   | 20.37              | 22 27.0                           | .2746  | 5 21.6                           | 8.05               |
|                                | 2  | .875                | .0176   | .0178   | 20.41              | 22 27.3                           | .2748  | 5 17.3                           | 8.03               |
|                                | 3  | .881                | .0194   | .0184   | 20.44              | 22 27.6                           | .2751  | 5 13.0                           | 8.00               |
|                                | 4  | .888                | .0212   | .0190   | 20.48              | 22 27.9                           | .2753  | 5 8.8                            | 7.97               |
|                                | 5  | .895                | .0230   | .0197   | 20.51              | 22 28.2                           | .2756  | 5 4.5                            | 7.94               |
|                                | 6  | .902                | .0248   | .0204   | 20.55              | 22 28.6                           | .2759  | 5 0.2                            | 7.91               |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                  | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|------------------------------------|--------|-----------------------------------|---------------------|
| Oktbr.                          | 7  | +2. <sup>s</sup> 908 | +0.0266 | +0.0212 | 20. <sup>u</sup> 58 | 22 <sup>h</sup> 28 <sup>m</sup> .9 | 1.2763 | 4 <sup>h</sup> 56 <sup>m</sup> .0 | +7. <sup>s</sup> 88 |
|                                 | 8  | .915                 | .0284   | .0220   | 20.62               | 22 29.2                            | .2766  | 4 51.7                            | 7.84                |
|                                 | 9  | .922                 | .0302   | .0229   | 20.66               | 22 29.6                            | .2770  | 4 47.5                            | 7.80                |
|                                 | 10 | .929                 | .0320   | .0238   | 20.69               | 22 30.0                            | .2774  | 4 43.2                            | 7.76                |
|                                 | 11 | .936                 | .0338   | .0248   | 20.73               | 22 30.3                            | .2778  | 4 39.0                            | 7.72                |
|                                 | 12 | .943                 | .0356   | .0258   | 20.76               | 22 30.7                            | .2782  | 4 34.7                            | 7.67                |
|                                 | 13 | .951                 | .0374   | .0269   | 20.80               | 22 31.1                            | .2787  | 4 30.5                            | 7.62                |
|                                 | 14 | .958                 | .0392   | .0280   | 20.84               | 22 31.4                            | .2791  | 4 26.3                            | 7.57                |
|                                 | 15 | .965                 | .0411   | .0291   | 20.88               | 22 31.8                            | .2796  | 4 22.1                            | 7.52                |
|                                 | 16 | .973                 | .0430   | .0303   | 20.91               | 22 32.2                            | .2801  | 4 17.9                            | 7.46                |
|                                 | 17 | +2.980               | +0.0449 | +0.0315 | 20.95               | 22 32.6                            | 1.2807 | 4 13.7                            | +7.40               |
|                                 | 18 | .988                 | .0469   | .0328   | 20.99               | 22 33.0                            | .2812  | 4 9.5                             | 7.34                |
|                                 | 19 | 2.995                | .0488   | .0341   | 21.03               | 22 33.4                            | .2817  | 4 5.3                             | 7.28                |
|                                 | 20 | 3.003                | .0507   | .0354   | 21.07               | 22 33.8                            | .2823  | 4 1.1                             | 7.22                |
|                                 | 21 | .011                 | .0526   | .0368   | 21.11               | 22 34.2                            | .2829  | 3 56.9                            | 7.15                |
|                                 | 22 | .018                 | .0546   | .0382   | 21.15               | 22 34.6                            | .2834  | 3 52.8                            | 7.08                |
|                                 | 23 | .026                 | .0566   | .0396   | 21.19               | 22 35.1                            | .2840  | 3 48.6                            | 7.01                |
|                                 | 24 | .034                 | .0586   | .0410   | 21.23               | 22 35.5                            | .2846  | 3 44.5                            | 6.94                |
|                                 | 25 | .043                 | .0607   | .0425   | 21.27               | 22 35.9                            | .2852  | 3 40.3                            | 6.86                |
|                                 | 26 | .051                 | .0628   | .0440   | 21.31               | 22 36.3                            | .2859  | 3 36.2                            | 6.78                |
|                                 | 27 | +3.059               | +0.0649 | +0.0455 | 21.35               | 22 36.8                            | 1.2865 | 3 32.1                            | +6.70               |
|                                 | 28 | .067                 | .0670   | .0470   | 21.40               | 22 37.2                            | .2871  | 3 28.0                            | 6.62                |
|                                 | 29 | .076                 | .0692   | .0485   | 21.44               | 22 37.7                            | .2877  | 3 23.9                            | 6.54                |
|                                 | 30 | .084                 | .0714   | .0500   | 21.48               | 22 38.1                            | .2884  | 3 19.8                            | 6.45                |
|                                 | 31 | .093                 | .0736   | .0516   | 21.53               | 22 38.6                            | .2890  | 3 15.7                            | 6.36                |
| Novbr.                          | 1  | .102                 | .0758   | .0532   | 21.57               | 22 39.0                            | .2897  | 3 11.7                            | 6.27                |
|                                 | 2  | .110                 | .0781   | .0548   | 21.62               | 22 39.5                            | .2903  | 3 7.6                             | 6.18                |
|                                 | 3  | .119                 | .0804   | .0564   | 21.66               | 22 39.9                            | .2910  | 3 3.6                             | 6.09                |
|                                 | 4  | .128                 | .0828   | .0580   | 21.71               | 22 40.4                            | .2917  | 2 59.5                            | 5.99                |
|                                 | 5  | .137                 | .0851   | .0596   | 21.76               | 22 40.8                            | .2923  | 2 55.5                            | 5.90                |
|                                 | 6  | +3.147               | +0.0875 | +0.0612 | 21.81               | 22 41.3                            | 1.2930 | 2 51.5                            | +5.80               |
|                                 | 7  | .156                 | .0899   | .0628   | 21.86               | 22 41.7                            | .2936  | 2 47.5                            | 5.70                |
|                                 | 8  | .165                 | .0924   | .0644   | 21.91               | 22 42.2                            | .2943  | 2 43.5                            | 5.59                |
|                                 | 9  | .175                 | .0949   | .0660   | 21.96               | 22 42.6                            | .2949  | 2 39.5                            | 5.49                |
|                                 | 10 | .184                 | .0975   | .0676   | 22.01               | 22 43.1                            | .2956  | 2 35.5                            | 5.38                |
|                                 | 11 | .194                 | .1001   | .0692   | 22.06               | 22 43.5                            | .2962  | 2 31.6                            | 5.27                |
|                                 | 12 | .204                 | .1027   | .0707   | 22.11               | 22 44.0                            | .2968  | 2 27.6                            | 5.16                |
|                                 | 13 | .213                 | .1053   | .0722   | 22.16               | 22 44.4                            | .2975  | 2 23.7                            | 5.05                |
|                                 | 14 | .223                 | .1080   | .0737   | 22.22               | 22 44.9                            | .2981  | 2 19.8                            | 4.94                |
|                                 | 15 | .234                 | .1107   | .0752   | 22.27               | 22 45.3                            | .2987  | 2 15.8                            | 4.82                |
|                                 | 16 | +3.244               | +0.1135 | +0.0767 | 22.33               | 22 45.8                            | 1.2993 | 2 11.9                            | +4.70               |
|                                 | 17 | .254                 | .1163   | .0782   | 22.38               | 22 46.2                            | .2999  | 2 8.0                             | 4.59                |
|                                 | 18 | .264                 | .1191   | .0796   | 22.44               | 22 46.7                            | .3005  | 2 4.1                             | 4.47                |
|                                 | 19 | .275                 | .1220   | .0811   | 22.50               | 22 47.1                            | .3010  | 2 0.2                             | 4.35                |
|                                 | 20 | .285                 | .1249   | .0825   | 22.56               | 22 47.5                            | .3016  | 1 56.3                            | 4.22                |
|                                 | 21 | .296                 | .1278   | .0839   | 22.61               | 22 48.0                            | .3022  | 1 52.5                            | 4.10                |
|                                 | 22 | .307                 | .1308   | .0853   | 22.67               | 22 48.4                            | .3027  | 1 48.6                            | 3.98                |
|                                 | 23 | .317                 | .1338   | .0867   | 22.73               | 22 48.8                            | .3033  | 1 44.8                            | 3.85                |
|                                 | 24 | .328                 | .1369   | .0880   | 22.80               | 22 49.2                            | .3038  | 1 40.9                            | 3.72                |
|                                 | 25 | .339                 | .1400   | .0893   | 22.86               | 22 49.7                            | .3043  | 1 37.1                            | 3.59                |

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| <sup>12h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                  | log h  | H                                 | i     |
|--------------------------------|----|--------|---------|---------|-------|------------------------------------|--------|-----------------------------------|-------|
| Novbr.                         | 26 | +3.350 | +0.1431 | +0.0905 | 22.92 | 22 <sup>h</sup> 50 <sup>m</sup> .1 | 1.3048 | 1 <sup>h</sup> 33 <sup>m</sup> .3 | +3.46 |
|                                | 27 | .361   | .1463   | .0917   | 22.99 | 22 50.5                            | .3053  | 1 29.4                            | 3.33  |
|                                | 28 | .372   | .1495   | .0928   | 23.05 | 22 50.9                            | .3057  | 1 25.6                            | 3.20  |
|                                | 29 | .384   | .1527   | .0940   | 23.11 | 22 51.3                            | .3062  | 1 21.8                            | 3.07  |
|                                | 30 | .395   | .1559   | .0951   | 23.18 | 22 51.7                            | .3066  | 1 18.0                            | 2.93  |
| Dezbr.                         | 1  | .406   | .1592   | .0961   | 23.24 | 22 52.0                            | .3070  | 1 14.2                            | 2.80  |
|                                | 2  | .418   | .1625   | .0971   | 23.31 | 22 52.4                            | .3074  | 1 10.4                            | 2.66  |
|                                | 3  | .429   | .1658   | .0980   | 23.38 | 22 52.8                            | .3078  | 1 6.6                             | 2.53  |
|                                | 4  | .441   | .1692   | .0989   | 23.44 | 22 53.2                            | .3081  | 1 2.8                             | 2.39  |
|                                | 5  | .453   | .1726   | .0997   | 23.51 | 22 53.5                            | .3084  | 0 59.0                            | 2.25  |
|                                | 6  | +3.464 | +0.1760 | +0.1005 | 23.58 | 22 53.9                            | 1.3088 | 0 55.3                            | +2.11 |
|                                | 7  | .476   | .1794   | .1013   | 23.65 | 22 54.2                            | .3091  | 0 51.5                            | 1.97  |
|                                | 8  | .488   | .1829   | .1020   | 23.72 | 22 54.6                            | .3093  | 0 47.7                            | 1.83  |
|                                | 9  | .500   | .1864   | .1027   | 23.79 | 22 54.9                            | .3096  | 0 44.0                            | 1.69  |
|                                | 10 | .512   | .1900   | .1033   | 23.86 | 22 55.2                            | .3098  | 0 40.2                            | 1.55  |
|                                | 11 | .523   | .1936   | .1038   | 23.93 | 22 55.5                            | .3101  | 0 36.5                            | 1.40  |
|                                | 12 | .535   | .1972   | .1043   | 24.01 | 22 55.8                            | .3103  | 0 32.7                            | 1.26  |
|                                | 13 | .547   | .2008   | .1048   | 24.08 | 22 56.1                            | .3104  | 0 29.0                            | 1.12  |
|                                | 14 | .559   | .2044   | .1052   | 24.15 | 22 56.4                            | .3106  | 0 25.2                            | 0.98  |
|                                | 15 | .571   | .2080   | .1056   | 24.22 | 22 56.7                            | .3107  | 0 21.5                            | 0.83  |
|                                | 16 | +3.583 | +0.2117 | +0.1059 | 24.30 | 22 57.0                            | 1.3109 | 0 17.8                            | +0.69 |
|                                | 17 | .595   | .2153   | .1061   | 24.37 | 22 57.3                            | .3110  | 0 14.0                            | 0.55  |
|                                | 18 | .607   | .2190   | .1063   | 24.44 | 22 57.6                            | .3110  | 0 10.3                            | 0.40  |
|                                | 19 | .619   | .2227   | .1064   | 24.52 | 22 57.8                            | .3111  | 0 6.6                             | 0.25  |
|                                | 20 | .631   | .2264   | .1064   | 24.59 | 22 58.1                            | .3111  | 0 2.8                             | +0.11 |
|                                | 21 | .644   | .2301   | .1064   | 24.67 | 22 58.3                            | .3111  | 23 59.1                           | -0.04 |
|                                | 22 | .656   | .2338   | .1064   | 24.74 | 22 58.5                            | .3111  | 23 55.3                           | 0.18  |
|                                | 23 | .668   | .2375   | .1063   | 24.82 | 22 58.8                            | .3111  | 23 51.6                           | 0.33  |
|                                | 24 | .680   | .2413   | .1062   | 24.89 | 22 59.0                            | .3110  | 23 47.8                           | 0.47  |
|                                | 25 | .692   | .2450   | .1060   | 24.97 | 22 59.2                            | .3109  | 23 44.1                           | 0.62  |
|                                | 26 | +3.704 | +0.2488 | +0.1058 | 25.04 | 22 59.4                            | 1.3108 | 23 40.3                           | -0.76 |
|                                | 27 | .716   | .2525   | .1055   | 25.12 | 22 59.6                            | .3107  | 23 36.6                           | 0.90  |
|                                | 28 | .728   | .2563   | .1051   | 25.19 | 22 59.8                            | .3106  | 23 32.8                           | 1.05  |
|                                | 29 | .740   | .2600   | .1047   | 25.27 | 23 0.0                             | .3104  | 23 29.1                           | 1.19  |
|                                | 30 | .752   | .2638   | .1042   | 25.34 | 23 0.2                             | .3102  | 23 25.3                           | 1.33  |
|                                | 31 | .764   | .2676   | .1037   | 25.42 | 23 0.4                             | .3100  | 23 21.6                           | 1.47  |

## 1841

|        |    |        |         |         |      |                                    |        |                                    |       |
|--------|----|--------|---------|---------|------|------------------------------------|--------|------------------------------------|-------|
| Januar | 1  | +0.705 | -0.6015 | +0.1030 | 7.99 | 20 <sup>h</sup> 20 <sup>m</sup> .1 | 1.3097 | 23 <sup>h</sup> 17 <sup>m</sup> .9 | -1.62 |
|        | 2  | .716   | .5991   | .1023   | 8.04 | 20 21.9                            | .3095  | 23 14.1                            | 1.76  |
|        | 3  | .728   | .5967   | .1016   | 8.09 | 20 23.6                            | .3092  | 23 10.3                            | 1.90  |
|        | 4  | .740   | .5943   | .1009   | 8.13 | 20 25.3                            | .3089  | 23 6.5                             | 2.04  |
|        | 5  | .752   | .5919   | .1002   | 8.18 | 20 26.9                            | .3086  | 23 2.7                             | 2.18  |
|        | 6  | .763   | .5894   | .0994   | 8.23 | 20 28.5                            | .3083  | 22 59.0                            | 2.32  |
|        | 7  | .775   | .5869   | .0985   | 8.28 | 20 30.1                            | .3080  | 22 55.2                            | 2.46  |
|        | 8  | .787   | .5844   | .0976   | 8.33 | 20 31.6                            | .3076  | 22 51.4                            | 2.60  |
|        | 9  | .798   | .5818   | .0966   | 8.39 | 20 33.1                            | .3072  | 22 47.6                            | 2.73  |
|        | 10 | .809   | .5792   | .0956   | 8.44 | 20 34.6                            | .3068  | 22 43.7                            | 2.87  |

## 1841

| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                 | log h  | H                                 | i     |
|---------------------------------|----|--------|---------|---------|-------|-----------------------------------|--------|-----------------------------------|-------|
| Januar                          | 11 | +0.821 | -0.5766 | +0.0945 | 8.49  | 20 <sup>h</sup> 36 <sup>m</sup> 0 | 1.3064 | 22 <sup>h</sup> 39 <sup>m</sup> 9 | -3.01 |
|                                 | 12 | .832   | .5739   | .0934   | 8.54  | 20 37.4                           | .3059  | 22 36.1                           | 3.14  |
|                                 | 13 | .843   | .5712   | .0922   | 8.60  | 20 38.8                           | .3055  | 22 32.3                           | 3.27  |
|                                 | 14 | .854   | .5685   | .0910   | 8.65  | 20 40.1                           | .3050  | 22 28.4                           | 3.40  |
|                                 | 15 | .865   | .5658   | .0898   | 8.70  | 20 41.4                           | .3045  | 22 24.6                           | 3.54  |
|                                 | 16 | .876   | .5631   | .0885   | 8.76  | 20 42.6                           | .3040  | 22 20.7                           | 3.67  |
|                                 | 17 | .887   | .5604   | .0873   | 8.81  | 20 43.8                           | .3035  | 22 16.9                           | 3.79  |
|                                 | 18 | .898   | .5577   | .0860   | 8.87  | 20 45.0                           | .3030  | 22 13.0                           | 3.92  |
|                                 | 19 | .909   | .5549   | .0847   | 8.92  | 20 46.2                           | .3025  | 22 9.1                            | 4.05  |
|                                 | 20 | .920   | .5522   | .0833   | 8.98  | 20 47.3                           | .3019  | 22 5.2                            | 4.17  |
|                                 | 21 | +0.930 | -0.5494 | +0.0819 | 9.03  | 20 48.4                           | 1.3013 | 22 1.3                            | -4.30 |
|                                 | 22 | .940   | .5467   | .0804   | 9.09  | 20 49.5                           | .3007  | 21 57.4                           | 4.42  |
|                                 | 23 | .951   | .5439   | .0789   | 9.14  | 20 50.5                           | .3001  | 21 53.5                           | 4.54  |
|                                 | 24 | .961   | .5412   | .0774   | 9.20  | 20 51.5                           | .2995  | 21 49.6                           | 4.66  |
|                                 | 25 | .971   | .5384   | .0759   | 9.25  | 20 52.5                           | .2989  | 21 45.6                           | 4.78  |
|                                 | 26 | .981   | .5357   | .0744   | 9.31  | 20 53.5                           | .2983  | 21 41.7                           | 4.90  |
|                                 | 27 | 0.991  | .5330   | .0729   | 9.36  | 20 54.4                           | .2977  | 21 37.7                           | 5.01  |
|                                 | 28 | 1.001  | .5303   | .0713   | 9.42  | 20 55.3                           | .2971  | 21 33.7                           | 5.12  |
|                                 | 29 | .011   | .5276   | .0697   | 9.47  | 20 56.2                           | .2964  | 21 29.8                           | 5.24  |
|                                 | 30 | .021   | .5249   | .0681   | 9.53  | 20 57.1                           | .2958  | 21 25.8                           | 5.35  |
| Februar                         | 31 | +1.030 | -0.5222 | +0.0665 | 9.58  | 20 57.9                           | 1.2951 | 21 21.8                           | -5.45 |
|                                 | 1  | .040   | .5195   | .0649   | 9.63  | 20 58.7                           | .2945  | 21 17.8                           | 5.56  |
|                                 | 2  | .049   | .5168   | .0632   | 9.69  | 20 59.5                           | .2938  | 21 13.8                           | 5.66  |
|                                 | 3  | .059   | .5141   | .0616   | 9.74  | 21 0.3                            | .2932  | 21 9.7                            | 5.77  |
|                                 | 4  | .068   | .5115   | .0600   | 9.79  | 21 1.1                            | .2925  | 21 5.7                            | 5.87  |
|                                 | 5  | .077   | .5089   | .0584   | 9.85  | 21 1.8                            | .2918  | 21 1.6                            | 5.96  |
|                                 | 6  | .086   | .5063   | .0568   | 9.90  | 21 2.5                            | .2912  | 20 57.6                           | 6.06  |
|                                 | 7  | .095   | .5038   | .0552   | 9.95  | 21 3.2                            | .2905  | 20 53.5                           | 6.16  |
|                                 | 8  | .104   | .5013   | .0536   | 10.00 | 21 3.9                            | .2898  | 20 49.4                           | 6.25  |
|                                 | 9  | .112   | .4988   | .0520   | 10.05 | 21 4.6                            | .2892  | 20 45.3                           | 6.34  |
|                                 | 10 | +1.121 | -0.4963 | +0.0504 | 10.10 | 21 5.3                            | 1.2885 | 20 41.2                           | -6.43 |
|                                 | 11 | .130   | .4938   | .0489   | 10.15 | 21 5.9                            | .2879  | 20 37.1                           | 6.52  |
|                                 | 12 | .138   | .4914   | .0474   | 10.20 | 21 6.6                            | .2873  | 20 33.0                           | 6.60  |
|                                 | 13 | .146   | .4890   | .0459   | 10.25 | 21 7.2                            | .2866  | 20 28.8                           | 6.69  |
|                                 | 14 | .155   | .4866   | .0444   | 10.29 | 21 7.8                            | .2860  | 20 24.6                           | 6.77  |
|                                 | 15 | .163   | .4842   | .0429   | 10.34 | 21 8.4                            | .2854  | 20 20.5                           | 6.85  |
|                                 | 16 | .171   | .4819   | .0414   | 10.39 | 21 9.0                            | .2847  | 20 16.3                           | 6.92  |
|                                 | 17 | .179   | .4796   | .0399   | 10.43 | 21 9.6                            | .2841  | 20 12.1                           | 7.00  |
|                                 | 18 | .186   | .4773   | .0384   | 10.48 | 21 10.2                           | .2836  | 20 7.9                            | 7.07  |
|                                 | 19 | .194   | .4750   | .0370   | 10.53 | 21 10.7                           | .2830  | 20 3.7                            | 7.14  |
|                                 | 20 | +1.202 | -0.4728 | +0.0356 | 10.57 | 21 11.3                           | 1.2824 | 19 59.5                           | -7.21 |
|                                 | 21 | .210   | .4706   | .0343   | 10.62 | 21 11.9                           | .2818  | 19 55.3                           | 7.27  |
|                                 | 22 | .217   | .4685   | .0330   | 10.66 | 21 12.4                           | .2812  | 19 51.1                           | 7.34  |
|                                 | 23 | .225   | .4664   | .0317   | 10.70 | 21 13.0                           | .2807  | 19 46.8                           | 7.40  |
|                                 | 24 | .232   | .4643   | .0304   | 10.74 | 21 13.5                           | .2802  | 19 42.6                           | 7.46  |
|                                 | 25 | .239   | .4622   | .0292   | 10.78 | 21 14.1                           | .2797  | 19 38.3                           | 7.51  |
|                                 | 26 | .247   | .4601   | .0281   | 10.83 | 21 14.6                           | .2792  | 19 34.1                           | 7.57  |
|                                 | 27 | .254   | .4581   | .0270   | 10.87 | 21 15.1                           | .2787  | 19 29.8                           | 7.62  |
|                                 | 28 | .261   | .4561   | .0259   | 10.91 | 21 15.6                           | .2782  | 19 25.5                           | 7.67  |
| März                            | 1  | .268   | .4542   | .0249   | 10.94 | 21 16.2                           | .2778  | 19 21.2                           | 7.72  |

## 1841

| <sup>12h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g      | G                                 | log h  | H                                 | i      |
|--------------------------------|----|----------------------|---------|---------|--------|-----------------------------------|--------|-----------------------------------|--------|
| März                           | 2  | +1. <sup>s</sup> 275 | —0.4523 | +0.0239 | 10."98 | 21 <sup>h</sup> 16 <sup>m</sup> 7 | 1.2774 | 19 <sup>h</sup> 16 <sup>m</sup> 9 | —7."76 |
|                                | 3  | .282                 | .4504   | .0230   | 11.02  | 21 17.2                           | .2770  | 19 12.6                           | 7.80   |
|                                | 4  | .289                 | .4485   | .0221   | 11.06  | 21 17.8                           | .2767  | 19 8.3                            | 7.84   |
|                                | 5  | .296                 | .4467   | .0213   | 11.09  | 21 18.3                           | .2763  | 19 4.0                            | 7.88   |
|                                | 6  | .302                 | .4449   | .0205   | 11.13  | 21 18.8                           | .2760  | 18 59.7                           | 7.91   |
|                                | 7  | .309                 | .4431   | .0198   | 11.17  | 21 19.4                           | .2756  | 18 55.4                           | 7.95   |
|                                | 8  | .316                 | .4413   | .0191   | 11.20  | 21 19.9                           | .2753  | 18 51.1                           | 7.98   |
|                                | 9  | .322                 | .4396   | .0184   | 11.24  | 21 20.5                           | .2751  | 18 46.8                           | 8.00   |
|                                | 10 | .329                 | .4379   | .0178   | 11.27  | 21 21.0                           | .2748  | 18 42.5                           | 8.03   |
|                                | 11 | .336                 | .4362   | .0172   | 11.30  | 21 21.6                           | .2746  | 18 38.1                           | 8.05   |
|                                | 12 | +1.342               | —0.4345 | +0.0167 | 11.34  | 21 22.1                           | 1.2744 | 18 33.8                           | —8.07  |
|                                | 13 | .349                 | .4329   | .0163   | 11.37  | 21 22.7                           | .2742  | 18 29.5                           | 8.09   |
|                                | 14 | .356                 | .4313   | .0160   | 11.40  | 21 23.2                           | .2741  | 18 25.1                           | 8.11   |
|                                | 15 | .362                 | .4297   | .0157   | 11.43  | 21 23.8                           | .2739  | 18 20.8                           | 8.12   |
|                                | 16 | .369                 | .4281   | .0155   | 11.47  | 21 24.4                           | .2738  | 18 16.5                           | 8.13   |
|                                | 17 | .375                 | .4266   | .0153   | 11.50  | 21 24.9                           | .2738  | 18 12.1                           | 8.14   |
|                                | 18 | .382                 | .4251   | .0152   | 11.53  | 21 25.5                           | .2737  | 18 7.8                            | 8.14   |
|                                | 19 | .388                 | .4236   | .0151   | 11.56  | 21 26.1                           | .2736  | 18 3.5                            | 8.15   |
|                                | 20 | .394                 | .4221   | .0150   | 11.59  | 21 26.7                           | .2736  | 17 59.1                           | 8.15   |
|                                | 21 | .401                 | .4207   | .0150   | 11.62  | 21 27.3                           | .2736  | 17 54.8                           | 8.15   |
|                                | 22 | +1.407               | —0.4192 | +0.0151 | 11.64  | 21 27.9                           | 1.2737 | 17 50.5                           | —8.14  |
|                                | 23 | .414                 | .4178   | .0153   | 11.67  | 21 28.5                           | .2738  | 17 46.2                           | 8.13   |
|                                | 24 | .420                 | .4164   | .0155   | 11.70  | 21 29.2                           | .2739  | 17 41.9                           | 8.12   |
|                                | 25 | .427                 | .4150   | .0158   | 11.73  | 21 29.8                           | .2740  | 17 37.6                           | 8.11   |
|                                | 26 | .433                 | .4136   | .0161   | 11.76  | 21 30.5                           | .2741  | 17 33.2                           | 8.10   |
|                                | 27 | .440                 | .4122   | .0165   | 11.79  | 21 31.1                           | .2743  | 17 28.9                           | 8.08   |
|                                | 28 | .446                 | .4108   | .0169   | 11.81  | 21 31.8                           | .2745  | 17 24.7                           | 8.06   |
|                                | 29 | .453                 | .4095   | .0174   | 11.84  | 21 32.5                           | .2747  | 17 20.4                           | 8.04   |
|                                | 30 | .459                 | .4081   | .0179   | 11.87  | 21 33.2                           | .2749  | 17 16.1                           | 8.02   |
|                                | 31 | .466                 | .4068   | .0185   | 11.89  | 21 33.8                           | .2751  | 17 11.9                           | 8.00   |
| April                          | 1  | +1.472               | —0.4054 | +0.0191 | 11.92  | 21 34.5                           | 1.2754 | 17 7.6                            | —7.97  |
|                                | 2  | .479                 | .4041   | .0198   | 11.95  | 21 35.2                           | .2757  | 17 3.3                            | 7.94   |
|                                | 3  | .486                 | .4027   | .0206   | 11.98  | 21 36.0                           | .2760  | 16 59.1                           | 7.91   |
|                                | 4  | .492                 | .4014   | .0214   | 12.00  | 21 36.7                           | .2764  | 16 54.8                           | 7.87   |
|                                | 5  | .499                 | .4001   | .0223   | 12.03  | 21 37.4                           | .2767  | 16 50.6                           | 7.84   |
|                                | 6  | .506                 | .3987   | .0232   | 12.06  | 21 38.2                           | .2771  | 16 46.4                           | 7.80   |
|                                | 7  | .513                 | .3974   | .0241   | 12.08  | 21 38.9                           | .2775  | 16 42.2                           | 7.75   |
|                                | 8  | .520                 | .3960   | .0251   | 12.11  | 21 39.7                           | .2779  | 16 38.0                           | 7.71   |
|                                | 9  | .527                 | .3947   | .0261   | 12.14  | 21 40.4                           | .2783  | 16 33.8                           | 7.66   |
|                                | 10 | .534                 | .3933   | .0271   | 12.17  | 21 41.2                           | .2788  | 16 29.6                           | 7.61   |
|                                | 11 | +1.541               | —0.3919 | +0.0282 | 12.19  | 21 42.0                           | 1.2793 | 16 25.5                           | —7.56  |
|                                | 12 | .548                 | .3905   | .0293   | 12.22  | 21 42.8                           | .2797  | 16 21.3                           | 7.51   |
|                                | 13 | .555                 | .3891   | .0305   | 12.25  | 21 43.6                           | .2802  | 16 17.1                           | 7.45   |
|                                | 14 | .563                 | .3877   | .0317   | 12.28  | 21 44.4                           | .2807  | 16 13.0                           | 7.39   |
|                                | 15 | .570                 | .3863   | .0329   | 12.30  | 21 45.2                           | .2812  | 16 8.9                            | 7.33   |
|                                | 16 | .578                 | .3849   | .0342   | 12.33  | 21 46.0                           | .2818  | 16 4.8                            | 7.27   |
|                                | 17 | .585                 | .3835   | .0355   | 12.36  | 21 46.9                           | .2823  | 16 0.7                            | 7.21   |
|                                | 18 | .593                 | .3820   | .0368   | 12.39  | 21 47.7                           | .2828  | 15 56.6                           | 7.15   |
|                                | 19 | .600                 | .3805   | .0381   | 12.42  | 21 48.6                           | .2834  | 15 52.5                           | 7.08   |
|                                | 20 | .608                 | .3789   | .0395   | 12.45  | 21 49.4                           | .2840  | 15 48.5                           | 7.01   |

## 1841

| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                  | log h  | H                                  | i     |
|---------------------------------|----|--------|---------|---------|-------|------------------------------------|--------|------------------------------------|-------|
| April                           | 21 | +1.616 | —0.3774 | +0.0409 | 12.48 | 21 <sup>h</sup> 58 <sup>m</sup> .3 | 1.2846 | 15 <sup>h</sup> 44 <sup>m</sup> .4 | —6.94 |
|                                 | 22 | .624   | .3758   | .0423   | 12.52 | 21 51.1                            | .2852  | 15 40.4                            | 6.86  |
|                                 | 23 | .632   | .3742   | .0438   | 12.55 | 21 52.0                            | .2858  | 15 36.4                            | 6.79  |
|                                 | 24 | .640   | .3726   | .0453   | 12.58 | 21 52.8                            | .2864  | 15 32.4                            | 6.71  |
|                                 | 25 | .648   | .3710   | .0468   | 12.61 | 21 53.7                            | .2870  | 15 28.4                            | 6.63  |
|                                 | 26 | .656   | .3693   | .0483   | 12.65 | 21 54.6                            | .2876  | 15 24.4                            | 6.55  |
|                                 | 27 | .664   | .3676   | .0498   | 12.68 | 21 55.5                            | .2883  | 15 20.4                            | 6.47  |
|                                 | 28 | .673   | .3659   | .0513   | 12.71 | 21 56.3                            | .2889  | 15 16.5                            | 6.38  |
|                                 | 29 | .681   | .3642   | .0529   | 12.75 | 21 57.2                            | .2895  | 15 12.5                            | 6.29  |
|                                 | 30 | .690   | .3624   | .0544   | 12.78 | 21 58.1                            | .2902  | 15 8.6                             | 6.20  |
| Mai                             | 1  | +1.698 | —0.3606 | +0.0560 | 12.82 | 21 59.0                            | 1.2908 | 15 4.7                             | —6.11 |
|                                 | 2  | .707   | .3587   | .0575   | 12.86 | 21 59.9                            | .2914  | 15 0.8                             | 6.02  |
|                                 | 3  | .716   | .3568   | .0591   | 12.90 | 22 0.7                             | .2921  | 14 56.9                            | 5.93  |
|                                 | 4  | .725   | .3549   | .0606   | 12.93 | 22 1.6                             | .2927  | 14 53.1                            | 5.83  |
|                                 | 5  | .734   | .3530   | .0622   | 12.97 | 22 2.5                             | .2933  | 14 49.2                            | 5.74  |
|                                 | 6  | .743   | .3510   | .0637   | 13.01 | 22 3.4                             | .2940  | 14 45.4                            | 5.64  |
|                                 | 7  | .752   | .3490   | .0652   | 13.05 | 22 4.3                             | .2946  | 14 41.6                            | 5.54  |
|                                 | 8  | .761   | .3470   | .0667   | 13.09 | 22 5.2                             | .2952  | 14 37.7                            | 5.44  |
|                                 | 9  | .770   | .3449   | .0682   | 13.14 | 22 6.1                             | .2958  | 14 33.9                            | 5.34  |
|                                 | 10 | .780   | .3428   | .0697   | 13.18 | 22 7.0                             | .2964  | 14 30.1                            | 5.23  |
|                                 | 11 | +1.789 | —0.3407 | +0.0712 | 13.22 | 22 7.8                             | 1.2970 | 14 26.3                            | —5.13 |
|                                 | 12 | .799   | .3385   | .0726   | 13.26 | 22 8.7                             | .2976  | 14 22.6                            | 5.02  |
|                                 | 13 | .808   | .3363   | .0741   | 13.31 | 22 9.6                             | .2982  | 14 18.8                            | 4.91  |
|                                 | 14 | .818   | .3340   | .0755   | 13.35 | 22 10.4                            | .2988  | 14 15.0                            | 4.80  |
|                                 | 15 | .828   | .3317   | .0770   | 13.40 | 22 11.3                            | .2994  | 14 11.3                            | 4.68  |
|                                 | 16 | .838   | .3293   | .0784   | 13.45 | 22 12.2                            | .2999  | 14 7.6                             | 4.57  |
|                                 | 17 | .848   | .3269   | .0798   | 13.50 | 22 13.0                            | .3005  | 14 3.9                             | 4.46  |
|                                 | 18 | .858   | .3245   | .0812   | 13.54 | 22 13.8                            | .3010  | 14 0.2                             | 4.35  |
|                                 | 19 | .868   | .3221   | .0825   | 13.59 | 22 14.7                            | .3016  | 13 56.5                            | 4.23  |
|                                 | 20 | .878   | .3196   | .0838   | 13.64 | 22 15.5                            | .3021  | 13 52.8                            | 4.11  |
|                                 | 21 | +1.888 | —0.3171 | +0.0851 | 13.69 | 22 16.3                            | 1.3026 | 13 49.1                            | —3.99 |
|                                 | 22 | .899   | .3146   | .0864   | 13.74 | 22 17.2                            | .3031  | 13 45.5                            | 3.87  |
|                                 | 23 | .909   | .3120   | .0876   | 13.80 | 22 18.0                            | .3036  | 13 41.8                            | 3.75  |
|                                 | 24 | .920   | .3094   | .0888   | 13.85 | 22 18.8                            | .3041  | 13 38.2                            | 3.63  |
|                                 | 25 | .930   | .3067   | .0900   | 13.90 | 22 19.6                            | .3046  | 13 34.6                            | 3.51  |
|                                 | 26 | .941   | .3040   | .0912   | 13.96 | 22 20.3                            | .3051  | 13 30.9                            | 3.39  |
|                                 | 27 | .952   | .3013   | .0923   | 14.01 | 22 21.1                            | .3055  | 13 27.3                            | 3.26  |
|                                 | 28 | .962   | .2985   | .0934   | 14.07 | 22 21.9                            | .3059  | 13 23.7                            | 3.14  |
|                                 | 29 | .973   | .2957   | .0945   | 14.12 | 22 22.6                            | .3064  | 13 20.1                            | 3.01  |
|                                 | 30 | .984   | .2928   | .0955   | 14.18 | 22 23.4                            | .3068  | 13 16.5                            | 2.88  |
| Juni                            | 31 | +1.995 | —0.2899 | +0.0965 | 14.24 | 22 24.1                            | 1.3072 | 13 12.9                            | —2.75 |
|                                 | 1  | 2.006  | .2870   | .0974   | 14.30 | 22 24.9                            | .3075  | 13 9.4                             | 2.63  |
|                                 | 2  | .017   | .2841   | .0983   | 14.35 | 22 25.6                            | .3079  | 13 5.8                             | 2.50  |
|                                 | 3  | .028   | .2812   | .0991   | 14.41 | 22 26.3                            | .3082  | 13 2.2                             | 2.37  |
|                                 | 4  | .039   | .2782   | .0999   | 14.47 | 22 26.9                            | .3085  | 12 58.7                            | 2.24  |
|                                 | 5  | .050   | .2752   | .1006   | 14.53 | 22 27.6                            | .3088  | 12 55.1                            | 2.11  |
|                                 | 6  | .061   | .2721   | .1013   | 14.60 | 22 28.3                            | .3091  | 12 51.6                            | 1.97  |
|                                 | 7  | .073   | .2690   | .1020   | 14.66 | 22 29.0                            | .3094  | 12 48.0                            | 1.84  |
|                                 | 8  | .084   | .2659   | .1026   | 14.72 | 22 29.6                            | .3096  | 12 44.5                            | 1.71  |
|                                 | 9  | .095   | .2627   | .1032   | 14.78 | 22 30.2                            | .3098  | 12 41.0                            | 1.58  |

## 1841

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g      | G                                  | log h  | H                                  | i      |
|---------------------------------|----|----------------------|---------|---------|--------|------------------------------------|--------|------------------------------------|--------|
| Juni                            | 10 | +2. <sup>s</sup> 106 | —0.2595 | +0.1038 | 14."85 | 22 <sup>h</sup> 30 <sup>m</sup> .8 | 1.3101 | 12 <sup>h</sup> 37 <sup>m</sup> .5 | —1."44 |
|                                 | 11 | .118                 | .2563   | .1043   | 14.91  | 22 31.4                            | .3102  | 12 34.0                            | 1.31   |
|                                 | 12 | .129                 | .2531   | .1047   | 14.98  | 22 32.0                            | .3104  | 12 30.4                            | 1.17   |
|                                 | 13 | .141                 | .2499   | .1051   | 15.04  | 22 32.6                            | .3106  | 12 26.9                            | 1.04   |
|                                 | 14 | .152                 | .2467   | .1054   | 15.11  | 22 33.2                            | .3107  | 12 23.4                            | 0.91   |
|                                 | 15 | .163                 | .2434   | .1057   | 15.17  | 22 33.7                            | .3108  | 12 19.9                            | 0.77   |
|                                 | 16 | .175                 | .2401   | .1059   | 15.24  | 22 34.3                            | .3109  | 12 16.4                            | 0.64   |
|                                 | 17 | .186                 | .2368   | .1061   | 15.30  | 22 34.8                            | .3110  | 12 12.9                            | 0.50   |
|                                 | 18 | .198                 | .2335   | .1063   | 15.37  | 22 35.3                            | .3110  | 12 9.4                             | 0.36   |
|                                 | 19 | .209                 | .2301   | .1064   | 15.44  | 22 35.8                            | .3111  | 12 5.9                             | 0.23   |
|                                 | 20 | +2.221               | —0.2267 | +0.1065 | 15.51  | 22 36.3                            | 1.3111 | 12 2.4                             | —0.09  |
|                                 | 21 | .232                 | .2233   | .1065   | 15.57  | 22 36.8                            | .3111  | 11 58.9                            | +0.04  |
|                                 | 22 | .244                 | .2199   | .1065   | 15.64  | 22 37.3                            | .3111  | 11 55.4                            | 0.18   |
|                                 | 23 | .255                 | .2165   | .1064   | 15.71  | 22 37.7                            | .3111  | 11 51.9                            | 0.31   |
|                                 | 24 | .267                 | .2131   | .1063   | 15.78  | 22 38.2                            | .3110  | 11 48.4                            | 0.45   |
|                                 | 25 | .278                 | .2096   | .1061   | 15.85  | 22 38.6                            | .3109  | 11 44.9                            | 0.58   |
|                                 | 26 | .290                 | .2062   | .1058   | 15.92  | 22 39.0                            | .3108  | 11 41.4                            | 0.72   |
|                                 | 27 | .301                 | .2027   | .1055   | 15.99  | 22 39.4                            | .3107  | 11 37.9                            | 0.85   |
|                                 | 28 | .313                 | .1993   | .1052   | 16.06  | 22 39.8                            | .3106  | 11 34.4                            | 0.99   |
|                                 | 29 | .324                 | .1958   | .1048   | 16.13  | 22 40.2                            | .3105  | 11 30.8                            | 1.12   |
| Juli                            | 30 | +2.335               | —0.1924 | +0.1044 | 16.19  | 22 40.6                            | 1.3103 | 11 27.3                            | +1.26  |
|                                 | 1  | .347                 | .1889   | .1040   | 16.26  | 22 41.0                            | .3101  | 11 23.8                            | 1.39   |
|                                 | 2  | .358                 | .1854   | .1035   | 16.33  | 22 41.3                            | .3099  | 11 20.3                            | 1.53   |
|                                 | 3  | .369                 | .1819   | .1029   | 16.40  | 22 41.7                            | .3097  | 11 16.8                            | 1.66   |
|                                 | 4  | .380                 | .1784   | .1023   | 16.47  | 22 42.0                            | .3095  | 11 13.3                            | 1.79   |
|                                 | 5  | .392                 | .1749   | .1016   | 16.54  | 22 42.3                            | .3092  | 11 9.8                             | 1.93   |
|                                 | 6  | .403                 | .1714   | .1009   | 16.61  | 22 42.6                            | .3089  | 11 6.2                             | 2.06   |
|                                 | 7  | .414                 | .1680   | .1001   | 16.68  | 22 42.9                            | .3086  | 11 2.7                             | 2.19   |
|                                 | 8  | .425                 | .1645   | .0993   | 16.75  | 22 43.2                            | .3083  | 10 59.1                            | 2.32   |
|                                 | 9  | .436                 | .1611   | .0985   | 16.82  | 22 43.4                            | .3080  | 10 55.6                            | 2.45   |
|                                 | 10 | +2.447               | —0.1577 | +0.0977 | 16.89  | 22 43.7                            | 1.3077 | 10 52.0                            | +2.58  |
|                                 | 11 | .458                 | .1543   | .0968   | 16.96  | 22 44.0                            | .3073  | 10 48.5                            | 2.70   |
|                                 | 12 | .469                 | .1508   | .0958   | 17.03  | 22 44.2                            | .3069  | 10 44.9                            | 2.83   |
|                                 | 13 | .480                 | .1474   | .0948   | 17.10  | 22 44.4                            | .3065  | 10 41.3                            | 2.96   |
|                                 | 14 | .491                 | .1440   | .0938   | 17.17  | 22 44.7                            | .3061  | 10 37.8                            | 3.08   |
|                                 | 15 | .501                 | .1406   | .0927   | 17.23  | 22 44.9                            | .3057  | 10 34.2                            | 3.21   |
|                                 | 16 | .512                 | .1372   | .0917   | 17.30  | 22 45.1                            | .3053  | 10 30.6                            | 3.33   |
|                                 | 17 | .522                 | .1338   | .0906   | 17.37  | 22 45.3                            | .3048  | 10 27.0                            | 3.46   |
|                                 | 18 | .533                 | .1304   | .0895   | 17.44  | 22 45.5                            | .3044  | 10 23.4                            | 3.58   |
|                                 | 19 | .543                 | .1271   | .0883   | 17.50  | 22 45.7                            | .3039  | 10 19.8                            | 3.70   |
|                                 | 20 | +2.554               | —0.1238 | +0.0871 | 17.57  | 22 45.8                            | 1.3034 | 10 16.2                            | +3.82  |
|                                 | 21 | .564                 | .1205   | .0859   | 17.64  | 22 46.0                            | .3029  | 10 12.5                            | 3.94   |
|                                 | 22 | .575                 | .1172   | .0846   | 17.70  | 22 46.2                            | .3024  | 10 8.9                             | 4.06   |
|                                 | 23 | .585                 | .1139   | .0833   | 17.77  | 22 46.3                            | .3019  | 10 5.2                             | 4.18   |
|                                 | 24 | .595                 | .1106   | .0819   | 17.83  | 22 46.5                            | .3013  | 10 1.5                             | 4.29   |
|                                 | 25 | .605                 | .1074   | .0805   | 17.90  | 22 46.6                            | .3008  | 9 57.9                             | 4.41   |
|                                 | 26 | .615                 | .1042   | .0791   | 17.96  | 22 46.7                            | .3002  | 9 54.2                             | 4.52   |
|                                 | 27 | .625                 | .1010   | .0777   | 18.03  | 22 46.9                            | .2997  | 9 50.5                             | 4.63   |
|                                 | 28 | .634                 | .0978   | .0763   | 18.09  | 22 47.0                            | .2991  | 9 46.8                             | 4.74   |
|                                 | 29 | .644                 | .0946   | .0750   | 18.16  | 22 47.1                            | .2986  | 9 43.1                             | 4.85   |

## 1841

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                  | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|------------------------------------|--------|-----------------------------------|---------------------|
| Juli                            | 30 | +2 <sup>s</sup> .654 | —0.0914 | +0.0736 | 18 <sup>h</sup> .22 | 22 <sup>h</sup> 47 <sup>m</sup> .2 | 1.2980 | 9 <sup>h</sup> 39 <sup>m</sup> .4 | +4 <sup>h</sup> .96 |
|                                 | 31 | .663                 | .0883   | .0721   | 18.28               | 22 47.3                            | .2974  | 9 35.6                            | 5.07                |
| August                          | 1  | .672                 | .0852   | .0706   | 18.34               | 22 47.4                            | .2968  | 9 31.9                            | 5.18                |
|                                 | 2  | .682                 | .0821   | .0691   | 18.41               | 22 47.5                            | .2962  | 9 28.1                            | 5.28                |
|                                 | 3  | .691                 | .0790   | .0675   | 18.47               | 22 47.6                            | .2956  | 9 24.4                            | 5.39                |
|                                 | 4  | .700                 | .0760   | .0660   | 18.53               | 22 47.7                            | .2949  | 9 20.6                            | 5.49                |
|                                 | 5  | .710                 | .0730   | .0645   | 18.59               | 22 47.8                            | .2943  | 9 16.8                            | 5.59                |
|                                 | 6  | .719                 | .0700   | .0630   | 18.65               | 22 47.9                            | .2937  | 9 13.0                            | 5.68                |
|                                 | 7  | .728                 | .0671   | .0615   | 18.71               | 22 48.0                            | .2931  | 9 9.2                             | 5.78                |
|                                 | 8  | .736                 | .0642   | .0600   | 18.76               | 22 48.1                            | .2925  | 9 5.3                             | 5.88                |
|                                 | 9  | +2.745               | —0.0613 | +0.0584 | 18.82               | 22 48.1                            | 1.2918 | 9 1.5                             | +5.97               |
|                                 | 10 | .754                 | .0584   | .0569   | 18.88               | 22 48.2                            | .2912  | 8 57.6                            | 6.06                |
|                                 | 11 | .762                 | .0556   | .0553   | 18.94               | 22 48.3                            | .2906  | 8 53.8                            | 6.15                |
|                                 | 12 | .771                 | .0528   | .0538   | 18.99               | 22 48.4                            | .2899  | 8 49.9                            | 6.24                |
|                                 | 13 | .779                 | .0500   | .0523   | 19.05               | 22 48.4                            | .2893  | 8 46.0                            | 6.33                |
|                                 | 14 | .788                 | .0472   | .0508   | 19.10               | 22 48.5                            | .2887  | 8 42.1                            | 6.41                |
|                                 | 15 | .796                 | .0445   | .0493   | 19.16               | 22 48.6                            | .2881  | 8 38.2                            | 6.50                |
|                                 | 16 | .804                 | .0418   | .0478   | 19.21               | 22 48.6                            | .2874  | 8 34.2                            | 6.58                |
|                                 | 17 | .812                 | .0391   | .0463   | 19.27               | 22 48.7                            | .2868  | 8 30.3                            | 6.66                |
|                                 | 18 | .820                 | .0365   | .0449   | 19.32               | 22 48.8                            | .2862  | 8 26.3                            | 6.74                |
|                                 | 19 | +2.828               | —0.0339 | +0.0434 | 19.37               | 22 48.8                            | 1.2856 | 8 22.4                            | +6.81               |
|                                 | 20 | .836                 | .0313   | .0420   | 19.42               | 22 48.9                            | .2850  | 8 18.4                            | 6.89                |
|                                 | 21 | .843                 | .0287   | .0406   | 19.48               | 22 49.0                            | .2845  | 8 14.4                            | 6.96                |
|                                 | 22 | .851                 | .0261   | .0392   | 19.53               | 22 49.1                            | .2839  | 8 10.4                            | 7.03                |
|                                 | 23 | .859                 | .0236   | .0378   | 19.58               | 22 49.1                            | .2833  | 8 6.3                             | 7.10                |
|                                 | 24 | .866                 | .0211   | .0365   | 19.63               | 22 49.2                            | .2828  | 8 2.3                             | 7.16                |
|                                 | 25 | .874                 | .0187   | .0352   | 19.68               | 22 49.3                            | .2822  | 7 58.3                            | 7.23                |
|                                 | 26 | .881                 | .0163   | .0339   | 19.72               | 22 49.4                            | .2816  | 7 54.2                            | 7.29                |
|                                 | 27 | .888                 | .0139   | .0326   | 19.77               | 22 49.4                            | .2811  | 7 50.1                            | 7.35                |
|                                 | 28 | .896                 | .0116   | .0314   | 19.82               | 22 49.5                            | .2806  | 7 46.1                            | 7.41                |
|                                 | 29 | +2.903               | —0.0093 | +0.0303 | 19.87               | 22 49.6                            | 1.2801 | 7 42.0                            | +7.46               |
|                                 | 30 | .910                 | .0070   | .0292   | 19.91               | 22 49.7                            | .2796  | 7 37.9                            | 7.52                |
|                                 | 31 | .917                 | .0047   | .0281   | 19.96               | 22 49.8                            | .2792  | 7 33.8                            | 7.57                |
| Septbr.                         | 1  | .924                 | .0024   | .0270   | 20.00               | 22 49.9                            | .2787  | 7 29.6                            | 7.62                |
|                                 | 2  | .931                 | —0.0002 | .0259   | 20.05               | 22 50.0                            | .2783  | 7 25.5                            | 7.67                |
|                                 | 3  | .938                 | +0.0020 | .0249   | 20.09               | 22 50.1                            | .2778  | 7 21.3                            | 7.71                |
|                                 | 4  | .945                 | .0042   | .0239   | 20.14               | 22 50.2                            | .2774  | 7 17.2                            | 7.76                |
|                                 | 5  | .952                 | .0064   | .0230   | 20.18               | 22 50.3                            | .2770  | 7 13.0                            | 7.80                |
|                                 | 6  | .958                 | .0085   | .0221   | 20.22               | 22 50.4                            | .2767  | 7 8.9                             | 7.83                |
|                                 | 7  | .965                 | .0106   | .0213   | 20.27               | 22 50.5                            | .2763  | 7 4.7                             | 7.87                |
|                                 | 8  | +2.972               | +0.0127 | +0.0205 | 20.31               | 22 50.6                            | 1.2760 | 7 0.5                             | +7.90               |
|                                 | 9  | .978                 | .0148   | .0198   | 20.35               | 22 50.8                            | .2757  | 6 56.3                            | 7.94                |
|                                 | 10 | .985                 | .0169   | .0191   | 20.39               | 22 50.9                            | .2754  | 6 52.1                            | 7.97                |
|                                 | 11 | .991                 | .0189   | .0185   | 20.43               | 22 51.0                            | .2751  | 6 47.9                            | 8.00                |
|                                 | 12 | 2.998                | .0209   | .0179   | 20.47               | 22 51.2                            | .2749  | 6 43.7                            | 8.03                |
|                                 | 13 | 3.004                | .0229   | .0174   | 20.51               | 22 51.3                            | .2747  | 6 39.4                            | 8.05                |
|                                 | 14 | .011                 | .0249   | .0169   | 20.55               | 22 51.5                            | .2745  | 6 35.2                            | 8.07                |
|                                 | 15 | .017                 | .0269   | .0165   | 20.59               | 22 51.6                            | .2743  | 6 31.0                            | 8.09                |
|                                 | 16 | .023                 | .0289   | .0161   | 20.63               | 22 51.8                            | .2741  | 6 26.7                            | 8.10                |
|                                 | 17 | .030                 | .0308   | .0158   | 20.67               | 22 52.0                            | .2740  | 6 22.5                            | 8.12                |

## 1841

| <sup>12h</sup><br>M. Z. Berlin | f                    | x       | y       | g      | G                                  | log h  | H                                 | i      |
|--------------------------------|----------------------|---------|---------|--------|------------------------------------|--------|-----------------------------------|--------|
| Septbr. 18                     | +3. <sup>s</sup> 036 | +0.0327 | +0.0156 | 20."71 | 22 <sup>h</sup> 52 <sup>m</sup> .1 | 1.2739 | 6 <sup>h</sup> 18 <sup>m</sup> .2 | +8."13 |
| 19                             | .042                 | .0346   | .0154   | 20.75  | 22 52.3                            | .2738  | 6 13.9                            | 8.14   |
| 20                             | .049                 | .0365   | .0152   | 20.78  | 22 52.5                            | .2737  | 6 9.7                             | 8.14   |
| 21                             | .055                 | .0384   | .0151   | 20.82  | 22 52.7                            | .2737  | 6 5.4                             | 8.15   |
| 22                             | .061                 | .0403   | .0150   | 20.86  | 22 52.9                            | .2736  | 6 1.1                             | 8.15   |
| 23                             | .068                 | .0421   | .0150   | 20.90  | 22 53.1                            | .2736  | 5 56.9                            | 8.15   |
| 24                             | .074                 | .0440   | .0151   | 20.93  | 22 53.3                            | .2737  | 5 52.6                            | 8.15   |
| 25                             | .080                 | .0458   | .0152   | 20.97  | 22 53.5                            | .2737  | 5 48.3                            | 8.14   |
| 26                             | .087                 | .0477   | .0154   | 21.01  | 22 53.7                            | .2738  | 5 44.0                            | 8.13   |
| 27                             | .093                 | .0495   | .0157   | 21.05  | 22 54.0                            | .2739  | 5 39.7                            | 8.12   |
| 28                             | +3.099               | +0.0514 | +0.0160 | 21.08  | 22 54.2                            | 1.2740 | 5 35.4                            | +8.11  |
| 29                             | .106                 | .0532   | .0163   | 21.12  | 22 54.4                            | .2742  | 5 31.1                            | 8.10   |
| 30                             | .112                 | .0550   | .0167   | 21.16  | 22 54.7                            | .2743  | 5 26.9                            | 8.08   |
| Oktbr. 1                       | .118                 | .0569   | .0172   | 21.19  | 22 54.9                            | .2745  | 5 22.6                            | 8.06   |
| 2                              | .125                 | .0587   | .0177   | 21.23  | 22 55.2                            | .2747  | 5 18.3                            | 8.04   |
| 3                              | .131                 | .0606   | .0182   | 21.27  | 22 55.5                            | .2750  | 5 14.1                            | 8.01   |
| 4                              | .138                 | .0624   | .0188   | 21.30  | 22 55.7                            | .2753  | 5 9.8                             | 7.98   |
| 5                              | .144                 | .0643   | .0195   | 21.34  | 22 56.0                            | .2756  | 5 5.5                             | 7.95   |
| 6                              | .151                 | .0661   | .0202   | 21.38  | 22 56.3                            | .2759  | 5 1.3                             | 7.92   |
| 7                              | .157                 | .0680   | .0210   | 21.41  | 22 56.6                            | .2762  | 4 57.0                            | 7.89   |
| 8                              | +3.164               | +0.0698 | +0.0218 | 21.45  | 22 56.9                            | 1.2765 | 4 52.8                            | +7.85  |
| 9                              | .171                 | .0717   | .0227   | 21.49  | 22 57.2                            | .2769  | 4 48.5                            | 7.81   |
| 10                             | .178                 | .0736   | .0236   | 21.53  | 22 57.5                            | .2773  | 4 44.2                            | 7.77   |
| 11                             | .185                 | .0755   | .0246   | 21.57  | 22 57.8                            | .2777  | 4 40.0                            | 7.73   |
| 12                             | .191                 | .0774   | .0256   | 21.60  | 22 58.1                            | .2781  | 4 35.8                            | 7.68   |
| 13                             | .198                 | .0793   | .0266   | 21.64  | 22 58.5                            | .2786  | 4 31.5                            | 7.63   |
| 14                             | .205                 | .0812   | .0277   | 21.68  | 22 58.8                            | .2790  | 4 27.3                            | 7.58   |
| 15                             | .212                 | .0832   | .0288   | 21.72  | 22 59.1                            | .2795  | 4 23.1                            | 7.53   |
| 16                             | .220                 | .0852   | .0300   | 21.76  | 22 59.5                            | .2800  | 4 18.9                            | 7.48   |
| 17                             | .227                 | .0872   | .0312   | 21.80  | 22 59.8                            | .2805  | 4 14.7                            | 7.42   |
| 18                             | +3.234               | +0.0892 | +0.0325 | 21.84  | 23 0.1                             | 1.2811 | 4 10.5                            | +7.36  |
| 19                             | .241                 | .0912   | .0338   | 21.88  | 23 0.5                             | .2816  | 4 6.3                             | 7.30   |
| 20                             | .249                 | .0932   | .0351   | 21.92  | 23 0.9                             | .2822  | 4 2.1                             | 7.23   |
| 21                             | .256                 | .0953   | .0364   | 21.96  | 23 1.2                             | .2827  | 3 58.0                            | 7.17   |
| 22                             | .264                 | .0974   | .0378   | 22.00  | 23 1.6                             | .2833  | 3 53.8                            | 7.10   |
| 23                             | .272                 | .0995   | .0392   | 22.05  | 23 2.0                             | .2839  | 3 49.6                            | 7.03   |
| 24                             | .279                 | .1017   | .0406   | 22.09  | 23 2.3                             | .2845  | 3 45.5                            | 6.95   |
| 25                             | .287                 | .1039   | .0421   | 22.14  | 23 2.7                             | .2851  | 3 41.3                            | 6.88   |
| 26                             | .295                 | .1061   | .0436   | 22.18  | 23 3.1                             | .2857  | 3 37.2                            | 6.80   |
| 27                             | .303                 | .1084   | .0451   | 22.22  | 23 3.5                             | .2863  | 3 33.1                            | 6.72   |
| 28                             | +3.311               | +0.1106 | +0.0466 | 22.27  | 23 3.8                             | 1.2869 | 3 29.0                            | +6.64  |
| 29                             | .319                 | .1129   | .0481   | 22.31  | 23 4.2                             | .2876  | 3 24.9                            | 6.56   |
| 30                             | .328                 | .1152   | .0496   | 22.36  | 23 4.6                             | .2882  | 3 20.8                            | 6.47   |
| 31                             | .336                 | .1175   | .0512   | 22.41  | 23 5.0                             | .2889  | 3 16.7                            | 6.39   |
| Novbr. 1                       | .344                 | .1199   | .0528   | 22.46  | 23 5.4                             | .2895  | 3 12.7                            | 6.30   |
| 2                              | .353                 | .1224   | .0544   | 22.50  | 23 5.8                             | .2902  | 3 8.6                             | 6.20   |
| 3                              | .362                 | .1248   | .0560   | 22.55  | 23 6.2                             | .2908  | 3 4.5                             | 6.11   |
| 4                              | .371                 | .1273   | .0576   | 22.60  | 23 6.6                             | .2915  | 3 0.5                             | 6.02   |
| 5                              | .379                 | .1298   | .0592   | 22.65  | 23 7.0                             | .2921  | 2 56.5                            | 5.92   |
| 6                              | .388                 | .1323   | .0608   | 22.70  | 23 7.4                             | .2928  | 2 52.5                            | 5.82   |

## 1841

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                 | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|-----------------------------------|--------|-----------------------------------|---------------------|
| Novbr.                          | 7  | +3 <sup>s</sup> .398 | +0.1348 | +0.0624 | 22 <sup>m</sup> .76 | 23 <sup>h</sup> 7 <sup>m</sup> .8 | 1.2934 | 2 <sup>h</sup> 48 <sup>m</sup> .5 | +5 <sup>m</sup> .72 |
|                                 | 8  | .407                 | .1374   | .0640   | 22.81               | 23 8.2                            | .2941  | 2 44.5                            | 5.62                |
|                                 | 9  | .416                 | .1401   | .0656   | 22.86               | 23 8.5                            | .2948  | 2 40.5                            | 5.51                |
|                                 | 10 | .425                 | .1428   | .0672   | 22.91               | 23 8.9                            | .2954  | 2 36.5                            | 5.41                |
|                                 | 11 | .435                 | .1455   | .0688   | 22.97               | 23 9.3                            | .2961  | 2 32.5                            | 5.30                |
|                                 | 12 | .444                 | .1482   | .0704   | 23.02               | 23 9.7                            | .2967  | 2 28.6                            | 5.19                |
|                                 | 13 | .454                 | .1509   | .0719   | 23.08               | 23 10.1                           | .2973  | 2 24.6                            | 5.08                |
|                                 | 14 | .463                 | .1537   | .0734   | 23.13               | 23 10.5                           | .2979  | 2 20.7                            | 4.96                |
|                                 | 15 | .473                 | .1565   | .0749   | 23.19               | 23 10.9                           | .2985  | 2 16.8                            | 4.85                |
|                                 | 16 | .483                 | .1594   | .0764   | 23.25               | 23 11.3                           | .2991  | 2 12.9                            | 4.73                |
|                                 | 17 | +3.493               | +0.1623 | +0.0779 | 23.31               | 23 11.6                           | 1.2997 | 2 9.0                             | +4.62               |
|                                 | 18 | .503                 | .1653   | .0793   | 23.37               | 23 12.0                           | .3003  | 2 5.1                             | 4.49                |
|                                 | 19 | .513                 | .1683   | .0808   | 23.43               | 23 12.4                           | .3009  | 2 1.2                             | 4.37                |
|                                 | 20 | .523                 | .1713   | .0822   | 23.49               | 23 12.8                           | .3015  | 1 57.3                            | 4.25                |
|                                 | 21 | .534                 | .1744   | .0836   | 23.55               | 23 13.1                           | .3020  | 1 53.4                            | 4.13                |
|                                 | 22 | .544                 | .1775   | .0850   | 23.61               | 23 13.5                           | .3026  | 1 49.6                            | 4.01                |
|                                 | 23 | .555                 | .1806   | .0863   | 23.67               | 23 13.8                           | .3031  | 1 45.7                            | 3.88                |
|                                 | 24 | .566                 | .1838   | .0876   | 23.74               | 23 14.2                           | .3037  | 1 41.9                            | 3.75                |
|                                 | 25 | .576                 | .1870   | .0889   | 23.80               | 23 14.5                           | .3042  | 1 38.0                            | 3.62                |
|                                 | 26 | .587                 | .1903   | .0902   | 23.87               | 23 14.9                           | .3047  | 1 34.2                            | 3.49                |
|                                 | 27 | +3.598               | +0.1935 | +0.0914 | 23.93               | 23 15.2                           | 1.3051 | 1 30.4                            | +3.36               |
|                                 | 28 | .609                 | .1968   | .0926   | 24.00               | 23 15.6                           | .3056  | 1 26.5                            | 3.23                |
|                                 | 29 | .620                 | .2001   | .0937   | 24.06               | 23 15.9                           | .3061  | 1 22.7                            | 3.10                |
|                                 | 30 | .631                 | .2034   | .0948   | 24.13               | 23 16.2                           | .3065  | 1 18.9                            | 2.97                |
| Dezbr.                          | 1  | .642                 | .2067   | .0958   | 24.20               | 23 16.5                           | .3069  | 1 15.1                            | 2.83                |
|                                 | 2  | .653                 | .2101   | .0968   | 24.27               | 23 16.8                           | .3073  | 1 11.3                            | 2.70                |
|                                 | 3  | .665                 | .2135   | .0977   | 24.33               | 23 17.1                           | .3077  | 1 7.5                             | 2.56                |
|                                 | 4  | .676                 | .2170   | .0986   | 24.40               | 23 17.4                           | .3080  | 1 3.7                             | 2.42                |
|                                 | 5  | .687                 | .2205   | .0995   | 24.47               | 23 17.7                           | .3084  | 1 0.0                             | 2.29                |
|                                 | 6  | .699                 | .2240   | .1003   | 24.54               | 23 18.0                           | .3087  | 0 56.2                            | 2.15                |
|                                 | 7  | +3.710               | +0.2275 | +0.1011 | 24.61               | 23 18.3                           | 1.3090 | 0 52.4                            | +2.00               |
|                                 | 8  | .722                 | .2310   | .1018   | 24.68               | 23 18.6                           | .3093  | 0 48.6                            | 1.86                |
|                                 | 9  | .733                 | .2346   | .1025   | 24.76               | 23 18.8                           | .3095  | 0 44.9                            | 1.72                |
|                                 | 10 | .745                 | .2382   | .1031   | 24.83               | 23 19.1                           | .3098  | 0 41.1                            | 1.58                |
|                                 | 11 | .757                 | .2418   | .1037   | 24.90               | 23 19.4                           | .3100  | 0 37.4                            | 1.44                |
|                                 | 12 | .768                 | .2455   | .1042   | 24.97               | 23 19.6                           | .3102  | 0 33.6                            | 1.30                |
|                                 | 13 | .780                 | .2491   | .1047   | 25.05               | 23 19.8                           | .3104  | 0 29.9                            | 1.16                |
|                                 | 14 | .792                 | .2528   | .1051   | 25.12               | 23 20.1                           | .3106  | 0 26.1                            | 1.01                |
|                                 | 15 | .803                 | .2564   | .1055   | 25.19               | 23 20.3                           | .3107  | 0 22.4                            | 0.87                |
|                                 | 16 | .815                 | .2601   | .1058   | 25.27               | 23 20.5                           | .3108  | 0 18.7                            | 0.73                |
|                                 | 17 | +3.827               | +0.2638 | +0.1061 | 25.34               | 23 20.7                           | 1.3109 | 0 14.9                            | +0.58               |
|                                 | 18 | .839                 | .2675   | .1063   | 25.42               | 23 20.9                           | .3110  | 0 11.2                            | 0.44                |
|                                 | 19 | .851                 | .2712   | .1064   | 25.49               | 23 21.1                           | .3111  | 0 7.5                             | 0.29                |
|                                 | 20 | .863                 | .2750   | .1064   | 25.57               | 23 21.3                           | .3111  | 0 3.7                             | +0.14               |
|                                 | 21 | .874                 | .2787   | .1064   | 25.64               | 23 21.5                           | .3111  | 0 0.0                             | 0.00                |
|                                 | 22 | .886                 | .2825   | .1064   | 25.72               | 23 21.7                           | .3111  | 23 56.2                           | -0.15               |
|                                 | 23 | .898                 | .2862   | .1063   | 25.79               | 23 21.8                           | .3111  | 23 52.5                           | 0.29                |
|                                 | 24 | .910                 | .2900   | .1062   | 25.87               | 23 22.0                           | .3110  | 23 48.8                           | 0.44                |
|                                 | 25 | .922                 | .2937   | .1060   | 25.94               | 23 22.2                           | .3110  | 23 45.0                           | 0.58                |
|                                 | 26 | .934                 | .2975   | .1058   | 26.02               | 23 22.3                           | .3109  | 23 41.3                           | 0.73                |

## 1841

| <sup>12<sup>h</sup></sup> | f                   | x       | y       | g     | G                                  | log h  | H                                  | i     |
|---------------------------|---------------------|---------|---------|-------|------------------------------------|--------|------------------------------------|-------|
| M. Z. Berlin              |                     |         |         |       |                                    |        |                                    |       |
| Dezbr. 27                 | +3 <sup>s</sup> 946 | +0.3012 | +0.1055 | 26.09 | 23 <sup>h</sup> 22 <sup>m</sup> .4 | 1.3108 | 23 <sup>h</sup> 37 <sup>m</sup> .5 | —0.87 |
| 28                        | .957                | .3050   | .1052   | 26.17 | 23 22.6                            | .3106  | 23 33.8                            | 1.01  |
| 29                        | .969                | .3088   | .1048   | 26.24 | 23 22.7                            | .3105  | 23 30.0                            | 1.16  |
| 30                        | .981                | .3126   | .1044   | 26.32 | 23 22.8                            | .3103  | 23 26.3                            | 1.30  |
| 31                        | .992                | .3164   | .1040   | 26.39 | 23 22.9                            | .3101  | 23 22.5                            | 1.44  |

## 1842

|         |    |                     |         |         |      |                                    |        |                                    |       |
|---------|----|---------------------|---------|---------|------|------------------------------------|--------|------------------------------------|-------|
| Januar  | 1  | +0 <sup>s</sup> 933 | —0.6303 | +0.1032 | 7.41 | 21 <sup>h</sup> 40 <sup>m</sup> .1 | 1.3098 | 23 <sup>h</sup> 18 <sup>m</sup> .8 | —1.58 |
|         | 2  | .945                | .6271   | .1026   | 7.48 | 21 41.4                            | .3096  | 23 15.0                            | 1.72  |
|         | 3  | .956                | .6240   | .1019   | 7.54 | 21 42.6                            | .3093  | 23 11.2                            | 1.87  |
|         | 4  | .968                | .6208   | .1012   | 7.60 | 21 43.8                            | .3090  | 23 7.4                             | 2.01  |
|         | 5  | .979                | .6177   | .1004   | 7.67 | 21 45.0                            | .3087  | 23 3.7                             | 2.15  |
|         | 6  | 0.991               | .6145   | .0996   | 7.73 | 21 46.2                            | .3084  | 22 59.9                            | 2.29  |
|         | 7  | 1.002               | .6113   | .0987   | 7.79 | 21 47.3                            | .3080  | 22 56.1                            | 2.43  |
|         | 8  | .013                | .6081   | .0978   | 7.86 | 21 48.4                            | .3077  | 22 52.3                            | 2.56  |
|         | 9  | .025                | .6049   | .0969   | 7.92 | 21 49.4                            | .3073  | 22 48.5                            | 2.70  |
|         | 10 | .036                | .6017   | .0959   | 7.99 | 21 50.4                            | .3069  | 22 44.7                            | 2.84  |
|         | 11 | +1.047              | —0.5984 | +0.0948 | 8.05 | 21 51.4                            | 1.3065 | 22 40.9                            | —2.97 |
|         | 12 | .058                | .5952   | .0937   | 8.12 | 21 52.3                            | .3061  | 22 37.0                            | 3.11  |
|         | 13 | .069                | .5920   | .0925   | 8.18 | 21 53.2                            | .3056  | 22 33.2                            | 3.24  |
|         | 14 | .080                | .5888   | .0913   | 8.24 | 21 54.1                            | .3051  | 22 29.4                            | 3.37  |
|         | 15 | .091                | .5856   | .0901   | 8.31 | 21 54.9                            | .3046  | 22 25.5                            | 3.50  |
|         | 16 | .102                | .5824   | .0888   | 8.37 | 21 55.7                            | .3041  | 22 21.7                            | 3.63  |
|         | 17 | .112                | .5791   | .0876   | 8.44 | 21 56.5                            | .3036  | 22 17.8                            | 3.76  |
|         | 18 | .123                | .5759   | .0863   | 8.50 | 21 57.3                            | .3031  | 22 13.9                            | 3.89  |
|         | 19 | .133                | .5727   | .0850   | 8.57 | 21 58.0                            | .3026  | 22 10.1                            | 4.02  |
|         | 20 | .144                | .5695   | .0836   | 8.63 | 21 58.7                            | .3020  | 22 6.2                             | 4.14  |
|         | 21 | +1.154              | —0.5663 | +0.0822 | 8.70 | 21 59.3                            | 1.3014 | 22 2.3                             | —4.27 |
|         | 22 | .164                | .5632   | .0807   | 8.76 | 21 59.9                            | .3009  | 21 58.4                            | 4.39  |
|         | 23 | .174                | .5601   | .0793   | 8.82 | 22 0.5                             | .3003  | 21 54.5                            | 4.51  |
|         | 24 | .184                | .5570   | .0778   | 8.88 | 22 1.1                             | .2997  | 21 50.5                            | 4.63  |
|         | 25 | .194                | .5539   | .0763   | 8.95 | 22 1.7                             | .2991  | 21 46.6                            | 4.75  |
|         | 26 | .204                | .5508   | .0748   | 9.01 | 22 2.3                             | .2985  | 21 42.6                            | 4.87  |
|         | 27 | .214                | .5477   | .0733   | 9.07 | 22 2.8                             | .2979  | 21 38.7                            | 4.98  |
|         | 28 | .224                | .5447   | .0717   | 9.13 | 22 3.3                             | .2972  | 21 34.7                            | 5.10  |
|         | 29 | .233                | .5417   | .0701   | 9.19 | 22 3.8                             | .2966  | 21 30.8                            | 5.21  |
|         | 30 | .243                | .5387   | .0685   | 9.25 | 22 4.3                             | .2959  | 21 26.8                            | 5.32  |
| Februar | 31 | +1.252              | —0.5357 | +0.0669 | 9.31 | 22 4.8                             | 1.2953 | 21 22.8                            | —5.43 |
|         | 1  | .262                | .5328   | .0653   | 9.37 | 22 5.2                             | .2946  | 21 18.8                            | 5.53  |
|         | 2  | .271                | .5298   | .0636   | 9.43 | 22 5.7                             | .2940  | 21 14.7                            | 5.64  |
|         | 3  | .280                | .5269   | .0620   | 9.49 | 22 6.1                             | .2933  | 21 10.7                            | 5.74  |
|         | 4  | .289                | .5240   | .0604   | 9.54 | 22 6.5                             | .2926  | 21 6.7                             | 5.84  |
|         | 5  | .298                | .5212   | .0588   | 9.60 | 22 6.9                             | .2920  | 21 2.6                             | 5.94  |
|         | 6  | .307                | .5184   | .0572   | 9.66 | 22 7.3                             | .2913  | 20 58.5                            | 6.04  |
|         | 7  | .315                | .5156   | .0556   | 9.71 | 22 7.7                             | .2907  | 20 54.5                            | 6.13  |
|         | 8  | .324                | .5129   | .0540   | 9.77 | 22 8.1                             | .2900  | 20 50.4                            | 6.23  |
|         | 9  | .332                | .5102   | .0524   | 9.82 | 22 8.4                             | .2893  | 20 46.3                            | 6.32  |

## 1842

| <sup>12<sup>h</sup></sup><br>M. Z. Berlin | f                    | x       | y       | g                 | G                                | log h  | H                                 | i                  |
|-------------------------------------------|----------------------|---------|---------|-------------------|----------------------------------|--------|-----------------------------------|--------------------|
| Februar 10                                | +1 <sup>s</sup> .341 | —0.5075 | +0.0508 | 9 <sup>h</sup> 87 | 22 <sup>h</sup> 8 <sup>m</sup> 8 | 1.2887 | 20 <sup>h</sup> 42 <sup>m</sup> 2 | —6 <sup>h</sup> 41 |
| 11                                        | .349                 | .5048   | .0493   | 9.93              | 22 9.1                           | .2881  | 20 38.1                           | 6.50               |
| 12                                        | .357                 | .5022   | .0477   | 9.98              | 22 9.5                           | .2874  | 20 33.9                           | 6.58               |
| 13                                        | .365                 | .4996   | .0462   | 10.03             | 22 9.8                           | .2868  | 20 29.8                           | 6.67               |
| 14                                        | .373                 | .4971   | .0447   | 10.08             | 22 10.1                          | .2861  | 20 25.6                           | 6.75               |
| 15                                        | .381                 | .4946   | .0432   | 10.13             | 22 10.5                          | .2855  | 20 21.5                           | 6.83               |
| 16                                        | .389                 | .4921   | .0417   | 10.18             | 22 10.8                          | .2849  | 20 17.3                           | 6.90               |
| 17                                        | .397                 | .4896   | .0402   | 10.23             | 22 11.1                          | .2843  | 20 13.1                           | 6.98               |
| 18                                        | .404                 | .4871   | .0387   | 10.28             | 22 11.4                          | .2837  | 20 8.9                            | 7.05               |
| 19                                        | .412                 | .4847   | .0373   | 10.33             | 22 11.7                          | .2831  | 20 4.7                            | 7.12               |
| 20                                        | +1.420               | —0.4823 | +0.0359 | 10.38             | 22 12.0                          | 1.2825 | 20 0.5                            | —7.19              |
| 21                                        | .427                 | .4799   | .0346   | 10.43             | 22 12.4                          | .2819  | 19 56.3                           | 7.26               |
| 22                                        | .434                 | .4776   | .0333   | 10.47             | 22 12.7                          | .2814  | 19 52.1                           | 7.32               |
| 23                                        | .442                 | .4753   | .0320   | 10.52             | 22 13.0                          | .2808  | 19 47.9                           | 7.38               |
| 24                                        | .449                 | .4731   | .0307   | 10.56             | 22 13.3                          | .2803  | 19 43.6                           | 7.44               |
| 25                                        | .456                 | .4709   | .0295   | 10.61             | 22 13.6                          | .2798  | 19 39.4                           | 7.50               |
| 26                                        | .463                 | .4687   | .0283   | 10.65             | 22 13.9                          | .2793  | 19 35.1                           | 7.56               |
| 27                                        | .470                 | .4665   | .0272   | 10.70             | 22 14.2                          | .2788  | 19 30.8                           | 7.61               |
| 28                                        | .477                 | .4644   | .0261   | 10.74             | 22 14.6                          | .2784  | 19 26.5                           | 7.66               |
| März 1                                    | .483                 | .4623   | .0251   | 10.78             | 22 14.9                          | .2779  | 19 22.3                           | 7.71               |
| 2                                         | +1.490               | —0.4602 | +0.0241 | 10.82             | 22 15.2                          | 1.2775 | 19 18.0                           | —7.75              |
| 3                                         | .497                 | .4582   | .0232   | 10.86             | 22 15.6                          | .2771  | 19 13.7                           | 7.79               |
| 4                                         | .504                 | .4562   | .0223   | 10.90             | 22 15.9                          | .2767  | 19 9.4                            | 7.83               |
| 5                                         | .510                 | .4542   | .0215   | 10.94             | 22 16.3                          | .2764  | 19 5.1                            | 7.87               |
| 6                                         | .517                 | .4522   | .0207   | 10.98             | 22 16.6                          | .2761  | 19 0.8                            | 7.90               |
| 7                                         | .523                 | .4502   | .0199   | 11.02             | 22 17.0                          | .2757  | 18 56.5                           | 7.94               |
| 8                                         | .530                 | .4483   | .0192   | 11.06             | 22 17.3                          | .2754  | 18 52.1                           | 7.97               |
| 9                                         | .536                 | .4464   | .0185   | 11.10             | 22 17.7                          | .2751  | 18 47.8                           | 8.00               |
| 10                                        | .543                 | .4445   | .0179   | 11.14             | 22 18.1                          | .2749  | 18 43.5                           | 8.02               |
| 11                                        | .549                 | .4426   | .0173   | 11.18             | 22 18.5                          | .2746  | 18 39.2                           | 8.05               |
| 12                                        | +1.555               | —0.4408 | +0.0168 | 11.21             | 22 18.9                          | 1.2744 | 18 34.8                           | —8.07              |
| 13                                        | .562                 | .4390   | .0164   | 11.25             | 22 19.3                          | .2742  | 18 30.5                           | 8.09               |
| 14                                        | .568                 | .4372   | .0161   | 11.28             | 22 19.7                          | .2741  | 18 26.2                           | 8.10               |
| 15                                        | .574                 | .4355   | .0158   | 11.32             | 22 20.1                          | .2740  | 18 21.8                           | 8.12               |
| 16                                        | .580                 | .4337   | .0155   | 11.35             | 22 20.5                          | .2739  | 18 17.5                           | 8.13               |
| 17                                        | .587                 | .4320   | .0153   | 11.39             | 22 20.9                          | .2738  | 18 13.2                           | 8.14               |
| 18                                        | .593                 | .4303   | .0151   | 11.42             | 22 21.4                          | .2737  | 18 8.8                            | 8.14               |
| 19                                        | .599                 | .4286   | .0150   | 11.46             | 22 21.8                          | .2736  | 18 4.5                            | 8.15               |
| 20                                        | .605                 | .4270   | .0150   | 11.49             | 22 22.3                          | .2736  | 18 0.2                            | 8.15               |
| 21                                        | .611                 | .4253   | .0150   | 11.52             | 22 22.7                          | .2736  | 17 55.9                           | 8.15               |
| 22                                        | +1.618               | —0.4236 | +0.0151 | 11.56             | 22 23.2                          | 1.2737 | 17 51.5                           | —8.14              |
| 23                                        | .624                 | .4219   | .0152   | 11.59             | 22 23.7                          | .2737  | 17 47.2                           | 8.14               |
| 24                                        | .630                 | .4202   | .0154   | 11.62             | 22 24.2                          | .2738  | 17 42.9                           | 8.13               |
| 25                                        | .636                 | .4186   | .0157   | 11.66             | 22 24.7                          | .2739  | 17 38.6                           | 8.12               |
| 26                                        | .642                 | .4170   | .0160   | 11.69             | 22 25.3                          | .2741  | 17 34.3                           | 8.10               |
| 27                                        | .649                 | .4154   | .0164   | 11.72             | 22 25.8                          | .2742  | 17 30.0                           | 8.09               |
| 28                                        | .655                 | .4138   | .0168   | 11.76             | 22 26.3                          | .2744  | 17 25.7                           | 8.07               |
| 29                                        | .661                 | .4121   | .0173   | 11.79             | 22 26.9                          | .2746  | 17 21.4                           | 8.05               |
| 30                                        | .668                 | .4105   | .0178   | 11.82             | 22 27.4                          | .2748  | 17 17.1                           | 8.03               |
| 31                                        | .674                 | .4088   | .0183   | 11.85             | 22 28.0                          | .2750  | 17 12.9                           | 8.00               |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                 | log h  | H                                | i     |
|---------------------------------|----|--------|---------|---------|-------|-----------------------------------|--------|----------------------------------|-------|
| April                           | 1  | +1.680 | —0.4072 | +0.0189 | 11.89 | 22 <sup>b</sup> 28 <sup>m</sup> 6 | 1.2753 | 17 <sup>h</sup> 8 <sup>m</sup> 6 | —7.98 |
|                                 | 2  | .687   | .4055   | .0196   | 11.92 | 22 29.2                           | .2756  | 17 4.4                           | 7.95  |
|                                 | 3  | .693   | .4038   | .0204   | 11.95 | 22 29.7                           | .2759  | 17 0.1                           | 7.92  |
|                                 | 4  | .699   | .4022   | .0212   | 11.98 | 22 30.3                           | .2763  | 16 55.9                          | 7.88  |
|                                 | 5  | .706   | .4006   | .0220   | 12.02 | 22 30.9                           | .2766  | 16 51.6                          | 7.84  |
|                                 | 6  | .713   | .3990   | .0229   | 12.05 | 22 31.6                           | .2770  | 16 47.4                          | 7.80  |
|                                 | 7  | .719   | .3973   | .0238   | 12.08 | 22 32.2                           | .2774  | 16 43.2                          | 7.76  |
|                                 | 8  | .726   | .3957   | .0248   | 12.12 | 22 32.8                           | .2778  | 16 39.0                          | 7.72  |
|                                 | 9  | .733   | .3940   | .0258   | 12.15 | 22 33.5                           | .2782  | 16 34.8                          | 7.67  |
|                                 | 10 | .739   | .3923   | .0269   | 12.18 | 22 34.1                           | .2787  | 16 30.6                          | 7.62  |
|                                 | 11 | +1.746 | —0.3906 | +0.0280 | 12.22 | 22 34.8                           | 1.2792 | 16 26.5                          | —7.57 |
|                                 | 12 | .753   | .3889   | .0291   | 12.25 | 22 35.4                           | .2796  | 16 22.3                          | 7.52  |
|                                 | 13 | .760   | .3872   | .0302   | 12.29 | 22 36.1                           | .2801  | 16 18.2                          | 7.47  |
|                                 | 14 | .767   | .3854   | .0314   | 12.32 | 22 36.8                           | .2806  | 16 14.0                          | 7.41  |
|                                 | 15 | .774   | .3836   | .0326   | 12.36 | 22 37.5                           | .2811  | 16 9.9                           | 7.35  |
|                                 | 16 | .781   | .3818   | .0339   | 12.39 | 22 38.2                           | .2816  | 16 5.8                           | 7.29  |
|                                 | 17 | .789   | .3800   | .0352   | 12.43 | 22 38.9                           | .2822  | 16 1.7                           | 7.23  |
|                                 | 18 | .796   | .3782   | .0365   | 12.47 | 22 39.6                           | .2827  | 15 57.6                          | 7.16  |
|                                 | 19 | .803   | .3764   | .0378   | 12.51 | 22 40.3                           | .2833  | 15 53.5                          | 7.09  |
|                                 | 20 | .811   | .3745   | .0392   | 12.54 | 22 41.0                           | .2838  | 15 49.5                          | 7.02  |
|                                 | 21 | +1.818 | —0.3726 | +0.0406 | 12.58 | 22 41.7                           | 1.2844 | 15 45.4                          | —6.95 |
|                                 | 22 | .826   | .3707   | .0420   | 12.62 | 22 42.4                           | .2850  | 15 41.4                          | 6.88  |
|                                 | 23 | .834   | .3687   | .0434   | 12.66 | 22 43.1                           | .2856  | 15 37.4                          | 6.81  |
|                                 | 24 | .842   | .3667   | .0449   | 12.70 | 22 43.9                           | .2863  | 15 33.3                          | 6.73  |
|                                 | 25 | .849   | .3647   | .0464   | 12.74 | 22 44.6                           | .2869  | 15 29.4                          | 6.65  |
|                                 | 26 | .857   | .3626   | .0479   | 12.78 | 22 45.3                           | .2875  | 15 25.4                          | 6.57  |
|                                 | 27 | .865   | .3606   | .0494   | 12.82 | 22 46.0                           | .2881  | 15 21.4                          | 6.49  |
|                                 | 28 | .873   | .3585   | .0509   | 12.86 | 22 46.8                           | .2888  | 15 17.4                          | 6.40  |
|                                 | 29 | .881   | .3564   | .0524   | 12.91 | 22 47.5                           | .2894  | 15 13.5                          | 6.31  |
|                                 | 30 | .890   | .3542   | .0540   | 12.95 | 22 48.2                           | .2900  | 15 9.6                           | 6.23  |
| Mai                             | 1  | +1.898 | —0.3520 | +0.0555 | 12.99 | 22 49.0                           | 1.2906 | 15 5.6                           | —6.14 |
|                                 | 2  | .907   | .3498   | .0571   | 13.04 | 22 49.7                           | .2913  | 15 1.7                           | 6.05  |
|                                 | 3  | .915   | .3475   | .0587   | 13.08 | 22 50.4                           | .2919  | 14 57.9                          | 5.95  |
|                                 | 4  | .924   | .3452   | .0602   | 13.13 | 22 51.1                           | .2925  | 14 54.0                          | 5.86  |
|                                 | 5  | .932   | .3429   | .0618   | 13.18 | 22 51.9                           | .2932  | 14 50.1                          | 5.76  |
|                                 | 6  | .941   | .3405   | .0633   | 13.22 | 22 52.6                           | .2938  | 14 46.3                          | 5.66  |
|                                 | 7  | .950   | .3381   | .0648   | 13.27 | 22 53.3                           | .2944  | 14 42.5                          | 5.56  |
|                                 | 8  | .959   | .3357   | .0663   | 13.32 | 22 54.0                           | .2950  | 14 38.7                          | 5.46  |
|                                 | 9  | .968   | .3332   | .0678   | 13.37 | 22 54.7                           | .2957  | 14 34.8                          | 5.36  |
|                                 | 10 | .977   | .3307   | .0693   | 13.42 | 22 55.5                           | .2963  | 14 31.0                          | 5.26  |
|                                 | 11 | +1.986 | —0.3282 | +0.0708 | 13.47 | 22 56.2                           | 1.2969 | 14 27.2                          | —5.15 |
|                                 | 12 | 1.996  | .3256   | .0723   | 13.52 | 22 56.9                           | .2975  | 14 23.5                          | 5.04  |
|                                 | 13 | 2.005  | .3230   | .0738   | 13.57 | 22 57.6                           | .2981  | 14 19.7                          | 4.93  |
|                                 | 14 | .014   | .3204   | .0752   | 13.63 | 22 58.3                           | .2987  | 14 15.9                          | 4.82  |
|                                 | 15 | .024   | .3178   | .0766   | 13.68 | 22 58.9                           | .2992  | 14 12.2                          | 4.71  |
|                                 | 16 | .033   | .3151   | .0780   | 13.73 | 22 59.6                           | .2998  | 14 8.5                           | 4.60  |
|                                 | 17 | .043   | .3124   | .0794   | 13.79 | 23 0.3                            | .3004  | 14 4.8                           | 4.49  |
|                                 | 18 | .053   | .3096   | .0808   | 13.84 | 23 1.0                            | .3009  | 14 1.0                           | 4.38  |
|                                 | 19 | .063   | .3068   | .0822   | 13.90 | 23 1.6                            | .3015  | 13 57.4                          | 4.26  |
|                                 | 20 | .073   | .3040   | .0835   | 13.96 | 23 2.3                            | .3020  | 13 53.7                          | 4.14  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g      | G                                | log h  | H                                 | i      |
|---------------------------------|----|----------------------|---------|---------|--------|----------------------------------|--------|-----------------------------------|--------|
| Mai                             | 21 | +2. <sup>s</sup> 083 | —0.3012 | +0.0848 | 14."01 | 23 <sup>h</sup> 2 <sup>m</sup> 9 | 1.3025 | 13 <sup>h</sup> 50 <sup>m</sup> 0 | —4."02 |
|                                 | 22 | .093                 | .2983   | .0861   | 14.07  | 23 3.5                           | .3030  | 13 46.3                           | 3.90   |
|                                 | 23 | .103                 | .2954   | .0873   | 14.13  | 23 4.2                           | .3035  | 13 42.7                           | 3.78   |
|                                 | 24 | .113                 | .2924   | .0885   | 14.19  | 23 4.8                           | .3040  | 13 39.1                           | 3.66   |
|                                 | 25 | .123                 | .2894   | .0897   | 14.25  | 23 5.4                           | .3045  | 13 35.4                           | 3.54   |
|                                 | 26 | .134                 | .2864   | .0909   | 14.31  | 23 6.0                           | .3049  | 13 31.8                           | 3.42   |
|                                 | 27 | .144                 | .2834   | .0920   | 14.37  | 23 6.6                           | .3054  | 13 28.2                           | 3.29   |
|                                 | 28 | .155                 | .2803   | .0931   | 14.43  | 23 7.2                           | .3058  | 13 24.6                           | 3.17   |
|                                 | 29 | .165                 | .2772   | .0942   | 14.49  | 23 7.7                           | .3063  | 13 21.0                           | 3.04   |
|                                 | 30 | .176                 | .2741   | .0953   | 14.56  | 23 8.3                           | .3067  | 13 17.4                           | 2.91   |
| Juni                            | 31 | +2.186               | —0.2710 | +0.0963 | 14.62  | 23 8.8                           | 1.3071 | 13 13.8                           | —2.79  |
|                                 | 1  | .197                 | .2678   | .0972   | 14.68  | 23 9.4                           | .3074  | 13 10.2                           | 2.66   |
|                                 | 2  | .208                 | .2646   | .0981   | 14.75  | 23 9.9                           | .3078  | 13 6.7                            | 2.53   |
|                                 | 3  | .218                 | .2613   | .0989   | 14.81  | 23 10.4                          | .3081  | 13 3.1                            | 2.40   |
|                                 | 4  | .229                 | .2581   | .0997   | 14.88  | 23 10.9                          | .3084  | 12 59.6                           | 2.27   |
|                                 | 5  | .240                 | .2548   | .1004   | 14.94  | 23 11.4                          | .3087  | 12 56.0                           | 2.14   |
|                                 | 6  | .251                 | .2515   | .1011   | 15.01  | 23 11.9                          | .3090  | 12 52.4                           | 2.01   |
|                                 | 7  | .262                 | .2482   | .1018   | 15.08  | 23 12.3                          | .3093  | 12 48.9                           | 1.87   |
|                                 | 8  | .273                 | .2449   | .1025   | 15.14  | 23 12.8                          | .3095  | 12 45.4                           | 1.74   |
|                                 | 9  | .284                 | .2415   | .1031   | 15.21  | 23 13.2                          | .3098  | 12 41.8                           | 1.61   |
|                                 | 10 | +2.295               | —0.2381 | +0.1037 | 15.28  | 23 13.7                          | 1.3100 | 12 38.3                           | —1.47  |
|                                 | 11 | .306                 | .2347   | .1042   | 15.35  | 23 14.1                          | .3102  | 12 34.8                           | 1.34   |
|                                 | 12 | .317                 | .2313   | .1046   | 15.41  | 23 14.5                          | .3104  | 12 31.3                           | 1.21   |
|                                 | 13 | .329                 | .2279   | .1050   | 15.48  | 23 14.9                          | .3105  | 12 27.8                           | 1.07   |
|                                 | 14 | .340                 | .2245   | .1053   | 15.55  | 23 15.3                          | .3107  | 12 24.3                           | 0.94   |
|                                 | 15 | .351                 | .2210   | .1056   | 15.62  | 23 15.7                          | .3108  | 12 20.7                           | 0.80   |
|                                 | 16 | .362                 | .2175   | .1059   | 15.69  | 23 16.0                          | .3109  | 12 17.2                           | 0.67   |
|                                 | 17 | .373                 | .2140   | .1061   | 15.76  | 23 16.4                          | .3110  | 12 13.7                           | 0.53   |
|                                 | 18 | .384                 | .2105   | .1063   | 15.83  | 23 16.7                          | .3110  | 12 10.2                           | 0.40   |
|                                 | 19 | .396                 | .2070   | .1064   | 15.90  | 23 17.0                          | .3111  | 12 6.7                            | 0.26   |
| Juli                            | 20 | +2.407               | —0.2035 | +0.1065 | 15.97  | 23 17.4                          | 1.3111 | 12 3.2                            | —0.12  |
|                                 | 21 | .418                 | .2000   | .1065   | 16.04  | 23 17.7                          | .3111  | 11 59.7                           | +0.01  |
|                                 | 22 | .429                 | .1965   | .1065   | 16.11  | 23 18.0                          | .3111  | 11 56.2                           | 0.15   |
|                                 | 23 | .441                 | .1929   | .1064   | 16.18  | 23 18.2                          | .3111  | 11 52.7                           | 0.28   |
|                                 | 24 | .452                 | .1893   | .1063   | 16.25  | 23 18.5                          | .3110  | 11 49.2                           | 0.42   |
|                                 | 25 | .463                 | .1858   | .1061   | 16.33  | 23 18.8                          | .3110  | 11 45.7                           | 0.55   |
|                                 | 26 | .474                 | .1823   | .1059   | 16.40  | 23 19.0                          | .3109  | 11 42.2                           | 0.69   |
|                                 | 27 | .486                 | .1788   | .1056   | 16.47  | 23 19.3                          | .3108  | 11 38.7                           | 0.82   |
|                                 | 28 | .497                 | .1752   | .1053   | 16.54  | 23 19.5                          | .3106  | 11 35.2                           | 0.96   |
|                                 | 29 | .508                 | .1717   | .1049   | 16.61  | 23 19.7                          | .3105  | 11 31.7                           | 1.09   |
|                                 | 30 | +2.519               | —0.1681 | +0.1045 | 16.68  | 23 19.9                          | 1.3104 | 11 28.2                           | +1.23  |
|                                 | 1  | .530                 | .1646   | .1041   | 16.75  | 23 20.1                          | .3102  | 11 24.7                           | 1.36   |
|                                 | 2  | .541                 | .1610   | .1036   | 16.82  | 23 20.3                          | .3100  | 11 21.2                           | 1.49   |
|                                 | 3  | .552                 | .1575   | .1031   | 16.89  | 23 20.5                          | .3098  | 11 17.7                           | 1.63   |
|                                 | 4  | .563                 | .1540   | .1025   | 16.96  | 23 20.7                          | .3095  | 11 14.1                           | 1.76   |
|                                 | 5  | .574                 | .1505   | .1018   | 17.04  | 23 20.8                          | .3093  | 11 10.6                           | 1.89   |
|                                 | 6  | .585                 | .1470   | .1011   | 17.11  | 23 21.0                          | .3090  | 11 7.1                            | 2.03   |
|                                 | 7  | .596                 | .1435   | .1003   | 17.18  | 23 21.1                          | .3087  | 11 3.5                            | 2.16   |
|                                 | 8  | .607                 | .1400   | .0995   | 17.24  | 23 21.3                          | .3084  | 11 0.0                            | 2.29   |
|                                 | 9  | .617                 | .1366   | .0987   | 17.31  | 23 21.4                          | .3081  | 10 56.5                           | 2.42   |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                 | log h  | H                                 | i     |
|---------------------------------|----|--------|---------|---------|-------|-----------------------------------|--------|-----------------------------------|-------|
| Juli                            | 10 | +2.628 | —0.1331 | +0.0979 | 17.38 | 23 <sup>h</sup> 21 <sup>m</sup> 5 | 1.3077 | 10 <sup>h</sup> 52 <sup>m</sup> 9 | +2.54 |
|                                 | 11 | .639   | .1297   | .0970   | 17.45 | 23 21.6                           | .3074  | 10 49.3                           | 2.67  |
|                                 | 12 | .649   | .1262   | .0960   | 17.52 | 23 21.7                           | .3070  | 10 45.8                           | 2.80  |
|                                 | 13 | .660   | .1227   | .0950   | 17.59 | 23 21.8                           | .3066  | 10 42.2                           | 2.93  |
|                                 | 14 | .671   | .1193   | .0940   | 17.66 | 23 21.9                           | .3062  | 10 38.7                           | 3.05  |
|                                 | 15 | .681   | .1159   | .0930   | 17.73 | 23 22.0                           | .3058  | 10 35.1                           | 3.18  |
|                                 | 16 | .691   | .1125   | .0920   | 17.79 | 23 22.1                           | .3054  | 10 31.5                           | 3.30  |
|                                 | 17 | .702   | .1092   | .0909   | 17.86 | 23 22.1                           | .3049  | 10 27.9                           | 3.43  |
|                                 | 18 | .712   | .1059   | .0898   | 17.93 | 23 22.2                           | .3045  | 10 24.3                           | 3.55  |
|                                 | 19 | .722   | .1026   | .0886   | 18.00 | 23 22.3                           | .3040  | 10 20.7                           | 3.67  |
|                                 | 20 | +2.732 | —0.0993 | +0.0874 | 18.06 | 23 22.3                           | 1.3035 | 10 17.0                           | +3.79 |
|                                 | 21 | .742   | .0960   | .0862   | 18.13 | 23 22.3                           | .3031  | 10 13.4                           | 3.91  |
|                                 | 22 | .752   | .0927   | .0849   | 18.19 | 23 22.4                           | .3026  | 10 9.7                            | 4.03  |
|                                 | 23 | .762   | .0895   | .0836   | 18.26 | 23 22.4                           | .3020  | 10 6.1                            | 4.15  |
|                                 | 24 | .772   | .0863   | .0823   | 18.32 | 23 22.5                           | .3015  | 10 2.4                            | 4.27  |
|                                 | 25 | .782   | .0831   | .0809   | 18.39 | 23 22.5                           | .3009  | 9 58.8                            | 4.38  |
|                                 | 26 | .792   | .0799   | .0795   | 18.45 | 23 22.5                           | .3004  | 9 55.1                            | 4.50  |
|                                 | 27 | .801   | .0768   | .0781   | 18.51 | 23 22.5                           | .2998  | 9 51.4                            | 4.61  |
|                                 | 28 | .811   | .0736   | .0767   | 18.58 | 23 22.5                           | .2993  | 9 47.7                            | 4.72  |
|                                 | 29 | .820   | .0705   | .0753   | 18.64 | 23 22.5                           | .2987  | 9 44.0                            | 4.83  |
|                                 | 30 | +2.830 | —0.0674 | +0.0739 | 18.70 | 23 22.5                           | 1.2981 | 9 40.3                            | +4.93 |
|                                 | 31 | .839   | .0643   | .0724   | 18.76 | 23 22.5                           | .2975  | 9 36.5                            | 5.04  |
| August                          | 1  | .848   | .0613   | .0709   | 18.82 | 23 22.5                           | .2969  | 9 32.8                            | 5.15  |
|                                 | 2  | .857   | .0583   | .0694   | 18.88 | 23 22.5                           | .2963  | 9 29.0                            | 5.26  |
|                                 | 3  | .866   | .0553   | .0679   | 18.94 | 23 22.5                           | .2957  | 9 25.3                            | 5.36  |
|                                 | 4  | .875   | .0524   | .0664   | 19.00 | 23 22.5                           | .2951  | 9 21.5                            | 5.46  |
|                                 | 5  | .884   | .0494   | .0649   | 19.06 | 23 22.5                           | .2945  | 9 17.7                            | 5.56  |
|                                 | 6  | .893   | .0465   | .0634   | 19.12 | 23 22.5                           | .2939  | 9 13.9                            | 5.66  |
|                                 | 7  | .901   | .0436   | .0618   | 19.18 | 23 22.5                           | .2932  | 9 10.1                            | 5.76  |
|                                 | 8  | .910   | .0408   | .0603   | 19.23 | 23 22.5                           | .2926  | 9 6.3                             | 5.85  |
|                                 | 9  | +2.918 | —0.0380 | +0.0587 | 19.29 | 23 22.5                           | 1.2920 | 9 2.4                             | +5.95 |
|                                 | 10 | .927   | .0352   | .0572   | 19.35 | 23 22.5                           | .2913  | 8 58.6                            | 6.04  |
|                                 | 11 | .935   | .0324   | .0557   | 19.40 | 23 22.5                           | .2907  | 8 54.7                            | 6.13  |
|                                 | 12 | .943   | .0297   | .0542   | 19.46 | 23 22.4                           | .2901  | 8 50.8                            | 6.22  |
|                                 | 13 | .951   | .0270   | .0527   | 19.51 | 23 22.4                           | .2895  | 8 46.9                            | 6.31  |
|                                 | 14 | .960   | .0243   | .0512   | 19.56 | 23 22.4                           | .2888  | 8 43.0                            | 6.39  |
|                                 | 15 | .968   | .0216   | .0497   | 19.62 | 23 22.4                           | .2882  | 8 39.1                            | 6.48  |
|                                 | 16 | .975   | .0190   | .0482   | 19.67 | 23 22.4                           | .2876  | 8 35.2                            | 6.56  |
|                                 | 17 | .983   | .0164   | .0467   | 19.72 | 23 22.4                           | .2870  | 8 31.2                            | 6.64  |
|                                 | 18 | .991   | .0138   | .0452   | 19.77 | 23 22.3                           | .2864  | 8 27.3                            | 6.72  |
|                                 | 19 | +2.999 | —0.0113 | +0.0437 | 19.82 | 23 22.3                           | 1.2858 | 8 23.3                            | +6.79 |
|                                 | 20 | 3.006  | .0088   | .0423   | 19.88 | 23 22.3                           | .2852  | 8 19.3                            | 6.87  |
|                                 | 21 | .014   | .0063   | .0409   | 19.93 | 23 22.3                           | .2846  | 8 15.3                            | 6.94  |
|                                 | 22 | .021   | .0038   | .0396   | 19.98 | 23 22.3                           | .2840  | 8 11.3                            | 7.01  |
|                                 | 23 | .029   | —0.0014 | .0382   | 20.02 | 23 22.3                           | .2835  | 8 7.3                             | 7.08  |
|                                 | 24 | .036   | +0.0010 | .0369   | 20.07 | 23 22.3                           | .2829  | 8 3.3                             | 7.15  |
|                                 | 25 | .043   | .0034   | .0355   | 20.12 | 23 22.3                           | .2823  | 7 59.2                            | 7.21  |
|                                 | 26 | .050   | .0057   | .0342   | 20.17 | 23 22.3                           | .2818  | 7 55.2                            | 7.28  |
|                                 | 27 | .057   | .0080   | .0329   | 20.21 | 23 22.3                           | .2812  | 7 51.1                            | 7.34  |
|                                 | 28 | .064   | .0103   | .0317   | 20.26 | 23 22.4                           | .2807  | 7 47.0                            | 7.40  |

## 1842

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g      | G                                  | log h  | H                                 | i      |
|---------------------------------|----|----------------------|---------|---------|--------|------------------------------------|--------|-----------------------------------|--------|
| August                          | 29 | +3 <sup>s</sup> .071 | +0.0126 | +0.0305 | 20."30 | 23 <sup>h</sup> 22 <sup>m</sup> .4 | 1.2802 | 7 <sup>h</sup> 43 <sup>m</sup> .0 | +7."45 |
|                                 | 30 | .078                 | .0149   | .0294   | 20.35  | 23 22.4                            | .2797  | 7 38.9                            | 7.51   |
|                                 | 31 | .085                 | .0171   | .0283   | 20.39  | 23 22.4                            | .2793  | 7 34.8                            | 7.56   |
| Septbr.                         | 1  | .091                 | .0193   | .0272   | 20.44  | 23 22.5                            | .2788  | 7 30.6                            | 7.61   |
|                                 | 2  | .098                 | .0215   | .0261   | 20.48  | 23 22.5                            | .2784  | 7 26.5                            | 7.66   |
|                                 | 3  | .105                 | .0237   | .0251   | 20.52  | 23 22.5                            | .2779  | 7 22.4                            | 7.70   |
|                                 | 4  | .111                 | .0258   | .0241   | 20.57  | 23 22.6                            | .2775  | 7 18.2                            | 7.75   |
|                                 | 5  | .118                 | .0279   | .0232   | 20.61  | 23 22.6                            | .2771  | 7 14.0                            | 7.79   |
|                                 | 6  | .124                 | .0300   | .0223   | 20.65  | 23 22.7                            | .2768  | 7 9.9                             | 7.83   |
|                                 | 7  | .131                 | .0320   | .0215   | 20.69  | 23 22.7                            | .2764  | 7 5.7                             | 7.86   |
|                                 | 8  | +3.137               | +0.0340 | +0.0207 | 20.73  | 23 22.8                            | 1.2761 | 7 1.5                             | +7.90  |
|                                 | 9  | .143                 | .0360   | .0200   | 20.77  | 23 22.9                            | .2757  | 6 57.3                            | 7.93   |
|                                 | 10 | .150                 | .0380   | .0193   | 20.82  | 23 22.9                            | .2754  | 6 53.1                            | 7.96   |
|                                 | 11 | .156                 | .0400   | .0186   | 20.86  | 23 23.0                            | .2752  | 6 48.9                            | 7.99   |
|                                 | 12 | .162                 | .0420   | .0180   | 20.90  | 23 23.1                            | .2749  | 6 44.7                            | 8.02   |
|                                 | 13 | .168                 | .0440   | .0175   | 20.93  | 23 23.2                            | .2747  | 6 40.5                            | 8.04   |
|                                 | 14 | .175                 | .0460   | .0170   | 20.97  | 23 23.3                            | .2745  | 6 36.2                            | 8.06   |
|                                 | 15 | .181                 | .0479   | .0166   | 21.01  | 23 23.4                            | .2743  | 6 32.0                            | 8.08   |
|                                 | 16 | .187                 | .0499   | .0162   | 21.05  | 23 23.5                            | .2742  | 6 27.7                            | 8.10   |
|                                 | 17 | .193                 | .0518   | .0159   | 21.09  | 23 23.6                            | .2740  | 6 23.5                            | 8.11   |
|                                 | 18 | +3.199               | +0.0537 | +0.0156 | 21.13  | 23 23.7                            | 1.2739 | 6 19.2                            | +8.12  |
|                                 | 19 | .205                 | .0556   | .0154   | 21.17  | 23 23.9                            | .2738  | 6 15.0                            | 8.13   |
|                                 | 20 | .211                 | .0575   | .0152   | 21.20  | 23 24.0                            | .2737  | 6 10.7                            | 8.14   |
|                                 | 21 | .217                 | .0594   | .0151   | 21.24  | 23 24.2                            | .2737  | 6 6.4                             | 8.15   |
|                                 | 22 | .223                 | .0613   | .0150   | 21.28  | 23 24.3                            | .2737  | 6 2.2                             | 8.15   |
|                                 | 23 | .229                 | .0632   | .0150   | 21.32  | 23 24.4                            | .2737  | 5 57.9                            | 8.15   |
|                                 | 24 | .235                 | .0651   | .0151   | 21.36  | 23 24.6                            | .2737  | 5 53.6                            | 8.15   |
|                                 | 25 | .241                 | .0669   | .0152   | 21.39  | 23 24.8                            | .2737  | 5 49.3                            | 8.14   |
|                                 | 26 | .247                 | .0688   | .0154   | 21.43  | 23 24.9                            | .2738  | 5 45.0                            | 8.14   |
|                                 | 27 | .253                 | .0707   | .0156   | 21.47  | 23 25.1                            | .2739  | 5 40.8                            | 8.13   |
|                                 | 28 | +3.259               | +0.0726 | +0.0159 | 21.51  | 23 25.3                            | 1.2740 | 5 36.5                            | +8.11  |
|                                 | 29 | .265                 | .0744   | .0162   | 21.54  | 23 25.5                            | .2741  | 5 32.2                            | 8.10   |
|                                 | 30 | .271                 | .0763   | .0166   | 21.58  | 23 25.7                            | .2743  | 5 27.9                            | 8.08   |
| Oktbr.                          | 1  | .277                 | .0782   | .0170   | 21.62  | 23 25.9                            | .2745  | 5 23.6                            | 8.06   |
|                                 | 2  | .284                 | .0801   | .0175   | 21.66  | 23 26.1                            | .2747  | 5 19.4                            | 8.04   |
|                                 | 3  | .290                 | .0820   | .0181   | 21.70  | 23 26.3                            | .2749  | 5 15.1                            | 8.02   |
|                                 | 4  | .296                 | .0838   | .0187   | 21.73  | 23 26.5                            | .2752  | 5 10.8                            | 7.99   |
|                                 | 5  | .302                 | .0857   | .0193   | 21.77  | 23 26.8                            | .2755  | 5 6.6                             | 7.96   |
|                                 | 6  | .309                 | .0876   | .0200   | 21.81  | 23 27.0                            | .2758  | 5 2.3                             | 7.93   |
|                                 | 7  | .315                 | .0895   | .0208   | 21.85  | 23 27.2                            | .2761  | 4 58.0                            | 7.89   |
|                                 | 8  | +3.321               | +0.0914 | +0.0216 | 21.89  | 23 27.5                            | 1.2765 | 4 53.8                            | +7.86  |
|                                 | 9  | .328                 | .0934   | .0224   | 21.93  | 23 27.7                            | .2768  | 4 49.5                            | 7.82   |
|                                 | 10 | .334                 | .0954   | .0233   | 21.97  | 23 28.0                            | .2772  | 4 45.3                            | 7.78   |
|                                 | 11 | .341                 | .0974   | .0243   | 22.01  | 23 28.2                            | .2776  | 4 41.0                            | 7.74   |
|                                 | 12 | .347                 | .0994   | .0253   | 22.04  | 23 28.5                            | .2780  | 4 36.8                            | 7.70   |
|                                 | 13 | .354                 | .1014   | .0264   | 22.08  | 23 28.8                            | .2785  | 4 32.5                            | 7.65   |
|                                 | 14 | .361                 | .1034   | .0275   | 22.12  | 23 29.1                            | .2789  | 4 28.3                            | 7.60   |
|                                 | 15 | .368                 | .1054   | .0286   | 22.17  | 23 29.3                            | .2794  | 4 24.1                            | 7.54   |
|                                 | 16 | .374                 | .1075   | .0298   | 22.21  | 23 29.6                            | .2799  | 4 19.9                            | 7.49   |
|                                 | 17 | .381                 | .1096   | .0310   | 22.25  | 23 29.9                            | .2804  | 4 15.7                            | 7.43   |

## 1842

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                 | log h  | H                                | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|-----------------------------------|--------|----------------------------------|---------------------|
| Oktbr.                          | 18 | +3. <sup>s</sup> 388 | +0.1117 | +0.0322 | 22. <sup>h</sup> 29 | 23 <sup>h</sup> 30 <sup>m</sup> 2 | 1.2810 | 4 <sup>h</sup> 11 <sup>m</sup> 5 | +7. <sup>s</sup> 37 |
|                                 | 19 | .395                 | .1138   | .0335   | 22.33               | 23 30.5                           | .2815  | 4 7.3                            | 7.31                |
|                                 | 20 | .402                 | .1160   | .0348   | 22.38               | 23 30.8                           | .2820  | 4 3.1                            | 7.25                |
|                                 | 21 | .410                 | .1182   | .0361   | 22.42               | 23 31.1                           | .2826  | 3 59.0                           | 7.18                |
|                                 | 22 | .417                 | .1204   | .0375   | 22.46               | 23 31.4                           | .2832  | 3 54.8                           | 7.11                |
|                                 | 23 | .424                 | .1226   | .0389   | 22.51               | 23 31.7                           | .2837  | 3 50.6                           | 7.04                |
|                                 | 24 | .432                 | .1249   | .0403   | 22.56               | 23 32.0                           | .2843  | 3 46.5                           | 6.97                |
|                                 | 25 | .439                 | .1272   | .0417   | 22.60               | 23 32.4                           | .2849  | 3 42.3                           | 6.90                |
|                                 | 26 | .447                 | .1295   | .0432   | 22.65               | 23 32.7                           | .2855  | 3 38.2                           | 6.82                |
|                                 | 27 | .455                 | .1318   | .0447   | 22.69               | 23 33.0                           | .2862  | 3 34.1                           | 6.74                |
|                                 | 28 | +3.463               | +0.1341 | +0.0462 | 22.74               | 23 33.3                           | 1.2868 | 3 30.0                           | +6.66               |
|                                 | 29 | .470                 | .1365   | .0478   | 22.79               | 23 33.7                           | .2874  | 3 25.9                           | 6.58                |
|                                 | 30 | .478                 | .1389   | .0493   | 22.84               | 23 34.0                           | .2881  | 3 21.8                           | 6.49                |
|                                 | 31 | .486                 | .1414   | .0509   | 22.89               | 23 34.3                           | .2887  | 3 17.7                           | 6.41                |
| Novbr.                          | 1  | .495                 | .1439   | .0524   | 22.94               | 23 34.6                           | .2894  | 3 13.6                           | 6.32                |
|                                 | 2  | .503                 | .1464   | .0540   | 22.99               | 23 35.0                           | .2900  | 3 9.6                            | 6.23                |
|                                 | 3  | .511                 | .1490   | .0556   | 23.04               | 23 35.3                           | .2907  | 3 5.5                            | 6.14                |
|                                 | 4  | .520                 | .1516   | .0572   | 23.09               | 23 35.6                           | .2913  | 3 1.5                            | 6.04                |
|                                 | 5  | .528                 | .1542   | .0588   | 23.15               | 23 35.9                           | .2920  | 2 57.5                           | 5.94                |
|                                 | 6  | .537                 | .1569   | .0604   | 23.20               | 23 36.3                           | .2926  | 2 53.4                           | 5.84                |
|                                 | 7  | +3.546               | +0.1596 | +0.0620 | 23.25               | 23 36.6                           | 1.2933 | 2 49.4                           | +5.74               |
|                                 | 8  | .554                 | .1623   | .0636   | 23.31               | 23 36.9                           | .2940  | 2 45.4                           | 5.64                |
|                                 | 9  | .563                 | .1650   | .0652   | 23.36               | 23 37.3                           | .2946  | 2 41.4                           | 5.54                |
|                                 | 10 | .572                 | .1678   | .0668   | 23.42               | 23 37.6                           | .2953  | 2 37.5                           | 5.43                |
|                                 | 11 | .581                 | .1706   | .0684   | 23.47               | 23 37.9                           | .2959  | 2 33.5                           | 5.33                |
|                                 | 12 | .591                 | .1735   | .0700   | 23.53               | 23 38.2                           | .2965  | 2 29.5                           | 5.22                |
|                                 | 13 | .600                 | .1764   | .0715   | 23.59               | 23 38.5                           | .2972  | 2 25.6                           | 5.10                |
|                                 | 14 | .609                 | .1793   | .0730   | 23.65               | 23 38.9                           | .2978  | 2 21.7                           | 4.99                |
|                                 | 15 | .619                 | .1822   | .0745   | 23.71               | 23 39.2                           | .2984  | 2 17.7                           | 4.88                |
|                                 | 16 | .628                 | .1852   | .0760   | 23.77               | 23 39.5                           | .2990  | 2 13.8                           | 4.76                |
|                                 | 17 | +3.638               | +0.1882 | +0.0775 | 23.83               | 23 39.8                           | 1.2996 | 2 9.9                            | +4.64               |
|                                 | 18 | .648                 | .1913   | .0790   | 23.89               | 23 40.1                           | .3002  | 2 6.0                            | 4.53                |
|                                 | 19 | .658                 | .1944   | .0805   | 23.95               | 23 40.4                           | .3008  | 2 2.1                            | 4.41                |
|                                 | 20 | .668                 | .1975   | .0819   | 24.01               | 23 40.7                           | .3013  | 1 58.2                           | 4.28                |
|                                 | 21 | .678                 | .2006   | .0833   | 24.08               | 23 41.0                           | .3019  | 1 54.4                           | 4.16                |
|                                 | 22 | .688                 | .2038   | .0847   | 24.14               | 23 41.3                           | .3025  | 1 50.5                           | 4.04                |
|                                 | 23 | .698                 | .2070   | .0860   | 24.20               | 23 41.6                           | .3030  | 1 46.6                           | 3.91                |
|                                 | 24 | .709                 | .2103   | .0873   | 24.27               | 23 41.9                           | .3035  | 1 42.8                           | 3.78                |
|                                 | 25 | .719                 | .2136   | .0886   | 24.34               | 23 42.1                           | .3040  | 1 39.0                           | 3.66                |
|                                 | 26 | .729                 | .2170   | .0899   | 24.40               | 23 42.4                           | .3045  | 1 35.1                           | 3.53                |
|                                 | 27 | +3.740               | +0.2203 | +0.0911 | 24.47               | 23 42.7                           | 1.3050 | 1 31.3                           | +3.40               |
|                                 | 28 | .751                 | .2237   | .0923   | 24.54               | 23 42.9                           | .3055  | 1 27.5                           | 3.26                |
|                                 | 29 | .761                 | .2271   | .0935   | 24.61               | 23 43.2                           | .3060  | 1 23.6                           | 3.13                |
|                                 | 30 | .772                 | .2305   | .0946   | 24.67               | 23 43.4                           | .3064  | 1 19.8                           | 3.00                |
| Dezbr.                          | 1  | .783                 | .2339   | .0956   | 24.74               | 23 43.7                           | .3068  | 1 16.0                           | 2.86                |
|                                 | 2  | .794                 | .2374   | .0966   | 24.81               | 23 43.9                           | .3072  | 1 12.2                           | 2.73                |
|                                 | 3  | .805                 | .2409   | .0975   | 24.88               | 23 44.2                           | .3076  | 1 8.4                            | 2.59                |
|                                 | 4  | .816                 | .2444   | .0984   | 24.95               | 23 44.4                           | .3079  | 1 4.7                            | 2.46                |
|                                 | 5  | .827                 | .2479   | .0993   | 25.02               | 23 44.6                           | .3083  | 1 0.9                            | 2.32                |
|                                 | 6  | .838                 | .2515   | .1001   | 25.09               | 23 44.8                           | .3086  | 0 57.1                           | 2.18                |

## 1842

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x                     | y                     | g                   | G                                  | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|-----------------------|-----------------------|---------------------|------------------------------------|--------|-----------------------------------|---------------------|
| Dezbr.                          | 7  | +3. <sup>s</sup> 849 | +0. <sup>s</sup> 2551 | +0. <sup>s</sup> 1009 | 25. <sup>s</sup> 17 | 23 <sup>h</sup> 45. <sup>m</sup> 0 | 1.3089 | 0 <sup>h</sup> 53. <sup>m</sup> 3 | +2. <sup>s</sup> 04 |
|                                 | 8  | .860                 | .2587                 | .1017                 | 25.24               | 23 45.2                            | .3092  | 0 49.6                            | 1.90                |
|                                 | 9  | .872                 | .2623                 | .1024                 | 25.31               | 23 45.4                            | .3095  | 0 45.8                            | 1.76                |
|                                 | 10 | .883                 | .2659                 | .1030                 | 25.38               | 23 45.6                            | .3097  | 0 42.0                            | 1.61                |
|                                 | 11 | .894                 | .2695                 | .1036                 | 25.46               | 23 45.8                            | .3100  | 0 38.3                            | 1.47                |
|                                 | 12 | .906                 | .2732                 | .1041                 | 25.53               | 23 46.0                            | .3102  | 0 34.5                            | 1.33                |
|                                 | 13 | .917                 | .2768                 | .1046                 | 25.60               | 23 46.1                            | .3104  | 0 30.8                            | 1.19                |
|                                 | 14 | .928                 | .2805                 | .1050                 | 25.68               | 23 46.3                            | .3105  | 0 27.0                            | 1.05                |
|                                 | 15 | .940                 | .2842                 | .1054                 | 25.75               | 23 46.5                            | .3107  | 0 23.3                            | 0.90                |
|                                 | 16 | .952                 | .2879                 | .1057                 | 25.82               | 23 46.6                            | .3108  | 0 19.6                            | 0.76                |
|                                 | 17 | +3.963               | +0. <sup>s</sup> 2916 | +0. <sup>s</sup> 1060 | 25.90               | 23 46.7                            | 1.3109 | 0 15.8                            | +0.62               |
|                                 | 18 | .975                 | .2953                 | .1062                 | 25.97               | 23 46.9                            | .3110  | 0 12.1                            | 0.47                |
|                                 | 19 | .986                 | .2990                 | .1064                 | 26.05               | 23 47.0                            | .3111  | 0 8.4                             | 0.32                |
|                                 | 20 | 3.998                | .3027                 | .1065                 | 26.12               | 23 47.1                            | .3111  | 0 4.6                             | 0.18                |
|                                 | 21 | 4.009                | .3064                 | .1065                 | 26.20               | 23 47.2                            | .3111  | 0 0.9                             | +0.03               |
|                                 | 22 | .021                 | .3102                 | .1065                 | 26.27               | 23 47.3                            | .3111  | 23 57.2                           | —0.11               |
|                                 | 23 | .032                 | .3139                 | .1064                 | 26.35               | 23 47.4                            | .3111  | 23 53.4                           | 0.26                |
|                                 | 24 | .044                 | .3176                 | .1063                 | 26.42               | 23 47.5                            | .3110  | 23 49.7                           | 0.40                |
|                                 | 25 | .056                 | .3213                 | .1061                 | 26.50               | 23 47.6                            | .3110  | 23 45.9                           | 0.55                |
|                                 | 26 | .067                 | .3251                 | .1059                 | 26.57               | 23 47.7                            | .3109  | 23 42.2                           | 0.69                |
|                                 | 27 | +4.079               | +0. <sup>s</sup> 3288 | +0. <sup>s</sup> 1056 | 26.65               | 23 47.8                            | 1.3108 | 23 38.4                           | —0.83               |
|                                 | 28 | .090                 | .3326                 | .1053                 | 26.72               | 23 47.8                            | .3106  | 23 34.7                           | 0.98                |
|                                 | 29 | .102                 | .3363                 | .1049                 | 26.80               | 23 47.9                            | .3105  | 23 30.9                           | 1.12                |
|                                 | 30 | .113                 | .3401                 | .1045                 | 26.87               | 23 48.0                            | .3103  | 23 27.2                           | 1.26                |
|                                 | 31 | .125                 | .3439                 | .1041                 | 26.95               | 23 48.0                            | .3101  | 23 23.4                           | 1.41                |

## 1843

|        |    |                      |                       |                       |                    |                                    |        |                                    |                     |
|--------|----|----------------------|-----------------------|-----------------------|--------------------|------------------------------------|--------|------------------------------------|---------------------|
| Januar | 1  | +1. <sup>s</sup> 065 | —0. <sup>s</sup> 6473 | +0. <sup>s</sup> 1033 | 7. <sup>s</sup> 07 | 23 <sup>h</sup> 14. <sup>m</sup> 1 | 1.3099 | 23 <sup>h</sup> 19. <sup>m</sup> 7 | —1. <sup>s</sup> 55 |
|        | 2  | .076                 | .6437                 | .1027                 | 7.14               | 23 14.6                            | .3096  | 23 15.9                            | 1.69                |
|        | 3  | .087                 | .6401                 | .1020                 | 7.22               | 23 15.0                            | .3094  | 23 12.1                            | 1.83                |
|        | 4  | .098                 | .6365                 | .1013                 | 7.29               | 23 15.5                            | .3091  | 23 8.4                             | 1.97                |
|        | 5  | .109                 | .6329                 | .1006                 | 7.36               | 23 15.9                            | .3088  | 23 4.6                             | 2.11                |
|        | 6  | .121                 | .6294                 | .0998                 | 7.43               | 23 16.2                            | .3085  | 23 0.8                             | 2.25                |
|        | 7  | .132                 | .6258                 | .0989                 | 7.50               | 23 16.6                            | .3081  | 22 57.0                            | 2.39                |
|        | 8  | .143                 | .6223                 | .0980                 | 7.57               | 23 16.9                            | .3078  | 22 53.2                            | 2.53                |
|        | 9  | .154                 | .6187                 | .0970                 | 7.64               | 23 17.2                            | .3074  | 22 49.4                            | 2.67                |
|        | 10 | .165                 | .6152                 | .0960                 | 7.72               | 23 17.5                            | .3070  | 22 45.6                            | 2.80                |
|        | 11 | +1.175               | —0. <sup>s</sup> 6117 | +0. <sup>s</sup> 0950 | 7.79               | 23 17.7                            | 1.3066 | 22 41.8                            | —2.94               |
|        | 12 | .186                 | .6082                 | .0939                 | 7.86               | 23 18.0                            | .3062  | 22 38.0                            | 3.07                |
|        | 13 | .197                 | .6047                 | .0928                 | 7.93               | 23 18.2                            | .3057  | 22 34.1                            | 3.21                |
|        | 14 | .208                 | .6013                 | .0916                 | 7.99               | 23 18.4                            | .3052  | 22 30.3                            | 3.34                |
|        | 15 | .218                 | .5978                 | .0904                 | 8.06               | 23 18.5                            | .3047  | 22 26.5                            | 3.47                |
|        | 16 | .229                 | .5944                 | .0892                 | 8.13               | 23 18.7                            | .3043  | 22 22.6                            | 3.60                |
|        | 17 | .239                 | .5910                 | .0879                 | 8.20               | 23 18.8                            | .3038  | 22 18.7                            | 3.73                |
|        | 18 | .250                 | .5876                 | .0866                 | 8.27               | 23 18.9                            | .3033  | 22 14.9                            | 3.86                |
|        | 19 | .260                 | .5842                 | .0853                 | 8.34               | 23 19.0                            | .3027  | 22 11.0                            | 3.99                |
|        | 20 | .270                 | .5809                 | .0839                 | 8.40               | 23 19.1                            | .3022  | 22 7.1                             | 4.11                |

## 1843

| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                 | log h  | H                                | i     |
|---------------------------------|----|--------|---------|---------|-------|-----------------------------------|--------|----------------------------------|-------|
| Januar                          | 21 | +1.280 | —0.5776 | +0.0825 | 8.47  | 23 <sup>h</sup> 19 <sup>m</sup> 2 | 1.3016 | 22 <sup>h</sup> 3 <sup>m</sup> 2 | —4.24 |
|                                 | 22 | .290   | .5743   | .0810   | 8.54  | 23 19.2                           | .3010  | 21 59.3                          | 4.36  |
|                                 | 23 | .300   | .5710   | .0796   | 8.60  | 23 19.3                           | .3004  | 21 55.4                          | 4.48  |
|                                 | 24 | .310   | .5678   | .0781   | 8.67  | 23 19.3                           | .2998  | 21 51.5                          | 4.60  |
|                                 | 25 | .319   | .5646   | .0766   | 8.73  | 23 19.3                           | .2992  | 21 47.6                          | 4.72  |
|                                 | 26 | .329   | .5614   | .0751   | 8.79  | 23 19.4                           | .2986  | 21 43.6                          | 4.84  |
|                                 | 27 | .338   | .5583   | .0736   | 8.86  | 23 19.4                           | .2980  | 21 39.6                          | 4.96  |
|                                 | 28 | .348   | .5552   | .0721   | 8.92  | 23 19.4                           | .2974  | 21 35.7                          | 5.07  |
|                                 | 29 | .357   | .5521   | .0705   | 8.98  | 23 19.4                           | .2967  | 21 31.7                          | 5.18  |
|                                 | 30 | .366   | .5491   | .0689   | 9.04  | 23 19.4                           | .2961  | 21 27.7                          | 5.29  |
| Februar                         | 31 | +1.376 | —0.5461 | +0.0673 | 9.10  | 23 19.4                           | 1.2954 | 21 23.7                          | —5.40 |
|                                 | 1  | .385   | .5431   | .0657   | 9.16  | 23 19.4                           | .2948  | 21 19.7                          | 5.51  |
|                                 | 2  | .394   | .5401   | .0640   | 9.22  | 23 19.3                           | .2941  | 21 15.7                          | 5.61  |
|                                 | 3  | .402   | .5372   | .0624   | 9.28  | 23 19.3                           | .2935  | 21 11.7                          | 5.72  |
|                                 | 4  | .411   | .5343   | .0608   | 9.34  | 23 19.3                           | .2928  | 21 7.7                           | 5.82  |
|                                 | 5  | .420   | .5314   | .0592   | 9.40  | 23 19.3                           | .2921  | 21 3.6                           | 5.92  |
|                                 | 6  | .428   | .5286   | .0576   | 9.45  | 23 19.2                           | .2915  | 20 59.5                          | 6.01  |
|                                 | 7  | .436   | .5258   | .0560   | 9.51  | 23 19.2                           | .2908  | 20 55.5                          | 6.11  |
|                                 | 8  | .445   | .5230   | .0544   | 9.56  | 23 19.2                           | .2902  | 20 51.4                          | 6.20  |
|                                 | 9  | .453   | .5203   | .0528   | 9.62  | 23 19.1                           | .2895  | 20 47.3                          | 6.30  |
|                                 | 10 | +1.461 | —0.5176 | +0.0512 | 9.67  | 23 19.1                           | 1.2889 | 20 43.2                          | —6.39 |
|                                 | 11 | .469   | .5149   | .0497   | 9.73  | 23 19.1                           | .2882  | 20 39.1                          | 6.47  |
|                                 | 12 | .477   | .5123   | .0481   | 9.78  | 23 19.0                           | .2876  | 20 34.9                          | 6.56  |
|                                 | 13 | .485   | .5097   | .0466   | 9.83  | 23 19.0                           | .2869  | 20 30.8                          | 6.65  |
|                                 | 14 | .493   | .5071   | .0451   | 9.88  | 23 19.0                           | .2863  | 20 26.6                          | 6.73  |
|                                 | 15 | .500   | .5046   | .0436   | 9.93  | 23 19.0                           | .2857  | 20 22.5                          | 6.81  |
|                                 | 16 | .508   | .5021   | .0421   | 9.98  | 23 19.0                           | .2850  | 20 18.3                          | 6.89  |
|                                 | 17 | .515   | .4996   | .0406   | 10.03 | 23 19.0                           | .2844  | 20 14.1                          | 6.96  |
|                                 | 18 | .523   | .4971   | .0392   | 10.08 | 23 19.0                           | .2838  | 20 10.0                          | 7.03  |
|                                 | 19 | .530   | .4947   | .0378   | 10.13 | 23 19.0                           | .2832  | 20 5.8                           | 7.11  |
|                                 | 20 | +1.537 | —0.4923 | +0.0364 | 10.18 | 23 19.0                           | 1.2827 | 20 1.6                           | —7.17 |
| März                            | 21 | .544   | .4900   | .0350   | 10.23 | 23 19.0                           | .2821  | 19 57.4                          | 7.24  |
|                                 | 22 | .551   | .4877   | .0336   | 10.27 | 23 19.0                           | .2815  | 19 53.1                          | 7.31  |
|                                 | 23 | .558   | .4854   | .0323   | 10.32 | 23 19.0                           | .2809  | 19 48.9                          | 7.37  |
|                                 | 24 | .565   | .4831   | .0310   | 10.36 | 23 19.1                           | .2804  | 19 44.6                          | 7.43  |
|                                 | 25 | .572   | .4809   | .0298   | 10.41 | 23 19.1                           | .2799  | 19 40.4                          | 7.49  |
|                                 | 26 | .579   | .4787   | .0286   | 10.45 | 23 19.2                           | .2794  | 19 36.1                          | 7.54  |
|                                 | 27 | .586   | .4765   | .0274   | 10.50 | 23 19.2                           | .2789  | 19 31.9                          | 7.60  |
|                                 | 28 | .592   | .4743   | .0263   | 10.54 | 23 19.3                           | .2785  | 19 27.6                          | 7.65  |
|                                 | 1  | .599   | .4722   | .0253   | 10.58 | 23 19.4                           | .2780  | 19 23.3                          | 7.69  |
|                                 | 2  | +1.605 | —0.4701 | +0.0243 | 10.62 | 23 19.5                           | 1.2776 | 19 19.0                          | —7.74 |
|                                 | 3  | .612   | .4680   | .0234   | 10.67 | 23 19.6                           | .2772  | 19 14.7                          | 7.78  |
|                                 | 4  | .618   | .4659   | .0225   | 10.71 | 23 19.7                           | .2768  | 19 10.4                          | 7.82  |
|                                 | 5  | .624   | .4639   | .0217   | 10.75 | 23 19.8                           | .2765  | 19 6.1                           | 7.86  |
|                                 | 6  | .631   | .4619   | .0209   | 10.79 | 23 19.9                           | .2761  | 19 1.8                           | 7.90  |
|                                 | 7  | .637   | .4599   | .0201   | 10.83 | 23 20.0                           | .2758  | 18 57.5                          | 7.93  |
|                                 | 8  | .643   | .4579   | .0194   | 10.87 | 23 20.2                           | .2755  | 18 53.2                          | 7.96  |
|                                 | 9  | .649   | .4560   | .0187   | 10.91 | 23 20.3                           | .2752  | 18 48.9                          | 7.99  |
|                                 | 10 | .655   | .4540   | .0181   | 10.95 | 23 20.5                           | .2749  | 18 44.6                          | 8.02  |
|                                 | 11 | .661   | .4521   | .0175   | 10.99 | 23 20.7                           | .2747  | 18 40.2                          | 8.04  |

## I843

| <sup>12<sup>h</sup></sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                  | log h  | H                                  | i                   |
|-------------------------------------------|----|----------------------|---------|---------|---------------------|------------------------------------|--------|------------------------------------|---------------------|
| März                                      | 12 | +1 <sup>s</sup> .667 | —0.4502 | +0.0170 | 11 <sup>m</sup> .02 | 23 <sup>h</sup> 20 <sup>m</sup> .9 | 1.2745 | 18 <sup>h</sup> 35 <sup>m</sup> .9 | —8 <sup>m</sup> .06 |
|                                           | 13 | .673                 | .4483   | .0165   | 11.06               | 23 21.1                            | .2743  | 18 31.6                            | 8.08                |
|                                           | 14 | .679                 | .4464   | .0161   | 11.10               | 23 21.3                            | .2741  | 18 27.2                            | 8.10                |
|                                           | 15 | .685                 | .4445   | .0158   | 11.14               | 23 21.5                            | .2740  | 18 22.9                            | 8.11                |
|                                           | 16 | .691                 | .4426   | .0156   | 11.18               | 23 21.7                            | .2739  | 18 18.6                            | 8.12                |
|                                           | 17 | .697                 | .4408   | .0154   | 11.21               | 23 22.0                            | .2738  | 18 14.2                            | 8.13                |
|                                           | 18 | .703                 | .4389   | .0152   | 11.25               | 23 22.2                            | .2737  | 18 9.9                             | 8.14                |
|                                           | 19 | .709                 | .4371   | .0151   | 11.29               | 23 22.5                            | .2737  | 18 5.6                             | 8.15                |
|                                           | 20 | .715                 | .4353   | .0150   | 11.32               | 23 22.8                            | .2736  | 18 1.2                             | 8.15                |
|                                           | 21 | .721                 | .4335   | .0150   | 11.36               | 23 23.1                            | .2736  | 17 56.9                            | 8.15                |
|                                           | 22 | +1.727               | —0.4316 | +0.0151 | 11.40               | 23 23.4                            | 1.2737 | 17 52.6                            | —8.14               |
|                                           | 23 | .733                 | .4298   | .0152   | 11.43               | 23 23.7                            | .2737  | 17 48.3                            | 8.14                |
|                                           | 24 | .738                 | .4280   | .0154   | 11.47               | 23 24.0                            | .2738  | 17 44.0                            | 8.13                |
|                                           | 25 | .744                 | .4262   | .0157   | 11.51               | 23 24.4                            | .2739  | 17 39.6                            | 8.12                |
|                                           | 26 | .750                 | .4244   | .0160   | 11.54               | 23 24.7                            | .2741  | 17 35.3                            | 8.11                |
|                                           | 27 | .756                 | .4226   | .0163   | 11.58               | 23 25.1                            | .2742  | 17 31.0                            | 8.09                |
|                                           | 28 | .762                 | .4207   | .0167   | 11.61               | 23 25.4                            | .2744  | 17 26.7                            | 8.07                |
|                                           | 29 | .768                 | .4189   | .0171   | 11.65               | 23 25.8                            | .2746  | 17 22.4                            | 8.05                |
|                                           | 30 | .774                 | .4171   | .0176   | 11.69               | 23 26.2                            | .2748  | 17 18.2                            | 8.03                |
|                                           | 31 | .780                 | .4153   | .0181   | 11.73               | 23 26.6                            | .2750  | 17 13.9                            | 8.01                |
| April                                     | 1  | +1.786               | —0.4135 | +0.0187 | 11.76               | 23 27.0                            | 1.2752 | 17 9.7                             | —7.98               |
|                                           | 2  | .792                 | .4116   | .0194   | 11.80               | 23 27.5                            | .2755  | 17 5.4                             | 7.95                |
|                                           | 3  | .798                 | .4098   | .0201   | 11.84               | 23 27.9                            | .2758  | 17 1.1                             | 7.92                |
|                                           | 4  | .804                 | .4079   | .0209   | 11.87               | 23 28.3                            | .2762  | 16 56.9                            | 7.89                |
|                                           | 5  | .810                 | .4060   | .0218   | 11.91               | 23 28.8                            | .2766  | 16 52.6                            | 7.85                |
|                                           | 6  | .817                 | .4041   | .0227   | 11.95               | 23 29.2                            | .2769  | 16 48.4                            | 7.81                |
|                                           | 7  | .823                 | .4022   | .0236   | 11.99               | 23 29.7                            | .2773  | 16 44.2                            | 7.77                |
|                                           | 8  | .830                 | .4002   | .0246   | 12.03               | 23 30.1                            | .2777  | 16 40.0                            | 7.73                |
|                                           | 9  | .836                 | .3983   | .0256   | 12.07               | 23 30.6                            | .2781  | 16 35.8                            | 7.68                |
|                                           | 10 | .842                 | .3963   | .0266   | 12.10               | 23 31.1                            | .2786  | 16 31.6                            | 7.63                |
|                                           | 11 | +1.849               | —0.3943 | +0.0277 | 12.14               | 23 31.6                            | 1.2790 | 16 27.5                            | —7.58               |
|                                           | 12 | .855                 | .3923   | .0288   | 12.18               | 23 32.1                            | .2795  | 16 23.3                            | 7.53                |
|                                           | 13 | .862                 | .3903   | .0299   | 12.22               | 23 32.6                            | .2800  | 16 19.2                            | 7.48                |
|                                           | 14 | .869                 | .3883   | .0311   | 12.26               | 23 33.1                            | .2805  | 16 15.0                            | 7.42                |
|                                           | 15 | .875                 | .3862   | .0323   | 12.31               | 23 33.6                            | .2810  | 16 10.9                            | 7.36                |
|                                           | 16 | .882                 | .3841   | .0335   | 12.35               | 23 34.2                            | .2815  | 16 6.8                             | 7.30                |
|                                           | 17 | .889                 | .3820   | .0348   | 12.39               | 23 34.7                            | .2820  | 16 2.7                             | 7.24                |
|                                           | 18 | .896                 | .3799   | .0361   | 12.43               | 23 35.2                            | .2826  | 15 58.6                            | 7.18                |
|                                           | 19 | .903                 | .3777   | .0374   | 12.48               | 23 35.7                            | .2831  | 15 54.5                            | 7.11                |
|                                           | 20 | .911                 | .3755   | .0388   | 12.52               | 23 36.3                            | .2837  | 15 50.4                            | 7.04                |
|                                           | 21 | +1.918               | —0.3733 | +0.0402 | 12.56               | 23 36.8                            | 1.2843 | 15 46.4                            | —6.97               |
|                                           | 22 | .925                 | .3711   | .0416   | 12.61               | 23 37.4                            | .2849  | 15 42.4                            | 6.90                |
|                                           | 23 | .933                 | .3689   | .0431   | 12.66               | 23 37.9                            | .2855  | 15 38.3                            | 6.83                |
|                                           | 24 | .940                 | .3666   | .0446   | 12.70               | 23 38.4                            | .2861  | 15 34.3                            | 6.75                |
|                                           | 25 | .947                 | .3643   | .0461   | 12.75               | 23 39.0                            | .2867  | 15 30.3                            | 6.67                |
|                                           | 26 | .955                 | .3619   | .0476   | 12.80               | 23 39.5                            | .2873  | 15 26.3                            | 6.59                |
|                                           | 27 | .963                 | .3595   | .0492   | 12.84               | 23 40.1                            | .2880  | 15 22.3                            | 6.51                |
|                                           | 28 | .970                 | .3571   | .0507   | 12.89               | 23 40.6                            | .2886  | 15 18.4                            | 6.42                |
|                                           | 29 | .978                 | .3547   | .0522   | 12.94               | 23 41.2                            | .2892  | 15 14.4                            | 6.34                |
|                                           | 30 | .986                 | .3522   | .0537   | 12.99               | 23 41.7                            | .2899  | 15 10.5                            | 6.25                |

## 1843

| <sup>12<sup>h</sup></sup><br>M. Z. Berlin |    | f                    | x       | y       | g      | G                                  | log h  | H                                 | i      |
|-------------------------------------------|----|----------------------|---------|---------|--------|------------------------------------|--------|-----------------------------------|--------|
| Mai                                       | 1  | +1 <sup>s</sup> .994 | —0.3497 | +0.0553 | 13."04 | 23 <sup>h</sup> 42 <sup>m</sup> .3 | 1.2905 | 15 <sup>h</sup> 6 <sup>m</sup> .6 | —6".16 |
|                                           | 2  | .2.002               | .3472   | .0568   | 13.09  | 23 42.8                            | .2911  | 15 2.7                            | 6.07   |
|                                           | 3  | .011                 | .3446   | .0583   | 13.14  | 23 43.3                            | .2918  | 14 58.8                           | 5.98   |
|                                           | 4  | .019                 | .3420   | .0598   | 13.19  | 23 43.9                            | .2924  | 14 54.9                           | 5.88   |
|                                           | 5  | .027                 | .3394   | .0614   | 13.25  | 23 44.4                            | .2930  | 14 51.1                           | 5.79   |
|                                           | 6  | .035                 | .3367   | .0629   | 13.30  | 23 44.9                            | .2937  | 14 47.2                           | 5.69   |
|                                           | 7  | .044                 | .3340   | .0644   | 13.35  | 23 45.5                            | .2943  | 14 43.4                           | 5.59   |
|                                           | 8  | .053                 | .3313   | .0659   | 13.41  | 23 46.0                            | .2949  | 14 39.6                           | 5.49   |
|                                           | 9  | .061                 | .3286   | .0674   | 13.46  | 23 46.5                            | .2955  | 14 35.8                           | 5.39   |
|                                           | 10 | .070                 | .3258   | .0689   | 13.52  | 23 47.0                            | .2961  | 14 32.0                           | 5.28   |
|                                           | 11 | +2.079               | —0.3230 | +0.0704 | 13.58  | 23 47.5                            | 1.2967 | 14 28.2                           | —5.18  |
|                                           | 12 | .088                 | .3201   | .0719   | 13.63  | 23 48.0                            | .2973  | 14 24.4                           | 5.07   |
|                                           | 13 | .097                 | .3173   | .0734   | 13.69  | 23 48.5                            | .2979  | 14 20.6                           | 4.96   |
|                                           | 14 | .106                 | .3144   | .0748   | 13.75  | 23 49.0                            | .2985  | 14 16.9                           | 4.85   |
|                                           | 15 | .115                 | .3115   | .0763   | 13.81  | 23 49.5                            | .2991  | 14 13.1                           | 4.74   |
|                                           | 16 | .125                 | .3085   | .0777   | 13.87  | 23 49.9                            | .2997  | 14 9.4                            | 4.63   |
|                                           | 17 | .134                 | .3055   | .0791   | 13.93  | 23 50.4                            | .3002  | 14 5.7                            | 4.52   |
|                                           | 18 | .143                 | .3024   | .0805   | 13.99  | 23 50.9                            | .3008  | 14 2.0                            | 4.40   |
|                                           | 19 | .153                 | .2994   | .0819   | 14.05  | 23 51.3                            | .3013  | 13 58.3                           | 4.29   |
|                                           | 20 | .162                 | .2963   | .0832   | 14.11  | 23 51.7                            | .3019  | 13 54.6                           | 4.17   |
|                                           | 21 | +2.172               | —0.2932 | +0.0845 | 14.17  | 23 52.2                            | 1.3024 | 13 50.9                           | —4.05  |
|                                           | 22 | .182                 | .2901   | .0858   | 14.23  | 23 52.6                            | .3029  | 13 47.2                           | 3.93   |
|                                           | 23 | .192                 | .2870   | .0871   | 14.30  | 23 53.0                            | .3034  | 13 43.6                           | 3.81   |
|                                           | 24 | .202                 | .2838   | .0883   | 14.36  | 23 53.4                            | .3039  | 13 39.9                           | 3.69   |
|                                           | 25 | .212                 | .2806   | .0895   | 14.43  | 23 53.8                            | .3044  | 13 36.3                           | 3.57   |
|                                           | 26 | .222                 | .2773   | .0906   | 14.49  | 23 54.2                            | .3048  | 13 32.7                           | 3.45   |
|                                           | 27 | .232                 | .2741   | .0917   | 14.55  | 23 54.6                            | .3053  | 13 29.1                           | 3.32   |
|                                           | 28 | .242                 | .2708   | .0928   | 14.62  | 23 55.0                            | .3057  | 13 25.5                           | 3.20   |
|                                           | 29 | .252                 | .2675   | .0939   | 14.69  | 23 55.3                            | .3062  | 13 21.9                           | 3.07   |
|                                           | 30 | .262                 | .2642   | .0950   | 14.75  | 23 55.7                            | .3066  | 13 18.3                           | 2.95   |
| Juni                                      | 31 | +2.272               | —0.2609 | +0.0960 | 14.82  | 23 56.0                            | 1.3070 | 13 14.7                           | —2.82  |
|                                           | 1  | .283                 | .2576   | .0970   | 14.89  | 23 56.3                            | .3074  | 13 11.1                           | 2.69   |
|                                           | 2  | .293                 | .2542   | .0979   | 14.95  | 23 56.7                            | .3077  | 13 7.5                            | 2.56   |
|                                           | 3  | .304                 | .2508   | .0987   | 15.02  | 23 57.0                            | .3080  | 13 4.0                            | 2.43   |
|                                           | 4  | .314                 | .2474   | .0995   | 15.09  | 23 57.3                            | .3084  | 13 0.4                            | 2.30   |
|                                           | 5  | .325                 | .2440   | .1003   | 15.16  | 23 57.6                            | .3087  | 12 56.9                           | 2.17   |
|                                           | 6  | .336                 | .2406   | .1010   | 15.23  | 23 57.8                            | .3090  | 12 53.3                           | 2.04   |
|                                           | 7  | .346                 | .2371   | .1017   | 15.30  | 23 58.1                            | .3092  | 12 49.8                           | 1.91   |
|                                           | 8  | .357                 | .2336   | .1023   | 15.37  | 23 58.4                            | .3095  | 12 46.2                           | 1.77   |
|                                           | 9  | .368                 | .2301   | .1029   | 15.44  | 23 58.6                            | .3097  | 12 42.7                           | 1.64   |
|                                           | 10 | +2.378               | —0.2266 | +0.1035 | 15.51  | 23 58.9                            | 1.3100 | 12 39.2                           | —1.51  |
|                                           | 11 | .389                 | .2231   | .1040   | 15.58  | 23 59.1                            | .3102  | 12 35.7                           | 1.37   |
|                                           | 12 | .400                 | .2196   | .1045   | 15.65  | 23 59.3                            | .3103  | 12 32.1                           | 1.24   |
|                                           | 13 | .411                 | .2161   | .1049   | 15.72  | 23 59.5                            | .3105  | 12 28.6                           | 1.10   |
|                                           | 14 | .421                 | .2126   | .1053   | 15.79  | 23 59.7                            | .3106  | 12 25.1                           | 0.97   |
|                                           | 15 | .432                 | .2090   | .1056   | 15.86  | 23 59.9                            | .3107  | 12 21.6                           | 0.83   |
|                                           | 16 | .443                 | .2055   | .1058   | 15.93  | 0 0.0                              | .3108  | 12 18.1                           | 0.70   |
|                                           | 17 | .454                 | .2019   | .1060   | 16.00  | 0 0.2                              | .3109  | 12 14.6                           | 0.56   |
|                                           | 18 | .465                 | .1984   | .1062   | 16.07  | 0 0.3                              | .3110  | 12 11.1                           | 0.43   |
|                                           | 19 | .476                 | .1948   | .1063   | 16.15  | 0 0.5                              | .3111  | 12 7.6                            | 0.29   |

## I843

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g      | G                                | log h  | H                                 | i      |
|---------------------------------|----|----------------------|---------|---------|--------|----------------------------------|--------|-----------------------------------|--------|
| Juni                            | 20 | +2 <sup>s</sup> .487 | —0.1912 | +0.1064 | 16".22 | 0 <sup>h</sup> 0 <sup>m</sup> .6 | 1.3111 | 12 <sup>h</sup> 4 <sup>m</sup> .1 | —0".16 |
|                                 | 21 | .498                 | .1877   | .1065   | 16.29  | 0 0.7                            | .3111  | 12 0.6                            | —0.02  |
|                                 | 22 | .509                 | .1841   | .1065   | 16.36  | 0 0.8                            | .3111  | 11 57.1                           | +0.11  |
|                                 | 23 | .520                 | .1806   | .1065   | 16.43  | 0 0.9                            | .3111  | 11 53.6                           | 0.25   |
|                                 | 24 | .530                 | .1770   | .1064   | 16.50  | 0 1.0                            | .3111  | 11 50.1                           | 0.38   |
|                                 | 25 | .541                 | .1735   | .1062   | 16.57  | 0 1.1                            | .3110  | 11 46.6                           | 0.52   |
|                                 | 26 | .552                 | .1699   | .1060   | 16.64  | 0 1.2                            | .3109  | 11 43.1                           | 0.65   |
|                                 | 27 | .563                 | .1664   | .1057   | 16.71  | 0 1.3                            | .3108  | 11 39.6                           | 0.79   |
|                                 | 28 | .574                 | .1629   | .1054   | 16.79  | 0 1.3                            | .3107  | 11 36.1                           | 0.92   |
|                                 | 29 | .585                 | .1594   | .1050   | 16.86  | 0 1.4                            | .3105  | 11 32.5                           | 1.06   |
| Juli                            | 30 | +2.595               | —0.1559 | +0.1046 | 16.93  | 0 1.4                            | 1.3104 | 11 29.0                           | +1.19  |
|                                 | 1  | .606                 | .1524   | .1042   | 17.00  | 0 1.5                            | .3102  | 11 25.5                           | 1.33   |
|                                 | 2  | .617                 | .1489   | .1037   | 17.07  | 0 1.5                            | .3100  | 11 22.0                           | 1.46   |
|                                 | 3  | .628                 | .1454   | .1032   | 17.14  | 0 1.5                            | .3098  | 11 18.5                           | 1.59   |
|                                 | 4  | .638                 | .1419   | .1026   | 17.21  | 0 1.5                            | .3096  | 11 15.0                           | 1.73   |
|                                 | 5  | .649                 | .1384   | .1019   | 17.28  | 0 1.5                            | .3093  | 11 11.5                           | 1.86   |
|                                 | 6  | .660                 | .1349   | .1012   | 17.34  | 0 1.5                            | .3090  | 11 7.9                            | 2.00   |
|                                 | 7  | .670                 | .1315   | .1005   | 17.41  | 0 1.5                            | .3088  | 11 4.4                            | 2.13   |
|                                 | 8  | .681                 | .1281   | .0998   | 17.48  | 0 1.5                            | .3085  | 11 0.9                            | 2.26   |
|                                 | 9  | .691                 | .1247   | .0990   | 17.55  | 0 1.4                            | .3082  | 10 57.3                           | 2.38   |
|                                 | 10 | +2.702               | —0.1214 | +0.0982 | 17.62  | 0 1.4                            | 1.3079 | 10 53.8                           | +2.51  |
|                                 | 11 | .712                 | .1180   | .0973   | 17.69  | 0 1.4                            | .3075  | 10 50.2                           | 2.64   |
|                                 | 12 | .723                 | .1146   | .0963   | 17.75  | 0 1.3                            | .3071  | 10 46.6                           | 2.77   |
|                                 | 13 | .733                 | .1112   | .0953   | 17.82  | 0 1.3                            | .3067  | 10 43.1                           | 2.90   |
|                                 | 14 | .743                 | .1079   | .0943   | 17.89  | 0 1.2                            | .3063  | 10 39.5                           | 3.02   |
|                                 | 15 | .753                 | .1046   | .0933   | 17.95  | 0 1.2                            | .3059  | 10 35.9                           | 3.15   |
|                                 | 16 | .763                 | .1013   | .0923   | 18.02  | 0 1.1                            | .3055  | 10 32.3                           | 3.27   |
|                                 | 17 | .773                 | .0980   | .0912   | 18.09  | 0 1.1                            | .3051  | 10 28.8                           | 3.40   |
|                                 | 18 | .783                 | .0948   | .0901   | 18.15  | 0 1.0                            | .3046  | 10 25.2                           | 3.52   |
|                                 | 19 | .793                 | .0916   | .0889   | 18.21  | 0 0.9                            | .3041  | 10 21.5                           | 3.64   |
|                                 | 20 | +2.803               | —0.0884 | +0.0877 | 18.28  | 0 0.8                            | 1.3037 | 10 17.9                           | +3.76  |
|                                 | 21 | .813                 | .0853   | .0865   | 18.34  | 0 0.7                            | .3032  | 10 14.3                           | 3.88   |
|                                 | 22 | .823                 | .0821   | .0852   | 18.40  | 0 0.6                            | .3027  | 10 10.6                           | 4.00   |
|                                 | 23 | .832                 | .0790   | .0839   | 18.47  | 0 0.6                            | .3022  | 10 7.0                            | 4.12   |
|                                 | 24 | .842                 | .0759   | .0826   | 18.53  | 0 0.5                            | .3016  | 10 3.3                            | 4.24   |
|                                 | 25 | .851                 | .0728   | .0812   | 18.59  | 0 0.4                            | .3010  | 9 59.6                            | 4.35   |
|                                 | 26 | .861                 | .0697   | .0798   | 18.65  | 0 0.3                            | .3005  | 9 56.0                            | 4.47   |
|                                 | 27 | .870                 | .0667   | .0784   | 18.71  | 0 0.2                            | .2999  | 9 52.3                            | 4.58   |
|                                 | 28 | .879                 | .0637   | .0770   | 18.77  | 0 0.0                            | .2994  | 9 48.6                            | 4.69   |
|                                 | 29 | .888                 | .0607   | .0756   | 18.83  | 23 59.9                          | .2989  | 9 44.9                            | 4.80   |
| August                          | 30 | +2.897               | —0.0577 | +0.0742 | 18.89  | 23 59.8                          | 1.2983 | 9 41.2                            | +4.91  |
|                                 | 31 | .906                 | .0548   | .0728   | 18.95  | 23 59.7                          | .2977  | 9 37.4                            | 5.02   |
|                                 | 1  | .915                 | .0519   | .0713   | 19.01  | 23 59.6                          | .2971  | 9 33.7                            | 5.12   |
|                                 | 2  | .924                 | .0490   | .0698   | 19.07  | 23 59.5                          | .2965  | 9 29.9                            | 5.23   |
|                                 | 3  | .933                 | .0462   | .0683   | 19.12  | 23 59.4                          | .2958  | 9 26.2                            | 5.34   |
|                                 | 4  | .941                 | .0434   | .0667   | 19.18  | 23 59.3                          | .2952  | 9 22.4                            | 5.44   |
|                                 | 5  | .950                 | .0406   | .0652   | 19.24  | 23 59.1                          | .2946  | 9 18.6                            | 5.54   |
|                                 | 6  | .958                 | .0378   | .0637   | 19.29  | 23 59.0                          | .2940  | 9 14.8                            | 5.64   |
|                                 | 7  | .967                 | .0350   | .0622   | 19.35  | 23 58.9                          | .2934  | 9 11.0                            | 5.73   |
|                                 | 8  | .975                 | .0323   | .0607   | 19.40  | 23 58.8                          | .2928  | 9 7.2                             | 5.83   |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g      | G                                  | log h  | H                                | i      |
|---------------------------------|----|----------------------|---------|---------|--------|------------------------------------|--------|----------------------------------|--------|
| August                          | 9  | +2. <sup>s</sup> 983 | —0.0297 | +0.0591 | 19."46 | 23 <sup>h</sup> 58 <sup>m</sup> .7 | 1.2921 | 9 <sup>h</sup> 3 <sup>m</sup> .3 | +5."92 |
|                                 | 10 | .991                 | .0271   | .0576   | 19.51  | 23 58.6                            | .2915  | 8 59.5                           | 6.02   |
|                                 | 11 | 2.999                | .0245   | .0561   | 19.56  | 23 58.5                            | .2909  | 8 55.6                           | 6.11   |
|                                 | 12 | 3.007                | .0219   | .0546   | 19.61  | 23 58.4                            | .2902  | 8 51.8                           | 6.20   |
|                                 | 13 | .015                 | .0193   | .0530   | 19.66  | 23 58.3                            | .2896  | 8 47.9                           | 6.29   |
|                                 | 14 | .023                 | .0168   | .0515   | 19.72  | 23 58.2                            | .2890  | 8 44.0                           | 6.37   |
|                                 | 15 | .031                 | .0143   | .0500   | 19.77  | 23 58.1                            | .2884  | 8 40.1                           | 6.46   |
|                                 | 16 | .038                 | .0118   | .0485   | 19.82  | 23 58.0                            | .2877  | 8 36.1                           | 6.54   |
|                                 | 17 | .046                 | .0093   | .0470   | 19.86  | 23 57.9                            | .2871  | 8 32.2                           | 6.62   |
|                                 | 18 | .053                 | .0069   | .0456   | 19.91  | 23 57.8                            | .2865  | 8 28.2                           | 6.70   |
|                                 | 19 | +3.060               | —0.0045 | +0.0441 | 19.96  | 23 57.7                            | 1.2859 | 8 24.3                           | +6.78  |
|                                 | 20 | .068                 | —0.0021 | .0427   | 20.01  | 23 57.6                            | .2853  | 8 20.3                           | 6.85   |
|                                 | 21 | .075                 | +0.0002 | .0413   | 20.06  | 23 57.5                            | .2847  | 8 16.3                           | 6.92   |
|                                 | 22 | .082                 | .0025   | .0399   | 20.10  | 23 57.4                            | .2842  | 8 12.3                           | 6.99   |
|                                 | 23 | .089                 | .0048   | .0385   | 20.15  | 23 57.3                            | .2836  | 8 8.3                            | 7.06   |
|                                 | 24 | .096                 | .0071   | .0372   | 20.19  | 23 57.2                            | .2830  | 8 4.3                            | 7.13   |
|                                 | 25 | .103                 | .0094   | .0358   | 20.24  | 23 57.2                            | .2825  | 8 0.2                            | 7.20   |
|                                 | 26 | .110                 | .0116   | .0345   | 20.28  | 23 57.1                            | .2819  | 7 56.2                           | 7.26   |
|                                 | 27 | .117                 | .0138   | .0332   | 20.33  | 23 57.0                            | .2814  | 7 52.1                           | 7.33   |
|                                 | 28 | .123                 | .0160   | .0320   | 20.37  | 23 57.0                            | .2808  | 7 48.0                           | 7.39   |
|                                 | 29 | +3.130               | +0.0182 | +0.0308 | 20.42  | 23 56.9                            | 1.2803 | 7 44.0                           | +7.44  |
|                                 | 30 | .136                 | .0203   | .0297   | 20.46  | 23 56.9                            | .2799  | 7 39.9                           | 7.49   |
|                                 | 31 | .143                 | .0224   | .0286   | 20.50  | 23 56.8                            | .2794  | 7 35.8                           | 7.54   |
| Septbr.                         | 1  | .149                 | .0245   | .0275   | 20.54  | 23 56.8                            | .2789  | 7 31.6                           | 7.60   |
|                                 | 2  | .156                 | .0266   | .0264   | 20.58  | 23 56.8                            | .2785  | 7 27.5                           | 7.65   |
|                                 | 3  | .162                 | .0286   | .0254   | 20.63  | 23 56.7                            | .2781  | 7 23.3                           | 7.69   |
|                                 | 4  | .168                 | .0307   | .0244   | 20.67  | 23 56.7                            | .2776  | 7 19.2                           | 7.74   |
|                                 | 5  | .175                 | .0327   | .0235   | 20.71  | 23 56.7                            | .2772  | 7 15.0                           | 7.78   |
|                                 | 6  | .181                 | .0347   | .0226   | 20.75  | 23 56.7                            | .2769  | 7 10.9                           | 7.82   |
|                                 | 7  | .187                 | .0367   | .0217   | 20.79  | 23 56.7                            | .2765  | 7 6.7                            | 7.85   |
|                                 | 8  | +3.193               | +0.0387 | +0.0209 | 20.83  | 23 56.7                            | 1.2762 | 7 2.6                            | +7.89  |
|                                 | 9  | .199                 | .0406   | .0201   | 20.87  | 23 56.7                            | .2758  | 6 58.4                           | 7.92   |
|                                 | 10 | .205                 | .0426   | .0194   | 20.90  | 23 56.7                            | .2755  | 6 54.2                           | 7.96   |
|                                 | 11 | .211                 | .0445   | .0187   | 20.94  | 23 56.7                            | .2752  | 6 50.0                           | 7.99   |
|                                 | 12 | .217                 | .0464   | .0181   | 20.98  | 23 56.7                            | .2750  | 6 45.7                           | 8.01   |
|                                 | 13 | .223                 | .0483   | .0176   | 21.02  | 23 56.8                            | .2747  | 6 41.5                           | 8.04   |
|                                 | 14 | .228                 | .0502   | .0171   | 21.06  | 23 56.8                            | .2745  | 6 37.3                           | 8.06   |
|                                 | 15 | .234                 | .0521   | .0167   | 21.10  | 23 56.8                            | .2744  | 6 33.0                           | 8.08   |
|                                 | 16 | .240                 | .0540   | .0163   | 21.13  | 23 56.9                            | .2742  | 6 28.8                           | 8.09   |
|                                 | 17 | .246                 | .0559   | .0160   | 21.17  | 23 57.0                            | .2740  | 6 24.5                           | 8.11   |
|                                 | 18 | +3.252               | +0.0577 | +0.0157 | 21.21  | 23 57.0                            | 1.2739 | 6 20.3                           | +8.12  |
|                                 | 19 | .257                 | .0596   | .0154   | 21.25  | 23 57.1                            | .2738  | 6 16.0                           | 8.13   |
|                                 | 20 | .263                 | .0614   | .0152   | 21.28  | 23 57.2                            | .2737  | 6 11.7                           | 8.14   |
|                                 | 21 | .269                 | .0633   | .0151   | 21.32  | 23 57.2                            | .2737  | 6 7.5                            | 8.14   |
|                                 | 22 | .275                 | .0651   | .0150   | 21.36  | 23 57.3                            | .2736  | 6 3.2                            | 8.15   |
|                                 | 23 | .280                 | .0670   | .0150   | 21.39  | 23 57.4                            | .2736  | 5 58.9                           | 8.15   |
|                                 | 24 | .286                 | .0688   | .0150   | 21.43  | 23 57.5                            | .2736  | 5 54.7                           | 8.15   |
|                                 | 25 | .292                 | .0707   | .0151   | 21.47  | 23 57.6                            | .2737  | 5 50.4                           | 8.14   |
|                                 | 26 | .297                 | .0725   | .0153   | 21.51  | 23 57.7                            | .2737  | 5 46.1                           | 8.14   |
|                                 | 27 | .303                 | .0744   | .0155   | 21.54  | 23 57.9                            | .2738  | 5 41.8                           | 8.13   |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                   | x       | y       | g                  | G                                 | log h  | H                                | i                  |
|---------------------------------|----|---------------------|---------|---------|--------------------|-----------------------------------|--------|----------------------------------|--------------------|
| Septbr.                         | 28 | +3 <sup>s</sup> 309 | +0.0763 | +0.0158 | 21 <sup>h</sup> 58 | 23 <sup>h</sup> 58 <sup>m</sup> 0 | 1.2739 | 5 <sup>h</sup> 37 <sup>m</sup> 5 | +8 <sup>h</sup> 12 |
|                                 | 29 | .315                | .0782   | .0161   | 21.62              | 23 58.1                           | .2741  | 5 33.2                           | 8.10               |
|                                 | 30 | .320                | .0801   | .0165   | 21.66              | 23 58.3                           | .2743  | 5 28.9                           | 8.09               |
| Oktbr.                          | 1  | .326                | .0819   | .0170   | 21.70              | 23 58.4                           | .2745  | 5 24.7                           | 8.07               |
|                                 | 2  | .332                | .0838   | .0175   | 21.73              | 23 58.6                           | .2747  | 5 20.4                           | 8.05               |
|                                 | 3  | .337                | .0857   | .0180   | 21.77              | 23 58.7                           | .2749  | 5 16.1                           | 8.02               |
|                                 | 4  | .343                | .0876   | .0186   | 21.81              | 23 58.9                           | .2752  | 5 11.9                           | 7.99               |
|                                 | 5  | .349                | .0895   | .0192   | 21.85              | 23 59.1                           | .2754  | 5 7.6                            | 7.96               |
|                                 | 6  | .355                | .0914   | .0199   | 21.89              | 23 59.2                           | .2757  | 5 3.4                            | 7.93               |
|                                 | 7  | .361                | .0934   | .0206   | 21.93              | 23 59.4                           | .2760  | 4 59.1                           | 7.90               |
|                                 | 8  | +3.368              | +0.0954 | +0.0214 | 21.96              | 23 59.6                           | 1.2764 | 4 54.8                           | +7.87              |
|                                 | 9  | .374                | .0974   | .0223   | 22.00              | 23 59.8                           | .2767  | 4 50.6                           | 7.83               |
|                                 | 10 | .380                | .0994   | .0232   | 22.04              | 0 0.0                             | .2771  | 4 46.3                           | 7.79               |
|                                 | 11 | .386                | .1014   | .0241   | 22.08              | 0 0.2                             | .2775  | 4 42.0                           | 7.75               |
|                                 | 12 | .392                | .1034   | .0251   | 22.13              | 0 0.4                             | .2779  | 4 37.8                           | 7.71               |
|                                 | 13 | .398                | .1055   | .0261   | 22.17              | 0 0.6                             | .2783  | 4 33.6                           | 7.66               |
|                                 | 14 | .405                | .1076   | .0272   | 22.21              | 0 0.8                             | .2788  | 4 29.3                           | 7.61               |
|                                 | 15 | .411                | .1097   | .0283   | 22.25              | 0 1.1                             | .2793  | 4 25.1                           | 7.56               |
|                                 | 16 | .418                | .1118   | .0295   | 22.29              | 0 1.3                             | .2798  | 4 20.9                           | 7.50               |
|                                 | 17 | .424                | .1139   | .0307   | 22.34              | 0 1.5                             | .2803  | 4 16.7                           | 7.45               |
|                                 | 18 | +3.431              | +0.1161 | +0.0319 | 22.38              | 0 1.8                             | 1.2808 | 4 12.5                           | +7.39              |
|                                 | 19 | .438                | .1183   | .0332   | 22.42              | 0 2.0                             | .2814  | 4 8.3                            | 7.33               |
|                                 | 20 | .444                | .1205   | .0345   | 22.47              | 0 2.2                             | .2819  | 4 4.1                            | 7.26               |
|                                 | 21 | .451                | .1228   | .0358   | 22.51              | 0 2.5                             | .2824  | 4 0.0                            | 7.20               |
|                                 | 22 | .458                | .1251   | .0371   | 22.56              | 0 2.7                             | .2830  | 3 55.8                           | 7.13               |
|                                 | 23 | .465                | .1274   | .0385   | 22.61              | 0 3.0                             | .2836  | 3 51.6                           | 7.06               |
|                                 | 24 | .472                | .1297   | .0399   | 22.65              | 0 3.2                             | .2842  | 3 47.5                           | 6.99               |
|                                 | 25 | .480                | .1321   | .0414   | 22.70              | 0 3.5                             | .2848  | 3 43.3                           | 6.92               |
|                                 | 26 | .487                | .1345   | .0429   | 22.75              | 0 3.7                             | .2854  | 3 39.2                           | 6.84               |
|                                 | 27 | .494                | .1369   | .0444   | 22.80              | 0 4.0                             | .2860  | 3 35.1                           | 6.76               |
|                                 | 28 | +3.502              | +0.1393 | +0.0459 | 22.85              | 0 4.2                             | 1.2866 | 3 31.0                           | +6.68              |
|                                 | 29 | .509                | .1418   | .0474   | 22.90              | 0 4.5                             | .2873  | 3 26.9                           | 6.60               |
|                                 | 30 | .517                | .1443   | .0489   | 22.95              | 0 4.8                             | .2879  | 3 22.8                           | 6.51               |
|                                 | 31 | .525                | .1469   | .0505   | 23.00              | 0 5.0                             | .2886  | 3 18.7                           | 6.43               |
| Novbr.                          | 1  | .532                | .1495   | .0521   | 23.05              | 0 5.3                             | .2892  | 3 14.6                           | 6.34               |
|                                 | 2  | .540                | .1521   | .0537   | 23.10              | 0 5.5                             | .2899  | 3 10.6                           | 6.25               |
|                                 | 3  | .548                | .1547   | .0553   | 23.15              | 0 5.8                             | .2905  | 3 6.5                            | 6.16               |
|                                 | 4  | .556                | .1574   | .0569   | 23.21              | 0 6.1                             | .2912  | 3 2.5                            | 6.06               |
|                                 | 5  | .565                | .1601   | .0584   | 23.26              | 0 6.3                             | .2918  | 2 58.4                           | 5.97               |
|                                 | 6  | .573                | .1628   | .0600   | 23.32              | 0 6.6                             | .2925  | 2 54.4                           | 5.87               |
|                                 | 7  | +3.581              | +0.1656 | +0.0616 | 23.37              | 0 6.8                             | 1.2931 | 2 50.4                           | +5.77              |
|                                 | 8  | .590                | .1684   | .0632   | 23.43              | 0 7.1                             | .2938  | 2 46.4                           | 5.67               |
|                                 | 9  | .598                | .1713   | .0648   | 23.49              | 0 7.4                             | .2945  | 2 42.4                           | 5.57               |
|                                 | 10 | .607                | .1742   | .0664   | 23.54              | 0 7.6                             | .2951  | 2 38.4                           | 5.46               |
|                                 | 11 | .616                | .1771   | .0680   | 23.60              | 0 7.9                             | .2958  | 2 34.5                           | 5.35               |
|                                 | 12 | .625                | .1800   | .0696   | 23.66              | 0 8.1                             | .2964  | 2 30.5                           | 5.24               |
|                                 | 13 | .634                | .1829   | .0711   | 23.72              | 0 8.4                             | .2970  | 2 26.6                           | 5.13               |
|                                 | 14 | .643                | .1859   | .0726   | 23.78              | 0 8.6                             | .2976  | 2 22.6                           | 5.02               |
|                                 | 15 | .652                | .1889   | .0741   | 23.84              | 0 8.8                             | .2982  | 2 18.7                           | 4.91               |
|                                 | 16 | .661                | .1920   | .0756   | 23.90              | 0 9.1                             | .2988  | 2 14.8                           | 4.79               |

## 1843

| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                | log h  | H                                 | i     |
|---------------------------------|----|--------|---------|---------|-------|----------------------------------|--------|-----------------------------------|-------|
| Novbr.                          | 17 | +3.670 | +0.1951 | +0.0771 | 23.96 | 0 <sup>h</sup> 9 <sup>m</sup> .3 | 1.2994 | 2 <sup>h</sup> 10 <sup>m</sup> .9 | +4.67 |
|                                 | 18 | .680   | .1983   | .0786   | 24.03 | 0 9.5                            | .3000  | 2 6.9                             | 4.55  |
|                                 | 19 | .689   | .2014   | .0801   | 24.09 | 0 9.8                            | .3006  | 2 3.0                             | 4.43  |
|                                 | 20 | .699   | .2046   | .0815   | 24.15 | 0 10.0                           | .3012  | 1 59.2                            | 4.31  |
|                                 | 21 | .709   | .2078   | .0829   | 24.22 | 0 10.2                           | .3018  | 1 55.3                            | 4.19  |
|                                 | 22 | .719   | .2110   | .0843   | 24.28 | 0 10.4                           | .3023  | 1 51.4                            | 4.07  |
|                                 | 23 | .728   | .2142   | .0857   | 24.35 | 0 10.6                           | .3029  | 1 47.6                            | 3.94  |
|                                 | 24 | .738   | .2175   | .0870   | 24.41 | 0 10.8                           | .3034  | 1 43.7                            | 3.82  |
|                                 | 25 | .748   | .2209   | .0883   | 24.48 | 0 11.0                           | .3039  | 1 39.9                            | 3.69  |
|                                 | 26 | .759   | .2243   | .0896   | 24.55 | 0 11.2                           | .3044  | 1 36.1                            | 3.56  |
|                                 | 27 | +3.769 | +0.2277 | +0.0908 | 24.62 | 0 11.4                           | 1.3049 | 1 32.2                            | +3.43 |
|                                 | 28 | .779   | .2311   | .0920   | 24.69 | 0 11.6                           | .3054  | 1 28.4                            | 3.30  |
|                                 | 29 | .789   | .2345   | .0932   | 24.75 | 0 11.8                           | .3059  | 1 24.6                            | 3.16  |
|                                 | 30 | .800   | .2380   | .0943   | 24.82 | 0 12.0                           | .3063  | 1 20.8                            | 3.03  |
| Dezbr.                          | 1  | .810   | .2414   | .0954   | 24.89 | 0 12.1                           | .3067  | 1 16.9                            | 2.90  |
|                                 | 2  | .821   | .2449   | .0964   | 24.96 | 0 12.3                           | .3071  | 1 13.1                            | 2.76  |
|                                 | 3  | .832   | .2484   | .0973   | 25.03 | 0 12.4                           | .3075  | 1 9.4                             | 2.63  |
|                                 | 4  | .842   | .2519   | .0982   | 25.10 | 0 12.6                           | .3079  | 1 5.6                             | 2.49  |
|                                 | 5  | .853   | .2554   | .0991   | 25.17 | 0 12.7                           | .3082  | 1 1.8                             | 2.35  |
|                                 | 6  | .864   | .2590   | .0999   | 25.25 | 0 12.9                           | .3085  | 0 58.0                            | 2.21  |
|                                 | 7  | +3.875 | +0.2626 | +0.1007 | 25.32 | 0 13.0                           | 1.3088 | 0 54.2                            | +2.07 |
|                                 | 8  | .886   | .2662   | .1015   | 25.39 | 0 13.1                           | .3091  | 0 50.5                            | 1.93  |
|                                 | 9  | .897   | .2698   | .1022   | 25.46 | 0 13.3                           | .3094  | 0 46.7                            | 1.79  |
|                                 | 10 | .908   | .2734   | .1028   | 25.53 | 0 13.4                           | .3097  | 0 43.0                            | 1.65  |
|                                 | 11 | .919   | .2770   | .1034   | 25.61 | 0 13.5                           | .3099  | 0 39.2                            | 1.51  |
|                                 | 12 | .930   | .2807   | .1040   | 25.68 | 0 13.6                           | .3101  | 0 35.4                            | 1.37  |
|                                 | 13 | .941   | .2843   | .1045   | 25.75 | 0 13.7                           | .3103  | 0 31.7                            | 1.22  |
|                                 | 14 | .952   | .2880   | .1049   | 25.83 | 0 13.7                           | .3105  | 0 28.0                            | 1.08  |
|                                 | 15 | .963   | .2916   | .1053   | 25.90 | 0 13.8                           | .3107  | 0 24.2                            | 0.94  |
|                                 | 16 | .974   | .2953   | .1057   | 25.97 | 0 13.9                           | .3108  | 0 20.5                            | 0.80  |
|                                 | 17 | +3.985 | +0.2989 | +0.1060 | 26.05 | 0 14.0                           | 1.3109 | 0 16.7                            | +0.65 |
|                                 | 18 | 3.996  | .3026   | .1062   | 26.12 | 0 14.0                           | .3110  | 0 13.0                            | 0.51  |
|                                 | 19 | 4.008  | .3063   | .1063   | 26.19 | 0 14.1                           | .3111  | 0 9.3                             | 0.36  |
|                                 | 20 | .019   | .3100   | .1064   | 26.27 | 0 14.1                           | .3111  | 0 5.5                             | 0.21  |
|                                 | 21 | .030   | .3137   | .1065   | 26.34 | 0 14.2                           | .3111  | 0 1.8                             | +0.07 |
|                                 | 22 | .041   | .3174   | .1065   | 26.42 | 0 14.2                           | .3111  | 23 58.1                           | -0.08 |
|                                 | 23 | .053   | .3211   | .1065   | 26.49 | 0 14.2                           | .3111  | 23 54.3                           | 0.22  |
|                                 | 24 | .064   | .3247   | .1064   | 26.56 | 0 14.2                           | .3110  | 23 50.6                           | 0.37  |
|                                 | 25 | .075   | .3284   | .1062   | 26.64 | 0 14.3                           | .3110  | 23 46.8                           | 0.51  |
|                                 | 26 | .086   | .3320   | .1060   | 26.71 | 0 14.3                           | .3109  | 23 43.1                           | 0.66  |
|                                 | 27 | +4.097 | +0.3357 | +0.1057 | 26.78 | 0 14.3                           | 1.3108 | 23 39.3                           | -0.80 |
|                                 | 28 | .109   | .3393   | .1054   | 26.86 | 0 14.3                           | .3107  | 23 35.6                           | 0.94  |
|                                 | 29 | .120   | .3429   | .1050   | 26.93 | 0 14.3                           | .3105  | 23 31.8                           | 1.09  |
|                                 | 30 | .131   | .3465   | .1046   | 27.00 | 0 14.2                           | .3104  | 23 28.1                           | 1.23  |
|                                 | 31 | .142   | .3501   | .1042   | 27.07 | 0 14.2                           | .3102  | 23 24.3                           | 1.37  |

## 1844

| 12 <sup>h</sup><br>M. Z. Berlin |    | f       | x       | y       | g                 | G                                | log h  | H                                 | i                  |
|---------------------------------|----|---------|---------|---------|-------------------|----------------------------------|--------|-----------------------------------|--------------------|
| Januar                          | 1  | +1.8082 | —0.6389 | +0.1035 | 7 <sup>h</sup> 24 | 0 <sup>h</sup> 53 <sup>m</sup> 8 | 1.3099 | 23 <sup>h</sup> 20 <sup>m</sup> 6 | —1 <sup>h</sup> 51 |
|                                 | 2  | .093    | .6354   | .1029   | 7.31              | 0 53.3                           | .3097  | 23 16.8                           | 1.66               |
|                                 | 3  | .104    | .6319   | .1022   | 7.38              | 0 52.7                           | .3094  | 23 13.0                           | 1.80               |
|                                 | 4  | .115    | .6284   | .1015   | 7.45              | 0 52.2                           | .3091  | 23 9.3                            | 1.94               |
|                                 | 5  | .125    | .6250   | .1007   | 7.52              | 0 51.7                           | .3088  | 23 5.5                            | 2.08               |
|                                 | 6  | .136    | .6216   | .0999   | 7.59              | 0 51.2                           | .3085  | 23 1.7                            | 2.22               |
|                                 | 7  | .147    | .6182   | .0991   | 7.65              | 0 50.6                           | .3082  | 22 57.9                           | 2.36               |
|                                 | 8  | .158    | .6148   | .0982   | 7.72              | 0 50.1                           | .3079  | 22 54.1                           | 2.50               |
|                                 | 9  | .169    | .6115   | .0973   | 7.79              | 0 49.6                           | .3075  | 22 50.3                           | 2.63               |
|                                 | 10 | .179    | .6082   | .0963   | 7.86              | 0 49.0                           | .3071  | 22 46.5                           | 2.77               |
|                                 | 11 | +1.190  | —0.6049 | +0.0953 | 7.92              | 0 48.5                           | 1.3067 | 22 42.7                           | —2.91              |
|                                 | 12 | .200    | .6016   | .0942   | 7.99              | 0 47.9                           | .3063  | 22 38.9                           | 3.04               |
|                                 | 13 | .210    | .5983   | .0931   | 8.05              | 0 47.4                           | .3058  | 22 35.1                           | 3.18               |
|                                 | 14 | .221    | .5950   | .0919   | 8.12              | 0 46.8                           | .3053  | 22 31.2                           | 3.31               |
|                                 | 15 | .231    | .5918   | .0907   | 8.18              | 0 46.3                           | .3049  | 22 27.4                           | 3.44               |
|                                 | 16 | .241    | .5886   | .0895   | 8.25              | 0 45.7                           | .3044  | 22 23.5                           | 3.57               |
|                                 | 17 | .252    | .5855   | .0882   | 8.31              | 0 45.2                           | .3039  | 22 19.7                           | 3.70               |
|                                 | 18 | .262    | .5824   | .0869   | 8.37              | 0 44.6                           | .3034  | 22 15.8                           | 3.83               |
|                                 | 19 | .272    | .5793   | .0856   | 8.44              | 0 44.1                           | .3029  | 22 11.9                           | 3.96               |
|                                 | 20 | .281    | .5762   | .0843   | 8.50              | 0 43.5                           | .3023  | 22 8.0                            | 4.08               |
| Februar                         | 21 | +1.291  | —0.5732 | +0.0829 | 8.56              | 0 43.0                           | 1.3018 | 22 4.1                            | —4.21              |
|                                 | 22 | .301    | .5702   | .0815   | 8.62              | 0 42.4                           | .3012  | 22 0.3                            | 4.33               |
|                                 | 23 | .310    | .5673   | .0800   | 8.68              | 0 41.8                           | .3006  | 21 56.4                           | 4.45               |
|                                 | 24 | .320    | .5643   | .0785   | 8.74              | 0 41.3                           | .3000  | 21 52.4                           | 4.57               |
|                                 | 25 | .329    | .5614   | .0770   | 8.80              | 0 40.8                           | .2994  | 21 48.5                           | 4.69               |
|                                 | 26 | .338    | .5585   | .0755   | 8.85              | 0 40.2                           | .2988  | 21 44.6                           | 4.81               |
|                                 | 27 | .348    | .5556   | .0740   | 8.91              | 0 39.7                           | .2982  | 21 40.6                           | 4.93               |
|                                 | 28 | .357    | .5527   | .0725   | 8.97              | 0 39.2                           | .2976  | 21 36.6                           | 5.04               |
|                                 | 29 | .366    | .5499   | .0709   | 9.02              | 0 38.6                           | .2969  | 21 32.7                           | 5.16               |
|                                 | 30 | .375    | .5471   | .0693   | 9.08              | 0 38.1                           | .2962  | 21 28.7                           | 5.27               |
|                                 | 31 | +1.383  | —0.5444 | +0.0677 | 9.13              | 0 37.6                           | 1.2956 | 21 24.7                           | —5.38              |
|                                 | 1  | .392    | .5417   | .0661   | 9.19              | 0 37.1                           | .2950  | 21 20.7                           | 5.48               |
|                                 | 2  | .401    | .5390   | .0645   | 9.24              | 0 36.6                           | .2943  | 21 16.7                           | 5.59               |
|                                 | 3  | .409    | .5363   | .0628   | 9.30              | 0 36.1                           | .2936  | 21 12.7                           | 5.69               |
|                                 | 4  | .418    | .5337   | .0612   | 9.35              | 0 35.6                           | .2930  | 21 8.6                            | 5.79               |
|                                 | 5  | .426    | .5311   | .0596   | 9.40              | 0 35.1                           | .2923  | 21 4.6                            | 5.89               |
|                                 | 6  | .434    | .5286   | .0580   | 9.45              | 0 34.7                           | .2917  | 21 0.5                            | 5.99               |
|                                 | 7  | .442    | .5261   | .0564   | 9.50              | 0 34.2                           | .2910  | 20 56.5                           | 6.09               |
|                                 | 8  | .450    | .5236   | .0548   | 9.55              | 0 33.8                           | .2903  | 20 52.4                           | 6.18               |
|                                 | 9  | .458    | .5211   | .0532   | 9.60              | 0 33.4                           | .2897  | 20 48.3                           | 6.28               |
|                                 | 10 | +1.466  | —0.5187 | +0.0516 | 9.65              | 0 32.9                           | 1.2890 | 20 44.2                           | —6.37              |
|                                 | 11 | .474    | .5163   | .0500   | 9.70              | 0 32.5                           | .2884  | 20 40.1                           | 6.45               |
|                                 | 12 | .482    | .5139   | .0485   | 9.75              | 0 32.1                           | .2877  | 20 36.0                           | 6.54               |
|                                 | 13 | .489    | .5115   | .0469   | 9.79              | 0 31.7                           | .2871  | 20 31.8                           | 6.62               |
|                                 | 14 | .497    | .5092   | .0454   | 9.84              | 0 31.3                           | .2865  | 20 27.7                           | 6.71               |
|                                 | 15 | .504    | .5069   | .0439   | 9.89              | 0 30.9                           | .2858  | 20 23.5                           | 6.79               |
|                                 | 16 | .511    | .5047   | .0424   | 9.93              | 0 30.6                           | .2852  | 20 19.3                           | 6.87               |
|                                 | 17 | .518    | .5024   | .0409   | 9.98              | 0 30.2                           | .2846  | 20 15.1                           | 6.94               |
|                                 | 18 | .525    | .5002   | .0395   | 10.02             | 0 29.9                           | .2840  | 20 11.0                           | 7.02               |
|                                 | 19 | .532    | .4980   | .0381   | 10.07             | 0 29.5                           | .2834  | 20 6.8                            | 7.09               |

## 1844

| <sup>12h</sup><br>M. Z. Berlin | f                    | x       | y       | g      | G                                 | log h  | H                                 | i      |
|--------------------------------|----------------------|---------|---------|--------|-----------------------------------|--------|-----------------------------------|--------|
| Februar 20                     | +1. <sup>s</sup> 539 | —0.4958 | +0.0367 | 10."11 | 0 <sup>h</sup> 29 <sup>m</sup> .2 | 1.2828 | 20 <sup>h</sup> 2 <sup>m</sup> .6 | —7."16 |
| 21                             | .546                 | .4936   | .0353   | 10.15  | 0 28.9                            | .2822  | 19 58.4                           | 7.23   |
| 22                             | .553                 | .4915   | .0340   | 10.20  | 0 28.6                            | .2817  | 19 54.2                           | 7.29   |
| 23                             | .559                 | .4894   | .0327   | 10.24  | 0 28.4                            | .2811  | 19 49.9                           | 7.35   |
| 24                             | .566                 | .4873   | .0314   | 10.28  | 0 28.1                            | .2806  | 19 45.7                           | 7.41   |
| 25                             | .573                 | .4852   | .0301   | 10.32  | 0 27.8                            | .2800  | 19 41.4                           | 7.47   |
| 26                             | .579                 | .4832   | .0289   | 10.36  | 0 27.6                            | .2795  | 19 37.2                           | 7.53   |
| 27                             | .585                 | .4812   | .0278   | 10.40  | 0 27.4                            | .2790  | 19 32.9                           | 7.58   |
| 28                             | .592                 | .4792   | .0267   | 10.44  | 0 27.2                            | .2786  | 19 28.6                           | 7.64   |
| 29                             | .598                 | .4772   | .0256   | 10.48  | 0 27.0                            | .2781  | 19 24.3                           | 7.68   |
| März 1                         | +1.604               | —0.4752 | +0.0246 | 10.52  | 0 26.8                            | 1.2777 | 19 20.1                           | —7.73  |
| 2                              | .610                 | .4732   | .0237   | 10.56  | 0 26.6                            | .2773  | 19 15.8                           | 7.77   |
| 3                              | .616                 | .4713   | .0228   | 10.60  | 0 26.5                            | .2769  | 19 11.5                           | 7.81   |
| 4                              | .622                 | .4693   | .0219   | 10.64  | 0 26.3                            | .2766  | 19 7.2                            | 7.85   |
| 5                              | .628                 | .4674   | .0211   | 10.68  | 0 26.2                            | .2762  | 19 2.9                            | 7.89   |
| 6                              | .634                 | .4655   | .0203   | 10.72  | 0 26.1                            | .2759  | 18 58.6                           | 7.92   |
| 7                              | .640                 | .4636   | .0195   | 10.76  | 0 26.0                            | .2756  | 18 54.2                           | 7.95   |
| 8                              | .645                 | .4617   | .0188   | 10.79  | 0 25.9                            | .2753  | 18 49.9                           | 7.98   |
| 9                              | .651                 | .4598   | .0182   | 10.83  | 0 25.8                            | .2750  | 18 45.6                           | 8.01   |
| 10                             | .657                 | .4579   | .0176   | 10.87  | 0 25.8                            | .2747  | 18 41.3                           | 8.04   |
| 11                             | +1.663               | —0.4561 | +0.0171 | 10.91  | 0 25.7                            | 1.2745 | 18 36.9                           | —8.06  |
| 12                             | .669                 | .4542   | .0166   | 10.94  | 0 25.7                            | .2743  | 18 32.6                           | 8.08   |
| 13                             | .674                 | .4524   | .0162   | 10.98  | 0 25.7                            | .2741  | 18 28.3                           | 8.10   |
| 14                             | .680                 | .4505   | .0159   | 11.02  | 0 25.7                            | .2740  | 18 23.9                           | 8.11   |
| 15                             | .686                 | .4487   | .0156   | 11.05  | 0 25.7                            | .2739  | 18 19.6                           | 8.12   |
| 16                             | .691                 | .4469   | .0154   | 11.09  | 0 25.8                            | .2738  | 18 15.3                           | 8.13   |
| 17                             | .697                 | .4451   | .0152   | 11.13  | 0 25.8                            | .2737  | 18 10.9                           | 8.14   |
| 18                             | .702                 | .4433   | .0151   | 11.16  | 0 25.9                            | .2737  | 18 6.6                            | 8.15   |
| 19                             | .708                 | .4415   | .0150   | 11.20  | 0 25.9                            | .2736  | 18 2.3                            | 8.15   |
| 20                             | .714                 | .4397   | .0150   | 11.24  | 0 26.0                            | .2736  | 17 58.0                           | 8.15   |
| 21                             | +1.719               | —0.4378 | +0.0150 | 11.27  | 0 26.1                            | 1.2737 | 17 53.6                           | —8.15  |
| 22                             | .725                 | .4360   | .0151   | 11.31  | 0 26.2                            | .2737  | 17 49.3                           | 8.14   |
| 23                             | .730                 | .4341   | .0153   | 11.35  | 0 26.3                            | .2738  | 17 45.0                           | 8.13   |
| 24                             | .736                 | .4322   | .0156   | 11.39  | 0 26.5                            | .2739  | 17 40.7                           | 8.12   |
| 25                             | .741                 | .4303   | .0159   | 11.42  | 0 26.6                            | .2740  | 17 36.4                           | 8.10   |
| 26                             | .747                 | .4284   | .0163   | 11.46  | 0 26.8                            | .2742  | 17 32.1                           | 8.09   |
| 27                             | .753                 | .4265   | .0167   | 11.50  | 0 26.9                            | .2743  | 17 27.8                           | 8.08   |
| 28                             | .758                 | .4246   | .0171   | 11.54  | 0 27.1                            | .2745  | 17 23.5                           | 8.06   |
| 29                             | .764                 | .4227   | .0176   | 11.58  | 0 27.3                            | .2747  | 17 19.2                           | 8.04   |
| 30                             | .770                 | .4208   | .0181   | 11.61  | 0 27.5                            | .2749  | 17 14.9                           | 8.01   |
| 31                             | +1.775               | —0.4188 | +0.0187 | 11.65  | 0 27.7                            | 1.2752 | 17 10.7                           | —7.99  |
| April 1                        | .781                 | .4168   | .0193   | 11.69  | 0 27.9                            | .2754  | 17 6.4                            | 7.96   |
| 2                              | .787                 | .4148   | .0200   | 11.73  | 0 28.2                            | .2757  | 17 2.2                            | 7.93   |
| 3                              | .793                 | .4128   | .0208   | 11.77  | 0 28.4                            | .2761  | 16 57.9                           | 7.90   |
| 4                              | .798                 | .4108   | .0216   | 11.81  | 0 28.6                            | .2765  | 16 53.7                           | 7.86   |
| 5                              | .804                 | .4088   | .0225   | 11.85  | 0 28.9                            | .2768  | 16 49.5                           | 7.82   |
| 6                              | .810                 | .4068   | .0234   | 11.89  | 0 29.1                            | .2772  | 16 45.2                           | 7.78   |
| 7                              | .816                 | .4047   | .0244   | 11.94  | 0 29.4                            | .2776  | 16 41.0                           | 7.74   |
| 8                              | .822                 | .4026   | .0254   | 11.98  | 0 29.7                            | .2780  | 16 36.8                           | 7.69   |
| 9                              | .828                 | .4005   | .0264   | 12.02  | 0 30.0                            | .2785  | 16 32.7                           | 7.65   |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                 | log h  | H                                  | i     |
|---------------------------------|----|--------|---------|---------|-------|-----------------------------------|--------|------------------------------------|-------|
| April                           | 10 | +1.835 | —0.3984 | +0.0275 | 12.06 | 0 <sup>h</sup> 30 <sup>m</sup> .3 | 1.2789 | 16 <sup>h</sup> 28 <sup>m</sup> .5 | —7.60 |
|                                 | 11 | .841   | .3963   | .0286   | 12.11 | 0 30.6                            | .2794  | 16 24.3                            | 7.54  |
|                                 | 12 | .847   | .3941   | .0297   | 12.15 | 0 30.9                            | .2799  | 16 20.2                            | 7.49  |
|                                 | 13 | .853   | .3919   | .0309   | 12.19 | 0 31.2                            | .2804  | 16 16.0                            | 7.43  |
|                                 | 14 | .860   | .3897   | .0321   | 12.24 | 0 31.5                            | .2809  | 16 11.9                            | 7.38  |
|                                 | 15 | .866   | .3874   | .0333   | 12.28 | 0 31.8                            | .2814  | 16 7.8                             | 7.32  |
|                                 | 16 | .873   | .3851   | .0345   | 12.33 | 0 32.1                            | .2819  | 16 3.7                             | 7.26  |
|                                 | 17 | .880   | .3828   | .0358   | 12.37 | 0 32.5                            | .2824  | 15 59.6                            | 7.19  |
|                                 | 18 | .886   | .3805   | .0371   | 12.42 | 0 32.8                            | .2830  | 15 55.5                            | 7.13  |
|                                 | 19 | .893   | .3782   | .0385   | 12.47 | 0 33.1                            | .2836  | 15 51.4                            | 7.06  |
|                                 | 20 | +1.900 | —0.3758 | +0.0399 | 12.52 | 0 33.5                            | 1.2841 | 15 47.4                            | —6.99 |
|                                 | 21 | .907   | .3734   | .0413   | 12.57 | 0 33.8                            | .2847  | 15 43.3                            | 6.92  |
|                                 | 22 | .914   | .3709   | .0427   | 12.61 | 0 34.1                            | .2853  | 15 39.3                            | 6.84  |
|                                 | 23 | .921   | .3684   | .0442   | 12.66 | 0 34.5                            | .2859  | 15 35.3                            | 6.77  |
|                                 | 24 | .928   | .3659   | .0457   | 12.72 | 0 34.8                            | .2866  | 15 31.3                            | 6.69  |
|                                 | 25 | .936   | .3634   | .0472   | 12.77 | 0 35.1                            | .2872  | 15 27.3                            | 6.61  |
|                                 | 26 | .943   | .3608   | .0487   | 12.82 | 0 35.5                            | .2878  | 15 23.3                            | 6.53  |
|                                 | 27 | .950   | .3582   | .0502   | 12.87 | 0 35.8                            | .2884  | 15 19.3                            | 6.44  |
|                                 | 28 | .958   | .3556   | .0517   | 12.92 | 0 36.1                            | .2891  | 15 15.4                            | 6.36  |
|                                 | 29 | .965   | .3529   | .0533   | 12.97 | 0 36.4                            | .2897  | 15 11.4                            | 6.27  |
| Mai                             | 30 | +1.973 | —0.3502 | +0.0548 | 13.03 | 0 36.7                            | 1.2903 | 15 7.5                             | —6.18 |
|                                 | 1  | .981   | .3475   | .0564   | 13.08 | 0 37.0                            | .2910  | 15 3.6                             | 6.09  |
|                                 | 2  | .989   | .3448   | .0579   | 13.14 | 0 37.4                            | .2916  | 14 59.7                            | 6.00  |
|                                 | 3  | 1.997  | .3420   | .0595   | 13.19 | 0 37.7                            | .2922  | 14 55.9                            | 5.90  |
|                                 | 4  | 2.005  | .3392   | .0610   | 13.25 | 0 38.0                            | .2929  | 14 52.0                            | 5.81  |
|                                 | 5  | .013   | .3364   | .0626   | 13.31 | 0 38.3                            | .2935  | 14 48.2                            | 5.71  |
|                                 | 6  | .021   | .3336   | .0641   | 13.36 | 0 38.6                            | .2941  | 14 44.3                            | 5.61  |
|                                 | 7  | .029   | .3307   | .0656   | 13.42 | 0 38.9                            | .2947  | 14 40.5                            | 5.51  |
|                                 | 8  | .037   | .3278   | .0671   | 13.48 | 0 39.2                            | .2954  | 14 36.7                            | 5.41  |
|                                 | 9  | .046   | .3249   | .0686   | 13.54 | 0 39.5                            | .2960  | 14 32.9                            | 5.31  |
|                                 | 10 | +2.055 | —0.3219 | +0.0701 | 13.60 | 0 39.8                            | 1.2966 | 14 29.1                            | —5.20 |
|                                 | 11 | .063   | .3189   | .0716   | 13.66 | 0 40.0                            | .2972  | 14 25.3                            | 5.10  |
|                                 | 12 | .072   | .3159   | .0730   | 13.72 | 0 40.3                            | .2978  | 14 21.5                            | 4.99  |
|                                 | 13 | .081   | .3128   | .0745   | 13.78 | 0 40.6                            | .2984  | 14 17.8                            | 4.88  |
|                                 | 14 | .089   | .3097   | .0760   | 13.84 | 0 40.8                            | .2990  | 14 14.0                            | 4.77  |
|                                 | 15 | .098   | .3066   | .0774   | 13.90 | 0 41.1                            | .2995  | 14 10.3                            | 4.65  |
|                                 | 16 | .107   | .3035   | .0788   | 13.97 | 0 41.3                            | .3001  | 14 6.5                             | 4.54  |
|                                 | 17 | .116   | .3004   | .0802   | 14.03 | 0 41.5                            | .3006  | 14 2.8                             | 4.43  |
|                                 | 18 | .125   | .2973   | .0816   | 14.09 | 0 41.8                            | .3012  | 13 59.1                            | 4.32  |
|                                 | 19 | .135   | .2941   | .0829   | 14.15 | 0 42.0                            | .3017  | 13 55.5                            | 4.20  |
|                                 | 20 | +2.144 | —0.2909 | +0.0842 | 14.22 | 0 42.2                            | 1.3023 | 13 51.8                            | —4.08 |
|                                 | 21 | .153   | .2877   | .0855   | 14.28 | 0 42.4                            | .3028  | 13 48.1                            | 3.96  |
|                                 | 22 | .163   | .2844   | .0868   | 14.35 | 0 42.6                            | .3033  | 13 44.5                            | 3.84  |
|                                 | 23 | .173   | .2811   | .0880   | 14.41 | 0 42.7                            | .3038  | 13 40.8                            | 3.72  |
|                                 | 24 | .182   | .2778   | .0892   | 14.48 | 0 42.9                            | .3043  | 13 37.2                            | 3.60  |
|                                 | 25 | .192   | .2745   | .0903   | 14.55 | 0 43.1                            | .3047  | 13 33.6                            | 3.47  |
|                                 | 26 | .202   | .2712   | .0914   | 14.61 | 0 43.3                            | .3052  | 13 30.0                            | 3.35  |
|                                 | 27 | .211   | .2679   | .0925   | 14.68 | 0 43.4                            | .3056  | 13 26.4                            | 3.23  |
|                                 | 28 | .221   | .2645   | .0936   | 14.75 | 0 43.6                            | .3060  | 13 22.7                            | 3.10  |
|                                 | 29 | .231   | .2612   | .0947   | 14.81 | 0 43.7                            | .3065  | 13 19.1                            | 2.98  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                 | log h  | H                                  | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|-----------------------------------|--------|------------------------------------|---------------------|
| Mai                             | 30 | +2 <sup>s</sup> .241 | —0.2578 | +0.0957 | 14 <sup>h</sup> .88 | 0 <sup>h</sup> 43 <sup>m</sup> .8 | 1.3069 | 13 <sup>h</sup> 15 <sup>m</sup> .5 | —2 <sup>h</sup> .85 |
|                                 | 31 | .251                 | .2544   | .0967   | 14.95               | 0 43.9                            | .3073  | 13 11.9                            | 2.72                |
| Juni                            | 1  | .261                 | .2510   | .0976   | 15.02               | 0 44.0                            | .3076  | 13 8.4                             | 2.59                |
|                                 | 2  | .271                 | .2476   | .0985   | 15.09               | 0 44.1                            | .3080  | 13 4.8                             | 2.46                |
|                                 | 3  | .281                 | .2442   | .0993   | 15.15               | 0 44.2                            | .3083  | 13 1.3                             | 2.33                |
|                                 | 4  | .292                 | .2408   | .1001   | 15.22               | 0 44.3                            | .3086  | 12 57.7                            | 2.20                |
|                                 | 5  | .302                 | .2374   | .1008   | 15.29               | 0 44.4                            | .3089  | 12 54.2                            | 2.07                |
|                                 | 6  | .312                 | .2340   | .1015   | 15.36               | 0 44.4                            | .3092  | 12 50.6                            | 1.94                |
|                                 | 7  | .322                 | .2305   | .1022   | 15.43               | 0 44.5                            | .3094  | 12 47.1                            | 1.81                |
|                                 | 8  | .333                 | .2270   | .1028   | 15.50               | 0 44.5                            | .3097  | 12 43.5                            | 1.67                |
|                                 | 9  | +2.343               | —0.2235 | +0.1034 | 15.57               | 0 44.5                            | 1.3099 | 12 40.0                            | —1.54               |
|                                 | 10 | .354                 | .2200   | .1039   | 15.64               | 0 44.5                            | .3101  | 12 36.5                            | 1.41                |
|                                 | 11 | .364                 | .2165   | .1044   | 15.71               | 0 44.5                            | .3103  | 12 33.0                            | 1.27                |
|                                 | 12 | .375                 | .2130   | .1048   | 15.78               | 0 44.5                            | .3105  | 12 29.5                            | 1.14                |
|                                 | 13 | .385                 | .2095   | .1052   | 15.85               | 0 44.5                            | .3106  | 12 26.0                            | 1.00                |
|                                 | 14 | .396                 | .2060   | .1055   | 15.92               | 0 44.5                            | .3107  | 12 22.4                            | 0.87                |
|                                 | 15 | .406                 | .2025   | .1058   | 15.99               | 0 44.5                            | .3108  | 12 18.9                            | 0.73                |
|                                 | 16 | .417                 | .1991   | .1060   | 16.06               | 0 44.5                            | .3109  | 12 15.4                            | 0.60                |
|                                 | 17 | .427                 | .1956   | .1062   | 16.13               | 0 44.4                            | .3110  | 12 11.9                            | 0.46                |
|                                 | 18 | .438                 | .1921   | .1064   | 16.20               | 0 44.4                            | .3110  | 12 8.4                             | 0.33                |
|                                 | 19 | +2.449               | —0.1886 | +0.1065 | 16.27               | 0 44.3                            | 1.3111 | 12 4.9                             | —0.19               |
|                                 | 20 | .459                 | .1851   | .1065   | 16.34               | 0 44.2                            | .3111  | 12 1.4                             | —0.06               |
|                                 | 21 | .470                 | .1817   | .1065   | 16.41               | 0 44.2                            | .3111  | 11 57.9                            | +0.08               |
|                                 | 22 | .480                 | .1782   | .1064   | 16.48               | 0 44.1                            | .3111  | 11 54.4                            | 0.21                |
|                                 | 23 | .491                 | .1748   | .1063   | 16.55               | 0 44.0                            | .3111  | 11 50.9                            | 0.35                |
|                                 | 24 | .502                 | .1714   | .1062   | 16.62               | 0 43.9                            | .3110  | 11 47.4                            | 0.48                |
|                                 | 25 | .512                 | .1680   | .1060   | 16.68               | 0 43.8                            | .3109  | 11 43.9                            | 0.62                |
|                                 | 26 | .523                 | .1646   | .1057   | 16.75               | 0 43.7                            | .3108  | 11 40.4                            | 0.76                |
|                                 | 27 | .533                 | .1612   | .1054   | 16.82               | 0 43.6                            | .3107  | 11 36.9                            | 0.89                |
|                                 | 28 | .544                 | .1578   | .1051   | 16.89               | 0 43.5                            | .3106  | 11 33.4                            | 1.03                |
|                                 | 29 | +2.554               | —0.1544 | +0.1047 | 16.96               | 0 43.3                            | 1.3104 | 11 29.9                            | +1.16               |
| Juli                            | 30 | .565                 | .1510   | .1043   | 17.02               | 0 43.2                            | .3103  | 11 26.4                            | 1.29                |
|                                 | 1  | .575                 | .1476   | .1039   | 17.09               | 0 43.1                            | .3101  | 11 22.9                            | 1.43                |
|                                 | 2  | .585                 | .1442   | .1034   | 17.16               | 0 42.9                            | .3099  | 11 19.4                            | 1.56                |
|                                 | 3  | .595                 | .1409   | .1028   | 17.23               | 0 42.8                            | .3097  | 11 15.8                            | 1.70                |
|                                 | 4  | .606                 | .1376   | .1021   | 17.29               | 0 42.6                            | .3094  | 11 12.3                            | 1.83                |
|                                 | 5  | .616                 | .1343   | .1014   | 17.36               | 0 42.5                            | .3091  | 11 8.8                             | 1.96                |
|                                 | 6  | .627                 | .1310   | .1007   | 17.42               | 0 42.3                            | .3088  | 11 5.3                             | 2.09                |
|                                 | 7  | .637                 | .1278   | .0999   | 17.49               | 0 42.1                            | .3085  | 11 1.7                             | 2.22                |
|                                 | 8  | .647                 | .1246   | .0991   | 17.55               | 0 41.9                            | .3082  | 10 58.2                            | 2.35                |
|                                 | 9  | +2.657               | —0.1214 | +0.0983 | 17.62               | 0 41.7                            | 1.3079 | 10 54.6                            | +2.48               |
|                                 | 10 | .667                 | .1182   | .0974   | 17.68               | 0 41.5                            | .3076  | 10 51.1                            | 2.61                |
|                                 | 11 | .677                 | .1150   | .0965   | 17.75               | 0 41.3                            | .3072  | 10 47.5                            | 2.74                |
|                                 | 12 | .687                 | .1118   | .0955   | 17.81               | 0 41.1                            | .3068  | 10 43.9                            | 2.87                |
|                                 | 13 | .697                 | .1087   | .0945   | 17.87               | 0 40.9                            | .3064  | 10 40.3                            | 2.99                |
|                                 | 14 | .707                 | .1056   | .0935   | 17.93               | 0 40.7                            | .3060  | 10 36.8                            | 3.12                |
|                                 | 15 | .717                 | .1025   | .0924   | 18.00               | 0 40.5                            | .3056  | 10 33.2                            | 3.24                |
|                                 | 16 | .726                 | .0994   | .0914   | 18.06               | 0 40.3                            | .3051  | 10 29.6                            | 3.37                |
|                                 | 17 | .736                 | .0964   | .0903   | 18.12               | 0 40.1                            | .3047  | 10 26.0                            | 3.49                |
|                                 | 18 | .746                 | .0934   | .0892   | 18.18               | 0 39.9                            | .3042  | 10 22.4                            | 3.61                |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                   | x       | y       | g                   | G                                 | log h  | H                                  | i                   |
|---------------------------------|----|---------------------|---------|---------|---------------------|-----------------------------------|--------|------------------------------------|---------------------|
| Juli                            | 19 | +2 <sup>s</sup> 755 | —0.0904 | +0.0880 | 18 <sup>h</sup> .24 | 0 <sup>h</sup> 39 <sup>m</sup> .7 | 1.3038 | 10 <sup>h</sup> 18 <sup>m</sup> .8 | +3 <sup>h</sup> .73 |
|                                 | 20 | .765                | .0874   | .0868   | 18.30               | 0 39.5                            | .3033  | 10 15.2                            | 3.85                |
|                                 | 21 | .774                | .0844   | .0855   | 18.36               | 0 39.3                            | .3028  | 10 11.5                            | 3.97                |
|                                 | 22 | .783                | .0815   | .0842   | 18.42               | 0 39.0                            | .3022  | 10 7.9                             | 4.09                |
|                                 | 23 | .793                | .0786   | .0829   | 18.47               | 0 38.8                            | .3017  | 10 4.2                             | 4.21                |
|                                 | 24 | .802                | .0758   | .0815   | 18.53               | 0 38.6                            | .3012  | 10 0.5                             | 4.33                |
|                                 | 25 | .811                | .0730   | .0801   | 18.59               | 0 38.4                            | .3006  | 9 56.8                             | 4.44                |
|                                 | 26 | .820                | .0702   | .0787   | 18.64               | 0 38.1                            | .3001  | 9 53.2                             | 4.55                |
|                                 | 27 | .829                | .0674   | .0773   | 18.70               | 0 37.9                            | .2995  | 9 49.5                             | 4.66                |
|                                 | 28 | .838                | .0646   | .0760   | 18.76               | 0 37.7                            | .2990  | 9 45.8                             | 4.77                |
|                                 | 29 | +2.846              | —0.0619 | +0.0746 | 18.81               | 0 37.4                            | 1.2984 | 9 42.1                             | +4.88               |
|                                 | 30 | .855                | .0592   | .0732   | 18.87               | 0 37.2                            | .2978  | 9 38.3                             | 4.99                |
|                                 | 31 | .863                | .0565   | .0717   | 18.92               | 0 37.0                            | .2972  | 9 34.6                             | 5.10                |
| August                          | 1  | .872                | .0538   | .0702   | 18.97               | 0 36.8                            | .2966  | 9 30.9                             | 5.21                |
|                                 | 2  | .880                | .0512   | .0687   | 19.03               | 0 36.5                            | .2960  | 9 27.1                             | 5.31                |
|                                 | 3  | .889                | .0486   | .0671   | 19.08               | 0 36.3                            | .2954  | 9 23.3                             | 5.41                |
|                                 | 4  | .897                | .0460   | .0656   | 19.13               | 0 36.1                            | .2948  | 9 19.5                             | 5.51                |
|                                 | 5  | .905                | .0435   | .0641   | 19.18               | 0 35.9                            | .2941  | 9 15.7                             | 5.61                |
|                                 | 6  | .913                | .0410   | .0626   | 19.23               | 0 35.7                            | .2935  | 9 11.9                             | 5.71                |
|                                 | 7  | .921                | .0385   | .0610   | 19.28               | 0 35.4                            | .2929  | 9 8.1                              | 5.81                |
|                                 | 8  | +2.929              | —0.0360 | +0.0595 | 19.33               | 0 35.2                            | 1.2923 | 9 4.3                              | +5.90               |
|                                 | 9  | .937                | .0336   | .0579   | 19.38               | 0 35.0                            | .2917  | 9 0.4                              | 5.99                |
|                                 | 10 | .945                | .0312   | .0564   | 19.43               | 0 34.8                            | .2910  | 8 56.6                             | 6.09                |
|                                 | 11 | .952                | .0288   | .0549   | 19.48               | 0 34.6                            | .2904  | 8 52.7                             | 6.18                |
|                                 | 12 | .960                | .0264   | .0534   | 19.52               | 0 34.4                            | .2898  | 8 48.8                             | 6.27                |
|                                 | 13 | .967                | .0241   | .0519   | 19.57               | 0 34.2                            | .2891  | 8 44.9                             | 6.35                |
|                                 | 14 | .975                | .0218   | .0504   | 19.62               | 0 34.0                            | .2885  | 8 41.0                             | 6.44                |
|                                 | 15 | .982                | .0195   | .0489   | 19.66               | 0 33.8                            | .2879  | 8 37.1                             | 6.52                |
|                                 | 16 | .989                | .0172   | .0474   | 19.71               | 0 33.6                            | .2873  | 8 33.1                             | 6.60                |
|                                 | 17 | 2.996               | .0150   | .0459   | 19.75               | 0 33.4                            | .2867  | 8 29.2                             | 6.68                |
|                                 | 18 | +3.003              | —0.0128 | +0.0444 | 19.80               | 0 33.3                            | 1.2861 | 8 25.2                             | +6.76               |
|                                 | 19 | .010                | .0106   | .0430   | 19.84               | 0 33.1                            | .2855  | 8 21.3                             | 6.83                |
|                                 | 20 | .017                | .0084   | .0416   | 19.88               | 0 32.9                            | .2849  | 8 17.3                             | 6.91                |
|                                 | 21 | .024                | .0062   | .0402   | 19.93               | 0 32.7                            | .2843  | 8 13.3                             | 6.98                |
|                                 | 22 | .031                | .0041   | .0389   | 19.97               | 0 32.6                            | .2837  | 8 9.3                              | 7.05                |
|                                 | 23 | .037                | —0.0020 | .0375   | 20.01               | 0 32.4                            | .2831  | 8 5.2                              | 7.11                |
|                                 | 24 | .044                | +0.0001 | .0362   | 20.05               | 0 32.3                            | .2826  | 8 1.2                              | 7.18                |
|                                 | 25 | .051                | .0021   | .0349   | 20.09               | 0 32.1                            | .2820  | 7 57.1                             | 7.25                |
|                                 | 26 | .057                | .0041   | .0336   | 20.13               | 0 32.0                            | .2815  | 7 53.1                             | 7.31                |
|                                 | 27 | .063                | .0061   | .0323   | 20.17               | 0 31.8                            | .2810  | 7 49.0                             | 7.37                |
|                                 | 28 | +3.070              | +0.0081 | +0.0311 | 20.21               | 0 31.7                            | 1.2805 | 7 44.9                             | +7.43               |
|                                 | 29 | .076                | .0101   | .0299   | 20.25               | 0 31.6                            | .2800  | 7 40.8                             | 7.48                |
|                                 | 30 | .082                | .0121   | .0288   | 20.29               | 0 31.5                            | .2795  | 7 36.7                             | 7.53                |
|                                 | 31 | .088                | .0141   | .0277   | 20.33               | 0 31.4                            | .2790  | 7 32.6                             | 7.58                |
| Septbr.                         | 1  | .094                | .0160   | .0267   | 20.37               | 0 31.3                            | .2786  | 7 28.5                             | 7.63                |
|                                 | 2  | .100                | .0179   | .0257   | 20.41               | 0 31.1                            | .2782  | 7 24.4                             | 7.68                |
|                                 | 3  | .106                | .0198   | .0247   | 20.45               | 0 31.0                            | .2777  | 7 20.2                             | 7.73                |
|                                 | 4  | .112                | .0217   | .0237   | 20.49               | 0 31.0                            | .2773  | 7 16.0                             | 7.77                |
|                                 | 5  | .118                | .0235   | .0228   | 20.52               | 0 30.9                            | .2770  | 7 11.9                             | 7.81                |
|                                 | 6  | .124                | .0254   | .0219   | 20.56               | 0 30.8                            | .2766  | 7 7.7                              | 7.84                |

## 1844

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g      | G                                 | log h  | H                                | i      |
|---------------------------------|----|----------------------|---------|---------|--------|-----------------------------------|--------|----------------------------------|--------|
| Septbr.                         | 7  | +3 <sup>s</sup> .130 | +0.0272 | +0.0211 | 20."60 | 0 <sup>h</sup> 30 <sup>m</sup> .7 | 1.2762 | 7 <sup>h</sup> 3 <sup>m</sup> .6 | +7."88 |
|                                 | 8  | .135                 | .0290   | .0203   | 20.63  | 0 30.7                            | .2759  | 6 59.4                           | 7.91   |
|                                 | 9  | .141                 | .0308   | .0196   | 20.67  | 0 30.6                            | .2756  | 6 55.2                           | 7.95   |
|                                 | 10 | .147                 | .0326   | .0189   | 20.70  | 0 30.6                            | .2753  | 6 51.0                           | 7.98   |
|                                 | 11 | .152                 | .0344   | .0183   | 20.74  | 0 30.5                            | .2750  | 6 46.8                           | 8.01   |
|                                 | 12 | .158                 | .0362   | .0177   | 20.78  | 0 30.5                            | .2748  | 6 42.5                           | 8.03   |
|                                 | 13 | .163                 | .0380   | .0172   | 20.81  | 0 30.5                            | .2746  | 6 38.3                           | 8.05   |
|                                 | 14 | .169                 | .0398   | .0168   | 20.85  | 0 30.4                            | .2744  | 6 34.1                           | 8.07   |
|                                 | 15 | .174                 | .0416   | .0164   | 20.89  | 0 30.4                            | .2742  | 6 29.8                           | 8.09   |
|                                 | 16 | .180                 | .0434   | .0161   | 20.92  | 0 30.4                            | .2741  | 6 25.6                           | 8.11   |
|                                 | 17 | +3.185               | +0.0452 | +0.0158 | 20.96  | 0 30.4                            | 1.2740 | 6 21.3                           | +8.12  |
|                                 | 18 | .190                 | .0469   | .0156   | 20.99  | 0 30.4                            | .2739  | 6 17.0                           | 8.13   |
|                                 | 19 | .196                 | .0487   | .0154   | 21.03  | 0 30.4                            | .2738  | 6 12.8                           | 8.14   |
|                                 | 20 | .201                 | .0505   | .0152   | 21.06  | 0 30.5                            | .2737  | 6 8.5                            | 8.14   |
|                                 | 21 | .207                 | .0523   | .0151   | 21.10  | 0 30.5                            | .2737  | 6 4.2                            | 8.15   |
|                                 | 22 | .212                 | .0541   | .0150   | 21.14  | 0 30.5                            | .2736  | 6 0.0                            | 8.15   |
|                                 | 23 | .217                 | .0559   | .0150   | 21.17  | 0 30.6                            | .2736  | 5 55.7                           | 8.15   |
|                                 | 24 | .223                 | .0577   | .0151   | 21.21  | 0 30.6                            | .2737  | 5 51.4                           | 8.14   |
|                                 | 25 | .228                 | .0595   | .0152   | 21.25  | 0 30.7                            | .2737  | 5 47.1                           | 8.14   |
|                                 | 26 | .234                 | .0613   | .0154   | 21.28  | 0 30.7                            | .2738  | 5 42.8                           | 8.13   |
|                                 | 27 | +3.239               | +0.0632 | +0.0156 | 21.32  | 0 30.8                            | 1.2739 | 5 38.5                           | +8.12  |
|                                 | 28 | .244                 | .0650   | .0159   | 21.36  | 0 30.9                            | .2740  | 5 34.3                           | 8.11   |
|                                 | 29 | .250                 | .0669   | .0163   | 21.39  | 0 30.9                            | .2742  | 5 30.0                           | 8.09   |
|                                 | 30 | .255                 | .0687   | .0168   | 21.43  | 0 31.0                            | .2744  | 5 25.7                           | 8.07   |
| Oktbr.                          | 1  | .261                 | .0706   | .0173   | 21.47  | 0 31.1                            | .2746  | 5 21.4                           | 8.05   |
|                                 | 2  | .266                 | .0725   | .0178   | 21.51  | 0 31.2                            | .2748  | 5 17.2                           | 8.03   |
|                                 | 3  | .272                 | .0744   | .0184   | 21.54  | 0 31.3                            | .2751  | 5 12.9                           | 8.00   |
|                                 | 4  | .277                 | .0763   | .0190   | 21.58  | 0 31.4                            | .2754  | 5 8.6                            | 7.97   |
|                                 | 5  | .283                 | .0782   | .0197   | 21.62  | 0 31.5                            | .2757  | 5 4.4                            | 7.94   |
|                                 | 6  | .289                 | .0801   | .0204   | 21.66  | 0 31.7                            | .2760  | 5 0.1                            | 7.91   |
|                                 | 7  | +3.294               | +0.0821 | +0.0212 | 21.70  | 0 31.8                            | 1.2763 | 4 55.9                           | +7.87  |
|                                 | 8  | .300                 | .0841   | .0220   | 21.74  | 0 31.9                            | .2766  | 4 51.6                           | 7.84   |
|                                 | 9  | .306                 | .0861   | .0229   | 21.78  | 0 32.1                            | .2770  | 4 47.3                           | 7.80   |
|                                 | 10 | .312                 | .0881   | .0238   | 21.82  | 0 32.2                            | .2774  | 4 43.1                           | 7.76   |
|                                 | 11 | .318                 | .0902   | .0248   | 21.86  | 0 32.4                            | .2778  | 4 38.8                           | 7.72   |
|                                 | 12 | .324                 | .0922   | .0258   | 21.90  | 0 32.5                            | .2782  | 4 34.6                           | 7.67   |
|                                 | 13 | .330                 | .0943   | .0269   | 21.94  | 0 32.7                            | .2787  | 4 30.4                           | 7.62   |
|                                 | 14 | .336                 | .0964   | .0280   | 21.99  | 0 32.8                            | .2792  | 4 26.1                           | 7.57   |
|                                 | 15 | .342                 | .0986   | .0291   | 22.03  | 0 33.0                            | .2797  | 4 21.9                           | 7.52   |
|                                 | 16 | .348                 | .1008   | .0303   | 22.07  | 0 33.1                            | .2802  | 4 17.7                           | 7.46   |
|                                 | 17 | +3.354               | +0.1030 | +0.0316 | 22.12  | 0 33.3                            | 1.2807 | 4 13.5                           | +7.40  |
|                                 | 18 | .361                 | .1052   | .0329   | 22.16  | 0 33.5                            | .2812  | 4 9.3                            | 7.34   |
|                                 | 19 | .367                 | .1075   | .0342   | 22.21  | 0 33.7                            | .2818  | 4 5.2                            | 7.28   |
|                                 | 20 | .374                 | .1097   | .0355   | 22.25  | 0 33.8                            | .2823  | 4 1.0                            | 7.21   |
|                                 | 21 | .380                 | .1120   | .0368   | 22.30  | 0 34.0                            | .2829  | 3 56.8                           | 7.15   |
|                                 | 22 | .387                 | .1143   | .0382   | 22.34  | 0 34.2                            | .2835  | 3 52.7                           | 7.08   |
|                                 | 23 | .394                 | .1167   | .0396   | 22.39  | 0 34.4                            | .2840  | 3 48.5                           | 7.01   |
|                                 | 24 | .401                 | .1191   | .0410   | 22.44  | 0 34.5                            | .2846  | 3 44.3                           | 6.93   |
|                                 | 25 | .408                 | .1215   | .0425   | 22.49  | 0 34.7                            | .2853  | 3 40.2                           | 6.86   |
|                                 | 26 | .415                 | .1240   | .0440   | 22.54  | 0 34.9                            | .2859  | 3 36.1                           | 6.78   |

## 1844

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                 | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|-----------------------------------|--------|-----------------------------------|---------------------|
| Oktbr.                          | 27 | +3 <sup>s</sup> .422 | +0.1265 | +0.0455 | 22 <sup>h</sup> .59 | 0 <sup>h</sup> 35 <sup>m</sup> .1 | 1.2865 | 3 <sup>h</sup> 32 <sup>m</sup> .0 | +6 <sup>h</sup> .70 |
|                                 | 28 | .429                 | .1290   | .0470   | 22.64               | 0 35.3                            | .2871  | 3 27.9                            | 6.62                |
|                                 | 29 | .436                 | .1315   | .0486   | 22.69               | 0 35.5                            | .2878  | 3 23.8                            | 6.54                |
|                                 | 30 | .444                 | .1341   | .0501   | 22.74               | 0 35.7                            | .2884  | 3 19.7                            | 6.45                |
|                                 | 31 | .451                 | .1367   | .0517   | 22.79               | 0 35.9                            | .2890  | 3 15.6                            | 6.36                |
| Novbr.                          | 1  | .459                 | .1394   | .0532   | 22.85               | 0 36.1                            | .2897  | 3 11.6                            | 6.27                |
|                                 | 2  | .466                 | .1421   | .0548   | 22.90               | 0 36.3                            | .2904  | 3 7.5                             | 6.18                |
|                                 | 3  | .474                 | .1448   | .0564   | 22.95               | 0 36.4                            | .2910  | 3 3.4                             | 6.09                |
|                                 | 4  | .482                 | .1475   | .0580   | 23.01               | 0 36.6                            | .2917  | 2 59.4                            | 5.99                |
|                                 | 5  | .490                 | .1502   | .0596   | 23.06               | 0 36.8                            | .2923  | 2 55.4                            | 5.89                |
|                                 | 6  | +3.498               | +0.1530 | +0.0612 | 23.12               | 0 37.0                            | 1.2930 | 2 51.4                            | +5.79               |
|                                 | 7  | .506                 | .1558   | .0628   | 23.18               | 0 37.2                            | .2936  | 2 47.4                            | 5.69                |
|                                 | 8  | .514                 | .1587   | .0644   | 23.23               | 0 37.4                            | .2943  | 2 43.4                            | 5.59                |
|                                 | 9  | .523                 | .1616   | .0660   | 23.29               | 0 37.5                            | .2949  | 2 39.4                            | 5.49                |
|                                 | 10 | .531                 | .1645   | .0676   | 23.35               | 0 37.7                            | .2956  | 2 35.4                            | 5.38                |
|                                 | 11 | .540                 | .1675   | .0692   | 23.41               | 0 37.9                            | .2962  | 2 31.5                            | 5.27                |
|                                 | 12 | .548                 | .1705   | .0708   | 23.47               | 0 38.0                            | .2969  | 2 27.5                            | 5.16                |
|                                 | 13 | .557                 | .1735   | .0723   | 23.53               | 0 38.2                            | .2975  | 2 23.6                            | 5.05                |
|                                 | 14 | .566                 | .1765   | .0738   | 23.59               | 0 38.4                            | .2981  | 2 19.6                            | 4.93                |
|                                 | 15 | .575                 | .1796   | .0753   | 23.65               | 0 38.5                            | .2987  | 2 15.7                            | 4.82                |
|                                 | 16 | +3.584               | +0.1827 | +0.0768 | 23.72               | 0 38.7                            | 1.2993 | 2 11.8                            | +4.70               |
|                                 | 17 | .593                 | .1858   | .0783   | 23.78               | 0 38.8                            | .2999  | 2 7.9                             | 4.58                |
|                                 | 18 | .602                 | .1890   | .0798   | 23.84               | 0 39.0                            | .3005  | 2 4.0                             | 4.46                |
|                                 | 19 | .611                 | .1922   | .0812   | 23.91               | 0 39.1                            | .3011  | 2 0.1                             | 4.34                |
|                                 | 20 | .620                 | .1954   | .0826   | 23.97               | 0 39.3                            | .3016  | 1 56.2                            | 4.22                |
|                                 | 21 | .630                 | .1987   | .0840   | 24.04               | 0 39.4                            | .3022  | 1 52.4                            | 4.10                |
|                                 | 22 | .640                 | .2020   | .0854   | 24.10               | 0 39.5                            | .3027  | 1 48.5                            | 3.97                |
|                                 | 23 | .649                 | .2053   | .0867   | 24.17               | 0 39.7                            | .3033  | 1 44.7                            | 3.85                |
|                                 | 24 | .659                 | .2086   | .0880   | 24.23               | 0 39.8                            | .3038  | 1 40.8                            | 3.72                |
|                                 | 25 | .669                 | .2119   | .0893   | 24.30               | 0 39.9                            | .3043  | 1 37.0                            | 3.59                |
| Dezbr.                          | 26 | +3.679               | +0.2153 | +0.0905 | 24.37               | 0 40.0                            | 1.3048 | 1 33.2                            | +3.46               |
|                                 | 27 | .688                 | .2187   | .0917   | 24.44               | 0 40.1                            | .3053  | 1 29.3                            | 3.33                |
|                                 | 28 | .698                 | .2221   | .0929   | 24.50               | 0 40.2                            | .3057  | 1 25.5                            | 3.20                |
|                                 | 29 | .709                 | .2255   | .0940   | 24.57               | 0 40.3                            | .3062  | 1 21.7                            | 3.06                |
|                                 | 30 | .719                 | .2290   | .0951   | 24.64               | 0 40.4                            | .3066  | 1 17.9                            | 2.93                |
|                                 | 1  | .729                 | .2324   | .0961   | 24.71               | 0 40.5                            | .3070  | 1 14.1                            | 2.79                |
|                                 | 2  | .739                 | .2359   | .0971   | 24.78               | 0 40.5                            | .3074  | 1 10.3                            | 2.66                |
|                                 | 3  | .750                 | .2394   | .0980   | 24.85               | 0 40.6                            | .3078  | 1 6.5                             | 2.52                |
|                                 | 4  | .760                 | .2429   | .0989   | 24.92               | 0 40.7                            | .3081  | 1 2.7                             | 2.39                |
|                                 | 5  | .770                 | .2464   | .0997   | 24.99               | 0 40.7                            | .3085  | 0 58.9                            | 2.25                |
|                                 | 6  | +3.781               | +0.2499 | +0.1005 | 25.06               | 0 40.8                            | 1.3088 | 0 55.2                            | +2.11               |
|                                 | 7  | .792                 | .2534   | .1013   | 25.13               | 0 40.8                            | .3091  | 0 51.4                            | 1.97                |
|                                 | 8  | .802                 | .2570   | .1020   | 25.20               | 0 40.9                            | .3093  | 0 47.6                            | 1.82                |
|                                 | 9  | .813                 | .2605   | .1027   | 25.28               | 0 40.9                            | .3096  | 0 43.9                            | 1.68                |
|                                 | 10 | .824                 | .2641   | .1033   | 25.35               | 0 40.9                            | .3098  | 0 40.1                            | 1.54                |
|                                 | 11 | .834                 | .2677   | .1038   | 25.42               | 0 40.9                            | .3100  | 0 36.3                            | 1.40                |
|                                 | 12 | .845                 | .2713   | .1043   | 25.49               | 0 41.0                            | .3102  | 0 32.6                            | 1.26                |
|                                 | 13 | .856                 | .2748   | .1048   | 25.56               | 0 41.0                            | .3104  | 0 28.9                            | 1.12                |
|                                 | 14 | .866                 | .2784   | .1052   | 25.63               | 0 41.0                            | .3106  | 0 25.1                            | 0.97                |
|                                 | 15 | .877                 | .2819   | .1056   | 25.71               | 0 41.0                            | .3108  | 0 21.4                            | 0.83                |

## 1844

| $12^h$<br>M. Z. Berlin | f                    | x       | y       | g                   | G                                 | log h  | 'H                                | i                   |
|------------------------|----------------------|---------|---------|---------------------|-----------------------------------|--------|-----------------------------------|---------------------|
| Dezbr. 16              | +3 <sup>s</sup> .888 | +0.2855 | +0.1059 | 25 <sup>h</sup> .78 | 0 <sup>h</sup> 40 <sup>m</sup> .9 | 1.3109 | 0 <sup>h</sup> 17 <sup>m</sup> .7 | +0 <sup>h</sup> .69 |
| 17                     | .899                 | .2890   | .1061   | 25.85               | 0 40.9                            | .3110  | 0 13.9                            | 0.54                |
| 18                     | .910                 | .2926   | .1063   | 25.92               | 0 40.9                            | .3111  | 0 10.2                            | 0.40                |
| 19                     | .921                 | .2962   | .1064   | 25.99               | 0 40.9                            | .3111  | 0 6.4                             | 0.25                |
| 20                     | .932                 | .2998   | .1064   | 26.06               | 0 40.8                            | .3111  | 0 2.7                             | +0.10               |
| 21                     | .943                 | .3034   | .1064   | 26.14               | 0 40.8                            | .3111  | 23 59.0                           | -0.04               |
| 22                     | .954                 | .3069   | .1064   | 26.21               | 0 40.7                            | .3111  | 23 55.2                           | 0.19                |
| 23                     | .965                 | .3105   | .1063   | 26.28               | 0 40.7                            | .3111  | 23 51.5                           | 0.33                |
| 24                     | .975                 | .3140   | .1062   | 26.35               | 0 40.6                            | .3110  | 23 47.7                           | 0.48                |
| 25                     | .986                 | .3176   | .1060   | 26.42               | 0 40.6                            | .3109  | 23 44.0                           | 0.62                |
| 26                     | +3.997               | +0.3211 | +0.1058 | 26.49               | 0 40.5                            | 1.3108 | 23 40.2                           | -0.77               |
| 27                     | 4.008                | .3246   | .1055   | 26.56               | 0 40.4                            | .3107  | 23 36.5                           | 0.91                |
| 28                     | .019                 | .3281   | .1051   | 26.63               | 0 40.3                            | .3106  | 23 32.7                           | 1.05                |
| 29                     | .030                 | .3316   | .1047   | 26.70               | 0 40.2                            | .3104  | 23 29.0                           | 1.19                |
| 30                     | .041                 | .3350   | .1042   | 26.77               | 0 40.2                            | .3102  | 23 25.2                           | 1.34                |
| 31                     | .051                 | .3384   | .1037   | 26.84               | 0 40.1                            | .3100  | 23 21.5                           | 1.48                |

## 1845

|          |                      |         |         |                    |                                   |        |                                    |                     |
|----------|----------------------|---------|---------|--------------------|-----------------------------------|--------|------------------------------------|---------------------|
| Januar 1 | +0 <sup>s</sup> .991 | -0.6030 | +0.1030 | 7 <sup>h</sup> .96 | 2 <sup>h</sup> 23 <sup>m</sup> .6 | 1.3097 | 23 <sup>h</sup> 17 <sup>m</sup> .7 | -1 <sup>h</sup> .62 |
| 2        | 1.001                | .6002   | .1023   | 8.02               | 2 22.4                            | .3095  | 23 14.0                            | 1.76                |
| 3        | .012                 | .5974   | .1016   | 8.07               | 2 21.2                            | .3092  | 23 10.2                            | 1.91                |
| 4        | .023                 | .5946   | .1009   | 8.13               | 2 20.1                            | .3089  | 23 6.4                             | 2.05                |
| 5        | .033                 | .5919   | .1001   | 8.18               | 2 18.9                            | .3086  | 23 2.6                             | 2.19                |
| 6        | .044                 | .5892   | .0993   | 8.24               | 2 17.8                            | .3083  | 22 58.8                            | 2.33                |
| 7        | .054                 | .5865   | .0984   | 8.29               | 2 16.7                            | .3079  | 22 55.1                            | 2.46                |
| 8        | .064                 | .5838   | .0975   | 8.34               | 2 15.5                            | .3076  | 22 51.3                            | 2.60                |
| 9        | .075                 | .5811   | .0965   | 8.40               | 2 14.4                            | .3072  | 22 47.4                            | 2.74                |
| 10       | .085                 | .5785   | .0955   | 8.45               | 2 13.3                            | .3068  | 22 43.6                            | 2.87                |
| 11       | +1.095               | -0.5759 | +0.0944 | 8.50               | 2 12.2                            | 1.3064 | 22 39.8                            | -3.01               |
| 12       | .105                 | .5733   | .0933   | 8.56               | 2 11.1                            | .3059  | 22 36.0                            | 3.14                |
| 13       | .115                 | .5707   | .0922   | 8.61               | 2 10.0                            | .3055  | 22 32.2                            | 3.28                |
| 14       | .125                 | .5682   | .0910   | 8.66               | 2 8.9                             | .3050  | 22 28.3                            | 3.41                |
| 15       | .135                 | .5656   | .0898   | 8.71               | 2 7.8                             | .3045  | 22 24.5                            | 3.54                |
| 16       | .145                 | .5631   | .0885   | 8.76               | 2 6.8                             | .3040  | 22 20.6                            | 3.67                |
| 17       | .155                 | .5606   | .0872   | 8.81               | 2 5.7                             | .3035  | 22 16.8                            | 3.80                |
| 18       | .164                 | .5581   | .0859   | 8.86               | 2 4.7                             | .3030  | 22 12.9                            | 3.93                |
| 19       | .174                 | .5557   | .0846   | 8.91               | 2 3.6                             | .3024  | 22 9.0                             | 4.05                |
| 20       | .183                 | .5533   | .0832   | 8.96               | 2 2.6                             | .3019  | 22 5.1                             | 4.18                |
| 21       | +1.193               | -0.5509 | +0.0818 | 9.00               | 2 1.6                             | 1.3013 | 22 1.2                             | -4.30               |
| 22       | .202                 | .5486   | .0803   | 9.05               | 2 0.6                             | .3007  | 21 57.3                            | 4.42                |
| 23       | .211                 | .5463   | .0788   | 9.10               | 1 59.6                            | .3001  | 21 53.4                            | 4.54                |
| 24       | .220                 | .5440   | .0773   | 9.14               | 1 58.6                            | .2995  | 21 49.5                            | 4.66                |
| 25       | .229                 | .5417   | .0758   | 9.19               | 1 57.7                            | .2989  | 21 45.5                            | 4.78                |
| 26       | .238                 | .5394   | .0743   | 9.23               | 1 56.7                            | .2983  | 21 41.6                            | 4.90                |
| 27       | .247                 | .5372   | .0728   | 9.28               | 1 55.8                            | .2977  | 21 37.6                            | 5.01                |
| 28       | .256                 | .5350   | .0712   | 9.32               | 1 54.9                            | .2970  | 21 33.7                            | 5.12                |
| 29       | .264                 | .5328   | .0697   | 9.37               | 1 53.9                            | .2964  | 21 29.7                            | 5.24                |
| 30       | .273                 | .5306   | .0681   | 9.41               | 1 53.0                            | .2958  | 21 25.7                            | 5.35                |

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| <sup>12<sup>h</sup></sup><br>M. Z. Berlin | f       | x       | y       | g     | G                                | log h  | H                                 | i     |
|-------------------------------------------|---------|---------|---------|-------|----------------------------------|--------|-----------------------------------|-------|
| Januar 31                                 | +1.8281 | —0.5285 | +0.0665 | 9.45  | 1 <sup>h</sup> 52 <sup>m</sup> 1 | 1.2951 | 21 <sup>h</sup> 21 <sup>m</sup> 7 | —5.45 |
| Februar 1                                 | .290    | .5264   | .0649   | 9.50  | 1 51.3                           | .2945  | 21 17.7                           | 5.56  |
| 2                                         | .298    | .5243   | .0633   | 9.54  | 1 50.4                           | .2938  | 21 13.6                           | 5.66  |
| 3                                         | .306    | .5223   | .0617   | 9.58  | 1 49.6                           | .2931  | 21 9.6                            | 5.77  |
| 4                                         | .314    | .5202   | .0600   | 9.62  | 1 48.8                           | .2925  | 21 5.6                            | 5.87  |
| 5                                         | .322    | .5182   | .0584   | 9.66  | 1 48.0                           | .2918  | 21 1.5                            | 5.97  |
| 6                                         | .330    | .5162   | .0568   | 9.70  | 1 47.2                           | .2912  | 20 57.4                           | 6.06  |
| 7                                         | .337    | .5142   | .0552   | 9.74  | 1 46.4                           | .2905  | 20 53.4                           | 6.16  |
| 8                                         | .345    | .5122   | .0536   | 9.78  | 1 45.6                           | .2898  | 20 49.3                           | 6.25  |
| 9                                         | .353    | .5103   | .0520   | 9.82  | 1 44.8                           | .2892  | 20 45.2                           | 6.35  |
| 10                                        | +1.360  | —0.5084 | +0.0504 | 9.86  | 1 44.1                           | 1.2885 | 20 41.1                           | —6.44 |
| 11                                        | .367    | .5065   | .0488   | 9.89  | 1 43.4                           | .2879  | 20 36.9                           | 6.52  |
| 12                                        | .374    | .5046   | .0472   | 9.93  | 1 42.7                           | .2872  | 20 32.8                           | 6.61  |
| 13                                        | .382    | .5028   | .0457   | 9.97  | 1 42.0                           | .2866  | 20 28.7                           | 6.69  |
| 14                                        | .389    | .5009   | .0442   | 10.01 | 1 41.3                           | .2860  | 20 24.5                           | 6.77  |
| 15                                        | .396    | .4991   | .0427   | 10.04 | 1 40.7                           | .2853  | 20 20.4                           | 6.85  |
| 16                                        | .403    | .4973   | .0412   | 10.08 | 1 40.0                           | .2847  | 20 16.2                           | 6.93  |
| 17                                        | .409    | .4955   | .0398   | 10.12 | 1 39.4                           | .2841  | 20 12.0                           | 7.00  |
| 18                                        | .416    | .4937   | .0383   | 10.15 | 1 38.8                           | .2835  | 20 7.8                            | 7.07  |
| 19                                        | .423    | .4919   | .0369   | 10.19 | 1 38.2                           | .2829  | 20 3.6                            | 7.14  |
| 20                                        | +1.429  | —0.4901 | +0.0355 | 10.22 | 1 37.6                           | 1.2824 | 19 59.4                           | —7.21 |
| 21                                        | .436    | .4884   | .0342   | 10.26 | 1 37.0                           | .2818  | 19 55.2                           | 7.28  |
| 22                                        | .442    | .4867   | .0329   | 10.29 | 1 36.5                           | .2812  | 19 50.9                           | 7.34  |
| 23                                        | .448    | .4850   | .0316   | 10.33 | 1 36.0                           | .2807  | 19 46.7                           | 7.40  |
| 24                                        | .454    | .4833   | .0304   | 10.36 | 1 35.5                           | .2802  | 19 42.4                           | 7.46  |
| 25                                        | .461    | .4816   | .0292   | 10.40 | 1 35.0                           | .2797  | 19 38.2                           | 7.52  |
| 26                                        | .467    | .4799   | .0280   | 10.43 | 1 34.5                           | .2792  | 19 33.9                           | 7.57  |
| 27                                        | .473    | .4782   | .0269   | 10.46 | 1 34.0                           | .2787  | 19 29.7                           | 7.62  |
| 28                                        | .479    | .4765   | .0258   | 10.50 | 1 33.6                           | .2782  | 19 25.4                           | 7.67  |
| März 1                                    | .484    | .4749   | .0248   | 10.53 | 1 33.2                           | .2778  | 19 21.1                           | 7.72  |
| 2                                         | +1.490  | —0.4732 | +0.0238 | 10.56 | 1 32.7                           | 1.2774 | 19 16.8                           | —7.76 |
| 3                                         | .496    | .4716   | .0228   | 10.60 | 1 32.3                           | .2770  | 19 12.5                           | 7.80  |
| 4                                         | .502    | .4699   | .0219   | 10.63 | 1 32.0                           | .2766  | 19 8.2                            | 7.84  |
| 5                                         | .507    | .4683   | .0211   | 10.66 | 1 31.6                           | .2763  | 19 3.9                            | 7.88  |
| 6                                         | .513    | .4666   | .0203   | 10.70 | 1 31.3                           | .2759  | 18 59.6                           | 7.92  |
| 7                                         | .518    | .4649   | .0196   | 10.73 | 1 31.0                           | .2756  | 18 55.3                           | 7.95  |
| 8                                         | .524    | .4632   | .0189   | 10.76 | 1 30.7                           | .2753  | 18 51.0                           | 7.98  |
| 9                                         | .529    | .4616   | .0183   | 10.79 | 1 30.4                           | .2750  | 18 46.6                           | 8.01  |
| 10                                        | .535    | .4600   | .0177   | 10.83 | 1 30.1                           | .2748  | 18 42.3                           | 8.03  |
| 11                                        | .540    | .4583   | .0172   | 10.86 | 1 29.8                           | .2746  | 18 38.0                           | 8.05  |
| 12                                        | +1.546  | —0.4567 | +0.0167 | 10.89 | 1 29.6                           | 1.2744 | 18 33.7                           | —8.07 |
| 13                                        | .551    | .4550   | .0163   | 10.93 | 1 29.3                           | .2742  | 18 29.3                           | 8.09  |
| 14                                        | .556    | .4534   | .0159   | 10.96 | 1 29.1                           | .2740  | 18 25.0                           | 8.11  |
| 15                                        | .562    | .4517   | .0156   | 10.99 | 1 28.9                           | .2739  | 18 20.7                           | 8.12  |
| 16                                        | .567    | .4501   | .0154   | 11.03 | 1 28.7                           | .2738  | 18 16.3                           | 8.13  |
| 17                                        | .572    | .4484   | .0152   | 11.06 | 1 28.6                           | .2737  | 18 12.0                           | 8.14  |
| 18                                        | .577    | .4467   | .0151   | 11.09 | 1 28.4                           | .2737  | 18 7.7                            | 8.14  |
| 19                                        | .583    | .4450   | .0150   | 11.13 | 1 28.3                           | .2736  | 18 3.4                            | 8.15  |
| 20                                        | .588    | .4433   | .0150   | 11.16 | 1 28.2                           | .2736  | 17 59.0                           | 8.15  |
| 21                                        | .593    | .4415   | .0150   | 11.20 | 1 28.0                           | .2737  | 17 54.7                           | 8.15  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                | log h  | H                                  | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|----------------------------------|--------|------------------------------------|---------------------|
| März                            | 22 | +1. <sup>s</sup> 598 | —0.4398 | +0.0151 | 11. <sup>h</sup> 23 | 1 <sup>h</sup> 27 <sup>m</sup> 9 | 1.2737 | 17 <sup>h</sup> 50 <sup>m</sup> .4 | —8. <sup>h</sup> 14 |
|                                 | 23 | .604                 | .4380   | .0153   | 11.27               | 1 27.8                           | .2738  | 17 46.1                            | 8.14                |
|                                 | 24 | .609                 | .4363   | .0155   | 11.30               | 1 27.8                           | .2739  | 17 41.8                            | 8.13                |
|                                 | 25 | .614                 | .4345   | .0158   | 11.34               | 1 27.7                           | .2740  | 17 37.4                            | 8.11                |
|                                 | 26 | .619                 | .4327   | .0161   | 11.38               | 1 27.6                           | .2741  | 17 33.1                            | 8.10                |
|                                 | 27 | .625                 | .4308   | .0165   | 11.41               | 1 27.6                           | .2743  | 17 28.8                            | 8.09                |
|                                 | 28 | .630                 | .4290   | .0169   | 11.45               | 1 27.6                           | .2745  | 17 24.6                            | 8.07                |
|                                 | 29 | .635                 | .4271   | .0174   | 11.49               | 1 27.5                           | .2747  | 17 20.3                            | 8.05                |
|                                 | 30 | .641                 | .4252   | .0180   | 11.52               | 1 27.5                           | .2749  | 17 16.0                            | 8.02                |
|                                 | 31 | .646                 | .4233   | .0186   | 11.56               | 1 27.5                           | .2751  | 17 11.7                            | 8.00                |
| April                           | 1  | +1.652               | —0.4214 | +0.0192 | 11.60               | 1 27.5                           | 1.2754 | 17 7.4                             | —7.97               |
|                                 | 2  | .657                 | .4195   | .0199   | 11.64               | 1 27.6                           | .2757  | 17 3.2                             | 7.94                |
|                                 | 3  | .663                 | .4175   | .0206   | 11.68               | 1 27.6                           | .2760  | 16 58.9                            | 7.90                |
|                                 | 4  | .668                 | .4155   | .0214   | 11.72               | 1 27.6                           | .2764  | 16 54.7                            | 7.87                |
|                                 | 5  | .674                 | .4135   | .0222   | 11.76               | 1 27.7                           | .2767  | 16 50.5                            | 7.83                |
|                                 | 6  | .679                 | .4115   | .0231   | 11.80               | 1 27.7                           | .2771  | 16 46.3                            | 7.79                |
|                                 | 7  | .685                 | .4094   | .0240   | 11.84               | 1 27.8                           | .2775  | 16 42.0                            | 7.75                |
|                                 | 8  | .691                 | .4073   | .0250   | 11.88               | 1 27.8                           | .2779  | 16 37.8                            | 7.71                |
|                                 | 9  | .697                 | .4052   | .0260   | 11.93               | 1 27.9                           | .2783  | 16 33.7                            | 7.66                |
|                                 | 10 | .702                 | .4031   | .0271   | 11.97               | 1 28.0                           | .2788  | 16 29.5                            | 7.61                |
|                                 | 11 | +1.708               | —0.4009 | +0.0282 | 12.01               | 1 28.0                           | 1.2793 | 16 25.3                            | —7.56               |
|                                 | 12 | .714                 | .3987   | .0293   | 12.06               | 1 28.1                           | .2797  | 16 21.2                            | 7.50                |
|                                 | 13 | .720                 | .3965   | .0305   | 12.10               | 1 28.2                           | .2802  | 16 17.0                            | 7.45                |
|                                 | 14 | .726                 | .3943   | .0317   | 12.14               | 1 28.3                           | .2807  | 16 12.9                            | 7.39                |
|                                 | 15 | .733                 | .3921   | .0330   | 12.19               | 1 28.4                           | .2813  | 16 8.8                             | 7.33                |
|                                 | 16 | .739                 | .3898   | .0343   | 12.24               | 1 28.5                           | .2818  | 16 4.6                             | 7.27                |
|                                 | 17 | .745                 | .3875   | .0356   | 12.28               | 1 28.6                           | .2823  | 16 0.5                             | 7.21                |
|                                 | 18 | .752                 | .3851   | .0369   | 12.33               | 1 28.7                           | .2829  | 15 56.5                            | 7.14                |
|                                 | 19 | .758                 | .3827   | .0382   | 12.38               | 1 28.8                           | .2835  | 15 52.4                            | 7.08                |
|                                 | 20 | .765                 | .3803   | .0396   | 12.43               | 1 28.9                           | .2840  | 15 48.3                            | 7.01                |
|                                 | 21 | +1.771               | —0.3778 | +0.0410 | 12.48               | 1 29.0                           | 1.2846 | 15 44.3                            | —6.94               |
|                                 | 22 | .778                 | .3753   | .0424   | 12.53               | 1 29.1                           | .2852  | 15 40.3                            | 6.86                |
|                                 | 23 | .785                 | .3728   | .0438   | 12.58               | 1 29.2                           | .2858  | 15 36.3                            | 6.79                |
|                                 | 24 | .791                 | .3703   | .0453   | 12.63               | 1 29.3                           | .2864  | 15 32.3                            | 6.71                |
|                                 | 25 | .798                 | .3677   | .0468   | 12.68               | 1 29.4                           | .2870  | 15 28.3                            | 6.63                |
|                                 | 26 | .805                 | .3651   | .0483   | 12.73               | 1 29.5                           | .2877  | 15 24.3                            | 6.55                |
|                                 | 27 | .812                 | .3625   | .0498   | 12.78               | 1 29.6                           | .2883  | 15 20.3                            | 6.46                |
|                                 | 28 | .820                 | .3599   | .0513   | 12.84               | 1 29.7                           | .2889  | 15 16.4                            | 6.38                |
|                                 | 29 | .827                 | .3572   | .0529   | 12.89               | 1 29.8                           | .2896  | 15 12.4                            | 6.29                |
|                                 | 30 | .834                 | .3545   | .0544   | 12.94               | 1 29.9                           | .2902  | 15 8.5                             | 6.20                |
| Mai                             | 1  | +1.842               | —0.3518 | +0.0560 | 13.00               | 1 30.0                           | 1.2908 | 15 4.6                             | —6.11               |
|                                 | 2  | .849                 | .3491   | .0575   | 13.05               | 1 30.1                           | .2915  | 15 0.7                             | 6.02                |
|                                 | 3  | .857                 | .3463   | .0591   | 13.11               | 1 30.2                           | .2921  | 14 56.8                            | 5.93                |
|                                 | 4  | .864                 | .3435   | .0606   | 13.16               | 1 30.3                           | .2927  | 14 52.9                            | 5.83                |
|                                 | 5  | .872                 | .3407   | .0622   | 13.22               | 1 30.3                           | .2933  | 14 49.1                            | 5.74                |
|                                 | 6  | .880                 | .3379   | .0637   | 13.28               | 1 30.4                           | .2940  | 14 45.2                            | 5.64                |
|                                 | 7  | .888                 | .3350   | .0652   | 13.34               | 1 30.5                           | .2946  | 14 41.4                            | 5.54                |
|                                 | 8  | .896                 | .3321   | .0667   | 13.39               | 1 30.5                           | .2952  | 14 37.6                            | 5.44                |
|                                 | 9  | .904                 | .3292   | .0683   | 13.45               | 1 30.6                           | .2958  | 14 33.8                            | 5.33                |
|                                 | 10 | .912                 | .3262   | .0698   | 13.51               | 1 30.6                           | .2965  | 14 30.0                            | 5.23                |

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| <sup>12<sup>h</sup></sup><br>M. Z. Berlin |    | f                    | x       | y       | g     | G                                 | log h  | H                                  | i     |
|-------------------------------------------|----|----------------------|---------|---------|-------|-----------------------------------|--------|------------------------------------|-------|
| Mai                                       | 11 | +1 <sup>s</sup> .921 | —0.3232 | +0.0713 | 13.57 | 1 <sup>h</sup> 30 <sup>m</sup> .7 | 1.2971 | 14 <sup>h</sup> 26 <sup>m</sup> .2 | —5.12 |
|                                           | 12 | .929                 | .3202   | .0728   | 13.63 | 1 30.7                            | .2977  | 14 22.4                            | 5.01  |
|                                           | 13 | .937                 | .3172   | .0743   | 13.69 | 1 30.7                            | .2983  | 14 18.7                            | 4.90  |
|                                           | 14 | .946                 | .3141   | .0757   | 13.75 | 1 30.8                            | .2988  | 14 14.9                            | 4.79  |
|                                           | 15 | .954                 | .3111   | .0771   | 13.81 | 1 30.8                            | .2994  | 14 11.2                            | 4.68  |
|                                           | 16 | .963                 | .3080   | .0785   | 13.88 | 1 30.8                            | .3000  | 14 7.5                             | 4.57  |
|                                           | 17 | .972                 | .3049   | .0799   | 13.94 | 1 30.8                            | .3005  | 14 3.8                             | 4.46  |
|                                           | 18 | .981                 | .3018   | .0813   | 14.00 | 1 30.8                            | .3011  | 14 0.1                             | 4.34  |
|                                           | 19 | .990                 | .2987   | .0826   | 14.06 | 1 30.8                            | .3016  | 13 56.4                            | 4.23  |
|                                           | 20 | 1.999                | .2955   | .0839   | 14.13 | 1 30.8                            | .3022  | 13 52.7                            | 4.11  |
|                                           | 21 | +2.008               | —0.2924 | +0.0852 | 14.19 | 1 30.7                            | 1.3027 | 13 49.0                            | —3.99 |
|                                           | 22 | .017                 | .2892   | .0865   | 14.25 | 1 30.7                            | .3032  | 13 45.4                            | 3.87  |
|                                           | 23 | .026                 | .2860   | .0877   | 14.32 | 1 30.7                            | .3037  | 13 41.7                            | 3.75  |
|                                           | 24 | .035                 | .2828   | .0889   | 14.38 | 1 30.6                            | .3042  | 13 38.1                            | 3.63  |
|                                           | 25 | .045                 | .2795   | .0901   | 14.45 | 1 30.6                            | .3046  | 13 34.4                            | 3.50  |
|                                           | 26 | .054                 | .2763   | .0912   | 14.51 | 1 30.5                            | .3051  | 13 30.8                            | 3.38  |
|                                           | 27 | .064                 | .2731   | .0923   | 14.58 | 1 30.4                            | .3055  | 13 27.2                            | 3.26  |
|                                           | 28 | .073                 | .2698   | .0934   | 14.64 | 1 30.3                            | .3060  | 13 23.6                            | 3.13  |
|                                           | 29 | .083                 | .2666   | .0944   | 14.71 | 1 30.3                            | .3064  | 13 20.0                            | 3.00  |
|                                           | 30 | .092                 | .2633   | .0954   | 14.77 | 1 30.2                            | .3067  | 13 16.4                            | 2.88  |
| Juni                                      | 31 | +2.102               | —0.2600 | +0.0964 | 14.84 | 1 30.1                            | 1.3071 | 13 12.8                            | —2.75 |
|                                           | 1  | .112                 | .2567   | .0973   | 14.90 | 1 30.0                            | .3075  | 13 9.3                             | 2.62  |
|                                           | 2  | .122                 | .2534   | .0982   | 14.97 | 1 29.8                            | .3079  | 13 5.7                             | 2.49  |
|                                           | 3  | .131                 | .2501   | .0990   | 15.04 | 1 29.7                            | .3082  | 13 2.1                             | 2.36  |
|                                           | 4  | .141                 | .2468   | .0998   | 15.10 | 1 29.6                            | .3085  | 12 58.6                            | 2.23  |
|                                           | 5  | .151                 | .2435   | .1006   | 15.17 | 1 29.4                            | .3088  | 12 55.0                            | 2.10  |
|                                           | 6  | .161                 | .2402   | .1013   | 15.23 | 1 29.3                            | .3091  | 12 51.5                            | 1.97  |
|                                           | 7  | .171                 | .2369   | .1020   | 15.30 | 1 29.1                            | .3094  | 12 47.9                            | 1.84  |
|                                           | 8  | .181                 | .2336   | .1026   | 15.37 | 1 28.9                            | .3096  | 12 44.4                            | 1.70  |
|                                           | 9  | .191                 | .2303   | .1032   | 15.43 | 1 28.8                            | .3098  | 12 40.9                            | 1.57  |
|                                           | 10 | +2.201               | —0.2270 | +0.1038 | 15.50 | 1 28.6                            | 1.3100 | 12 37.3                            | —1.44 |
|                                           | 11 | .212                 | .2237   | .1043   | 15.57 | 1 28.4                            | .3102  | 12 33.8                            | 1.30  |
|                                           | 12 | .222                 | .2204   | .1047   | 15.63 | 1 28.2                            | .3104  | 12 30.3                            | 1.17  |
|                                           | 13 | .232                 | .2171   | .1051   | 15.70 | 1 28.0                            | .3106  | 12 26.8                            | 1.03  |
|                                           | 14 | .242                 | .2138   | .1054   | 15.77 | 1 27.8                            | .3107  | 12 23.3                            | 0.90  |
|                                           | 15 | .252                 | .2105   | .1057   | 15.83 | 1 27.6                            | .3108  | 12 19.8                            | 0.77  |
|                                           | 16 | .263                 | .2072   | .1059   | 15.90 | 1 27.4                            | .3109  | 12 16.3                            | 0.63  |
|                                           | 17 | .273                 | .2039   | .1061   | 15.96 | 1 27.1                            | .3110  | 12 12.8                            | 0.49  |
|                                           | 18 | .283                 | .2006   | .1063   | 16.03 | 1 26.9                            | .3110  | 12 9.3                             | 0.36  |
|                                           | 19 | .293                 | .1974   | .1064   | 16.09 | 1 26.6                            | .3111  | 12 5.8                             | 0.22  |
|                                           | 20 | +2.304               | —0.1941 | +0.1065 | 16.16 | 1 26.4                            | 1.3111 | 12 2.3                             | —0.09 |
|                                           | 21 | .314                 | .1909   | .1065   | 16.22 | 1 26.1                            | .3111  | 11 58.8                            | +0.05 |
|                                           | 22 | .324                 | .1877   | .1064   | 16.29 | 1 25.9                            | .3111  | 11 55.3                            | 0.18  |
|                                           | 23 | .335                 | .1845   | .1063   | 16.35 | 1 25.6                            | .3111  | 11 51.8                            | 0.32  |
|                                           | 24 | .345                 | .1813   | .1062   | 16.42 | 1 25.3                            | .3110  | 11 48.3                            | 0.45  |
|                                           | 25 | .355                 | .1781   | .1060   | 16.48 | 1 25.1                            | .3109  | 11 44.8                            | 0.59  |
|                                           | 26 | .365                 | .1749   | .1058   | 16.54 | 1 24.8                            | .3108  | 11 41.3                            | 0.72  |
|                                           | 27 | .376                 | .1717   | .1055   | 16.61 | 1 24.5                            | .3107  | 11 37.8                            | 0.86  |
|                                           | 28 | .386                 | .1685   | .1052   | 16.67 | 1 24.2                            | .3106  | 11 34.3                            | 0.99  |
|                                           | 29 | .396                 | .1654   | .1048   | 16.73 | 1 23.9                            | .3104  | 11 30.7                            | 1.13  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                 | log h  | H                                  | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|-----------------------------------|--------|------------------------------------|---------------------|
| Juni                            | 30 | +2 <sup>s</sup> .406 | —0.1623 | +0.1044 | 16 <sup>m</sup> .80 | 1 <sup>h</sup> 23 <sup>m</sup> .6 | 1.3103 | 11 <sup>h</sup> 27 <sup>m</sup> .2 | +1 <sup>m</sup> .26 |
| Juli                            | 1  | .416                 | .1592   | .1039   | 16.86               | 1 23.3                            | .3101  | 11 23.7                            | 1.40                |
|                                 | 2  | .426                 | .1561   | .1034   | 16.92               | 1 23.0                            | .3099  | 11 20.2                            | 1.53                |
|                                 | 3  | .437                 | .1530   | .1028   | 16.98               | 1 22.7                            | .3097  | 11 16.7                            | 1.66                |
|                                 | 4  | .447                 | .1499   | .1022   | 17.04               | 1 22.4                            | .3094  | 11 13.2                            | 1.80                |
|                                 | 5  | .457                 | .1469   | .1016   | 17.11               | 1 22.0                            | .3092  | 11 9.6                             | 1.93                |
|                                 | 6  | .467                 | .1439   | .1009   | 17.17               | 1 21.7                            | .3089  | 11 6.1                             | 2.06                |
|                                 | 7  | .476                 | .1409   | .1001   | 17.23               | 1 21.4                            | .3086  | 11 2.6                             | 2.19                |
|                                 | 8  | .486                 | .1380   | .0993   | 17.28               | 1 21.0                            | .3083  | 10 59.0                            | 2.32                |
|                                 | 9  | .496                 | .1351   | .0985   | 17.34               | 1 20.7                            | .3080  | 10 55.5                            | 2.45                |
|                                 | 10 | +2.506               | —0.1322 | +0.0977 | 17.40               | 1 20.4                            | 1.3076 | 10 51.9                            | +2.58               |
|                                 | 11 | .516                 | .1293   | .0968   | 17.46               | 1 20.0                            | .3073  | 10 48.4                            | 2.71                |
|                                 | 12 | .525                 | .1264   | .0959   | 17.52               | 1 19.7                            | .3069  | 10 44.8                            | 2.83                |
|                                 | 13 | .535                 | .1236   | .0949   | 17.57               | 1 19.3                            | .3065  | 10 41.2                            | 2.96                |
|                                 | 14 | .545                 | .1207   | .0939   | 17.63               | 1 19.0                            | .3061  | 10 37.6                            | 3.09                |
|                                 | 15 | .554                 | .1179   | .0928   | 17.69               | 1 18.7                            | .3057  | 10 34.1                            | 3.21                |
|                                 | 16 | .563                 | .1151   | .0917   | 17.74               | 1 18.3                            | .3053  | 10 30.5                            | 3.34                |
|                                 | 17 | .573                 | .1123   | .0906   | 17.80               | 1 18.0                            | .3048  | 10 26.9                            | 3.46                |
|                                 | 18 | .582                 | .1096   | .0894   | 17.85               | 1 17.6                            | .3043  | 10 23.3                            | 3.58                |
|                                 | 19 | .591                 | .1069   | .0882   | 17.91               | 1 17.3                            | .3039  | 10 19.6                            | 3.70                |
|                                 | 20 | +2.600               | —0.1042 | +0.0870 | 17.96               | 1 16.9                            | 1.3034 | 10 16.0                            | +3.82               |
|                                 | 21 | .610                 | .1015   | .0858   | 18.01               | 1 16.6                            | .3029  | 10 12.4                            | 3.94                |
|                                 | 22 | .619                 | .0989   | .0845   | 18.07               | 1 16.2                            | .3024  | 10 8.7                             | 4.06                |
|                                 | 23 | .628                 | .0963   | .0832   | 18.12               | 1 15.9                            | .3019  | 10 5.1                             | 4.18                |
|                                 | 24 | .636                 | .0937   | .0819   | 18.17               | 1 15.5                            | .3013  | 10 1.4                             | 4.30                |
|                                 | 25 | .645                 | .0912   | .0805   | 18.22               | 1 15.2                            | .3008  | 9 57.8                             | 4.41                |
|                                 | 26 | .654                 | .0887   | .0791   | 18.27               | 1 14.8                            | .3002  | 9 54.1                             | 4.52                |
|                                 | 27 | .663                 | .0862   | .0777   | 18.32               | 1 14.5                            | .2997  | 9 50.4                             | 4.64                |
|                                 | 28 | .671                 | .0837   | .0763   | 18.37               | 1 14.1                            | .2991  | 9 46.7                             | 4.75                |
|                                 | 29 | .680                 | .0812   | .0749   | 18.42               | 1 13.8                            | .2985  | 9 43.0                             | 4.86                |
|                                 | 30 | +2.688               | —0.0788 | +0.0735 | 18.47               | 1 13.4                            | 1.2979 | 9 39.2                             | +4.97               |
| August                          | 31 | .696                 | .0764   | .0720   | 18.52               | 1 13.1                            | .2973  | 9 35.5                             | 5.07                |
|                                 | 1  | .704                 | .0740   | .0705   | 18.57               | 1 12.7                            | .2967  | 9 31.8                             | 5.18                |
|                                 | 2  | .713                 | .0717   | .0690   | 18.61               | 1 12.4                            | .2961  | 9 28.0                             | 5.28                |
|                                 | 3  | .721                 | .0694   | .0675   | 18.66               | 1 12.1                            | .2955  | 9 24.2                             | 5.39                |
|                                 | 4  | .729                 | .0671   | .0660   | 18.71               | 1 11.8                            | .2949  | 9 20.4                             | 5.49                |
|                                 | 5  | .737                 | .0648   | .0644   | 18.75               | 1 11.4                            | .2943  | 9 16.6                             | 5.59                |
|                                 | 6  | .744                 | .0626   | .0629   | 18.80               | 1 11.1                            | .2937  | 9 12.8                             | 5.69                |
|                                 | 7  | .752                 | .0604   | .0614   | 18.84               | 1 10.8                            | .2931  | 9 9.0                              | 5.78                |
|                                 | 8  | .760                 | .0582   | .0599   | 18.88               | 1 10.5                            | .2924  | 9 5.2                              | 5.88                |
|                                 | 9  | +2.767               | —0.0560 | +0.0583 | 18.93               | 1 10.2                            | 1.2918 | 9 1.3                              | +5.97               |
|                                 | 10 | .775                 | .0539   | .0568   | 18.97               | 1 9.9                             | .2912  | 8 57.5                             | 6.06                |
|                                 | 11 | .782                 | .0518   | .0553   | 19.01               | 1 9.6                             | .2905  | 8 53.6                             | 6.15                |
|                                 | 12 | .789                 | .0497   | .0538   | 19.06               | 1 9.3                             | .2899  | 8 49.7                             | 6.24                |
|                                 | 13 | .796                 | .0476   | .0523   | 19.10               | 1 9.0                             | .2893  | 8 45.8                             | 6.33                |
|                                 | 14 | .804                 | .0455   | .0508   | 19.14               | 1 8.7                             | .2887  | 8 41.9                             | 6.42                |
|                                 | 15 | .811                 | .0435   | .0493   | 19.18               | 1 8.4                             | .2880  | 8 38.0                             | 6.50                |
|                                 | 16 | .818                 | .0415   | .0478   | 19.22               | 1 8.1                             | .2874  | 8 34.1                             | 6.58                |
|                                 | 17 | .824                 | .0395   | .0463   | 19.26               | 1 7.8                             | .2868  | 8 30.2                             | 6.66                |
|                                 | 18 | .831                 | .0376   | .0449   | 19.30               | 1 7.5                             | .2862  | 8 26.2                             | 6.74                |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                | log h  | H                                 | i     |
|---------------------------------|----|--------|---------|---------|-------|----------------------------------|--------|-----------------------------------|-------|
| August                          | 19 | +2.838 | -0.0356 | +0.0434 | 19.34 | 1 <sup>h</sup> 7 <sup>m</sup> .3 | 1.2856 | 8 <sup>h</sup> 22 <sup>m</sup> .2 | +6.81 |
|                                 | 20 | .845   | .0337   | .0420   | 19.38 | 1 7.0                            | .2850  | 8 18.2                            | 6.89  |
|                                 | 21 | .851   | .0318   | .0406   | 19.41 | 1 6.7                            | .2844  | 8 14.2                            | 6.96  |
|                                 | 22 | .858   | .0299   | .0392   | 19.45 | 1 6.5                            | .2838  | 8 10.2                            | 7.03  |
|                                 | 23 | .864   | .0280   | .0378   | 19.49 | 1 6.3                            | .2833  | 8 6.2                             | 7.10  |
|                                 | 24 | .870   | .0262   | .0365   | 19.53 | 1 6.0                            | .2827  | 8 2.2                             | 7.17  |
|                                 | 25 | .877   | .0244   | .0352   | 19.56 | 1 5.8                            | .2822  | 7 58.1                            | 7.23  |
|                                 | 26 | .883   | .0226   | .0339   | 19.60 | 1 5.6                            | .2816  | 7 54.1                            | 7.29  |
|                                 | 27 | .889   | .0208   | .0326   | 19.64 | 1 5.3                            | .2811  | 7 50.0                            | 7.35  |
|                                 | 28 | .895   | .0190   | .0314   | 19.67 | 1 5.1                            | .2806  | 7 45.9                            | 7.41  |
| Septbr.                         | 29 | +2.901 | -0.0172 | +0.0302 | 19.71 | 1 4.9                            | 1.2801 | 7 41.8                            | +7.47 |
|                                 | 30 | .907   | .0155   | .0291   | 19.74 | 1 4.7                            | .2796  | 7 37.7                            | 7.52  |
|                                 | 31 | .912   | .0137   | .0280   | 19.78 | 1 4.5                            | .2791  | 7 33.6                            | 7.57  |
|                                 | 1  | .918   | .0120   | .0269   | 19.81 | 1 4.4                            | .2787  | 7 29.5                            | 7.62  |
|                                 | 2  | .924   | .0103   | .0259   | 19.85 | 1 4.2                            | .2782  | 7 25.4                            | 7.67  |
|                                 | 3  | .930   | .0086   | .0249   | 19.88 | 1 4.0                            | .2778  | 7 21.2                            | 7.72  |
|                                 | 4  | .935   | .0069   | .0239   | 19.91 | 1 3.8                            | .2774  | 7 17.1                            | 7.76  |
|                                 | 5  | .941   | .0052   | .0230   | 19.95 | 1 3.7                            | .2770  | 7 12.9                            | 7.80  |
|                                 | 6  | .946   | .0035   | .0221   | 19.98 | 1 3.5                            | .2767  | 7 8.7                             | 7.84  |
|                                 | 7  | .952   | .0018   | .0213   | 20.02 | 1 3.4                            | .2763  | 7 4.6                             | 7.88  |
|                                 | 8  | +2.957 | -0.0002 | +0.0205 | 20.05 | 1 3.3                            | 1.2760 | 7 0.4                             | +7.91 |
|                                 | 9  | .963   | +0.0015 | .0198   | 20.08 | 1 3.1                            | .2757  | 6 56.2                            | 7.94  |
|                                 | 10 | .968   | .0031   | .0191   | 20.11 | 1 3.0                            | .2754  | 6 52.0                            | 7.97  |
|                                 | 11 | .973   | .0048   | .0184   | 20.15 | 1 2.9                            | .2751  | 6 47.7                            | 8.00  |
|                                 | 12 | .978   | .0064   | .0178   | 20.18 | 1 2.8                            | .2749  | 6 43.5                            | 8.02  |
|                                 | 13 | .984   | .0081   | .0173   | 20.21 | 1 2.7                            | .2746  | 6 39.3                            | 8.05  |
|                                 | 14 | .989   | .0097   | .0168   | 20.25 | 1 2.6                            | .2744  | 6 35.1                            | 8.07  |
|                                 | 15 | .994   | .0114   | .0164   | 20.28 | 1 2.5                            | .2742  | 6 30.8                            | 8.09  |
|                                 | 16 | 2.999  | .0130   | .0161   | 20.31 | 1 2.5                            | .2741  | 6 26.6                            | 8.10  |
|                                 | 17 | 3.004  | .0147   | .0158   | 20.35 | 1 2.4                            | .2740  | 6 22.3                            | 8.12  |
|                                 | 18 | +3.009 | +0.0163 | +0.0156 | 20.38 | 1 2.3                            | 1.2739 | 6 18.1                            | +8.13 |
|                                 | 19 | .015   | .0180   | .0154   | 20.41 | 1 2.3                            | .2738  | 6 13.8                            | 8.14  |
|                                 | 20 | .020   | .0197   | .0152   | 20.45 | 1 2.2                            | .2737  | 6 9.5                             | 8.14  |
|                                 | 21 | .025   | .0214   | .0151   | 20.48 | 1 2.2                            | .2737  | 6 5.3                             | 8.15  |
|                                 | 22 | .030   | .0231   | .0151   | 20.51 | 1 2.2                            | .2736  | 6 1.0                             | 8.15  |
|                                 | 23 | .035   | .0248   | .0151   | 20.55 | 1 2.1                            | .2736  | 5 56.7                            | 8.15  |
|                                 | 24 | .040   | .0265   | .0151   | 20.58 | 1 2.1                            | .2737  | 5 52.4                            | 8.14  |
|                                 | 25 | .045   | .0282   | .0152   | 20.62 | 1 2.1                            | .2737  | 5 48.2                            | 8.14  |
|                                 | 26 | .050   | .0299   | .0154   | 20.65 | 1 2.1                            | .2738  | 5 43.9                            | 8.13  |
|                                 | 27 | .055   | .0316   | .0156   | 20.69 | 1 2.1                            | .2739  | 5 39.6                            | 8.12  |
| Oktbr.                          | 28 | +3.060 | +0.0333 | +0.0159 | 20.72 | 1 2.1                            | 1.2740 | 5 35.3                            | +8.11 |
|                                 | 29 | .066   | .0351   | .0163   | 20.76 | 1 2.1                            | .2742  | 5 31.0                            | 8.09  |
|                                 | 30 | .071   | .0369   | .0167   | 20.79 | 1 2.1                            | .2744  | 5 26.8                            | 8.08  |
|                                 | 1  | .076   | .0387   | .0171   | 20.83 | 1 2.2                            | .2746  | 5 22.5                            | 8.06  |
|                                 | 2  | .081   | .0406   | .0176   | 20.86 | 1 2.2                            | .2748  | 5 18.2                            | 8.03  |
|                                 | 3  | .086   | .0424   | .0182   | 20.90 | 1 2.2                            | .2750  | 5 13.9                            | 8.01  |
|                                 | 4  | .092   | .0442   | .0188   | 20.94 | 1 2.3                            | .2753  | 5 9.7                             | 7.98  |
|                                 | 5  | .097   | .0460   | .0195   | 20.97 | 1 2.3                            | .2756  | 5 5.4                             | 7.95  |
|                                 | 6  | .102   | .0479   | .0202   | 21.01 | 1 2.4                            | .2759  | 5 1.1                             | 7.92  |
|                                 | 7  | .108   | .0498   | .0210   | 21.05 | 1 2.4                            | .2762  | 4 56.9                            | 7.89  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g     | G                               | log h  | H                                | i                   |
|---------------------------------|----|----------------------|---------|---------|-------|---------------------------------|--------|----------------------------------|---------------------|
| Oktbr.                          | 8  | +3. <sup>s</sup> 113 | +0.0517 | +0.0218 | 21.09 | 1 <sup>h</sup> 2 <sup>m</sup> 5 | 1.2766 | 4 <sup>h</sup> 52 <sup>m</sup> 6 | +7. <sup>h</sup> 85 |
|                                 | 9  | .119                 | .0537   | .0227   | 21.13 | 1 2.6                           | .2769  | 4 48.4                           | 7.81                |
|                                 | 10 | .124                 | .0557   | .0236   | 21.17 | 1 2.7                           | .2773  | 4 44.1                           | 7.77                |
|                                 | 11 | .130                 | .0577   | .0246   | 21.21 | 1 2.7                           | .2777  | 4 39.9                           | 7.73                |
|                                 | 12 | .136                 | .0597   | .0256   | 21.25 | 1 2.8                           | .2782  | 4 35.6                           | 7.68                |
|                                 | 13 | .141                 | .0617   | .0267   | 21.29 | 1 2.9                           | .2786  | 4 31.4                           | 7.63                |
|                                 | 14 | .147                 | .0638   | .0278   | 21.33 | 1 3.0                           | .2791  | 4 27.2                           | 7.58                |
|                                 | 15 | .153                 | .0659   | .0289   | 21.37 | 1 3.1                           | .2795  | 4 23.0                           | 7.53                |
|                                 | 16 | .159                 | .0680   | .0301   | 21.42 | 1 3.2                           | .2800  | 4 18.8                           | 7.48                |
|                                 | 17 | .165                 | .0702   | .0313   | 21.46 | 1 3.3                           | .2806  | 4 14.5                           | 7.42                |
|                                 | 18 | +3.171               | +0.0724 | +0.0325 | 21.50 | 1 3.4                           | 1.2811 | 4 10.3                           | +7.36               |
|                                 | 19 | .177                 | .0746   | .0338   | 21.55 | 1 3.5                           | .2816  | 4 6.2                            | 7.30                |
|                                 | 20 | .183                 | .0768   | .0351   | 21.59 | 1 3.6                           | .2822  | 4 2.0                            | 7.23                |
|                                 | 21 | .190                 | .0791   | .0365   | 21.64 | 1 3.7                           | .2827  | 3 57.8                           | 7.17                |
|                                 | 22 | .196                 | .0814   | .0379   | 21.69 | 1 3.8                           | .2833  | 3 53.7                           | 7.10                |
|                                 | 23 | .202                 | .0838   | .0393   | 21.73 | 1 3.9                           | .2839  | 3 49.5                           | 7.03                |
|                                 | 24 | .209                 | .0862   | .0407   | 21.78 | 1 4.1                           | .2845  | 3 45.4                           | 6.95                |
|                                 | 25 | .216                 | .0886   | .0421   | 21.83 | 1 4.2                           | .2851  | 3 41.2                           | 6.88                |
|                                 | 26 | .222                 | .0910   | .0436   | 21.88 | 1 4.3                           | .2857  | 3 37.1                           | 6.80                |
|                                 | 27 | .229                 | .0935   | .0451   | 21.93 | 1 4.4                           | .2863  | 3 33.0                           | 6.72                |
|                                 | 28 | +3.236               | +0.0960 | +0.0466 | 21.98 | 1 4.5                           | 1.2870 | 3 28.9                           | +6.64               |
|                                 | 29 | .243                 | .0985   | .0482   | 22.03 | 1 4.6                           | .2876  | 3 24.8                           | 6.56                |
|                                 | 30 | .250                 | .1011   | .0497   | 22.08 | 1 4.8                           | .2882  | 3 20.7                           | 6.47                |
|                                 | 31 | .257                 | .1037   | .0513   | 22.13 | 1 4.9                           | .2889  | 3 16.6                           | 6.38                |
| Novbr.                          | 1  | .264                 | .1063   | .0529   | 22.18 | 1 5.0                           | .2895  | 3 12.5                           | 6.29                |
|                                 | 2  | .272                 | .1090   | .0545   | 22.24 | 1 5.1                           | .2902  | 3 8.5                            | 6.20                |
|                                 | 3  | .279                 | .1117   | .0561   | 22.29 | 1 5.2                           | .2909  | 3 4.4                            | 6.11                |
|                                 | 4  | .287                 | .1144   | .0577   | 22.35 | 1 5.3                           | .2915  | 3 0.4                            | 6.01                |
|                                 | 5  | .294                 | .1172   | .0593   | 22.40 | 1 5.4                           | .2922  | 2 56.4                           | 5.92                |
|                                 | 6  | .302                 | .1200   | .0609   | 22.46 | 1 5.5                           | .2928  | 2 52.4                           | 5.82                |
|                                 | 7  | +3.310               | +0.1228 | +0.0625 | 22.51 | 1 5.6                           | 1.2935 | 2 48.4                           | +5.72               |
|                                 | 8  | .318                 | .1256   | .0641   | 22.57 | 1 5.7                           | .2941  | 2 44.4                           | 5.61                |
|                                 | 9  | .326                 | .1284   | .0657   | 22.63 | 1 5.8                           | .2948  | 2 40.3                           | 5.51                |
|                                 | 10 | .334                 | .1313   | .0673   | 22.68 | 1 5.9                           | .2954  | 2 36.3                           | 5.40                |
|                                 | 11 | .342                 | .1342   | .0689   | 22.74 | 1 6.0                           | .2961  | 2 32.4                           | 5.29                |
|                                 | 12 | .351                 | .1372   | .0704   | 22.80 | 1 6.1                           | .2967  | 2 28.5                           | 5.18                |
|                                 | 13 | .359                 | .1402   | .0720   | 22.86 | 1 6.2                           | .2973  | 2 24.5                           | 5.07                |
|                                 | 14 | .367                 | .1432   | .0735   | 22.92 | 1 6.3                           | .2980  | 2 20.6                           | 4.96                |
|                                 | 15 | .376                 | .1462   | .0750   | 22.98 | 1 6.4                           | .2986  | 2 16.7                           | 4.85                |
|                                 | 16 | .385                 | .1493   | .0765   | 23.05 | 1 6.4                           | .2992  | 2 12.7                           | 4.73                |
|                                 | 17 | +3.394               | +0.1524 | +0.0780 | 23.11 | 1 6.5                           | 1.2998 | 2 8.8                            | +4.61               |
|                                 | 18 | .402                 | .1555   | .0795   | 23.17 | 1 6.6                           | .3004  | 2 4.9                            | 4.49                |
|                                 | 19 | .411                 | .1586   | .0809   | 23.23 | 1 6.6                           | .3009  | 2 1.0                            | 4.37                |
|                                 | 20 | .420                 | .1618   | .0823   | 23.30 | 1 6.7                           | .3015  | 1 57.2                           | 4.25                |
|                                 | 21 | .430                 | .1650   | .0837   | 23.36 | 1 6.7                           | .3021  | 1 53.3                           | 4.13                |
|                                 | 22 | .439                 | .1682   | .0851   | 23.42 | 1 6.8                           | .3026  | 1 49.4                           | 4.00                |
|                                 | 23 | .448                 | .1714   | .0864   | 23.49 | 1 6.8                           | .3032  | 1 45.6                           | 3.88                |
|                                 | 24 | .457                 | .1747   | .0877   | 23.55 | 1 6.9                           | .3037  | 1 41.7                           | 3.75                |
|                                 | 25 | .467                 | .1780   | .0890   | 23.62 | 1 6.9                           | .3042  | 1 37.9                           | 3.62                |
|                                 | 26 | .477                 | .1813   | .0902   | 23.69 | 1 6.9                           | .3047  | 1 34.1                           | 3.49                |

## 1845

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|----------------------------------|--------|-----------------------------------|---------------------|
| Novbr.                          | 27 | +3 <sup>s</sup> .486 | +0.1846 | +0.0914 | 23 <sup>h</sup> .75 | 1 <sup>h</sup> 6 <sup>m</sup> .9 | 1.3052 | 1 <sup>h</sup> 30 <sup>m</sup> .2 | +3 <sup>s</sup> .36 |
|                                 | 28 | .496                 | .1879   | .0926   | 23.82               | 1 7.0                            | .3056  | 1 26.4                            | 3.23                |
|                                 | 29 | .506                 | .1912   | .0937   | 23.89               | 1 7.0                            | .3061  | 1 22.6                            | 3.10                |
|                                 | 30 | .516                 | .1946   | .0948   | 23.95               | 1 7.0                            | .3065  | 1 18.8                            | 2.96                |
| Dezbr.                          | 1  | .526                 | .1980   | .0959   | 24.02               | 1 7.0                            | .3069  | 1 15.0                            | 2.83                |
|                                 | 2  | .536                 | .2014   | .0969   | 24.09               | 1 7.0                            | .3073  | 1 11.2                            | 2.69                |
|                                 | 3  | .546                 | .2048   | .0979   | 24.16               | 1 7.0                            | .3077  | 1 7.4                             | 2.55                |
|                                 | 4  | .556                 | .2082   | .0988   | 24.23               | 1 6.9                            | .3081  | 1 3.6                             | 2.42                |
|                                 | 5  | .566                 | .2116   | .0996   | 24.29               | 1 6.9                            | .3084  | 0 59.9                            | 2.28                |
|                                 | 6  | .576                 | .2150   | .1004   | 24.36               | 1 6.9                            | .3087  | 0 56.1                            | 2.14                |
|                                 | 7  | +3.586               | +0.2184 | +0.1012 | 24.43               | 1 6.8                            | 1.3090 | 0 52.3                            | +2.00               |
|                                 | 8  | .597                 | .2218   | .1019   | 24.50               | 1 6.8                            | .3093  | 0 48.6                            | 1.86                |
|                                 | 9  | .607                 | .2253   | .1026   | 24.57               | 1 6.7                            | .3096  | 0 44.8                            | 1.72                |
|                                 | 10 | .617                 | .2287   | .1032   | 24.64               | 1 6.7                            | .3098  | 0 41.0                            | 1.58                |
|                                 | 11 | .628                 | .2322   | .1038   | 24.71               | 1 6.6                            | .3100  | 0 37.3                            | 1.44                |
|                                 | 12 | .638                 | .2356   | .1043   | 24.78               | 1 6.5                            | .3102  | 0 33.5                            | 1.29                |
|                                 | 13 | .649                 | .2391   | .1047   | 24.85               | 1 6.5                            | .3104  | 0 29.8                            | 1.15                |
|                                 | 14 | .659                 | .2425   | .1051   | 24.92               | 1 6.4                            | .3106  | 0 26.0                            | 1.01                |
|                                 | 15 | .670                 | .2460   | .1055   | 24.98               | 1 6.3                            | .3107  | 0 22.3                            | 0.86                |
|                                 | 16 | .681                 | .2494   | .1058   | 25.05               | 1 6.2                            | .3108  | 0 18.6                            | 0.72                |
|                                 | 17 | +3.691               | +0.2529 | +0.1060 | 25.12               | 1 6.1                            | 1.3109 | 0 14.8                            | +0.57               |
|                                 | 18 | .702                 | .2563   | .1062   | 25.19               | 1 6.0                            | .3110  | 0 11.1                            | 0.43                |
|                                 | 19 | .712                 | .2597   | .1063   | 25.26               | 1 5.9                            | .3111  | 0 7.4                             | 0.29                |
|                                 | 20 | .723                 | .2631   | .1064   | 25.33               | 1 5.8                            | .3111  | 0 3.6                             | +0.14               |
|                                 | 21 | .734                 | .2665   | .1064   | 25.40               | 1 5.7                            | .3111  | 23 59.9                           | 0.00                |
|                                 | 22 | .744                 | .2699   | .1064   | 25.46               | 1 5.5                            | .3111  | 23 56.1                           | -0.15               |
|                                 | 23 | .755                 | .2733   | .1063   | 25.53               | 1 5.4                            | .3111  | 23 52.4                           | 0.29                |
|                                 | 24 | .766                 | .2767   | .1062   | 25.60               | 1 5.3                            | .3110  | 23 48.7                           | 0.44                |
|                                 | 25 | .776                 | .2801   | .1060   | 25.67               | 1 5.1                            | .3109  | 23 44.9                           | 0.58                |
|                                 | 26 | .787                 | .2834   | .1058   | 25.73               | 1 5.0                            | .3108  | 23 41.2                           | 0.73                |
|                                 | 27 | +3.797               | +0.2867 | +0.1055 | 25.80               | 1 4.8                            | 1.3107 | 23 37.4                           | -0.87               |
|                                 | 28 | .808                 | .2900   | .1052   | 25.87               | 1 4.7                            | .3106  | 23 33.7                           | 1.02                |
|                                 | 29 | .819                 | .2933   | .1048   | 25.93               | 1 4.5                            | .3104  | 23 29.9                           | 1.16                |
|                                 | 30 | .829                 | .2966   | .1043   | 26.00               | 1 4.3                            | .3102  | 23 26.2                           | 1.30                |
|                                 | 31 | .840                 | .2999   | .1038   | 26.07               | 1 4.1                            | .3100  | 23 22.4                           | 1.45                |

## 1846

|        |    |                      |         |         |                    |                                   |        |                                    |                     |
|--------|----|----------------------|---------|---------|--------------------|-----------------------------------|--------|------------------------------------|---------------------|
| Januar | 1  | +0 <sup>s</sup> .779 | -0.5608 | +0.1032 | 8 <sup>h</sup> .81 | 3 <sup>h</sup> 39 <sup>m</sup> .4 | 1.3098 | 23 <sup>h</sup> 18 <sup>m</sup> .6 | -1 <sup>s</sup> .59 |
|        | 2  | .789                 | .5589   | .1026   | 8.84               | 3 38.0                            | .3096  | 23 14.9                            | 1.73                |
|        | 3  | .799                 | .5570   | .1019   | 8.88               | 3 36.5                            | .3093  | 23 11.1                            | 1.87                |
|        | 4  | .810                 | .5552   | .1012   | 8.92               | 3 35.1                            | .3090  | 23 7.3                             | 2.01                |
|        | 5  | .820                 | .5534   | .1004   | 8.95               | 3 33.6                            | .3087  | 23 3.6                             | 2.15                |
|        | 6  | .830                 | .5516   | .0995   | 8.99               | 3 32.2                            | .3084  | 22 59.8                            | 2.29                |
|        | 7  | .840                 | .5498   | .0986   | 9.03               | 3 30.8                            | .3080  | 22 56.0                            | 2.43                |
|        | 8  | .850                 | .5481   | .0977   | 9.06               | 3 29.4                            | .3077  | 22 52.2                            | 2.57                |
|        | 9  | .860                 | .5463   | .0967   | 9.10               | 3 28.0                            | .3073  | 22 48.4                            | 2.71                |
|        | 10 | .870                 | .5445   | .0957   | 9.13               | 3 26.6                            | .3069  | 22 44.6                            | 2.84                |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                | log h  | H                                 | i     |
|---------------------------------|----|--------|---------|---------|-------|----------------------------------|--------|-----------------------------------|-------|
| Januar                          | 11 | +0.880 | -0.5428 | +0.0947 | 9.17  | 3 <sup>h</sup> 25 <sup>m</sup> 2 | 1.3065 | 22 <sup>h</sup> 40 <sup>m</sup> 7 | -2.98 |
|                                 | 12 | .890   | .5411   | .0936   | 9.20  | 3 23.8                           | .3060  | 22 36.9                           | 3.11  |
|                                 | 13 | .900   | .5394   | .0925   | 9.24  | 3 22.5                           | .3056  | 22 33.1                           | 3.25  |
|                                 | 14 | .910   | .5378   | .0913   | 9.27  | 3 21.1                           | .3051  | 22 29.3                           | 3.38  |
|                                 | 15 | .919   | .5361   | .0901   | 9.30  | 3 19.8                           | .3046  | 22 25.4                           | 3.51  |
|                                 | 16 | .929   | .5345   | .0889   | 9.33  | 3 18.5                           | .3041  | 22 21.6                           | 3.64  |
|                                 | 17 | .938   | .5328   | .0876   | 9.37  | 3 17.1                           | .3036  | 22 17.7                           | 3.77  |
|                                 | 18 | .948   | .5312   | .0863   | 9.40  | 3 15.8                           | .3031  | 22 13.8                           | 3.90  |
|                                 | 19 | .957   | .5296   | .0849   | 9.43  | 3 14.6                           | .3026  | 22 10.0                           | 4.02  |
|                                 | 20 | .966   | .5280   | .0835   | 9.46  | 3 13.3                           | .3020  | 22 6.1                            | 4.15  |
|                                 | 21 | +0.975 | -0.5264 | +0.0821 | 9.50  | 3 12.0                           | 1.3014 | 22 2.2                            | -4.27 |
|                                 | 22 | .984   | .5249   | .0806   | 9.53  | 3 10.8                           | .3009  | 21 58.3                           | 4.39  |
|                                 | 23 | 0.993  | .5234   | .0792   | 9.56  | 3 9.5                            | .3003  | 21 54.3                           | 4.51  |
|                                 | 24 | 1.002  | .5219   | .0777   | 9.59  | 3 8.3                            | .2997  | 21 50.4                           | 4.63  |
|                                 | 25 | .011   | .5204   | .0762   | 9.62  | 3 7.1                            | .2991  | 21 46.5                           | 4.75  |
|                                 | 26 | .020   | .5190   | .0747   | 9.64  | 3 5.9                            | .2985  | 21 42.5                           | 4.87  |
|                                 | 27 | .028   | .5175   | .0732   | 9.67  | 3 4.7                            | .2978  | 21 38.6                           | 4.98  |
|                                 | 28 | .037   | .5161   | .0716   | 9.70  | 3 3.6                            | .2972  | 21 34.6                           | 5.10  |
|                                 | 29 | .045   | .5147   | .0700   | 9.73  | 3 2.4                            | .2966  | 21 30.6                           | 5.21  |
|                                 | 30 | .053   | .5133   | .0684   | 9.76  | 3 1.3                            | .2959  | 21 26.7                           | 5.32  |
| Februar                         | 31 | +1.062 | -0.5119 | +0.0668 | 9.79  | 3 0.2                            | 1.2953 | 21 22.7                           | -5.43 |
|                                 | 1  | .070   | .5105   | .0652   | 9.82  | 2 59.1                           | .2946  | 21 18.6                           | 5.53  |
|                                 | 2  | .078   | .5091   | .0636   | 9.84  | 2 58.0                           | .2939  | 21 14.6                           | 5.64  |
|                                 | 3  | .085   | .5078   | .0620   | 9.87  | 2 57.0                           | .2933  | 21 10.6                           | 5.74  |
|                                 | 4  | .093   | .5064   | .0604   | 9.90  | 2 55.9                           | .2926  | 21 6.5                            | 5.84  |
|                                 | 5  | .101   | .5051   | .0588   | 9.92  | 2 54.9                           | .2920  | 21 2.5                            | 5.94  |
|                                 | 6  | .108   | .5038   | .0572   | 9.95  | 2 53.9                           | .2913  | 20 58.4                           | 6.04  |
|                                 | 7  | .116   | .5025   | .0556   | 9.98  | 2 52.9                           | .2907  | 20 54.3                           | 6.13  |
|                                 | 8  | .123   | .5012   | .0540   | 10.00 | 2 51.9                           | .2900  | 20 50.3                           | 6.23  |
|                                 | 9  | .130   | .4999   | .0524   | 10.03 | 2 50.9                           | .2893  | 20 46.2                           | 6.32  |
|                                 | 10 | +1.138 | -0.4986 | +0.0508 | 10.05 | 2 50.0                           | 1.2887 | 20 42.1                           | -6.41 |
|                                 | 11 | .145   | .4974   | .0492   | 10.08 | 2 49.1                           | .2880  | 20 37.9                           | 6.50  |
|                                 | 12 | .152   | .4961   | .0476   | 10.10 | 2 48.2                           | .2874  | 20 33.8                           | 6.59  |
|                                 | 13 | .159   | .4949   | .0461   | 10.13 | 2 47.3                           | .2867  | 20 29.7                           | 6.67  |
|                                 | 14 | .165   | .4936   | .0445   | 10.15 | 2 46.4                           | .2861  | 20 25.5                           | 6.75  |
|                                 | 15 | .172   | .4924   | .0430   | 10.18 | 2 45.5                           | .2855  | 20 21.4                           | 6.83  |
|                                 | 16 | .179   | .4912   | .0415   | 10.20 | 2 44.7                           | .2849  | 20 17.2                           | 6.91  |
|                                 | 17 | .185   | .4900   | .0401   | 10.23 | 2 43.8                           | .2843  | 20 13.0                           | 6.98  |
|                                 | 18 | .192   | .4888   | .0386   | 10.25 | 2 43.0                           | .2837  | 20 8.8                            | 7.06  |
|                                 | 19 | .198   | .4876   | .0372   | 10.27 | 2 42.2                           | .2831  | 20 4.6                            | 7.13  |
|                                 | 20 | +1.204 | -0.4864 | +0.0358 | 10.30 | 2 41.5                           | 1.2825 | 20 0.4                            | -7.20 |
|                                 | 21 | .210   | .4852   | .0345   | 10.32 | 2 40.7                           | .2819  | 19 56.2                           | 7.26  |
|                                 | 22 | .217   | .4839   | .0332   | 10.35 | 2 40.0                           | .2814  | 19 52.0                           | 7.32  |
|                                 | 23 | .223   | .4827   | .0319   | 10.37 | 2 39.2                           | .2808  | 19 47.7                           | 7.38  |
|                                 | 24 | .229   | .4815   | .0307   | 10.40 | 2 38.5                           | .2803  | 19 43.5                           | 7.44  |
|                                 | 25 | .235   | .4803   | .0295   | 10.42 | 2 37.9                           | .2798  | 19 39.2                           | 7.50  |
|                                 | 26 | .240   | .4791   | .0283   | 10.45 | 2 37.2                           | .2793  | 19 35.0                           | 7.56  |
|                                 | 27 | .246   | .4779   | .0272   | 10.47 | 2 36.5                           | .2788  | 19 30.7                           | 7.61  |
|                                 | 28 | .252   | .4767   | .0261   | 10.49 | 2 35.9                           | .2784  | 19 26.4                           | 7.66  |
| März                            | 1  | .257   | .4755   | .0251   | 10.52 | 2 35.3                           | .2779  | 19 22.1                           | 7.71  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                 | log h  | H                                  | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|-----------------------------------|--------|------------------------------------|---------------------|
| März                            | 2  | +1 <sup>s</sup> .263 | —0.4742 | +0.0241 | 10 <sup>h</sup> .54 | 2 <sup>h</sup> 34 <sup>m</sup> .7 | 1.2775 | 19 <sup>h</sup> 17 <sup>m</sup> .8 | —7 <sup>h</sup> .75 |
|                                 | 3  | .268                 | .4730   | .0231   | 10.57               | 2 34.1                            | .2771  | 19 13.5                            | 7.79                |
|                                 | 4  | .274                 | .4718   | .0222   | 10.59               | 2 33.6                            | .2767  | 19 9.2                             | 7.83                |
|                                 | 5  | .279                 | .4705   | .0213   | 10.62               | 2 33.0                            | .2763  | 19 4.9                             | 7.87                |
|                                 | 6  | .285                 | .4693   | .0205   | 10.64               | 2 32.5                            | .2760  | 19 0.6                             | 7.91                |
|                                 | 7  | .290                 | .4680   | .0198   | 10.67               | 2 32.0                            | .2757  | 18 56.3                            | 7.94                |
|                                 | 8  | .295                 | .4667   | .0191   | 10.69               | 2 31.5                            | .2754  | 18 52.0                            | 7.97                |
|                                 | 9  | .300                 | .4654   | .0185   | 10.72               | 2 31.0                            | .2751  | 18 47.7                            | 8.00                |
|                                 | 10 | .306                 | .4641   | .0179   | 10.75               | 2 30.5                            | .2749  | 18 43.4                            | 8.02                |
|                                 | 11 | .311                 | .4628   | .0173   | 10.77               | 2 30.0                            | .2746  | 18 39.0                            | 8.05                |
|                                 | 12 | +1.316               | —0.4615 | +0.0168 | 10.80               | 2 29.6                            | 1.2744 | 18 34.7                            | —8.07               |
|                                 | 13 | .321                 | .4602   | .0164   | 10.82               | 2 29.2                            | .2742  | 18 30.4                            | 8.09                |
|                                 | 14 | .326                 | .4589   | .0160   | 10.85               | 2 28.8                            | .2741  | 18 26.0                            | 8.10                |
|                                 | 15 | .331                 | .4575   | .0157   | 10.88               | 2 28.4                            | .2739  | 18 21.7                            | 8.12                |
|                                 | 16 | .336                 | .4561   | .0154   | 10.91               | 2 28.0                            | .2738  | 18 17.4                            | 8.13                |
|                                 | 17 | .341                 | .4547   | .0152   | 10.93               | 2 27.7                            | .2737  | 18 13.1                            | 8.14                |
|                                 | 18 | .346                 | .4533   | .0151   | 10.96               | 2 27.3                            | .2737  | 18 8.7                             | 8.14                |
|                                 | 19 | .351                 | .4519   | .0150   | 10.99               | 2 27.0                            | .2737  | 18 4.4                             | 8.15                |
|                                 | 20 | .356                 | .4505   | .0150   | 11.02               | 2 26.7                            | .2736  | 18 0.1                             | 8.15                |
|                                 | 21 | .361                 | .4490   | .0150   | 11.05               | 2 26.4                            | .2737  | 17 55.7                            | 8.15                |
|                                 | 22 | +1.366               | —0.4475 | +0.0151 | 11.08               | 2 26.1                            | 1.2737 | 17 51.4                            | —8.14               |
|                                 | 23 | .371                 | .4459   | .0152   | 11.11               | 2 25.8                            | .2737  | 17 47.1                            | 8.14                |
|                                 | 24 | .376                 | .4444   | .0154   | 11.14               | 2 25.5                            | .2738  | 17 42.8                            | 8.13                |
|                                 | 25 | .381                 | .4428   | .0157   | 11.17               | 2 25.2                            | .2739  | 17 38.5                            | 8.12                |
|                                 | 26 | .386                 | .4413   | .0160   | 11.20               | 2 25.0                            | .2741  | 17 34.2                            | 8.10                |
|                                 | 27 | .391                 | .4397   | .0164   | 11.24               | 2 24.7                            | .2742  | 17 29.9                            | 8.09                |
|                                 | 28 | .396                 | .4381   | .0168   | 11.27               | 2 24.5                            | .2744  | 17 25.6                            | 8.07                |
|                                 | 29 | .401                 | .4364   | .0173   | 11.30               | 2 24.3                            | .2746  | 17 21.3                            | 8.05                |
|                                 | 30 | .406                 | .4347   | .0178   | 11.34               | 2 24.1                            | .2748  | 17 17.0                            | 8.03                |
|                                 | 31 | .411                 | .4330   | .0184   | 11.37               | 2 23.9                            | .2751  | 17 12.7                            | 8.00                |
| April                           | 1  | +1.416               | —0.4313 | +0.0190 | 11.41               | 2 23.7                            | 1.2754 | 17 8.5                             | —7.98               |
|                                 | 2  | .422                 | .4295   | .0197   | 11.44               | 2 23.5                            | .2756  | 17 4.2                             | 7.95                |
|                                 | 3  | .427                 | .4277   | .0204   | 11.48               | 2 23.3                            | .2759  | 17 0.0                             | 7.91                |
|                                 | 4  | .432                 | .4259   | .0212   | 11.51               | 2 23.2                            | .2763  | 16 55.7                            | 7.88                |
|                                 | 5  | .437                 | .4241   | .0220   | 11.55               | 2 23.0                            | .2766  | 16 51.5                            | 7.84                |
|                                 | 6  | .443                 | .4222   | .0229   | 11.59               | 2 22.8                            | .2770  | 16 47.3                            | 7.80                |
|                                 | 7  | .448                 | .4203   | .0238   | 11.62               | 2 22.7                            | .2774  | 16 43.1                            | 7.76                |
|                                 | 8  | .454                 | .4184   | .0248   | 11.66               | 2 22.5                            | .2778  | 16 38.9                            | 7.72                |
|                                 | 9  | .459                 | .4164   | .0258   | 11.70               | 2 22.4                            | .2782  | 16 34.7                            | 7.67                |
|                                 | 10 | .465                 | .4144   | .0269   | 11.74               | 2 22.3                            | .2787  | 16 30.5                            | 7.62                |
|                                 | 11 | +1.470               | —0.4124 | +0.0280 | 11.78               | 2 22.1                            | 1.2791 | 16 26.3                            | —7.57               |
|                                 | 12 | .476                 | .4103   | .0291   | 11.82               | 2 22.0                            | .2796  | 16 22.2                            | 7.52                |
|                                 | 13 | .482                 | .4082   | .0302   | 11.87               | 2 21.9                            | .2801  | 16 18.0                            | 7.46                |
|                                 | 14 | .488                 | .4061   | .0314   | 11.91               | 2 21.8                            | .2806  | 16 13.9                            | 7.41                |
|                                 | 15 | .494                 | .4040   | .0326   | 11.95               | 2 21.7                            | .2811  | 16 9.7                             | 7.35                |
|                                 | 16 | .500                 | .4018   | .0339   | 11.99               | 2 21.6                            | .2817  | 16 5.6                             | 7.29                |
|                                 | 17 | .506                 | .3996   | .0352   | 12.04               | 2 21.5                            | .2822  | 16 1.5                             | 7.23                |
|                                 | 18 | .512                 | .3974   | .0365   | 12.08               | 2 21.4                            | .2828  | 15 57.5                            | 7.16                |
|                                 | 19 | .518                 | .3952   | .0379   | 12.13               | 2 21.2                            | .2833  | 15 53.4                            | 7.09                |
|                                 | 20 | .524                 | .3929   | .0393   | 12.17               | 2 21.1                            | .2839  | 15 49.3                            | 7.02                |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                  | G                                | log h  | H                                 | i                  |
|---------------------------------|----|----------------------|---------|---------|--------------------|----------------------------------|--------|-----------------------------------|--------------------|
| April                           | 21 | +1. <sup>s</sup> 530 | —0.3906 | +0.0407 | 12 <sup>h</sup> 22 | 2 <sup>h</sup> 21 <sup>m</sup> 0 | 1.2845 | 15 <sup>h</sup> 45 <sup>m</sup> 3 | —6 <sup>h</sup> 95 |
|                                 | 22 | .537                 | .3882   | .0421   | 12.27              | 2 20.9                           | .2851  | 15 41.2                           | 6.88               |
|                                 | 23 | .543                 | .3858   | .0435   | 12.31              | 2 20.8                           | .2857  | 15 37.2                           | 6.80               |
|                                 | 24 | .550                 | .3834   | .0450   | 12.36              | 2 20.7                           | .2863  | 15 33.2                           | 6.73               |
|                                 | 25 | .557                 | .3810   | .0465   | 12.41              | 2 20.5                           | .2869  | 15 29.2                           | 6.65               |
|                                 | 26 | .563                 | .3785   | .0480   | 12.46              | 2 20.4                           | .2875  | 15 25.2                           | 6.57               |
|                                 | 27 | .570                 | .3760   | .0495   | 12.51              | 2 20.3                           | .2881  | 15 21.3                           | 6.48               |
|                                 | 28 | .577                 | .3735   | .0510   | 12.56              | 2 20.2                           | .2888  | 15 17.3                           | 6.40               |
|                                 | 29 | .584                 | .3710   | .0525   | 12.61              | 2 20.0                           | .2894  | 15 13.4                           | 6.31               |
|                                 | 30 | .591                 | .3684   | .0540   | 12.66              | 2 19.9                           | .2900  | 15 9.5                            | 6.23               |
| Mai                             | 1  | +1.598               | —0.3659 | +0.0556 | 12.72              | 2 19.8                           | 1.2907 | 15 5.5                            | —6.14              |
|                                 | 2  | .606                 | .3633   | .0571   | 12.77              | 2 19.6                           | .2913  | 15 1.6                            | 6.04               |
|                                 | 3  | .613                 | .3607   | .0587   | 12.82              | 2 19.5                           | .2919  | 14 57.7                           | 5.95               |
|                                 | 4  | .620                 | .3580   | .0602   | 12.87              | 2 19.3                           | .2926  | 14 53.9                           | 5.86               |
|                                 | 5  | .628                 | .3553   | .0618   | 12.93              | 2 19.2                           | .2932  | 14 50.0                           | 5.76               |
|                                 | 6  | .635                 | .3526   | .0633   | 12.98              | 2 19.0                           | .2938  | 14 46.2                           | 5.66               |
|                                 | 7  | .643                 | .3499   | .0648   | 13.04              | 2 18.9                           | .2944  | 14 42.3                           | 5.56               |
|                                 | 8  | .651                 | .3471   | .0663   | 13.09              | 2 18.7                           | .2951  | 14 38.5                           | 5.46               |
|                                 | 9  | .658                 | .3443   | .0679   | 13.15              | 2 18.5                           | .2957  | 14 34.7                           | 5.36               |
|                                 | 10 | .666                 | .3415   | .0694   | 13.20              | 2 18.4                           | .2963  | 14 30.9                           | 5.25               |
|                                 | 11 | +1.674               | —0.3387 | +0.0709 | 13.26              | 2 18.2                           | 1.2969 | 14 27.1                           | —5.15              |
|                                 | 12 | .682                 | .3359   | .0724   | 13.32              | 2 18.0                           | .2975  | 14 23.3                           | 5.04               |
|                                 | 13 | .691                 | .3331   | .0739   | 13.37              | 2 17.8                           | .2981  | 14 19.6                           | 4.93               |
|                                 | 14 | .699                 | .3302   | .0754   | 13.43              | 2 17.6                           | .2987  | 14 15.8                           | 4.82               |
|                                 | 15 | .707                 | .3273   | .0768   | 13.49              | 2 17.4                           | .2993  | 14 12.1                           | 4.71               |
|                                 | 16 | .716                 | .3244   | .0782   | 13.55              | 2 17.2                           | .2999  | 14 8.4                            | 4.60               |
|                                 | 17 | .724                 | .3215   | .0796   | 13.60              | 2 17.0                           | .3004  | 14 4.7                            | 4.48               |
|                                 | 18 | .733                 | .3186   | .0809   | 13.66              | 2 16.8                           | .3010  | 14 1.0                            | 4.37               |
|                                 | 19 | .742                 | .3157   | .0823   | 13.72              | 2 16.5                           | .3015  | 13 57.3                           | 4.25               |
|                                 | 20 | .750                 | .3127   | .0836   | 13.78              | 2 16.3                           | .3020  | 13 53.6                           | 4.14               |
| Juni                            | 21 | +1.759               | —0.3098 | +0.0849 | 13.84              | 2 16.1                           | 1.3026 | 13 49.9                           | —4.02              |
|                                 | 22 | .768                 | .3068   | .0862   | 13.90              | 2 15.8                           | .3031  | 13 46.2                           | 3.90               |
|                                 | 23 | .777                 | .3038   | .0875   | 13.96              | 2 15.5                           | .3036  | 13 42.6                           | 3.78               |
|                                 | 24 | .786                 | .3008   | .0887   | 14.02              | 2 15.3                           | .3041  | 13 38.9                           | 3.66               |
|                                 | 25 | .795                 | .2978   | .0899   | 14.08              | 2 15.0                           | .3045  | 13 35.3                           | 3.53               |
|                                 | 26 | .804                 | .2948   | .0910   | 14.14              | 2 14.7                           | .3050  | 13 31.7                           | 3.41               |
|                                 | 27 | .813                 | .2918   | .0921   | 14.20              | 2 14.5                           | .3054  | 13 28.1                           | 3.29               |
|                                 | 28 | .822                 | .2888   | .0932   | 14.26              | 2 14.2                           | .3059  | 13 24.5                           | 3.16               |
|                                 | 29 | .832                 | .2858   | .0942   | 14.32              | 2 13.9                           | .3063  | 13 20.9                           | 3.03               |
|                                 | 30 | .841                 | .2828   | .0952   | 14.38              | 2 13.6                           | .3067  | 13 17.3                           | 2.91               |
|                                 | 31 | +1.851               | —0.2797 | +0.0962 | 14.44              | 2 13.3                           | 1.3070 | 13 13.7                           | —2.78              |
|                                 | 1  | .860                 | .2767   | .0971   | 14.50              | 2 12.9                           | .3074  | 13 10.1                           | 2.65               |
|                                 | 2  | .870                 | .2737   | .0980   | 14.57              | 2 12.6                           | .3078  | 13 6.6                            | 2.52               |
|                                 | 3  | .879                 | .2706   | .0989   | 14.63              | 2 12.3                           | .3081  | 13 3.0                            | 2.39               |
|                                 | 4  | .889                 | .2676   | .0997   | 14.69              | 2 12.0                           | .3084  | 12 59.4                           | 2.26               |
|                                 | 5  | .898                 | .2645   | .1005   | 14.75              | 2 11.6                           | .3087  | 12 55.9                           | 2.13               |
|                                 | 6  | .908                 | .2615   | .1012   | 14.81              | 2 11.3                           | .3090  | 12 52.3                           | 2.00               |
|                                 | 7  | .918                 | .2584   | .1019   | 14.87              | 2 10.9                           | .3093  | 12 48.8                           | 1.87               |
|                                 | 8  | .928                 | .2554   | .1025   | 14.93              | 2 10.5                           | .3095  | 12 45.3                           | 1.74               |
|                                 | 9  | .938                 | .2523   | .1031   | 14.99              | 2 10.2                           | .3098  | 12 41.7                           | 1.60               |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                | log h  | H                                  | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|----------------------------------|--------|------------------------------------|---------------------|
| Juni                            | 10 | +1 <sup>s</sup> .948 | —0.2493 | +0.1036 | 15 <sup>h</sup> .05 | 2 <sup>h</sup> 9 <sup>m</sup> .8 | 1.3100 | 12 <sup>h</sup> 38 <sup>m</sup> .2 | —1 <sup>h</sup> .47 |
|                                 | 11 | .958                 | .2463   | .1041   | 15.11               | 2 9.4                            | .3102  | 12 34.7                            | 1.34                |
|                                 | 12 | .968                 | .2433   | .1046   | 15.17               | 2 9.0                            | .3104  | 12 31.1                            | 1.20                |
|                                 | 13 | .977                 | .2402   | .1050   | 15.23               | 2 8.6                            | .3105  | 12 27.6                            | 1.07                |
|                                 | 14 | .987                 | .2372   | .1053   | 15.29               | 2 8.2                            | .3107  | 12 24.1                            | 0.93                |
|                                 | 15 | 1.997                | .2342   | .1056   | 15.35               | 2 7.8                            | .3108  | 12 20.6                            | 0.80                |
|                                 | 16 | 2.007                | .2313   | .1059   | 15.41               | 2 7.4                            | .3109  | 12 17.1                            | 0.66                |
|                                 | 17 | .017                 | .2283   | .1061   | 15.47               | 2 7.0                            | .3110  | 12 13.6                            | 0.53                |
|                                 | 18 | .027                 | .2253   | .1063   | 15.53               | 2 6.6                            | .3110  | 12 10.1                            | 0.39                |
|                                 | 19 | .037                 | .2224   | .1064   | 15.59               | 2 6.2                            | .3111  | 12 6.6                             | 0.26                |
|                                 | 20 | +2.047               | —0.2194 | +0.1065 | 15.65               | 2 5.7                            | 1.3111 | 12 3.1                             | —0.12               |
|                                 | 21 | .057                 | .2165   | .1065   | 15.71               | 2 5.3                            | .3111  | 11 59.6                            | +0.01               |
|                                 | 22 | .067                 | .2136   | .1065   | 15.77               | 2 4.9                            | .3111  | 11 56.1                            | 0.15                |
|                                 | 23 | .078                 | .2107   | .1064   | 15.83               | 2 4.4                            | .3111  | 11 52.6                            | 0.29                |
|                                 | 24 | .088                 | .2078   | .1063   | 15.88               | 2 4.0                            | .3110  | 11 49.1                            | 0.42                |
|                                 | 25 | .098                 | .2050   | .1061   | 15.94               | 2 3.5                            | .3110  | 11 45.6                            | 0.56                |
|                                 | 26 | .108                 | .2021   | .1059   | 16.00               | 2 3.1                            | .3109  | 11 42.1                            | 0.69                |
|                                 | 27 | .118                 | .1993   | .1056   | 16.06               | 2 2.6                            | .3108  | 11 38.6                            | 0.83                |
|                                 | 28 | .128                 | .1964   | .1053   | 16.11               | 2 2.1                            | .3106  | 11 35.1                            | 0.96                |
|                                 | 29 | .138                 | .1936   | .1049   | 16.17               | 2 1.7                            | .3105  | 11 31.6                            | 1.10                |
| Juli                            | 30 | +2.148               | —0.1908 | +0.1045 | 16.22               | 2 1.2                            | 1.3103 | 11 28.1                            | +1.23               |
|                                 | 1  | .157                 | .1881   | .1040   | 16.28               | 2 0.7                            | .3101  | 11 24.6                            | 1.37                |
|                                 | 2  | .167                 | .1853   | .1035   | 16.34               | 2 0.3                            | .3099  | 11 21.1                            | 1.50                |
|                                 | 3  | .177                 | .1826   | .1029   | 16.39               | 1 59.8                           | .3097  | 11 17.5                            | 1.63                |
|                                 | 4  | .187                 | .1799   | .1023   | 16.45               | 1 59.3                           | .3095  | 11 14.0                            | 1.76                |
|                                 | 5  | .197                 | .1772   | .1017   | 16.50               | 1 58.8                           | .3092  | 11 10.5                            | 1.90                |
|                                 | 6  | .206                 | .1745   | .1010   | 16.55               | 1 58.4                           | .3090  | 11 7.0                             | 2.03                |
|                                 | 7  | .216                 | .1719   | .1003   | 16.61               | 1 57.9                           | .3087  | 11 3.4                             | 2.16                |
|                                 | 8  | .226                 | .1693   | .0995   | 16.66               | 1 57.4                           | .3084  | 10 59.9                            | 2.29                |
|                                 | 9  | .235                 | .1667   | .0987   | 16.71               | 1 56.9                           | .3081  | 10 56.3                            | 2.42                |
|                                 | 10 | +2.245               | —0.1641 | +0.0979 | 16.76               | 1 56.4                           | 1.3077 | 10 52.8                            | +2.55               |
|                                 | 11 | .254                 | .1616   | .0970   | 16.81               | 1 56.0                           | .3074  | 10 49.2                            | 2.68                |
|                                 | 12 | .264                 | .1590   | .0961   | 16.86               | 1 55.5                           | .3070  | 10 45.7                            | 2.81                |
|                                 | 13 | .273                 | .1565   | .0951   | 16.91               | 1 55.0                           | .3066  | 10 42.1                            | 2.94                |
|                                 | 14 | .282                 | .1540   | .0941   | 16.96               | 1 54.5                           | .3062  | 10 38.5                            | 3.06                |
|                                 | 15 | .292                 | .1516   | .0930   | 17.01               | 1 54.0                           | .3058  | 10 34.9                            | 3.18                |
|                                 | 16 | .301                 | .1492   | .0919   | 17.06               | 1 53.5                           | .3054  | 10 31.4                            | 3.31                |
|                                 | 17 | .310                 | .1478   | .0908   | 17.11               | 1 53.0                           | .3049  | 10 27.8                            | 3.43                |
|                                 | 18 | .319                 | .1454   | .0897   | 17.16               | 1 52.5                           | .3045  | 10 24.1                            | 3.55                |
|                                 | 19 | .328                 | .1421   | .0885   | 17.20               | 1 52.1                           | .3040  | 10 20.5                            | 3.67                |
|                                 | 20 | +2.337               | —0.1397 | +0.0873 | 17.25               | 1 51.6                           | 1.3035 | 10 16.9                            | +3.79               |
|                                 | 21 | .346                 | .1374   | .0851   | 17.30               | 1 51.1                           | .3030  | 10 13.3                            | 3.91                |
|                                 | 22 | .355                 | .1351   | .0838   | 17.34               | 1 50.6                           | .3025  | 10 9.6                             | 4.03                |
|                                 | 23 | .363                 | .1329   | .0835   | 17.39               | 1 50.1                           | .3020  | 10 6.0                             | 4.15                |
|                                 | 24 | .372                 | .1307   | .0822   | 17.43               | 1 49.7                           | .3015  | 10 2.3                             | 4.27                |
|                                 | 25 | .381                 | .1285   | .0808   | 17.48               | 1 49.2                           | .3009  | 9 58.6                             | 4.38                |
|                                 | 26 | .389                 | .1263   | .0794   | 17.52               | 1 48.7                           | .3004  | 9 55.0                             | 4.50                |
|                                 | 27 | .398                 | .1241   | .0780   | 17.56               | 1 48.3                           | .2998  | 9 51.3                             | 4.61                |
|                                 | 28 | .406                 | .1220   | .0766   | 17.61               | 1 47.8                           | .2992  | 9 47.6                             | 4.72                |
|                                 | 29 | .414                 | .1199   | .0752   | 17.65               | 1 47.3                           | .2987  | 9 43.9                             | 4.83                |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                | log h  | H                                | i     |
|---------------------------------|----|--------|---------|---------|-------|----------------------------------|--------|----------------------------------|-------|
| Juli                            | 30 | +2.422 | —0.1178 | +0.0738 | 17.69 | 1 <sup>h</sup> 46 <sup>m</sup> 9 | 1.2981 | 9 <sup>h</sup> 40 <sup>m</sup> 1 | +4.94 |
|                                 | 31 | .430   | .1157   | .0723   | 17.73 | 1 46.4                           | .2975  | 9 36.4                           | 5.05  |
| August                          | 1  | .438   | .1136   | .0708   | 17.77 | 1 45.9                           | .2969  | 9 32.7                           | 5.15  |
|                                 | 2  | .446   | .1116   | .0693   | 17.81 | 1 45.5                           | .2963  | 9 28.9                           | 5.26  |
|                                 | 3  | .454   | .1096   | .0678   | 17.85 | 1 45.0                           | .2957  | 9 25.1                           | 5.36  |
|                                 | 4  | .462   | .1076   | .0663   | 17.89 | 1 44.6                           | .2951  | 9 21.4                           | 5.46  |
|                                 | 5  | .470   | .1057   | .0648   | 17.93 | 1 44.2                           | .2945  | 9 17.6                           | 5.56  |
|                                 | 6  | .477   | .1038   | .0633   | 17.97 | 1 43.7                           | .2938  | 9 13.8                           | 5.66  |
|                                 | 7  | .485   | .1019   | .0618   | 18.01 | 1 43.3                           | .2932  | 9 9.9                            | 5.76  |
|                                 | 8  | .492   | .1000   | .0603   | 18.05 | 1 42.9                           | .2926  | 9 6.1                            | 5.85  |
|                                 | 9  | +2.500 | —0.0981 | +0.0587 | 18.08 | 1 42.5                           | 1.2920 | 9 2.3                            | +5.95 |
|                                 | 10 | .507   | .0963   | .0572   | 18.12 | 1 42.1                           | .2913  | 8 58.4                           | 6.04  |
|                                 | 11 | .514   | .0945   | .0557   | 18.16 | 1 41.6                           | .2907  | 8 54.6                           | 6.13  |
|                                 | 12 | .521   | .0927   | .0542   | 18.19 | 1 41.2                           | .2901  | 8 50.7                           | 6.22  |
|                                 | 13 | .528   | .0909   | .0526   | 18.23 | 1 40.8                           | .2894  | 8 46.8                           | 6.31  |
|                                 | 14 | .535   | .0891   | .0511   | 18.26 | 1 40.4                           | .2888  | 8 42.9                           | 6.39  |
|                                 | 15 | .542   | .0874   | .0496   | 18.30 | 1 40.1                           | .2882  | 8 39.0                           | 6.48  |
|                                 | 16 | .548   | .0857   | .0481   | 18.33 | 1 39.7                           | .2876  | 8 35.0                           | 6.56  |
|                                 | 17 | .555   | .0840   | .0466   | 18.37 | 1 39.3                           | .2870  | 8 31.1                           | 6.64  |
|                                 | 18 | .562   | .0824   | .0452   | 18.40 | 1 38.9                           | .2864  | 8 27.2                           | 6.72  |
|                                 | 19 | +2.568 | —0.0807 | +0.0437 | 18.43 | 1 38.6                           | 1.2858 | 8 23.2                           | +6.80 |
|                                 | 20 | .575   | .0791   | .0423   | 18.47 | 1 38.2                           | .2852  | 8 19.2                           | 6.87  |
|                                 | 21 | .581   | .0774   | .0409   | 18.50 | 1 37.9                           | .2846  | 8 15.2                           | 6.94  |
|                                 | 22 | .587   | .0758   | .0395   | 18.53 | 1 37.5                           | .2840  | 8 11.2                           | 7.01  |
|                                 | 23 | .593   | .0742   | .0381   | 18.56 | 1 37.2                           | .2834  | 8 7.2                            | 7.08  |
|                                 | 24 | .599   | .0726   | .0368   | 18.60 | 1 36.9                           | .2828  | 8 3.2                            | 7.15  |
|                                 | 25 | .605   | .0710   | .0355   | 18.63 | 1 36.5                           | .2823  | 7 59.1                           | 7.22  |
|                                 | 26 | .611   | .0695   | .0342   | 18.66 | 1 36.2                           | .2818  | 7 55.1                           | 7.28  |
|                                 | 27 | .617   | .0680   | .0329   | 18.69 | 1 35.9                           | .2812  | 7 51.0                           | 7.34  |
|                                 | 28 | .623   | .0665   | .0317   | 18.72 | 1 35.6                           | .2807  | 7 46.9                           | 7.40  |
|                                 | 29 | +2.629 | —0.0649 | +0.0305 | 18.75 | 1 35.3                           | 1.2802 | 7 42.8                           | +7.45 |
|                                 | 30 | .634   | .0634   | .0293   | 18.78 | 1 35.1                           | .2797  | 7 38.7                           | 7.51  |
|                                 | 31 | .640   | .0619   | .0282   | 18.81 | 1 34.8                           | .2792  | 7 34.6                           | 7.56  |
| Septbr.                         | 1  | .646   | .0604   | .0271   | 18.84 | 1 34.5                           | .2788  | 7 30.5                           | 7.61  |
|                                 | 2  | .651   | .0589   | .0261   | 18.87 | 1 34.3                           | .2783  | 7 26.4                           | 7.66  |
|                                 | 3  | .657   | .0574   | .0251   | 18.90 | 1 34.0                           | .2779  | 7 22.2                           | 7.71  |
|                                 | 4  | .662   | .0560   | .0241   | 18.93 | 1 33.8                           | .2775  | 7 18.1                           | 7.75  |
|                                 | 5  | .667   | .0545   | .0232   | 18.96 | 1 33.5                           | .2771  | 7 13.9                           | 7.79  |
|                                 | 6  | .673   | .0530   | .0223   | 18.99 | 1 33.3                           | .2768  | 7 9.8                            | 7.83  |
|                                 | 7  | .678   | .0515   | .0215   | 19.02 | 1 33.1                           | .2764  | 7 5.6                            | 7.87  |
|                                 | 8  | +2.683 | —0.0501 | +0.0207 | 19.05 | 1 32.9                           | 1.2761 | 7 1.4                            | +7.90 |
|                                 | 9  | .688   | .0486   | .0200   | 19.08 | 1 32.7                           | .2758  | 6 57.2                           | 7.94  |
|                                 | 10 | .693   | .0472   | .0193   | 19.11 | 1 32.5                           | .2755  | 6 53.0                           | 7.97  |
|                                 | 11 | .698   | .0457   | .0186   | 19.14 | 1 32.3                           | .2752  | 6 48.8                           | 7.99  |
|                                 | 12 | .703   | .0442   | .0180   | 19.17 | 1 32.1                           | .2749  | 6 44.5                           | 8.02  |
|                                 | 13 | .708   | .0427   | .0175   | 19.20 | 1 32.0                           | .2747  | 6 40.3                           | 8.04  |
|                                 | 14 | .713   | .0413   | .0170   | 19.22 | 1 31.8                           | .2745  | 6 36.1                           | 8.06  |
|                                 | 15 | .718   | .0398   | .0166   | 19.25 | 1 31.6                           | .2743  | 6 31.8                           | 8.08  |
|                                 | 16 | .723   | .0383   | .0162   | 19.28 | 1 31.5                           | .2741  | 6 27.6                           | 8.10  |
|                                 | 17 | .728   | .0368   | .0159   | 19.31 | 1 31.3                           | .2740  | 6 23.3                           | 8.11  |

## 1846

| <sup>12h</sup><br>M. Z. Berlin | f                    | x       | y       | g      | G                                 | log h  | H                                 | i      |
|--------------------------------|----------------------|---------|---------|--------|-----------------------------------|--------|-----------------------------------|--------|
| Septbr. 18                     | +2 <sup>s</sup> .733 | —0.0353 | +0.0156 | 19".34 | 1 <sup>h</sup> 31 <sup>m</sup> .2 | 1.2739 | 6 <sup>h</sup> 19 <sup>m</sup> .1 | +8".13 |
| 19                             | .738                 | .0338   | .0154   | 19.38  | 1 31.1                            | .2738  | 6 14.8                            | 8.14   |
| 20                             | .743                 | .0323   | .0152   | 19.41  | 1 31.0                            | .2737  | 6 10.6                            | 8.14   |
| 21                             | .748                 | .0307   | .0151   | 19.44  | 1 30.9                            | .2737  | 6 6.3                             | 8.15   |
| 22                             | .753                 | .0292   | .0150   | 19.47  | 1 30.8                            | .2736  | 6 2.0                             | 8.15   |
| 23                             | .758                 | .0276   | .0150   | 19.50  | 1 30.7                            | .2736  | 5 57.8                            | 8.15   |
| 24                             | .762                 | .0261   | .0151   | 19.53  | 1 30.6                            | .2737  | 5 53.5                            | 8.15   |
| 25                             | .767                 | .0245   | .0152   | 19.56  | 1 30.5                            | .2737  | 5 49.2                            | 8.14   |
| 26                             | .772                 | .0229   | .0154   | 19.59  | 1 30.4                            | .2738  | 5 44.9                            | 8.13   |
| 27                             | .777                 | .0213   | .0156   | 19.62  | 1 30.3                            | .2739  | 5 40.6                            | 8.12   |
| 28                             | +2.782               | —0.0197 | +0.0159 | 19.66  | 1 30.3                            | 1.2740 | 5 36.4                            | +8.11  |
| 29                             | .787                 | .0180   | .0162   | 19.69  | 1 30.2                            | .2741  | 5 32.1                            | 8.10   |
| 30                             | .792                 | .0163   | .0166   | 19.72  | 1 30.2                            | .2743  | 5 27.8                            | 8.08   |
| Oktbr. 1                       | .797                 | .0146   | .0170   | 19.76  | 1 30.1                            | .2745  | 5 23.5                            | 8.06   |
| 2                              | .802                 | .0129   | .0175   | 19.79  | 1 30.1                            | .2747  | 5 19.2                            | 8.04   |
| 3                              | .807                 | .0112   | .0181   | 19.83  | 1 30.1                            | .2750  | 5 15.0                            | 8.02   |
| 4                              | .812                 | .0095   | .0187   | 19.86  | 1 30.0                            | .2752  | 5 10.7                            | 7.99   |
| 5                              | .817                 | .0077   | .0194   | 19.90  | 1 30.0                            | .2755  | 5 6.4                             | 7.96   |
| 6                              | .822                 | .0059   | .0201   | 19.93  | 1 30.0                            | .2758  | 5 2.2                             | 7.93   |
| 7                              | .827                 | .0041   | .0209   | 19.97  | 1 30.0                            | .2761  | 4 57.9                            | 7.90   |
| 8                              | +2.833               | —0.0023 | +0.0217 | 20.01  | 1 30.0                            | 1.2765 | 4 53.6                            | +7.86  |
| 9                              | .838                 | —0.0004 | .0226   | 20.04  | 1 30.0                            | .2768  | 4 49.4                            | 7.82   |
| 10                             | .843                 | +0.0015 | .0235   | 20.08  | 1 30.0                            | .2772  | 4 45.1                            | 7.78   |
| 11                             | .849                 | .0034   | .0244   | 20.12  | 1 30.0                            | .2776  | 4 40.9                            | 7.74   |
| 12                             | .854                 | .0053   | .0254   | 20.16  | 1 30.0                            | .2781  | 4 36.7                            | 7.69   |
| 13                             | .859                 | .0073   | .0264   | 20.20  | 1 30.0                            | .2785  | 4 32.4                            | 7.65   |
| 14                             | .865                 | .0093   | .0275   | 20.24  | 1 30.1                            | .2790  | 4 28.2                            | 7.60   |
| 15                             | .871                 | .0113   | .0286   | 20.28  | 1 30.1                            | .2794  | 4 24.0                            | 7.54   |
| 16                             | .876                 | .0133   | .0298   | 20.32  | 1 30.1                            | .2799  | 4 19.8                            | 7.49   |
| 17                             | .882                 | .0154   | .0310   | 20.36  | 1 30.1                            | .2804  | 4 15.6                            | 7.43   |
| 18                             | +2.888               | +0.0175 | +0.0322 | 20.40  | 1 30.2                            | 1.2809 | 4 11.4                            | +7.37  |
| 19                             | .894                 | .0197   | .0335   | 20.45  | 1 30.2                            | .2815  | 4 7.2                             | 7.31   |
| 20                             | .900                 | .0219   | .0348   | 20.49  | 1 30.2                            | .2820  | 4 3.0                             | 7.25   |
| 21                             | .906                 | .0241   | .0361   | 20.53  | 1 30.3                            | .2826  | 3 58.8                            | 7.18   |
| 22                             | .912                 | .0263   | .0375   | 20.58  | 1 30.3                            | .2832  | 3 54.7                            | 7.11   |
| 23                             | .918                 | .0286   | .0389   | 20.62  | 1 30.4                            | .2837  | 3 50.5                            | 7.04   |
| 24                             | .925                 | .0309   | .0403   | 20.67  | 1 30.4                            | .2843  | 3 46.4                            | 6.97   |
| 25                             | .931                 | .0332   | .0417   | 20.72  | 1 30.4                            | .2849  | 3 42.2                            | 6.90   |
| 26                             | .937                 | .0356   | .0432   | 20.77  | 1 30.5                            | .2855  | 3 38.1                            | 6.82   |
| 27                             | .944                 | .0380   | .0447   | 20.81  | 1 30.5                            | .2862  | 3 34.0                            | 6.74   |
| 28                             | +2.951               | +0.0404 | +0.0462 | 20.86  | 1 30.6                            | 1.2868 | 3 29.9                            | +6.66  |
| 29                             | .957                 | .0429   | .0478   | 20.91  | 1 30.6                            | .2875  | 3 25.8                            | 6.58   |
| 30                             | .964                 | .0454   | .0494   | 20.96  | 1 30.6                            | .2881  | 3 21.7                            | 6.49   |
| 31                             | .971                 | .0479   | .0510   | 21.01  | 1 30.7                            | .2887  | 3 17.6                            | 6.41   |
| Novbr. 1                       | .978                 | .0504   | .0525   | 21.06  | 1 30.7                            | .2894  | 3 13.5                            | 6.32   |
| 2                              | .985                 | .0530   | .0541   | 21.11  | 1 30.7                            | .2900  | 3 9.5                             | 6.23   |
| 3                              | 2.992                | .0556   | .0557   | 21.17  | 1 30.8                            | .2907  | 3 5.4                             | 6.13   |
| 4                              | 3.000                | .0582   | .0573   | 21.22  | 1 30.8                            | .2914  | 3 1.4                             | 6.04   |
| 5                              | .007                 | .0609   | .0589   | 21.27  | 1 30.8                            | .2920  | 2 57.3                            | 5.94   |
| 6                              | .015                 | .0636   | .0605   | 21.33  | 1 30.9                            | .2927  | 2 53.3                            | 5.84   |

## 1846

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                 | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|-----------------------------------|--------|-----------------------------------|---------------------|
| Novbr.                          | 7  | +3 <sup>s</sup> .022 | +0.0663 | +0.0621 | 21 <sup>h</sup> .38 | 1 <sup>h</sup> 30 <sup>m</sup> .9 | 1.2933 | 2 <sup>h</sup> 49 <sup>m</sup> .3 | +5 <sup>h</sup> .74 |
|                                 | 8  | .030                 | .0691   | .0637   | 21.44               | 1 30.9                            | .2940  | 2 45.3                            | 5.64                |
|                                 | 9  | .038                 | .0719   | .0653   | 21.49               | 1 30.9                            | .2946  | 2 41.3                            | 5.53                |
|                                 | 10 | .046                 | .0747   | .0669   | 21.55               | 1 31.0                            | .2953  | 2 37.4                            | 5.43                |
|                                 | 11 | .054                 | .0775   | .0685   | 21.61               | 1 31.0                            | .2959  | 2 33.4                            | 5.32                |
|                                 | 12 | .062                 | .0804   | .0700   | 21.66               | 1 31.0                            | .2965  | 2 29.4                            | 5.21                |
|                                 | 13 | .070                 | .0833   | .0716   | 21.72               | 1 31.0                            | .2972  | 2 25.5                            | 5.10                |
|                                 | 14 | .078                 | .0862   | .0731   | 21.78               | 1 31.0                            | .2978  | 2 21.5                            | 4.99                |
|                                 | 15 | .086                 | .0891   | .0746   | 21.84               | 1 31.0                            | .2984  | 2 17.6                            | 4.87                |
|                                 | 16 | .095                 | .0921   | .0761   | 21.90               | 1 31.0                            | .2990  | 2 13.7                            | 4.76                |
|                                 | 17 | +3.103               | +0.0951 | +0.0776 | 21.96               | 1 31.0                            | 1.2996 | 2 9.8                             | +4.64               |
|                                 | 18 | .112                 | .0981   | .0791   | 22.02               | 1 31.0                            | .3002  | 2 5.9                             | 4.52                |
|                                 | 19 | .121                 | .1012   | .0806   | 22.08               | 1 31.0                            | .3008  | 2 2.0                             | 4.40                |
|                                 | 20 | .130                 | .1043   | .0820   | 22.14               | 1 30.9                            | .3014  | 1 58.1                            | 4.28                |
|                                 | 21 | .139                 | .1074   | .0834   | 22.21               | 1 30.9                            | .3020  | 1 54.2                            | 4.16                |
|                                 | 22 | .148                 | .1105   | .0848   | 22.27               | 1 30.9                            | .3025  | 1 50.4                            | 4.03                |
| Dezbr.                          | 23 | .157                 | .1136   | .0861   | 22.33               | 1 30.8                            | .3030  | 1 46.5                            | 3.91                |
|                                 | 24 | .166                 | .1168   | .0874   | 22.39               | 1 30.8                            | .3036  | 1 42.7                            | 3.78                |
|                                 | 25 | .175                 | .1200   | .0887   | 22.46               | 1 30.7                            | .3041  | 1 38.8                            | 3.65                |
|                                 | 26 | .185                 | .1232   | .0899   | 22.52               | 1 30.7                            | .3046  | 1 35.0                            | 3.52                |
|                                 | 27 | +3.194               | +0.1264 | +0.0911 | 22.59               | 1 30.6                            | 1.3051 | 1 31.2                            | +3.39               |
|                                 | 28 | .203                 | .1296   | .0923   | 22.65               | 1 30.5                            | .3055  | 1 27.3                            | 3.26                |
|                                 | 29 | .213                 | .1328   | .0934   | 22.71               | 1 30.4                            | .3060  | 1 23.5                            | 3.13                |
|                                 | 30 | .223                 | .1360   | .0945   | 22.78               | 1 30.4                            | .3064  | 1 19.7                            | 3.00                |
|                                 | 1  | .232                 | .1392   | .0956   | 22.84               | 1 30.3                            | .3068  | 1 15.9                            | 2.86                |
|                                 | 2  | .242                 | .1425   | .0966   | 22.91               | 1 30.2                            | .3072  | 1 12.1                            | 2.72                |
|                                 | 3  | .252                 | .1457   | .0976   | 22.97               | 1 30.1                            | .3076  | 1 8.3                             | 2.59                |
|                                 | 4  | .262                 | .1490   | .0986   | 23.04               | 1 30.0                            | .3080  | 1 4.5                             | 2.45                |
|                                 | 5  | .272                 | .1523   | .0995   | 23.11               | 1 29.9                            | .3083  | 1 0.8                             | 2.31                |
|                                 | 6  | .282                 | .1556   | .1003   | 23.17               | 1 29.8                            | .3087  | 0 57.0                            | 2.17                |
|                                 | 7  | +3.292               | +0.1589 | +0.1011 | 23.24               | 1 29.6                            | 1.3090 | 0 53.2                            | +2.03               |
|                                 | 8  | .302                 | .1622   | .1018   | 23.30               | 1 29.5                            | .3093  | 0 49.5                            | 1.89                |
|                                 | 9  | .312                 | .1655   | .1025   | 23.37               | 1 29.4                            | .3095  | 0 45.7                            | 1.75                |
|                                 | 10 | .322                 | .1688   | .1031   | 23.44               | 1 29.2                            | .3098  | 0 41.9                            | 1.61                |
|                                 | 11 | .332                 | .1721   | .1037   | 23.50               | 1 29.1                            | .3100  | 0 38.2                            | 1.47                |
|                                 | 12 | .343                 | .1754   | .1042   | 23.57               | 1 28.9                            | .3102  | 0 34.4                            | 1.33                |
|                                 | 13 | .353                 | .1787   | .1046   | 23.63               | 1 28.8                            | .3104  | 0 30.7                            | 1.18                |
|                                 | 14 | .363                 | .1819   | .1050   | 23.70               | 1 28.6                            | .3105  | 0 26.9                            | 1.04                |
|                                 | 15 | .374                 | .1852   | .1054   | 23.76               | 1 28.4                            | .3107  | 0 23.2                            | 0.90                |
|                                 | 16 | .384                 | .1884   | .1057   | 23.83               | 1 28.3                            | .3108  | 0 19.5                            | 0.75                |
|                                 | 17 | +3.395               | +0.1917 | +0.1060 | 23.89               | 1 28.1                            | 1.3109 | 0 15.7                            | +0.61               |
|                                 | 18 | .405                 | .1949   | .1062   | 23.96               | 1 27.9                            | .3110  | 0 12.0                            | 0.46                |
|                                 | 19 | .415                 | .1982   | .1064   | 24.03               | 1 27.7                            | .3111  | 0 8.3                             | 0.32                |
|                                 | 20 | .426                 | .2014   | .1065   | 24.09               | 1 27.5                            | .3111  | 0 4.5                             | 0.17                |
|                                 | 21 | .436                 | .2047   | .1065   | 24.16               | 1 27.3                            | .3111  | 0 0.8                             | +0.03               |
|                                 | 22 | .447                 | .2079   | .1065   | 24.22               | 1 27.1                            | .3111  | 23 57.0                           | -0.11               |
|                                 | 23 | .457                 | .2111   | .1064   | 24.29               | 1 26.9                            | .3111  | 23 53.3                           | 0.26                |
|                                 | 24 | .468                 | .2143   | .1062   | 24.35               | 1 26.7                            | .3110  | 23 49.6                           | 0.40                |
|                                 | 25 | .478                 | .2175   | .1060   | 24.41               | 1 26.4                            | .3110  | 23 45.8                           | 0.55                |
|                                 | 26 | .488                 | .2206   | .1058   | 24.48               | 1 26.2                            | .3109  | 23 42.1                           | 0.69                |

## 1846

| <sup>12<sup>h</sup></sup><br>M. Z. Berlin | f                    | x       | y       | g      | G                                 | log h  | H                                  | i      |
|-------------------------------------------|----------------------|---------|---------|--------|-----------------------------------|--------|------------------------------------|--------|
| Dezbr. 27                                 | +3 <sup>s</sup> .499 | +0.2238 | +0.1055 | 24".54 | 1 <sup>h</sup> 26 <sup>m</sup> .0 | 1.3108 | 23 <sup>h</sup> 38 <sup>m</sup> .3 | —0".84 |
| 28                                        | .509                 | .2269   | .1052   | 24.60  | 1 25.7                            | .3106  | 23 34.6                            | 0.98   |
| 29                                        | .520                 | .2300   | .1048   | 24.66  | 1 25.5                            | .3105  | 23 30.8                            | 1.13   |
| 30                                        | .530                 | .2331   | .1044   | 24.73  | 1 25.3                            | .3103  | 23 27.1                            | 1.27   |
| 31                                        | .540                 | .2362   | .1040   | 24.79  | 1 25.0                            | .3101  | 23 23.3                            | 1.41   |

## 1847

|           |                      |         |         |       |                                   |        |                                    |        |
|-----------|----------------------|---------|---------|-------|-----------------------------------|--------|------------------------------------|--------|
| Januar 1  | +0 <sup>s</sup> .479 | —0.5259 | +0.1033 | 9".51 | 4 <sup>h</sup> 43 <sup>m</sup> .4 | 1.3099 | 23 <sup>h</sup> 19 <sup>m</sup> .6 | —1".55 |
| 2         | .489                 | .5250   | .1027   | 9.52  | 4 41.9                            | .3096  | 23 15.8                            | 1.70   |
| 3         | .499                 | .5241   | .1020   | 9.54  | 4 40.3                            | .3094  | 23 12.0                            | 1.84   |
| 4         | .510                 | .5232   | .1013   | 9.56  | 4 38.8                            | .3091  | 23 8.3                             | 1.98   |
| 5         | .520                 | .5223   | .1006   | 9.58  | 4 37.3                            | .3088  | 23 4.5                             | *2.12  |
| 6         | .530                 | .5215   | .0998   | 9.59  | 4 35.8                            | .3085  | 23 0.7                             | 2.26   |
| 7         | .540                 | .5207   | .0989   | 9.61  | 4 34.3                            | .3081  | 22 56.9                            | 2.40   |
| 8         | .549                 | .5199   | .0980   | 9.63  | 4 32.8                            | .3078  | 22 53.1                            | 2.53   |
| 9         | .559                 | .5191   | .0970   | 9.64  | 4 31.3                            | .3074  | 22 49.3                            | 2.67   |
| 10        | .569                 | .5183   | .0960   | 9.66  | 4 29.8                            | .3070  | 22 45.5                            | 2.81   |
| 11        | +0.579               | —0.5175 | +0.0950 | 9.68  | 4 28.3                            | 1.3066 | 22 41.7                            | —2.95  |
| 12        | .588                 | .5167   | .0939   | 9.69  | 4 26.8                            | .3061  | 22 37.9                            | 3.08   |
| 13        | .598                 | .5159   | .0928   | 9.71  | 4 25.4                            | .3057  | 22 34.0                            | 3.21   |
| 14        | .608                 | .5152   | .0916   | 9.72  | 4 23.9                            | .3052  | 22 30.2                            | 3.34   |
| 15        | .617                 | .5144   | .0904   | 9.74  | 4 22.5                            | .3048  | 22 26.4                            | 3.48   |
| 16        | .626                 | .5137   | .0892   | 9.75  | 4 21.1                            | .3043  | 22 22.5                            | 3.61   |
| 17        | .636                 | .5130   | .0879   | 9.76  | 4 19.6                            | .3038  | 22 18.6                            | 3.74   |
| 18        | .645                 | .5123   | .0866   | 9.78  | 4 18.2                            | .3032  | 22 14.8                            | 3.87   |
| 19        | .654                 | .5116   | .0853   | 9.79  | 4 16.8                            | .3027  | 22 10.9                            | 3.99   |
| 20        | .663                 | .5109   | .0839   | 9.81  | 4 15.5                            | .3021  | 22 7.0                             | 4.12   |
| 21        | +0.672               | —0.5102 | +0.0825 | 9.82  | 4 14.1                            | 1.3016 | 22 3.1                             | —4.24  |
| 22        | .681                 | .5096   | .0810   | 9.83  | 4 12.7                            | .3010  | 21 59.2                            | 4.36   |
| 23        | .690                 | .5089   | .0796   | 9.85  | 4 11.4                            | .3004  | 21 55.3                            | 4.49   |
| 24        | .698                 | .5083   | .0781   | 9.86  | 4 10.1                            | .2998  | 21 51.4                            | 4.61   |
| 25        | .707                 | .5076   | .0766   | 9.87  | 4 8.7                             | .2992  | 21 47.4                            | 4.72   |
| 26        | .715                 | .5070   | .0751   | 9.88  | 4 7.4                             | .2986  | 21 43.5                            | 4.84   |
| 27        | .724                 | .5064   | .0736   | 9.90  | 4 6.2                             | .2980  | 21 39.6                            | 4.96   |
| 28        | .732                 | .5058   | .0720   | 9.91  | 4 4.9                             | .2974  | 21 35.6                            | 5.07   |
| 29        | .740                 | .5052   | .0704   | 9.92  | 4 3.6                             | .2967  | 21 31.6                            | 5.18   |
| 30        | .749                 | .5046   | .0688   | 9.93  | 4 2.4                             | .2961  | 21 27.6                            | 5.29   |
| 31        | +0.757               | —0.5041 | +0.0672 | 9.94  | 4 1.1                             | 1.2954 | 21 23.6                            | —5.40  |
| Februar 1 | .765                 | .5035   | .0656   | 9.96  | 3 59.9                            | .2948  | 21 19.6                            | 5.51   |
| 2         | .772                 | .5029   | .0640   | 9.97  | 3 58.7                            | .2941  | 21 15.6                            | 5.61   |
| 3         | .780                 | .5023   | .0624   | 9.98  | 3 57.5                            | .2935  | 21 11.6                            | 5.72   |
| 4         | .788                 | .5018   | .0608   | 9.99  | 3 56.3                            | .2928  | 21 7.5                             | 5.82   |
| 5         | .795                 | .5012   | .0592   | 10.00 | 3 55.2                            | .2921  | 21 3.5                             | 5.92   |
| 6         | .803                 | .5007   | .0576   | 10.01 | 3 54.0                            | .2915  | 20 59.4                            | 6.02   |
| 7         | .810                 | .5001   | .0560   | 10.02 | 3 52.9                            | .2908  | 20 55.3                            | 6.11   |
| 8         | .817                 | .4996   | .0544   | 10.04 | 3 51.8                            | .2902  | 20 51.3                            | 6.21   |
| 9         | .824                 | .4990   | .0528   | 10.05 | 3 50.7                            | .2895  | 20 47.2                            | 6.30   |

| <sup>12<sup>h</sup></sup><br>M. Z. Berlin | f      | x       | y       | g     | G                                 | log h  | H                                  | i      |
|-------------------------------------------|--------|---------|---------|-------|-----------------------------------|--------|------------------------------------|--------|
| Februar 10                                | +0.831 | -0.4985 | +0.0512 | 10.06 | 3 <sup>h</sup> 49 <sup>m</sup> .7 | 1.2888 | 20 <sup>h</sup> 43 <sup>m</sup> .1 | -6".39 |
| 11                                        | .838   | .4979   | .0496   | 10.07 | 3 48.6                            | .2882  | 20 38.9                            | 6.48   |
| 12                                        | .845   | .4973   | .0480   | 10.08 | 3 47.6                            | .2875  | 20 34.8                            | 6.57   |
| 13                                        | .852   | .4967   | .0465   | 10.09 | 3 46.5                            | .2869  | 20 30.7                            | 6.65   |
| 14                                        | .858   | .4962   | .0450   | 10.10 | 3 45.5                            | .2863  | 20 26.5                            | 6.73   |
| 15                                        | .865   | .4956   | .0435   | 10.11 | 3 44.5                            | .2856  | 20 22.4                            | 6.81   |
| 16                                        | .871   | .4950   | .0420   | 10.13 | 3 43.6                            | .2850  | 20 18.2                            | 6.89   |
| 17                                        | .878   | .4944   | .0405   | 10.14 | 3 42.6                            | .2844  | 20 14.0                            | 6.97   |
| 18                                        | .884   | .4939   | .0391   | 10.15 | 3 41.7                            | .2838  | 20 9.8                             | 7.04   |
| 19                                        | .890   | .4933   | .0377   | 10.16 | 3 40.7                            | .2832  | 20 5.6                             | 7.11   |
| 20                                        | +0.896 | -0.4927 | +0.0363 | 10.17 | 3 39.8                            | 1.2826 | 20 1.4                             | -7.18  |
| 21                                        | .902   | .4921   | .0349   | 10.18 | 3 38.9                            | .2821  | 19 57.2                            | 7.25   |
| 22                                        | .908   | .4915   | .0335   | 10.20 | 3 38.0                            | .2815  | 19 53.0                            | 7.31   |
| 23                                        | .914   | .4908   | .0322   | 10.21 | 3 37.2                            | .2809  | 19 48.7                            | 7.37   |
| 24                                        | .920   | .4902   | .0309   | 10.22 | 3 36.3                            | .2804  | 19 44.5                            | 7.43   |
| 25                                        | .926   | .4895   | .0297   | 10.24 | 3 35.5                            | .2799  | 19 40.3                            | 7.49   |
| 26                                        | .931   | .4889   | .0285   | 10.25 | 3 34.7                            | .2794  | 19 36.0                            | 7.55   |
| 27                                        | .937   | .4882   | .0274   | 10.26 | 3 33.9                            | .2789  | 19 31.7                            | 7.60   |
| 28                                        | .943   | .4875   | .0263   | 10.28 | 3 33.1                            | .2785  | 19 27.4                            | 7.65   |
| März 1                                    | .948   | .4868   | .0253   | 10.29 | 3 32.4                            | .2780  | 19 23.2                            | 7.70   |
| 2                                         | +0.953 | -0.4861 | +0.0243 | 10.30 | 3 31.6                            | 1.2776 | 19 18.9                            | -7.74  |
| 3                                         | .959   | .4853   | .0233   | 10.32 | 3 30.9                            | .2772  | 19 14.6                            | 7.78   |
| 4                                         | .964   | .4846   | .0224   | 10.33 | 3 30.2                            | .2768  | 19 10.3                            | 7.82   |
| 5                                         | .969   | .4838   | .0215   | 10.35 | 3 29.5                            | .2764  | 19 6.0                             | 7.86   |
| 6                                         | .974   | .4830   | .0207   | 10.37 | 3 28.8                            | .2761  | 19 1.7                             | 7.90   |
| 7                                         | .979   | .4822   | .0199   | 10.38 | 3 28.2                            | .2758  | 18 57.4                            | 7.93   |
| 8                                         | .985   | .4814   | .0192   | 10.40 | 3 27.5                            | .2755  | 18 53.1                            | 7.96   |
| 9                                         | .990   | .4806   | .0186   | 10.42 | 3 26.9                            | .2752  | 18 48.7                            | 7.99   |
| 10                                        | 0.995  | .4797   | .0180   | 10.43 | 3 26.2                            | .2749  | 18 44.4                            | 8.02   |
| 11                                        | 1.000  | .4788   | .0174   | 10.45 | 3 25.6                            | .2747  | 18 40.1                            | 8.04   |
| 12                                        | +1.005 | -0.4779 | +0.0169 | 10.47 | 3 25.0                            | 1.2745 | 18 35.8                            | -8.07  |
| 13                                        | .009   | .4770   | .0165   | 10.49 | 3 24.5                            | .2743  | 18 31.4                            | 8.08   |
| 14                                        | .014   | .4761   | .0161   | 10.51 | 3 23.9                            | .2741  | 18 27.1                            | 8.10   |
| 15                                        | .019   | .4752   | .0158   | 10.52 | 3 23.3                            | .2740  | 18 22.8                            | 8.11   |
| 16                                        | .024   | .4742   | .0155   | 10.54 | 3 22.8                            | .2739  | 18 18.4                            | 8.13   |
| 17                                        | .029   | .4732   | .0153   | 10.56 | 3 22.3                            | .2738  | 18 14.1                            | 8.14   |
| 18                                        | .034   | .4722   | .0151   | 10.59 | 3 21.8                            | .2737  | 18 9.8                             | 8.14   |
| 19                                        | .038   | .4711   | .0150   | 10.61 | 3 21.3                            | .2737  | 18 5.4                             | 8.15   |
| 20                                        | .043   | .4700   | .0150   | 10.63 | 3 20.8                            | .2736  | 18 1.1                             | 8.15   |
| 21                                        | .048   | .4689   | .0150   | 10.65 | 3 20.3                            | .2736  | 17 56.8                            | 8.15   |
| 22                                        | +1.053 | -0.4677 | +0.0151 | 10.67 | 3 19.8                            | 1.2737 | 17 52.5                            | -8.14  |
| 23                                        | .058   | .4665   | .0152   | 10.70 | 3 19.4                            | .2737  | 17 48.2                            | 8.14   |
| 24                                        | .063   | .4653   | .0154   | 10.72 | 3 18.9                            | .2738  | 17 43.8                            | 8.13   |
| 25                                        | .067   | .4641   | .0156   | 10.75 | 3 18.5                            | .2739  | 17 39.5                            | 8.12   |
| 26                                        | .072   | .4629   | .0159   | 10.77 | 3 18.1                            | .2740  | 17 35.2                            | 8.11   |
| 27                                        | .077   | .4616   | .0162   | 10.80 | 3 17.7                            | .2742  | 17 30.9                            | 8.09   |
| 28                                        | .082   | .4603   | .0166   | 10.82 | 3 17.3                            | .2743  | 17 26.6                            | 8.08   |
| 29                                        | .087   | .4589   | .0171   | 10.85 | 3 16.9                            | .2745  | 17 22.3                            | 8.06   |
| 30                                        | .092   | .4575   | .0176   | 10.88 | 3 16.5                            | .2748  | 17 18.1                            | 8.03   |
| 31                                        | .097   | .4560   | .0182   | 10.91 | 3 16.1                            | .2750  | 17 13.8                            | 8.01   |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                | log h  | H                                | i     |
|---------------------------------|----|--------|---------|---------|-------|----------------------------------|--------|----------------------------------|-------|
| April                           | 1  | +1.102 | -0.4546 | +0.0188 | 10.94 | 3 <sup>h</sup> 15 <sup>m</sup> 7 | 1.2753 | 17 <sup>h</sup> 9 <sup>m</sup> 5 | -7.98 |
|                                 | 2  | .107   | .4531   | .0195   | 10.97 | 3 15.3                           | .2756  | 17 5.2                           | 7.95  |
|                                 | 3  | .112   | .4516   | .0202   | 11.00 | 3 15.0                           | .2759  | 17 1.0                           | 7.92  |
|                                 | 4  | .117   | .4501   | .0210   | 11.03 | 3 14.6                           | .2762  | 16 56.8                          | 7.89  |
|                                 | 5  | .122   | .4486   | .0218   | 11.06 | 3 14.2                           | .2765  | 16 52.5                          | 7.85  |
|                                 | 6  | .127   | .4470   | .0227   | 11.09 | 3 13.9                           | .2769  | 16 48.3                          | 7.81  |
|                                 | 7  | .132   | .4454   | .0236   | 11.12 | 3 13.6                           | .2773  | 16 44.1                          | 7.77  |
|                                 | 8  | .138   | .4437   | .0246   | 11.15 | 3 13.2                           | .2777  | 16 39.9                          | 7.73  |
|                                 | 9  | .143   | .4420   | .0256   | 11.19 | 3 12.9                           | .2781  | 16 35.7                          | 7.68  |
|                                 | 10 | .148   | .4403   | .0266   | 11.22 | 3 12.6                           | .2786  | 16 31.5                          | 7.63  |
|                                 | 11 | +1.154 | -0.4386 | +0.0277 | 11.26 | 3 12.2                           | 1.2790 | 16 27.3                          | -7.58 |
|                                 | 12 | .159   | .4368   | .0288   | 11.29 | 3 11.9                           | .2795  | 16 23.2                          | 7.53  |
|                                 | 13 | .165   | .4350   | .0299   | 11.33 | 3 11.6                           | .2800  | 16 19.0                          | 7.48  |
|                                 | 14 | .170   | .4331   | .0311   | 11.37 | 3 11.3                           | .2805  | 16 14.9                          | 7.42  |
|                                 | 15 | .176   | .4312   | .0323   | 11.41 | 3 10.9                           | .2810  | 16 10.7                          | 7.36  |
|                                 | 16 | .182   | .4293   | .0336   | 11.44 | 3 10.6                           | .2815  | 16 6.6                           | 7.30  |
|                                 | 17 | .188   | .4274   | .0349   | 11.48 | 3 10.3                           | .2821  | 16 2.5                           | 7.24  |
|                                 | 18 | .194   | .4254   | .0362   | 11.52 | 3 10.0                           | .2826  | 15 58.4                          | 7.18  |
|                                 | 19 | .200   | .4234   | .0375   | 11.56 | 3 9.6                            | .2832  | 15 54.4                          | 7.11  |
|                                 | 20 | .206   | .4214   | .0389   | 11.60 | 3 9.3                            | .2838  | 15 50.3                          | 7.04  |
|                                 | 21 | +1.212 | -0.4193 | +0.0403 | 11.64 | 3 9.0                            | 1.2843 | 15 46.3                          | -6.97 |
|                                 | 22 | .218   | .4172   | .0417   | 11.69 | 3 8.7                            | .2849  | 15 42.2                          | 6.90  |
|                                 | 23 | .224   | .4151   | .0431   | 11.73 | 3 8.3                            | .2855  | 15 38.2                          | 6.82  |
|                                 | 24 | .231   | .4129   | .0446   | 11.77 | 3 8.0                            | .2861  | 15 34.2                          | 6.75  |
|                                 | 25 | .237   | .4107   | .0461   | 11.82 | 3 7.6                            | .2867  | 15 30.2                          | 6.67  |
|                                 | 26 | .244   | .4085   | .0476   | 11.86 | 3 7.3                            | .2874  | 15 26.2                          | 6.59  |
|                                 | 27 | .250   | .4063   | .0491   | 11.91 | 3 7.0                            | .2880  | 15 22.2                          | 6.50  |
|                                 | 28 | .257   | .4041   | .0506   | 11.95 | 3 6.6                            | .2886  | 15 18.3                          | 6.42  |
|                                 | 29 | .264   | .4018   | .0522   | 12.00 | 3 6.3                            | .2892  | 15 14.3                          | 6.33  |
|                                 | 30 | .271   | .3995   | .0537   | 12.04 | 3 5.9                            | .2899  | 15 10.4                          | 6.25  |
| Mai                             | 1  | +1.278 | -0.3972 | +0.0552 | 12.09 | 3 5.6                            | 1.2905 | 15 6.5                           | -6.16 |
|                                 | 2  | .285   | .3949   | .0567   | 12.13 | 3 5.2                            | .2911  | 15 2.6                           | 6.07  |
|                                 | 3  | .292   | .3925   | .0583   | 12.18 | 3 4.9                            | .2918  | 14 58.7                          | 5.97  |
|                                 | 4  | .299   | .3901   | .0598   | 12.23 | 3 4.5                            | .2924  | 14 54.8                          | 5.88  |
|                                 | 5  | .307   | .3876   | .0614   | 12.28 | 3 4.2                            | .2930  | 14 50.9                          | 5.78  |
|                                 | 6  | .314   | .3851   | .0629   | 12.33 | 3 3.8                            | .2937  | 14 47.1                          | 5.68  |
|                                 | 7  | .321   | .3827   | .0645   | 12.38 | 3 3.4                            | .2943  | 14 43.3                          | 5.58  |
|                                 | 8  | .329   | .3803   | .0660   | 12.43 | 3 3.0                            | .2949  | 14 39.4                          | 5.48  |
|                                 | 9  | .337   | .3778   | .0675   | 12.48 | 3 2.6                            | .2955  | 14 35.6                          | 5.38  |
|                                 | 10 | .344   | .3752   | .0690   | 12.53 | 3 2.2                            | .2962  | 14 31.8                          | 5.28  |
|                                 | 11 | +1.352 | -0.3727 | +0.0705 | 12.58 | 3 1.8                            | 1.2968 | 14 28.0                          | -5.17 |
|                                 | 12 | .360   | .3701   | .0720   | 12.63 | 3 1.4                            | .2974  | 14 24.3                          | 5.07  |
|                                 | 13 | .368   | .3676   | .0735   | 12.68 | 3 1.0                            | .2980  | 14 20.5                          | 4.96  |
|                                 | 14 | .376   | .3650   | .0749   | 12.73 | 3 0.6                            | .2986  | 14 16.7                          | 4.85  |
|                                 | 15 | .384   | .3624   | .0764   | 12.78 | 3 0.2                            | .2991  | 14 13.0                          | 4.74  |
|                                 | 16 | .392   | .3598   | .0778   | 12.84 | 2 59.8                           | .2997  | 14 9.3                           | 4.63  |
|                                 | 17 | .401   | .3572   | .0792   | 12.89 | 2 59.3                           | .3003  | 14 5.5                           | 4.51  |
|                                 | 18 | .409   | .3546   | .0806   | 12.94 | 2 58.9                           | .3008  | 14 1.8                           | 4.40  |
|                                 | 19 | .418   | .3520   | .0820   | 12.99 | 2 58.4                           | .3014  | 13 58.2                          | 4.28  |
|                                 | 20 | .426   | .3494   | .0833   | 13.05 | 2 58.0                           | .3019  | 13 54.5                          | 4.17  |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                | log h  | H                                 | i     |
|---------------------------------|----|--------|---------|---------|-------|----------------------------------|--------|-----------------------------------|-------|
| Mai                             | 21 | +1.435 | -0.3468 | +0.0846 | 13.10 | 2 <sup>h</sup> 57 <sup>m</sup> 5 | 1.3024 | 13 <sup>h</sup> 50 <sup>m</sup> 8 | -4.05 |
|                                 | 22 | .444   | .3441   | .0859   | 13.15 | 2 57.1                           | .3030  | 13 47.1                           | 3.93  |
|                                 | 23 | .452   | .3414   | .0872   | 13.21 | 2 56.6                           | .3035  | 13 43.5                           | 3.81  |
|                                 | 24 | .461   | .3387   | .0884   | 13.26 | 2 56.1                           | .3039  | 13 39.8                           | 3.69  |
|                                 | 25 | .470   | .3360   | .0896   | 13.31 | 2 55.6                           | .3044  | 13 36.2                           | 3.56  |
|                                 | 26 | .479   | .3333   | .0907   | 13.37 | 2 55.1                           | .3049  | 13 32.6                           | 3.44  |
|                                 | 27 | .488   | .3306   | .0918   | 13.42 | 2 54.7                           | .3053  | 13 29.0                           | 3.32  |
|                                 | 28 | .497   | .3279   | .0929   | 13.48 | 2 54.2                           | .3058  | 13 25.3                           | 3.19  |
|                                 | 29 | .506   | .3252   | .0940   | 13.53 | 2 53.7                           | .3062  | 13 21.7                           | 3.07  |
|                                 | 30 | .516   | .3225   | .0950   | 13.58 | 2 53.2                           | .3066  | 13 18.1                           | 2.94  |
| Juni                            | 31 | +1.525 | -0.3198 | +0.0960 | 13.64 | 2 52.7                           | 1.3070 | 13 14.6                           | -2.81 |
|                                 | 1  | .534   | .3171   | .0969   | 13.69 | 2 52.1                           | .3073  | 13 11.0                           | 2.68  |
|                                 | 2  | .543   | .3144   | .0978   | 13.75 | 2 51.6                           | .3077  | 13 7.4                            | 2.55  |
|                                 | 3  | .553   | .3117   | .0987   | 13.80 | 2 51.0                           | .3080  | 13 3.8                            | 2.42  |
|                                 | 4  | .562   | .3090   | .0995   | 13.85 | 2 50.5                           | .3084  | 13 0.3                            | 2.29  |
|                                 | 5  | .572   | .3064   | .1003   | 13.91 | 2 50.0                           | .3087  | 12 56.7                           | 2.16  |
|                                 | 6  | .581   | .3037   | .1010   | 13.96 | 2 49.4                           | .3090  | 12 53.2                           | 2.03  |
|                                 | 7  | .591   | .3010   | .1017   | 14.02 | 2 48.8                           | .3092  | 12 49.6                           | 1.90  |
|                                 | 8  | .601   | .2983   | .1023   | 14.07 | 2 48.3                           | .3095  | 12 46.1                           | 1.77  |
|                                 | 9  | .610   | .2957   | .1029   | 14.12 | 2 47.7                           | .3097  | 12 42.6                           | 1.64  |
|                                 | 10 | +1.620 | -0.2930 | +0.1035 | 14.18 | 2 47.1                           | 1.3099 | 12 39.0                           | -1.50 |
|                                 | 11 | .630   | .2904   | .1040   | 14.23 | 2 46.6                           | .3101  | 12 35.5                           | 1.37  |
|                                 | 12 | .640   | .2877   | .1045   | 14.28 | 2 46.0                           | .3103  | 12 32.0                           | 1.23  |
|                                 | 13 | .649   | .2851   | .1049   | 14.34 | 2 45.4                           | .3105  | 12 28.5                           | 1.10  |
|                                 | 14 | .659   | .2824   | .1053   | 14.39 | 2 44.8                           | .3106  | 12 25.0                           | 0.96  |
|                                 | 15 | .669   | .2798   | .1056   | 14.44 | 2 44.2                           | .3107  | 12 21.5                           | 0.83  |
|                                 | 16 | .679   | .2772   | .1059   | 14.49 | 2 43.6                           | .3109  | 12 18.0                           | 0.69  |
|                                 | 17 | .689   | .2746   | .1061   | 14.55 | 2 43.0                           | .3109  | 12 14.5                           | 0.56  |
|                                 | 18 | .699   | .2720   | .1063   | 14.60 | 2 42.4                           | .3110  | 12 10.9                           | 0.42  |
|                                 | 19 | .709   | .2694   | .1064   | 14.65 | 2 41.8                           | .3111  | 12 7.4                            | 0.29  |
|                                 | 20 | +1.718 | -0.2668 | +0.1065 | 14.70 | 2 41.2                           | 1.3111 | 12 3.9                            | -0.15 |
|                                 | 21 | .728   | .2643   | .1065   | 14.75 | 2 40.6                           | .3111  | 12 0.4                            | -0.02 |
|                                 | 22 | .738   | .2618   | .1065   | 14.80 | 2 39.9                           | .3111  | 11 57.0                           | +0.12 |
|                                 | 23 | .748   | .2593   | .1064   | 14.85 | 2 39.3                           | .3111  | 11 53.5                           | 0.25  |
|                                 | 24 | .758   | .2568   | .1063   | 14.90 | 2 38.7                           | .3110  | 11 50.0                           | 0.39  |
|                                 | 25 | .768   | .2543   | .1061   | 14.95 | 2 38.1                           | .3110  | 11 46.5                           | 0.52  |
|                                 | 26 | .778   | .2518   | .1059   | 15.00 | 2 37.4                           | .3109  | 11 43.0                           | 0.66  |
|                                 | 27 | .788   | .2494   | .1056   | 15.05 | 2 36.8                           | .3108  | 11 39.5                           | 0.79  |
|                                 | 28 | .797   | .2470   | .1053   | 15.10 | 2 36.2                           | .3107  | 11 36.0                           | 0.93  |
|                                 | 29 | .807   | .2446   | .1050   | 15.15 | 2 35.5                           | .3105  | 11 32.4                           | 1.06  |
| Juli                            | 30 | +1.817 | -0.2421 | +0.1046 | 15.20 | 2 34.9                           | 1.3104 | 11 28.9                           | +1.20 |
|                                 | 1  | .827   | .2397   | .1041   | 15.24 | 2 34.2                           | .3102  | 11 25.4                           | 1.33  |
|                                 | 2  | .837   | .2373   | .1036   | 15.29 | 2 33.6                           | .3100  | 11 21.9                           | 1.47  |
|                                 | 3  | .846   | .2350   | .1031   | 15.34 | 2 33.0                           | .3098  | 11 18.4                           | 1.60  |
|                                 | 4  | .856   | .2327   | .1025   | 15.38 | 2 32.3                           | .3096  | 11 14.9                           | 1.73  |
|                                 | 5  | .866   | .2304   | .1019   | 15.43 | 2 31.7                           | .3093  | 11 11.3                           | 1.86  |
|                                 | 6  | .875   | .2281   | .1012   | 15.48 | 2 31.0                           | .3090  | 11 7.8                            | 2.00  |
|                                 | 7  | .885   | .2259   | .1005   | 15.52 | 2 30.4                           | .3088  | 11 4.3                            | 2.13  |
|                                 | 8  | .894   | .2237   | .0997   | 15.57 | 2 29.8                           | .3085  | 11 0.7                            | 2.26  |
|                                 | 9  | .904   | .2215   | .0989   | 15.61 | 2 29.1                           | .3081  | 10 57.2                           | 2.39  |

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| <sup>12h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                 | log h  | H                                  | i                   |
|--------------------------------|----|----------------------|---------|---------|---------------------|-----------------------------------|--------|------------------------------------|---------------------|
| Juli                           | 10 | +1 <sup>s</sup> .913 | —0.2193 | +0.0981 | 15 <sup>"</sup> .66 | 2 <sup>h</sup> 28 <sup>m</sup> .5 | 1.3078 | 10 <sup>h</sup> 53 <sup>m</sup> .6 | +2 <sup>"</sup> .52 |
|                                | 11 | .922                 | .2171   | .0972   | 15.70               | 2 27.8                            | .3075  | 10 50.1                            | 2.65                |
|                                | 12 | .932                 | .2150   | .0963   | 15.74               | 2 27.2                            | .3071  | 10 46.5                            | 2.77                |
|                                | 13 | .941                 | .2129   | .0953   | 15.78               | 2 26.6                            | .3067  | 10 43.0                            | 2.90                |
|                                | 14 | .950                 | .2108   | .0943   | 15.83               | 2 25.9                            | .3063  | 10 39.4                            | 3.03                |
|                                | 15 | .959                 | .2087   | .0933   | 15.87               | 2 25.3                            | .3059  | 10 35.8                            | 3.15                |
|                                | 16 | .968                 | .2066   | .0922   | 15.91               | 2 24.6                            | .3055  | 10 32.2                            | 3.28                |
|                                | 17 | .977                 | .2046   | .0911   | 15.95               | 2 24.0                            | .3050  | 10 28.6                            | 3.40                |
|                                | 18 | .986                 | .2026   | .0900   | 15.99               | 2 23.4                            | .3046  | 10 25.0                            | 3.52                |
|                                | 19 | .995                 | .2006   | .0888   | 16.03               | 2 22.8                            | .3041  | 10 21.4                            | 3.64                |
|                                | 20 | +2.004               | —0.1986 | +0.0876 | 16.07               | 2 22.1                            | 1.3036 | 10 17.8                            | +3.77               |
|                                | 21 | .013                 | .1966   | .0864   | 16.11               | 2 21.5                            | .3031  | 10 14.1                            | 3.89                |
|                                | 22 | .022                 | .1947   | .0851   | 16.15               | 2 20.9                            | .3026  | 10 10.5                            | 4.01                |
|                                | 23 | .030                 | .1928   | .0838   | 16.18               | 2 20.3                            | .3021  | 10 6.9                             | 4.12                |
|                                | 24 | .039                 | .1909   | .0825   | 16.22               | 2 19.6                            | .3016  | 10 3.2                             | 4.24                |
|                                | 25 | .047                 | .1891   | .0811   | 16.26               | 2 19.0                            | .3010  | 9 59.5                             | 4.36                |
|                                | 26 | .056                 | .1873   | .0798   | 16.30               | 2 18.4                            | .3005  | 9 55.9                             | 4.47                |
|                                | 27 | .064                 | .1855   | .0784   | 16.33               | 2 17.8                            | .2999  | 9 52.2                             | 4.58                |
|                                | 28 | .072                 | .1837   | .0770   | 16.37               | 2 17.2                            | .2994  | 9 48.5                             | 4.69                |
|                                | 29 | .080                 | .1819   | .0756   | 16.40               | 2 16.6                            | .2988  | 9 44.8                             | 4.80                |
| August                         | 30 | +2.088               | —0.1802 | +0.0742 | 16.44               | 2 16.0                            | 1.2982 | 9 41.0                             | +4.91               |
|                                | 31 | .096                 | .1785   | .0727   | 16.47               | 2 15.5                            | .2976  | 9 37.3                             | 5.02                |
|                                | 1  | .104                 | .1768   | .0712   | 16.51               | 2 14.9                            | .2970  | 9 33.6                             | 5.13                |
|                                | 2  | .112                 | .1752   | .0697   | 16.54               | 2 14.3                            | .2964  | 9 29.8                             | 5.23                |
|                                | 3  | .120                 | .1735   | .0682   | 16.57               | 2 13.7                            | .2958  | 9 26.0                             | 5.34                |
|                                | 4  | .127                 | .1719   | .0667   | 16.61               | 2 13.2                            | .2952  | 9 22.3                             | 5.44                |
|                                | 5  | .135                 | .1703   | .0651   | 16.64               | 2 12.6                            | .2946  | 9 18.5                             | 5.54                |
|                                | 6  | .142                 | .1687   | .0636   | 16.67               | 2 12.1                            | .2940  | 9 14.7                             | 5.64                |
|                                | 7  | .150                 | .1671   | .0621   | 16.70               | 2 11.5                            | .2934  | 9 10.9                             | 5.74                |
|                                | 8  | .157                 | .1655   | .0606   | 16.73               | 2 11.0                            | .2927  | 9 7.0                              | 5.83                |
|                                | 9  | +2.164               | —0.1640 | +0.0590 | 16.76               | 2 10.4                            | 1.2921 | 9 3.2                              | +5.93               |
|                                | 10 | .171                 | .1625   | .0575   | 16.79               | 2 9.9                             | .2915  | 8 59.3                             | 6.02                |
|                                | 11 | .178                 | .1610   | .0560   | 16.82               | 2 9.4                             | .2909  | 8 55.5                             | 6.11                |
|                                | 12 | .185                 | .1595   | .0545   | 16.85               | 2 8.8                             | .2902  | 8 51.6                             | 6.20                |
|                                | 13 | .192                 | .1580   | .0530   | 16.88               | 2 8.3                             | .2896  | 8 47.7                             | 6.29                |
|                                | 14 | .199                 | .1566   | .0515   | 16.91               | 2 7.8                             | .2890  | 8 43.8                             | 6.37                |
|                                | 15 | .206                 | .1551   | .0500   | 16.94               | 2 7.3                             | .2883  | 8 39.9                             | 6.46                |
|                                | 16 | .212                 | .1537   | .0485   | 16.97               | 2 6.8                             | .2877  | 8 36.0                             | 6.54                |
|                                | 17 | .219                 | .1523   | .0470   | 17.00               | 2 6.4                             | .2871  | 8 32.1                             | 6.62                |
|                                | 18 | .225                 | .1509   | .0456   | 17.03               | 2 5.9                             | .2865  | 8 28.1                             | 6.70                |
|                                | 19 | +2.232               | —0.1495 | +0.0441 | 17.05               | 2 5.4                             | 1.2859 | 8 24.1                             | +6.78               |
|                                | 20 | .238                 | .1482   | .0427   | 17.08               | 2 4.9                             | .2853  | 8 20.2                             | 6.85                |
|                                | 21 | .244                 | .1468   | .0412   | 17.11               | 2 4.5                             | .2847  | 8 16.2                             | 6.93                |
|                                | 22 | .250                 | .1455   | .0398   | 17.13               | 2 4.0                             | .2841  | 8 12.2                             | 7.00                |
|                                | 23 | .256                 | .1441   | .0384   | 17.16               | 2 3.6                             | .2836  | 8 8.1                              | 7.07                |
|                                | 24 | .262                 | .1428   | .0371   | 17.19               | 2 3.2                             | .2830  | 8 4.1                              | 7.13                |
|                                | 25 | .268                 | .1415   | .0358   | 17.21               | 2 2.8                             | .2824  | 8 0.1                              | 7.20                |
|                                | 26 | .274                 | .1402   | .0345   | 17.24               | 2 2.4                             | .2819  | 7 56.0                             | 7.26                |
|                                | 27 | .280                 | .1390   | .0332   | 17.27               | 2 2.0                             | .2814  | 7 52.0                             | 7.32                |
|                                | 28 | .286                 | .1377   | .0320   | 17.29               | 2 1.6                             | .2808  | 7 47.9                             | 7.38                |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|----------------------------------|--------|-----------------------------------|---------------------|
| August                          | 29 | +2 <sup>s</sup> .291 | —0.1364 | +0.0308 | 17 <sup>h</sup> .32 | 2 <sup>h</sup> 1 <sup>m</sup> .2 | 1.2803 | 7 <sup>h</sup> 43 <sup>m</sup> .8 | +7 <sup>h</sup> .44 |
|                                 | 30 | .297                 | .1351   | .0296   | 17.34               | 2 0.8                            | .2798  | 7 39.7                            | 7.50                |
| Septbr.                         | 31 | .302                 | .1339   | .0285   | 17.37               | 2 0.4                            | .2794  | 7 35.6                            | 7.55                |
|                                 | 1  | .308                 | .1326   | .0274   | 17.39               | 2 0.1                            | .2789  | 7 31.5                            | 7.60                |
|                                 | 2  | .313                 | .1313   | .0263   | 17.42               | 1 59.7                           | .2785  | 7 27.4                            | 7.65                |
|                                 | 3  | .318                 | .1300   | .0253   | 17.44               | 1 59.4                           | .2780  | 7 23.2                            | 7.69                |
|                                 | 4  | .324                 | .1288   | .0243   | 17.47               | 1 59.1                           | .2776  | 7 19.1                            | 7.74                |
|                                 | 5  | .329                 | .1275   | .0234   | 17.49               | 1 58.7                           | .2772  | 7 14.9                            | 7.78                |
|                                 | 6  | .334                 | .1263   | .0225   | 17.52               | 1 58.4                           | .2768  | 7 10.8                            | 7.82                |
|                                 | 7  | .339                 | .1250   | .0217   | 17.55               | 1 58.1                           | .2765  | 7 6.6                             | 7.86                |
|                                 | 8  | +2.344               | —0.1238 | +0.0209 | 17.57               | 1 57.8                           | 1.2761 | 7 2.4                             | +7.89               |
|                                 | 9  | .349                 | .1225   | .0201   | 17.60               | 1 57.5                           | .2758  | 6 58.2                            | 7.93                |
|                                 | 10 | .354                 | .1213   | .0194   | 17.62               | 1 57.2                           | .2755  | 6 54.0                            | 7.96                |
|                                 | 11 | .359                 | .1200   | .0187   | 17.65               | 1 57.0                           | .2752  | 6 49.8                            | 7.99                |
|                                 | 12 | .364                 | .1187   | .0181   | 17.67               | 1 56.7                           | .2750  | 6 45.6                            | 8.01                |
|                                 | 13 | .369                 | .1174   | .0176   | 17.70               | 1 56.5                           | .2747  | 6 41.3                            | 8.04                |
|                                 | 14 | .374                 | .1161   | .0171   | 17.72               | 1 56.2                           | .2745  | 6 37.1                            | 8.06                |
|                                 | 15 | .379                 | .1148   | .0166   | 17.75               | 1 56.0                           | .2743  | 6 32.9                            | 8.08                |
|                                 | 16 | .384                 | .1135   | .0162   | 17.78               | 1 55.8                           | .2742  | 6 28.6                            | 8.10                |
|                                 | 17 | .388                 | .1122   | .0159   | 17.80               | 1 55.5                           | .2740  | 6 24.4                            | 8.11                |
|                                 | 18 | +2.393               | —0.1109 | +0.0156 | 17.83               | 1 55.3                           | 1.2739 | 6 20.1                            | +8.12               |
|                                 | 19 | .398                 | .1095   | .0154   | 17.86               | 1 55.1                           | .2738  | 6 15.9                            | 8.13                |
|                                 | 20 | .403                 | .1082   | .0152   | 17.88               | 1 54.9                           | .2737  | 6 11.6                            | 8.14                |
|                                 | 21 | .408                 | .1068   | .0151   | 17.91               | 1 54.7                           | .2737  | 6 7.3                             | 8.15                |
|                                 | 22 | .412                 | .1054   | .0150   | 17.94               | 1 54.5                           | .2736  | 6 3.1                             | 8.15                |
|                                 | 23 | .417                 | .1040   | .0150   | 17.97               | 1 54.4                           | .2736  | 5 58.8                            | 8.15                |
|                                 | 24 | .422                 | .1026   | .0150   | 18.00               | 1 54.2                           | .2737  | 5 54.5                            | 8.15                |
|                                 | 25 | .426                 | .1011   | .0151   | 18.02               | 1 54.0                           | .2737  | 5 50.2                            | 8.14                |
|                                 | 26 | .431                 | .0997   | .0153   | 18.05               | 1 53.9                           | .2738  | 5 46.0                            | 8.14                |
|                                 | 27 | .436                 | .0982   | .0155   | 18.08               | 1 53.7                           | .2739  | 5 41.7                            | 8.13                |
|                                 | 28 | +2.441               | —0.0967 | +0.0158 | 18.11               | 1 53.6                           | 1.2740 | 5 37.4                            | +8.12               |
|                                 | 29 | .446                 | .0952   | .0161   | 18.14               | 1 53.5                           | .2741  | 5 33.1                            | 8.10                |
| Oktbr.                          | 30 | .450                 | .0937   | .0165   | 18.17               | 1 53.3                           | .2743  | 5 28.8                            | 8.09                |
|                                 | 1  | .455                 | .0922   | .0169   | 18.20               | 1 53.2                           | .2745  | 5 24.6                            | 8.07                |
|                                 | 2  | .460                 | .0906   | .0174   | 18.24               | 1 53.1                           | .2747  | 5 20.3                            | 8.05                |
|                                 | 3  | .465                 | .0890   | .0180   | 18.27               | 1 53.0                           | .2749  | 5 16.0                            | 8.02                |
|                                 | 4  | .470                 | .0874   | .0186   | 18.30               | 1 52.9                           | .2751  | 5 11.7                            | 8.00                |
|                                 | 5  | .475                 | .0857   | .0193   | 18.33               | 1 52.8                           | .2754  | 5 7.5                             | 7.97                |
|                                 | 6  | .480                 | .0840   | .0200   | 18.37               | 1 52.7                           | .2757  | 5 3.2                             | 7.94                |
|                                 | 7  | .485                 | .0823   | .0207   | 18.40               | 1 52.7                           | .2760  | 4 58.9                            | 7.90                |
|                                 | 8  | +2.490               | —0.0806 | +0.0215 | 18.44               | 1 52.6                           | 1.2764 | 4 54.7                            | +7.87               |
|                                 | 9  | .495                 | .0789   | .0223   | 18.47               | 1 52.5                           | .2767  | 4 50.4                            | 7.83                |
|                                 | 10 | .500                 | .0771   | .0232   | 18.51               | 1 52.4                           | .2771  | 4 46.2                            | 7.79                |
|                                 | 11 | .506                 | .0753   | .0241   | 18.54               | 1 52.4                           | .2775  | 4 41.9                            | 7.75                |
|                                 | 12 | .511                 | .0735   | .0251   | 18.58               | 1 52.3                           | .2779  | 4 37.7                            | 7.70                |
|                                 | 13 | .516                 | .0716   | .0261   | 18.62               | 1 52.3                           | .2784  | 4 33.4                            | 7.66                |
|                                 | 14 | .522                 | .0697   | .0272   | 18.65               | 1 52.2                           | .2788  | 4 29.2                            | 7.61                |
|                                 | 15 | .527                 | .0678   | .0283   | 18.69               | 1 52.2                           | .2793  | 4 25.0                            | 7.56                |
|                                 | 16 | .533                 | .0659   | .0295   | 18.73               | 1 52.1                           | .2798  | 4 20.8                            | 7.50                |
|                                 | 17 | .538                 | .0639   | .0307   | 18.77               | 1 52.1                           | .2803  | 4 16.6                            | 7.45                |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                 | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|-----------------------------------|--------|-----------------------------------|---------------------|
| Oktbr.                          | 18 | +2 <sup>s</sup> .544 | —0.0619 | +0.0319 | 18 <sup>h</sup> .81 | 1 <sup>h</sup> 52 <sup>m</sup> .0 | 1.2808 | 4 <sup>h</sup> 12 <sup>m</sup> .4 | +7 <sup>s</sup> .39 |
|                                 | 19 | .550                 | .0598   | .0332   | 18.85               | 1 52.0                            | .2814  | 4 8.2                             | 7.33                |
|                                 | 20 | .556                 | .0577   | .0345   | 18.89               | 1 52.0                            | .2819  | 4 4.0                             | 7.26                |
|                                 | 21 | .562                 | .0556   | .0358   | 18.94               | 1 51.9                            | .2825  | 3 59.8                            | 7.20                |
|                                 | 22 | .568                 | .0535   | .0372   | 18.98               | 1 51.9                            | .2830  | 3 55.7                            | 7.13                |
|                                 | 23 | .574                 | .0513   | .0386   | 19.02               | 1 51.9                            | .2836  | 3 51.5                            | 7.06                |
|                                 | 24 | .580                 | .0491   | .0400   | 19.07               | 1 51.8                            | .2842  | 3 47.4                            | 6.99                |
|                                 | 25 | .586                 | .0468   | .0414   | 19.11               | 1 51.8                            | .2848  | 3 43.2                            | 6.91                |
|                                 | 26 | .593                 | .0445   | .0429   | 19.16               | 1 51.8                            | .2854  | 3 39.1                            | 6.84                |
|                                 | 27 | .599                 | .0422   | .0444   | 19.20               | 1 51.7                            | .2860  | 3 35.0                            | 6.76                |
|                                 | 28 | +2.605               | —0.0399 | +0.0459 | 19.25               | 1 51.7                            | 1.2867 | 3 30.9                            | +6.68               |
|                                 | 29 | .612                 | .0375   | .0475   | 19.30               | 1 51.7                            | .2873  | 3 26.7                            | 6.60                |
|                                 | 30 | .619                 | .0351   | .0490   | 19.35               | 1 51.6                            | .2879  | 3 22.6                            | 6.51                |
|                                 | 31 | .626                 | .0327   | .0506   | 19.40               | 1 51.6                            | .2886  | 3 18.6                            | 6.43                |
| Novbr.                          | 1  | .632                 | .0303   | .0521   | 19.44               | 1 51.5                            | .2892  | 3 14.5                            | 6.34                |
|                                 | 2  | .639                 | .0278   | .0537   | 19.49               | 1 51.5                            | .2899  | 3 10.4                            | 6.25                |
|                                 | 3  | .646                 | .0253   | .0553   | 19.55               | 1 51.5                            | .2905  | 3 6.4                             | 6.16                |
|                                 | 4  | .654                 | .0227   | .0569   | 19.60               | 1 51.4                            | .2912  | 3 2.3                             | 6.06                |
|                                 | 5  | .661                 | .0201   | .0585   | 19.65               | 1 51.4                            | .2919  | 2 58.3                            | 5.97                |
|                                 | 6  | .668                 | .0175   | .0601   | 19.70               | 1 51.3                            | .2925  | 2 54.3                            | 5.87                |
|                                 | 7  | +2.676               | —0.0149 | +0.0617 | 19.75               | 1 51.3                            | 1.2932 | 2 50.3                            | +5.77               |
|                                 | 8  | .683                 | .0123   | .0633   | 19.81               | 1 51.2                            | .2938  | 2 46.3                            | 5.66                |
|                                 | 9  | .691                 | .0096   | .0649   | 19.86               | 1 51.2                            | .2945  | 2 42.3                            | 5.56                |
|                                 | 10 | .699                 | .0069   | .0665   | 19.91               | 1 51.1                            | .2951  | 2 38.3                            | 5.45                |
|                                 | 11 | .707                 | .0042   | .0681   | 19.97               | 1 51.0                            | .2958  | 2 34.3                            | 5.35                |
|                                 | 12 | .715                 | —0.0015 | .0696   | 20.02               | 1 51.0                            | .2964  | 2 30.4                            | 5.24                |
|                                 | 13 | .723                 | +0.0013 | .0712   | 20.08               | 1 50.9                            | .2970  | 2 26.4                            | 5.13                |
|                                 | 14 | .731                 | .0041   | .0728   | 20.13               | 1 50.8                            | .2977  | 2 22.5                            | 5.02                |
|                                 | 15 | .739                 | .0069   | .0743   | 20.19               | 1 50.7                            | .2983  | 2 18.6                            | 4.90                |
|                                 | 16 | .747                 | .0098   | .0758   | 20.25               | 1 50.6                            | .2989  | 2 14.6                            | 4.79                |
|                                 | 17 | +2.756               | +0.0127 | +0.0773 | 20.31               | 1 50.5                            | 1.2995 | 2 10.7                            | +4.67               |
|                                 | 18 | .764                 | .0157   | .0787   | 20.37               | 1 50.4                            | .3001  | 2 6.8                             | 4.55                |
|                                 | 19 | .773                 | .0186   | .0802   | 20.43               | 1 50.3                            | .3007  | 2 2.9                             | 4.43                |
|                                 | 20 | .782                 | .0216   | .0816   | 20.48               | 1 50.2                            | .3012  | 1 59.0                            | 4.31                |
|                                 | 21 | .790                 | .0246   | .0830   | 20.54               | 1 50.1                            | .3018  | 1 55.2                            | 4.19                |
|                                 | 22 | .799                 | .0276   | .0844   | 20.60               | 1 50.0                            | .3024  | 1 51.3                            | 4.06                |
|                                 | 23 | .808                 | .0306   | .0858   | 20.66               | 1 49.9                            | .3029  | 1 47.5                            | 3.94                |
|                                 | 24 | .817                 | .0336   | .0871   | 20.72               | 1 49.7                            | .3034  | 1 43.6                            | 3.81                |
|                                 | 25 | .827                 | .0366   | .0884   | 20.79               | 1 49.6                            | .3040  | 1 39.8                            | 3.68                |
|                                 | 26 | .836                 | .0397   | .0897   | 20.85               | 1 49.5                            | .3045  | 1 35.9                            | 3.55                |
|                                 | 27 | +2.845               | +0.0427 | +0.0909 | 20.91               | 1 49.3                            | 1.3049 | 1 32.1                            | +3.42               |
|                                 | 28 | .854                 | .0458   | .0921   | 20.97               | 1 49.2                            | .3054  | 1 28.3                            | 3.29                |
|                                 | 29 | .864                 | .0488   | .0932   | 21.03               | 1 49.0                            | .3059  | 1 24.5                            | 3.16                |
|                                 | 30 | .873                 | .0519   | .0943   | 21.09               | 1 48.8                            | .3063  | 1 20.6                            | 3.03                |
| Dezbr.                          | 1  | .883                 | .0550   | .0954   | 21.16               | 1 48.7                            | .3067  | 1 16.8                            | 2.89                |
|                                 | 2  | .893                 | .0581   | .0964   | 21.22               | 1 48.5                            | .3071  | 1 13.0                            | 2.76                |
|                                 | 3  | .902                 | .0612   | .0974   | 21.28               | 1 48.3                            | .3075  | 1 9.2                             | 2.62                |
|                                 | 4  | .912                 | .0643   | .0984   | 21.34               | 1 48.1                            | .3079  | 1 5.5                             | 2.48                |
|                                 | 5  | .922                 | .0674   | .0993   | 21.40               | 1 47.9                            | .3082  | 1 1.7                             | 2.35                |
|                                 | 6  | .932                 | .0706   | .1001   | 21.47               | 1 47.7                            | .3086  | 0 57.9                            | 2.21                |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                 | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|-----------------------------------|--------|-----------------------------------|---------------------|
| Dezbr.                          | 7  | +2 <sup>s</sup> .942 | +0.0737 | +0.1009 | 21 <sup>h</sup> .53 | 1 <sup>h</sup> 47 <sup>m</sup> .5 | 1.3089 | 0 <sup>h</sup> 54 <sup>m</sup> .1 | +2 <sup>s</sup> .07 |
|                                 | 8  | .952                 | .0768   | .1016   | 21.59               | 1 47.3                            | .3092  | 0 50.4                            | 1.93                |
|                                 | 9  | .962                 | .0799   | .1023   | 21.65               | 1 47.1                            | .3095  | 0 46.6                            | 1.79                |
|                                 | 10 | .972                 | .0831   | .1029   | 21.72               | 1 46.8                            | .3097  | 0 42.9                            | 1.65                |
|                                 | 11 | .982                 | .0863   | .1035   | 21.78               | 1 46.6                            | .3099  | 0 39.1                            | 1.50                |
|                                 | 12 | 2.992                | .0894   | .1040   | 21.84               | 1 46.4                            | .3101  | 0 35.4                            | 1.36                |
|                                 | 13 | 3.002                | .0925   | .1045   | 21.91               | 1 46.1                            | .3103  | 0 31.6                            | 1.22                |
|                                 | 14 | .013                 | .0956   | .1049   | 21.97               | 1 45.9                            | .3105  | 0 27.9                            | 1.08                |
|                                 | 15 | .023                 | .0987   | .1053   | 22.03               | 1 45.6                            | .3106  | 0 24.1                            | 0.93                |
|                                 | 16 | .033                 | .1018   | .1056   | 22.09               | 1 45.3                            | .3108  | 0 20.4                            | 0.79                |
|                                 | 17 | +3.043               | +0.1049 | +0.1059 | 22.16               | 1 45.1                            | 1.3109 | 0 16.7                            | +0.64               |
|                                 | 18 | .054                 | .1080   | .1061   | 22.22               | 1 44.8                            | .3110  | 0 12.9                            | 0.50                |
|                                 | 19 | .064                 | .1111   | .1063   | 22.28               | 1 44.5                            | .3110  | 0 9.2                             | 0.36                |
|                                 | 20 | .074                 | .1142   | .1064   | 22.34               | 1 44.2                            | .3111  | 0 5.4                             | 0.21                |
|                                 | 21 | .085                 | .1173   | .1065   | 22.40               | 1 43.9                            | .3111  | 0 1.7                             | +0.07               |
|                                 | 22 | .095                 | .1203   | .1065   | 22.46               | 1 43.6                            | .3111  | 23 57.9                           | —0.08               |
|                                 | 23 | .105                 | .1233   | .1064   | 22.53               | 1 43.3                            | .3111  | 23 54.2                           | 0.22                |
|                                 | 24 | .116                 | .1263   | .1063   | 22.59               | 1 43.0                            | .3110  | 23 50.5                           | 0.37                |
|                                 | 25 | .126                 | .1293   | .1061   | 22.65               | 1 42.7                            | .3110  | 23 46.7                           | 0.51                |
|                                 | 26 | .136                 | .1323   | .1059   | 22.70               | 1 42.4                            | .3109  | 23 43.0                           | 0.66                |
|                                 | 27 | +3.147               | +0.1353 | +0.1056 | 22.76               | 1 42.1                            | 1.3108 | 23 39.2                           | —0.80               |
|                                 | 28 | .157                 | .1382   | .1053   | 22.82               | 1 41.8                            | .3107  | 23 35.5                           | 0.95                |
|                                 | 29 | .167                 | .1411   | .1049   | 22.88               | 1 41.5                            | .3105  | 23 31.7                           | 1.09                |
|                                 | 30 | .178                 | .1440   | .1045   | 22.94               | 1 41.1                            | .3103  | 23 28.0                           | 1.23                |
|                                 | 31 | .188                 | .1469   | .1041   | 23.00               | 1 40.8                            | .3101  | 23 24.2                           | 1.38                |

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|        |    |                      |         |         |                    |                                   |        |                                    |                     |
|--------|----|----------------------|---------|---------|--------------------|-----------------------------------|--------|------------------------------------|---------------------|
| Januar | 1  | +0 <sup>s</sup> .127 | —0.5102 | +0.1035 | 9 <sup>h</sup> .82 | 5 <sup>h</sup> 40 <sup>m</sup> .7 | 1.3099 | 23 <sup>h</sup> 20 <sup>m</sup> .5 | —1 <sup>s</sup> .52 |
|        | 2  | .137                 | .5102   | .1029   | 9.82               | 5 39.2                            | .3097  | 23 16.7                            | 1.66                |
|        | 3  | .147                 | .5103   | .1022   | 9.82               | 5 37.6                            | .3094  | 23 12.9                            | 1.80                |
|        | 4  | .157                 | .5104   | .1015   | 9.82               | 5 36.1                            | .3092  | 23 9.2                             | 1.94                |
|        | 5  | .167                 | .5105   | .1008   | 9.81               | 5 34.5                            | .3089  | 23 5.4                             | 2.08                |
|        | 6  | .177                 | .5106   | .1000   | 9.81               | 5 33.0                            | .3085  | 23 1.6                             | 2.22                |
|        | 7  | .187                 | .5107   | .0991   | 9.81               | 5 31.5                            | .3082  | 22 57.8                            | 2.36                |
|        | 8  | .196                 | .5108   | .0982   | 9.81               | 5 30.0                            | .3078  | 22 54.0                            | 2.50                |
|        | 9  | .206                 | .5110   | .0973   | 9.80               | 5 28.5                            | .3075  | 22 50.2                            | 2.64                |
|        | 10 | .216                 | .5111   | .0963   | 9.80               | 5 27.0                            | .3071  | 22 46.4                            | 2.78                |
|        | 11 | +0.226               | .5112   | +0.0952 | 9.80               | 5 25.4                            | 1.3067 | 22 42.6                            | —2.91               |
|        | 12 | .235                 | .5113   | .0941   | 9.80               | 5 24.0                            | .3062  | 22 38.8                            | 3.05                |
|        | 13 | .245                 | .5115   | .0930   | 9.79               | 5 22.5                            | .3058  | 22 35.0                            | 3.18                |
|        | 14 | .254                 | .5117   | .0919   | 9.79               | 5 21.0                            | .3053  | 22 31.1                            | 3.31                |
|        | 15 | .264                 | .5119   | .0907   | 9.79               | 5 19.5                            | .3049  | 22 27.3                            | 3.44                |
|        | 16 | .273                 | .5121   | .0895   | 9.78               | 5 18.1                            | .3044  | 22 23.4                            | 3.58                |
|        | 17 | .282                 | .5123   | .0882   | 9.78               | 5 16.6                            | .3039  | 22 19.6                            | 3.71                |
|        | 18 | .291                 | .5125   | .0869   | 9.78               | 5 15.1                            | .3034  | 22 15.7                            | 3.83                |
|        | 19 | .301                 | .5127   | .0856   | 9.77               | 5 13.7                            | .3028  | 22 11.8                            | 3.96                |
|        | 20 | .310                 | .5129   | .0842   | 9.77               | 5 12.3                            | .3023  | 22 8.0                             | 4.09                |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                 | G                                | log h  | H                                | i                  |
|---------------------------------|----|----------------------|---------|---------|-------------------|----------------------------------|--------|----------------------------------|--------------------|
| Januar                          | 21 | +0. <sup>s</sup> 318 | —0.5131 | +0.0828 | 9 <sup>h</sup> 76 | 5 <sup>h</sup> 10 <sup>m</sup> 9 | 1.3017 | 22 <sup>h</sup> 4 <sup>m</sup> 1 | —4 <sup>h</sup> 21 |
|                                 | 22 | .327                 | .5133   | .0814   | 9.76              | 5 9.5                            | .3011  | 22 0.2                           | 4.33               |
|                                 | 23 | .336                 | .5135   | .0799   | 9.76              | 5 8.1                            | .3005  | 21 56.2                          | 4.46               |
|                                 | 24 | .345                 | .5137   | .0784   | 9.75              | 5 6.7                            | .3000  | 21 52.3                          | 4.58               |
|                                 | 25 | .353                 | .5139   | .0769   | 9.75              | 5 5.3                            | .2994  | 21 48.4                          | 4.70               |
|                                 | 26 | .362                 | .5141   | .0754   | 9.74              | 5 4.0                            | .2987  | 21 44.5                          | 4.81               |
|                                 | 27 | .370                 | .5144   | .0739   | 9.74              | 5 2.6                            | .2981  | 21 40.5                          | 4.93               |
|                                 | 28 | .378                 | .5147   | .0724   | 9.73              | 5 1.3                            | .2975  | 21 36.6                          | 5.04               |
|                                 | 29 | .386                 | .5149   | .0708   | 9.73              | 4 59.9                           | .2969  | 21 32.6                          | 5.16               |
|                                 | 30 | .394                 | .5151   | .0692   | 9.72              | 4 58.6                           | .2962  | 21 28.6                          | 5.27               |
| Februar                         | 31 | +0.402               | —0.5153 | +0.0676 | 9.72              | 4 57.3                           | 1.2956 | 21 24.6                          | —5.38              |
|                                 | 1  | .410                 | .5155   | .0660   | 9.71              | 4 56.1                           | .2949  | 21 20.6                          | 5.48               |
|                                 | 2  | .418                 | .5157   | .0644   | 9.71              | 4 54.8                           | .2943  | 21 16.6                          | 5.59               |
|                                 | 3  | .426                 | .5159   | .0628   | 9.71              | 4 53.5                           | .2936  | 21 12.6                          | 5.69               |
|                                 | 4  | .433                 | .5161   | .0612   | 9.70              | 4 52.3                           | .2930  | 21 8.5                           | 5.80               |
|                                 | 5  | .441                 | .5163   | .0596   | 9.70              | 4 51.0                           | .2923  | 21 4.5                           | 5.90               |
|                                 | 6  | .448                 | .5165   | .0580   | 9.69              | 4 49.8                           | .2916  | 21 0.4                           | 5.99               |
|                                 | 7  | .455                 | .5167   | .0563   | 9.69              | 4 48.6                           | .2910  | 20 56.3                          | 6.09               |
|                                 | 8  | .462                 | .5169   | .0547   | 9.69              | 4 47.4                           | .2903  | 20 52.2                          | 6.19               |
|                                 | 9  | .469                 | .5171   | .0531   | 9.68              | 4 46.3                           | .2896  | 20 48.2                          | 6.28               |
|                                 | 10 | +0.476               | —0.5172 | +0.0515 | 9.68              | 4 45.1                           | 1.2890 | 20 44.1                          | —6.37              |
|                                 | 11 | .483                 | .5174   | .0499   | 9.68              | 4 44.0                           | .2883  | 20 39.9                          | 6.46               |
|                                 | 12 | .480                 | .5175   | .0484   | 9.68              | 4 42.8                           | .2877  | 20 35.8                          | 6.55               |
|                                 | 13 | .497                 | .5176   | .0468   | 9.67              | 4 41.7                           | .2871  | 20 31.7                          | 6.63               |
|                                 | 14 | .503                 | .5177   | .0453   | 9.67              | 4 40.6                           | .2864  | 20 27.5                          | 6.71               |
|                                 | 15 | .510                 | .5178   | .0438   | 9.67              | 4 39.5                           | .2858  | 20 23.4                          | 6.79               |
|                                 | 16 | .516                 | .5179   | .0423   | 9.67              | 4 38.5                           | .2852  | 20 19.2                          | 6.87               |
|                                 | 17 | .522                 | .5180   | .0408   | 9.66              | 4 37.4                           | .2845  | 20 15.0                          | 6.95               |
|                                 | 18 | .529                 | .5181   | .0394   | 9.66              | 4 36.3                           | .2839  | 20 10.9                          | 7.02               |
|                                 | 19 | .535                 | .5182   | .0380   | 9.66              | 4 35.3                           | .2834  | 20 6.7                           | 7.09               |
|                                 | 20 | +0.541               | —0.5182 | +0.0366 | 9.66              | 4 34.3                           | 1.2828 | 20 2.5                           | —7.16              |
|                                 | 21 | .547                 | .5182   | .0352   | 9.66              | 4 33.3                           | .2822  | 19 58.2                          | 7.23               |
|                                 | 22 | .553                 | .5182   | .0339   | 9.66              | 4 32.3                           | .2816  | 19 54.0                          | 7.29               |
|                                 | 23 | .559                 | .5182   | .0326   | 9.66              | 4 31.3                           | .2811  | 19 49.8                          | 7.36               |
|                                 | 24 | .564                 | .5181   | .0313   | 9.66              | 4 30.4                           | .2805  | 19 45.5                          | 7.42               |
|                                 | 25 | .570                 | .5181   | .0300   | 9.66              | 4 29.4                           | .2800  | 19 41.3                          | 7.47               |
|                                 | 26 | .576                 | .5180   | .0288   | 9.66              | 4 28.5                           | .2795  | 19 37.0                          | 7.53               |
|                                 | 27 | .581                 | .5179   | .0276   | 9.67              | 4 27.6                           | .2790  | 19 32.8                          | 7.58               |
|                                 | 28 | .587                 | .5178   | .0265   | 9.67              | 4 26.7                           | .2786  | 19 28.5                          | 7.63               |
|                                 | 29 | .592                 | .5177   | .0255   | 9.67              | 4 25.8                           | .2781  | 19 24.2                          | 7.68               |
| März                            | 1  | +0.597               | —0.5176 | +0.0245 | 9.67              | 4 25.0                           | 1.2777 | 19 19.9                          | —7.73              |
|                                 | 2  | .603                 | .5174   | .0236   | 9.68              | 4 24.1                           | .2773  | 19 15.6                          | 7.77               |
|                                 | 3  | .608                 | .5171   | .0227   | 9.68              | 4 23.3                           | .2769  | 19 11.3                          | 7.82               |
|                                 | 4  | .613                 | .5169   | .0218   | 9.69              | 4 22.4                           | .2765  | 19 7.0                           | 7.85               |
|                                 | 5  | .618                 | .5166   | .0210   | 9.69              | 4 21.6                           | .2762  | 19 2.7                           | 7.89               |
|                                 | 6  | .623                 | .5163   | .0202   | 9.70              | 4 20.8                           | .2758  | 18 58.4                          | 7.92               |
|                                 | 7  | .628                 | .5160   | .0194   | 9.70              | 4 20.0                           | .2755  | 18 54.1                          | 7.96               |
|                                 | 8  | .633                 | .5157   | .0187   | 9.71              | 4 19.2                           | .2752  | 18 49.8                          | 7.99               |
|                                 | 9  | .638                 | .5153   | .0181   | 9.72              | 4 18.5                           | .2750  | 18 45.5                          | 8.01               |
|                                 | 10 | .643                 | .5149   | .0175   | 9.73              | 4 17.7                           | .2747  | 18 41.1                          | 8.04               |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f       | x       | y       | g     | G                                | log h  | H                                 | i     |
|---------------------------------|----|---------|---------|---------|-------|----------------------------------|--------|-----------------------------------|-------|
| März                            | 11 | +0.8648 | -0.5145 | +0.0170 | 9.73  | 4 <sup>h</sup> 17 <sup>m</sup> 0 | 1.2745 | 18 <sup>h</sup> 36 <sup>m</sup> 8 | -8.06 |
|                                 | 12 | .653    | .5141   | .0166   | 9.74  | 4 16.3                           | .2743  | 18 32.5                           | 8.08  |
|                                 | 13 | .658    | .5136   | .0162   | 9.75  | 4 15.6                           | .2741  | 18 28.1                           | 8.10  |
|                                 | 14 | .662    | .5131   | .0159   | 9.76  | 4 14.9                           | .2740  | 18 23.8                           | 8.11  |
|                                 | 15 | .667    | .5125   | .0156   | 9.77  | 4 14.2                           | .2739  | 18 19.5                           | 8.12  |
|                                 | 16 | .672    | .5119   | .0154   | 9.79  | 4 13.5                           | .2738  | 18 15.1                           | 8.13  |
|                                 | 17 | .677    | .5113   | .0152   | 9.80  | 4 12.8                           | .2737  | 18 10.8                           | 8.14  |
|                                 | 18 | .681    | .5107   | .0151   | 9.81  | 4 12.2                           | .2737  | 18 6.5                            | 8.15  |
|                                 | 19 | .686    | .5100   | .0150   | 9.82  | 4 11.5                           | .2736  | 18 2.2                            | 8.15  |
|                                 | 20 | .691    | .5093   | .0150   | 9.84  | 4 10.9                           | .2736  | 17 57.8                           | 8.15  |
|                                 | 21 | +0.696  | -0.5086 | +0.0151 | 9.85  | 4 10.3                           | 1.2737 | 17 53.5                           | -8.15 |
|                                 | 22 | .700    | .5078   | .0152   | 9.87  | 4 9.6                            | .2737  | 17 49.2                           | 8.14  |
|                                 | 23 | .705    | .5070   | .0154   | 9.88  | 4 9.0                            | .2738  | 17 44.9                           | 8.13  |
|                                 | 24 | .710    | .5062   | .0156   | 9.90  | 4 8.4                            | .2739  | 17 40.6                           | 8.12  |
|                                 | 25 | .715    | .5053   | .0159   | 9.92  | 4 7.8                            | .2740  | 17 36.3                           | 8.11  |
|                                 | 26 | .719    | .5044   | .0162   | 9.94  | 4 7.2                            | .2741  | 17 32.0                           | 8.10  |
|                                 | 27 | .724    | .5035   | .0166   | 9.96  | 4 6.6                            | .2743  | 17 27.7                           | 8.08  |
|                                 | 28 | .729    | .5025   | .0170   | 9.98  | 4 6.0                            | .2745  | 17 23.4                           | 8.06  |
|                                 | 29 | .734    | .5015   | .0175   | 10.00 | 4 5.4                            | .2747  | 17 19.1                           | 8.04  |
|                                 | 30 | .739    | .5005   | .0181   | 10.02 | 4 4.9                            | .2750  | 17 14.8                           | 8.02  |
| April                           | 31 | +0.744  | -0.4994 | +0.0187 | 10.04 | 4 4.3                            | 1.2752 | 17 10.5                           | -7.99 |
|                                 | 1  | .749    | .4983   | .0194   | 10.06 | 4 3.7                            | .2755  | 17 6.3                            | 7.96  |
|                                 | 2  | .754    | .4971   | .0201   | 10.08 | 4 3.2                            | .2758  | 17 2.0                            | 7.93  |
|                                 | 3  | .759    | .4959   | .0208   | 10.11 | 4 2.6                            | .2761  | 16 57.8                           | 7.90  |
|                                 | 4  | .764    | .4947   | .0216   | 10.13 | 4 2.1                            | .2765  | 16 53.5                           | 7.86  |
|                                 | 5  | .769    | .4935   | .0225   | 10.16 | 4 1.5                            | .2768  | 16 49.3                           | 7.82  |
|                                 | 6  | .774    | .4922   | .0234   | 10.18 | 4 1.0                            | .2772  | 16 45.1                           | 7.78  |
|                                 | 7  | .779    | .4909   | .0244   | 10.21 | 4 0.4                            | .2776  | 16 40.9                           | 7.74  |
|                                 | 8  | .785    | .4895   | .0254   | 10.24 | 3 59.9                           | .2780  | 16 36.7                           | 7.69  |
|                                 | 9  | .790    | .4881   | .0264   | 10.26 | 3 59.4                           | .2785  | 16 32.5                           | 7.65  |
|                                 | 10 | +0.795  | -0.4867 | +0.0275 | 10.29 | 3 58.8                           | 1.2789 | 16 28.3                           | -7.60 |
|                                 | 11 | .801    | .4853   | .0286   | 10.32 | 3 58.3                           | .2794  | 16 24.2                           | 7.54  |
|                                 | 12 | .806    | .4838   | .0297   | 10.35 | 3 57.7                           | .2799  | 16 20.0                           | 7.49  |
|                                 | 13 | .812    | .4823   | .0309   | 10.38 | 3 57.2                           | .2804  | 16 15.9                           | 7.43  |
|                                 | 14 | .817    | .4808   | .0321   | 10.41 | 3 56.7                           | .2809  | 16 11.7                           | 7.38  |
|                                 | 15 | .823    | .4792   | .0333   | 10.44 | 3 56.1                           | .2814  | 16 7.6                            | 7.32  |
|                                 | 16 | .829    | .4776   | .0346   | 10.47 | 3 55.6                           | .2819  | 16 3.5                            | 7.26  |
|                                 | 17 | .835    | .4760   | .0359   | 10.51 | 3 55.1                           | .2825  | 15 59.4                           | 7.19  |
|                                 | 18 | .841    | .4743   | .0372   | 10.54 | 3 54.5                           | .2830  | 15 55.4                           | 7.13  |
|                                 | 19 | .847    | .4726   | .0386   | 10.58 | 3 54.0                           | .2836  | 15 51.3                           | 7.06  |
|                                 | 20 | +0.853  | -0.4708 | +0.0400 | 10.61 | 3 53.4                           | 1.2842 | 15 47.2                           | -6.99 |
|                                 | 21 | .859    | .4691   | .0414   | 10.65 | 3 52.8                           | .2848  | 15 43.2                           | 6.92  |
|                                 | 22 | .865    | .4673   | .0428   | 10.68 | 3 52.3                           | .2854  | 15 39.2                           | 6.84  |
|                                 | 23 | .871    | .4655   | .0442   | 10.72 | 3 51.7                           | .2860  | 15 35.2                           | 6.76  |
|                                 | 24 | .878    | .4637   | .0457   | 10.75 | 3 51.1                           | .2866  | 15 31.2                           | 6.69  |
|                                 | 25 | .884    | .4619   | .0472   | 10.79 | 3 50.6                           | .2872  | 15 27.2                           | 6.61  |
|                                 | 26 | .891    | .4600   | .0487   | 10.83 | 3 50.0                           | .2878  | 15 23.2                           | 6.52  |
|                                 | 27 | .897    | .4581   | .0503   | 10.86 | 3 49.4                           | .2885  | 15 19.2                           | 6.44  |
|                                 | 28 | .904    | .4561   | .0518   | 10.90 | 3 48.9                           | .2891  | 15 15.3                           | 6.35  |
|                                 | 29 | .911    | .4542   | .0534   | 10.94 | 3 48.3                           | .2897  | 15 11.3                           | 6.27  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f       | x       | y       | g     | G                                | log h  | H                                | i     |
|---------------------------------|----|---------|---------|---------|-------|----------------------------------|--------|----------------------------------|-------|
| April                           | 30 | +0.8918 | —0.4522 | +0.0549 | 10.98 | 3 <sup>h</sup> 47 <sup>m</sup> 7 | 1.2904 | 15 <sup>h</sup> 7 <sup>m</sup> 4 | —6.18 |
| Mai                             | 1  | .925    | .4503   | .0565   | 11.02 | 3 47.1                           | .2910  | 15 3.5                           | 6.08  |
|                                 | 2  | .932    | .4483   | .0580   | 11.06 | 3 46.5                           | .2916  | 14 59.6                          | 5.99  |
|                                 | 3  | .939    | .4463   | .0595   | 11.10 | 3 45.9                           | .2923  | 14 55.7                          | 5.90  |
|                                 | 4  | .946    | .4442   | .0610   | 11.15 | 3 45.3                           | .2929  | 14 51.9                          | 5.81  |
|                                 | 5  | .954    | .4421   | .0626   | 11.19 | 3 44.7                           | .2935  | 14 48.0                          | 5.71  |
|                                 | 6  | .961    | .4400   | .0641   | 11.23 | 3 44.1                           | .2941  | 14 44.2                          | 5.61  |
|                                 | 7  | .968    | .4378   | .0656   | 11.27 | 3 43.5                           | .2948  | 14 40.4                          | 5.51  |
|                                 | 8  | .976    | .4356   | .0671   | 11.32 | 3 42.9                           | .2954  | 14 36.5                          | 5.41  |
|                                 | 9  | .984    | .4335   | .0686   | 11.36 | 3 42.2                           | .2960  | 14 32.7                          | 5.30  |
|                                 | 10 | +0.992  | —0.4313 | +0.0701 | 11.40 | 3 41.6                           | 1.2966 | 14 28.9                          | —5.20 |
|                                 | 11 | 0.999   | .4291   | .0716   | 11.45 | 3 41.0                           | .2972  | 14 25.2                          | 5.09  |
|                                 | 12 | 1.007   | .4269   | .0731   | 11.49 | 3 40.3                           | .2978  | 14 21.4                          | 4.98  |
|                                 | 13 | .015    | .4247   | .0746   | 11.53 | 3 39.7                           | .2984  | 14 17.6                          | 4.87  |
|                                 | 14 | .023    | .4225   | .0760   | 11.58 | 3 39.0                           | .2990  | 14 13.9                          | 4.76  |
|                                 | 15 | .031    | .4203   | .0775   | 11.62 | 3 38.3                           | .2996  | 14 10.2                          | 4.65  |
|                                 | 16 | .040    | .4180   | .0789   | 11.67 | 3 37.7                           | .3001  | 14 6.4                           | 4.54  |
|                                 | 17 | .048    | .4158   | .0803   | 11.71 | 3 37.0                           | .3007  | 14 2.7                           | 4.43  |
|                                 | 18 | .056    | .4135   | .0817   | 11.76 | 3 36.3                           | .3012  | 13 59.0                          | 4.31  |
|                                 | 19 | .065    | .4112   | .0830   | 11.81 | 3 35.6                           | .3018  | 13 55.4                          | 4.19  |
|                                 | 20 | +1.073  | —0.4089 | +0.0843 | 11.85 | 3 34.9                           | 1.3023 | 13 51.7                          | —4.08 |
|                                 | 21 | .082    | .4067   | .0856   | 11.90 | 3 34.2                           | .3028  | 13 48.0                          | 3.96  |
|                                 | 22 | .091    | .4044   | .0869   | 11.94 | 3 33.5                           | .3033  | 13 44.3                          | 3.84  |
|                                 | 23 | .100    | .4021   | .0881   | 11.99 | 3 32.8                           | .3038  | 13 40.7                          | 3.71  |
|                                 | 24 | .109    | .3998   | .0893   | 12.04 | 3 32.1                           | .3043  | 13 37.1                          | 3.59  |
|                                 | 25 | .117    | .3974   | .0905   | 12.08 | 3 31.4                           | .3048  | 13 33.4                          | 3.47  |
|                                 | 26 | .126    | .3951   | .0916   | 12.13 | 3 30.6                           | .3052  | 13 29.8                          | 3.35  |
|                                 | 27 | .135    | .3928   | .0927   | 12.17 | 3 29.9                           | .3057  | 13 26.2                          | 3.22  |
|                                 | 28 | .145    | .3905   | .0937   | 12.22 | 3 29.2                           | .3061  | 13 22.6                          | 3.10  |
|                                 | 29 | .154    | .3882   | .0947   | 12.27 | 3 28.4                           | .3065  | 13 19.0                          | 2.97  |
|                                 | 30 | +1.163  | —0.3859 | +0.0957 | 12.31 | 3 27.7                           | 1.3069 | 13 15.4                          | —2.84 |
| Juni                            | 31 | .172    | .3836   | .0967   | 12.36 | 3 26.9                           | .3072  | 13 11.8                          | 2.71  |
|                                 | 1  | .181    | .3813   | .0976   | 12.41 | 3 26.2                           | .3076  | 13 8.3                           | 2.59  |
|                                 | 2  | .191    | .3790   | .0985   | 12.45 | 3 25.4                           | .3080  | 13 4.7                           | 2.46  |
|                                 | 3  | .200    | .3767   | .0993   | 12.50 | 3 24.7                           | .3083  | 13 1.1                           | 2.33  |
|                                 | 4  | .210    | .3744   | .1001   | 12.54 | 3 23.9                           | .3086  | 12 57.6                          | 2.20  |
|                                 | 5  | .219    | .3721   | .1008   | 12.59 | 3 23.1                           | .3089  | 12 54.0                          | 2.06  |
|                                 | 6  | .229    | .3698   | .1015   | 12.64 | 3 22.3                           | .3092  | 12 50.5                          | 1.93  |
|                                 | 7  | .238    | .3675   | .1022   | 12.68 | 3 21.5                           | .3094  | 12 47.0                          | 1.80  |
|                                 | 8  | .248    | .3652   | .1028   | 12.73 | 3 20.7                           | .3097  | 12 43.4                          | 1.67  |
|                                 | 9  | +1.258  | —0.3630 | +0.1034 | 12.77 | 3 20.0                           | 1.3099 | 12 39.9                          | —1.53 |
|                                 | 10 | .267    | .3607   | .1039   | 12.82 | 3 19.2                           | .3101  | 12 36.4                          | 1.40  |
|                                 | 11 | .277    | .3585   | .1044   | 12.86 | 3 18.4                           | .3103  | 12 32.9                          | 1.27  |
|                                 | 12 | .287    | .3562   | .1048   | 12.91 | 3 17.6                           | .3105  | 12 29.3                          | 1.13  |
|                                 | 13 | .297    | .3540   | .1052   | 12.95 | 3 16.8                           | .3106  | 12 25.8                          | 1.00  |
|                                 | 14 | .306    | .3518   | .1055   | 13.00 | 3 15.9                           | .3107  | 12 22.3                          | 0.86  |
|                                 | 15 | .316    | .3496   | .1058   | 13.04 | 3 15.1                           | .3108  | 12 18.8                          | 0.73  |
|                                 | 16 | .326    | .3475   | .1060   | 13.08 | 3 14.3                           | .3109  | 12 15.3                          | 0.59  |
|                                 | 17 | .336    | .3453   | .1062   | 13.13 | 3 13.5                           | .3110  | 12 11.8                          | 0.46  |
|                                 | 18 | .346    | .3431   | .1063   | 13.17 | 3 12.6                           | .3111  | 12 8.3                           | 0.32  |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                | log h  | H                                | i     |
|---------------------------------|----|--------|---------|---------|-------|----------------------------------|--------|----------------------------------|-------|
| Juni                            | 19 | +1.356 | -0.3409 | +0.1064 | 13.22 | 3 <sup>h</sup> 11 <sup>m</sup> 8 | 1.3111 | 12 <sup>h</sup> 4 <sup>m</sup> 8 | -0.19 |
|                                 | 20 | .366   | .3387   | .1065   | 13.26 | 3 11.0                           | .3111  | 12 1.3                           | -0.05 |
|                                 | 21 | .375   | .3366   | .1065   | 13.30 | 3 10.2                           | .3111  | 11 57.8                          | +0.08 |
|                                 | 22 | .385   | .3345   | .1064   | 13.35 | 3 9.3                            | .3111  | 11 54.3                          | 0.22  |
|                                 | 23 | .395   | .3324   | .1063   | 13.39 | 3 8.5                            | .3111  | 11 50.8                          | 0.36  |
|                                 | 24 | .405   | .3303   | .1062   | 13.43 | 3 7.7                            | .3110  | 11 47.3                          | 0.49  |
|                                 | 25 | .415   | .3282   | .1060   | 13.47 | 3 6.8                            | .3109  | 11 43.8                          | 0.63  |
|                                 | 26 | .425   | .3261   | .1057   | 13.51 | 3 6.0                            | .3108  | 11 40.3                          | 0.76  |
|                                 | 27 | .434   | .3241   | .1054   | 13.55 | 3 5.2                            | .3107  | 11 36.8                          | 0.90  |
|                                 | 28 | .444   | .3221   | .1051   | 13.59 | 3 4.3                            | .3106  | 11 33.3                          | 1.03  |
|                                 | 29 | +1.454 | -0.3201 | +0.1047 | 13.63 | 3 3.5                            | 1.3104 | 11 29.8                          | +1.17 |
|                                 | 30 | .464   | .3181   | .1043   | 13.67 | 3 2.7                            | .3102  | 11 26.3                          | 1.30  |
| Juli                            | 1  | .473   | .3161   | .1038   | 13.71 | 3 1.8                            | .3100  | 11 22.8                          | 1.43  |
|                                 | 2  | .483   | .3141   | .1033   | 13.75 | 3 1.0                            | .3098  | 11 19.2                          | 1.57  |
|                                 | 3  | .493   | .3122   | .1027   | 13.79 | 3 0.2                            | .3096  | 11 15.7                          | 1.70  |
|                                 | 4  | .502   | .3103   | .1021   | 13.83 | 2 59.3                           | .3094  | 11 12.2                          | 1.83  |
|                                 | 5  | .512   | .3084   | .1014   | 13.87 | 2 58.5                           | .3091  | 11 8.7                           | 1.96  |
|                                 | 6  | .521   | .3065   | .1007   | 13.91 | 2 57.6                           | .3088  | 11 5.1                           | 2.10  |
|                                 | 7  | .531   | .3047   | .0999   | 13.94 | 2 56.8                           | .3085  | 11 1.6                           | 2.23  |
|                                 | 8  | .540   | .3029   | .0991   | 13.98 | 2 56.0                           | .3082  | 10 58.0                          | 2.36  |
|                                 | 9  | +1.550 | -0.3011 | +0.0983 | 14.02 | 2 55.1                           | 1.3079 | 10 54.5                          | +2.49 |
|                                 | 10 | .559   | .2993   | .0974   | 14.05 | 2 54.3                           | .3075  | 10 50.9                          | 2.61  |
|                                 | 11 | .568   | .2975   | .0965   | 14.09 | 2 53.5                           | .3072  | 10 47.4                          | 2.74  |
|                                 | 12 | .578   | .2957   | .0956   | 14.12 | 2 52.7                           | .3068  | 10 43.8                          | 2.87  |
|                                 | 13 | .587   | .2939   | .0946   | 14.16 | 2 51.9                           | .3064  | 10 40.2                          | 3.00  |
|                                 | 14 | .596   | .2922   | .0936   | 14.19 | 2 51.0                           | .3060  | 10 36.7                          | 3.12  |
|                                 | 15 | .605   | .2905   | .0925   | 14.23 | 2 50.2                           | .3056  | 10 33.1                          | 3.25  |
|                                 | 16 | .614   | .2888   | .0914   | 14.26 | 2 49.4                           | .3051  | 10 29.5                          | 3.37  |
|                                 | 17 | .623   | .2872   | .0903   | 14.29 | 2 48.6                           | .3047  | 10 25.9                          | 3.49  |
|                                 | 18 | .632   | .2856   | .0891   | 14.33 | 2 47.8                           | .3042  | 10 22.3                          | 3.61  |
|                                 | 19 | +1.641 | -0.2840 | +0.0879 | 14.36 | 2 47.0                           | 1.3037 | 10 18.7                          | +3.74 |
|                                 | 20 | .649   | .2824   | .0867   | 14.39 | 2 46.2                           | .3033  | 10 15.0                          | 3.86  |
|                                 | 21 | .658   | .2808   | .0854   | 14.42 | 2 45.4                           | .3028  | 10 11.4                          | 3.98  |
|                                 | 22 | .667   | .2792   | .0841   | 14.45 | 2 44.7                           | .3023  | 10 7.7                           | 4.09  |
|                                 | 23 | .675   | .2777   | .0828   | 14.48 | 2 43.9                           | .3017  | 10 4.1                           | 4.21  |
|                                 | 24 | .684   | .2762   | .0815   | 14.51 | 2 43.1                           | .3012  | 10 0.4                           | 4.33  |
|                                 | 25 | .692   | .2747   | .0801   | 14.54 | 2 42.3                           | .3006  | 9 56.7                           | 4.44  |
|                                 | 26 | .700   | .2732   | .0787   | 14.57 | 2 41.6                           | .3001  | 9 53.1                           | 4.56  |
|                                 | 27 | .709   | .2717   | .0773   | 14.60 | 2 40.8                           | .2995  | 9 49.4                           | 4.67  |
|                                 | 28 | .717   | .2703   | .0759   | 14.63 | 2 40.0                           | .2989  | 9 45.6                           | 4.78  |
| August                          | 29 | +1.725 | -0.2689 | +0.0745 | 14.66 | 2 39.3                           | 1.2984 | 9 41.9                           | +4.89 |
|                                 | 30 | .733   | .2675   | .0731   | 14.69 | 2 38.5                           | .2978  | 9 38.2                           | 4.99  |
|                                 | 31 | .741   | .2661   | .0716   | 14.72 | 2 37.8                           | .2972  | 9 34.5                           | 5.10  |
|                                 | 1  | .748   | .2647   | .0701   | 14.74 | 2 37.1                           | .2966  | 9 30.7                           | 5.21  |
|                                 | 2  | .756   | .2633   | .0686   | 14.77 | 2 36.3                           | .2960  | 9 27.0                           | 5.31  |
|                                 | 3  | .764   | .2620   | .0671   | 14.80 | 2 35.6                           | .2954  | 9 23.2                           | 5.41  |
|                                 | 4  | .771   | .2607   | .0656   | 14.82 | 2 34.9                           | .2947  | 9 19.4                           | 5.51  |
|                                 | 5  | .779   | .2594   | .0640   | 14.85 | 2 34.2                           | .2941  | 9 15.6                           | 5.61  |
|                                 | 6  | .787   | .2582   | .0625   | 14.88 | 2 33.5                           | .2935  | 9 11.8                           | 5.71  |
|                                 | 7  | .794   | .2569   | .0610   | 14.90 | 2 32.9                           | .2929  | 9 8.0                            | 5.81  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g      | G                                | log h  | H                               | i     |
|---------------------------------|----|--------|---------|---------|--------|----------------------------------|--------|---------------------------------|-------|
| August                          | 8  | +1.801 | —0.2557 | +0.0595 | 14.793 | 2 <sup>h</sup> 32 <sup>m</sup> 2 | 1.2923 | 9 <sup>h</sup> 4 <sup>m</sup> 1 | +5.90 |
|                                 | 9  | .808   | .2544   | .0579   | 14.95  | 2 31.5                           | .2916  | 9 0.3                           | 6.00  |
|                                 | 10 | .815   | .2532   | .0564   | 14.98  | 2 30.8                           | .2910  | 8 56.4                          | 6.09  |
|                                 | 11 | .822   | .2519   | .0549   | 15.00  | 2 30.2                           | .2904  | 8 52.5                          | 6.18  |
|                                 | 12 | .829   | .2507   | .0534   | 15.02  | 2 29.5                           | .2897  | 8 48.7                          | 6.27  |
|                                 | 13 | .836   | .2495   | .0518   | 15.05  | 2 28.9                           | .2891  | 8 44.8                          | 6.35  |
|                                 | 14 | .842   | .2483   | .0503   | 15.07  | 2 28.2                           | .2885  | 8 40.9                          | 6.44  |
|                                 | 15 | .849   | .2471   | .0488   | 15.10  | 2 27.6                           | .2879  | 8 36.9                          | 6.52  |
|                                 | 16 | .855   | .2460   | .0473   | 15.12  | 2 27.0                           | .2873  | 8 33.0                          | 6.60  |
|                                 | 17 | .862   | .2449   | .0458   | 15.14  | 2 26.4                           | .2866  | 8 29.1                          | 6.68  |
|                                 | 18 | +1.868 | —0.2438 | +0.0444 | 15.16  | 2 25.8                           | 1.2860 | 8 25.1                          | +6.76 |
|                                 | 19 | .875   | .2427   | .0430   | 15.19  | 2 25.2                           | .2854  | 8 21.1                          | 6.83  |
|                                 | 20 | .881   | .2416   | .0416   | 15.21  | 2 24.6                           | .2849  | 8 17.1                          | 6.91  |
|                                 | 21 | .887   | .2405   | .0402   | 15.23  | 2 24.0                           | .2843  | 8 13.1                          | 6.98  |
|                                 | 22 | .893   | .2394   | .0388   | 15.25  | 2 23.5                           | .2837  | 8 9.1                           | 7.05  |
|                                 | 23 | .899   | .2383   | .0374   | 15.27  | 2 22.9                           | .2831  | 8 5.1                           | 7.12  |
|                                 | 24 | .905   | .2372   | .0361   | 15.30  | 2 22.4                           | .2826  | 8 1.1                           | 7.18  |
|                                 | 25 | .911   | .2361   | .0348   | 15.32  | 2 21.9                           | .2820  | 7 57.0                          | 7.25  |
|                                 | 26 | .917   | .2350   | .0335   | 15.34  | 2 21.4                           | .2815  | 7 53.0                          | 7.31  |
|                                 | 27 | .922   | .2339   | .0323   | 15.36  | 2 20.8                           | .2810  | 7 48.9                          | 7.37  |
|                                 | 28 | +1.928 | —0.2328 | +0.0311 | 15.38  | 2 20.3                           | 1.2805 | 7 44.8                          | +7.43 |
|                                 | 29 | .934   | .2317   | .0299   | 15.40  | 2 19.8                           | .2800  | 7 40.7                          | 7.48  |
|                                 | 30 | .939   | .2307   | .0287   | 15.42  | 2 19.4                           | .2795  | 7 36.6                          | 7.54  |
|                                 | 31 | .944   | .2296   | .0276   | 15.45  | 2 18.9                           | .2790  | 7 32.5                          | 7.59  |
| Septbr.                         | 1  | .950   | .2286   | .0266   | 15.47  | 2 18.4                           | .2786  | 7 28.4                          | 7.64  |
|                                 | 2  | .955   | .2275   | .0256   | 15.49  | 2 18.0                           | .2781  | 7 24.2                          | 7.68  |
|                                 | 3  | .960   | .2265   | .0246   | 15.51  | 2 17.5                           | .2777  | 7 20.1                          | 7.73  |
|                                 | 4  | .965   | .2254   | .0236   | 15.53  | 2 17.1                           | .2773  | 7 15.9                          | 7.77  |
|                                 | 5  | .971   | .2243   | .0227   | 15.55  | 2 16.7                           | .2769  | 7 11.8                          | 7.81  |
|                                 | 6  | .976   | .2233   | .0219   | 15.57  | 2 16.3                           | .2766  | 7 7.6                           | 7.85  |
|                                 | 7  | +1.981 | —0.2222 | +0.0211 | 15.60  | 2 15.9                           | 1.2762 | 7 3.4                           | +7.89 |
|                                 | 8  | .986   | .2211   | .0203   | 15.62  | 2 15.5                           | .2759  | 6 59.2                          | 7.92  |
|                                 | 9  | .991   | .2200   | .0196   | 15.64  | 2 15.1                           | .2756  | 6 55.0                          | 7.95  |
|                                 | 10 | 1.996  | .2189   | .0189   | 15.66  | 2 14.7                           | .2753  | 6 50.8                          | 7.98  |
|                                 | 11 | 2.001  | .2178   | .0183   | 15.68  | 2 14.4                           | .2750  | 6 46.6                          | 8.01  |
|                                 | 12 | .006   | .2167   | .0177   | 15.71  | 2 14.0                           | .2748  | 6 42.4                          | 8.03  |
|                                 | 13 | .011   | .2156   | .0172   | 15.73  | 2 13.7                           | .2746  | 6 38.1                          | 8.05  |
|                                 | 14 | .016   | .2145   | .0167   | 15.75  | 2 13.3                           | .2744  | 6 33.9                          | 8.07  |
|                                 | 15 | .020   | .2133   | .0163   | 15.78  | 2 13.0                           | .2742  | 6 29.7                          | 8.09  |
|                                 | 16 | .025   | .2121   | .0160   | 15.80  | 2 12.7                           | .2741  | 6 25.4                          | 8.11  |
|                                 | 17 | +2.030 | —0.2109 | +0.0157 | 15.82  | 2 12.4                           | 1.2739 | 6 21.2                          | +8.12 |
|                                 | 18 | .035   | .2097   | .0154   | 15.85  | 2 12.1                           | .2738  | 6 16.9                          | 8.13  |
|                                 | 19 | .040   | .2085   | .0152   | 15.87  | 2 11.8                           | .2737  | 6 12.6                          | 8.14  |
|                                 | 20 | .044   | .2073   | .0151   | 15.89  | 2 11.5                           | .2737  | 6 8.4                           | 8.14  |
|                                 | 21 | .049   | .2061   | .0150   | 15.92  | 2 11.3                           | .2737  | 6 4.1                           | 8.15  |
|                                 | 22 | .054   | .2048   | .0150   | 15.94  | 2 11.0                           | .2737  | 5 59.8                          | 8.15  |
|                                 | 23 | .059   | .2035   | .0150   | 15.97  | 2 10.8                           | .2737  | 5 55.6                          | 8.15  |
|                                 | 24 | .063   | .2022   | .0151   | 16.00  | 2 10.5                           | .2737  | 5 51.3                          | 8.14  |
|                                 | 25 | .068   | .2009   | .0153   | 16.02  | 2 10.3                           | .2737  | 5 47.0                          | 8.14  |
|                                 | 26 | .073   | .1996   | .0155   | 16.05  | 2 10.0                           | .2738  | 5 42.7                          | 8.13  |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                               | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|---------------------------------|--------|-----------------------------------|---------------------|
| Septbr.                         | 27 | +2. <sup>8</sup> 078 | —0.1982 | +0.0157 | 16. <sup>0</sup> 08 | 2 <sup>h</sup> 9 <sup>m</sup> 8 | 1.2739 | 5 <sup>h</sup> 38 <sup>m</sup> .4 | +8. <sup>7</sup> 12 |
|                                 | 28 | .082                 | .1968   | .0160   | 16.10               | 2 9.6                           | .2741  | 5 34.1                            | 8.11                |
|                                 | 29 | .087                 | .1954   | .0164   | 16.13               | 2 9.4                           | .2742  | 5 29.9                            | 8.09                |
|                                 | 30 | .092                 | .1940   | .0168   | 16.16               | 2 9.2                           | .2744  | 5 25.6                            | 8.07                |
| Oktbr.                          | 1  | .097                 | .1926   | .0173   | 16.19               | 2 9.0                           | .2746  | 5 21.3                            | 8.05                |
|                                 | 2  | .102                 | .1911   | .0178   | 16.22               | 2 8.8                           | .2748  | 5 17.0                            | 8.03                |
|                                 | 3  | .107                 | .1896   | .0184   | 16.25               | 2 8.6                           | .2751  | 5 12.8                            | 8.00                |
|                                 | 4  | .112                 | .1881   | .0191   | 16.28               | 2 8.5                           | .2754  | 5 8.5                             | 7.97                |
|                                 | 5  | .117                 | .1865   | .0198   | 16.31               | 2 8.3                           | .2757  | 5 4.2                             | 7.94                |
|                                 | 6  | .122                 | .1849   | .0205   | 16.34               | 2 8.1                           | .2760  | 5 0.0                             | 7.91                |
|                                 | 7  | +2.127               | —0.1833 | +0.0213 | 16.38               | 2 8.0                           | 1.2763 | 4 55.7                            | +7.88               |
|                                 | 8  | .132                 | .1816   | .0221   | 16.41               | 2 7.8                           | .2767  | 4 51.4                            | 7.84                |
|                                 | 9  | .137                 | .1799   | .0230   | 16.44               | 2 7.7                           | .2770  | 4 47.2                            | 7.80                |
|                                 | 10 | .142                 | .1782   | .0239   | 16.48               | 2 7.6                           | .2774  | 4 42.9                            | 7.76                |
|                                 | 11 | .148                 | .1765   | .0249   | 16.51               | 2 7.4                           | .2778  | 4 38.7                            | 7.72                |
|                                 | 12 | .153                 | .1748   | .0259   | 16.55               | 2 7.3                           | .2783  | 4 34.5                            | 7.67                |
|                                 | 13 | .158                 | .1730   | .0270   | 16.58               | 2 7.2                           | .2787  | 4 30.2                            | 7.62                |
|                                 | 14 | .164                 | .1712   | .0281   | 16.62               | 2 7.0                           | .2792  | 4 26.0                            | 7.57                |
|                                 | 15 | .169                 | .1694   | .0292   | 16.66               | 2 6.9                           | .2797  | 4 21.8                            | 7.52                |
|                                 | 16 | .175                 | .1675   | .0304   | 16.69               | 2 6.8                           | .2802  | 4 17.6                            | 7.46                |
|                                 | 17 | +2.181               | —0.1656 | +0.0316 | 16.73               | 2 6.7                           | 1.2807 | 4 13.4                            | +7.40               |
|                                 | 18 | .186                 | .1637   | .0329   | 16.77               | 2 6.5                           | .2812  | 4 9.2                             | 7.34                |
|                                 | 19 | .192                 | .1617   | .0342   | 16.81               | 2 6.4                           | .2818  | 4 5.0                             | 7.28                |
|                                 | 20 | .198                 | .1597   | .0355   | 16.85               | 2 6.3                           | .2823  | 4 0.8                             | 7.21                |
|                                 | 21 | .204                 | .1576   | .0368   | 16.89               | 2 6.2                           | .2829  | 3 56.7                            | 7.15                |
|                                 | 22 | .210                 | .1555   | .0382   | 16.93               | 2 6.1                           | .2835  | 3 52.5                            | 7.08                |
|                                 | 23 | .216                 | .1534   | .0396   | 16.98               | 2 6.0                           | .2841  | 3 48.4                            | 7.01                |
|                                 | 24 | .223                 | .1513   | .0410   | 17.02               | 2 5.9                           | .2847  | 3 44.2                            | 6.93                |
|                                 | 25 | .229                 | .1491   | .0425   | 17.06               | 2 5.8                           | .2853  | 3 40.1                            | 6.86                |
|                                 | 26 | .235                 | .1469   | .0440   | 17.11               | 2 5.7                           | .2859  | 3 36.0                            | 6.78                |
|                                 | 27 | +2.242               | —0.1447 | +0.0455 | 17.15               | 2 5.6                           | 1.2865 | 3 31.8                            | +6.70               |
|                                 | 28 | .248                 | .1424   | .0470   | 17.20               | 2 5.5                           | .2871  | 3 27.7                            | 6.62                |
|                                 | 29 | .255                 | .1401   | .0486   | 17.24               | 2 5.3                           | .2878  | 3 23.6                            | 6.53                |
|                                 | 30 | .262                 | .1378   | .0501   | 17.29               | 2 5.2                           | .2884  | 3 19.6                            | 6.45                |
|                                 | 31 | .269                 | .1354   | .0517   | 17.34               | 2 5.1                           | .2891  | 3 15.5                            | 6.36                |
| Novbr.                          | 1  | .276                 | .1330   | .0533   | 17.38               | 2 5.0                           | .2897  | 3 11.4                            | 6.27                |
|                                 | 2  | .283                 | .1306   | .0549   | 17.43               | 2 4.9                           | .2904  | 3 7.4                             | 6.18                |
|                                 | 3  | .290                 | .1282   | .0565   | 17.48               | 2 4.8                           | .2910  | 3 3.3                             | 6.08                |
|                                 | 4  | .297                 | .1257   | .0581   | 17.53               | 2 4.6                           | .2917  | 2 59.3                            | 5.99                |
|                                 | 5  | .305                 | .1232   | .0597   | 17.58               | 2 4.5                           | .2924  | 2 55.3                            | 5.89                |
|                                 | 6  | +2.312               | —0.1207 | +0.0613 | 17.63               | 2 4.4                           | 1.2930 | 2 51.3                            | +5.79               |
|                                 | 7  | .320                 | .1181   | .0629   | 17.68               | 2 4.2                           | .2937  | 2 47.3                            | 5.69                |
|                                 | 8  | .327                 | .1155   | .0645   | 17.74               | 2 4.1                           | .2943  | 2 43.3                            | 5.59                |
|                                 | 9  | .335                 | .1129   | .0661   | 17.79               | 2 3.9                           | .2950  | 2 39.3                            | 5.48                |
|                                 | 10 | .343                 | .1103   | .0677   | 17.84               | 2 3.7                           | .2956  | 2 35.3                            | 5.37                |
|                                 | 11 | .351                 | .1076   | .0693   | 17.89               | 2 3.6                           | .2962  | 2 31.4                            | 5.26                |
|                                 | 12 | .359                 | .1049   | .0708   | 17.95               | 2 3.5                           | .2969  | 2 27.4                            | 5.15                |
|                                 | 13 | .367                 | .1022   | .0724   | 18.00               | 2 3.4                           | .2975  | 2 23.5                            | 5.04                |
|                                 | 14 | .375                 | .0994   | .0739   | 18.06               | 2 3.2                           | .2981  | 2 19.5                            | 4.93                |
|                                 | 15 | .383                 | .0967   | .0754   | 18.11               | 2 3.0                           | .2987  | 2 15.6                            | 4.81                |

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| <sup>12<sup>h</sup></sup><br>M. Z. Berlin | f                    | x       | y       | g      | G                               | log h  | H                                | i      |
|-------------------------------------------|----------------------|---------|---------|--------|---------------------------------|--------|----------------------------------|--------|
| Novbr. 16                                 | +2. <sup>s</sup> 392 | −0.0939 | +0.0769 | 18."17 | 2 <sup>h</sup> 2 <sup>m</sup> 9 | 1.2993 | 2 <sup>h</sup> 11 <sup>m</sup> 7 | +4."70 |
| 17                                        | .400                 | .0911   | .0784   | 18.22  | 2 2.7                           | .2999  | 2 7.8                            | 4.58   |
| 18                                        | .409                 | .0883   | .0799   | 18.28  | 2 2.5                           | .3005  | 2 3.9                            | 4.46   |
| 19                                        | .418                 | .0855   | .0813   | 18.34  | 2 2.3                           | .3011  | 2 0.0                            | 4.34   |
| 20                                        | .426                 | .0826   | .0827   | 18.40  | 2 2.1                           | .3017  | 1 56.1                           | 4.22   |
| 21                                        | .435                 | .0797   | .0841   | 18.45  | 2 1.9                           | .3022  | 1 52.3                           | 4.09   |
| 22                                        | .444                 | .0768   | .0855   | 18.51  | 2 1.7                           | .3028  | 1 48.4                           | 3.97   |
| 23                                        | .453                 | .0739   | .0868   | 18.57  | 2 1.5                           | .3033  | 1 44.5                           | 3.84   |
| 24                                        | .463                 | .0710   | .0881   | 18.63  | 2 1.3                           | .3038  | 1 40.7                           | 3.71   |
| 25                                        | .472                 | .0681   | .0894   | 18.69  | 2 1.0                           | .3043  | 1 36.9                           | 3.59   |
| 26                                        | +2.481               | −0.0651 | +0.0906 | 18.75  | 2 0.8                           | 1.3048 | 1 33.0                           | +3.46  |
| 27                                        | .491                 | .0621   | .0918   | 18.81  | 2 0.6                           | .3053  | 1 29.2                           | 3.33   |
| 28                                        | .500                 | .0591   | .0929   | 18.87  | 2 0.3                           | .3058  | 1 25.4                           | 3.19   |
| 29                                        | .509                 | .0561   | .0940   | 18.93  | 2 0.1                           | .3062  | 1 21.6                           | 3.06   |
| 30                                        | .519                 | .0531   | .0951   | 18.99  | 1 59.8                          | .3066  | 1 17.8                           | 2.93   |
| Dezbr. 1                                  | .529                 | .0501   | .0961   | 19.05  | 1 59.5                          | .3070  | 1 14.0                           | 2.79   |
| 2                                         | .538                 | .0471   | .0971   | 19.11  | 1 59.3                          | .3074  | 1 10.2                           | 2.65   |
| 3                                         | .548                 | .0441   | .0980   | 19.17  | 1 59.0                          | .3078  | 1 6.4                            | 2.52   |
| 4                                         | .558                 | .0411   | .0989   | 19.23  | 1 58.7                          | .3082  | 1 2.6                            | 2.38   |
| 5                                         | .568                 | .0381   | .0998   | 19.29  | 1 58.4                          | .3085  | 0 58.8                           | 2.24   |
| 6                                         | +2.578               | −0.0351 | +0.1006 | 19.35  | 1 58.1                          | 1.3088 | 0 55.1                           | +2.10  |
| 7                                         | .588                 | .0321   | .1014   | 19.41  | 1 57.8                          | .3091  | 0 51.3                           | 1.96   |
| 8                                         | .598                 | .0291   | .1021   | 19.47  | 1 57.5                          | .3094  | 0 47.5                           | 1.82   |
| 9                                         | .608                 | .0261   | .1028   | 19.53  | 1 57.2                          | .3097  | 0 43.8                           | 1.68   |
| 10                                        | .618                 | .0231   | .1034   | 19.59  | 1 56.9                          | .3099  | 0 40.0                           | 1.54   |
| 11                                        | .628                 | .0200   | .1039   | 19.65  | 1 56.5                          | .3101  | 0 36.3                           | 1.40   |
| 12                                        | .639                 | .0170   | .1044   | 19.71  | 1 56.2                          | .3103  | 0 32.5                           | 1.25   |
| 13                                        | .649                 | .0140   | .1048   | 19.77  | 1 55.9                          | .3105  | 0 28.8                           | 1.11   |
| 14                                        | .659                 | .0110   | .1052   | 19.83  | 1 55.5                          | .3106  | 0 25.0                           | 0.97   |
| 15                                        | .669                 | .0080   | .1056   | 19.89  | 1 55.2                          | .3108  | 0 21.3                           | 0.82   |
| 16                                        | +2.680               | −0.0051 | +0.1059 | 19.95  | 1 54.8                          | 1.3109 | 0 17.6                           | +0.68  |
| 17                                        | .690                 | −0.0021 | .1061   | 20.01  | 1 54.4                          | .3110  | 0 13.8                           | 0.54   |
| 18                                        | .700                 | +0.0008 | .1063   | 20.07  | 1 54.1                          | .3110  | 0 10.1                           | 0.39   |
| 19                                        | .711                 | .0038   | .1064   | 20.13  | 1 53.7                          | .3111  | 0 6.3                            | 0.25   |
| 20                                        | .721                 | .0067   | .1065   | 20.19  | 1 53.3                          | .3111  | 0 2.6                            | +0.10  |
| 21                                        | .731                 | .0097   | .1065   | 20.25  | 1 52.9                          | .3111  | 23 58.9                          | −0.04  |
| 22                                        | .742                 | .0126   | .1064   | 20.30  | 1 52.6                          | .3111  | 23 55.1                          | 0.19   |
| 23                                        | .752                 | .0155   | .1063   | 20.36  | 1 52.2                          | .3111  | 23 51.4                          | 0.33   |
| 24                                        | .763                 | .0184   | .1062   | 20.42  | 1 51.8                          | .3110  | 23 47.6                          | 0.48   |
| 25                                        | .773                 | .0213   | .1060   | 20.48  | 1 51.4                          | .3109  | 23 43.9                          | 0.62   |
| 26                                        | +2.783               | +0.0241 | +0.1057 | 20.53  | 1 51.0                          | 1.3108 | 23 40.1                          | −0.77  |
| 27                                        | .794                 | .0269   | .1054   | 20.59  | 1 50.5                          | .3107  | 23 36.4                          | 0.91   |
| 28                                        | .804                 | .0297   | .1051   | 20.65  | 1 50.1                          | .3105  | 23 32.6                          | 1.06   |
| 29                                        | .814                 | .0325   | .1047   | 20.70  | 1 49.7                          | .3104  | 23 28.9                          | 1.20   |
| 30                                        | .824                 | .0352   | .1042   | 20.76  | 1 49.3                          | .3102  | 23 25.1                          | 1.34   |
| 31                                        | .835                 | .0379   | .1037   | 20.81  | 1 48.9                          | .3100  | 23 21.4                          | 1.48   |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                  | G                                 | log h  | H                                  | i                   |
|---------------------------------|----|----------------------|---------|---------|--------------------|-----------------------------------|--------|------------------------------------|---------------------|
| Januar                          | 1  | —0 <sup>s</sup> .226 | —0.5201 | +0.1030 | 9 <sup>h</sup> .62 | 6 <sup>h</sup> 35 <sup>m</sup> .2 | 1.3097 | 23 <sup>h</sup> 17 <sup>m</sup> .6 | —1 <sup>h</sup> .63 |
|                                 | 2  | .216                 | .5211   | .1023   | 9.60               | 6 33.7                            | .3095  | 23 13.9                            | 1.77                |
|                                 | 3  | .206                 | .5221   | .1016   | 9.58               | 6 32.2                            | .3092  | 23 10.1                            | 1.91                |
|                                 | 4  | .196                 | .5232   | .1009   | 9.56               | 6 30.7                            | .3080  | 23 6.3                             | 2.05                |
|                                 | 5  | .186                 | .5242   | .1001   | 9.54               | 6 29.1                            | .3086  | 23 2.5                             | 2.19                |
|                                 | 6  | .176                 | .5253   | .0993   | 9.52               | 6 27.6                            | .3083  | 22 58.7                            | 2.33                |
|                                 | 7  | .166                 | .5263   | .0984   | 9.50               | 6 26.1                            | .3079  | 22 54.9                            | 2.47                |
|                                 | 8  | .156                 | .5273   | .0975   | 9.48               | 6 24.6                            | .3076  | 22 51.1                            | 2.61                |
|                                 | 9  | .147                 | .5283   | .0965   | 9.46               | 6 23.1                            | .3072  | 22 47.3                            | 2.74                |
|                                 | 10 | .137                 | .5294   | .0955   | 9.44               | 6 21.6                            | .3068  | 22 43.5                            | 2.88                |
|                                 | 11 | —0.127               | —0.5304 | +0.0944 | 9.42               | 6 20.1                            | 1.3064 | 22 39.7                            | —3.01               |
|                                 | 12 | .118                 | .5315   | .0933   | 9.39               | 6 18.7                            | .3059  | 22 35.9                            | 3.15                |
|                                 | 13 | .108                 | .5325   | .0922   | 9.37               | 6 17.2                            | .3055  | 22 32.1                            | 3.28                |
|                                 | 14 | .099                 | .5336   | .0910   | 9.35               | 6 15.7                            | .3050  | 22 28.2                            | 3.41                |
|                                 | 15 | .089                 | .5347   | .0898   | 9.33               | 6 14.2                            | .3045  | 22 24.4                            | 3.54                |
|                                 | 16 | .080                 | .5358   | .0885   | 9.31               | 6 12.8                            | .3040  | 22 20.5                            | 3.67                |
|                                 | 17 | .071                 | .5368   | .0872   | 9.29               | 6 11.3                            | .3035  | 22 16.6                            | 3.80                |
|                                 | 18 | .062                 | .5379   | .0859   | 9.26               | 6 9.8                             | .3030  | 22 12.8                            | 3.93                |
|                                 | 19 | .053                 | .5390   | .0845   | 9.24               | 6 8.4                             | .3024  | 22 8.9                             | 4.06                |
|                                 | 20 | .044                 | .5401   | .0831   | 9.22               | 6 7.0                             | .3019  | 22 5.0                             | 4.18                |
| Februar                         | 21 | —0.035               | —0.5412 | +0.0817 | 9.20               | 6 5.6                             | 1.3013 | 22 1.1                             | —4.30               |
|                                 | 22 | .026                 | .5423   | .0802   | 9.18               | 6 4.1                             | .3007  | 21 57.2                            | 4.43                |
|                                 | 23 | .018                 | .5434   | .0788   | 9.15               | 6 2.7                             | .3001  | 21 53.3                            | 4.55                |
|                                 | 24 | —0.009               | .5445   | .0773   | 9.13               | 6 1.3                             | .2995  | 21 49.3                            | 4.67                |
|                                 | 25 | .000                 | .5456   | .0758   | 9.11               | 5 59.9                            | .2989  | 21 45.4                            | 4.79                |
|                                 | 26 | +0.008               | .5466   | .0743   | 9.09               | 5 58.6                            | .2983  | 21 41.5                            | 4.90                |
|                                 | 27 | .016                 | .5477   | .0728   | 9.07               | 5 57.2                            | .2977  | 21 37.5                            | 5.02                |
|                                 | 28 | .024                 | .5487   | .0712   | 9.05               | 5 55.8                            | .2970  | 21 33.5                            | 5.13                |
|                                 | 29 | .032                 | .5497   | .0696   | 9.03               | 5 54.5                            | .2964  | 21 29.5                            | 5.24                |
|                                 | 30 | .041                 | .5507   | .0680   | 9.01               | 5 53.1                            | .2957  | 21 25.6                            | 5.35                |
|                                 | 31 | +0.049               | —0.5517 | +0.0664 | 8.99               | 5 51.8                            | 1.2951 | 21 21.6                            | —5.46               |
|                                 | 1  | .056                 | .5527   | .0648   | 8.97               | 5 50.4                            | .2944  | 21 17.5                            | 5.56                |
|                                 | 2  | .064                 | .5537   | .0632   | 8.95               | 5 49.1                            | .2938  | 21 13.5                            | 5.67                |
|                                 | 3  | .072                 | .5546   | .0616   | 8.93               | 5 47.8                            | .2931  | 21 9.5                             | 5.77                |
|                                 | 4  | .079                 | .5556   | .0599   | 8.91               | 5 46.5                            | .2925  | 21 5.5                             | 5.87                |
|                                 | 5  | .087                 | .5565   | .0583   | 8.89               | 5 45.3                            | .2918  | 21 1.4                             | 5.97                |
|                                 | 6  | .094                 | .5575   | .0567   | 8.87               | 5 44.0                            | .2911  | 20 57.3                            | 6.07                |
|                                 | 7  | .101                 | .5584   | .0551   | 8.86               | 5 42.8                            | .2905  | 20 53.2                            | 6.16                |
|                                 | 8  | .108                 | .5593   | .0535   | 8.84               | 5 41.5                            | .2898  | 20 49.1                            | 6.26                |
|                                 | 9  | .115                 | .5602   | .0519   | 8.82               | 5 40.3                            | .2892  | 20 45.0                            | 6.35                |
|                                 | 10 | +0.122               | —0.5611 | +0.0503 | 8.80               | 5 39.1                            | 1.2885 | 20 40.9                            | —6.44               |
|                                 | 11 | .129                 | .5619   | .0488   | 8.78               | 5 37.9                            | .2879  | 20 36.8                            | 6.52                |
|                                 | 12 | .136                 | .5627   | .0472   | 8.77               | 5 36.7                            | .2872  | 20 32.7                            | 6.61                |
|                                 | 13 | .142                 | .5635   | .0457   | 8.75               | 5 35.5                            | .2866  | 20 28.5                            | 6.69                |
|                                 | 14 | .149                 | .5643   | .0442   | 8.74               | 5 34.3                            | .2859  | 20 24.4                            | 6.77                |
|                                 | 15 | .155                 | .5651   | .0427   | 8.72               | 5 33.1                            | .2853  | 20 20.2                            | 6.85                |
|                                 | 16 | .162                 | .5659   | .0412   | 8.71               | 5 31.9                            | .2847  | 20 16.0                            | 6.93                |
|                                 | 17 | .168                 | .5666   | .0398   | 8.69               | 5 30.8                            | .2841  | 20 11.9                            | 7.00                |
|                                 | 18 | .174                 | .5673   | .0383   | 8.68               | 5 29.7                            | .2835  | 20 7.7                             | 7.07                |
|                                 | 19 | .180                 | .5680   | .0369   | 8.66               | 5 28.6                            | .2829  | 20 3.5                             | 7.14                |

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| <sup>12h</sup><br>M. Z. Berlin | f      | x       | y       | g    | G                                 | log h  | H                                  | i     |
|--------------------------------|--------|---------|---------|------|-----------------------------------|--------|------------------------------------|-------|
| Februar 20                     | +0.186 | -0.5687 | +0.0355 | 8.65 | 5 <sup>h</sup> 27 <sup>m</sup> .5 | 1.2823 | 19 <sup>h</sup> 59 <sup>m</sup> .3 | -7.21 |
| 21                             | .192   | .5603   | .0342   | 8.64 | 5 26.4                            | .2818  | 19 55.0                            | 7.28  |
| 22                             | .198   | .5609   | .0329   | 8.62 | 5 25.3                            | .2812  | 19 50.8                            | 7.34  |
| 23                             | .204   | .5705   | .0316   | 8.61 | 5 24.2                            | .2807  | 19 46.6                            | 7.40  |
| 24                             | .210   | .5711   | .0303   | 8.60 | 5 23.1                            | .2801  | 19 42.3                            | 7.46  |
| 25                             | .216   | .5716   | .0291   | 8.59 | 5 22.1                            | .2796  | 19 38.1                            | 7.52  |
| 26                             | .221   | .5721   | .0280   | 8.58 | 5 21.1                            | .2791  | 19 33.8                            | 7.57  |
| 27                             | .227   | .5726   | .0269   | 8.57 | 5 20.1                            | .2787  | 19 29.5                            | 7.62  |
| 28                             | .232   | .5730   | .0258   | 8.56 | 5 19.1                            | .2782  | 19 25.2                            | 7.67  |
| März 1                         | .237   | .5734   | .0248   | 8.55 | 5 18.1                            | .2778  | 19 21.0                            | 7.72  |
| 2                              | +0.243 | -0.5738 | +0.0238 | 8.55 | 5 17.1                            | 1.2774 | 19 16.7                            | -7.76 |
| 3                              | .248   | .5741   | .0228   | 8.54 | 5 16.1                            | .2770  | 19 12.4                            | 7.80  |
| 4                              | .253   | .5744   | .0219   | 8.53 | 5 15.1                            | .2766  | 19 8.1                             | 7.84  |
| 5                              | .258   | .5747   | .0211   | 8.53 | 5 14.1                            | .2763  | 19 3.8                             | 7.88  |
| 6                              | .264   | .5750   | .0203   | 8.52 | 5 13.2                            | .2759  | 18 59.5                            | 7.92  |
| 7                              | .269   | .5752   | .0196   | 8.52 | 5 12.2                            | .2756  | 18 55.1                            | 7.95  |
| 8                              | .274   | .5754   | .0189   | 8.52 | 5 11.3                            | .2753  | 18 50.8                            | 7.98  |
| 9                              | .279   | .5755   | .0183   | 8.51 | 5 10.4                            | .2750  | 18 46.5                            | 8.01  |
| 10                             | .284   | .5756   | .0177   | 8.51 | 5 9.5                             | .2748  | 18 42.2                            | 8.03  |
| 11                             | .289   | .5757   | .0172   | 8.51 | 5 8.6                             | .2746  | 18 37.9                            | 8.06  |
| 12                             | +0.294 | -0.5758 | +0.0167 | 8.51 | 5 7.7                             | 1.2744 | 18 33.5                            | -8.08 |
| 13                             | .298   | .5758   | .0163   | 8.51 | 5 6.8                             | .2742  | 18 29.2                            | 8.09  |
| 14                             | .303   | .5758   | .0159   | 8.51 | 5 6.0                             | .2740  | 18 24.9                            | 8.11  |
| 15                             | .308   | .5757   | .0156   | 8.51 | 5 5.1                             | .2739  | 18 20.5                            | 8.12  |
| 16                             | .313   | .5756   | .0154   | 8.51 | 5 4.2                             | .2738  | 18 16.2                            | 8.13  |
| 17                             | .318   | .5755   | .0152   | 8.51 | 5 3.4                             | .2737  | 18 11.9                            | 8.14  |
| 18                             | .323   | .5753   | .0151   | 8.52 | 5 2.5                             | .2737  | 18 7.5                             | 8.14  |
| 19                             | .327   | .5751   | .0150   | 8.52 | 5 1.7                             | .2736  | 18 3.2                             | 8.15  |
| 20                             | .332   | .5749   | .0150   | 8.52 | 5 0.8                             | .2736  | 17 58.9                            | 8.15  |
| 21                             | .337   | .5746   | .0150   | 8.53 | 5 0.0                             | .2737  | 17 54.6                            | 8.15  |
| 22                             | +0.342 | -0.5743 | +0.0151 | 8.54 | 4 59.2                            | 1.2737 | 17 50.2                            | -8.14 |
| 23                             | .347   | .5739   | .0153   | 8.54 | 4 58.4                            | .2738  | 17 45.9                            | 8.13  |
| 24                             | .351   | .5735   | .0155   | 8.55 | 4 57.5                            | .2739  | 17 41.6                            | 8.12  |
| 25                             | .356   | .5731   | .0158   | 8.56 | 4 56.7                            | .2740  | 17 37.3                            | 8.11  |
| 26                             | .361   | .5726   | .0161   | 8.57 | 4 55.9                            | .2741  | 17 33.0                            | 8.10  |
| 27                             | .366   | .5721   | .0165   | 8.58 | 4 55.1                            | .2743  | 17 28.7                            | 8.08  |
| 28                             | .371   | .5716   | .0169   | 8.59 | 4 54.3                            | .2745  | 17 24.4                            | 8.07  |
| 29                             | .376   | .5710   | .0174   | 8.60 | 4 53.5                            | .2747  | 17 20.1                            | 8.04  |
| 30                             | .381   | .5704   | .0179   | 8.62 | 4 52.7                            | .2749  | 17 15.9                            | 8.02  |
| 31                             | .386   | .5697   | .0185   | 8.63 | 4 51.9                            | .2751  | 17 11.6                            | 8.00  |
| April 1                        | +0.391 | -0.5690 | +0.0192 | 8.64 | 4 51.1                            | 1.2754 | 17 7.3                             | -7.97 |
| 2                              | .396   | .5683   | .0199   | 8.66 | 4 50.3                            | .2757  | 17 3.1                             | 7.94  |
| 3                              | .401   | .5675   | .0207   | 8.67 | 4 49.5                            | .2760  | 16 58.8                            | 7.90  |
| 4                              | .406   | .5667   | .0215   | 8.69 | 4 48.7                            | .2764  | 16 54.6                            | 7.87  |
| 5                              | .411   | .5659   | .0223   | 8.70 | 4 47.9                            | .2767  | 16 50.3                            | 7.83  |
| 6                              | .416   | .5650   | .0232   | 8.72 | 4 47.1                            | .2771  | 16 46.1                            | 7.79  |
| 7                              | .422   | .5641   | .0241   | 8.74 | 4 46.4                            | .2775  | 16 41.9                            | 7.75  |
| 8                              | .427   | .5632   | .0251   | 8.76 | 4 45.6                            | .2779  | 16 37.7                            | 7.70  |
| 9                              | .432   | .5622   | .0261   | 8.78 | 4 44.8                            | .2784  | 16 33.5                            | 7.66  |
| 10                             | .438   | .5612   | .0272   | 8.80 | 4 44.0                            | .2788  | 16 29.3                            | 7.61  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                 | G                                 | log h  | H                                  | i                  |
|---------------------------------|----|----------------------|---------|---------|-------------------|-----------------------------------|--------|------------------------------------|--------------------|
| April                           | 11 | +0 <sup>s</sup> .443 | —0.5602 | +0.0283 | 8 <sup>h</sup> 82 | 4 <sup>h</sup> 43 <sup>m</sup> .2 | 1.2793 | 16 <sup>h</sup> 25 <sup>m</sup> .2 | —7 <sup>s</sup> 56 |
|                                 | 12 | .449                 | .5591   | .0294   | 8.84              | 4 42.4                            | .2798  | 16 21.0                            | 7.50               |
|                                 | 13 | .454                 | .5580   | .0306   | 8.86              | 4 41.6                            | .2803  | 16 16.9                            | 7.45               |
|                                 | 14 | .460                 | .5568   | .0318   | 8.89              | 4 40.8                            | .2808  | 16 12.7                            | 7.39               |
|                                 | 15 | .466                 | .5556   | .0330   | 8.91              | 4 40.0                            | .2813  | 16 8.6                             | 7.33               |
|                                 | 16 | .472                 | .5544   | .0343   | 8.93              | 4 39.2                            | .2818  | 16 4.5                             | 7.27               |
|                                 | 17 | .477                 | .5532   | .0356   | 8.96              | 4 38.3                            | .2823  | 16 0.4                             | 7.21               |
|                                 | 18 | .483                 | .5519   | .0369   | 8.99              | 4 37.5                            | .2829  | 15 56.3                            | 7.14               |
|                                 | 19 | .490                 | .5506   | .0383   | 9.01              | 4 36.7                            | .2835  | 15 52.3                            | 7.08               |
|                                 | 20 | .496                 | .5493   | .0397   | 9.04              | 4 35.9                            | .2840  | 15 48.2                            | 7.01               |
|                                 | 21 | +0.502               | —0.5479 | +0.0411 | 9.07              | 4 35.0                            | 1.2846 | 15 44.2                            | —6.93              |
|                                 | 22 | .508                 | .5465   | .0425   | 9.09              | 4 34.2                            | .2852  | 15 40.1                            | 6.86               |
|                                 | 23 | .514                 | .5451   | .0439   | 9.12              | 4 33.3                            | .2858  | 15 36.1                            | 6.78               |
|                                 | 24 | .521                 | .5436   | .0454   | 9.15              | 4 32.5                            | .2864  | 15 32.1                            | 6.71               |
|                                 | 25 | .527                 | .5422   | .0469   | 9.18              | 4 31.6                            | .2871  | 15 28.1                            | 6.63               |
|                                 | 26 | .534                 | .5407   | .0484   | 9.21              | 4 30.8                            | .2877  | 15 24.2                            | 6.54               |
|                                 | 27 | .541                 | .5392   | .0499   | 9.24              | 4 29.9                            | .2883  | 15 20.2                            | 6.46               |
|                                 | 28 | .547                 | .5377   | .0514   | 9.27              | 4 29.1                            | .2889  | 15 16.2                            | 6.38               |
|                                 | 29 | .554                 | .5362   | .0530   | 9.30              | 4 28.2                            | .2896  | 15 12.3                            | 6.29               |
|                                 | 30 | .561                 | .5346   | .0545   | 9.33              | 4 27.3                            | .2902  | 15 8.4                             | 6.20               |
| Mai                             | 1  | +0.568               | —0.5330 | +0.0560 | 9.36              | 4 26.4                            | 1.2908 | 15 4.5                             | —6.11              |
|                                 | 2  | .575                 | .5313   | .0575   | 9.40              | 4 25.5                            | .2915  | 15 0.6                             | 6.02               |
|                                 | 3  | .583                 | .5297   | .0591   | 9.43              | 4 24.6                            | .2921  | 14 56.7                            | 5.92               |
|                                 | 4  | .590                 | .5280   | .0606   | 9.46              | 4 23.7                            | .2927  | 14 52.8                            | 5.83               |
|                                 | 5  | .597                 | .5263   | .0622   | 9.50              | 4 22.8                            | .2934  | 14 49.0                            | 5.73               |
|                                 | 6  | .605                 | .5246   | .0637   | 9.53              | 4 21.9                            | .2940  | 14 45.1                            | 5.63               |
|                                 | 7  | .612                 | .5229   | .0653   | 9.57              | 4 21.0                            | .2946  | 14 41.3                            | 5.53               |
|                                 | 8  | .620                 | .5212   | .0668   | 9.60              | 4 20.0                            | .2952  | 14 37.5                            | 5.43               |
|                                 | 9  | .628                 | .5195   | .0683   | 9.64              | 4 19.1                            | .2959  | 14 33.7                            | 5.33               |
|                                 | 10 | .635                 | .5177   | .0698   | 9.67              | 4 18.2                            | .2965  | 14 29.9                            | 5.22               |
|                                 | 11 | +0.643               | —0.5159 | +0.0713 | 9.71              | 4 17.2                            | 1.2971 | 14 26.1                            | —5.12              |
|                                 | 12 | .651                 | .5141   | .0728   | 9.74              | 4 16.3                            | .2977  | 14 22.3                            | 5.01               |
|                                 | 13 | .659                 | .5123   | .0743   | 9.78              | 4 15.3                            | .2983  | 14 18.6                            | 4.90               |
|                                 | 14 | .667                 | .5104   | .0757   | 9.82              | 4 14.3                            | .2989  | 14 14.8                            | 4.79               |
|                                 | 15 | .676                 | .5086   | .0771   | 9.85              | 4 13.3                            | .2994  | 14 11.1                            | 4.68               |
|                                 | 16 | .684                 | .5067   | .0785   | 9.89              | 4 12.4                            | .3000  | 14 7.3                             | 4.57               |
|                                 | 17 | .692                 | .5049   | .0799   | 9.93              | 4 11.4                            | .3006  | 14 3.6                             | 4.45               |
|                                 | 18 | .701                 | .5030   | .0813   | 9.96              | 4 10.4                            | .3011  | 13 59.9                            | 4.34               |
|                                 | 19 | .709                 | .5012   | .0826   | 10.00             | 4 9.4                             | .3016  | 13 56.2                            | 4.22               |
|                                 | 20 | .718                 | .4993   | .0839   | 10.04             | 4 8.4                             | .3022  | 13 52.6                            | 4.11               |
|                                 | 21 | +0.727               | —0.4974 | +0.0852 | 10.08             | 4 7.4                             | 1.3027 | 13 48.9                            | —3.99              |
|                                 | 22 | .735                 | .4955   | .0865   | 10.12             | 4 6.4                             | .3032  | 13 45.2                            | 3.87               |
|                                 | 23 | .744                 | .4936   | .0878   | 10.15             | 4 5.4                             | .3037  | 13 41.6                            | 3.74               |
|                                 | 24 | .753                 | .4917   | .0890   | 10.19             | 4 4.3                             | .3042  | 13 37.9                            | 3.62               |
|                                 | 25 | .762                 | .4898   | .0902   | 10.23             | 4 3.3                             | .3047  | 13 34.3                            | 3.50               |
|                                 | 26 | .771                 | .4879   | .0913   | 10.27             | 4 2.3                             | .3051  | 13 30.7                            | 3.38               |
|                                 | 27 | .780                 | .4860   | .0924   | 10.31             | 4 1.3                             | .3055  | 13 27.1                            | 3.25               |
|                                 | 28 | .789                 | .4841   | .0935   | 10.34             | 4 0.2                             | .3060  | 13 23.5                            | 3.13               |
|                                 | 29 | .799                 | .4822   | .0945   | 10.38             | 3 59.2                            | .3064  | 13 19.9                            | 3.00               |
|                                 | 30 | .808                 | .4803   | .0955   | 10.42             | 3 58.1                            | .3068  | 13 16.3                            | 2.87               |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                | log h  | H                                 | i     |
|---------------------------------|----|--------|---------|---------|-------|----------------------------------|--------|-----------------------------------|-------|
| Mai                             | 31 | +0.817 | -0.4784 | +0.0965 | 10.46 | 3 <sup>h</sup> 57 <sup>m</sup> 0 | 1.3072 | 13 <sup>h</sup> 12 <sup>m</sup> 7 | -2.75 |
| Juni                            | 1  | .827   | .4764   | .0974   | 10.50 | 3 56.0                           | .3075  | 13 9.1                            | 2.62  |
|                                 | 2  | .836   | .4745   | .0983   | 10.54 | 3 54.9                           | .3079  | 13 5.6                            | 2.49  |
|                                 | 3  | .846   | .4726   | .0991   | 10.57 | 3 53.9                           | .3082  | 13 2.0                            | 2.36  |
|                                 | 4  | .855   | .4707   | .0999   | 10.61 | 3 52.8                           | .3085  | 12 58.5                           | 2.23  |
|                                 | 5  | .865   | .4688   | .1007   | 10.65 | 3 51.8                           | .3088  | 12 54.9                           | 2.09  |
|                                 | 6  | .874   | .4669   | .1014   | 10.69 | 3 50.7                           | .3091  | 12 51.4                           | 1.96  |
|                                 | 7  | .884   | .4650   | .1020   | 10.73 | 3 49.6                           | .3094  | 12 47.8                           | 1.83  |
|                                 | 8  | .894   | .4631   | .1026   | 10.77 | 3 48.5                           | .3096  | 12 44.3                           | 1.70  |
|                                 | 9  | .904   | .4612   | .1032   | 10.80 | 3 47.4                           | .3098  | 12 40.8                           | 1.57  |
|                                 | 10 | +0.913 | -0.4593 | +0.1038 | 10.84 | 3 46.3                           | 1.3100 | 12 37.2                           | -1.43 |
|                                 | 11 | .923   | .4575   | .1043   | 10.88 | 3 45.2                           | .3102  | 12 33.7                           | 1.30  |
|                                 | 12 | .933   | .4556   | .1047   | 10.92 | 3 44.1                           | .3104  | 12 30.2                           | 1.17  |
|                                 | 13 | .943   | .4538   | .1051   | 10.95 | 3 43.0                           | .3106  | 12 26.7                           | 1.03  |
|                                 | 14 | .953   | .4519   | .1054   | 10.99 | 3 41.9                           | .3107  | 12 23.2                           | 0.90  |
|                                 | 15 | .962   | .4501   | .1057   | 11.03 | 3 40.8                           | .3108  | 12 19.7                           | 0.76  |
|                                 | 16 | .972   | .4482   | .1059   | 11.06 | 3 39.7                           | .3109  | 12 16.1                           | 0.63  |
|                                 | 17 | .982   | .4464   | .1061   | 11.10 | 3 38.6                           | .3110  | 12 12.6                           | 0.49  |
|                                 | 18 | 0.992  | .4446   | .1063   | 11.14 | 3 37.5                           | .3110  | 12 9.1                            | 0.35  |
|                                 | 19 | 1.002  | .4428   | .1064   | 11.17 | 3 36.4                           | .3111  | 12 5.6                            | 0.22  |
|                                 | 20 | +1.012 | -0.4410 | +0.1065 | 11.21 | 3 35.3                           | 1.3111 | 12 2.1                            | -0.08 |
|                                 | 21 | .022   | .4392   | .1065   | 11.24 | 3 34.2                           | .3111  | 11 58.6                           | +0.05 |
|                                 | 22 | .032   | .4374   | .1064   | 11.28 | 3 33.0                           | .3111  | 11 55.1                           | 0.19  |
|                                 | 23 | .042   | .4357   | .1063   | 11.31 | 3 31.9                           | .3111  | 11 51.6                           | 0.32  |
|                                 | 24 | .052   | .4340   | .1062   | 11.35 | 3 30.8                           | .3110  | 11 48.1                           | 0.46  |
|                                 | 25 | .062   | .4323   | .1060   | 11.38 | 3 29.7                           | .3109  | 11 44.6                           | 0.59  |
|                                 | 26 | .072   | .4306   | .1058   | 11.42 | 3 28.6                           | .3108  | 11 41.1                           | 0.73  |
|                                 | 27 | .082   | .4289   | .1055   | 11.45 | 3 27.5                           | .3107  | 11 37.6                           | 0.86  |
|                                 | 28 | .092   | .4272   | .1052   | 11.49 | 3 26.4                           | .3106  | 11 34.1                           | 1.00  |
|                                 | 29 | .101   | .4255   | .1048   | 11.52 | 3 25.3                           | .3104  | 11 30.6                           | 1.13  |
| Juli                            | 30 | +1.111 | -0.4238 | +0.1044 | 11.55 | 3 24.2                           | 1.3103 | 11 27.1                           | +1.27 |
|                                 | 1  | .121   | .4222   | .1039   | 11.59 | 3 23.1                           | .3101  | 11 23.6                           | 1.40  |
|                                 | 2  | .131   | .4205   | .1034   | 11.62 | 3 22.0                           | .3099  | 11 20.1                           | 1.54  |
|                                 | 3  | .140   | .4189   | .1028   | 11.65 | 3 20.9                           | .3097  | 11 16.6                           | 1.67  |
|                                 | 4  | .150   | .4173   | .1022   | 11.68 | 3 19.8                           | .3094  | 11 13.0                           | 1.80  |
|                                 | 5  | .160   | .4157   | .1015   | 11.72 | 3 18.7                           | .3092  | 11 9.5                            | 1.93  |
|                                 | 6  | .170   | .4141   | .1008   | 11.75 | 3 17.6                           | .3089  | 11 6.0                            | 2.06  |
|                                 | 7  | .179   | .4126   | .1001   | 11.78 | 3 16.5                           | .3086  | 11 2.4                            | 2.20  |
|                                 | 8  | .189   | .4111   | .0993   | 11.81 | 3 15.4                           | .3083  | 10 58.9                           | 2.33  |
|                                 | 9  | .198   | .4096   | .0985   | 11.84 | 3 14.4                           | .3080  | 10 55.4                           | 2.45  |
|                                 | 10 | +1.208 | -0.4081 | +0.0976 | 11.87 | 3 13.3                           | 1.3076 | 10 51.8                           | +2.58 |
|                                 | 11 | .217   | .4066   | .0967   | 11.90 | 3 12.2                           | .3073  | 10 48.2                           | 2.71  |
|                                 | 12 | .226   | .4051   | .0958   | 11.93 | 3 11.1                           | .3069  | 10 44.7                           | 2.84  |
|                                 | 13 | .236   | .4037   | .0948   | 11.96 | 3 10.1                           | .3065  | 10 41.1                           | 2.96  |
|                                 | 14 | .245   | .4023   | .0938   | 11.99 | 3 9.0                            | .3061  | 10 37.5                           | 3.09  |
|                                 | 15 | .254   | .4009   | .0927   | 12.01 | 3 8.0                            | .3057  | 10 33.9                           | 3.22  |
|                                 | 16 | .263   | .3995   | .0916   | 12.04 | 3 6.9                            | .3052  | 10 30.4                           | 3.34  |
|                                 | 17 | .272   | .3981   | .0905   | 12.07 | 3 5.9                            | .3048  | 10 26.8                           | 3.46  |
|                                 | 18 | .281   | .3967   | .0894   | 12.10 | 3 4.8                            | .3043  | 10 23.2                           | 3.59  |
|                                 | 19 | .290   | .3953   | .0872   | 12.12 | 3 3.8                            | .3039  | 10 19.5                           | 3.71  |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                   | x       | y       | g                  | G                               | log h  | H                                 | i                  |
|---------------------------------|----|---------------------|---------|---------|--------------------|---------------------------------|--------|-----------------------------------|--------------------|
| Juli                            | 20 | +1 <sup>s</sup> 299 | -0.3940 | +0.0870 | 12 <sup>m</sup> 15 | 3 <sup>h</sup> 2 <sup>m</sup> 8 | 1.3034 | 10 <sup>h</sup> 15 <sup>m</sup> 9 | +3 <sup>s</sup> 83 |
|                                 | 21 | .308                | .3927   | .0857   | 12.18              | 3 1.7                           | .3029  | 10 12.3                           | 3.95               |
|                                 | 22 | .317                | .3914   | .0844   | 12.20              | 3 0.7                           | .3024  | 10 8.6                            | 4.07               |
|                                 | 23 | .325                | .3901   | .0831   | 12.23              | 2 59.7                          | .3019  | 10 5.0                            | 4.18               |
|                                 | 24 | .334                | .3888   | .0818   | 12.26              | 2 58.7                          | .3013  | 10 1.3                            | 4.30               |
|                                 | 25 | .342                | .3875   | .0804   | 12.28              | 2 57.7                          | .3008  | 9 57.6                            | 4.41               |
|                                 | 26 | .351                | .3862   | .0790   | 12.31              | 2 56.7                          | .3002  | 9 53.9                            | 4.53               |
|                                 | 27 | .359                | .3850   | .0776   | 12.33              | 2 55.7                          | .2996  | 9 50.2                            | 4.64               |
|                                 | 28 | .367                | .3838   | .0762   | 12.36              | 2 54.8                          | .2991  | 9 46.5                            | 4.75               |
|                                 | 29 | .375                | .3826   | .0748   | 12.38              | 2 53.8                          | .2985  | 9 42.8                            | 4.86               |
| August                          | 30 | +1.384              | -0.3814 | +0.0734 | 12.40              | 2 52.8                          | 1.2979 | 9 39.1                            | +4.97              |
|                                 | 31 | .392                | .3803   | .0719   | 12.43              | 2 51.9                          | .2973  | 9 35.4                            | 5.08               |
|                                 | 1  | .400                | .3791   | .0704   | 12.45              | 2 50.9                          | .2967  | 9 31.6                            | 5.18               |
|                                 | 2  | .407                | .3780   | .0689   | 12.47              | 2 50.0                          | .2961  | 9 27.9                            | 5.29               |
|                                 | 3  | .415                | .3768   | .0674   | 12.50              | 2 49.1                          | .2955  | 9 24.1                            | 5.39               |
|                                 | 4  | .423                | .3757   | .0659   | 12.52              | 2 48.2                          | .2949  | 9 20.3                            | 5.49               |
|                                 | 5  | .430                | .3746   | .0644   | 12.54              | 2 47.3                          | .2943  | 9 16.5                            | 5.59               |
|                                 | 6  | .438                | .3735   | .0629   | 12.56              | 2 46.4                          | .2937  | 9 12.7                            | 5.69               |
|                                 | 7  | .445                | .3724   | .0614   | 12.58              | 2 45.5                          | .2930  | 9 8.9                             | 5.79               |
|                                 | 8  | .453                | .3714   | .0599   | 12.60              | 2 44.6                          | .2924  | 9 5.1                             | 5.88               |
|                                 | 9  | +1.460              | -0.3703 | +0.0583 | 12.63              | 2 43.7                          | 1.2918 | 9 1.2                             | +5.97              |
|                                 | 10 | .467                | .3693   | .0568   | 12.65              | 2 42.9                          | .2912  | 8 57.4                            | 6.07               |
|                                 | 11 | .474                | .3682   | .0552   | 12.67              | 2 42.0                          | .2905  | 8 53.5                            | 6.16               |
|                                 | 12 | .481                | .3672   | .0537   | 12.69              | 2 41.2                          | .2899  | 8 49.6                            | 6.25               |
|                                 | 13 | .488                | .3662   | .0522   | 12.71              | 2 40.4                          | .2893  | 8 45.7                            | 6.33               |
|                                 | 14 | .495                | .3652   | .0507   | 12.73              | 2 39.5                          | .2886  | 8 41.8                            | 6.42               |
|                                 | 15 | .502                | .3642   | .0492   | 12.75              | 2 38.7                          | .2880  | 8 37.9                            | 6.50               |
|                                 | 16 | .508                | .3632   | .0477   | 12.77              | 2 37.9                          | .2874  | 8 34.0                            | 6.58               |
|                                 | 17 | .515                | .3622   | .0462   | 12.79              | 2 37.1                          | .2868  | 8 30.0                            | 6.66               |
|                                 | 18 | .521                | .3612   | .0448   | 12.81              | 2 36.4                          | .2862  | 8 26.1                            | 6.74               |
| Septbr.                         | 19 | +1.528              | -0.3602 | +0.0433 | 12.83              | 2 35.6                          | 1.2856 | 8 22.1                            | +6.82              |
|                                 | 20 | .534                | .3593   | .0419   | 12.85              | 2 34.9                          | .2850  | 8 18.1                            | 6.89               |
|                                 | 21 | .540                | .3583   | .0405   | 12.87              | 2 34.1                          | .2844  | 8 14.1                            | 6.96               |
|                                 | 22 | .546                | .3574   | .0391   | 12.89              | 2 33.4                          | .2838  | 8 10.1                            | 7.03               |
|                                 | 23 | .553                | .3564   | .0377   | 12.90              | 2 32.7                          | .2833  | 8 6.1                             | 7.10               |
|                                 | 24 | .559                | .3555   | .0364   | 12.92              | 2 32.0                          | .2827  | 8 2.0                             | 7.17               |
|                                 | 25 | .565                | .3545   | .0351   | 12.94              | 2 31.3                          | .2822  | 7 58.0                            | 7.23               |
|                                 | 26 | .571                | .3536   | .0338   | 12.96              | 2 30.6                          | .2816  | 7 53.9                            | 7.30               |
|                                 | 27 | .576                | .3526   | .0326   | 12.98              | 2 29.9                          | .2811  | 7 49.9                            | 7.36               |
|                                 | 28 | .582                | .3517   | .0314   | 13.00              | 2 29.3                          | .2806  | 7 45.8                            | 7.41               |
|                                 | 29 | +1.588              | -0.3508 | +0.0302 | 13.02              | 2 28.6                          | 1.2801 | 7 41.7                            | +7.47              |
|                                 | 30 | .593                | .3498   | .0291   | 13.04              | 2 28.0                          | .2796  | 7 37.6                            | 7.52               |
|                                 | 31 | .599                | .3489   | .0280   | 13.06              | 2 27.4                          | .2791  | 7 33.5                            | 7.57               |
|                                 | 1  | .605                | .3479   | .0269   | 13.07              | 2 26.8                          | .2787  | 7 29.4                            | 7.62               |
|                                 | 2  | .610                | .3470   | .0259   | 13.09              | 2 26.2                          | .2782  | 7 25.2                            | 7.67               |
|                                 | 3  | .615                | .3460   | .0249   | 13.11              | 2 25.6                          | .2778  | 7 21.1                            | 7.72               |
|                                 | 4  | .621                | .3451   | .0239   | 13.13              | 2 25.0                          | .2774  | 7 16.9                            | 7.76               |
|                                 | 5  | .626                | .3441   | .0230   | 13.15              | 2 24.4                          | .2770  | 7 12.8                            | 7.80               |
|                                 | 6  | .631                | .3432   | .0221   | 13.17              | 2 23.9                          | .2767  | 7 8.6                             | 7.84               |
|                                 | 7  | .637                | .3422   | .0213   | 13.19              | 2 23.4                          | .2763  | 7 4.4                             | 7.88               |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                | log h  | H                               | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|----------------------------------|--------|---------------------------------|---------------------|
| Septbr.                         | 8  | +1. <sup>s</sup> 642 | —0.3412 | +0.0205 | 13. <sup>h</sup> 21 | 2 <sup>h</sup> 22 <sup>m</sup> 8 | 1.2760 | 7 <sup>h</sup> 0 <sup>m</sup> 2 | +7. <sup>9</sup> 91 |
|                                 | 9  | .647                 | .3402   | .0198   | 13.23               | 2 22.3                           | .2757  | 6 56.0                          | 7.94                |
|                                 | 10 | .652                 | .3392   | .0191   | 13.25               | 2 21.8                           | .2754  | 6 51.8                          | 7.97                |
|                                 | 11 | .657                 | .3382   | .0184   | 13.27               | 2 21.3                           | .2751  | 6 47.6                          | 8.00                |
|                                 | 12 | .662                 | .3372   | .0178   | 13.29               | 2 20.9                           | .2748  | 6 43.4                          | 8.03                |
|                                 | 13 | .667                 | .3361   | .0173   | 13.31               | 2 20.4                           | .2746  | 6 39.2                          | 8.05                |
|                                 | 14 | .672                 | .3351   | .0169   | 13.33               | 2 20.0                           | .2744  | 6 34.9                          | 8.07                |
|                                 | 15 | .677                 | .3340   | .0165   | 13.35               | 2 19.5                           | .2742  | 6 30.7                          | 8.09                |
|                                 | 16 | .682                 | .3329   | .0161   | 13.38               | 2 19.1                           | .2741  | 6 26.4                          | 8.10                |
|                                 | 17 | .687                 | .3318   | .0158   | 13.40               | 2 18.7                           | .2740  | 6 22.2                          | 8.12                |
|                                 | 18 | +1.692               | —0.3307 | +0.0156 | 13.42               | 2 18.3                           | 1.2739 | 6 17.9                          | +8.13               |
|                                 | 19 | .697                 | .3295   | .0154   | 13.44               | 2 17.9                           | .2738  | 6 13.7                          | 8.14                |
|                                 | 20 | .701                 | .3284   | .0152   | 13.47               | 2 17.5                           | .2737  | 6 9.4                           | 8.14                |
|                                 | 21 | .706                 | .3272   | .0151   | 13.49               | 2 17.1                           | .2737  | 6 5.1                           | 8.15                |
|                                 | 22 | .711                 | .3260   | .0150   | 13.51               | 2 16.7                           | .2736  | 6 0.9                           | 8.15                |
|                                 | 23 | .716                 | .3248   | .0150   | 13.54               | 2 16.4                           | .2736  | 5 56.6                          | 8.15                |
|                                 | 24 | .721                 | .3236   | .0151   | 13.56               | 2 16.0                           | .2737  | 5 52.3                          | 8.14                |
|                                 | 25 | .726                 | .3224   | .0152   | 13.59               | 2 15.7                           | .2737  | 5 48.0                          | 8.14                |
|                                 | 26 | .731                 | .3211   | .0154   | 13.61               | 2 15.4                           | .2738  | 5 43.7                          | 8.13                |
|                                 | 27 | .735                 | .3198   | .0156   | 13.64               | 2 15.0                           | .2739  | 5 39.5                          | 8.12                |
|                                 | 28 | +1.740               | —0.3185 | +0.0159 | 13.66               | 2 14.7                           | 1.2740 | 5 35.2                          | +8.11               |
|                                 | 29 | .745                 | .3172   | .0163   | 13.69               | 2 14.4                           | .2742  | 5 30.9                          | 8.09                |
|                                 | 30 | .750                 | .3158   | .0167   | 13.72               | 2 14.1                           | .2744  | 5 26.6                          | 8.08                |
| Oktbr.                          | 1  | .755                 | .3144   | .0172   | 13.75               | 2 13.8                           | .2746  | 5 22.4                          | 8.06                |
|                                 | 2  | .760                 | .3130   | .0177   | 13.78               | 2 13.6                           | .2748  | 5 18.1                          | 8.03                |
|                                 | 3  | .765                 | .3115   | .0183   | 13.80               | 2 13.3                           | .2750  | 5 13.8                          | 8.01                |
|                                 | 4  | .770                 | .3101   | .0189   | 13.83               | 2 13.0                           | .2753  | 5 9.5                           | 7.98                |
|                                 | 5  | .775                 | .3086   | .0196   | 13.86               | 2 12.8                           | .2756  | 5 5.3                           | 7.95                |
|                                 | 6  | .780                 | .3071   | .0203   | 13.89               | 2 12.5                           | .2759  | 5 1.0                           | 7.92                |
|                                 | 7  | .786                 | .3055   | .0211   | 13.93               | 2 12.3                           | .2762  | 4 56.7                          | 7.89                |
|                                 | 8  | +1.791               | —0.3039 | +0.0219 | 13.96               | 2 12.1                           | 1.2766 | 4 52.5                          | +7.85               |
|                                 | 9  | .796                 | .3023   | .0228   | 13.99               | 2 11.8                           | .2769  | 4 48.2                          | 7.81                |
|                                 | 10 | .802                 | .3007   | .0237   | 14.02               | 2 11.6                           | .2773  | 4 44.0                          | 7.77                |
|                                 | 11 | .807                 | .2990   | .0247   | 14.06               | 2 11.4                           | .2777  | 4 39.7                          | 7.73                |
|                                 | 12 | .813                 | .2973   | .0257   | 14.09               | 2 11.2                           | .2782  | 4 35.5                          | 7.68                |
|                                 | 13 | .818                 | .2956   | .0267   | 14.12               | 2 11.0                           | .2786  | 4 31.3                          | 7.63                |
|                                 | 14 | .824                 | .2938   | .0278   | 14.16               | 2 10.8                           | .2791  | 4 27.0                          | 7.58                |
|                                 | 15 | .829                 | .2920   | .0289   | 14.20               | 2 10.6                           | .2796  | 4 22.8                          | 7.53                |
|                                 | 16 | .835                 | .2902   | .0301   | 14.23               | 2 10.4                           | .2801  | 4 18.6                          | 7.47                |
|                                 | 17 | .841                 | .2884   | .0313   | 14.27               | 2 10.2                           | .2806  | 4 14.4                          | 7.42                |
|                                 | 18 | +1.847               | —0.2865 | +0.0326 | 14.31               | 2 10.0                           | 1.2811 | 4 10.2                          | +7.36               |
|                                 | 19 | .852                 | .2846   | .0339   | 14.35               | 2 9.8                            | .2816  | 4 6.0                           | 7.29                |
|                                 | 20 | .858                 | .2826   | .0352   | 14.38               | 2 9.6                            | .2822  | 4 1.9                           | 7.23                |
|                                 | 21 | .865                 | .2806   | .0365   | 14.42               | 2 9.5                            | .2828  | 3 57.7                          | 7.16                |
|                                 | 22 | .871                 | .2786   | .0379   | 14.47               | 2 9.3                            | .2833  | 3 53.5                          | 7.09                |
|                                 | 23 | .877                 | .2765   | .0393   | 14.51               | 2 9.1                            | .2839  | 3 49.4                          | 7.02                |
|                                 | 24 | .883                 | .2744   | .0407   | 14.55               | 2 8.9                            | .2845  | 3 45.2                          | 6.95                |
|                                 | 25 | .890                 | .2723   | .0422   | 14.59               | 2 8.7                            | .2851  | 3 41.1                          | 6.87                |
|                                 | 26 | .896                 | .2702   | .0437   | 14.63               | 2 8.5                            | .2857  | 3 37.0                          | 6.80                |
|                                 | 27 | .903                 | .2680   | .0452   | 14.68               | 2 8.4                            | .2864  | 3 32.8                          | 6.72                |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f       | x       | y       | g     | G                               | log h  | H                                | i     |
|---------------------------------|----|---------|---------|---------|-------|---------------------------------|--------|----------------------------------|-------|
| Oktbr.                          | 28 | +1.8910 | -0.2658 | +0.0467 | 14.72 | 2 <sup>h</sup> 8 <sup>m</sup> 2 | 1.2870 | 3 <sup>h</sup> 28 <sup>m</sup> 7 | +6.64 |
|                                 | 29 | .916    | .2635   | .0483   | 14.77 | 2 8.0                           | .2876  | 3 24.6                           | 6.55  |
|                                 | 30 | .923    | .2612   | .0498   | 14.81 | 2 7.8                           | .2883  | 3 20.6                           | 6.47  |
|                                 | 31 | .930    | .2589   | .0514   | 14.86 | 2 7.6                           | .2889  | 3 16.5                           | 6.38  |
| Novbr.                          | 1  | .937    | .2566   | .0529   | 14.91 | 2 7.4                           | .2896  | 3 12.4                           | 6.29  |
|                                 | 2  | .944    | .2542   | .0545   | 14.95 | 2 7.2                           | .2902  | 3 8.4                            | 6.20  |
|                                 | 3  | .952    | .2518   | .0561   | 15.00 | 2 7.1                           | .2909  | 3 4.3                            | 6.11  |
|                                 | 4  | .959    | .2494   | .0577   | 15.05 | 2 6.9                           | .2915  | 3 0.3                            | 6.01  |
|                                 | 5  | .967    | .2470   | .0593   | 15.10 | 2 6.7                           | .2922  | 2 56.3                           | 5.91  |
|                                 | 6  | .974    | .2445   | .0609   | 15.15 | 2 6.5                           | .2928  | 2 52.2                           | 5.81  |
|                                 | 7  | +1.982  | -0.2420 | +0.0625 | 15.20 | 2 6.3                           | 1.2935 | 2 48.2                           | +5.71 |
|                                 | 8  | .990    | .2395   | .0641   | 15.25 | 2 6.1                           | .2942  | 2 44.2                           | 5.61  |
|                                 | 9  | 1.997   | .2369   | .0657   | 15.30 | 2 5.8                           | .2948  | 2 40.2                           | 5.51  |
|                                 | 10 | 2.005   | .2343   | .0673   | 15.35 | 2 5.6                           | .2955  | 2 36.3                           | 5.40  |
|                                 | 11 | .013    | .2317   | .0689   | 15.41 | 2 5.4                           | .2961  | 2 32.3                           | 5.29  |
|                                 | 12 | .022    | .2291   | .0704   | 15.46 | 2 5.2                           | .2967  | 2 28.4                           | 5.18  |
|                                 | 13 | .030    | .2264   | .0720   | 15.51 | 2 4.9                           | .2973  | 2 24.4                           | 5.07  |
|                                 | 14 | .038    | .2237   | .0735   | 15.57 | 2 4.7                           | .2980  | 2 20.5                           | 4.96  |
|                                 | 15 | .047    | .2210   | .0750   | 15.62 | 2 4.5                           | .2986  | 2 16.5                           | 4.84  |
|                                 | 16 | .055    | .2183   | .0765   | 15.67 | 2 4.2                           | .2992  | 2 12.6                           | 4.73  |
| Dezbr.                          | 17 | +2.064  | -0.2155 | +0.0780 | 15.73 | 2 4.0                           | 1.2998 | 2 8.7                            | +4.61 |
|                                 | 18 | .072    | .2127   | .0794   | 15.79 | 2 3.7                           | .3004  | 2 4.8                            | 4.49  |
|                                 | 19 | .081    | .2099   | .0809   | 15.84 | 2 3.5                           | .3010  | 2 0.9                            | 4.37  |
|                                 | 20 | .090    | .2071   | .0823   | 15.90 | 2 3.2                           | .3015  | 1 57.1                           | 4.25  |
|                                 | 21 | .099    | .2043   | .0837   | 15.96 | 2 2.9                           | .3021  | 1 53.2                           | 4.12  |
|                                 | 22 | .108    | .2014   | .0851   | 16.01 | 2 2.6                           | .3026  | 1 49.3                           | 4.00  |
|                                 | 23 | .117    | .1985   | .0865   | 16.07 | 2 2.4                           | .3032  | 1 45.5                           | 3.87  |
|                                 | 24 | .127    | .1956   | .0878   | 16.13 | 2 2.1                           | .3037  | 1 41.6                           | 3.75  |
|                                 | 25 | .136    | .1927   | .0891   | 16.19 | 2 1.8                           | .3042  | 1 37.8                           | 3.62  |
|                                 | 26 | .145    | .1898   | .0903   | 16.25 | 2 1.4                           | .3047  | 1 33.9                           | 3.49  |
|                                 | 27 | +2.155  | -0.1869 | +0.0915 | 16.30 | 2 1.1                           | 1.3052 | 1 30.1                           | +3.36 |
|                                 | 28 | .164    | .1839   | .0926   | 16.36 | 2 0.8                           | .3056  | 1 26.3                           | 3.23  |
|                                 | 29 | .174    | .1810   | .0937   | 16.42 | 2 0.5                           | .3061  | 1 22.5                           | 3.09  |
|                                 | 30 | .184    | .1780   | .0948   | 16.48 | 2 0.1                           | .3065  | 1 18.7                           | 2.96  |
|                                 | 1  | .194    | .1751   | .0959   | 16.54 | 1 59.8                          | .3069  | 1 14.9                           | 2.82  |
|                                 | 2  | .203    | .1721   | .0969   | 16.60 | 1 59.4                          | .3073  | 1 11.1                           | 2.69  |
|                                 | 3  | .213    | .1692   | .0979   | 16.66 | 1 59.1                          | .3077  | 1 7.3                            | 2.55  |
|                                 | 4  | .223    | .1662   | .0988   | 16.72 | 1 58.7                          | .3081  | 1 3.5                            | 2.41  |
|                                 | 5  | .233    | .1632   | .0996   | 16.78 | 1 58.4                          | .3084  | 0 59.7                           | 2.28  |
|                                 | 6  | .243    | .1602   | .1004   | 16.84 | 1 58.0                          | .3087  | 0 56.0                           | 2.14  |
|                                 | 7  | +2.254  | -0.1572 | +0.1012 | 16.90 | 1 57.6                          | 1.3090 | 0 52.2                           | +2.00 |
|                                 | 8  | .264    | .1542   | .1019   | 16.96 | 1 57.2                          | .3093  | 0 48.4                           | 1.86  |
|                                 | 9  | .274    | .1512   | .1026   | 17.02 | 1 56.8                          | .3096  | 0 44.7                           | 1.71  |
|                                 | 10 | .284    | .1482   | .1032   | 17.08 | 1 56.4                          | .3098  | 0 40.9                           | 1.57  |
|                                 | 11 | .295    | .1452   | .1037   | 17.14 | 1 56.0                          | .3100  | 0 37.2                           | 1.43  |
|                                 | 12 | .305    | .1422   | .1042   | 17.20 | 1 55.6                          | .3102  | 0 33.4                           | 1.29  |
|                                 | 13 | .315    | .1392   | .1047   | 17.26 | 1 55.2                          | .3104  | 0 29.7                           | 1.15  |
|                                 | 14 | .326    | .1362   | .1051   | 17.32 | 1 54.7                          | .3106  | 0 25.9                           | 1.00  |
|                                 | 15 | .336    | .1332   | .1055   | 17.38 | 1 54.3                          | .3107  | 0 22.2                           | 0.86  |
|                                 | 16 | .347    | .1303   | .1058   | 17.44 | 1 53.9                          | .3108  | 0 18.5                           | 0.71  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                 | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|-----------------------------------|--------|-----------------------------------|---------------------|
| Dezbr.                          | 17 | +2 <sup>s</sup> .357 | —0.1273 | +0.1060 | 17 <sup>m</sup> .50 | 1 <sup>h</sup> 53 <sup>m</sup> .4 | 1.3109 | 0 <sup>h</sup> 14 <sup>m</sup> .7 | +0 <sup>m</sup> .57 |
|                                 | 18 | .368                 | .1244   | .1062   | 17.56               | 1 53.0                            | .3110  | 0 11.0                            | 0.43                |
|                                 | 19 | .378                 | .1214   | .1063   | 17.62               | 1 52.5                            | .3111  | 0 7.3                             | 0.28                |
|                                 | 20 | .389                 | .1185   | .1064   | 17.67               | 1 52.0                            | .3111  | 0 3.5                             | +0.14               |
|                                 | 21 | .399                 | .1156   | .1064   | 17.73               | 1 51.6                            | .3111  | 23 59.8                           | —0.01               |
|                                 | 22 | .410                 | .1127   | .1064   | 17.79               | 1 51.1                            | .3111  | 23 56.0                           | 0.15                |
|                                 | 23 | .420                 | .1098   | .1063   | 17.85               | 1 50.6                            | .3111  | 23 52.3                           | 0.30                |
|                                 | 24 | .431                 | .1069   | .1062   | 17.91               | 1 50.1                            | .3110  | 23 48.5                           | 0.44                |
|                                 | 25 | .441                 | .1040   | .1060   | 17.96               | 1 49.7                            | .3109  | 23 44.8                           | 0.59                |
|                                 | 26 | .452                 | .1012   | .1058   | 18.02               | 1 49.2                            | .3108  | 23 41.0                           | 0.73                |
|                                 | 27 | +2.462               | —0.0984 | +0.1055 | 18.08               | 1 48.7                            | 1.3107 | 23 37.3                           | —0.88               |
|                                 | 28 | .473                 | .0956   | .1052   | 18.13               | 1 48.2                            | .3106  | 23 33.5                           | 1.02                |
|                                 | 29 | .483                 | .0928   | .1048   | 18.19               | 1 47.7                            | .3104  | 23 29.8                           | 1.16                |
|                                 | 30 | .493                 | .0900   | .1043   | 18.25               | 1 47.2                            | .3102  | 23 26.0                           | 1.31                |
|                                 | 31 | .504                 | .0872   | .1038   | 18.30               | 1 46.7                            | .3100  | 23 22.3                           | 1.45                |

## 1850

|        |    |                      |         |         |                    |                                   |        |                                    |                     |
|--------|----|----------------------|---------|---------|--------------------|-----------------------------------|--------|------------------------------------|---------------------|
| Januar | 1  | —0 <sup>s</sup> .557 | —0.5527 | +0.1032 | 8 <sup>m</sup> .97 | 7 <sup>h</sup> 35 <sup>m</sup> .4 | 1.3098 | 23 <sup>h</sup> 18 <sup>m</sup> .5 | —1 <sup>m</sup> .59 |
|        | 2  | .547                 | .5547   | .1025   | 8.93               | 7 34.0                            | .3096  | 23 14.8                            | 1.73                |
|        | 3  | .537                 | .5566   | .1018   | 8.89               | 7 32.5                            | .3093  | 23 11.0                            | 1.88                |
|        | 4  | .527                 | .5586   | .1011   | 8.85               | 7 31.1                            | .3090  | 23 7.2                             | 2.02                |
|        | 5  | .516                 | .5605   | .1003   | 8.81               | 7 29.7                            | .3087  | 23 3.4                             | 2.16                |
|        | 6  | .506                 | .5625   | .0995   | 8.77               | 7 28.2                            | .3084  | 22 59.7                            | 2.30                |
|        | 7  | .496                 | .5644   | .0986   | 8.73               | 7 26.8                            | .3080  | 22 55.9                            | 2.43                |
|        | 8  | .486                 | .5664   | .0977   | 8.69               | 7 25.4                            | .3077  | 22 52.1                            | 2.57                |
|        | 9  | .476                 | .5683   | .0967   | 8.66               | 7 23.9                            | .3073  | 22 48.3                            | 2.71                |
|        | 10 | .467                 | .5703   | .0957   | 8.62               | 7 22.5                            | .3069  | 22 44.5                            | 2.85                |
|        | 11 | —0.457               | —0.5722 | +0.0947 | 8.58               | 7 21.1                            | 1.3065 | 22 40.6                            | —2.98               |
|        | 12 | .447                 | .5742   | .0936   | 8.54               | 7 19.7                            | .3060  | 22 36.8                            | 3.12                |
|        | 13 | .437                 | .5762   | .0925   | 8.50               | 7 18.2                            | .3056  | 22 33.0                            | 3.25                |
|        | 14 | .428                 | .5782   | .0913   | 8.46               | 7 16.8                            | .3051  | 22 29.2                            | 3.38                |
|        | 15 | .418                 | .5802   | .0901   | 8.42               | 7 15.4                            | .3046  | 22 25.3                            | 3.51                |
|        | 16 | .409                 | .5821   | .0888   | 8.38               | 7 14.0                            | .3041  | 22 21.5                            | 3.64                |
|        | 17 | .399                 | .5841   | .0875   | 8.34               | 7 12.5                            | .3036  | 22 17.6                            | 3.77                |
|        | 18 | .390                 | .5860   | .0862   | 8.30               | 7 11.1                            | .3031  | 22 13.7                            | 3.90                |
|        | 19 | .381                 | .5879   | .0849   | 8.26               | 7 9.7                             | .3025  | 22 9.8                             | 4.03                |
|        | 20 | .372                 | .5898   | .0835   | 8.22               | 7 8.3                             | .3020  | 22 6.0                             | 4.15                |
|        | 21 | —0.363               | —0.5918 | +0.0821 | 8.18               | 7 6.9                             | 1.3014 | 22 2.1                             | —4.27               |
|        | 22 | .354                 | .5937   | .0806   | 8.15               | 7 5.5                             | .3008  | 21 58.1                            | 4.40                |
|        | 23 | .345                 | .5957   | .0792   | 8.11               | 7 4.1                             | .3002  | 21 54.2                            | 4.52                |
|        | 24 | .336                 | .5976   | .0777   | 8.07               | 7 2.8                             | .2997  | 21 50.3                            | 4.64                |
|        | 25 | .327                 | .5995   | .0762   | 8.03               | 7 1.4                             | .2991  | 21 46.4                            | 4.76                |
|        | 26 | .319                 | .6013   | .0747   | 7.99               | 7 0.0                             | .2984  | 21 42.4                            | 4.87                |
|        | 27 | .310                 | .6032   | .0732   | 7.96               | 6 58.7                            | .2978  | 21 38.5                            | 4.99                |
|        | 28 | .302                 | .6050   | .0716   | 7.92               | 6 57.3                            | .2972  | 21 34.5                            | 5.10                |
|        | 29 | .293                 | .6069   | .0700   | 7.88               | 6 56.0                            | .2965  | 21 30.5                            | 5.21                |
|        | 30 | .285                 | .6087   | .0684   | 7.85               | 6 54.6                            | .2959  | 21 26.5                            | 5.32                |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g    | G                                 | log h  | H                                  | i     |
|---------------------------------|----|--------|---------|---------|------|-----------------------------------|--------|------------------------------------|-------|
| Januar                          | 31 | −0.277 | −0.6105 | +0.0668 | 7.81 | 6 <sup>h</sup> 53 <sup>m</sup> .3 | 1.2952 | 21 <sup>h</sup> 22 <sup>m</sup> .5 | −5.43 |
| Februar                         | 1  | .269   | .6123   | .0652   | 7.77 | 6 51.9                            | .2946  | 21 18.5                            | 5.54  |
|                                 | 2  | .261   | .6141   | .0636   | 7.74 | 6 50.6                            | .2939  | 21 14.5                            | 5.64  |
|                                 | 3  | .253   | .6158   | .0620   | 7.70 | 6 49.3                            | .2933  | 21 10.5                            | 5.74  |
|                                 | 4  | .246   | .6175   | .0603   | 7.67 | 6 48.0                            | .2926  | 21 6.4                             | 5.85  |
|                                 | 5  | .238   | .6192   | .0587   | 7.63 | 6 46.7                            | .2920  | 21 2.4                             | 5.95  |
|                                 | 6  | .231   | .6209   | .0571   | 7.60 | 6 45.4                            | .2913  | 20 58.3                            | 6.05  |
|                                 | 7  | .223   | .6226   | .0555   | 7.57 | 6 44.1                            | .2906  | 20 54.2                            | 6.14  |
|                                 | 8  | .216   | .6243   | .0539   | 7.53 | 6 42.9                            | .2900  | 20 50.1                            | 6.24  |
|                                 | 9  | .209   | .6259   | .0523   | 7.50 | 6 41.6                            | .2893  | 20 46.0                            | 6.33  |
|                                 | 10 | −0.202 | −0.6275 | +0.0507 | 7.47 | 6 40.3                            | 1.2887 | 20 41.9                            | −6.41 |
|                                 | 11 | .195   | .6291   | .0492   | 7.44 | 6 39.1                            | .2880  | 20 37.8                            | 6.50  |
|                                 | 12 | .188   | .6307   | .0476   | 7.41 | 6 37.8                            | .2874  | 20 33.7                            | 6.59  |
|                                 | 13 | .181   | .6322   | .0461   | 7.38 | 6 36.6                            | .2867  | 20 29.5                            | 6.67  |
|                                 | 14 | .174   | .6337   | .0446   | 7.35 | 6 35.3                            | .2861  | 20 25.4                            | 6.75  |
|                                 | 15 | .168   | .6352   | .0431   | 7.32 | 6 34.1                            | .2855  | 20 21.2                            | 6.83  |
|                                 | 16 | .161   | .6366   | .0416   | 7.29 | 6 32.9                            | .2848  | 20 17.1                            | 6.91  |
|                                 | 17 | .155   | .6380   | .0401   | 7.26 | 6 31.6                            | .2842  | 20 12.9                            | 6.99  |
|                                 | 18 | .148   | .6394   | .0386   | 7.23 | 6 30.4                            | .2836  | 20 8.7                             | 7.06  |
|                                 | 19 | .142   | .6408   | .0372   | 7.20 | 6 29.2                            | .2831  | 20 4.5                             | 7.13  |
|                                 | 20 | −0.136 | −0.6421 | +0.0358 | 7.18 | 6 28.0                            | 1.2825 | 20 0.3                             | −7.20 |
|                                 | 21 | .130   | .6434   | .0345   | 7.15 | 6 26.8                            | .2819  | 19 56.1                            | 7.26  |
|                                 | 22 | .124   | .6447   | .0332   | 7.13 | 6 25.6                            | .2813  | 19 51.8                            | 7.33  |
|                                 | 23 | .117   | .6459   | .0319   | 7.10 | 6 24.4                            | .2808  | 19 47.6                            | 7.39  |
|                                 | 24 | .111   | .6471   | .0306   | 7.08 | 6 23.3                            | .2803  | 19 43.4                            | 7.45  |
|                                 | 25 | .106   | .6482   | .0294   | 7.05 | 6 22.1                            | .2798  | 19 39.1                            | 7.50  |
|                                 | 26 | .100   | .6493   | .0282   | 7.03 | 6 20.9                            | .2793  | 19 34.8                            | 7.56  |
|                                 | 27 | .094   | .6504   | .0271   | 7.01 | 6 19.8                            | .2788  | 19 30.6                            | 7.61  |
|                                 | 28 | .089   | .6515   | .0260   | 6.99 | 6 18.6                            | .2783  | 19 26.3                            | 7.66  |
| März                            | 1  | .083   | .6525   | .0250   | 6.97 | 6 17.5                            | .2779  | 19 22.0                            | 7.71  |
|                                 | 2  | −0.078 | −0.6535 | +0.0240 | 6.95 | 6 16.3                            | 1.2775 | 19 17.7                            | −7.75 |
|                                 | 3  | .072   | .6544   | .0230   | 6.93 | 6 15.2                            | .2771  | 19 13.4                            | 7.80  |
|                                 | 4  | .067   | .6553   | .0221   | 6.91 | 6 14.1                            | .2767  | 19 9.1                             | 7.84  |
|                                 | 5  | .061   | .6562   | .0213   | 6.89 | 6 12.9                            | .2763  | 19 4.8                             | 7.87  |
|                                 | 6  | .056   | .6570   | .0205   | 6.88 | 6 11.8                            | .2760  | 19 0.5                             | 7.91  |
|                                 | 7  | .051   | .6578   | .0198   | 6.86 | 6 10.7                            | .2757  | 18 56.2                            | 7.94  |
|                                 | 8  | .046   | .6586   | .0191   | 6.85 | 6 9.6                             | .2754  | 18 51.9                            | 7.97  |
|                                 | 9  | .040   | .6593   | .0185   | 6.83 | 6 8.5                             | .2751  | 18 47.6                            | 8.00  |
|                                 | 10 | .035   | .6600   | .0179   | 6.82 | 6 7.3                             | .2748  | 18 43.2                            | 8.03  |
|                                 | 11 | .030   | .6606   | .0173   | 6.81 | 6 6.2                             | .2746  | 18 38.9                            | 8.05  |
|                                 | 12 | −0.025 | −0.6612 | +0.0168 | 6.79 | 6 5.1                             | 1.2744 | 18 34.6                            | −8.07 |
|                                 | 13 | .020   | .6617   | .0164   | 6.78 | 6 4.0                             | .2742  | 18 30.2                            | 8.09  |
|                                 | 14 | .015   | .6622   | .0160   | 6.77 | 6 2.9                             | .2741  | 18 25.9                            | 8.11  |
|                                 | 15 | .010   | .6627   | .0157   | 6.76 | 6 1.8                             | .2739  | 18 21.6                            | 8.12  |
|                                 | 16 | −0.005 | .6631   | .0154   | 6.75 | 6 0.7                             | .2738  | 18 17.3                            | 8.13  |
|                                 | 17 | .0000  | .6635   | .0152   | 6.75 | 5 59.6                            | .2737  | 18 12.9                            | 8.14  |
|                                 | 18 | +0.005 | .6639   | .0151   | 6.74 | 5 58.4                            | .2737  | 18 8.6                             | 8.14  |
|                                 | 19 | .010   | .6642   | .0150   | 6.73 | 5 57.3                            | .2736  | 18 4.3                             | 8.15  |
|                                 | 20 | .015   | .6645   | .0150   | 6.73 | 5 56.2                            | .2736  | 17 59.9                            | 8.15  |
|                                 | 21 | .020   | .6647   | .0150   | 6.72 | 5 55.1                            | .2737  | 17 55.6                            | 8.15  |

## 1850

| 12 <sup>h</sup><br>M. Z. Berlin |    | f       | x       | y       | g    | G                                | log h  | H                                 | i     |
|---------------------------------|----|---------|---------|---------|------|----------------------------------|--------|-----------------------------------|-------|
| März                            | 22 | +0.8025 | -0.6649 | +0.0151 | 6.72 | 5 <sup>h</sup> 54 <sup>m</sup> 0 | 1.2737 | 17 <sup>h</sup> 51 <sup>m</sup> 3 | -8.14 |
|                                 | 23 | .030    | .6650   | .0152   | 6.72 | 5 52.9                           | .2738  | 17 47.0                           | 8.14  |
|                                 | 24 | .035    | .6651   | .0154   | 6.71 | 5 51.8                           | .2738  | 17 42.7                           | 8.13  |
|                                 | 25 | .040    | .6652   | .0157   | 6.71 | 5 50.7                           | .2739  | 17 38.3                           | 8.12  |
|                                 | 26 | .045    | .6652   | .0160   | 6.71 | 5 49.6                           | .2741  | 17 34.0                           | 8.10  |
|                                 | 27 | .050    | .6652   | .0164   | 6.71 | 5 48.4                           | .2742  | 17 29.7                           | 8.09  |
|                                 | 28 | .055    | .6652   | .0168   | 6.71 | 5 47.3                           | .2744  | 17 25.4                           | 8.07  |
|                                 | 29 | .060    | .6651   | .0173   | 6.72 | 5 46.2                           | .2746  | 17 21.2                           | 8.05  |
|                                 | 30 | .065    | .6650   | .0178   | 6.72 | 5 45.0                           | .2748  | 17 16.9                           | 8.03  |
|                                 | 31 | .070    | .6648   | .0184   | 6.72 | 5 43.9                           | .2751  | 17 12.6                           | 8.00  |
| April                           | 1  | +0.075  | -0.6646 | +0.0190 | 6.73 | 5 42.7                           | 1.2754 | 17 8.3                            | -7.97 |
|                                 | 2  | .080    | .6643   | .0197   | 6.73 | 5 41.6                           | .2757  | 17 4.1                            | 7.94  |
|                                 | 3  | .086    | .6640   | .0204   | 6.74 | 5 40.4                           | .2760  | 16 59.8                           | 7.91  |
|                                 | 4  | .091    | .6637   | .0212   | 6.74 | 5 39.3                           | .2763  | 16 55.6                           | 7.88  |
|                                 | 5  | .096    | .6634   | .0220   | 6.75 | 5 38.1                           | .2766  | 16 51.4                           | 7.84  |
|                                 | 6  | .102    | .6630   | .0229   | 6.76 | 5 37.0                           | .2770  | 16 47.1                           | 7.80  |
|                                 | 7  | .107    | .6626   | .0238   | 6.77 | 5 35.8                           | .2774  | 16 42.9                           | 7.76  |
|                                 | 8  | .113    | .6621   | .0248   | 6.78 | 5 34.6                           | .2778  | 16 38.7                           | 7.72  |
|                                 | 9  | .118    | .6616   | .0258   | 6.79 | 5 33.4                           | .2783  | 16 34.5                           | 7.67  |
|                                 | 10 | .124    | .6610   | .0269   | 6.80 | 5 32.2                           | .2787  | 16 30.4                           | 7.62  |
|                                 | 11 | +0.129  | -0.6604 | +0.0280 | 6.81 | 5 31.0                           | 1.2792 | 16 26.2                           | -7.57 |
|                                 | 12 | .135    | .6598   | .0291   | 6.82 | 5 29.8                           | .2796  | 16 22.0                           | 7.52  |
|                                 | 13 | .141    | .6592   | .0303   | 6.83 | 5 28.6                           | .2801  | 16 17.9                           | 7.46  |
|                                 | 14 | .147    | .6585   | .0315   | 6.85 | 5 27.4                           | .2806  | 16 13.7                           | 7.41  |
|                                 | 15 | .153    | .6578   | .0327   | 6.86 | 5 26.2                           | .2811  | 16 9.6                            | 7.35  |
|                                 | 16 | .159    | .6570   | .0340   | 6.88 | 5 24.9                           | .2817  | 16 5.5                            | 7.29  |
|                                 | 17 | .165    | .6562   | .0353   | 6.89 | 5 23.7                           | .2822  | 16 1.4                            | 7.22  |
|                                 | 18 | .171    | .6554   | .0366   | 6.91 | 5 22.4                           | .2828  | 15 57.3                           | 7.16  |
|                                 | 19 | .177    | .6546   | .0379   | 6.93 | 5 21.1                           | .2833  | 15 53.3                           | 7.09  |
|                                 | 20 | .183    | .6537   | .0393   | 6.94 | 5 19.9                           | .2839  | 15 49.2                           | 7.02  |
|                                 | 21 | +0.190  | -0.6528 | +0.0407 | 6.96 | 5 18.6                           | 1.2845 | 15 45.2                           | -6.95 |
|                                 | 22 | .196    | .6519   | .0421   | 6.98 | 5 17.3                           | .2851  | 15 41.1                           | 6.88  |
|                                 | 23 | .203    | .6509   | .0435   | 7.00 | 5 16.0                           | .2857  | 15 37.1                           | 6.80  |
|                                 | 24 | .209    | .6499   | .0450   | 7.02 | 5 14.6                           | .2863  | 15 33.1                           | 6.72  |
|                                 | 25 | .216    | .6489   | .0465   | 7.04 | 5 13.3                           | .2869  | 15 29.1                           | 6.64  |
|                                 | 26 | .223    | .6479   | .0480   | 7.06 | 5 12.0                           | .2875  | 15 25.1                           | 6.56  |
|                                 | 27 | .229    | .6468   | .0495   | 7.08 | 5 10.7                           | .2882  | 15 21.1                           | 6.48  |
|                                 | 28 | .236    | .6457   | .0510   | 7.10 | 5 9.3                            | .2888  | 15 17.2                           | 6.40  |
|                                 | 29 | .243    | .6446   | .0525   | 7.13 | 5 8.0                            | .2894  | 15 13.3                           | 6.31  |
|                                 | 30 | .251    | .6435   | .0541   | 7.15 | 5 6.6                            | .2900  | 15 9.3                            | 6.22  |
| Mai                             | 1  | +0.258  | -0.6423 | +0.0556 | 7.17 | 5 5.3                            | 1.2907 | 15 5.4                            | -6.13 |
|                                 | 2  | .265    | .6411   | .0571   | 7.20 | 5 3.9                            | .2913  | 15 1.5                            | 6.04  |
|                                 | 3  | .272    | .6399   | .0587   | 7.22 | 5 2.5                            | .2919  | 14 57.6                           | 5.95  |
|                                 | 4  | .280    | .6387   | .0602   | 7.24 | 5 1.1                            | .2926  | 14 53.7                           | 5.85  |
|                                 | 5  | .287    | .6375   | .0618   | 7.27 | 4 59.7                           | .2932  | 14 49.9                           | 5.76  |
|                                 | 6  | .295    | .6362   | .0633   | 7.29 | 4 58.3                           | .2938  | 14 46.0                           | 5.66  |
|                                 | 7  | .303    | .6349   | .0649   | 7.32 | 4 56.9                           | .2945  | 14 42.2                           | 5.56  |
|                                 | 8  | .310    | .6336   | .0664   | 7.35 | 4 55.5                           | .2951  | 14 38.4                           | 5.46  |
|                                 | 9  | .318    | .6323   | .0679   | 7.37 | 4 54.1                           | .2957  | 14 34.6                           | 5.35  |
|                                 | 10 | .326    | .6309   | .0694   | 7.40 | 4 52.6                           | .2963  | 14 30.8                           | 5.25  |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                  | G                                 | log h  | H                                  | i                   |
|---------------------------------|----|----------------------|---------|---------|--------------------|-----------------------------------|--------|------------------------------------|---------------------|
| Mai                             | 11 | +0 <sup>s</sup> .334 | —0.6295 | +0.0709 | 7 <sup>h</sup> .43 | 4 <sup>h</sup> 51 <sup>m</sup> .2 | 1.2969 | 14 <sup>h</sup> 27 <sup>m</sup> .0 | —5 <sup>h</sup> .14 |
|                                 | 12 | .342                 | .6281   | .0724   | 7.46               | 4 49.7                            | .2975  | 14 23.2                            | 5.04                |
|                                 | 13 | .351                 | .6267   | .0739   | 7.48               | 4 48.3                            | .2981  | 14 19.5                            | 4.93                |
|                                 | 14 | .359                 | .6253   | .0754   | 7.51               | 4 46.8                            | .2987  | 14 15.7                            | 4.82                |
|                                 | 15 | .367                 | .6239   | .0768   | 7.54               | 4 45.3                            | .2993  | 14 12.0                            | 4.71                |
|                                 | 16 | .376                 | .6225   | .0782   | 7.57               | 4 43.9                            | .2999  | 14 8.2                             | 4.59                |
|                                 | 17 | .384                 | .6211   | .0796   | 7.60               | 4 42.4                            | .3004  | 14 4.5                             | 4.48                |
|                                 | 18 | .393                 | .6196   | .0810   | 7.63               | 4 40.9                            | .3010  | 14 0.8                             | 4.37                |
|                                 | 19 | .402                 | .6182   | .0823   | 7.66               | 4 39.4                            | .3015  | 13 57.1                            | 4.25                |
|                                 | 20 | .411                 | .6167   | .0836   | 7.69               | 4 37.9                            | .3021  | 13 53.5                            | 4.13                |
|                                 | 21 | +0.419               | —0.6152 | +0.0849 | 7.72               | 4 36.4                            | 1.3026 | 13 49.8                            | —4.01               |
|                                 | 22 | .428                 | .6137   | .0862   | 7.75               | 4 34.9                            | .3031  | 13 46.1                            | 3.89                |
|                                 | 23 | .437                 | .6122   | .0875   | 7.78               | 4 33.4                            | .3036  | 13 42.5                            | 3.77                |
|                                 | 24 | .446                 | .6106   | .0887   | 7.81               | 4 31.8                            | .3041  | 13 38.8                            | 3.65                |
|                                 | 25 | .456                 | .6091   | .0899   | 7.84               | 4 30.3                            | .3045  | 13 35.2                            | 3.53                |
|                                 | 26 | .465                 | .6075   | .0910   | 7.87               | 4 28.8                            | .3050  | 13 31.6                            | 3.41                |
|                                 | 27 | .474                 | .6060   | .0921   | 7.90               | 4 27.3                            | .3054  | 13 28.0                            | 3.28                |
|                                 | 28 | .483                 | .6044   | .0932   | 7.93               | 4 25.8                            | .3059  | 13 24.4                            | 3.16                |
|                                 | 29 | .493                 | .6029   | .0943   | 7.96               | 4 24.2                            | .3063  | 13 20.8                            | 3.03                |
|                                 | 30 | .502                 | .6013   | .0953   | 7.99               | 4 22.7                            | .3067  | 13 17.2                            | 2.90                |
| Juni                            | 31 | +0.512               | —0.5998 | +0.0963 | 8.02               | 4 21.2                            | 1.3071 | 13 13.6                            | —2.78               |
|                                 | 1  | .521                 | .5982   | .0972   | 8.06               | 4 19.6                            | .3074  | 13 10.0                            | 2.65                |
|                                 | 2  | .531                 | .5966   | .0981   | 8.09               | 4 18.1                            | .3078  | 13 6.4                             | 2.52                |
|                                 | 3  | .540                 | .5950   | .0989   | 8.12               | 4 16.5                            | .3081  | 13 2.9                             | 2.39                |
|                                 | 4  | .550                 | .5935   | .0997   | 8.15               | 4 15.0                            | .3085  | 12 59.3                            | 2.26                |
|                                 | 5  | .560                 | .5919   | .1005   | 8.18               | 4 13.4                            | .3088  | 12 55.8                            | 2.13                |
|                                 | 6  | .570                 | .5903   | .1012   | 8.22               | 4 11.9                            | .3090  | 12 52.2                            | 2.00                |
|                                 | 7  | .580                 | .5887   | .1019   | 8.25               | 4 10.3                            | .3093  | 12 48.7                            | 1.86                |
|                                 | 8  | .590                 | .5872   | .1025   | 8.28               | 4 8.8                             | .3095  | 12 45.1                            | 1.73                |
|                                 | 9  | .599                 | .5856   | .1031   | 8.31               | 4 7.2                             | .3098  | 12 41.6                            | 1.60                |
|                                 | 10 | +0.609               | —0.5840 | +0.1036 | 8.34               | 4 5.6                             | 1.3100 | 12 38.1                            | —1.47               |
|                                 | 11 | .619                 | .5824   | .1041   | 8.37               | 4 4.1                             | .3102  | 12 34.6                            | 1.33                |
|                                 | 12 | .629                 | .5809   | .1046   | 8.41               | 4 2.5                             | .3104  | 12 31.0                            | 1.20                |
|                                 | 13 | .640                 | .5793   | .1050   | 8.44               | 4 1.0                             | .3105  | 12 27.5                            | 1.06                |
|                                 | 14 | .650                 | .5777   | .1053   | 8.47               | 3 59.4                            | .3107  | 12 24.0                            | 0.93                |
|                                 | 15 | .660                 | .5761   | .1056   | 8.50               | 3 57.8                            | .3108  | 12 20.5                            | 0.79                |
|                                 | 16 | .670                 | .5745   | .1059   | 8.53               | 3 56.3                            | .3109  | 12 17.0                            | 0.66                |
|                                 | 17 | .680                 | .5730   | .1061   | 8.56               | 3 54.7                            | .3110  | 12 13.5                            | 0.52                |
|                                 | 18 | .690                 | .5714   | .1063   | 8.59               | 3 53.2                            | .3110  | 12 10.0                            | 0.39                |
|                                 | 19 | .700                 | .5699   | .1064   | 8.62               | 3 51.6                            | .3111  | 12 6.5                             | 0.25                |
|                                 | 20 | +0.710               | —0.5683 | +0.1065 | 8.66               | 3 50.1                            | 1.3111 | 12 3.0                             | —0.12               |
|                                 | 21 | .720                 | .5668   | .1065   | 8.69               | 3 48.5                            | .3111  | 11 59.5                            | +0.02               |
|                                 | 22 | .731                 | .5652   | .1065   | 8.72               | 3 46.9                            | .3111  | 11 56.0                            | 0.15                |
|                                 | 23 | .741                 | .5637   | .1064   | 8.75               | 3 45.4                            | .3111  | 11 52.5                            | 0.29                |
|                                 | 24 | .751                 | .5622   | .1063   | 8.78               | 3 43.8                            | .3110  | 11 49.0                            | 0.43                |
|                                 | 25 | .761                 | .5607   | .1061   | 8.81               | 3 42.3                            | .3110  | 11 45.5                            | 0.56                |
|                                 | 26 | .771                 | .5592   | .1059   | 8.84               | 3 40.8                            | .3109  | 11 42.0                            | 0.70                |
|                                 | 27 | .781                 | .5577   | .1056   | 8.87               | 3 39.2                            | .3108  | 11 38.5                            | 0.83                |
|                                 | 28 | .791                 | .5562   | .1053   | 8.90               | 3 37.7                            | .3106  | 11 35.0                            | 0.97                |
|                                 | 29 | .801                 | .5547   | .1049   | 8.93               | 3 36.2                            | .3105  | 11 31.5                            | 1.10                |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                | log h  | H                                 | i     |
|---------------------------------|----|--------|---------|---------|-------|----------------------------------|--------|-----------------------------------|-------|
| Juni                            | 30 | +0.811 | —0.5532 | +0.1045 | 8.96  | 3 <sup>h</sup> 34 <sup>m</sup> 6 | 1.3103 | 11 <sup>h</sup> 28 <sup>m</sup> 0 | +1.24 |
| Juli                            | 1  | .821   | .5517   | .1040   | 8.99  | 3 33.1                           | .3101  | 11 24.5                           | 1.37  |
|                                 | 2  | .831   | .5502   | .1035   | 9.02  | 3 31.6                           | .3099  | 11 20.9                           | 1.50  |
|                                 | 3  | .841   | .5488   | .1029   | 9.05  | 3 30.1                           | .3097  | 11 17.4                           | 1.64  |
|                                 | 4  | .851   | .5473   | .1023   | 9.08  | 3 28.6                           | .3095  | 11 13.9                           | 1.77  |
|                                 | 5  | .861   | .5459   | .1017   | 9.10  | 3 27.1                           | .3092  | 11 10.4                           | 1.90  |
|                                 | 6  | .871   | .5445   | .1010   | 9.13  | 3 25.6                           | .3090  | 11 6.8                            | 2.03  |
|                                 | 7  | .881   | .5431   | .1003   | 9.16  | 3 24.1                           | .3087  | 11 3.3                            | 2.16  |
|                                 | 8  | .890   | .5417   | .0995   | 9.19  | 3 22.6                           | .3084  | 10 59.8                           | 2.29  |
|                                 | 9  | .900   | .5403   | .0987   | 9.22  | 3 21.1                           | .3081  | 10 56.2                           | 2.42  |
|                                 | 10 | +0.910 | —0.5389 | +0.0979 | 9.25  | 3 19.7                           | 1.3077 | 10 52.7                           | +2.55 |
|                                 | 11 | .919   | .5376   | .0970   | 9.27  | 3 18.2                           | .3074  | 10 49.1                           | 2.68  |
|                                 | 12 | .929   | .5362   | .0961   | 9.30  | 3 16.8                           | .3070  | 10 45.5                           | 2.81  |
|                                 | 13 | .938   | .5348   | .0951   | 9.33  | 3 15.3                           | .3066  | 10 42.0                           | 2.93  |
|                                 | 14 | .948   | .5335   | .0941   | 9.35  | 3 13.9                           | .3062  | 10 38.4                           | 3.06  |
|                                 | 15 | .957   | .5322   | .0930   | 9.38  | 3 12.5                           | .3058  | 10 34.8                           | 3.19  |
|                                 | 16 | .967   | .5309   | .0919   | 9.41  | 3 11.0                           | .3054  | 10 31.2                           | 3.31  |
|                                 | 17 | .976   | .5296   | .0907   | 9.43  | 3 9.6                            | .3049  | 10 27.6                           | 3.43  |
|                                 | 18 | .985   | .5283   | .0896   | 9.46  | 3 8.2                            | .3044  | 10 24.0                           | 3.56  |
|                                 | 19 | 0.994  | .5270   | .0884   | 9.48  | 3 6.8                            | .3040  | 10 20.4                           | 3.68  |
|                                 | 20 | +1.003 | —0.5257 | +0.0872 | 9.51  | 3 5.4                            | 1.3035 | 10 16.8                           | +3.80 |
|                                 | 21 | .012   | .5245   | .0860   | 9.54  | 3 4.1                            | .3030  | 10 13.1                           | 3.92  |
|                                 | 22 | .021   | .5232   | .0847   | 9.56  | 3 2.7                            | .3025  | 10 9.5                            | 4.04  |
|                                 | 23 | .030   | .5220   | .0834   | 9.59  | 3 1.4                            | .3020  | 10 5.8                            | 4.16  |
|                                 | 24 | .039   | .5207   | .0821   | 9.61  | 3 0.0                            | .3014  | 10 2.2                            | 4.27  |
|                                 | 25 | .048   | .5195   | .0807   | 9.63  | 2 58.7                           | .3009  | 9 58.5                            | 4.39  |
|                                 | 26 | .056   | .5183   | .0794   | 9.66  | 2 57.3                           | .3003  | 9 54.8                            | 4.50  |
|                                 | 27 | .065   | .5171   | .0780   | 9.68  | 2 56.0                           | .2998  | 9 51.1                            | 4.61  |
|                                 | 28 | .073   | .5159   | .0766   | 9.71  | 2 54.7                           | .2992  | 9 47.4                            | 4.72  |
|                                 | 29 | .082   | .5148   | .0752   | 9.73  | 2 53.4                           | .2986  | 9 43.7                            | 4.83  |
|                                 | 30 | +1.090 | —0.5136 | +0.0738 | 9.75  | 2 52.1                           | 1.2981 | 9 40.0                            | +4.94 |
| August                          | 31 | .098   | .5125   | .0723   | 9.78  | 2 50.8                           | .2975  | 9 36.3                            | 5.05  |
|                                 | 1  | .106   | .5113   | .0708   | 9.80  | 2 49.6                           | .2969  | 9 32.5                            | 5.16  |
|                                 | 2  | .114   | .5102   | .0693   | 9.82  | 2 48.3                           | .2963  | 9 28.8                            | 5.26  |
|                                 | 3  | .122   | .5091   | .0678   | 9.84  | 2 47.1                           | .2957  | 9 25.0                            | 5.36  |
|                                 | 4  | .130   | .5080   | .0663   | 9.87  | 2 45.9                           | .2950  | 9 21.2                            | 5.47  |
|                                 | 5  | .138   | .5069   | .0648   | 9.89  | 2 44.7                           | .2944  | 9 17.4                            | 5.57  |
|                                 | 6  | .146   | .5058   | .0633   | 9.91  | 2 43.5                           | .2938  | 9 13.6                            | 5.67  |
|                                 | 7  | .154   | .5047   | .0617   | 9.93  | 2 42.3                           | .2932  | 9 9.8                             | 5.76  |
|                                 | 8  | .161   | .5036   | .0602   | 9.95  | 2 41.1                           | .2926  | 9 6.0                             | 5.86  |
|                                 | 9  | +1.169 | —0.5025 | +0.0586 | 9.98  | 2 40.0                           | 1.2919 | 9 2.1                             | +5.95 |
|                                 | 10 | .176   | .5014   | .0571   | 10.00 | 2 38.8                           | .2913  | 8 58.3                            | 6.04  |
|                                 | 11 | .183   | .5003   | .0556   | 10.02 | 2 37.7                           | .2907  | 8 54.4                            | 6.13  |
|                                 | 12 | .190   | .4993   | .0541   | 10.04 | 2 36.6                           | .2901  | 8 50.5                            | 6.22  |
|                                 | 13 | .198   | .4982   | .0526   | 10.06 | 2 35.5                           | .2894  | 8 46.7                            | 6.31  |
|                                 | 14 | .205   | .4972   | .0511   | 10.08 | 2 34.4                           | .2888  | 8 42.8                            | 6.40  |
|                                 | 15 | .212   | .4962   | .0496   | 10.10 | 2 33.3                           | .2882  | 8 38.9                            | 6.48  |
|                                 | 16 | .219   | .4952   | .0481   | 10.12 | 2 32.3                           | .2876  | 8 34.9                            | 6.56  |
|                                 | 17 | .225   | .4941   | .0466   | 10.14 | 2 31.2                           | .2869  | 8 31.0                            | 6.64  |
|                                 | 18 | .232   | .4931   | .0452   | 10.16 | 2 30.2                           | .2863  | 8 27.0                            | 6.72  |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                   | log h  | H                   | i     |
|---------------------------------|----|--------|---------|---------|-------|---------------------|--------|---------------------|-------|
| August                          | 19 | +1.239 | -0.4921 | +0.0437 | 10.18 | 2 <sup>h</sup> 29.2 | 1.2857 | 8 <sup>h</sup> 23.1 | +6.80 |
|                                 | 20 | .245   | .4911   | .0423   | 10.20 | 2 28.2              | .2851  | 8 19.1              | 6.87  |
|                                 | 21 | .252   | .4901   | .0408   | 10.22 | 2 27.2              | .2846  | 8 15.1              | 6.95  |
|                                 | 22 | .258   | .4891   | .0394   | 10.24 | 2 26.2              | .2840  | 8 11.1              | 7.02  |
|                                 | 23 | .265   | .4881   | .0380   | 10.26 | 2 25.3              | .2834  | 8 7.1               | 7.09  |
|                                 | 24 | .271   | .4871   | .0367   | 10.28 | 2 24.4              | .2828  | 8 3.0               | 7.15  |
|                                 | 25 | .277   | .4861   | .0354   | 10.30 | 2 23.4              | .2823  | 7 59.0              | 7.22  |
|                                 | 26 | .283   | .4851   | .0341   | 10.32 | 2 22.5              | .2817  | 7 54.9              | 7.28  |
|                                 | 27 | .289   | .4841   | .0328   | 10.34 | 2 21.6              | .2812  | 7 50.9              | 7.34  |
|                                 | 28 | .295   | .4831   | .0316   | 10.36 | 2 20.8              | .2807  | 7 46.8              | 7.40  |
|                                 | 29 | +1.301 | -0.4821 | +0.0304 | 10.38 | 2 19.9              | 1.2802 | 7 42.7              | +7.46 |
|                                 | 30 | .307   | .4811   | .0293   | 10.40 | 2 19.1              | .2797  | 7 38.6              | 7.51  |
|                                 | 31 | .313   | .4801   | .0282   | 10.42 | 2 18.3              | .2792  | 7 34.5              | 7.56  |
| Septbr.                         | 1  | .318   | .4791   | .0271   | 10.44 | 2 17.5              | .2788  | 7 30.4              | 7.61  |
|                                 | 2  | .324   | .4781   | .0261   | 10.46 | 2 16.7              | .2783  | 7 26.2              | 7.66  |
|                                 | 3  | .330   | .4771   | .0251   | 10.49 | 2 15.9              | .2779  | 7 22.1              | 7.71  |
|                                 | 4  | .335   | .4760   | .0241   | 10.51 | 2 15.1              | .2775  | 7 17.9              | 7.75  |
|                                 | 5  | .341   | .4750   | .0232   | 10.53 | 2 14.4              | .2771  | 7 13.8              | 7.79  |
|                                 | 6  | .346   | .4740   | .0223   | 10.55 | 2 13.6              | .2767  | 7 9.6               | 7.83  |
|                                 | 7  | .352   | .4730   | .0215   | 10.57 | 2 12.9              | .2764  | 7 5.4               | 7.87  |
|                                 | 8  | +1.357 | -0.4720 | +0.0207 | 10.59 | 2 12.3              | 1.2761 | 7 1.2               | +7.90 |
|                                 | 9  | .363   | .4709   | .0200   | 10.61 | 2 11.6              | .2757  | 6 57.0              | 7.94  |
|                                 | 10 | .368   | .4698   | .0193   | 10.63 | 2 10.9              | .2754  | 6 52.8              | 7.97  |
|                                 | 11 | .373   | .4687   | .0186   | 10.65 | 2 10.3              | .2752  | 6 48.6              | 7.99  |
|                                 | 12 | .378   | .4676   | .0180   | 10.68 | 2 9.6               | .2749  | 6 44.4              | 8.02  |
|                                 | 13 | .383   | .4665   | .0174   | 10.70 | 2 9.0               | .2747  | 6 40.2              | 8.04  |
|                                 | 14 | .389   | .4654   | .0169   | 10.72 | 2 8.4               | .2745  | 6 35.9              | 8.06  |
|                                 | 15 | .394   | .4642   | .0165   | 10.74 | 2 7.8               | .2743  | 6 31.7              | 8.08  |
|                                 | 16 | .399   | .4631   | .0162   | 10.77 | 2 7.3               | .2741  | 6 27.5              | 8.10  |
|                                 | 17 | .404   | .4619   | .0159   | 10.79 | 2 6.7               | .2740  | 6 23.2              | 8.11  |
| Oktbr.                          | 18 | +1.409 | -0.4608 | +0.0156 | 10.81 | 2 6.2               | 1.2739 | 6 19.0              | +8.12 |
|                                 | 19 | .414   | .4596   | .0154   | 10.84 | 2 5.6               | .2738  | 6 14.7              | 8.13  |
|                                 | 20 | .419   | .4584   | .0152   | 10.86 | 2 5.1               | .2737  | 6 10.4              | 8.14  |
|                                 | 21 | .424   | .4572   | .0151   | 10.88 | 2 4.6               | .2737  | 6 6.2               | 8.15  |
|                                 | 22 | .429   | .4559   | .0150   | 10.91 | 2 4.1               | .2736  | 6 1.9               | 8.15  |
|                                 | 23 | .435   | .4547   | .0150   | 10.93 | 2 3.7               | .2736  | 5 57.6              | 8.15  |
|                                 | 24 | .440   | .4534   | .0151   | 10.96 | 2 3.2               | .2737  | 5 53.4              | 8.15  |
|                                 | 25 | .445   | .4521   | .0152   | 10.99 | 2 2.8               | .2737  | 5 49.1              | 8.14  |
|                                 | 26 | .450   | .4508   | .0154   | 11.01 | 2 2.3               | .2738  | 5 44.8              | 8.13  |
|                                 | 27 | .455   | .4495   | .0156   | 11.04 | 2 1.9               | .2739  | 5 40.5              | 8.12  |
|                                 | 28 | +1.460 | -0.4481 | +0.0159 | 11.07 | 2 1.5               | 1.2740 | 5 36.2              | +8.11 |
|                                 | 29 | .465   | .4467   | .0162   | 11.09 | 2 1.1               | .2741  | 5 31.9              | 8.10  |
|                                 | 30 | .470   | .4453   | .0166   | 11.12 | 2 0.7               | .2743  | 5 27.7              | 8.08  |
|                                 | 1  | .476   | .4439   | .0170   | 11.15 | 2 0.3               | .2745  | 5 23.4              | 8.06  |
|                                 | 2  | .481   | .4424   | .0175   | 11.18 | 2 0.0               | .2747  | 5 19.1              | 8.04  |
|                                 | 3  | .486   | .4409   | .0181   | 11.21 | 1 59.6              | .2750  | 5 14.8              | 8.02  |
|                                 | 4  | .491   | .4394   | .0187   | 11.24 | 1 59.3              | .2752  | 5 10.6              | 7.99  |
|                                 | 5  | .497   | .4379   | .0194   | 11.27 | 1 59.0              | .2755  | 5 6.3               | 7.96  |
|                                 | 6  | .502   | .4363   | .0201   | 11.30 | 1 58.6              | .2758  | 5 2.0               | 7.93  |
|                                 | 7  | .507   | .4347   | .0209   | 11.33 | 1 58.3              | .2761  | 4 57.8              | 7.89  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                 | log h  | H                                 | i                  |
|---------------------------------|----|----------------------|---------|---------|---------------------|-----------------------------------|--------|-----------------------------------|--------------------|
| Oktbr.                          | 8  | +1 <sup>s</sup> .513 | —0.4331 | +0.0217 | 11 <sup>h</sup> .37 | 1 <sup>h</sup> 58 <sup>m</sup> .0 | 1.2765 | 4 <sup>h</sup> 53 <sup>m</sup> .5 | +7 <sup>h</sup> 86 |
|                                 | 9  | .518                 | .4315   | .0225   | 11.40               | 1 57.7                            | .2769  | 4 49.3                            | 7.82               |
|                                 | 10 | .524                 | .4298   | .0234   | 11.43               | 1 57.5                            | .2772  | 4 45.0                            | 7.78               |
|                                 | 11 | .530                 | .4281   | .0244   | 11.47               | 1 57.2                            | .2776  | 4 40.8                            | 7.74               |
|                                 | 12 | .535                 | .4263   | .0254   | 11.50               | 1 56.9                            | .2781  | 4 36.5                            | 7.69               |
|                                 | 13 | .541                 | .4245   | .0265   | 11.54               | 1 56.7                            | .2785  | 4 32.3                            | 7.64               |
|                                 | 14 | .547                 | .4227   | .0276   | 11.57               | 1 56.4                            | .2790  | 4 28.1                            | 7.59               |
|                                 | 15 | .553                 | .4209   | .0287   | 11.61               | 1 56.1                            | .2794  | 4 23.8                            | 7.54               |
|                                 | 16 | .559                 | .4191   | .0299   | 11.65               | 1 55.9                            | .2799  | 4 19.6                            | 7.49               |
|                                 | 17 | .565                 | .4172   | .0311   | 11.69               | 1 55.7                            | .2804  | 4 15.4                            | 7.43               |
|                                 | 18 | +1.571               | —0.4153 | +0.0323 | 11.72               | 1 55.4                            | 1.2810 | 4 11.2                            | +7.37              |
|                                 | 19 | .577                 | .4133   | .0336   | 11.76               | 1 55.2                            | .2815  | 4 7.0                             | 7.31               |
|                                 | 20 | .583                 | .4113   | .0349   | 11.80               | 1 54.9                            | .2821  | 4 2.9                             | 7.25               |
|                                 | 21 | .589                 | .4093   | .0362   | 11.84               | 1 54.7                            | .2826  | 3 58.7                            | 7.18               |
|                                 | 22 | .596                 | .4072   | .0376   | 11.89               | 1 54.5                            | .2832  | 3 54.5                            | 7.11               |
|                                 | 23 | .602                 | .4051   | .0390   | 11.93               | 1 54.3                            | .2838  | 3 50.4                            | 7.04               |
|                                 | 24 | .609                 | .4030   | .0404   | 11.97               | 1 54.1                            | .2844  | 3 46.2                            | 6.97               |
|                                 | 25 | .615                 | .4008   | .0418   | 12.01               | 1 53.8                            | .2850  | 3 42.1                            | 6.89               |
|                                 | 26 | .622                 | .3986   | .0433   | 12.06               | 1 53.6                            | .2856  | 3 38.0                            | 6.82               |
|                                 | 27 | .629                 | .3964   | .0448   | 12.10               | 1 53.4                            | .2862  | 3 33.8                            | 6.74               |
|                                 | 28 | +1.636               | —0.3942 | +0.0463 | 12.15               | 1 53.2                            | 1.2868 | 3 29.7                            | +6.66              |
|                                 | 29 | .643                 | .3919   | .0479   | 12.19               | 1 53.0                            | .2875  | 3 25.6                            | 6.58               |
|                                 | 30 | .650                 | .3896   | .0494   | 12.24               | 1 52.8                            | .2881  | 3 21.5                            | 6.49               |
|                                 | 31 | .657                 | .3872   | .0510   | 12.29               | 1 52.6                            | .2888  | 3 17.5                            | 6.40               |
| Novbr.                          | 1  | .664                 | .3848   | .0525   | 12.34               | 1 52.3                            | .2894  | 3 13.4                            | 6.31               |
|                                 | 2  | .672                 | .3824   | .0541   | 12.38               | 1 52.1                            | .2901  | 3 9.3                             | 6.22               |
|                                 | 3  | .679                 | .3800   | .0557   | 12.43               | 1 51.9                            | .2907  | 3 5.3                             | 6.13               |
|                                 | 4  | .687                 | .3775   | .0573   | 12.48               | 1 51.7                            | .2914  | 3 1.3                             | 6.04               |
|                                 | 5  | .694                 | .3750   | .0590   | 12.53               | 1 51.4                            | .2920  | 2 57.2                            | 5.94               |
|                                 | 6  | .702                 | .3725   | .0606   | 12.58               | 1 51.2                            | .2927  | 2 53.2                            | 5.84               |
|                                 | 7  | +1.710               | —0.3700 | +0.0622 | 12.63               | 1 51.0                            | 1.2934 | 2 49.2                            | +5.74              |
|                                 | 8  | .718                 | .3674   | .0638   | 12.69               | 1 50.8                            | .2940  | 2 45.2                            | 5.64               |
|                                 | 9  | .726                 | .3648   | .0654   | 12.74               | 1 50.5                            | .2947  | 2 41.2                            | 5.53               |
|                                 | 10 | .734                 | .3621   | .0669   | 12.79               | 1 50.3                            | .2953  | 2 37.2                            | 5.42               |
|                                 | 11 | .742                 | .3594   | .0685   | 12.84               | 1 50.0                            | .2959  | 2 33.3                            | 5.32               |
|                                 | 12 | .751                 | .3567   | .0700   | 12.90               | 1 49.8                            | .2966  | 2 29.3                            | 5.21               |
|                                 | 13 | .759                 | .3540   | .0716   | 12.95               | 1 49.5                            | .2972  | 2 25.4                            | 5.10               |
|                                 | 14 | .768                 | .3513   | .0731   | 13.01               | 1 49.3                            | .2978  | 2 21.4                            | 4.98               |
|                                 | 15 | .776                 | .3485   | .0747   | 13.06               | 1 49.0                            | .2984  | 2 17.5                            | 4.87               |
|                                 | 16 | .785                 | .3457   | .0762   | 13.12               | 1 48.7                            | .2990  | 2 13.6                            | 4.76               |
|                                 | 17 | +1.794               | —0.3429 | +0.0777 | 13.18               | 1 48.4                            | 1.2996 | 2 9.7                             | +4.64              |
|                                 | 18 | .803                 | .3400   | .0791   | 13.23               | 1 48.2                            | .3002  | 2 5.8                             | 4.52               |
|                                 | 19 | .812                 | .3371   | .0806   | 13.29               | 1 47.9                            | .3008  | 2 1.9                             | 4.40               |
|                                 | 20 | .821                 | .3342   | .0820   | 13.35               | 1 47.6                            | .3014  | 1 58.0                            | 4.28               |
|                                 | 21 | .830                 | .3313   | .0834   | 13.41               | 1 47.3                            | .3020  | 1 54.1                            | 4.15               |
|                                 | 22 | .840                 | .3284   | .0848   | 13.47               | 1 47.0                            | .3025  | 1 50.3                            | 4.03               |
|                                 | 23 | .849                 | .3255   | .0862   | 13.53               | 1 46.6                            | .3031  | 1 46.4                            | 3.90               |
|                                 | 24 | .858                 | .3225   | .0875   | 13.59               | 1 46.3                            | .3036  | 1 42.6                            | 3.78               |
|                                 | 25 | .868                 | .3195   | .0888   | 13.65               | 1 46.0                            | .3041  | 1 38.7                            | 3.65               |
|                                 | 26 | .878                 | .3165   | .0900   | 13.71               | 1 45.7                            | .3046  | 1 34.9                            | 3.52               |

## 1850

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                   | x       | y       | g                  | G                                | log h  | H                                | i                  |
|---------------------------------|----|---------------------|---------|---------|--------------------|----------------------------------|--------|----------------------------------|--------------------|
| Novbr.                          | 27 | +1 <sup>s</sup> 887 | —0.3135 | +0.0912 | 13 <sup>h</sup> 77 | 1 <sup>h</sup> 45 <sup>m</sup> 3 | 1.3051 | 1 <sup>h</sup> 31 <sup>m</sup> 0 | +3 <sup>h</sup> 39 |
|                                 | 28 | .897                | .3105   | .0924   | 13.83              | 1 45.0                           | .3055  | 1 27.2                           | 3.26               |
|                                 | 29 | .907                | .3075   | .0935   | 13.89              | 1 44.6                           | .3060  | 1 23.4                           | 3.12               |
|                                 | 30 | .917                | .3044   | .0946   | 13.95              | 1 44.2                           | .3064  | 1 19.6                           | 2.99               |
| Dezbr.                          | 1  | .927                | .3013   | .0956   | 14.01              | 1 43.8                           | .3068  | 1 15.8                           | 2.86               |
|                                 | 2  | .937                | .2982   | .0966   | 14.07              | 1 43.4                           | .3072  | 1 12.0                           | 2.72               |
|                                 | 3  | .947                | .2952   | .0976   | 14.13              | 1 43.1                           | .3076  | 1 8.2                            | 2.58               |
|                                 | 4  | .957                | .2921   | .0986   | 14.19              | 1 42.7                           | .3080  | 1 4.4                            | 2.45               |
|                                 | 5  | .968                | .2890   | .0995   | 14.26              | 1 42.3                           | .3083  | 1 0.7                            | 2.31               |
|                                 | 6  | .978                | .2859   | .1003   | 14.32              | 1 41.9                           | .3087  | 0 56.9                           | 2.17               |
|                                 | 7  | +1.988              | —0.2828 | +0.1011 | 14.38              | 1 41.4                           | 1.3090 | 0 53.1                           | +2.03              |
|                                 | 8  | 1.999               | .2797   | .1018   | 14.44              | 1 41.0                           | .3093  | 0 49.4                           | 1.89               |
|                                 | 9  | 2.009               | .2766   | .1025   | 14.51              | 1 40.6                           | .3095  | 0 45.6                           | 1.75               |
|                                 | 10 | .019                | .2735   | .1031   | 14.57              | 1 40.1                           | .3098  | 0 41.8                           | 1.61               |
|                                 | 11 | .030                | .2704   | .1036   | 14.63              | 1 39.7                           | .3100  | 0 38.1                           | 1.47               |
|                                 | 12 | .040                | .2672   | .1041   | 14.69              | 1 39.2                           | .3102  | 0 34.3                           | 1.32               |
|                                 | 13 | .051                | .2640   | .1046   | 14.76              | 1 38.7                           | .3104  | 0 30.6                           | 1.18               |
|                                 | 14 | .062                | .2609   | .1050   | 14.82              | 1 38.3                           | .3105  | 0 26.8                           | 1.04               |
|                                 | 15 | .072                | .2578   | .1054   | 14.88              | 1 37.8                           | .3107  | 0 23.1                           | 0.89               |
|                                 | 16 | .083                | .2547   | .1057   | 14.94              | 1 37.3                           | .3108  | 0 19.4                           | 0.75               |
|                                 | 17 | +2.094              | —0.2517 | +0.1060 | 15.01              | 1 36.8                           | 1.3109 | 0 15.6                           | +0.61              |
|                                 | 18 | .105                | .2486   | .1062   | 15.07              | 1 36.3                           | .3110  | 0 11.9                           | 0.46               |
|                                 | 19 | .115                | .2454   | .1063   | 15.13              | 1 35.8                           | .3111  | 0 8.2                            | 0.32               |
|                                 | 20 | .126                | .2423   | .1064   | 15.19              | 1 35.3                           | .3111  | 0 4.4                            | 0.17               |
|                                 | 21 | .137                | .2392   | .1065   | 15.25              | 1 34.8                           | .3111  | 0 0.7                            | +0.03              |
|                                 | 22 | .148                | .2362   | .1065   | 15.31              | 1 34.3                           | .3111  | 23 56.9                          | —0.12              |
|                                 | 23 | .158                | .2331   | .1064   | 15.38              | 1 33.8                           | .3111  | 23 53.2                          | 0.26               |
|                                 | 24 | .169                | .2301   | .1063   | 15.44              | 1 33.2                           | .3110  | 23 49.5                          | 0.41               |
|                                 | 25 | .180                | .2271   | .1061   | 15.50              | 1 32.7                           | .3110  | 23 45.7                          | 0.55               |
|                                 | 26 | .191                | .2241   | .1058   | 15.56              | 1 32.2                           | .3109  | 23 42.0                          | 0.70               |
|                                 | 27 | +2.201              | —0.2211 | +0.1055 | 15.62              | 1 31.6                           | 1.3108 | 23 38.2                          | —0.84              |
|                                 | 28 | .212                | .2182   | .1051   | 15.68              | 1 31.1                           | .3106  | 23 34.5                          | 0.99               |
|                                 | 29 | .223                | .2152   | .1048   | 15.74              | 1 30.5                           | .3105  | 23 30.7                          | 1.13               |
|                                 | 30 | .233                | .2123   | .1044   | 15.80              | 1 29.9                           | .3103  | 23 27.0                          | 1.27               |
|                                 | 31 | .244                | .2093   | .1039   | 15.85              | 1 29.4                           | .3102  | 23 23.2                          | 1.42               |

## 1851

|        |    |                     |         |         |                   |                                  |        |                                   |                    |
|--------|----|---------------------|---------|---------|-------------------|----------------------------------|--------|-----------------------------------|--------------------|
| Januar | 1  | —0 <sup>s</sup> 817 | —0.5997 | +0.1033 | 8 <sup>h</sup> 03 | 8 <sup>h</sup> 45 <sup>m</sup> 9 | 1.3099 | 23 <sup>h</sup> 19 <sup>m</sup> 4 | —1 <sup>h</sup> 56 |
|        | 2  | .806                | .6025   | .1027   | 7.97              | 8 44.7                           | .3096  | 23 15.7                           | 1.70               |
|        | 3  | .796                | .6053   | .1020   | 7.92              | 8 43.5                           | .3094  | 23 11.9                           | 1.84               |
|        | 4  | .785                | .6081   | .1013   | 7.86              | 8 42.3                           | .3091  | 23 8.1                            | 1.98               |
|        | 5  | .775                | .6110   | .1005   | 7.80              | 8 41.1                           | .3088  | 23 4.4                            | 2.12               |
|        | 6  | .765                | .6138   | .0997   | 7.75              | 8 39.9                           | .3085  | 23 0.6                            | 2.26               |
|        | 7  | .754                | .6166   | .0989   | 7.69              | 8 38.7                           | .3081  | 22 56.8                           | 2.40               |
|        | 8  | .744                | .6194   | .0980   | 7.63              | 8 37.5                           | .3078  | 22 53.0                           | 2.54               |
|        | 9  | .734                | .6223   | .0970   | 7.57              | 8 36.3                           | .3074  | 22 49.2                           | 2.68               |
|        | 10 | .724                | .6251   | .0960   | 7.52              | 8 35.1                           | .3070  | 22 45.4                           | 2.81               |

## 1851

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                  | G                                | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|--------------------|----------------------------------|--------|-----------------------------------|---------------------|
| Januar                          | 11 | —0 <sup>s</sup> .714 | —0.6279 | +0.0950 | 7 <sup>h</sup> .46 | 8 <sup>h</sup> 34 <sup>m</sup> 0 | 1.3066 | 22 <sup>h</sup> 41 <sup>m</sup> 6 | —2 <sup>h</sup> .95 |
|                                 | 12 | .704                 | .6307   | .0939   | 7.40               | 8 32.8                           | .3061  | 22 37.7                           | 3.08                |
|                                 | 13 | .694                 | .6336   | .0928   | 7.35               | 8 31.6                           | .3057  | 22 33.9                           | 3.22                |
|                                 | 14 | .683                 | .6364   | .0916   | 7.29               | 8 30.4                           | .3052  | 22 30.1                           | 3.35                |
|                                 | 15 | .674                 | .6392   | .0904   | 7.24               | 8 29.3                           | .3047  | 22 26.2                           | 3.48                |
|                                 | 16 | .664                 | .6420   | .0891   | 7.18               | 8 28.1                           | .3042  | 22 22.4                           | 3.61                |
|                                 | 17 | .655                 | .6448   | .0878   | 7.12               | 8 26.9                           | .3037  | 22 18.5                           | 3.74                |
|                                 | 18 | .645                 | .6476   | .0865   | 7.07               | 8 25.7                           | .3032  | 22 14.7                           | 3.87                |
|                                 | 19 | .636                 | .6503   | .0852   | 7.01               | 8 24.6                           | .3027  | 22 10.8                           | 4.00                |
|                                 | 20 | .626                 | .6531   | .0838   | 6.96               | 8 23.4                           | .3021  | 22 6.9                            | 4.12                |
|                                 | 21 | —0.617               | —0.6559 | +0.0824 | 6.90               | 8 22.2                           | 1.3016 | 22 3.0                            | —4.24               |
|                                 | 22 | .608                 | .6587   | .0809   | 6.84               | 8 21.1                           | .3010  | 21 59.1                           | 4.37                |
|                                 | 23 | .599                 | .6614   | .0795   | 6.79               | 8 19.9                           | .3004  | 21 55.2                           | 4.49                |
|                                 | 24 | .590                 | .6641   | .0780   | 6.74               | 8 18.8                           | .2998  | 21 51.2                           | 4.61                |
|                                 | 25 | .581                 | .6668   | .0765   | 6.68               | 8 17.7                           | .2992  | 21 47.3                           | 4.73                |
|                                 | 26 | .572                 | .6694   | .0750   | 6.63               | 8 16.5                           | .2986  | 21 43.4                           | 4.84                |
|                                 | 27 | .563                 | .6721   | .0735   | 6.57               | 8 15.4                           | .2980  | 21 39.4                           | 4.96                |
|                                 | 28 | .555                 | .6747   | .0720   | 6.52               | 8 14.3                           | .2973  | 21 35.5                           | 5.07                |
|                                 | 29 | .546                 | .6774   | .0704   | 6.47               | 8 13.1                           | .2967  | 21 31.5                           | 5.19                |
|                                 | 30 | .537                 | .6800   | .0688   | 6.42               | 8 12.0                           | .2961  | 21 27.5                           | 5.30                |
| Februar                         | 31 | —0.529               | —0.6826 | +0.0672 | 6.36               | 8 10.8                           | 1.2954 | 21 23.5                           | —5.41               |
|                                 | 1  | .521                 | .6852   | .0656   | 6.31               | 8 9.7                            | .2947  | 21 19.5                           | 5.51                |
|                                 | 2  | .512                 | .6877   | .0639   | 6.26               | 8 8.6                            | .2941  | 21 15.5                           | 5.62                |
|                                 | 3  | .504                 | .6902   | .0623   | 6.21               | 8 7.5                            | .2934  | 21 11.5                           | 5.72                |
|                                 | 4  | .496                 | .6927   | .0607   | 6.16               | 8 6.3                            | .2928  | 21 7.4                            | 5.82                |
|                                 | 5  | .489                 | .6952   | .0591   | 6.11               | 8 5.2                            | .2921  | 21 3.4                            | 5.92                |
|                                 | 6  | .481                 | .6977   | .0575   | 6.06               | 8 4.1                            | .2915  | 20 59.3                           | 6.02                |
|                                 | 7  | .473                 | .7001   | .0559   | 6.01               | 8 3.0                            | .2908  | 20 55.2                           | 6.12                |
|                                 | 8  | .466                 | .7025   | .0543   | 5.97               | 8 1.9                            | .2901  | 20 51.1                           | 6.21                |
|                                 | 9  | .458                 | .7049   | .0527   | 5.92               | 8 0.8                            | .2895  | 20 47.0                           | 6.30                |
|                                 | 10 | —0.451               | —0.7072 | +0.0511 | 5.87               | 7 59.7                           | 1.2888 | 20 42.9                           | —6.39               |
|                                 | 11 | .444                 | .7095   | .0496   | 5.82               | 7 58.6                           | .2882  | 20 38.8                           | 6.48                |
|                                 | 12 | .436                 | .7118   | .0480   | 5.78               | 7 57.5                           | .2875  | 20 34.7                           | 6.57                |
|                                 | 13 | .429                 | .7140   | .0465   | 5.73               | 7 56.4                           | .2869  | 20 30.6                           | 6.65                |
|                                 | 14 | .422                 | .7162   | .0450   | 5.69               | 7 55.3                           | .2862  | 20 26.4                           | 6.73                |
|                                 | 15 | .415                 | .7184   | .0435   | 5.65               | 7 54.1                           | .2856  | 20 22.2                           | 6.81                |
|                                 | 16 | .408                 | .7206   | .0420   | 5.60               | 7 52.0                           | .2850  | 20 18.1                           | 6.89                |
|                                 | 17 | .402                 | .7227   | .0405   | 5.56               | 7 51.9                           | .2844  | 20 13.9                           | 6.97                |
|                                 | 18 | .395                 | .7248   | .0391   | 5.52               | 7 50.8                           | .2838  | 20 9.7                            | 7.04                |
|                                 | 19 | .389                 | .7269   | .0377   | 5.48               | 7 49.6                           | .2832  | 20 5.5                            | 7.11                |
| März                            | 20 | —0.382               | —0.7289 | +0.0363 | 5.44               | 7 48.5                           | 1.2826 | 20 1.3                            | —7.18               |
|                                 | 21 | .376                 | .7309   | .0349   | 5.40               | 7 47.4                           | .2820  | 19 57.1                           | 7.25                |
|                                 | 22 | .369                 | .7329   | .0335   | 5.36               | 7 46.2                           | .2815  | 19 52.9                           | 7.31                |
|                                 | 23 | .363                 | .7348   | .0322   | 5.32               | 7 45.1                           | .2809  | 19 48.6                           | 7.37                |
|                                 | 24 | .357                 | .7367   | .0309   | 5.28               | 7 43.9                           | .2804  | 19 44.4                           | 7.43                |
|                                 | 25 | .351                 | .7385   | .0297   | 5.24               | 7 42.8                           | .2799  | 19 40.1                           | 7.49                |
|                                 | 26 | .345                 | .7403   | .0285   | 5.21               | 7 41.6                           | .2794  | 19 35.9                           | 7.55                |
|                                 | 27 | .339                 | .7420   | .0274   | 5.17               | 7 40.5                           | .2789  | 19 31.6                           | 7.60                |
|                                 | 28 | .333                 | .7437   | .0263   | 5.14               | 7 39.3                           | .2784  | 19 27.3                           | 7.65                |
|                                 | 1  | .327                 | .7454   | .0253   | 5.10               | 7 38.1                           | .2780  | 19 23.0                           | 7.70                |

## 1851

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                  | G                                 | log h  | H                                  | i                   |
|---------------------------------|----|----------------------|---------|---------|--------------------|-----------------------------------|--------|------------------------------------|---------------------|
| März                            | 2  | —0 <sup>s</sup> .321 | —0.7471 | +0.0243 | 5 <sup>h</sup> .07 | 7 <sup>h</sup> 36 <sup>m</sup> .9 | 1.2776 | 19 <sup>h</sup> 18 <sup>m</sup> .8 | —7 <sup>h</sup> .74 |
|                                 | 3  | .315                 | .7487   | .0233   | 5.04               | 7 35.7                            | .2772  | 19 14.5                            | 7.79                |
|                                 | 4  | .310                 | .7503   | .0224   | 5.01               | 7 34.4                            | .2768  | 19 10.2                            | 7.83                |
|                                 | 5  | .304                 | .7518   | .0215   | 4.98               | 7 33.2                            | .2764  | 19 5.9                             | 7.86                |
|                                 | 6  | .299                 | .7533   | .0207   | 4.95               | 7 32.0                            | .2761  | 19 1.6                             | 7.90                |
|                                 | 7  | .293                 | .7547   | .0199   | 4.92               | 7 30.7                            | .2758  | 18 57.2                            | 7.93                |
|                                 | 8  | .288                 | .7561   | .0192   | 4.89               | 7 29.5                            | .2755  | 18 52.9                            | 7.96                |
|                                 | 9  | .282                 | .7575   | .0186   | 4.86               | 7 28.2                            | .2752  | 18 48.6                            | 7.99                |
|                                 | 10 | .277                 | .7588   | .0180   | 4.84               | 7 26.9                            | .2749  | 18 44.3                            | 8.02                |
|                                 | 11 | .271                 | .7601   | .0174   | 4.81               | 7 25.6                            | .2747  | 18 40.0                            | 8.04                |
|                                 | 12 | —0.266               | —0.7614 | +0.0169 | 4.78               | 7 24.2                            | 1.2745 | 18 35.6                            | —8.07               |
|                                 | 13 | .261                 | .7626   | .0165   | 4.76               | 7 22.9                            | .2743  | 18 31.3                            | 8.09                |
|                                 | 14 | .255                 | .7638   | .0161   | 4.74               | 7 21.6                            | .2741  | 18 27.0                            | 8.10                |
|                                 | 15 | .250                 | .7649   | .0158   | 4.71               | 7 20.2                            | .2740  | 18 22.6                            | 8.12                |
|                                 | 16 | .245                 | .7660   | .0155   | 4.69               | 7 18.8                            | .2738  | 18 18.3                            | 8.13                |
|                                 | 17 | .240                 | .7670   | .0153   | 4.67               | 7 17.4                            | .2738  | 18 14.0                            | 8.14                |
|                                 | 18 | .234                 | .7680   | .0151   | 4.65               | 7 15.9                            | .2737  | 18 9.6                             | 8.14                |
|                                 | 19 | .229                 | .7689   | .0150   | 4.63               | 7 14.5                            | .2737  | 18 5.3                             | 8.15                |
|                                 | 20 | .224                 | .7698   | .0150   | 4.61               | 7 13.0                            | .2736  | 18 1.0                             | 8.15                |
|                                 | 21 | .219                 | .7707   | .0150   | 4.60               | 7 11.5                            | .2736  | 17 56.7                            | 8.15                |
|                                 | 22 | —0.213               | —0.7715 | +0.0151 | 4.58               | 7 10.0                            | 1.2737 | 17 52.3                            | —8.14               |
|                                 | 23 | .208                 | .7723   | .0152   | 4.57               | 7 8.4                             | .2737  | 17 48.0                            | 8.14                |
|                                 | 24 | .203                 | .7730   | .0154   | 4.55               | 7 6.9                             | .2738  | 17 43.7                            | 8.13                |
|                                 | 25 | .198                 | .7737   | .0157   | 4.54               | 7 5.3                             | .2739  | 17 39.4                            | 8.12                |
|                                 | 26 | .192                 | .7744   | .0160   | 4.52               | 7 3.7                             | .2740  | 17 35.1                            | 8.11                |
| April                           | 27 | .187                 | .7750   | .0163   | 4.51               | 7 2.0                             | .2742  | 17 30.8                            | 8.09                |
|                                 | 28 | .182                 | .7756   | .0167   | 4.50               | 7 0.3                             | .2744  | 17 26.5                            | 8.08                |
|                                 | 29 | .177                 | .7762   | .0172   | 4.49               | 6 58.6                            | .2746  | 17 22.2                            | 8.06                |
|                                 | 30 | .171                 | .7767   | .0177   | 4.48               | 6 56.9                            | .2748  | 17 17.9                            | 8.03                |
|                                 | 31 | .166                 | .7772   | .0182   | 4.47               | 6 55.2                            | .2750  | 17 13.6                            | 8.01                |
|                                 | 1  | —0.160               | —0.7776 | +0.0188 | 4.46               | 6 53.4                            | 1.2753 | 17 9.4                             | —7.98               |
|                                 | 2  | .155                 | .7780   | .0195   | 4.45               | 6 51.6                            | .2756  | 17 5.1                             | 7.95                |
|                                 | 3  | .149                 | .7784   | .0202   | 4.44               | 6 49.8                            | .2759  | 17 0.9                             | 7.92                |
|                                 | 4  | .144                 | .7787   | .0210   | 4.44               | 6 48.0                            | .2762  | 16 56.6                            | 7.89                |
|                                 | 5  | .138                 | .7790   | .0218   | 4.43               | 6 46.1                            | .2766  | 16 52.4                            | 7.85                |
|                                 | 6  | .133                 | .7792   | .0227   | 4.43               | 6 44.2                            | .2769  | 16 48.2                            | 7.81                |
|                                 | 7  | .127                 | .7794   | .0236   | 4.42               | 6 42.3                            | .2773  | 16 44.0                            | 7.77                |
|                                 | 8  | .121                 | .7795   | .0246   | 4.42               | 6 40.4                            | .2777  | 16 39.7                            | 7.73                |
|                                 | 9  | .115                 | .7796   | .0256   | 4.42               | 6 38.4                            | .2782  | 16 35.6                            | 7.68                |
|                                 | 10 | .110                 | .7797   | .0267   | 4.42               | 6 36.4                            | .2786  | 16 31.4                            | 7.63                |
|                                 | 11 | —0.104               | —0.7797 | +0.0278 | 4.42               | 6 34.4                            | 1.2791 | 16 27.2                            | —7.58               |
|                                 | 12 | .098                 | .7797   | .0289   | 4.42               | 6 32.4                            | .2795  | 16 23.0                            | 7.53                |
|                                 | 13 | .092                 | .7797   | .0300   | 4.42               | 6 30.3                            | .2800  | 16 18.9                            | 7.48                |
|                                 | 14 | .086                 | .7797   | .0312   | 4.42               | 6 28.2                            | .2805  | 16 14.7                            | 7.42                |
|                                 | 15 | .080                 | .7796   | .0324   | 4.42               | 6 26.1                            | .2810  | 16 10.6                            | 7.36                |
|                                 | 16 | .073                 | .7794   | .0336   | 4.42               | 6 24.0                            | .2815  | 16 6.5                             | 7.30                |
|                                 | 17 | .067                 | .7792   | .0349   | 4.43               | 6 21.9                            | .2821  | 16 2.4                             | 7.24                |
|                                 | 18 | .061                 | .7790   | .0362   | 4.43               | 6 19.7                            | .2826  | 15 58.3                            | 7.18                |
|                                 | 19 | .054                 | .7788   | .0376   | 4.44               | 6 17.5                            | .2832  | 15 54.2                            | 7.11                |
|                                 | 20 | .048                 | .7785   | .0390   | 4.44               | 6 15.2                            | .2838  | 15 50.2                            | 7.04                |

## 1851

| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g    | G                                | log h  | H                                 | i     |
|---------------------------------|----|--------|---------|---------|------|----------------------------------|--------|-----------------------------------|-------|
| April                           | 21 | —0.041 | —0.7782 | +0.0404 | 4.45 | 6 <sup>h</sup> 12 <sup>m</sup> 9 | 1.2843 | 15 <sup>h</sup> 46 <sup>m</sup> 1 | —6.97 |
|                                 | 22 | .034   | .7778   | .0418   | 4.45 | 6 10.7                           | .2849  | 15 42.1                           | 6.90  |
|                                 | 23 | .028   | .7774   | .0432   | 4.46 | 6 8.4                            | .2855  | 15 38.1                           | 6.82  |
|                                 | 24 | .021   | .7770   | .0447   | 4.47 | 6 6.0                            | .2862  | 15 34.1                           | 6.74  |
|                                 | 25 | .014   | .7766   | .0462   | 4.48 | 6 3.7                            | .2868  | 15 30.1                           | 6.66  |
|                                 | 26 | —0.007 | .7761   | .0477   | 4.49 | 6 1.4                            | .2874  | 15 26.1                           | 6.58  |
|                                 | 27 | 0.000  | .7756   | .0492   | 4.50 | 5 59.0                           | .2880  | 15 22.1                           | 6.50  |
|                                 | 28 | +0.007 | .7751   | .0507   | 4.51 | 5 56.6                           | .2886  | 15 18.1                           | 6.42  |
|                                 | 29 | .015   | .7745   | .0522   | 4.52 | 5 54.2                           | .2893  | 15 14.2                           | 6.33  |
|                                 | 30 | .022   | .7739   | .0537   | 4.53 | 5 51.8                           | .2899  | 15 10.3                           | 6.24  |
| Mai                             | 1  | +0.029 | —0.7733 | +0.0553 | 4.55 | 5 49.4                           | 1.2905 | 15 6.3                            | —6.15 |
|                                 | 2  | .037   | .7726   | .0568   | 4.56 | 5 47.0                           | .2912  | 15 2.4                            | 6.06  |
|                                 | 3  | .044   | .7719   | .0584   | 4.57 | 5 44.5                           | .2918  | 14 58.6                           | 5.97  |
|                                 | 4  | .052   | .7712   | .0599   | 4.59 | 5 42.0                           | .2924  | 14 54.7                           | 5.88  |
|                                 | 5  | .060   | .7705   | .0615   | 4.60 | 5 39.5                           | .2931  | 14 50.8                           | 5.78  |
|                                 | 6  | .068   | .7697   | .0630   | 4.62 | 5 37.0                           | .2937  | 14 47.0                           | 5.68  |
|                                 | 7  | .076   | .7689   | .0645   | 4.64 | 5 34.5                           | .2943  | 14 43.1                           | 5.58  |
|                                 | 8  | .084   | .7680   | .0660   | 4.65 | 5 32.0                           | .2949  | 14 39.3                           | 5.48  |
|                                 | 9  | .092   | .7671   | .0676   | 4.67 | 5 29.5                           | .2956  | 14 35.5                           | 5.38  |
|                                 | 10 | .100   | .7662   | .0691   | 4.69 | 5 27.0                           | .2962  | 14 31.7                           | 5.28  |
|                                 | 11 | +0.108 | —0.7653 | +0.0706 | 4.71 | 5 24.5                           | 1.2968 | 14 27.9                           | —5.17 |
|                                 | 12 | .117   | .7643   | .0721   | 4.73 | 5 22.0                           | .2974  | 14 24.1                           | 5.06  |
|                                 | 13 | .125   | .7633   | .0736   | 4.75 | 5 19.4                           | .2980  | 14 20.4                           | 4.95  |
|                                 | 14 | .134   | .7623   | .0750   | 4.77 | 5 16.8                           | .2986  | 14 16.6                           | 4.84  |
|                                 | 15 | .142   | .7613   | .0764   | 4.79 | 5 14.3                           | .2992  | 14 12.9                           | 4.73  |
|                                 | 16 | .151   | .7602   | .0778   | 4.81 | 5 11.7                           | .2997  | 14 9.1                            | 4.62  |
|                                 | 17 | .160   | .7591   | .0792   | 4.83 | 5 9.1                            | .3003  | 14 5.4                            | 4.51  |
|                                 | 18 | .169   | .7580   | .0806   | 4.85 | 5 6.6                            | .3008  | 14 1.7                            | 4.40  |
|                                 | 19 | .178   | .7569   | .0820   | 4.87 | 5 4.0                            | .3014  | 13 58.0                           | 4.28  |
|                                 | 20 | .187   | .7557   | .0833   | 4.90 | 5 1.4                            | .3019  | 13 54.3                           | 4.16  |
|                                 | 21 | +0.196 | —0.7545 | +0.0846 | 4.92 | 4 58.8                           | 1.3025 | 13 50.7                           | —4.04 |
|                                 | 22 | .205   | .7533   | .0859   | 4.94 | 4 56.2                           | .3030  | 13 47.0                           | 3.92  |
|                                 | 23 | .214   | .7521   | .0872   | 4.97 | 4 53.6                           | .3035  | 13 43.3                           | 3.80  |
|                                 | 24 | .224   | .7509   | .0884   | 4.99 | 4 51.0                           | .3040  | 13 39.7                           | 3.68  |
|                                 | 25 | .233   | .7496   | .0896   | 5.02 | 4 48.5                           | .3044  | 13 36.1                           | 3.56  |
|                                 | 26 | .242   | .7483   | .0907   | 5.04 | 4 45.9                           | .3049  | 13 32.5                           | 3.44  |
|                                 | 27 | .252   | .7470   | .0918   | 5.07 | 4 43.4                           | .3053  | 13 28.8                           | 3.31  |
|                                 | 28 | .262   | .7457   | .0929   | 5.10 | 4 40.8                           | .3058  | 13 25.2                           | 3.19  |
|                                 | 29 | .271   | .7444   | .0940   | 5.12 | 4 38.2                           | .3062  | 13 21.6                           | 3.06  |
|                                 | 30 | .281   | .7431   | .0950   | 5.15 | 4 35.7                           | .3066  | 13 18.0                           | 2.94  |
| Juni                            | 31 | +0.291 | —0.7417 | +0.0960 | 5.18 | 4 33.1                           | 1.3070 | 13 14.4                           | —2.81 |
|                                 | 1  | .300   | .7403   | .0969   | 5.21 | 4 30.6                           | .3074  | 13 10.9                           | 2.68  |
|                                 | 2  | .310   | .7389   | .0978   | 5.24 | 4 28.0                           | .3077  | 13 7.3                            | 2.55  |
|                                 | 3  | .320   | .7374   | .0987   | 5.26 | 4 25.5                           | .3081  | 13 3.7                            | 2.42  |
|                                 | 4  | .330   | .7360   | .0995   | 5.29 | 4 23.0                           | .3084  | 13 0.2                            | 2.29  |
|                                 | 5  | .340   | .7345   | .1003   | 5.32 | 4 20.5                           | .3087  | 12 56.6                           | 2.16  |
|                                 | 6  | .350   | .7331   | .1010   | 5.35 | 4 17.9                           | .3090  | 12 53.1                           | 2.03  |
|                                 | 7  | .360   | .7316   | .1017   | 5.38 | 4 15.4                           | .3092  | 12 49.5                           | 1.90  |
|                                 | 8  | .371   | .7301   | .1023   | 5.41 | 4 12.9                           | .3095  | 12 46.0                           | 1.76  |
|                                 | 9  | .381   | .7286   | .1029   | 5.44 | 4 10.4                           | .3097  | 12 42.5                           | 1.63  |

| $12^h$<br>M. Z. Berlin |    | f      | x       | y       | g    | G                               | log h  | H                                 | i     |
|------------------------|----|--------|---------|---------|------|---------------------------------|--------|-----------------------------------|-------|
| Juni                   | 10 | +0.391 | -0.7271 | +0.1034 | 5.47 | 4 <sup>h</sup> 7 <sup>m</sup> 9 | 1.3100 | 12 <sup>h</sup> 38 <sup>m</sup> 9 | -1.50 |
|                        | 11 | .401   | .7256   | .1039   | 5.50 | 4 5.4                           | .3102  | 12 35.4                           | 1.36  |
|                        | 12 | .412   | .7241   | .1044   | 5.53 | 4 2.9                           | .3103  | 12 31.9                           | 1.23  |
|                        | 13 | .422   | .7225   | .1049   | 5.56 | 4 0.5                           | .3105  | 12 28.4                           | 1.10  |
|                        | 14 | .432   | .7210   | .1053   | 5.60 | 3 58.0                          | .3106  | 12 24.9                           | 0.96  |
|                        | 15 | .442   | .7194   | .1056   | 5.63 | 3 55.5                          | .3108  | 12 21.3                           | 0.83  |
|                        | 16 | .453   | .7178   | .1059   | 5.66 | 3 53.1                          | .3109  | 12 17.8                           | 0.69  |
|                        | 17 | .463   | .7162   | .1061   | 5.69 | 3 50.7                          | .3109  | 12 14.3                           | 0.56  |
|                        | 18 | .474   | .7146   | .1063   | 5.72 | 3 48.3                          | .3110  | 12 10.8                           | 0.42  |
|                        | 19 | .484   | .7130   | .1064   | 5.75 | 3 45.9                          | .3111  | 12 7.3                            | 0.28  |
|                        | 20 | +0.495 | -0.7114 | +0.1065 | 5.79 | 3 43.5                          | 1.3111 | 12 3.8                            | -0.15 |
|                        | 21 | .505   | .7098   | .1065   | 5.82 | 3 41.2                          | .3111  | 12 0.3                            | -0.01 |
|                        | 22 | .515   | .7082   | .1065   | 5.85 | 3 38.8                          | .3111  | 11 56.8                           | +0.12 |
|                        | 23 | .526   | .7066   | .1064   | 5.88 | 3 36.4                          | .3111  | 11 53.3                           | 0.26  |
|                        | 24 | .536   | .7049   | .1063   | 5.92 | 3 34.1                          | .3110  | 11 49.8                           | 0.39  |
|                        | 25 | .547   | .7033   | .1061   | 5.95 | 3 31.7                          | .3110  | 11 46.3                           | 0.53  |
|                        | 26 | .557   | .7016   | .1059   | 5.98 | 3 29.4                          | .3109  | 11 42.8                           | 0.66  |
|                        | 27 | .567   | .7000   | .1057   | 6.02 | 3 27.1                          | .3108  | 11 39.3                           | 0.80  |
|                        | 28 | .578   | .6983   | .1054   | 6.05 | 3 24.9                          | .3107  | 11 35.8                           | 0.93  |
|                        | 29 | .588   | .6967   | .1050   | 6.08 | 3 22.6                          | .3105  | 11 32.3                           | 1.07  |
| Juli                   | 30 | +0.598 | -0.6950 | +0.1046 | 6.11 | 3 20.3                          | 1.3104 | 11 28.8                           | +1.20 |
|                        | 1  | .609   | .6934   | .1041   | 6.15 | 3 18.1                          | .3102  | 11 25.3                           | 1.34  |
|                        | 2  | .619   | .6917   | .1036   | 6.18 | 3 15.9                          | .3100  | 11 21.8                           | 1.47  |
|                        | 3  | .629   | .6901   | .1031   | 6.21 | 3 13.7                          | .3098  | 11 18.3                           | 1.60  |
|                        | 4  | .639   | .6884   | .1025   | 6.25 | 3 11.5                          | .3096  | 11 14.8                           | 1.74  |
|                        | 5  | .650   | .6867   | .1019   | 6.28 | 3 9.3                           | .3093  | 11 11.2                           | 1.87  |
|                        | 6  | .660   | .6850   | .1012   | 6.31 | 3 7.1                           | .3090  | 11 7.7                            | 2.00  |
|                        | 7  | .670   | .6834   | .1005   | 6.35 | 3 5.0                           | .3088  | 11 4.2                            | 2.13  |
|                        | 8  | .680   | .6817   | .0997   | 6.38 | 3 2.9                           | .3085  | 11 0.6                            | 2.26  |
|                        | 9  | .690   | .6801   | .0989   | 6.41 | 3 0.8                           | .3081  | 10 57.1                           | 2.39  |
|                        | 10 | +0.700 | -0.6784 | +0.0981 | 6.45 | 2 58.7                          | 1.3078 | 10 53.5                           | +2.52 |
|                        | 11 | .710   | .6768   | .0972   | 6.48 | 2 56.6                          | .3075  | 10 50.0                           | 2.65  |
|                        | 12 | .720   | .6751   | .0963   | 6.51 | 2 54.5                          | .3071  | 10 46.4                           | 2.78  |
|                        | 13 | .729   | .6735   | .0953   | 6.55 | 2 52.4                          | .3067  | 10 42.8                           | 2.80  |
|                        | 14 | .739   | .6719   | .0943   | 6.58 | 2 50.4                          | .3063  | 10 39.3                           | 2.93  |
|                        | 15 | .749   | .6703   | .0932   | 6.61 | 2 48.4                          | .3059  | 10 35.7                           | 3.16  |
|                        | 16 | .758   | .6686   | .0921   | 6.64 | 2 46.4                          | .3055  | 10 32.1                           | 3.28  |
|                        | 17 | .768   | .6670   | .0910   | 6.68 | 2 44.4                          | .3050  | 10 28.5                           | 3.40  |
|                        | 18 | .777   | .6654   | .0899   | 6.71 | 2 42.5                          | .3046  | 10 24.9                           | 3.53  |
|                        | 19 | .787   | .6638   | .0887   | 6.74 | 2 40.6                          | .3041  | 10 21.3                           | 3.65  |
|                        | 20 | +0.796 | -0.6621 | +0.0875 | 6.77 | 2 38.7                          | 1.3036 | 10 17.7                           | +3.77 |
|                        | 21 | .806   | .6605   | .0863   | 6.81 | 2 36.8                          | .3031  | 10 14.0                           | 3.89  |
|                        | 22 | .815   | .6589   | .0851   | 6.84 | 2 34.9                          | .3026  | 10 10.4                           | 4.01  |
|                        | 23 | .824   | .6573   | .0838   | 6.87 | 2 33.0                          | .3021  | 10 6.7                            | 4.13  |
|                        | 24 | .833   | .6558   | .0825   | 6.90 | 2 31.2                          | .3016  | 10 3.1                            | 4.24  |
|                        | 25 | .842   | .6542   | .0811   | 6.93 | 2 29.4                          | .3010  | 9 59.4                            | 4.36  |
|                        | 26 | .851   | .6527   | .0797   | 6.97 | 2 27.6                          | .3005  | 9 55.7                            | 4.47  |
|                        | 27 | .860   | .6511   | .0783   | 7.00 | 2 25.8                          | .2999  | 9 52.0                            | 4.59  |
|                        | 28 | .869   | .6495   | .0769   | 7.03 | 2 24.0                          | .2994  | 9 48.3                            | 4.70  |
|                        | 29 | .877   | .6479   | .0755   | 7.06 | 2 22.3                          | .2988  | 9 44.6                            | 4.81  |

## 1851

| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g    | G                                | log h  | H                                | i     |
|---------------------------------|----|--------|---------|---------|------|----------------------------------|--------|----------------------------------|-------|
| Juli                            | 30 | +0.886 | —0.6463 | +0.0741 | 7.09 | 2 <sup>h</sup> 20 <sup>m</sup> 5 | 1.2982 | 9 <sup>h</sup> 40 <sup>m</sup> 9 | +4.92 |
|                                 | 31 | .894   | .6448   | .0727   | 7.12 | 2 18.8                           | .2976  | 9 37.2                           | 5.02  |
| August                          | 1  | .903   | .6432   | .0712   | 7.15 | 2 17.1                           | .2970  | 9 33.4                           | 5.13  |
|                                 | 2  | .911   | .6417   | .0697   | 7.18 | 2 15.5                           | .2964  | 9 29.7                           | 5.24  |
|                                 | 3  | .919   | .6401   | .0682   | 7.22 | 2 13.8                           | .2958  | 9 25.9                           | 5.34  |
|                                 | 4  | .928   | .6386   | .0666   | 7.25 | 2 12.2                           | .2952  | 9 22.1                           | 5.44  |
|                                 | 5  | .936   | .6371   | .0651   | 7.28 | 2 10.7                           | .2946  | 9 18.4                           | 5.54  |
|                                 | 6  | .944   | .6356   | .0636   | 7.31 | 2 9.1                            | .2940  | 9 14.6                           | 5.64  |
|                                 | 7  | .952   | .6341   | .0621   | 7.34 | 2 7.5                            | .2933  | 9 10.7                           | 5.74  |
|                                 | 8  | .960   | .6326   | .0606   | 7.37 | 2 6.0                            | .2927  | 9 6.9                            | 5.84  |
|                                 | 9  | +0.967 | —0.6311 | +0.0590 | 7.40 | 2 4.5                            | 1.2921 | 9 3.1                            | +5.93 |
|                                 | 10 | .975   | .6296   | .0575   | 7.43 | 2 3.0                            | .2915  | 8 59.2                           | 6.02  |
|                                 | 11 | .983   | .6281   | .0560   | 7.46 | 2 1.5                            | .2908  | 8 55.4                           | 6.11  |
|                                 | 12 | .990   | .6267   | .0545   | 7.49 | 2 0.0                            | .2902  | 8 51.5                           | 6.20  |
|                                 | 13 | 0.998  | .6252   | .0529   | 7.51 | 1 58.6                           | .2896  | 8 47.6                           | 6.29  |
|                                 | 14 | 1.005  | .6238   | .0514   | 7.54 | 1 57.2                           | .2889  | 8 43.7                           | 6.38  |
|                                 | 15 | .012   | .6223   | .0499   | 7.57 | 1 55.8                           | .2883  | 8 39.8                           | 6.46  |
|                                 | 16 | .020   | .6209   | .0484   | 7.60 | 1 54.5                           | .2877  | 8 35.9                           | 6.54  |
|                                 | 17 | .027   | .6195   | .0469   | 7.63 | 1 53.1                           | .2871  | 8 31.9                           | 6.62  |
|                                 | 18 | .034   | .6181   | .0455   | 7.66 | 1 51.8                           | .2865  | 8 28.0                           | 6.70  |
|                                 | 19 | +1.041 | —0.6167 | +0.0440 | 7.69 | 1 50.5                           | 1.2859 | 8 24.0                           | +6.78 |
|                                 | 20 | .048   | .6153   | .0426   | 7.71 | 1 49.2                           | .2853  | 8 20.0                           | 6.86  |
|                                 | 21 | .054   | .6138   | .0412   | 7.74 | 1 48.0                           | .2847  | 8 16.0                           | 6.93  |
|                                 | 22 | .061   | .6124   | .0398   | 7.77 | 1 46.8                           | .2841  | 8 12.0                           | 7.00  |
|                                 | 23 | .068   | .6110   | .0384   | 7.80 | 1 45.6                           | .2835  | 8 8.0                            | 7.07  |
|                                 | 24 | .074   | .6096   | .0371   | 7.83 | 1 44.4                           | .2830  | 8 4.0                            | 7.14  |
|                                 | 25 | .081   | .6083   | .0357   | 7.86 | 1 43.2                           | .2824  | 8 0.0                            | 7.20  |
|                                 | 26 | .087   | .6069   | .0344   | 7.88 | 1 42.1                           | .2819  | 7 55.9                           | 7.27  |
|                                 | 27 | .094   | .6055   | .0331   | 7.91 | 1 41.0                           | .2813  | 7 51.8                           | 7.33  |
|                                 | 28 | .100   | .6041   | .0319   | 7.94 | 1 39.9                           | .2808  | 7 47.8                           | 7.39  |
|                                 | 29 | +1.106 | —0.6027 | +0.0307 | 7.97 | 1 38.9                           | 1.2803 | 7 43.7                           | +7.44 |
|                                 | 30 | .112   | .6013   | .0296   | 8.00 | 1 37.8                           | .2798  | 7 39.6                           | 7.50  |
|                                 | 31 | .118   | .5999   | .0285   | 8.02 | 1 36.8                           | .2793  | 7 35.5                           | 7.55  |
| Septbr.                         | 1  | .124   | .5985   | .0274   | 8.05 | 1 35.8                           | .2789  | 7 31.4                           | 7.60  |
|                                 | 2  | .130   | .5972   | .0263   | 8.08 | 1 34.8                           | .2784  | 7 27.2                           | 7.65  |
|                                 | 3  | .136   | .5958   | .0253   | 8.11 | 1 33.9                           | .2780  | 7 23.1                           | 7.70  |
|                                 | 4  | .142   | .5944   | .0243   | 8.13 | 1 33.0                           | .2776  | 7 19.0                           | 7.74  |
|                                 | 5  | .148   | .5930   | .0234   | 8.16 | 1 32.1                           | .2772  | 7 14.8                           | 7.78  |
|                                 | 6  | .154   | .5917   | .0225   | 8.19 | 1 31.2                           | .2768  | 7 10.6                           | 7.82  |
|                                 | 7  | .160   | .5903   | .0217   | 8.22 | 1 30.3                           | .2765  | 7 6.5                            | 7.86  |
|                                 | 8  | +1.165 | —0.5889 | +0.0209 | 8.24 | 1 29.5                           | 1.2761 | 7 2.3                            | +7.89 |
|                                 | 9  | .171   | .5875   | .0201   | 8.27 | 1 28.7                           | .2758  | 6 58.1                           | 7.93  |
|                                 | 10 | .176   | .5861   | .0194   | 8.30 | 1 27.9                           | .2755  | 6 53.9                           | 7.96  |
|                                 | 11 | .182   | .5847   | .0188   | 8.33 | 1 27.2                           | .2752  | 6 49.7                           | 7.99  |
|                                 | 12 | .188   | .5833   | .0182   | 8.36 | 1 26.4                           | .2750  | 6 45.4                           | 8.01  |
|                                 | 13 | .193   | .5819   | .0176   | 8.38 | 1 25.7                           | .2747  | 6 41.2                           | 8.04  |
|                                 | 14 | .199   | .5805   | .0171   | 8.41 | 1 25.0                           | .2745  | 6 37.0                           | 8.06  |
|                                 | 15 | .204   | .5791   | .0166   | 8.44 | 1 24.3                           | .2743  | 6 32.7                           | 8.08  |
|                                 | 16 | .209   | .5776   | .0162   | 8.47 | 1 23.7                           | .2742  | 6 28.5                           | 8.10  |
|                                 | 17 | .215   | .5761   | .0159   | 8.50 | 1 23.1                           | .2740  | 6 24.2                           | 8.11  |

## 1851

| <sup>12h</sup><br>M. Z. Berlin | f                    | x       | y       | g                  | G                                 | log h  | H                                 | i                   |
|--------------------------------|----------------------|---------|---------|--------------------|-----------------------------------|--------|-----------------------------------|---------------------|
| Septbr. 18                     | +1 <sup>s</sup> .220 | —0.5747 | +0.0156 | 8 <sup>h</sup> .53 | 1 <sup>h</sup> 22 <sup>m</sup> .4 | 1.2739 | 6 <sup>h</sup> 20 <sup>m</sup> .0 | +8 <sup>h</sup> .12 |
| 19                             | .226                 | .5732   | .0154   | 8.56               | 1 21.8                            | .2738  | 6 15.7                            | 8.13                |
| 20                             | .231                 | .5718   | .0152   | 8.59               | 1 21.3                            | .2737  | 6 11.5                            | 8.14                |
| 21                             | .236                 | .5703   | .0151   | 8.62               | 1 20.7                            | .2737  | 6 7.2                             | 8.15                |
| 22                             | .242                 | .5688   | .0150   | 8.65               | 1 20.2                            | .2736  | 6 2.9                             | 8.15                |
| 23                             | .247                 | .5673   | .0150   | 8.68               | 1 19.6                            | .2736  | 5 58.7                            | 8.15                |
| 24                             | .252                 | .5657   | .0150   | 8.71               | 1 19.1                            | .2737  | 5 54.4                            | 8.15                |
| 25                             | .258                 | .5642   | .0151   | 8.74               | 1 18.7                            | .2737  | 5 50.1                            | 8.14                |
| 26                             | .263                 | .5627   | .0153   | 8.77               | 1 18.2                            | .2738  | 5 45.8                            | 8.13                |
| 27                             | .269                 | .5611   | .0155   | 8.80               | 1 17.7                            | .2739  | 5 41.5                            | 8.12                |
| 28                             | +1.274               | —0.5595 | +0.0158 | 8.83               | 1 17.3                            | 1.2740 | 5 37.3                            | +8.11               |
| 29                             | .279                 | .5579   | .0161   | 8.87               | 1 16.9                            | .2741  | 5 33.0                            | 8.10                |
| 30                             | .285                 | .5563   | .0165   | 8.90               | 1 16.5                            | .2743  | 5 28.7                            | 8.09                |
| Oktbr. 1                       | .290                 | .5546   | .0169   | 8.93               | 1 16.2                            | .2745  | 5 24.4                            | 8.07                |
| 2                              | .296                 | .5529   | .0174   | 8.97               | 1 15.8                            | .2747  | 5 20.1                            | 8.05                |
| 3                              | .301                 | .5512   | .0180   | 9.00               | 1 15.5                            | .2749  | 5 15.9                            | 8.02                |
| 4                              | .307                 | .5495   | .0186   | 9.03               | 1 15.1                            | .2752  | 5 11.6                            | 8.00                |
| 5                              | .313                 | .5478   | .0192   | 9.07               | 1 14.8                            | .2754  | 5 7.3                             | 7.97                |
| 6                              | .318                 | .5461   | .0199   | 9.10               | 1 14.5                            | .2757  | 5 3.1                             | 7.94                |
| 7                              | .324                 | .5443   | .0207   | 9.14               | 1 14.3                            | .2761  | 4 58.8                            | 7.90                |
| 8                              | +1.330               | —0.5425 | +0.0215 | 9.17               | 1 14.0                            | 1.2764 | 4 54.5                            | +7.87               |
| 9                              | .335                 | .5406   | .0224   | 9.21               | 1 13.7                            | .2768  | 4 50.3                            | 7.83                |
| 10                             | .341                 | .5388   | .0233   | 9.25               | 1 13.5                            | .2771  | 4 46.0                            | 7.79                |
| 11                             | .347                 | .5369   | .0242   | 9.29               | 1 13.3                            | .2775  | 4 41.8                            | 7.75                |
| 12                             | .353                 | .5350   | .0252   | 9.32               | 1 13.1                            | .2780  | 4 37.5                            | 7.70                |
| 13                             | .359                 | .5331   | .0262   | 9.36               | 1 12.9                            | .2784  | 4 33.3                            | 7.66                |
| 14                             | .365                 | .5312   | .0273   | 9.40               | 1 12.7                            | .2788  | 4 29.1                            | 7.61                |
| 15                             | .371                 | .5292   | .0284   | 9.44               | 1 12.5                            | .2793  | 4 24.9                            | 7.55                |
| 16                             | .378                 | .5272   | .0296   | 9.48               | 1 12.3                            | .2798  | 4 20.7                            | 7.50                |
| 17                             | .384                 | .5252   | .0308   | 9.52               | 1 12.2                            | .2803  | 4 16.5                            | 7.44                |
| 18                             | +1.390               | —0.5231 | +0.0320 | 9.56               | 1 12.0                            | 1.2808 | 4 12.3                            | +7.38               |
| 19                             | .396                 | .5210   | .0333   | 9.60               | 1 11.9                            | .2814  | 4 8.1                             | 7.32                |
| 20                             | .403                 | .5189   | .0346   | 9.65               | 1 11.7                            | .2819  | 4 3.9                             | 7.26                |
| 21                             | .410                 | .5167   | .0359   | 9.69               | 1 11.6                            | .2825  | 3 59.7                            | 7.20                |
| 22                             | .416                 | .5145   | .0372   | 9.73               | 1 11.4                            | .2830  | 3 55.5                            | 7.13                |
| 23                             | .423                 | .5123   | .0386   | 9.78               | 1 11.3                            | .2836  | 3 51.4                            | 7.06                |
| 24                             | .430                 | .5101   | .0400   | 9.82               | 1 11.2                            | .2842  | 3 47.2                            | 6.99                |
| 25                             | .437                 | .5078   | .0414   | 9.87               | 1 11.1                            | .2848  | 3 43.1                            | 6.91                |
| 26                             | .444                 | .5055   | .0429   | 9.92               | 1 11.0                            | .2854  | 3 39.0                            | 6.84                |
| 27                             | .451                 | .5031   | .0444   | 9.96               | 1 10.9                            | .2860  | 3 34.8                            | 6.76                |
| 28                             | +1.458               | —0.5007 | +0.0459 | 10.01              | 1 10.8                            | 1.2867 | 3 30.7                            | +6.68               |
| 29                             | .465                 | .4983   | .0475   | 10.06              | 1 10.6                            | .2873  | 3 26.6                            | 6.60                |
| 30                             | .473                 | .4959   | .0490   | 10.11              | 1 10.5                            | .2880  | 3 22.5                            | 6.51                |
| 31                             | .480                 | .4934   | .0506   | 10.16              | 1 10.4                            | .2886  | 3 18.4                            | 6.42                |
| Novbr. 1                       | .488                 | .4909   | .0522   | 10.21              | 1 10.3                            | .2893  | 3 14.4                            | 6.34                |
| 2                              | .495                 | .4884   | .0538   | 10.26              | 1 10.2                            | .2899  | 3 10.3                            | 6.25                |
| 3                              | .503                 | .4858   | .0554   | 10.31              | 1 10.1                            | .2906  | 3 6.3                             | 6.15                |
| 4                              | .511                 | .4832   | .0570   | 10.36              | 1 10.0                            | .2912  | 3 2.2                             | 6.06                |
| 5                              | .519                 | .4806   | .0586   | 10.42              | 1 9.9                             | .2919  | 2 58.2                            | 5.96                |
| 6                              | .527                 | .4779   | .0602   | 10.47              | 1 9.8                             | .2925  | 2 54.2                            | 5.86                |

## 1851

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|----------------------------------|--------|-----------------------------------|---------------------|
| Novbr.                          | 7  | +1 <sup>s</sup> .535 | —0.4752 | +0.0618 | 10 <sup>h</sup> .52 | 1 <sup>h</sup> 9 <sup>m</sup> .7 | 1.2932 | 2 <sup>h</sup> 50 <sup>m</sup> .2 | +5 <sup>h</sup> .76 |
|                                 | 8  | .543                 | .4725   | .0634   | 10.58               | 1 9.5                            | .2938  | 2 46.2                            | 5.66                |
|                                 | 9  | .552                 | .4698   | .0650   | 10.63               | 1 9.4                            | .2945  | 2 42.2                            | 5.56                |
|                                 | 10 | .560                 | .4670   | .0666   | 10.69               | 1 9.3                            | .2951  | 2 38.2                            | 5.45                |
|                                 | 11 | .568                 | .4642   | .0682   | 10.74               | 1 9.2                            | .2958  | 2 34.2                            | 5.34                |
|                                 | 12 | .577                 | .4613   | .0697   | 10.80               | 1 9.1                            | .2964  | 2 30.3                            | 5.23                |
|                                 | 13 | .586                 | .4585   | .0713   | 10.86               | 1 8.9                            | .2970  | 2 26.3                            | 5.12                |
|                                 | 14 | .595                 | .4556   | .0728   | 10.92               | 1 8.8                            | .2977  | 2 22.4                            | 5.01                |
|                                 | 15 | .603                 | .4527   | .0743   | 10.98               | 1 8.6                            | .2983  | 2 18.4                            | 4.90                |
|                                 | 16 | .612                 | .4497   | .0758   | 11.03               | 1 8.5                            | .2989  | 2 14.5                            | 4.78                |
|                                 | 17 | +1.622               | —0.4467 | +0.0773 | 11.09               | 1 8.3                            | 1.2995 | 2 10.6                            | +4.67               |
|                                 | 18 | .631                 | .4436   | .0787   | 11.16               | 1 8.2                            | .3001  | 2 6.7                             | 4.55                |
|                                 | 19 | .640                 | .4406   | .0802   | 11.22               | 1 8.0                            | .3007  | 2 2.8                             | 4.43                |
|                                 | 20 | .649                 | .4375   | .0816   | 11.28               | 1 7.8                            | .3013  | 1 58.9                            | 4.31                |
|                                 | 21 | .659                 | .4345   | .0830   | 11.34               | 1 7.6                            | .3018  | 1 55.1                            | 4.18                |
|                                 | 22 | .669                 | .4314   | .0844   | 11.40               | 1 7.4                            | .3024  | 1 51.2                            | 4.06                |
|                                 | 23 | .678                 | .4283   | .0858   | 11.47               | 1 7.2                            | .3029  | 1 47.3                            | 3.93                |
|                                 | 24 | .688                 | .4251   | .0871   | 11.53               | 1 7.0                            | .3035  | 1 43.5                            | 3.81                |
|                                 | 25 | .698                 | .4219   | .0884   | 11.59               | 1 6.8                            | .3040  | 1 39.7                            | 3.68                |
|                                 | 26 | .708                 | .4187   | .0897   | 11.66               | 1 6.6                            | .3045  | 1 35.8                            | 3.55                |
| Dezbr.                          | 27 | +1.718               | —0.4155 | +0.0909 | 11.72               | 1 6.3                            | 1.3050 | 1 32.0                            | +3.42               |
|                                 | 28 | .728                 | .4122   | .0921   | 11.79               | 1 6.1                            | .3054  | 1 28.2                            | 3.29                |
|                                 | 29 | .738                 | .4090   | .0932   | 11.85               | 1 5.8                            | .3059  | 1 24.3                            | 3.16                |
|                                 | 30 | .748                 | .4057   | .0943   | 11.92               | 1 5.6                            | .3063  | 1 20.5                            | 3.02                |
|                                 | 1  | .758                 | .4024   | .0954   | 11.98               | 1 5.3                            | .3067  | 1 16.7                            | 2.89                |
|                                 | 2  | .769                 | .3991   | .0964   | 12.05               | 1 5.0                            | .3071  | 1 12.9                            | 2.75                |
|                                 | 3  | .779                 | .3958   | .0974   | 12.11               | 1 4.7                            | .3075  | 1 9.1                             | 2.62                |
|                                 | 4  | .790                 | .3925   | .0984   | 12.18               | 1 4.5                            | .3079  | 1 5.4                             | 2.48                |
|                                 | 5  | .800                 | .3892   | .0993   | 12.25               | 1 4.2                            | .3083  | 1 1.6                             | 2.34                |
|                                 | 6  | .811                 | .3858   | .1001   | 12.31               | 1 3.9                            | .3086  | 0 57.8                            | 2.20                |
|                                 | 7  | +1.821               | —0.3825 | +0.1009 | 12.38               | 1 3.6                            | 1.3089 | 0 54.0                            | +2.06               |
|                                 | 8  | .832                 | .3791   | .1016   | 12.45               | 1 3.3                            | .3092  | 0 50.3                            | 1.92                |
|                                 | 9  | .843                 | .3758   | .1023   | 12.52               | 1 2.9                            | .3095  | 0 46.5                            | 1.78                |
|                                 | 10 | .854                 | .3724   | .1029   | 12.58               | 1 2.5                            | .3097  | 0 42.7                            | 1.64                |
|                                 | 11 | .864                 | .3690   | .1035   | 12.65               | 1 2.2                            | .3099  | 0 39.0                            | 1.50                |
|                                 | 12 | .875                 | .3656   | .1040   | 12.72               | 1 1.8                            | .3101  | 0 35.2                            | 1.36                |
|                                 | 13 | .886                 | .3622   | .1045   | 12.79               | 1 1.4                            | .3103  | 0 31.5                            | 1.21                |
|                                 | 14 | .897                 | .3588   | .1049   | 12.86               | 1 1.1                            | .3105  | 0 27.7                            | 1.07                |
|                                 | 15 | .908                 | .3554   | .1053   | 12.93               | 1 0.7                            | .3107  | 0 24.0                            | 0.93                |
|                                 | 16 | .919                 | .3520   | .1057   | 12.99               | 1 0.3                            | .3108  | 0 20.3                            | 0.78                |
|                                 | 17 | +1.930               | —0.3486 | +0.1060 | 13.06               | 0 59.8                           | 1.3109 | 0 16.5                            | +0.64               |
|                                 | 18 | .941                 | .3452   | .1062   | 13.13               | 0 59.4                           | .3110  | 0 12.8                            | 0.50                |
|                                 | 19 | .952                 | .3418   | .1064   | 13.20               | 0 59.0                           | .3111  | 0 9.1                             | 0.35                |
|                                 | 20 | .963                 | .3384   | .1065   | 13.27               | 0 58.6                           | .3111  | 0 5.3                             | 0.21                |
|                                 | 21 | .974                 | .3350   | .1065   | 13.33               | 0 58.1                           | .3111  | 0 1.6                             | +0.06               |
|                                 | 22 | .985                 | .3317   | .1065   | 13.40               | 0 57.7                           | .3111  | 23 57.8                           | —0.08               |
|                                 | 23 | 1.996                | .3283   | .1064   | 13.47               | 0 57.3                           | .3111  | 23 54.1                           | 0.23                |
|                                 | 24 | 2.007                | .3249   | .1063   | 13.54               | 0 56.8                           | .3110  | 23 50.4                           | 0.37                |
|                                 | 25 | .018                 | .3215   | .1061   | 13.60               | 0 56.3                           | .3110  | 23 46.6                           | 0.52                |
|                                 | 26 | .029                 | .3182   | .1059   | 13.67               | 0 55.9                           | .3109  | 23 42.9                           | 0.66                |

## 1851

| <sup>12h</sup><br>M. Z. Berlin | f                   | x       | y       | g                  | G                                | log h  | H                                 | i                  |
|--------------------------------|---------------------|---------|---------|--------------------|----------------------------------|--------|-----------------------------------|--------------------|
| Dezbr. 27                      | +2 <sup>s</sup> 040 | —0.3148 | +0.1056 | 13 <sup>h</sup> 74 | 0 <sup>h</sup> 55 <sup>m</sup> 4 | 1.3108 | 23 <sup>h</sup> 39 <sup>m</sup> 1 | —0 <sup>h</sup> 81 |
| 28                             | .051                | .3115   | .1053   | 13.81              | 0 54.9                           | .3107  | 23 35.4                           | 0.95               |
| 29                             | .062                | .3082   | .1049   | 13.87              | 0 54.4                           | .3105  | 23 31.6                           | 1.09               |
| 30                             | .073                | .3049   | .1045   | 13.94              | 0 53.9                           | .3103  | 23 27.9                           | 1.24               |
| 31                             | .084                | .3016   | .1041   | 14.00              | 0 53.4                           | .3101  | 23 24.1                           | 1.38               |

## 1852

|         |    |                     |         |         |                   |                                   |        |                                   |                    |
|---------|----|---------------------|---------|---------|-------------------|-----------------------------------|--------|-----------------------------------|--------------------|
| Januar  | 1  | —0 <sup>s</sup> 976 | —0.6448 | +0.1034 | 7 <sup>h</sup> 12 | 10 <sup>h</sup> 12 <sup>m</sup> 5 | 1.3099 | 23 <sup>h</sup> 20 <sup>m</sup> 4 | —1 <sup>h</sup> 52 |
|         | 2  | .965                | .6484   | .1028   | 7.05              | 10 12.0                           | .3097  | 23 16.6                           | 1.66               |
|         | 3  | .954                | .6519   | .1021   | 6.98              | 10 11.4                           | .3094  | 23 12.8                           | 1.81               |
|         | 4  | .944                | .6554   | .1014   | 6.91              | 10 10.9                           | .3091  | 23 9.1                            | 1.95               |
|         | 5  | .933                | .6589   | .1007   | 6.84              | 10 10.4                           | .3088  | 23 5.3                            | 2.09               |
|         | 6  | .922                | .6624   | .0999   | 6.77              | 10 9.8                            | .3085  | 23 1.5                            | 2.23               |
|         | 7  | .912                | .6659   | .0990   | 6.70              | 10 9.3                            | .3082  | 22 57.7                           | 2.37               |
|         | 8  | .901                | .6693   | .0981   | 6.63              | 10 8.8                            | .3078  | 22 53.9                           | 2.50               |
|         | 9  | .891                | .6728   | .0972   | 6.56              | 10 8.3                            | .3075  | 22 50.1                           | 2.64               |
|         | 10 | .880                | .6763   | .0962   | 6.49              | 10 7.8                            | .3071  | 22 46.3                           | 2.78               |
|         | 11 | —0.870              | —0.6798 | +0.0952 | 6.42              | 10 7.3                            | 1.3067 | 22 42.5                           | —2.91              |
|         | 12 | .860                | .6833   | .0941   | 6.35              | 10 6.9                            | .3062  | 22 38.7                           | 3.05               |
|         | 13 | .849                | .6867   | .0930   | 6.28              | 10 6.4                            | .3058  | 22 34.8                           | 3.18               |
|         | 14 | .839                | .6902   | .0918   | 6.21              | 10 6.0                            | .3053  | 22 31.0                           | 3.32               |
|         | 15 | .829                | .6936   | .0906   | 6.14              | 10 5.6                            | .3049  | 22 27.2                           | 3.45               |
|         | 16 | .819                | .6971   | .0894   | 6.07              | 10 5.2                            | .3044  | 22 23.3                           | 3.58               |
|         | 17 | .809                | .7005   | .0881   | 6.01              | 10 4.8                            | .3039  | 22 19.5                           | 3.71               |
|         | 18 | .799                | .7039   | .0868   | 5.94              | 10 4.4                            | .3033  | 22 15.6                           | 3.84               |
|         | 19 | .789                | .7073   | .0855   | 5.87              | 10 4.0                            | .3028  | 22 11.7                           | 3.96               |
|         | 20 | .779                | .7107   | .0842   | 5.80              | 10 3.7                            | .3023  | 22 7.8                            | 4.09               |
|         | 21 | —0.770              | —0.7140 | +0.0828 | 5.73              | 10 3.4                            | 1.3017 | 22 3.9                            | —4.21              |
|         | 22 | .760                | .7174   | .0814   | 5.67              | 10 3.1                            | .3011  | 22 0.0                            | 4.34               |
|         | 23 | .751                | .7207   | .0799   | 5.60              | 10 2.8                            | .3005  | 21 56.1                           | 4.46               |
|         | 24 | .742                | .7240   | .0784   | 5.53              | 10 2.5                            | .2999  | 21 52.2                           | 4.58               |
|         | 25 | .732                | .7273   | .0769   | 5.47              | 10 2.2                            | .2993  | 21 48.3                           | 4.70               |
|         | 26 | .723                | .7306   | .0754   | 5.40              | 10 2.0                            | .2987  | 21 44.3                           | 4.82               |
|         | 27 | .714                | .7338   | .0739   | 5.34              | 10 1.8                            | .2981  | 21 40.4                           | 4.93               |
|         | 28 | .705                | .7370   | .0724   | 5.27              | 10 1.6                            | .2975  | 21 36.4                           | 5.05               |
|         | 29 | .696                | .7402   | .0708   | 5.21              | 10 1.4                            | .2969  | 21 32.5                           | 5.16               |
|         | 30 | .687                | .7434   | .0692   | 5.15              | 10 1.1                            | .2962  | 21 28.5                           | 5.27               |
|         | 31 | —0.678              | —0.7465 | +0.0676 | 5.08              | 10 0.9                            | 1.2956 | 21 24.5                           | —5.38              |
| Februar | 1  | .670                | .7496   | .0660   | 5.02              | 10 0.7                            | .2949  | 21 20.5                           | 5.49               |
|         | 2  | .661                | .7527   | .0644   | 4.96              | 10 0.6                            | .2943  | 21 16.5                           | 5.59               |
|         | 3  | .653                | .7558   | .0627   | 4.90              | 10 0.4                            | .2936  | 21 12.4                           | 5.69               |
|         | 4  | .645                | .7588   | .0611   | 4.84              | 10 0.3                            | .2929  | 21 8.4                            | 5.80               |
|         | 5  | .637                | .7618   | .0595   | 4.78              | 10 0.2                            | .2923  | 21 4.3                            | 5.90               |
|         | 6  | .628                | .7648   | .0579   | 4.72              | 10 0.1                            | .2916  | 21 0.3                            | 6.00               |
|         | 7  | .620                | .7678   | .0563   | 4.66              | 10 0.0                            | .2909  | 20 56.2                           | 6.09               |
|         | 8  | .613                | .7707   | .0547   | 4.60              | 9 59.9                            | .2903  | 20 52.1                           | 6.19               |
|         | 9  | .605                | .7736   | .0531   | 4.54              | 9 59.8                            | .2896  | 20 48.0                           | 6.28               |

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| <sup>12<sup>h</sup></sup><br>M. Z. Berlin | f      | x       | y       | g    | G                   | log h  | H                    | i     |
|-------------------------------------------|--------|---------|---------|------|---------------------|--------|----------------------|-------|
| Februar 10                                | —0.597 | —0.7764 | +0.0515 | 4.48 | 9 <sup>h</sup> 59.7 | 1.2890 | 20 <sup>h</sup> 43.9 | —6.37 |
| 11                                        | .589   | .7792   | .0499   | 4.43 | 9 59.7              | .2883  | 20 39.8              | 6.46  |
| 12                                        | .582   | .7820   | .0484   | 4.37 | 9 59.6              | .2877  | 20 35.7              | 6.55  |
| 13                                        | .574   | .7848   | .0468   | 4.32 | 9 59.5              | .2870  | 20 31.6              | 6.63  |
| 14                                        | .567   | .7875   | .0453   | 4.26 | 9 59.5              | .2864  | 20 27.4              | 6.71  |
| 15                                        | .560   | .7902   | .0438   | 4.21 | 9 59.4              | .2858  | 20 23.3              | 6.79  |
| 16                                        | .553   | .7929   | .0423   | 4.15 | 9 59.4              | .2851  | 20 19.1              | 6.87  |
| 17                                        | .546   | .7956   | .0408   | 4.10 | 9 59.4              | .2845  | 20 14.9              | 6.95  |
| 18                                        | .539   | .7982   | .0394   | 4.05 | 9 59.3              | .2839  | 20 10.7              | 7.02  |
| 19                                        | .532   | .8008   | .0380   | 3.99 | 9 59.3              | .2833  | 20 6.5               | 7.09  |
| 20                                        | —0.525 | —0.8033 | +0.0366 | 3.94 | 9 59.2              | 1.2828 | 20 2.3               | —7.16 |
| 21                                        | .518   | .8058   | .0352   | 3.89 | 9 59.1              | .2822  | 19 58.1              | 7.23  |
| 22                                        | .512   | .8083   | .0339   | 3.84 | 9 59.1              | .2816  | 19 53.9              | 7.30  |
| 23                                        | .505   | .8108   | .0326   | 3.79 | 9 59.0              | .2811  | 19 49.7              | 7.36  |
| 24                                        | .498   | .8132   | .0313   | 3.75 | 9 58.9              | .2805  | 19 45.4              | 7.42  |
| 25                                        | .492   | .8156   | .0300   | 3.70 | 9 58.8              | .2800  | 19 41.2              | 7.48  |
| 26                                        | .485   | .8179   | .0288   | 3.65 | 9 58.7              | .2795  | 19 36.9              | 7.53  |
| 27                                        | .479   | .8202   | .0276   | 3.60 | 9 58.6              | .2790  | 19 32.6              | 7.59  |
| 28                                        | .473   | .8225   | .0265   | 3.56 | 9 58.5              | .2786  | 19 28.4              | 7.64  |
| 29                                        | .467   | .8248   | .0255   | 3.51 | 9 58.3              | .2781  | 19 24.1              | 7.69  |
| März 1                                    | —0.461 | —0.8270 | +0.0245 | 3.47 | 9 58.1              | 1.2777 | 19 19.8              | —7.73 |
| 2                                         | .455   | .8292   | .0236   | 3.42 | 9 57.9              | .2773  | 19 15.5              | 7.78  |
| 3                                         | .449   | .8314   | .0227   | 3.38 | 9 57.7              | .2769  | 19 11.2              | 7.82  |
| 4                                         | .443   | .8336   | .0218   | 3.34 | 9 57.5              | .2765  | 19 6.9               | 7.85  |
| 5                                         | .437   | .8357   | .0210   | 3.29 | 9 57.2              | .2762  | 19 2.6               | 7.89  |
| 6                                         | .431   | .8378   | .0202   | 3.25 | 9 56.9              | .2758  | 18 58.3              | 7.92  |
| 7                                         | .425   | .8399   | .0194   | 3.21 | 9 56.6              | .2755  | 18 54.0              | 7.96  |
| 8                                         | .419   | .8419   | .0187   | 3.17 | 9 56.2              | .2752  | 18 49.6              | 7.99  |
| 9                                         | .414   | .8439   | .0181   | 3.13 | 9 55.8              | .2750  | 18 45.3              | 8.01  |
| 10                                        | .408   | .8459   | .0175   | 3.09 | 9 55.3              | .2747  | 18 41.0              | 8.04  |
| 11                                        | —0.402 | —0.8478 | +0.0170 | 3.05 | 9 54.8              | 1.2745 | 18 36.7              | —8.06 |
| 12                                        | .397   | .8497   | .0166   | 3.01 | 9 54.2              | .2743  | 18 32.4              | 8.08  |
| 13                                        | .391   | .8516   | .0162   | 2.98 | 9 53.5              | .2741  | 18 28.0              | 8.10  |
| 14                                        | .385   | .8535   | .0159   | 2.94 | 9 52.8              | .2740  | 18 23.7              | 8.11  |
| 15                                        | .380   | .8553   | .0156   | 2.90 | 9 52.1              | .2739  | 18 19.3              | 8.12  |
| 16                                        | .374   | .8571   | .0154   | 2.86 | 9 51.3              | .2738  | 18 15.0              | 8.13  |
| 17                                        | .369   | .8589   | .0152   | 2.83 | 9 50.5              | .2737  | 18 10.7              | 8.14  |
| 18                                        | .363   | .8607   | .0151   | 2.79 | 9 49.6              | .2737  | 18 6.4               | 8.15  |
| 19                                        | .358   | .8625   | .0150   | 2.76 | 9 48.6              | .2736  | 18 2.0               | 8.15  |
| 20                                        | .352   | .8643   | .0150   | 2.72 | 9 47.5              | .2736  | 17 57.7              | 8.15  |
| 21                                        | —0.347 | —0.8660 | +0.0151 | 2.69 | 9 46.4              | 1.2737 | 17 53.4              | —8.15 |
| 22                                        | .341   | .8677   | .0152   | 2.65 | 9 45.2              | .2737  | 17 49.1              | 8.14  |
| 23                                        | .336   | .8694   | .0154   | 2.62 | 9 44.0              | .2738  | 17 44.8              | 8.13  |
| 24                                        | .330   | .8711   | .0156   | 2.59 | 9 42.6              | .2739  | 17 40.4              | 8.12  |
| 25                                        | .324   | .8727   | .0159   | 2.55 | 9 41.2              | .2740  | 17 36.1              | 8.11  |
| 26                                        | .319   | .8743   | .0163   | 2.52 | 9 39.6              | .2742  | 17 31.8              | 8.10  |
| 27                                        | .313   | .8759   | .0167   | 2.49 | 9 37.9              | .2743  | 17 27.5              | 8.08  |
| 28                                        | .308   | .8775   | .0171   | 2.46 | 9 36.2              | .2745  | 17 23.2              | 8.06  |
| 29                                        | .302   | .8790   | .0176   | 2.43 | 9 34.3              | .2747  | 17 18.9              | 8.04  |
| 30                                        | .296   | .8806   | .0181   | 2.39 | 9 32.4              | .2750  | 17 14.7              | 8.01  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f       | x       | y       | g    | G                                 | log h  | H                                  | i     |
|---------------------------------|----|---------|---------|---------|------|-----------------------------------|--------|------------------------------------|-------|
| März                            | 31 | —0.8291 | —0.8822 | +0.0187 | 2.36 | 9 <sup>h</sup> 30 <sup>m</sup> .4 | 1.2752 | 17 <sup>h</sup> 10 <sup>m</sup> .4 | —7.99 |
| April                           | 1  | .285    | .8837   | .0194   | 2.33 | 9 28.2                            | .2755  | 17 6.2                             | 7.96  |
|                                 | 2  | .279    | .8852   | .0201   | 2.30 | 9 25.9                            | .2758  | 17 1.9                             | 7.93  |
|                                 | 3  | .273    | .8867   | .0209   | 2.27 | 9 23.5                            | .2761  | 16 57.7                            | 7.89  |
|                                 | 4  | .267    | .8881   | .0217   | 2.24 | 9 20.9                            | .2765  | 16 53.4                            | 7.86  |
|                                 | 5  | .261    | .8895   | .0225   | 2.21 | 9 18.2                            | .2768  | 16 49.2                            | 7.82  |
|                                 | 6  | .255    | .8909   | .0234   | 2.19 | 9 15.4                            | .2772  | 16 45.0                            | 7.78  |
|                                 | 7  | .249    | .8923   | .0244   | 2.16 | 9 12.4                            | .2776  | 16 40.8                            | 7.74  |
|                                 | 8  | .243    | .8937   | .0254   | 2.13 | 9 9.3                             | .2781  | 16 36.6                            | 7.69  |
|                                 | 9  | .237    | .8950   | .0264   | 2.11 | 9 6.1                             | .2785  | 16 32.4                            | 7.64  |
|                                 | 10 | —0.231  | —0.8963 | +0.0275 | 2.08 | 9 2.7                             | 1.2789 | 16 28.2                            | —7.59 |
|                                 | 11 | .225    | .8976   | .0286   | 2.05 | 8 59.2                            | .2794  | 16 24.0                            | 7.54  |
|                                 | 12 | .218    | .8989   | .0297   | 2.03 | 8 55.6                            | .2799  | 16 19.9                            | 7.49  |
|                                 | 13 | .212    | .9001   | .0309   | 2.00 | 8 51.7                            | .2804  | 16 15.8                            | 7.43  |
|                                 | 14 | .205    | .9013   | .0321   | 1.98 | 8 47.7                            | .2809  | 16 11.6                            | 7.37  |
|                                 | 15 | .199    | .9025   | .0333   | 1.96 | 8 43.5                            | .2814  | 16 7.5                             | 7.31  |
|                                 | 16 | .192    | .9036   | .0346   | 1.93 | 8 39.1                            | .2819  | 16 3.4                             | 7.25  |
|                                 | 17 | .186    | .9047   | .0359   | 1.91 | 8 34.6                            | .2825  | 15 59.3                            | 7.19  |
|                                 | 18 | .179    | .9057   | .0372   | 1.89 | 8 29.8                            | .2830  | 15 55.2                            | 7.12  |
|                                 | 19 | .172    | .9067   | .0386   | 1.87 | 8 24.9                            | .2836  | 15 51.2                            | 7.06  |
|                                 | 20 | —0.165  | —0.9077 | +0.0400 | 1.85 | 8 19.7                            | 1.2842 | 15 47.1                            | —6.99 |
|                                 | 21 | .158    | .9087   | .0414   | 1.83 | 8 14.4                            | .2848  | 15 43.1                            | 6.91  |
|                                 | 22 | .151    | .9096   | .0429   | 1.81 | 8 9.0                             | .2854  | 15 39.0                            | 6.84  |
|                                 | 23 | .144    | .9104   | .0443   | 1.79 | 8 3.3                             | .2860  | 15 35.0                            | 6.76  |
|                                 | 24 | .137    | .9112   | .0458   | 1.78 | 7 57.5                            | .2866  | 15 31.0                            | 6.68  |
|                                 | 25 | .130    | .9119   | .0473   | 1.77 | 7 51.6                            | .2872  | 15 27.0                            | 6.60  |
|                                 | 26 | .122    | .9126   | .0488   | 1.75 | 7 45.4                            | .2879  | 15 23.1                            | 6.52  |
|                                 | 27 | .115    | .9132   | .0503   | 1.74 | 7 39.1                            | .2885  | 15 19.1                            | 6.44  |
|                                 | 28 | .107    | .9138   | .0518   | 1.73 | 7 32.6                            | .2891  | 15 15.1                            | 6.35  |
|                                 | 29 | .099    | .9143   | .0533   | 1.72 | 7 26.0                            | .2897  | 15 11.2                            | 6.26  |
| Mai                             | 30 | —0.092  | —0.9148 | +0.0549 | 1.71 | 7 19.2                            | 1.2904 | 15 7.3                             | —6.18 |
|                                 | 1  | .084    | .9152   | .0564   | 1.70 | 7 12.3                            | .2910  | 15 3.4                             | 6.09  |
|                                 | 2  | .076    | .9155   | .0579   | 1.69 | 7 5.2                             | .2916  | 14 59.5                            | 5.99  |
|                                 | 3  | .068    | .9157   | .0595   | 1.69 | 6 58.1                            | .2923  | 14 55.6                            | 5.90  |
|                                 | 4  | .060    | .9158   | .0610   | 1.69 | 6 50.9                            | .2929  | 14 51.8                            | 5.80  |
|                                 | 5  | .052    | .9158   | .0626   | 1.69 | 6 43.5                            | .2935  | 14 47.9                            | 5.71  |
|                                 | 6  | .044    | .9158   | .0641   | 1.69 | 6 36.1                            | .2942  | 14 44.1                            | 5.61  |
|                                 | 7  | .035    | .9157   | .0657   | 1.69 | 6 28.6                            | .2948  | 14 40.2                            | 5.51  |
|                                 | 8  | .027    | .9155   | .0672   | 1.69 | 6 21.1                            | .2954  | 14 36.4                            | 5.40  |
|                                 | 9  | .018    | .9152   | .0687   | 1.70 | 6 13.5                            | .2960  | 14 32.6                            | 5.30  |
|                                 | 10 | —0.010  | —0.9148 | +0.0702 | 1.71 | 6 5.9                             | 1.2966 | 14 28.8                            | —5.20 |
|                                 | 11 | —0.001  | .9143   | .0717   | 1.72 | 5 58.3                            | .2972  | 14 25.0                            | 5.09  |
|                                 | 12 | +0.008  | .9137   | .0732   | 1.73 | 5 50.7                            | .2978  | 14 21.3                            | 4.98  |
|                                 | 13 | .016    | .9131   | .0747   | 1.74 | 5 43.1                            | .2984  | 14 17.5                            | 4.87  |
|                                 | 14 | .025    | .9124   | .0761   | 1.76 | 5 35.5                            | .2990  | 14 13.8                            | 4.76  |
|                                 | 15 | .034    | .9116   | .0775   | 1.77 | 5 28.1                            | .2996  | 14 10.1                            | 4.65  |
|                                 | 16 | .043    | .9107   | .0789   | 1.79 | 5 20.8                            | .3001  | 14 6.3                             | 4.54  |
|                                 | 17 | .052    | .9097   | .0803   | 1.81 | 5 13.5                            | .3007  | 14 2.6                             | 4.42  |
|                                 | 18 | .062    | .9086   | .0817   | 1.83 | 5 6.3                             | .3012  | 13 58.9                            | 4.31  |
|                                 | 19 | .071    | .9075   | .0830   | 1.85 | 4 59.3                            | .3018  | 13 55.2                            | 4.19  |

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| <sup>12h</sup><br>M. Z. Berlin |    | f       | x       | y       | g    | G                                | log h  | H                                 | i     |
|--------------------------------|----|---------|---------|---------|------|----------------------------------|--------|-----------------------------------|-------|
| Mai                            | 20 | +0.8081 | -0.9063 | +0.0843 | 1.88 | 4 <sup>h</sup> 52 <sup>m</sup> 3 | 1.3023 | 13 <sup>h</sup> 51 <sup>m</sup> 5 | -4.07 |
|                                | 21 | .090    | .9050   | .0856   | 1.90 | 4 45.3                           | .3028  | 13 47.9                           | 3.95  |
|                                | 22 | .100    | .9037   | .0869   | 1.93 | 4 38.6                           | .3033  | 13 44.2                           | 3.83  |
|                                | 23 | .109    | .9023   | .0881   | 1.96 | 4 31.9                           | .3038  | 13 40.6                           | 3.71  |
|                                | 24 | .119    | .9008   | .0893   | 1.99 | 4 25.4                           | .3043  | 13 36.9                           | 3.59  |
|                                | 25 | .129    | .8992   | .0905   | 2.02 | 4 19.1                           | .3048  | 13 33.3                           | 3.47  |
|                                | 26 | .139    | .8975   | .0916   | 2.05 | 4 13.0                           | .3052  | 13 29.7                           | 3.34  |
|                                | 27 | .149    | .8958   | .0927   | 2.09 | 4 6.9                            | .3057  | 13 26.1                           | 3.22  |
|                                | 28 | .158    | .8940   | .0937   | 2.12 | 4 1.0                            | .3061  | 13 22.5                           | 3.09  |
|                                | 29 | .168    | .8922   | .0947   | 2.16 | 3 55.3                           | .3065  | 13 18.9                           | 2.97  |
| Juni                           | 30 | +0.178  | -0.8903 | +0.0957 | 2.20 | 3 49.6                           | 1.3069 | 13 15.3                           | -2.84 |
|                                | 31 | .189    | .8884   | .0967   | 2.24 | 3 44.1                           | .3073  | 13 11.7                           | 2.71  |
|                                | 1  | .199    | .8864   | .0976   | 2.28 | 3 38.7                           | .3076  | 13 8.1                            | 2.58  |
|                                | 2  | .209    | .8843   | .0985   | 2.32 | 3 33.5                           | .3080  | 13 4.6                            | 2.45  |
|                                | 3  | .219    | .8822   | .0994   | 2.36 | 3 28.5                           | .3083  | 13 1.0                            | 2.32  |
|                                | 4  | .230    | .8801   | .1002   | 2.40 | 3 23.5                           | .3086  | 12 57.5                           | 2.19  |
|                                | 5  | .240    | .8779   | .1009   | 2.45 | 3 18.6                           | .3089  | 12 53.9                           | 2.06  |
|                                | 6  | .250    | .8757   | .1016   | 2.49 | 3 13.8                           | .3092  | 12 50.4                           | 1.93  |
|                                | 7  | .261    | .8734   | .1022   | 2.54 | 3 9.2                            | .3094  | 12 46.9                           | 1.80  |
|                                | 8  | .271    | .8711   | .1028   | 2.58 | 3 4.6                            | .3097  | 12 43.3                           | 1.66  |
|                                | 9  | +0.282  | -0.8687 | +0.1034 | 2.63 | 3 0.2                            | 1.3099 | 12 39.8                           | -1.53 |
|                                | 10 | .293    | .8664   | .1039   | 2.68 | 2 56.0                           | .3101  | 12 36.3                           | 1.40  |
|                                | 11 | .303    | .8640   | .1044   | 2.73 | 2 51.8                           | .3103  | 12 32.7                           | 1.26  |
|                                | 12 | .314    | .8616   | .1048   | 2.78 | 2 47.8                           | .3105  | 12 29.2                           | 1.13  |
|                                | 13 | .324    | .8591   | .1052   | 2.83 | 2 43.8                           | .3106  | 12 25.7                           | 0.99  |
|                                | 14 | .335    | .8566   | .1055   | 2.88 | 2 39.9                           | .3107  | 12 22.2                           | 0.86  |
|                                | 15 | .346    | .8540   | .1058   | 2.93 | 2 36.0                           | .3108  | 12 18.7                           | 0.72  |
|                                | 16 | .356    | .8515   | .1060   | 2.98 | 2 32.3                           | .3109  | 12 15.2                           | 0.59  |
|                                | 17 | .367    | .8489   | .1062   | 3.03 | 2 28.7                           | .3110  | 12 11.7                           | 0.45  |
|                                | 18 | .378    | .8463   | .1064   | 3.08 | 2 25.1                           | .3111  | 12 8.2                            | 0.32  |
|                                | 19 | +0.389  | -0.8437 | +0.1065 | 3.13 | 2 21.7                           | 1.3111 | 12 4.7                            | -0.18 |
|                                | 20 | .399    | .8411   | .1065   | 3.19 | 2 18.3                           | .3111  | 12 1.2                            | -0.05 |
|                                | 21 | .410    | .8384   | .1065   | 3.24 | 2 15.0                           | .3111  | 11 57.7                           | +0.09 |
|                                | 22 | .421    | .8357   | .1064   | 3.29 | 2 11.7                           | .3111  | 11 54.2                           | 0.22  |
|                                | 23 | .431    | .8330   | .1063   | 3.35 | 2 8.5                            | .3111  | 11 50.7                           | 0.36  |
|                                | 24 | .442    | .8303   | .1062   | 3.40 | 2 5.4                            | .3110  | 11 47.2                           | 0.49  |
|                                | 25 | .453    | .8276   | .1060   | 3.46 | 2 2.4                            | .3109  | 11 43.7                           | 0.63  |
|                                | 26 | .464    | .8249   | .1057   | 3.51 | 1 59.4                           | .3108  | 11 40.2                           | 0.76  |
|                                | 27 | .474    | .8222   | .1054   | 3.56 | 1 56.5                           | .3107  | 11 36.7                           | 0.90  |
|                                | 28 | .485    | .8195   | .1051   | 3.62 | 1 53.7                           | .3106  | 11 33.2                           | 1.03  |
| Juli                           | 29 | +0.496  | -0.8167 | +0.1047 | 3.67 | 1 50.9                           | 1.3104 | 11 29.7                           | +1.17 |
|                                | 30 | .506    | .8139   | .1043   | 3.73 | 1 48.1                           | .3102  | 11 26.2                           | 1.30  |
|                                | 1  | .517    | .8111   | .1038   | 3.79 | 1 45.4                           | .3100  | 11 22.6                           | 1.44  |
|                                | 2  | .527    | .8083   | .1033   | 3.84 | 1 42.8                           | .3098  | 11 19.1                           | 1.57  |
|                                | 3  | .538    | .8056   | .1027   | 3.90 | 1 40.2                           | .3096  | 11 15.6                           | 1.70  |
|                                | 4  | .548    | .8028   | .1021   | 3.95 | 1 37.7                           | .3094  | 11 12.1                           | 1.84  |
|                                | 5  | .559    | .8001   | .1014   | 4.01 | 1 35.2                           | .3091  | 11 8.5                            | 1.97  |
|                                | 6  | .569    | .7973   | .1007   | 4.06 | 1 32.7                           | .3088  | 11 5.0                            | 2.10  |
|                                | 7  | .580    | .7946   | .0999   | 4.12 | 1 30.3                           | .3085  | 11 1.5                            | 2.23  |
|                                | 8  | .590    | .7918   | .0991   | 4.17 | 1 28.0                           | .3082  | 10 57.9                           | 2.36  |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f       | x       | y       | g    | G                   | log h  | H                    | i     |
|---------------------------------|----|---------|---------|---------|------|---------------------|--------|----------------------|-------|
| Juli                            | 9  | +0.8600 | -0.7891 | +0.0983 | 4.23 | 1 <sup>h</sup> 25.7 | 1.3079 | 10 <sup>h</sup> 54.4 | +2.49 |
|                                 | 10 | .610    | .7863   | .0974   | 4.28 | 1 23.4              | .3076  | 10 50.8              | 2.62  |
|                                 | 11 | .621    | .7836   | .0965   | 4.34 | 1 21.2              | .3072  | 10 47.3              | 2.75  |
|                                 | 12 | .631    | .7808   | .0955   | 4.39 | 1 19.0              | .3068  | 10 43.7              | 2.87  |
|                                 | 13 | .641    | .7781   | .0945   | 4.45 | 1 16.8              | .3064  | 10 40.1              | 3.00  |
|                                 | 14 | .651    | .7754   | .0935   | 4.50 | 1 14.7              | .3060  | 10 36.5              | 3.12  |
|                                 | 15 | .661    | .7726   | .0924   | 4.56 | 1 12.7              | .3056  | 10 33.0              | 3.25  |
|                                 | 16 | .671    | .7698   | .0913   | 4.61 | 1 10.6              | .3051  | 10 29.4              | 3.37  |
|                                 | 17 | .681    | .7671   | .0902   | 4.67 | 1 8.6               | .3047  | 10 25.8              | 3.50  |
|                                 | 18 | .690    | .7644   | .0890   | 4.72 | 1 6.6               | .3042  | 10 22.2              | 3.62  |
|                                 | 19 | +0.700  | -0.7617 | +0.0878 | 4.78 | 1 4.7               | 1.3037 | 10 18.5              | +3.74 |
|                                 | 20 | .710    | .7590   | .0866   | 4.83 | 1 2.8               | .3033  | 10 14.9              | 3.86  |
|                                 | 21 | .719    | .7564   | .0854   | 4.88 | 1 1.0               | .3028  | 10 11.3              | 3.98  |
|                                 | 22 | .729    | .7537   | .0841   | 4.94 | 0 59.1              | .3022  | 10 7.6               | 4.10  |
|                                 | 23 | .738    | .7511   | .0828   | 4.99 | 0 57.3              | .3017  | 10 4.0               | 4.22  |
|                                 | 24 | .748    | .7484   | .0814   | 5.04 | 0 55.6              | .3012  | 10 0.3               | 4.33  |
|                                 | 25 | .757    | .7458   | .0800   | 5.10 | 0 53.8              | .3006  | 9 56.6               | 4.45  |
|                                 | 26 | .766    | .7431   | .0786   | 5.15 | 0 52.1              | .3000  | 9 52.9               | 4.56  |
|                                 | 27 | .775    | .7405   | .0772   | 5.20 | 0 50.4              | .2995  | 9 49.2               | 4.67  |
|                                 | 28 | .784    | .7379   | .0758   | 5.26 | 0 48.7              | .2989  | 9 45.5               | 4.78  |
|                                 | 29 | +0.793  | -0.7353 | +0.0744 | 5.31 | 0 47.1              | 1.2984 | 9 41.8               | +4.89 |
|                                 | 30 | .802    | .7327   | .0730   | 5.36 | 0 45.5              | .2978  | 9 38.1               | 5.00  |
|                                 | 31 | .811    | .7302   | .0715   | 5.41 | 0 43.9              | .2972  | 9 34.3               | 5.10  |
| August                          | 1  | .820    | .7276   | .0700   | 5.46 | 0 42.4              | .2966  | 9 30.6               | 5.21  |
|                                 | 2  | .828    | .7251   | .0685   | 5.51 | 0 40.9              | .2960  | 9 26.8               | 5.32  |
|                                 | 3  | .837    | .7226   | .0670   | 5.56 | 0 39.4              | .2953  | 9 23.1               | 5.42  |
|                                 | 4  | .845    | .7201   | .0655   | 5.61 | 0 37.9              | .2947  | 9 19.3               | 5.52  |
|                                 | 5  | .854    | .7176   | .0639   | 5.66 | 0 36.5              | .2941  | 9 15.5               | 5.62  |
|                                 | 6  | .862    | .7152   | .0624   | 5.71 | 0 35.0              | .2935  | 9 11.7               | 5.72  |
|                                 | 7  | .870    | .7127   | .0609   | 5.76 | 0 33.6              | .2929  | 9 7.8                | 5.81  |
|                                 | 8  | +0.878  | -0.7103 | +0.0594 | 5.81 | 0 32.3              | 1.2922 | 9 4.0                | +5.91 |
|                                 | 9  | .886    | .7079   | .0578   | 5.86 | 0 31.0              | .2916  | 9 0.2                | 6.00  |
|                                 | 10 | .894    | .7055   | .0563   | 5.90 | 0 29.7              | .2910  | 8 56.3               | 6.09  |
|                                 | 11 | .902    | .7032   | .0548   | 5.95 | 0 28.4              | .2904  | 8 52.4               | 6.18  |
|                                 | 12 | .910    | .7008   | .0533   | 6.00 | 0 27.2              | .2897  | 8 48.5               | 6.27  |
|                                 | 13 | .918    | .6984   | .0518   | 6.05 | 0 25.9              | .2891  | 8 44.7               | 6.36  |
|                                 | 14 | .925    | .6960   | .0503   | 6.09 | 0 24.7              | .2885  | 8 40.7               | 6.44  |
|                                 | 15 | .933    | .6937   | .0488   | 6.14 | 0 23.6              | .2879  | 8 36.8               | 6.52  |
|                                 | 16 | .940    | .6914   | .0473   | 6.19 | 0 22.4              | .2872  | 8 32.9               | 6.60  |
|                                 | 17 | .948    | .6891   | .0458   | 6.23 | 0 21.3              | .2866  | 8 28.9               | 6.68  |
|                                 | 18 | +0.955  | -0.6869 | +0.0443 | 6.28 | 0 20.2              | 1.2860 | 8 25.0               | +6.76 |
|                                 | 19 | .962    | .6847   | .0429   | 6.32 | 0 19.1              | .2854  | 8 21.0               | 6.84  |
|                                 | 20 | .969    | .6825   | .0415   | 6.37 | 0 18.1              | .2848  | 8 17.0               | 6.91  |
|                                 | 21 | .976    | .6803   | .0401   | 6.41 | 0 17.1              | .2842  | 8 13.0               | 6.98  |
|                                 | 22 | .983    | .6782   | .0388   | 6.45 | 0 16.1              | .2837  | 8 9.0                | 7.05  |
|                                 | 23 | .990    | .6760   | .0374   | 6.50 | 0 15.1              | .2831  | 8 5.0                | 7.12  |
|                                 | 24 | 0.997   | .6739   | .0361   | 6.54 | 0 14.2              | .2826  | 8 0.9                | 7.19  |
|                                 | 25 | 1.004   | .6717   | .0348   | 6.58 | 0 13.3              | .2820  | 7 56.9               | 7.25  |
|                                 | 26 | .010    | .6696   | .0335   | 6.62 | 0 12.4              | .2815  | 7 52.8               | 7.31  |
|                                 | 27 | .017    | .6675   | .0322   | 6.67 | 0 11.5              | .2809  | 7 48.7               | 7.37  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g     | G                                 | log h  | H                                 | i      |
|---------------------------------|----|----------------------|---------|---------|-------|-----------------------------------|--------|-----------------------------------|--------|
| August                          | 28 | +1. <sup>s</sup> 024 | —0.6654 | +0.0310 | 6".71 | 0 <sup>h</sup> 10 <sup>m</sup> .7 | 1.2804 | 7 <sup>h</sup> 44 <sup>m</sup> .7 | +7".43 |
|                                 | 29 | .030                 | .6633   | .0298   | 6.75  | 0 9.9                             | .2799  | 7 40.6                            | 7.48   |
|                                 | 30 | .037                 | .6613   | .0287   | 6.79  | 0 9.1                             | .2795  | 7 36.5                            | 7.54   |
|                                 | 31 | .043                 | .6593   | .0276   | 6.83  | 0 8.3                             | .2790  | 7 32.4                            | 7.59   |
| Septbr.                         | 1  | .049                 | .6573   | .0266   | 6.87  | 0 7.6                             | .2786  | 7 28.2                            | 7.64   |
|                                 | 2  | .056                 | .6553   | .0256   | 6.91  | 0 6.8                             | .2781  | 7 24.1                            | 7.68   |
|                                 | 3  | .062                 | .6533   | .0246   | 6.95  | 0 6.1                             | .2777  | 7 20.0                            | 7.73   |
|                                 | 4  | .068                 | .6513   | .0236   | 6.99  | 0 5.5                             | .2773  | 7 15.8                            | 7.77   |
|                                 | 5  | .074                 | .6493   | .0227   | 7.03  | 0 4.8                             | .2769  | 7 11.6                            | 7.81   |
|                                 | 6  | .080                 | .6473   | .0219   | 7.07  | 0 4.2                             | .2766  | 7 7.5                             | 7.85   |
|                                 | 7  | +1.086               | —0.6454 | +0.0211 | 7.11  | 0 3.6                             | 1.2762 | 7 3.3                             | +7.89  |
|                                 | 8  | .092                 | .6435   | .0203   | 7.15  | 0 3.1                             | .2759  | 6 59.1                            | 7.92   |
|                                 | 9  | .098                 | .6416   | .0196   | 7.19  | 0 2.5                             | .2756  | 6 54.9                            | 7.95   |
|                                 | 10 | .104                 | .6397   | .0189   | 7.23  | 0 2.0                             | .2753  | 6 50.7                            | 7.98   |
|                                 | 11 | .110                 | .6378   | .0183   | 7.26  | 0 1.5                             | .2750  | 6 46.5                            | 8.01   |
|                                 | 12 | .116                 | .6359   | .0177   | 7.30  | 0 1.0                             | .2748  | 6 42.2                            | 8.03   |
|                                 | 13 | .121                 | .6340   | .0172   | 7.34  | 0 0.6                             | .2746  | 6 38.0                            | 8.05   |
|                                 | 14 | .127                 | .6321   | .0167   | 7.38  | 0 0.1                             | .2744  | 6 33.8                            | 8.07   |
|                                 | 15 | .133                 | .6302   | .0163   | 7.42  | 23 59.7                           | .2742  | 6 29.5                            | 8.09   |
|                                 | 16 | .139                 | .6283   | .0160   | 7.45  | 23 59.4                           | .2741  | 6 25.3                            | 8.11   |
|                                 | 17 | +1.144               | —0.6264 | +0.0157 | 7.49  | 23 59.0                           | 1.2739 | 6 21.0                            | +8.12  |
|                                 | 18 | .150                 | .6245   | .0154   | 7.53  | 23 58.7                           | .2738  | 6 16.8                            | 8.13   |
|                                 | 19 | .156                 | .6227   | .0152   | 7.56  | 23 58.3                           | .2737  | 6 12.5                            | 8.14   |
|                                 | 20 | .162                 | .6209   | .0151   | 7.60  | 23 58.0                           | .2737  | 6 8.2                             | 8.14   |
|                                 | 21 | .167                 | .6190   | .0150   | 7.64  | 23 57.8                           | .2737  | 6 4.0                             | 8.15   |
|                                 | 22 | .173                 | .6172   | .0150   | 7.68  | 23 57.5                           | .2736  | 5 59.7                            | 8.15   |
|                                 | 23 | .179                 | .6153   | .0150   | 7.71  | 23 57.3                           | .2737  | 5 55.4                            | 8.15   |
|                                 | 24 | .184                 | .6134   | .0151   | 7.75  | 23 57.1                           | .2737  | 5 51.1                            | 8.14   |
|                                 | 25 | .190                 | .6115   | .0153   | 7.79  | 23 56.9                           | .2737  | 5 46.9                            | 8.14   |
|                                 | 26 | .196                 | .6097   | .0155   | 7.83  | 23 56.8                           | .2738  | 5 42.6                            | 8.13   |
|                                 | 27 | +1.202               | —0.6078 | +0.0157 | 7.86  | 23 56.6                           | 1.2739 | 5 38.3                            | +8.12  |
|                                 | 28 | .207                 | .6059   | .0160   | 7.90  | 23 56.5                           | .2741  | 5 34.0                            | 8.11   |
|                                 | 29 | .213                 | .6040   | .0164   | 7.94  | 23 56.4                           | .2742  | 5 29.7                            | 8.09   |
|                                 | 30 | .219                 | .6021   | .0168   | 7.98  | 23 56.3                           | .2744  | 5 25.4                            | 8.07   |
| Oktbr.                          | 1  | .225                 | .6002   | .0173   | 8.02  | 23 56.2                           | .2746  | 5 21.2                            | 8.05   |
|                                 | 2  | .230                 | .5983   | .0178   | 8.05  | 23 56.2                           | .2748  | 5 16.9                            | 8.03   |
|                                 | 3  | .236                 | .5964   | .0184   | 8.09  | 23 56.1                           | .2751  | 5 12.6                            | 8.00   |
|                                 | 4  | .242                 | .5945   | .0191   | 8.13  | 23 56.1                           | .2754  | 5 8.4                             | 7.97   |
|                                 | 5  | .248                 | .5925   | .0198   | 8.17  | 23 56.1                           | .2757  | 5 4.1                             | 7.94   |
|                                 | 6  | .254                 | .5906   | .0205   | 8.21  | 23 56.2                           | .2760  | 4 59.8                            | 7.91   |
|                                 | 7  | +1.260               | —0.5886 | +0.0213 | 8.25  | 23 56.2                           | 1.2763 | 4 55.6                            | +7.88  |
|                                 | 8  | .266                 | .5866   | .0221   | 8.29  | 23 56.3                           | .2767  | 4 51.3                            | 7.84   |
|                                 | 9  | .273                 | .5846   | .0230   | 8.33  | 23 56.4                           | .2770  | 4 47.1                            | 7.80   |
|                                 | 10 | .279                 | .5826   | .0239   | 8.37  | 23 56.4                           | .2774  | 4 42.8                            | 7.76   |
|                                 | 11 | .285                 | .5805   | .0249   | 8.41  | 23 56.5                           | .2779  | 4 38.6                            | 7.71   |
|                                 | 12 | .291                 | .5785   | .0259   | 8.45  | 22 56.7                           | .2783  | 4 34.3                            | 7.67   |
|                                 | 13 | .298                 | .5764   | .0270   | 8.49  | 23 56.8                           | .2787  | 4 30.1                            | 7.62   |
|                                 | 14 | .304                 | .5743   | .0281   | 8.54  | 23 56.9                           | .2792  | 4 25.9                            | 7.57   |
|                                 | 15 | .311                 | .5722   | .0292   | 8.58  | 23 57.1                           | .2797  | 4 21.7                            | 7.51   |
|                                 | 16 | .317                 | .5701   | .0304   | 8.62  | 23 57.2                           | .2802  | 4 17.5                            | 7.46   |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                 | log h  | H                                | i     |
|---------------------------------|----|--------|---------|---------|-------|-----------------------------------|--------|----------------------------------|-------|
| Oktbr.                          | 17 | +1.324 | —0.5680 | +0.0316 | 8.66  | 23 <sup>h</sup> 57 <sup>m</sup> 4 | 1.2807 | 4 <sup>h</sup> 13 <sup>m</sup> 3 | +7.40 |
|                                 | 18 | .331   | .5658   | .0329   | 8.71  | 23 57.5                           | .2812  | 4 9.1                            | 7.34  |
|                                 | 19 | .337   | .5636   | .0342   | 8.75  | 23 57.7                           | .2818  | 4 4.9                            | 7.28  |
|                                 | 20 | .344   | .5613   | .0355   | 8.80  | 23 57.9                           | .2823  | 4 0.7                            | 7.21  |
|                                 | 21 | .351   | .5590   | .0369   | 8.84  | 23 58.1                           | .2829  | 3 56.6                           | 7.14  |
|                                 | 22 | .358   | .5567   | .0383   | 8.89  | 23 58.4                           | .2835  | 3 52.4                           | 7.07  |
|                                 | 23 | .365   | .5544   | .0397   | 8.93  | 23 58.6                           | .2841  | 3 48.2                           | 7.00  |
|                                 | 24 | .373   | .5520   | .0411   | 8.98  | 23 58.8                           | .2847  | 3 44.1                           | 6.93  |
|                                 | 25 | .380   | .5496   | .0426   | 9.03  | 23 59.0                           | .2853  | 3 40.0                           | 6.85  |
|                                 | 26 | .387   | .5472   | .0441   | 9.08  | 23 59.3                           | .2859  | 3 35.8                           | 6.78  |
| Novbr.                          | 27 | +1.395 | —0.5448 | +0.0456 | 9.13  | 23 59.5                           | 1.2865 | 3 31.7                           | +6.70 |
|                                 | 28 | .402   | .5424   | .0471   | 9.18  | 23 59.8                           | .2872  | 3 27.6                           | 6.62  |
|                                 | 29 | .410   | .5399   | .0487   | 9.23  | 0 0.1                             | .2878  | 3 23.5                           | 6.53  |
|                                 | 30 | .418   | .5374   | .0502   | 9.28  | 0 0.3                             | .2884  | 3 19.4                           | 6.45  |
|                                 | 31 | .426   | .5348   | .0518   | 9.33  | 0 0.6                             | .2891  | 3 15.4                           | 6.36  |
|                                 | 1  | .434   | .5322   | .0533   | 9.38  | 0 0.8                             | .2897  | 3 11.3                           | 6.27  |
|                                 | 2  | .442   | .5295   | .0549   | 9.43  | 0 1.1                             | .2904  | 3 7.3                            | 6.18  |
|                                 | 3  | .450   | .5269   | .0565   | 9.49  | 0 1.3                             | .2911  | 3 3.2                            | 6.08  |
|                                 | 4  | .458   | .5242   | .0581   | 9.54  | 0 1.6                             | .2917  | 2 59.2                           | 5.99  |
|                                 | 5  | .466   | .5215   | .0598   | 9.59  | 0 1.8                             | .2924  | 2 55.1                           | 5.89  |
|                                 | 6  | +1.475 | —0.5188 | +0.0614 | 9.65  | 0 2.0                             | 1.2930 | 2 51.1                           | +5.79 |
|                                 | 7  | .483   | .5160   | .0630   | 9.71  | 0 2.3                             | .2937  | 2 47.1                           | 5.69  |
|                                 | 8  | .492   | .5132   | .0646   | 9.76  | 0 2.5                             | .2943  | 2 43.1                           | 5.58  |
|                                 | 9  | .501   | .5104   | .0662   | 9.82  | 0 2.8                             | .2950  | 2 39.2                           | 5.48  |
|                                 | 10 | .510   | .5075   | .0678   | 9.88  | 0 3.0                             | .2956  | 2 35.2                           | 5.37  |
|                                 | 11 | .518   | .5046   | .0694   | 9.93  | 0 3.2                             | .2963  | 2 31.2                           | 5.26  |
|                                 | 12 | .527   | .5016   | .0709   | 9.99  | 0 3.5                             | .2969  | 2 27.3                           | 5.15  |
|                                 | 13 | .537   | .4986   | .0724   | 10.05 | 0 3.7                             | .2975  | 2 23.3                           | 5.04  |
|                                 | 14 | .546   | .4956   | .0739   | 10.11 | 0 3.9                             | .2981  | 2 19.4                           | 4.93  |
|                                 | 15 | .555   | .4926   | .0754   | 10.17 | 0 4.1                             | .2987  | 2 15.5                           | 4.81  |
|                                 | 16 | +1.564 | —0.4895 | +0.0769 | 10.24 | 0 4.3                             | 1.2993 | 2 11.6                           | +4.69 |
|                                 | 17 | .574   | .4864   | .0784   | 10.30 | 0 4.5                             | .2999  | 2 7.7                            | 4.58  |
|                                 | 18 | .584   | .4833   | .0798   | 10.36 | 0 4.7                             | .3005  | 2 3.8                            | 4.46  |
|                                 | 19 | .593   | .4802   | .0813   | 10.42 | 0 4.9                             | .3011  | 1 59.9                           | 4.34  |
|                                 | 20 | .603   | .4770   | .0827   | 10.49 | 0 5.0                             | .3017  | 1 56.0                           | 4.21  |
|                                 | 21 | .613   | .4738   | .0841   | 10.55 | 0 5.2                             | .3022  | 1 52.1                           | 4.09  |
|                                 | 22 | .623   | .4705   | .0855   | 10.62 | 0 5.3                             | .3028  | 1 48.3                           | 3.96  |
|                                 | 23 | .633   | .4672   | .0868   | 10.68 | 0 5.4                             | .3033  | 1 44.4                           | 3.84  |
|                                 | 24 | .643   | .4639   | .0881   | 10.75 | 0 5.6                             | .3038  | 1 40.6                           | 3.71  |
|                                 | 25 | .653   | .4606   | .0894   | 10.82 | 0 5.7                             | .3043  | 1 36.7                           | 3.58  |
| Dezbr.                          | 26 | +1.664 | —0.4572 | +0.0906 | 10.88 | 0 5.8                             | 1.3048 | 1 32.9                           | +3.45 |
|                                 | 27 | .674   | .4538   | .0918   | 10.95 | 0 5.9                             | .3053  | 1 29.1                           | 3.32  |
|                                 | 28 | .684   | .4504   | .0929   | 11.02 | 0 6.0                             | .3058  | 1 25.3                           | 3.19  |
|                                 | 29 | .695   | .4470   | .0941   | 11.09 | 0 6.1                             | .3062  | 1 21.5                           | 3.06  |
|                                 | 30 | .706   | .4436   | .0952   | 11.16 | 0 6.1                             | .3066  | 1 17.7                           | 2.92  |
|                                 | 1  | .716   | .4401   | .0962   | 11.23 | 0 6.2                             | .3070  | 1 13.9                           | 2.79  |
|                                 | 2  | .727   | .4366   | .0972   | 11.30 | 0 6.2                             | .3074  | 1 10.1                           | 2.65  |
|                                 | 3  | .738   | .4331   | .0981   | 11.37 | 0 6.2                             | .3078  | 1 6.3                            | 2.51  |
|                                 | 4  | .748   | .4295   | .0990   | 11.44 | 0 6.3                             | .3082  | 1 2.5                            | 2.38  |
|                                 | 5  | .759   | .4260   | .0998   | 11.51 | 0 6.3                             | .3085  | 0 58.7                           | 2.24  |

## 1852

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                  | G                               | log h  | H                                | i                  |
|---------------------------------|----|----------------------|---------|---------|--------------------|---------------------------------|--------|----------------------------------|--------------------|
| Dezbr.                          | 6  | +1. <sup>s</sup> 770 | —0.4224 | +0.1006 | 11 <sup>h</sup> 58 | 0 <sup>h</sup> 6 <sup>m</sup> 3 | 1.3088 | 0 <sup>h</sup> 54 <sup>m</sup> 9 | +2 <sup>h</sup> 10 |
|                                 | 7  | .781                 | .4188   | .1014   | 11.65              | 0 6.2                           | .3091  | 0 51.2                           | 1.96               |
|                                 | 8  | .792                 | .4152   | .1021   | 11.73              | 0 6.2                           | .3094  | 0 47.4                           | 1.82               |
|                                 | 9  | .804                 | .4116   | .1028   | 11.80              | 0 6.2                           | .3097  | 0 43.7                           | 1.68               |
|                                 | 10 | .815                 | .4080   | .1034   | 11.87              | 0 6.1                           | .3099  | 0 39.9                           | 1.53               |
|                                 | 11 | .826                 | .4044   | .1039   | 11.94              | 0 6.0                           | .3101  | 0 36.1                           | 1.39               |
|                                 | 12 | .837                 | .4007   | .1044   | 12.02              | 0 6.0                           | .3103  | 0 32.4                           | 1.25               |
|                                 | 13 | .848                 | .3971   | .1048   | 12.09              | 0 5.9                           | .3105  | 0 28.6                           | 1.11               |
|                                 | 14 | .859                 | .3934   | .1052   | 12.16              | 0 5.8                           | .3106  | 0 24.9                           | 0.96               |
|                                 | 15 | .871                 | .3898   | .1056   | 12.24              | 0 5.7                           | .3108  | 0 21.2                           | 0.82               |
|                                 | 16 | +1.882               | —0.3861 | +0.1059 | 12.31              | 0 5.5                           | 1.3109 | 0 17.5                           | +0.68              |
|                                 | 17 | .893                 | .3824   | .1061   | 12.38              | 0 5.4                           | .3110  | 0 13.7                           | 0.53               |
|                                 | 18 | .905                 | .3787   | .1063   | 12.46              | 0 5.2                           | .3110  | 0 10.0                           | 0.39               |
|                                 | 19 | .916                 | .3750   | .1064   | 12.53              | 0 5.1                           | .3111  | 0 6.2                            | 0.24               |
|                                 | 20 | .928                 | .3713   | .1064   | 12.61              | 0 4.9                           | .3111  | 0 2.5                            | +0.10              |
|                                 | 21 | .939                 | .3676   | .1064   | 12.68              | 0 4.7                           | .3111  | 23 58.8                          | —0.05              |
|                                 | 22 | .950                 | .3639   | .1064   | 12.76              | 0 4.5                           | .3111  | 23 55.0                          | 0.19               |
|                                 | 23 | .962                 | .3602   | .1063   | 12.83              | 0 4.3                           | .3111  | 23 51.3                          | 0.34               |
|                                 | 24 | .973                 | .3565   | .1062   | 12.90              | 0 4.1                           | .3110  | 23 47.5                          | 0.48               |
|                                 | 25 | .985                 | .3528   | .1060   | 12.98              | 0 3.9                           | .3109  | 23 43.8                          | 0.63               |
|                                 | 26 | +1.996               | —0.3492 | +0.1057 | 13.05              | 0 3.7                           | 1.3108 | 23 40.0                          | —0.77              |
|                                 | 27 | 2.007                | .3455   | .1054   | 13.12              | 0 3.4                           | .3107  | 23 36.3                          | 0.92               |
|                                 | 28 | .019                 | .3418   | .1050   | 13.20              | 0 3.2                           | .3105  | 23 32.5                          | 1.06               |
|                                 | 29 | .030                 | .3381   | .1046   | 13.27              | 0 2.9                           | .3104  | 23 28.8                          | 1.20               |
|                                 | 30 | .041                 | .3345   | .1042   | 13.34              | 0 2.7                           | .3102  | 23 25.0                          | 1.34               |
|                                 | 31 | .052                 | .3309   | .1037   | 13.42              | 0 2.4                           | .3100  | 23 21.3                          | 1.49               |

## 1853

|        |    |                      |         |         |                   |                                   |        |                                   |                    |
|--------|----|----------------------|---------|---------|-------------------|-----------------------------------|--------|-----------------------------------|--------------------|
| Januar | 1  | —1. <sup>s</sup> 008 | —0.6728 | +0.1030 | 6 <sup>h</sup> 56 | 11 <sup>h</sup> 55 <sup>m</sup> 7 | 1.3097 | 23 <sup>h</sup> 17 <sup>m</sup> 5 | —1 <sup>h</sup> 63 |
|        | 2  | 0.997                | .6764   | .1023   | 6.49              | 11 56.2                           | .3095  | 23 13.7                           | 1.77               |
|        | 3  | .985                 | .6800   | .1016   | 6.42              | 11 56.8                           | .3092  | 23 10.0                           | 1.91               |
|        | 4  | .974                 | .6836   | .1009   | 6.34              | 11 57.4                           | .3089  | 23 6.2                            | 2.05               |
|        | 5  | .963                 | .6872   | .1001   | 6.27              | 11 58.0                           | .3086  | 23 2.4                            | 2.19               |
|        | 6  | .952                 | .6907   | .0993   | 6.20              | 11 58.7                           | .3083  | 22 58.6                           | 2.33               |
|        | 7  | .942                 | .6943   | .0984   | 6.13              | 11 59.4                           | .3079  | 22 54.8                           | 2.47               |
|        | 8  | .931                 | .6978   | .0975   | 6.06              | 12 0.2                            | .3076  | 22 51.0                           | 2.61               |
|        | 9  | .920                 | .7013   | .0965   | 5.99              | 12 1.0                            | .3072  | 22 47.2                           | 2.75               |
|        | 10 | .909                 | .7048   | .0955   | 5.92              | 12 1.8                            | .3068  | 22 43.4                           | 2.88               |
|        | 11 | —0.899               | —0.7083 | +0.0944 | 5.85              | 12 2.7                            | 1.3063 | 22 39.6                           | —3.02              |
|        | 12 | .888                 | .7117   | .0933   | 5.78              | 12 3.6                            | .3059  | 22 35.8                           | 3.15               |
|        | 13 | .877                 | .7151   | .0921   | 5.71              | 12 4.6                            | .3054  | 22 31.9                           | 3.28               |
|        | 14 | .867                 | .7185   | .0909   | 5.64              | 12 5.6                            | .3050  | 22 28.1                           | 3.42               |
|        | 15 | .857                 | .7219   | .0897   | 5.58              | 12 6.6                            | .3045  | 22 24.3                           | 3.55               |
|        | 16 | .846                 | .7252   | .0884   | 5.51              | 12 7.7                            | .3040  | 22 20.4                           | 3.68               |
|        | 17 | .836                 | .7285   | .0871   | 5.44              | 12 8.8                            | .3035  | 22 16.5                           | 3.81               |
|        | 18 | .826                 | .7317   | .0858   | 5.38              | 12 10.0                           | .3029  | 22 12.7                           | 3.93               |
|        | 19 | .816                 | .7349   | .0845   | 5.31              | 12 11.2                           | .3024  | 22 8.8                            | 4.06               |
|        | 20 | .806                 | .7381   | .0831   | 5.25              | 12 12.5                           | .3018  | 22 4.9                            | 4.18               |

| <sup>12<sup>h</sup></sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                  | log h  | H                                 | i                    |
|-------------------------------------------|----|----------------------|---------|---------|---------------------|------------------------------------|--------|-----------------------------------|----------------------|
| Januar                                    | 21 | —0 <sup>s</sup> .796 | —0.7413 | +0.0817 | 5 <sup>''</sup> .19 | 12 <sup>h</sup> 13 <sup>m</sup> .8 | 1.3013 | 22 <sup>h</sup> 1 <sup>m</sup> .0 | —4 <sup>''</sup> .31 |
|                                           | 22 | .786                 | .7444   | .0802   | 5.12                | 12 15.2                            | .3007  | 21 57.1                           | 4.43                 |
|                                           | 23 | .776                 | .7475   | .0787   | 5.06                | 12 16.6                            | .3001  | 21 53.2                           | 4.55                 |
|                                           | 24 | .767                 | .7505   | .0772   | 5.00                | 12 18.0                            | .2995  | 21 49.2                           | 4.67                 |
|                                           | 25 | .757                 | .7535   | .0757   | 4.94                | 12 19.5                            | .2989  | 21 45.3                           | 4.79                 |
|                                           | 26 | .748                 | .7564   | .0742   | 4.88                | 12 21.0                            | .2983  | 21 41.3                           | 4.90                 |
|                                           | 27 | .739                 | .7593   | .0727   | 4.83                | 12 22.6                            | .2977  | 21 37.4                           | 5.02                 |
|                                           | 28 | .729                 | .7621   | .0712   | 4.77                | 12 24.2                            | .2970  | 21 33.4                           | 5.13                 |
|                                           | 29 | .720                 | .7649   | .0696   | 4.71                | 12 25.8                            | .2964  | 21 29.4                           | 5.24                 |
|                                           | 30 | .711                 | .7677   | .0680   | 4.66                | 12 27.5                            | .2957  | 21 25.4                           | 5.35                 |
| Februar                                   | 31 | —0.702               | —0.7704 | +0.0664 | 4.60                | 12 29.2                            | 1.2951 | 21 21.4                           | —5.46                |
|                                           | 1  | .693                 | .7731   | .0648   | 4.55                | 12 31.0                            | .2944  | 21 17.4                           | 5.57                 |
|                                           | 2  | .684                 | .7757   | .0631   | 4.50                | 12 32.8                            | .2938  | 21 13.4                           | 5.67                 |
|                                           | 3  | .676                 | .7783   | .0615   | 4.44                | 12 34.7                            | .2931  | 21 9.4                            | 5.77                 |
|                                           | 4  | .667                 | .7809   | .0599   | 4.39                | 12 36.6                            | .2924  | 21 5.3                            | 5.87                 |
|                                           | 5  | .659                 | .7834   | .0583   | 4.34                | 12 38.5                            | .2918  | 21 1.3                            | 5.97                 |
|                                           | 6  | .650                 | .7858   | .0567   | 4.29                | 12 40.5                            | .2911  | 20 57.2                           | 6.07                 |
|                                           | 7  | .642                 | .7882   | .0551   | 4.25                | 12 42.5                            | .2904  | 20 53.1                           | 6.17                 |
|                                           | 8  | .634                 | .7905   | .0535   | 4.20                | 12 44.5                            | .2898  | 20 49.0                           | 6.26                 |
|                                           | 9  | .626                 | .7928   | .0519   | 4.15                | 12 46.5                            | .2891  | 20 44.9                           | 6.35                 |
|                                           | 10 | —0.618               | —0.7950 | +0.0503 | 4.11                | 12 48.6                            | 1.2885 | 20 40.8                           | —6.44                |
|                                           | 11 | .610                 | .7972   | .0488   | 4.07                | 12 50.7                            | .2878  | 20 36.7                           | 6.53                 |
|                                           | 12 | .602                 | .7994   | .0472   | 4.02                | 12 52.9                            | .2872  | 20 32.6                           | 6.61                 |
|                                           | 13 | .595                 | .8015   | .0457   | 3.98                | 12 55.1                            | .2866  | 20 28.4                           | 6.69                 |
|                                           | 14 | .587                 | .8036   | .0441   | 3.94                | 12 57.3                            | .2859  | 20 24.3                           | 6.77                 |
|                                           | 15 | .579                 | .8056   | .0426   | 3.90                | 12 59.5                            | .2853  | 20 20.1                           | 6.85                 |
|                                           | 16 | .572                 | .8076   | .0411   | 3.86                | 13 1.7                             | .2847  | 20 15.9                           | 6.93                 |
|                                           | 17 | .565                 | .8096   | .0397   | 3.82                | 13 4.0                             | .2841  | 20 11.7                           | 7.00                 |
|                                           | 18 | .558                 | .8115   | .0383   | 3.78                | 13 6.3                             | .2835  | 20 7.6                            | 7.08                 |
|                                           | 19 | .550                 | .8134   | .0369   | 3.74                | 13 8.6                             | .2829  | 20 3.4                            | 7.15                 |
| März                                      | 20 | —0.543               | —0.8152 | +0.0355 | 3.70                | 13 10.9                            | 1.2823 | 19 59.1                           | —7.21                |
|                                           | 21 | .536                 | .8170   | .0342   | 3.67                | 13 13.2                            | .2818  | 19 54.9                           | 7.28                 |
|                                           | 22 | .529                 | .8188   | .0329   | 3.63                | 13 15.5                            | .2812  | 19 50.7                           | 7.34                 |
|                                           | 23 | .522                 | .8205   | .0316   | 3.60                | 13 17.9                            | .2807  | 19 46.5                           | 7.40                 |
|                                           | 24 | .516                 | .8222   | .0303   | 3.56                | 13 20.2                            | .2801  | 19 42.2                           | 7.46                 |
|                                           | 25 | .509                 | .8239   | .0291   | 3.53                | 13 22.6                            | .2796  | 19 37.9                           | 7.52                 |
|                                           | 26 | .502                 | .8255   | .0280   | 3.50                | 13 24.9                            | .2791  | 19 33.7                           | 7.57                 |
|                                           | 27 | .496                 | .8271   | .0269   | 3.47                | 13 27.3                            | .2787  | 19 29.4                           | 7.62                 |
|                                           | 28 | .489                 | .8287   | .0258   | 3.44                | 13 29.7                            | .2782  | 19 25.1                           | 7.67                 |
|                                           | 1  | .483                 | .8302   | .0248   | 3.40                | 13 32.0                            | .2778  | 19 20.8                           | 7.72                 |
|                                           | 2  | —0.476               | —0.8317 | +0.0238 | 3.37                | 13 34.4                            | 1.2774 | 19 16.5                           | —7.77                |
|                                           | 3  | .470                 | .8332   | .0229   | 3.34                | 13 36.7                            | .2770  | 19 12.3                           | 7.81                 |
|                                           | 4  | .464                 | .8347   | .0220   | 3.31                | 13 39.1                            | .2766  | 19 8.0                            | 7.85                 |
|                                           | 5  | .457                 | .8362   | .0212   | 3.28                | 13 41.4                            | .2763  | 19 3.6                            | 7.88                 |
|                                           | 6  | .451                 | .8376   | .0204   | 3.26                | 13 43.8                            | .2759  | 18 59.3                           | 7.92                 |
|                                           | 7  | .445                 | .8390   | .0197   | 3.23                | 13 46.2                            | .2756  | 18 55.0                           | 7.95                 |
|                                           | 8  | .439                 | .8404   | .0190   | 3.20                | 13 48.5                            | .2753  | 18 50.7                           | 7.98                 |
|                                           | 9  | .433                 | .8418   | .0183   | 3.17                | 13 50.8                            | .2750  | 18 46.4                           | 8.01                 |
|                                           | 10 | .427                 | .8431   | .0177   | 3.14                | 13 53.2                            | .2748  | 18 42.1                           | 8.03                 |
|                                           | 11 | .421                 | .8445   | .0172   | 3.12                | 13 55.5                            | .2746  | 18 37.7                           | 8.06                 |

## 1853

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                  | G                                 | log h  | H                                 | i                  |
|---------------------------------|----|----------------------|---------|---------|--------------------|-----------------------------------|--------|-----------------------------------|--------------------|
| März                            | 12 | —0 <sup>s</sup> .415 | —0.8458 | +0.0167 | 3 <sup>h</sup> .09 | 13 <sup>h</sup> 57 <sup>m</sup> 8 | 1.2744 | 18 <sup>h</sup> 33 <sup>m</sup> 4 | —8 <sup>o</sup> 08 |
|                                 | 13 | .409                 | .8472   | .0163   | 3.06               | 14 0.1                            | .2742  | 18 29.1                           | 8.09               |
|                                 | 14 | .403                 | .8485   | .0159   | 3.04               | 14 2.4                            | .2740  | 18 24.7                           | 8.11               |
|                                 | 15 | .397                 | .8499   | .0156   | 3.01               | 14 4.7                            | .2739  | 18 20.4                           | 8.12               |
|                                 | 16 | .391                 | .8512   | .0154   | 2.98               | 14 7.0                            | .2738  | 18 16.1                           | 8.13               |
|                                 | 17 | .385                 | .8526   | .0152   | 2.96               | 14 9.3                            | .2737  | 18 11.7                           | 8.14               |
|                                 | 18 | .380                 | .8539   | .0151   | 2.93               | 14 11.5                           | .2737  | 18 7.4                            | 8.15               |
|                                 | 19 | .374                 | .8553   | .0150   | 2.90               | 14 13.8                           | .2736  | 18 3.1                            | 8.15               |
|                                 | 20 | .368                 | .8566   | .0150   | 2.87               | 14 16.0                           | .2736  | 17 58.8                           | 8.15               |
|                                 | 21 | .362                 | .8580   | .0150   | 2.85               | 14 18.3                           | .2737  | 17 54.4                           | 8.15               |
|                                 | 22 | —0.356               | —0.8593 | +0.0151 | 2.82               | 14 20.5                           | 1.2737 | 17 50.1                           | —8.14              |
|                                 | 23 | .350                 | .8607   | .0153   | 2.79               | 14 22.8                           | .2738  | 17 45.8                           | 8.13               |
|                                 | 24 | .344                 | .8621   | .0155   | 2.76               | 14 25.0                           | .2739  | 17 41.5                           | 8.12               |
|                                 | 25 | .338                 | .8635   | .0158   | 2.74               | 14 27.3                           | .2740  | 17 37.2                           | 8.11               |
|                                 | 26 | .333                 | .8649   | .0161   | 2.71               | 14 29.6                           | .2741  | 17 32.9                           | 8.10               |
|                                 | 27 | .327                 | .8663   | .0165   | 2.68               | 14 31.9                           | .2743  | 17 28.6                           | 8.08               |
|                                 | 28 | .321                 | .8677   | .0169   | 2.65               | 14 34.3                           | .2745  | 17 24.3                           | 8.06               |
|                                 | 29 | .315                 | .8692   | .0174   | 2.62               | 14 36.6                           | .2747  | 17 20.0                           | 8.04               |
|                                 | 30 | .309                 | .8706   | .0179   | 2.59               | 14 39.0                           | .2749  | 17 15.7                           | 8.02               |
|                                 | 31 | .303                 | .8721   | .0185   | 2.56               | 14 41.4                           | .2751  | 17 11.4                           | 7.99               |
| April                           | 1  | —0.296               | —0.8735 | +0.0192 | 2.54               | 14 43.8                           | 1.2754 | 17 7.2                            | —7.97              |
|                                 | 2  | .290                 | .8750   | .0199   | 2.51               | 14 46.2                           | .2757  | 17 2.9                            | 7.94               |
|                                 | 3  | .284                 | .8765   | .0207   | 2.48               | 14 48.7                           | .2760  | 16 58.7                           | 7.90               |
|                                 | 4  | .278                 | .8780   | .0215   | 2.45               | 14 51.2                           | .2764  | 16 54.4                           | 7.87               |
|                                 | 5  | .272                 | .8795   | .0223   | 2.41               | 14 53.7                           | .2768  | 16 50.2                           | 7.83               |
|                                 | 6  | .266                 | .8811   | .0232   | 2.38               | 14 56.3                           | .2771  | 16 46.0                           | 7.79               |
|                                 | 7  | .259                 | .8826   | .0241   | 2.35               | 14 58.9                           | .2775  | 16 41.8                           | 7.75               |
|                                 | 8  | .253                 | .8842   | .0251   | 2.32               | 15 1.6                            | .2780  | 16 37.6                           | 7.70               |
|                                 | 9  | .246                 | .8858   | .0261   | 2.29               | 15 4.3                            | .2784  | 16 33.4                           | 7.66               |
|                                 | 10 | .240                 | .8874   | .0272   | 2.26               | 15 7.1                            | .2788  | 16 29.2                           | 7.61               |
|                                 | 11 | —0.233               | —0.8890 | +0.0283 | 2.22               | 15 10.0                           | 1.2793 | 16 25.1                           | —7.55              |
|                                 | 12 | .227                 | .8906   | .0294   | 2.19               | 15 13.0                           | .2798  | 16 20.9                           | 7.50               |
|                                 | 13 | .220                 | .8922   | .0306   | 2.16               | 15 16.1                           | .2803  | 16 16.8                           | 7.45               |
|                                 | 14 | .213                 | .8939   | .0318   | 2.13               | 15 19.3                           | .2808  | 16 12.6                           | 7.39               |
|                                 | 15 | .206                 | .8955   | .0330   | 2.09               | 15 22.6                           | .2813  | 16 8.5                            | 7.33               |
|                                 | 16 | .199                 | .8972   | .0343   | 2.06               | 15 26.0                           | .2818  | 16 4.4                            | 7.27               |
|                                 | 17 | .192                 | .8989   | .0356   | 2.03               | 15 29.5                           | .2824  | 16 0.3                            | 7.21               |
|                                 | 18 | .185                 | .9006   | .0369   | 1.99               | 15 33.2                           | .2829  | 15 56.2                           | 7.14               |
|                                 | 19 | .178                 | .9023   | .0383   | 1.96               | 15 37.1                           | .2835  | 15 52.1                           | 7.07               |
|                                 | 20 | .171                 | .9040   | .0397   | 1.93               | 15 41.1                           | .2840  | 15 48.1                           | 7.00               |
|                                 | 21 | —0.164               | —0.9057 | +0.0411 | 1.89               | 15 45.3                           | 1.2846 | 15 44.0                           | —6.93              |
|                                 | 22 | .156                 | .9073   | .0425   | 1.86               | 15 49.7                           | .2852  | 15 40.0                           | 6.86               |
|                                 | 23 | .149                 | .9090   | .0439   | 1.83               | 15 54.2                           | .2858  | 15 36.0                           | 6.78               |
|                                 | 24 | .141                 | .9106   | .0454   | 1.79               | 15 59.0                           | .2865  | 15 32.0                           | 6.70               |
|                                 | 25 | .134                 | .9122   | .0469   | 1.76               | 16 4.0                            | .2871  | 15 28.0                           | 6.62               |
|                                 | 26 | .126                 | .9138   | .0484   | 1.73               | 16 9.2                            | .2877  | 15 24.0                           | 6.54               |
|                                 | 27 | .118                 | .9154   | .0499   | 1.70               | 16 14.7                           | .2883  | 15 20.1                           | 6.46               |
|                                 | 28 | .110                 | .9170   | .0514   | 1.66               | 16 20.5                           | .2890  | 15 16.1                           | 6.37               |
|                                 | 29 | .102                 | .9185   | .0530   | 1.63               | 16 26.5                           | .2896  | 15 12.2                           | 6.29               |
|                                 | 30 | .094                 | .9199   | .0545   | 1.61               | 16 32.8                           | .2902  | 15 8.2                            | 6.20               |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f       | x       | y       | g    | G                                  | log h  | H                                 | i     |
|---------------------------------|----|---------|---------|---------|------|------------------------------------|--------|-----------------------------------|-------|
| Mai                             | 1  | —0.8086 | —0.9213 | +0.0561 | 1.58 | 16 <sup>h</sup> 39 <sup>m</sup> .4 | 1.2909 | 15 <sup>h</sup> 4 <sup>m</sup> .3 | —6.11 |
|                                 | 2  | .078    | .9226   | .0576   | 1.55 | 16 46.3                            | .2915  | 15 0.4                            | 6.02  |
|                                 | 3  | .070    | .9239   | .0592   | 1.52 | 16 53.6                            | .2921  | 14 56.6                           | 5.92  |
|                                 | 4  | .061    | .9251   | .0607   | 1.50 | 17 1.2                             | .2928  | 14 52.7                           | 5.83  |
|                                 | 5  | .053    | .9262   | .0623   | 1.48 | 17 9.0                             | .2934  | 14 48.8                           | 5.73  |
|                                 | 6  | .045    | .9273   | .0638   | 1.46 | 17 17.2                            | .2940  | 14 45.0                           | 5.63  |
|                                 | 7  | .036    | .9283   | .0653   | 1.44 | 17 25.8                            | .2946  | 14 41.2                           | 5.53  |
|                                 | 8  | .027    | .9292   | .0668   | 1.42 | 17 34.6                            | .2953  | 14 37.4                           | 5.43  |
|                                 | 9  | .018    | .9300   | .0683   | 1.40 | 17 43.7                            | .2959  | 14 33.5                           | 5.33  |
|                                 | 10 | —0.009  | .9306   | .0698   | 1.39 | 17 53.1                            | .2965  | 14 29.7                           | 5.22  |
|                                 | 11 | 0.000   | —0.9311 | +0.0713 | 1.38 | 18 2.8                             | 1.2971 | 14 26.0                           | —5.12 |
|                                 | 12 | +0.009  | .9315   | .0728   | 1.37 | 18 12.7                            | .2977  | 14 22.2                           | 5.01  |
|                                 | 13 | .018    | .9318   | .0743   | 1.37 | 18 22.9                            | .2983  | 14 18.4                           | 4.90  |
|                                 | 14 | .027    | .9319   | .0757   | 1.37 | 18 33.2                            | .2989  | 14 14.7                           | 4.79  |
|                                 | 15 | .036    | .9318   | .0771   | 1.36 | 18 43.5                            | .2994  | 14 10.9                           | 4.67  |
|                                 | 16 | .046    | .9316   | .0785   | 1.37 | 18 53.8                            | .3000  | 14 7.2                            | 4.56  |
|                                 | 17 | .055    | .9312   | .0799   | 1.38 | 19 4.1                             | .3006  | 14 3.5                            | 4.45  |
|                                 | 18 | .065    | .9306   | .0813   | 1.39 | 19 14.3                            | .3011  | 13 59.8                           | 4.34  |
|                                 | 19 | .074    | .9299   | .0827   | 1.40 | 19 24.4                            | .3017  | 13 56.1                           | 4.22  |
|                                 | 20 | .084    | .9291   | .0840   | 1.42 | 19 34.4                            | .3022  | 13 52.4                           | 4.10  |
|                                 | 21 | +0.094  | —0.9281 | +0.0853 | 1.44 | 19 44.3                            | 1.3027 | 13 48.8                           | —3.98 |
|                                 | 22 | .104    | .9270   | .0866   | 1.46 | 19 54.0                            | .3032  | 13 45.1                           | 3.86  |
|                                 | 23 | .114    | .9257   | .0878   | 1.49 | 20 3.3                             | .3037  | 13 41.5                           | 3.74  |
|                                 | 24 | .124    | .9243   | .0890   | 1.52 | 20 12.2                            | .3042  | 13 37.8                           | 3.62  |
|                                 | 25 | .134    | .9227   | .0902   | 1.55 | 20 20.8                            | .3047  | 13 34.2                           | 3.50  |
|                                 | 26 | .144    | .9210   | .0913   | 1.58 | 20 29.1                            | .3051  | 13 30.6                           | 3.37  |
|                                 | 27 | .154    | .9192   | .0924   | 1.62 | 20 37.0                            | .3056  | 13 27.0                           | 3.25  |
|                                 | 28 | .164    | .9172   | .0935   | 1.66 | 20 44.6                            | .3060  | 13 23.4                           | 3.12  |
|                                 | 29 | .175    | .9151   | .0945   | 1.70 | 20 51.9                            | .3064  | 13 19.8                           | 3.00  |
|                                 | 30 | .185    | .9129   | .0955   | 1.75 | 20 58.8                            | .3068  | 13 16.2                           | 2.87  |
| Juni                            | 31 | +0.195  | —0.9106 | +0.0965 | 1.79 | 21 5.3                             | 1.3072 | 13 12.6                           | —2.74 |
|                                 | 1  | .206    | .9082   | .0974   | 1.84 | 21 11.4                            | .3075  | 13 9.0                            | 2.61  |
|                                 | 2  | .217    | .9057   | .0983   | 1.89 | 21 17.3                            | .3079  | 13 5.5                            | 2.48  |
|                                 | 3  | .227    | .9032   | .0991   | 1.94 | 21 22.8                            | .3082  | 13 1.9                            | 2.35  |
|                                 | 4  | .238    | .9005   | .0999   | 1.99 | 21 28.0                            | .3085  | 12 58.3                           | 2.22  |
|                                 | 5  | .248    | .8978   | .1007   | 2.05 | 21 32.9                            | .3088  | 12 54.8                           | 2.09  |
|                                 | 6  | .259    | .8950   | .1014   | 2.10 | 21 37.5                            | .3091  | 12 51.2                           | 1.96  |
|                                 | 7  | .270    | .8921   | .1021   | 2.16 | 21 41.8                            | .3094  | 12 47.7                           | 1.83  |
|                                 | 8  | .281    | .8892   | .1027   | 2.22 | 21 45.9                            | .3096  | 12 44.2                           | 1.69  |
|                                 | 9  | .292    | .8862   | .1033   | 2.28 | 21 49.7                            | .3098  | 12 40.6                           | 1.56  |
|                                 | 10 | +0.303  | —0.8831 | +0.1038 | 2.34 | 21 53.3                            | 1.3101 | 12 37.1                           | —1.43 |
|                                 | 11 | .314    | .8800   | .1043   | 2.40 | 21 56.7                            | .3103  | 12 33.6                           | 1.29  |
|                                 | 12 | .324    | .8769   | .1047   | 2.47 | 21 59.8                            | .3104  | 12 30.1                           | 1.16  |
|                                 | 13 | .335    | .8737   | .1051   | 2.53 | 22 2.8                             | .3106  | 12 26.6                           | 1.03  |
|                                 | 14 | .346    | .8705   | .1054   | 2.60 | 22 5.6                             | .3107  | 12 23.0                           | 0.89  |
|                                 | 15 | .357    | .8672   | .1057   | 2.66 | 22 8.2                             | .3108  | 12 19.5                           | 0.76  |
|                                 | 16 | .368    | .8639   | .1059   | 2.73 | 22 10.6                            | .3109  | 12 16.0                           | 0.62  |
|                                 | 17 | .379    | .8606   | .1061   | 2.79 | 22 12.9                            | .3110  | 12 12.5                           | 0.49  |
|                                 | 18 | .391    | .8572   | .1063   | 2.86 | 22 15.0                            | .3110  | 12 9.0                            | 0.35  |
|                                 | 19 | .402    | .8538   | .1064   | 2.93 | 22 17.0                            | .3111  | 12 5.5                            | 0.21  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f       | x       | y       | g    | G                                 | log h  | H                                | i     |
|---------------------------------|----|---------|---------|---------|------|-----------------------------------|--------|----------------------------------|-------|
| Juni                            | 20 | +0.8413 | —0.8504 | +0.1065 | 3.00 | 22 <sup>h</sup> 18 <sup>m</sup> 9 | 1.3111 | 12 <sup>h</sup> 2 <sup>m</sup> 0 | —0.08 |
|                                 | 21 | .424    | .8470   | .1065   | 3.07 | 22 20.7                           | .3111  | 11 58.5                          | +0.06 |
|                                 | 22 | .435    | .8436   | .1064   | 3.14 | 22 22.3                           | .3111  | 11 55.0                          | 0.19  |
|                                 | 23 | .446    | .8401   | .1063   | 3.21 | 22 23.8                           | .3111  | 11 51.5                          | 0.33  |
|                                 | 24 | .457    | .8366   | .1062   | 3.28 | 22 25.2                           | .3110  | 11 48.0                          | 0.46  |
|                                 | 25 | .468    | .8331   | .1060   | 3.35 | 22 26.5                           | .3109  | 11 44.5                          | 0.60  |
|                                 | 26 | .479    | .8296   | .1058   | 3.42 | 22 27.7                           | .3108  | 11 41.0                          | 0.73  |
|                                 | 27 | .490    | .8261   | .1055   | 3.49 | 22 28.8                           | .3107  | 11 37.5                          | 0.87  |
|                                 | 28 | .501    | .8226   | .1052   | 3.56 | 22 29.8                           | .3106  | 11 34.0                          | 1.00  |
|                                 | 29 | .512    | .8190   | .1048   | 3.63 | 22 30.8                           | .3104  | 11 30.5                          | 1.14  |
| Juli                            | 30 | +0.523  | —0.8155 | +0.1044 | 3.70 | 22 31.7                           | 1.3103 | 11 27.0                          | +1.27 |
|                                 | 1  | .534    | .8119   | .1039   | 3.77 | 22 32.6                           | .3101  | 11 23.5                          | 1.41  |
|                                 | 2  | .545    | .8083   | .1034   | 3.85 | 22 33.4                           | .3099  | 11 20.0                          | 1.54  |
|                                 | 3  | .555    | .8047   | .1028   | 3.92 | 22 34.1                           | .3097  | 11 16.5                          | 1.67  |
|                                 | 4  | .566    | .8011   | .1022   | 3.99 | 22 34.7                           | .3094  | 11 12.9                          | 1.81  |
|                                 | 5  | .577    | .7975   | .1015   | 4.06 | 22 35.3                           | .3092  | 11 9.4                           | 1.94  |
|                                 | 6  | .588    | .7939   | .1008   | 4.13 | 22 35.8                           | .3089  | 11 5.9                           | 2.07  |
|                                 | 7  | .599    | .7904   | .1001   | 4.20 | 22 36.3                           | .3086  | 11 2.3                           | 2.20  |
|                                 | 8  | .609    | .7868   | .0993   | 4.27 | 22 36.7                           | .3083  | 10 58.8                          | 2.33  |
|                                 | 9  | .620    | .7833   | .0985   | 4.34 | 22 37.1                           | .3080  | 10 55.2                          | 2.46  |
|                                 | 10 | +0.630  | —0.7797 | +0.0976 | 4.42 | 22 37.5                           | 1.3076 | 10 51.7                          | +2.59 |
|                                 | 11 | .641    | .7762   | .0967   | 4.49 | 22 37.8                           | .3073  | 10 48.1                          | 2.72  |
|                                 | 12 | .651    | .7726   | .0958   | 4.56 | 22 38.0                           | .3069  | 10 44.6                          | 2.84  |
|                                 | 13 | .662    | .7691   | .0948   | 4.63 | 22 38.2                           | .3065  | 10 41.0                          | 2.97  |
|                                 | 14 | .672    | .7656   | .0938   | 4.70 | 22 38.4                           | .3061  | 10 37.4                          | 3.09  |
|                                 | 15 | .683    | .7621   | .0927   | 4.77 | 22 38.6                           | .3057  | 10 33.8                          | 3.22  |
|                                 | 16 | .693    | .7586   | .0916   | 4.84 | 22 38.7                           | .3052  | 10 30.2                          | 3.34  |
|                                 | 17 | .703    | .7551   | .0905   | 4.91 | 22 38.8                           | .3048  | 10 26.6                          | 3.47  |
|                                 | 18 | .713    | .7516   | .0893   | 4.98 | 22 38.9                           | .3043  | 10 23.0                          | 3.59  |
|                                 | 19 | .723    | .7482   | .0881   | 5.05 | 22 39.0                           | .3039  | 10 19.4                          | 3.71  |
|                                 | 20 | +0.733  | —0.7447 | +0.0869 | 5.12 | 22 39.0                           | 1.3034 | 10 15.8                          | +3.83 |
|                                 | 21 | .743    | .7413   | .0857   | 5.19 | 22 39.0                           | .3029  | 10 12.2                          | 3.95  |
|                                 | 22 | .753    | .7379   | .0844   | 5.25 | 22 39.0                           | .3024  | 10 8.5                           | 4.07  |
| August                          | 23 | .763    | .7345   | .0831   | 5.32 | 22 39.0                           | .3018  | 10 4.8                           | 4.19  |
|                                 | 24 | .772    | .7311   | .0818   | 5.39 | 22 38.9                           | .3013  | 10 1.2                           | 4.30  |
|                                 | 25 | .782    | .7278   | .0804   | 5.46 | 22 38.9                           | .3007  | 9 57.5                           | 4.42  |
|                                 | 26 | .792    | .7244   | .0790   | 5.52 | 22 38.8                           | .3002  | 9 53.8                           | 4.53  |
|                                 | 27 | .801    | .7211   | .0776   | 5.59 | 22 38.7                           | .2996  | 9 50.1                           | 4.64  |
|                                 | 28 | .810    | .7178   | .0762   | 5.66 | 22 38.6                           | .2991  | 9 46.4                           | 4.75  |
|                                 | 29 | .820    | .7145   | .0748   | 5.72 | 22 38.5                           | .2985  | 9 42.7                           | 4.86  |
|                                 | 30 | +0.829  | —0.7112 | +0.0734 | 5.79 | 22 38.3                           | 1.2979 | 9 39.0                           | +4.97 |
|                                 | 31 | .838    | .7080   | .0719   | 5.86 | 22 38.2                           | .2973  | 9 35.2                           | 5.08  |
|                                 | 1  | .847    | .7047   | .0704   | 5.92 | 22 38.0                           | .2967  | 9 31.5                           | 5.19  |
|                                 | 2  | .856    | .7015   | .0689   | 5.98 | 22 37.9                           | .2961  | 9 27.7                           | 5.29  |
|                                 | 3  | .865    | .6983   | .0674   | 6.05 | 22 37.7                           | .2955  | 9 24.0                           | 5.39  |
|                                 | 4  | .874    | .6952   | .0659   | 6.11 | 22 37.6                           | .2949  | 9 20.2                           | 5.49  |
|                                 | 5  | .882    | .6921   | .0643   | 6.17 | 22 37.4                           | .2943  | 9 16.4                           | 5.59  |
|                                 | 6  | .891    | .6890   | .0628   | 6.23 | 22 37.2                           | .2936  | 9 12.6                           | 5.69  |
|                                 | 7  | .900    | .6859   | .0613   | 6.30 | 22 37.0                           | .2930  | 9 8.8                            | 5.79  |
|                                 | 8  | .908    | .6829   | .0598   | 6.36 | 22 36.8                           | .2924  | 9 4.9                            | 5.88  |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                 | log h  | H                               | i      |
|---------------------------------|----|--------|---------|---------|-------|-----------------------------------|--------|---------------------------------|--------|
| August                          | 9  | +0.916 | —0.6798 | +0.0582 | 6".42 | 22 <sup>h</sup> 36 <sup>m</sup> 6 | 1.2918 | 9 <sup>h</sup> 1 <sup>m</sup> 1 | +5".98 |
|                                 | 10 | .925   | .6768   | .0567   | 6.48  | 22 36.5                           | .2911  | 8 57.2                          | 6.07   |
|                                 | 11 | .933   | .6738   | .0552   | 6.54  | 22 36.3                           | .2905  | 8 53.4                          | 6.16   |
|                                 | 12 | .941   | .6709   | .0537   | 6.60  | 22 36.1                           | .2899  | 8 49.5                          | 6.25   |
|                                 | 13 | .949   | .6680   | .0522   | 6.66  | 22 35.8                           | .2892  | 8 45.6                          | 6.34   |
|                                 | 14 | .957   | .6652   | .0507   | 6.71  | 22 35.6                           | .2886  | 8 41.7                          | 6.42   |
|                                 | 15 | .965   | .6623   | .0492   | 6.77  | 22 35.4                           | .2880  | 8 37.8                          | 6.51   |
|                                 | 16 | .973   | .6595   | .0477   | 6.83  | 22 35.2                           | .2874  | 8 33.8                          | 6.59   |
|                                 | 17 | .981   | .6567   | .0462   | 6.88  | 22 35.1                           | .2868  | 8 29.9                          | 6.67   |
|                                 | 18 | .988   | .6539   | .0448   | 6.94  | 22 34.9                           | .2862  | 8 25.9                          | 6.74   |
|                                 | 19 | +0.996 | —0.6511 | +0.0433 | 7.00  | 22 34.7                           | 1.2856 | 8 22.0                          | +6.82  |
|                                 | 20 | 1.003  | .6484   | .0419   | 7.05  | 22 34.5                           | .2850  | 8 18.0                          | 6.89   |
|                                 | 21 | .011   | .6457   | .0405   | 7.10  | 22 34.3                           | .2844  | 8 14.0                          | 6.97   |
|                                 | 22 | .018   | .6430   | .0391   | 7.16  | 22 34.2                           | .2838  | 8 10.0                          | 7.04   |
|                                 | 23 | .025   | .6404   | .0377   | 7.21  | 22 34.0                           | .2833  | 8 6.0                           | 7.10   |
|                                 | 24 | .032   | .6378   | .0364   | 7.26  | 22 33.9                           | .2827  | 8 1.9                           | 7.17   |
|                                 | 25 | .039   | .6352   | .0351   | 7.32  | 22 33.7                           | .2821  | 7 57.9                          | 7.24   |
|                                 | 26 | .047   | .6326   | .0338   | 7.37  | 22 33.6                           | .2816  | 7 53.8                          | 7.30   |
|                                 | 27 | .054   | .6301   | .0325   | 7.42  | 22 33.5                           | .2811  | 7 49.7                          | 7.36   |
|                                 | 28 | .060   | .6276   | .0313   | 7.47  | 22 33.4                           | .2806  | 7 45.7                          | 7.42   |
|                                 | 29 | +1.067 | —0.6251 | +0.0301 | 7.52  | 22 33.3                           | 1.2801 | 7 41.6                          | +7.47  |
|                                 | 30 | .074   | .6227   | .0290   | 7.56  | 22 33.1                           | .2796  | 7 37.5                          | 7.52   |
|                                 | 31 | .081   | .6203   | .0279   | 7.61  | 22 33.0                           | .2791  | 7 33.4                          | 7.58   |
| Septbr.                         | 1  | .087   | .6179   | .0268   | 7.66  | 22 33.0                           | .2787  | 7 29.2                          | 7.62   |
|                                 | 2  | .094   | .6155   | .0258   | 7.71  | 22 32.9                           | .2782  | 7 25.1                          | 7.67   |
|                                 | 3  | .101   | .6131   | .0248   | 7.76  | 22 32.8                           | .2778  | 7 21.0                          | 7.72   |
|                                 | 4  | .107   | .6108   | .0238   | 7.80  | 22 32.8                           | .2774  | 7 16.8                          | 7.76   |
|                                 | 5  | .113   | .6085   | .0229   | 7.85  | 22 32.7                           | .2770  | 7 12.6                          | 7.80   |
|                                 | 6  | .120   | .6062   | .0220   | 7.89  | 22 32.7                           | .2766  | 7 8.5                           | 7.84   |
|                                 | 7  | .126   | .6040   | .0212   | 7.94  | 22 32.6                           | .2763  | 7 4.3                           | 7.88   |
|                                 | 8  | +1.133 | —0.6018 | +0.0204 | 7.98  | 22 32.6                           | 1.2760 | 7 0.1                           | +7.91  |
|                                 | 9  | .139   | .5996   | .0197   | 8.03  | 22 32.6                           | .2757  | 6 55.9                          | 7.94   |
|                                 | 10 | .145   | .5974   | .0190   | 8.07  | 22 32.6                           | .2754  | 6 51.7                          | 7.97   |
|                                 | 11 | .151   | .5953   | .0184   | 8.11  | 22 32.7                           | .2751  | 6 47.5                          | 8.00   |
|                                 | 12 | .157   | .5932   | .0178   | 8.16  | 22 32.7                           | .2748  | 6 43.3                          | 8.03   |
|                                 | 13 | .164   | .5911   | .0173   | 8.20  | 22 32.8                           | .2746  | 6 39.0                          | 8.05   |
|                                 | 14 | .170   | .5890   | .0168   | 8.24  | 22 32.8                           | .2744  | 6 34.8                          | 8.07   |
|                                 | 15 | .176   | .5869   | .0164   | 8.28  | 22 32.9                           | .2742  | 6 30.6                          | 8.09   |
|                                 | 16 | .182   | .5848   | .0161   | 8.32  | 22 33.0                           | .2741  | 6 26.3                          | 8.10   |
|                                 | 17 | .188   | .5828   | .0158   | 8.37  | 22 33.1                           | .2740  | 6 22.1                          | 8.12   |
|                                 | 18 | +1.194 | —0.5808 | +0.0156 | 8.41  | 22 33.2                           | 1.2739 | 6 17.8                          | +8.13  |
|                                 | 19 | .200   | .5788   | .0154   | 8.45  | 22 33.4                           | .2738  | 6 13.5                          | 8.14   |
|                                 | 20 | .206   | .5768   | .0152   | 8.49  | 22 33.5                           | .2737  | 6 9.3                           | 8.14   |
|                                 | 21 | .212   | .5748   | .0151   | 8.53  | 22 33.7                           | .2737  | 6 5.0                           | 8.15   |
|                                 | 22 | .218   | .5728   | .0150   | 8.57  | 22 33.8                           | .2736  | 6 0.7                           | 8.15   |
|                                 | 23 | .224   | .5709   | .0150   | 8.60  | 22 34.0                           | .2736  | 5 56.5                          | 8.15   |
|                                 | 24 | .230   | .5689   | .0151   | 8.64  | 22 34.2                           | .2737  | 5 52.2                          | 8.14   |
|                                 | 25 | .236   | .5670   | .0152   | 8.68  | 22 34.5                           | .2737  | 5 47.9                          | 8.14   |
|                                 | 26 | .242   | .5650   | .0154   | 8.72  | 22 34.7                           | .2738  | 5 43.6                          | 8.13   |
|                                 | 27 | .248   | .5631   | .0156   | 8.76  | 22 35.0                           | .2739  | 5 39.3                          | 8.12   |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                  | G                                  | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|--------------------|------------------------------------|--------|-----------------------------------|---------------------|
| Septbr.                         | 28 | +1 <sup>s</sup> .254 | —0.5611 | +0.0159 | 8 <sup>h</sup> .80 | 22 <sup>h</sup> 35 <sup>m</sup> .2 | 1.2740 | 5 <sup>h</sup> 35 <sup>m</sup> .0 | +8 <sup>h</sup> .11 |
|                                 | 29 | .260                 | .5592   | .0163   | 8.84               | 22 35.5                            | .2742  | 5 30.8                            | 8.09                |
|                                 | 30 | .266                 | .5572   | .0167   | 8.88               | 22 35.8                            | .2744  | 5 26.5                            | 8.08                |
| Oktbr.                          | 1  | .273                 | .5553   | .0172   | 8.92               | 22 36.1                            | .2746  | 5 22.2                            | 8.06                |
|                                 | 2  | .279                 | .5534   | .0177   | 8.95               | 22 36.4                            | .2748  | 5 17.9                            | 8.03                |
|                                 | 3  | .285                 | .5515   | .0183   | 8.99               | 22 36.8                            | .2750  | 5 13.7                            | 8.01                |
|                                 | 4  | .291                 | .5496   | .0189   | 9.03               | 22 37.1                            | .2753  | 5 9.4                             | 7.98                |
|                                 | 5  | .297                 | .5477   | .0196   | 9.07               | 22 37.5                            | .2756  | 5 5.1                             | 7.95                |
|                                 | 6  | .304                 | .5458   | .0203   | 9.11               | 22 37.8                            | .2759  | 5 0.9                             | 7.92                |
|                                 | 7  | .310                 | .5439   | .0211   | 9.15               | 22 38.2                            | .2762  | 4 56.6                            | 7.88                |
|                                 | 8  | +1.316               | —0.5420 | +0.0219 | 9.18               | 22 38.6                            | 1.2766 | 4 52.4                            | +7.85               |
|                                 | 9  | .323                 | .5400   | .0228   | 9.22               | 22 39.1                            | .2770  | 4 48.1                            | 7.81                |
|                                 | 10 | .329                 | .5381   | .0237   | 9.26               | 22 39.5                            | .2773  | 4 43.8                            | 7.77                |
|                                 | 11 | .336                 | .5361   | .0247   | 9.30               | 22 39.9                            | .2778  | 4 39.6                            | 7.73                |
|                                 | 12 | .343                 | .5342   | .0257   | 9.34               | 22 40.4                            | .2782  | 4 35.4                            | 7.68                |
|                                 | 13 | .349                 | .5322   | .0268   | 9.38               | 22 40.9                            | .2786  | 4 31.1                            | 7.63                |
|                                 | 14 | .356                 | .5302   | .0279   | 9.42               | 22 41.3                            | .2791  | 4 26.9                            | 7.58                |
|                                 | 15 | .363                 | .5282   | .0290   | 9.46               | 22 41.8                            | .2796  | 4 22.7                            | 7.53                |
|                                 | 16 | .370                 | .5262   | .0302   | 9.50               | 22 42.3                            | .2801  | 4 18.5                            | 7.47                |
|                                 | 17 | .377                 | .5242   | .0314   | 9.54               | 22 42.8                            | .2806  | 4 14.3                            | 7.41                |
|                                 | 18 | +1.384               | —0.5222 | +0.0326 | 9.58               | 22 43.3                            | 1.2811 | 4 10.1                            | +7.35               |
|                                 | 19 | .391                 | .5201   | .0339   | 9.62               | 22 43.8                            | .2817  | 4 5.9                             | 7.29                |
|                                 | 20 | .398                 | .5180   | .0352   | 9.66               | 22 44.4                            | .2822  | 4 1.7                             | 7.23                |
|                                 | 21 | .405                 | .5159   | .0366   | 9.71               | 22 44.9                            | .2828  | 3 57.6                            | 7.16                |
|                                 | 22 | .413                 | .5138   | .0380   | 9.75               | 22 45.5                            | .2834  | 3 53.4                            | 7.09                |
|                                 | 23 | .420                 | .5116   | .0394   | 9.79               | 22 46.0                            | .2839  | 3 49.3                            | 7.02                |
|                                 | 24 | .428                 | .5094   | .0408   | 9.84               | 22 46.6                            | .2845  | 3 45.1                            | 6.95                |
|                                 | 25 | .435                 | .5072   | .0422   | 9.88               | 22 47.2                            | .2851  | 3 41.0                            | 6.87                |
|                                 | 26 | .443                 | .5050   | .0437   | 9.93               | 22 47.8                            | .2858  | 3 36.8                            | 6.79                |
|                                 | 27 | .451                 | .5027   | .0452   | 9.97               | 22 48.3                            | .2864  | 3 32.7                            | 6.71                |
|                                 | 28 | +1.459               | —0.5004 | +0.0467 | 10.02              | 22 48.9                            | 1.2870 | 3 28.6                            | +6.63               |
|                                 | 29 | .466                 | .4981   | .0483   | 10.06              | 22 49.5                            | .2876  | 3 24.5                            | 6.55                |
|                                 | 30 | .474                 | .4958   | .0498   | 10.11              | 22 50.1                            | .2883  | 3 20.4                            | 6.47                |
|                                 | 31 | .483                 | .4934   | .0514   | 10.16              | 22 50.7                            | .2889  | 3 16.4                            | 6.38                |
| Novbr.                          | 1  | .491                 | .4910   | .0530   | 10.21              | 22 51.3                            | .2896  | 3 12.3                            | 6.29                |
|                                 | 2  | .499                 | .4886   | .0546   | 10.25              | 22 51.9                            | .2902  | 3 8.2                             | 6.20                |
|                                 | 3  | .508                 | .4861   | .0562   | 10.30              | 22 52.5                            | .2909  | 3 4.2                             | 6.10                |
|                                 | 4  | .516                 | .4836   | .0578   | 10.35              | 22 53.1                            | .2916  | 3 0.1                             | 6.01                |
|                                 | 5  | .525                 | .4810   | .0594   | 10.41              | 22 53.7                            | .2922  | 2 56.1                            | 5.91                |
|                                 | 6  | .534                 | .4784   | .0610   | 10.46              | 22 54.3                            | .2929  | 2 52.1                            | 5.81                |
|                                 | 7  | +1.543               | —0.4758 | +0.0626 | 10.51              | 22 54.9                            | 1.2935 | 2 48.1                            | +5.71               |
|                                 | 8  | .551                 | .4732   | .0642   | 10.56              | 22 55.5                            | .2942  | 2 44.1                            | 5.61                |
|                                 | 9  | .560                 | .4706   | .0658   | 10.62              | 22 56.0                            | .2948  | 2 40.1                            | 5.50                |
|                                 | 10 | .570                 | .4679   | .0674   | 10.67              | 22 56.6                            | .2955  | 2 36.2                            | 5.40                |
|                                 | 11 | .579                 | .4652   | .0690   | 10.72              | 22 57.2                            | .2961  | 2 32.2                            | 5.29                |
|                                 | 12 | .588                 | .4624   | .0705   | 10.78              | 22 57.8                            | .2967  | 2 28.2                            | 5.18                |
|                                 | 13 | .597                 | .4595   | .0720   | 10.84              | 22 58.4                            | .2974  | 2 24.3                            | 5.07                |
|                                 | 14 | .607                 | .4567   | .0735   | 10.89              | 22 58.9                            | .2980  | 2 20.4                            | 4.95                |
|                                 | 15 | .617                 | .4538   | .0750   | 10.95              | 22 59.5                            | .2986  | 2 16.4                            | 4.84                |
|                                 | 16 | .626                 | .4509   | .0765   | 11.01              | 23 0.1                             | .2992  | 2 12.5                            | 4.72                |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                 | log h  | H                                | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|-----------------------------------|--------|----------------------------------|---------------------|
| Novbr.                          | 17 | +1 <sup>s</sup> .636 | —0.4480 | +0.0780 | 11 <sup>h</sup> .07 | 23 <sup>h</sup> 0 <sup>m</sup> .6 | 1.2998 | 2 <sup>h</sup> 8 <sup>m</sup> .6 | +4 <sup>h</sup> .61 |
|                                 | 18 | .646                 | .4450   | .0795   | 11.13               | 23 1.1                            | .3004  | 2 4.7                            | 4.49                |
|                                 | 19 | .656                 | .4420   | .0809   | 11.19               | 23 1.7                            | .3010  | 2 0.8                            | 4.37                |
|                                 | 20 | .666                 | .4389   | .0823   | 11.25               | 23 2.2                            | .3015  | 1 56.9                           | 4.24                |
|                                 | 21 | .676                 | .4358   | .0837   | 11.31               | 23 2.7                            | .3021  | 1 53.1                           | 4.12                |
|                                 | 22 | .686                 | .4327   | .0851   | 11.38               | 23 3.2                            | .3027  | 1 49.2                           | 3.99                |
|                                 | 23 | .697                 | .4295   | .0865   | 11.44               | 23 3.7                            | .3032  | 1 45.4                           | 3.87                |
|                                 | 24 | .707                 | .4263   | .0878   | 11.50               | 23 4.2                            | .3037  | 1 41.5                           | 3.74                |
|                                 | 25 | .718                 | .4231   | .0891   | 11.57               | 23 4.7                            | .3042  | 1 37.7                           | 3.61                |
|                                 | 26 | .728                 | .4198   | .0903   | 11.63               | 23 5.1                            | .3047  | 1 33.9                           | 3.48                |
|                                 | 27 | +1.739               | —0.4165 | +0.0915 | 11.70               | 23 5.6                            | 1.3052 | 1 30.0                           | +3.35               |
|                                 | 28 | .750                 | .4132   | .0927   | 11.77               | 23 6.0                            | .3057  | 1 26.2                           | 3.22                |
|                                 | 29 | .761                 | .4098   | .0938   | 11.83               | 23 6.5                            | .3061  | 1 22.4                           | 3.09                |
|                                 | 30 | .771                 | .4064   | .0949   | 11.90               | 23 6.9                            | .3065  | 1 18.6                           | 2.95                |
|                                 | 1  | .782                 | .4030   | .0959   | 11.97               | 23 7.3                            | .3069  | 1 14.8                           | 2.82                |
| Dezbr.                          | 2  | .793                 | .3996   | .0969   | 12.04               | 23 7.7                            | .3073  | 1 11.0                           | 2.68                |
|                                 | 3  | .804                 | .3962   | .0979   | 12.11               | 23 8.1                            | .3077  | 1 7.2                            | 2.55                |
|                                 | 4  | .816                 | .3927   | .0988   | 12.18               | 23 8.5                            | .3081  | 1 3.4                            | 2.41                |
|                                 | 5  | .827                 | .3892   | .0996   | 12.25               | 23 8.8                            | .3084  | 0 59.6                           | 2.27                |
|                                 | 6  | .838                 | .3856   | .1004   | 12.32               | 23 9.2                            | .3087  | 0 55.9                           | 2.13                |
|                                 | 7  | +1.849               | —0.3820 | +0.1012 | 12.39               | 23 9.5                            | 1.3090 | 0 52.1                           | +1.99               |
|                                 | 8  | .861                 | .3784   | .1019   | 12.46               | 23 9.8                            | .3093  | 0 48.3                           | 1.85                |
|                                 | 9  | .872                 | .3748   | .1026   | 12.54               | 23 10.1                           | .3096  | 0 44.6                           | 1.71                |
|                                 | 10 | .884                 | .3711   | .1032   | 12.61               | 23 10.4                           | .3098  | 0 40.8                           | 1.57                |
|                                 | 11 | .895                 | .3675   | .1037   | 12.68               | 23 10.7                           | .3100  | 0 37.0                           | 1.43                |
|                                 | 12 | .907                 | .3638   | .1042   | 12.76               | 23 11.0                           | .3102  | 0 33.3                           | 1.28                |
|                                 | 13 | .918                 | .3601   | .1047   | 12.83               | 23 11.2                           | .3104  | 0 29.6                           | 1.14                |
|                                 | 14 | .930                 | .3564   | .1051   | 12.90               | 23 11.4                           | .3106  | 0 25.8                           | 1.00                |
|                                 | 15 | .941                 | .3527   | .1055   | 12.98               | 23 11.7                           | .3107  | 0 22.1                           | 0.86                |
|                                 | 16 | .953                 | .3489   | .1058   | 13.06               | 23 11.9                           | .3109  | 0 18.4                           | 0.71                |
|                                 | 17 | +1.965               | —0.3452 | +0.1061 | 13.13               | 23 12.1                           | 1.3110 | 0 14.6                           | +0.57               |
|                                 | 18 | .976                 | .3414   | .1063   | 13.21               | 23 12.2                           | .3110  | 0 10.9                           | 0.42                |
|                                 | 19 | 1.988                | .3376   | .1064   | 13.28               | 23 12.4                           | .3111  | 0 7.1                            | 0.28                |
|                                 | 20 | 2.000                | .3338   | .1065   | 13.36               | 23 12.6                           | .3111  | 0 3.4                            | +0.13               |
|                                 | 21 | .011                 | .3300   | .1065   | 13.43               | 23 12.7                           | .3111  | 23 59.7                          | —0.01               |
|                                 | 22 | .023                 | .3262   | .1064   | 13.51               | 23 12.8                           | .3111  | 23 55.9                          | 0.16                |
|                                 | 23 | .035                 | .3224   | .1063   | 13.59               | 23 12.9                           | .3111  | 23 52.2                          | 0.30                |
|                                 | 24 | .046                 | .3186   | .1062   | 13.66               | 23 13.0                           | .3110  | 23 48.4                          | 0.45                |
|                                 | 25 | .058                 | .3147   | .1060   | 13.74               | 23 13.1                           | .3109  | 23 44.7                          | 0.59                |
|                                 | 26 | .070                 | .3109   | .1058   | 13.82               | 23 13.2                           | .3108  | 23 40.9                          | 0.74                |
|                                 | 27 | +2.082               | —0.3071 | +0.1055 | 13.89               | 23 13.3                           | 1.3107 | 23 37.2                          | —0.88               |
|                                 | 28 | .093                 | .3033   | .1052   | 13.97               | 23 13.3                           | .3106  | 23 33.4                          | 1.02                |
|                                 | 29 | .105                 | .2994   | .1048   | 14.05               | 23 13.4                           | .3104  | 23 29.7                          | 1.17                |
|                                 | 30 | .116                 | .2956   | .1043   | 14.12               | 23 13.4                           | .3102  | 23 25.9                          | 1.31                |
|                                 | 31 | .128                 | .2918   | .1038   | 14.20               | 23 13.4                           | .3100  | 23 22.2                          | 1.45                |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f       | x       | y       | g    | G                                 | log h  | H                                 | i      |
|---------------------------------|----|---------|---------|---------|------|-----------------------------------|--------|-----------------------------------|--------|
| Januar                          | 1  | —0.8932 | —0.6651 | +0.1031 | 6.72 | 13 <sup>h</sup> 41 <sup>m</sup> 6 | 1.3098 | 23 <sup>h</sup> 18 <sup>m</sup> 4 | —1.760 |
|                                 | 2  | .920    | .6681   | .1025   | 6.66 | 13 43.2                           | .3096  | 23 14.7                           | 1.74   |
|                                 | 3  | .909    | .6711   | .1018   | 6.60 | 13 44.8                           | .3093  | 23 10.9                           | 1.88   |
|                                 | 4  | .898    | .6740   | .1011   | 6.54 | 13 46.5                           | .3090  | 23 7.1                            | 2.02   |
|                                 | 5  | .886    | .6769   | .1003   | 6.48 | 13 48.3                           | .3087  | 23 3.3                            | 2.16   |
|                                 | 6  | .875    | .6797   | .0995   | 6.42 | 13 50.1                           | .3084  | 22 59.5                           | 2.30   |
|                                 | 7  | .864    | .6825   | .0986   | 6.37 | 13 51.9                           | .3080  | 22 55.8                           | 2.44   |
|                                 | 8  | .853    | .6852   | .0977   | 6.31 | 13 53.7                           | .3076  | 22 52.0                           | 2.58   |
|                                 | 9  | .842    | .6879   | .0967   | 6.26 | 13 55.6                           | .3073  | 22 48.2                           | 2.71   |
|                                 | 10 | .831    | .6906   | .0957   | 6.20 | 13 57.6                           | .3069  | 22 44.3                           | 2.85   |
|                                 | 11 | —0.820  | —0.6932 | +0.0947 | 6.15 | 13 59.6                           | 1.3065 | 22 40.5                           | —2.99  |
|                                 | 12 | .809    | .6957   | .0936   | 6.10 | 14 1.6                            | .3060  | 22 36.7                           | 3.12   |
|                                 | 13 | .798    | .6982   | .0925   | 6.05 | 14 3.7                            | .3056  | 22 32.9                           | 3.25   |
|                                 | 14 | .787    | .7006   | .0913   | 6.00 | 14 5.8                            | .3051  | 22 29.0                           | 3.39   |
|                                 | 15 | .776    | .7030   | .0901   | 5.95 | 14 7.9                            | .3046  | 22 25.2                           | 3.52   |
|                                 | 16 | .765    | .7053   | .0888   | 5.91 | 14 10.1                           | .3041  | 22 21.3                           | 3.65   |
|                                 | 17 | .755    | .7076   | .0875   | 5.86 | 14 12.4                           | .3036  | 22 17.5                           | 3.78   |
|                                 | 18 | .744    | .7098   | .0862   | 5.82 | 14 14.6                           | .3031  | 22 13.6                           | 3.90   |
|                                 | 19 | .734    | .7119   | .0848   | 5.78 | 14 16.9                           | .3025  | 22 9.7                            | 4.03   |
|                                 | 20 | .724    | .7140   | .0834   | 5.74 | 14 19.3                           | .3020  | 22 5.8                            | 4.15   |
|                                 | 21 | —0.713  | —0.7160 | +0.0820 | 5.70 | 14 21.6                           | 1.3014 | 22 1.9                            | —4.28  |
|                                 | 22 | .703    | .7179   | .0805   | 5.66 | 14 24.0                           | .3008  | 21 58.0                           | 4.40   |
|                                 | 23 | .693    | .7198   | .0791   | 5.62 | 14 26.5                           | .3002  | 21 54.1                           | 4.52   |
|                                 | 24 | .683    | .7216   | .0776   | 5.58 | 14 28.9                           | .2996  | 21 50.2                           | 4.64   |
|                                 | 25 | .674    | .7233   | .0761   | 5.55 | 14 31.4                           | .2990  | 21 46.3                           | 4.76   |
|                                 | 26 | .664    | .7250   | .0746   | 5.51 | 14 33.9                           | .2984  | 21 42.3                           | 4.88   |
|                                 | 27 | .654    | .7266   | .0731   | 5.48 | 14 36.4                           | .2978  | 21 38.4                           | 4.99   |
|                                 | 28 | .644    | .7281   | .0715   | 5.45 | 14 39.0                           | .2972  | 21 34.4                           | 5.10   |
|                                 | 29 | .635    | .7296   | .0699   | 5.42 | 14 41.5                           | .2965  | 21 30.4                           | 5.22   |
|                                 | 30 | .625    | .7311   | .0683   | 5.39 | 14 44.1                           | .2959  | 21 26.4                           | 5.33   |
| Februar                         | 31 | —0.616  | —0.7325 | +0.0667 | 5.36 | 14 46.7                           | 1.2952 | 21 22.4                           | —5.43  |
|                                 | 1  | .607    | .7338   | .0651   | 5.34 | 14 49.3                           | .2946  | 21 18.4                           | 5.54   |
|                                 | 2  | .598    | .7351   | .0635   | 5.31 | 14 51.9                           | .2939  | 21 14.4                           | 5.65   |
|                                 | 3  | .589    | .7363   | .0619   | 5.29 | 14 54.5                           | .2933  | 21 10.4                           | 5.75   |
|                                 | 4  | .580    | .7374   | .0603   | 5.27 | 14 57.1                           | .2926  | 21 6.3                            | 5.85   |
|                                 | 5  | .571    | .7385   | .0587   | 5.24 | 14 59.7                           | .2919  | 21 2.3                            | 5.95   |
|                                 | 6  | .563    | .7395   | .0571   | 5.22 | 15 2.3                            | .2913  | 20 58.2                           | 6.05   |
|                                 | 7  | .554    | .7405   | .0555   | 5.20 | 15 4.9                            | .2906  | 20 54.1                           | 6.14   |
|                                 | 8  | .546    | .7414   | .0539   | 5.18 | 15 7.5                            | .2900  | 20 50.0                           | 6.24   |
|                                 | 9  | .537    | .7423   | .0523   | 5.17 | 15 10.1                           | .2893  | 20 45.9                           | 6.33   |
|                                 | 10 | —0.529  | —0.7431 | +0.0507 | 5.15 | 15 12.6                           | 1.2887 | 20 41.8                           | —6.42  |
|                                 | 11 | .521    | .7439   | .0492   | 5.14 | 15 15.2                           | .2880  | 20 37.7                           | 6.50   |
|                                 | 12 | .513    | .7446   | .0476   | 5.12 | 15 17.7                           | .2874  | 20 33.6                           | 6.59   |
|                                 | 13 | .505    | .7453   | .0461   | 5.11 | 15 20.3                           | .2867  | 20 29.4                           | 6.67   |
|                                 | 14 | .497    | .7460   | .0446   | 5.09 | 15 22.8                           | .2861  | 20 25.3                           | 6.75   |
|                                 | 15 | .489    | .7466   | .0431   | 5.08 | 15 25.4                           | .2855  | 20 21.1                           | 6.83   |
|                                 | 16 | .481    | .7472   | .0416   | 5.07 | 15 27.9                           | .2848  | 20 16.9                           | 6.91   |
|                                 | 17 | .473    | .7477   | .0401   | 5.06 | 15 30.4                           | .2842  | 20 12.8                           | 6.99   |
|                                 | 18 | .466    | .7482   | .0386   | 5.05 | 15 32.9                           | .2836  | 20 8.6                            | 7.06   |
|                                 | 19 | .458    | .7486   | .0372   | 5.04 | 15 35.3                           | .2831  | 20 4.4                            | 7.13   |

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| <sup>12h</sup><br>M. Z. Berlin | f      | x       | y       | g    | G                                 | log h  | H                                | i     |
|--------------------------------|--------|---------|---------|------|-----------------------------------|--------|----------------------------------|-------|
| Februar 20                     | —0.451 | —0.7491 | +0.0358 | 5.03 | 15 <sup>h</sup> 37 <sup>m</sup> 7 | 1.2825 | 20 <sup>h</sup> 0 <sup>m</sup> 2 | —7.20 |
| 21                             | .443   | .7495   | .0345   | 5.02 | 15 40.1                           | .2819  | 19 55.9                          | 7.26  |
| 22                             | .436   | .7499   | .0332   | 5.02 | 15 42.5                           | .2814  | 19 51.7                          | 7.33  |
| 23                             | .429   | .7503   | .0319   | 5.01 | 15 44.9                           | .2809  | 19 47.5                          | 7.39  |
| 24                             | .422   | .7507   | .0306   | 5.00 | 15 47.2                           | .2804  | 19 43.2                          | 7.45  |
| 25                             | .415   | .7510   | .0294   | 4.99 | 15 49.5                           | .2798  | 19 39.0                          | 7.50  |
| 26                             | .408   | .7513   | .0282   | 4.99 | 15 51.8                           | .2793  | 19 34.7                          | 7.56  |
| 27                             | .401   | .7516   | .0271   | 4.98 | 15 54.1                           | .2788  | 19 30.4                          | 7.61  |
| 28                             | .394   | .7519   | .0260   | 4.98 | 15 56.4                           | .2783  | 19 26.1                          | 7.66  |
| März 1                         | .387   | .7521   | .0250   | 4.97 | 15 58.6                           | .2779  | 19 21.9                          | 7.71  |
| 2                              | —0.381 | —0.7524 | +0.0240 | 4.96 | 16 0.8                            | 1.2775 | 19 17.6                          | —7.75 |
| 3                              | .374   | .7526   | .0231   | 4.96 | 16 3.0                            | .2771  | 19 13.3                          | 7.80  |
| 4                              | .367   | .7529   | .0222   | 4.95 | 16 5.1                            | .2767  | 19 9.0                           | 7.84  |
| 5                              | .361   | .7531   | .0214   | 4.95 | 16 7.3                            | .2763  | 19 4.7                           | 7.87  |
| 6                              | .354   | .7534   | .0206   | 4.94 | 16 9.4                            | .2760  | 19 0.4                           | 7.91  |
| 7                              | .348   | .7536   | .0199   | 4.94 | 16 11.4                           | .2757  | 18 56.1                          | 7.94  |
| 8                              | .341   | .7539   | .0192   | 4.93 | 16 13.5                           | .2754  | 18 51.7                          | 7.97  |
| 9                              | .335   | .7541   | .0185   | 4.93 | 16 15.6                           | .2751  | 18 47.4                          | 8.00  |
| 10                             | .329   | .7543   | .0179   | 4.92 | 16 17.6                           | .2748  | 18 43.1                          | 8.03  |
| 11                             | .322   | .7546   | .0173   | 4.92 | 16 19.6                           | .2746  | 18 38.8                          | 8.05  |
| 12                             | —0.316 | —0.7548 | +0.0168 | 4.91 | 16 21.6                           | 1.2744 | 18 34.4                          | —8.07 |
| 13                             | .310   | .7551   | .0164   | 4.91 | 16 23.6                           | .2742  | 18 30.1                          | 8.09  |
| 14                             | .303   | .7553   | .0160   | 4.90 | 16 25.6                           | .2741  | 18 25.8                          | 8.11  |
| 15                             | .297   | .7556   | .0157   | 4.90 | 16 27.5                           | .2739  | 18 21.4                          | 8.12  |
| 16                             | .291   | .7559   | .0155   | 4.89 | 16 29.5                           | .2738  | 18 17.1                          | 8.13  |
| 17                             | .285   | .7562   | .0153   | 4.89 | 16 31.4                           | .2737  | 18 12.8                          | 8.14  |
| 18                             | .279   | .7565   | .0152   | 4.88 | 16 33.3                           | .2737  | 18 8.5                           | 8.14  |
| 19                             | .272   | .7569   | .0151   | 4.87 | 16 35.2                           | .2737  | 18 4.1                           | 8.15  |
| 20                             | .266   | .7572   | .0151   | 4.87 | 16 37.1                           | .2736  | 17 59.8                          | 8.15  |
| 21                             | .260   | .7576   | .0151   | 4.86 | 16 39.0                           | .2737  | 17 55.5                          | 8.15  |
| 22                             | —0.254 | —0.7580 | +0.0152 | 4.85 | 16 40.9                           | 1.2737 | 17 51.2                          | —8.14 |
| 23                             | .248   | .7584   | .0154   | 4.85 | 16 42.8                           | .2738  | 17 46.8                          | 8.14  |
| 24                             | .242   | .7588   | .0156   | 4.84 | 16 44.7                           | .2739  | 17 42.5                          | 8.13  |
| 25                             | .235   | .7592   | .0158   | 4.83 | 16 46.6                           | .2740  | 17 38.2                          | 8.12  |
| 26                             | .229   | .7596   | .0161   | 4.82 | 16 48.5                           | .2741  | 17 33.9                          | 8.10  |
| 27                             | .223   | .7601   | .0164   | 4.81 | 16 50.4                           | .2743  | 17 29.6                          | 8.09  |
| 28                             | .217   | .7606   | .0168   | 4.80 | 16 52.3                           | .2744  | 17 25.3                          | 8.07  |
| 29                             | .210   | .7611   | .0173   | 4.79 | 16 54.2                           | .2746  | 17 21.0                          | 8.05  |
| 30                             | .204   | .7616   | .0178   | 4.78 | 16 56.1                           | .2748  | 17 16.8                          | 8.03  |
| 31                             | .198   | .7621   | .0184   | 4.77 | 16 58.0                           | .2751  | 17 12.5                          | 8.00  |
| April 1                        | —0.191 | —0.7626 | +0.0190 | 4.76 | 17 0.0                            | 1.2754 | 17 8.2                           | —7.97 |
| 2                              | .185   | .7631   | .0197   | 4.75 | 17 1.9                            | .2757  | 17 4.0                           | 7.94  |
| 3                              | .179   | .7637   | .0205   | 4.74 | 17 3.9                            | .2760  | 16 59.7                          | 7.91  |
| 4                              | .172   | .7643   | .0213   | 4.73 | 17 5.9                            | .2763  | 16 55.5                          | 7.88  |
| 5                              | .166   | .7649   | .0221   | 4.71 | 17 7.9                            | .2767  | 16 51.2                          | 7.84  |
| 6                              | .159   | .7655   | .0230   | 4.70 | 17 9.9                            | .2770  | 16 47.0                          | 7.80  |
| 7                              | .152   | .7661   | .0239   | 4.69 | 17 11.9                           | .2774  | 16 42.8                          | 7.76  |
| 8                              | .146   | .7667   | .0249   | 4.68 | 17 13.9                           | .2778  | 16 38.6                          | 7.71  |
| 9                              | .139   | .7673   | .0259   | 4.66 | 17 16.0                           | .2783  | 16 34.4                          | 7.67  |
| 10                             | .132   | .7680   | .0270   | 4.65 | 17 18.1                           | .2787  | 16 30.2                          | 7.62  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f       | x       | y       | g    | G                                  | log h  | H                                  | i     |
|---------------------------------|----|---------|---------|---------|------|------------------------------------|--------|------------------------------------|-------|
| April                           | 11 | —0.8125 | —0.7686 | +0.0281 | 4.64 | 17 <sup>h</sup> 20 <sup>m</sup> .2 | 1.2792 | 16 <sup>h</sup> 26 <sup>m</sup> .1 | —7.57 |
|                                 | 12 | .118    | .7693   | .0292   | 4.63 | 17 22.3                            | .2797  | 16 21.9                            | 7.52  |
|                                 | 13 | .111    | .7699   | .0303   | 4.61 | 17 24.5                            | .2801  | 16 17.8                            | 7.46  |
|                                 | 14 | .104    | .7706   | .0315   | 4.60 | 17 26.8                            | .2806  | 16 13.6                            | 7.40  |
|                                 | 15 | .097    | .7712   | .0327   | 4.59 | 17 29.0                            | .2812  | 16 9.5                             | 7.34  |
|                                 | 16 | .090    | .7719   | .0340   | 4.57 | 17 31.3                            | .2817  | 16 5.4                             | 7.28  |
|                                 | 17 | .083    | .7726   | .0353   | 4.56 | 17 33.6                            | .2822  | 16 1.3                             | 7.22  |
|                                 | 18 | .075    | .7733   | .0366   | 4.55 | 17 36.0                            | .2828  | 15 57.2                            | 7.16  |
|                                 | 19 | .068    | .7740   | .0379   | 4.53 | 17 38.4                            | .2833  | 15 53.1                            | 7.09  |
|                                 | 20 | .060    | .7746   | .0393   | 4.52 | 17 40.8                            | .2839  | 15 49.1                            | 7.02  |
|                                 | 21 | —0.053  | —0.7753 | +0.0407 | 4.51 | 17 43.3                            | 1.2845 | 15 45.0                            | —6.95 |
|                                 | 22 | .045    | .7759   | .0421   | 4.49 | 17 45.8                            | .2851  | 15 41.0                            | 6.88  |
|                                 | 23 | .038    | .7765   | .0436   | 4.48 | 17 48.4                            | .2857  | 15 37.0                            | 6.80  |
|                                 | 24 | .030    | .7771   | .0451   | 4.47 | 17 51.0                            | .2863  | 15 33.0                            | 6.72  |
|                                 | 25 | .022    | .7777   | .0466   | 4.46 | 17 53.6                            | .2869  | 15 29.0                            | 6.64  |
|                                 | 26 | .014    | .7782   | .0481   | 4.45 | 17 56.2                            | .2876  | 15 25.0                            | 6.56  |
|                                 | 27 | —0.006  | .7787   | .0496   | 4.44 | 17 58.9                            | .2882  | 15 21.0                            | 6.48  |
|                                 | 28 | +0.002  | .7792   | .0511   | 4.43 | 18 1.7                             | .2888  | 15 17.1                            | 6.39  |
|                                 | 29 | .010    | .7797   | .0526   | 4.42 | 18 4.5                             | .2894  | 15 13.1                            | 6.31  |
|                                 | 30 | .019    | .7802   | .0541   | 4.41 | 18 7.3                             | .2901  | 15 9.2                             | 6.22  |
| Mai                             | 1  | +0.027  | —0.7806 | +0.0556 | 4.40 | 18 10.2                            | 1.2907 | 15 5.3                             | —6.13 |
|                                 | 2  | .036    | .7810   | .0572   | 4.39 | 18 13.1                            | .2913  | 15 1.4                             | 6.04  |
|                                 | 3  | .044    | .7814   | .0587   | 4.38 | 18 16.1                            | .2920  | 14 57.5                            | 5.95  |
|                                 | 4  | .053    | .7817   | .0603   | 4.38 | 18 19.1                            | .2926  | 14 53.6                            | 5.85  |
|                                 | 5  | .062    | .7820   | .0619   | 4.37 | 18 22.1                            | .2932  | 14 49.8                            | 5.75  |
|                                 | 6  | .070    | .7823   | .0634   | 4.37 | 18 25.2                            | .2939  | 14 45.9                            | 5.65  |
|                                 | 7  | .079    | .7825   | .0649   | 4.36 | 18 28.3                            | .2945  | 14 42.1                            | 5.55  |
|                                 | 8  | .088    | .7827   | .0664   | 4.36 | 18 31.4                            | .2951  | 14 38.3                            | 5.45  |
|                                 | 9  | .097    | .7828   | .0680   | 4.35 | 18 34.6                            | .2957  | 14 34.5                            | 5.35  |
|                                 | 10 | .107    | .7829   | .0695   | 4.35 | 18 37.8                            | .2963  | 14 30.7                            | 5.25  |
|                                 | 11 | +0.116  | —0.7829 | +0.0710 | 4.35 | 18 41.0                            | 1.2969 | 14 26.9                            | —5.14 |
|                                 | 12 | .125    | .7829   | .0725   | 4.35 | 18 44.3                            | .2975  | 14 23.1                            | 5.03  |
|                                 | 13 | .135    | .7828   | .0740   | 4.35 | 18 47.6                            | .2981  | 14 19.3                            | 4.92  |
|                                 | 14 | .144    | .7827   | .0754   | 4.36 | 18 50.9                            | .2987  | 14 15.6                            | 4.81  |
|                                 | 15 | .154    | .7825   | .0768   | 4.36 | 18 54.2                            | .2993  | 14 11.8                            | 4.70  |
|                                 | 16 | .163    | .7822   | .0782   | 4.37 | 18 57.6                            | .2999  | 14 8.1                             | 4.59  |
|                                 | 17 | .173    | .7818   | .0796   | 4.37 | 19 0.9                             | .3004  | 14 4.4                             | 4.48  |
|                                 | 18 | .183    | .7814   | .0810   | 4.38 | 19 4.3                             | .3010  | 14 0.7                             | 4.36  |
|                                 | 19 | .193    | .7809   | .0824   | 4.39 | 19 7.6                             | .3015  | 13 57.0                            | 4.25  |
|                                 | 20 | .203    | .7803   | .0837   | 4.40 | 19 11.0                            | .3021  | 13 53.3                            | 4.13  |
|                                 | 21 | +0.213  | —0.7797 | +0.0850 | 4.42 | 19 14.4                            | 1.3026 | 13 49.7                            | —4.01 |
|                                 | 22 | .223    | .7790   | .0863   | 4.43 | 19 17.8                            | .3031  | 13 46.0                            | 3.89  |
|                                 | 23 | .233    | .7782   | .0875   | 4.45 | 19 21.2                            | .3036  | 13 42.3                            | 3.77  |
|                                 | 24 | .244    | .7774   | .0887   | 4.46 | 19 24.5                            | .3041  | 13 38.7                            | 3.65  |
|                                 | 25 | .254    | .7765   | .0899   | 4.48 | 19 27.9                            | .3046  | 13 35.1                            | 3.53  |
|                                 | 26 | .265    | .7756   | .0910   | 4.50 | 19 31.2                            | .3050  | 13 31.5                            | 3.40  |
|                                 | 27 | .275    | .7746   | .0921   | 4.52 | 19 34.5                            | .3055  | 13 27.9                            | 3.28  |
|                                 | 28 | .286    | .7735   | .0932   | 4.54 | 19 37.8                            | .3059  | 13 24.2                            | 3.15  |
|                                 | 29 | .296    | .7723   | .0943   | 4.57 | 19 41.1                            | .3063  | 13 20.6                            | 3.03  |
|                                 | 30 | .307    | .7710   | .0953   | 4.59 | 19 44.4                            | .3067  | 13 17.0                            | 2.90  |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g    | G                                 | log h  | H                                 | i     |
|---------------------------------|----|--------|---------|---------|------|-----------------------------------|--------|-----------------------------------|-------|
| Mai                             | 31 | +0.317 | -0.7696 | +0.0963 | 4.62 | 19 <sup>h</sup> 47 <sup>m</sup> 6 | 1.3071 | 13 <sup>h</sup> 13 <sup>m</sup> 5 | -2.77 |
| Juni                            | 1  | .328   | .7682   | .0972   | 4.65 | 19 50.8                           | .3075  | 13 9.9                            | 2.64  |
|                                 | 2  | .339   | .7667   | .0981   | 4.68 | 19 54.0                           | .3078  | 13 6.3                            | 2.51  |
|                                 | 3  | .350   | .7652   | .0989   | 4.71 | 19 57.1                           | .3081  | 13 2.8                            | 2.38  |
|                                 | 4  | .361   | .7636   | .0997   | 4.74 | 20 0.1                            | .3085  | 12 59.2                           | 2.25  |
|                                 | 5  | .372   | .7619   | .1005   | 4.77 | 20 3.2                            | .3088  | 12 55.7                           | 2.12  |
|                                 | 6  | .383   | .7601   | .1012   | 4.81 | 20 6.2                            | .3090  | 12 52.1                           | 1.99  |
|                                 | 7  | .394   | .7582   | .1019   | 4.85 | 20 9.1                            | .3093  | 12 48.6                           | 1.86  |
|                                 | 8  | .405   | .7563   | .1025   | 4.89 | 20 12.0                           | .3096  | 12 45.0                           | 1.73  |
|                                 | 9  | .416   | .7543   | .1031   | 4.93 | 20 14.8                           | .3098  | 12 41.5                           | 1.59  |
|                                 | 10 | +0.427 | -0.7522 | +0.1036 | 4.97 | 20 17.6                           | 1.3100 | 12 38.0                           | -1.46 |
|                                 | 11 | .439   | .7501   | .1041   | 5.01 | 20 20.3                           | .3102  | 12 34.4                           | 1.33  |
|                                 | 12 | .450   | .7479   | .1046   | 5.05 | 20 23.0                           | .3104  | 12 30.9                           | 1.19  |
|                                 | 13 | .461   | .7456   | .1050   | 5.10 | 20 25.6                           | .3105  | 12 27.4                           | 1.06  |
|                                 | 14 | .472   | .7433   | .1053   | 5.15 | 20 28.2                           | .3107  | 12 23.9                           | 0.92  |
|                                 | 15 | .484   | .7410   | .1056   | 5.19 | 20 30.7                           | .3108  | 12 20.4                           | 0.79  |
|                                 | 16 | .495   | .7386   | .1059   | 5.24 | 20 33.1                           | .3109  | 12 16.9                           | 0.65  |
|                                 | 17 | .506   | .7361   | .1061   | 5.29 | 20 35.5                           | .3110  | 12 13.4                           | 0.52  |
|                                 | 18 | .518   | .7336   | .1063   | 5.34 | 20 37.8                           | .3110  | 12 9.9                            | 0.38  |
|                                 | 19 | .529   | .7310   | .1064   | 5.39 | 20 40.1                           | .3111  | 12 6.4                            | 0.25  |
|                                 | 20 | +0.541 | -0.7284 | +0.1065 | 5.45 | 20 42.3                           | 1.3111 | 12 2.9                            | -0.11 |
|                                 | 21 | .552   | .7257   | .1065   | 5.50 | 20 44.5                           | .3111  | 11 59.4                           | +0.02 |
|                                 | 22 | .563   | .7230   | .1065   | 5.55 | 20 46.6                           | .3111  | 11 55.9                           | 0.16  |
|                                 | 23 | .575   | .7202   | .1064   | 5.61 | 20 48.6                           | .3111  | 11 52.4                           | 0.29  |
|                                 | 24 | .586   | .7174   | .1063   | 5.67 | 20 50.6                           | .3110  | 11 48.9                           | 0.43  |
|                                 | 25 | .597   | .7145   | .1061   | 5.72 | 20 52.5                           | .3110  | 11 45.4                           | 0.57  |
|                                 | 26 | .609   | .7116   | .1059   | 5.78 | 20 54.4                           | .3109  | 11 41.9                           | 0.70  |
|                                 | 27 | .620   | .7087   | .1056   | 5.84 | 20 56.2                           | .3108  | 11 38.4                           | 0.84  |
|                                 | 28 | .631   | .7057   | .1053   | 5.90 | 20 57.9                           | .3106  | 11 34.9                           | 0.97  |
|                                 | 29 | .642   | .7027   | .1049   | 5.96 | 20 59.6                           | .3105  | 11 31.4                           | 1.11  |
| Juli                            | 30 | +0.654 | -0.6997 | +0.1045 | 6.02 | 21 1.3                            | 1.3103 | 11 27.8                           | +1.24 |
|                                 | 1  | .665   | .6966   | .1040   | 6.08 | 21 2.9                            | .3101  | 11 24.3                           | 1.37  |
|                                 | 2  | .676   | .6935   | .1035   | 6.14 | 21 4.5                            | .3099  | 11 20.8                           | 1.51  |
|                                 | 3  | .687   | .6904   | .1029   | 6.21 | 21 6.0                            | .3097  | 11 17.3                           | 1.64  |
|                                 | 4  | .698   | .6873   | .1023   | 6.27 | 21 7.4                            | .3095  | 11 13.8                           | 1.77  |
|                                 | 5  | .710   | .6841   | .1017   | 6.33 | 21 8.8                            | .3092  | 11 10.3                           | 1.91  |
|                                 | 6  | .721   | .6809   | .1010   | 6.40 | 21 10.1                           | .3090  | 11 6.7                            | 2.04  |
|                                 | 7  | .732   | .6777   | .1003   | 6.46 | 21 11.4                           | .3087  | 11 3.2                            | 2.17  |
|                                 | 8  | .743   | .6745   | .0995   | 6.53 | 21 12.6                           | .3084  | 10 59.6                           | 2.30  |
|                                 | 9  | .753   | .6713   | .0987   | 6.59 | 21 13.8                           | .3081  | 10 56.1                           | 2.43  |
|                                 | 10 | +0.764 | -0.6681 | +0.0978 | 6.66 | 21 15.0                           | 1.3077 | 10 52.5                           | +2.56 |
|                                 | 11 | .775   | .6648   | .0969   | 6.72 | 21 16.1                           | .3074  | 10 49.0                           | 2.69  |
|                                 | 12 | .786   | .6616   | .0960   | 6.79 | 21 17.2                           | .3070  | 10 45.4                           | 2.81  |
|                                 | 13 | .797   | .6583   | .0950   | 6.85 | 21 18.2                           | .3066  | 10 41.9                           | 2.94  |
|                                 | 14 | .807   | .6550   | .0940   | 6.92 | 21 19.2                           | .3062  | 10 38.3                           | 3.06  |
|                                 | 15 | .818   | .6517   | .0929   | 6.98 | 21 20.2                           | .3058  | 10 34.7                           | 3.19  |
|                                 | 16 | .829   | .6485   | .0918   | 7.05 | 21 21.1                           | .3053  | 10 31.1                           | 3.31  |
|                                 | 17 | .839   | .6452   | .0907   | 7.12 | 21 22.0                           | .3049  | 10 27.5                           | 3.44  |
|                                 | 18 | .849   | .6419   | .0896   | 7.18 | 21 22.9                           | .3044  | 10 23.9                           | 3.56  |
|                                 | 19 | .860   | .6386   | .0884   | 7.25 | 21 23.7                           | .3040  | 10 20.3                           | 3.68  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                 | log h  | H                                 | i     |
|---------------------------------|----|--------|---------|---------|-------|-----------------------------------|--------|-----------------------------------|-------|
| Juli                            | 20 | +0.870 | -0.6353 | +0.0872 | 7.31  | 21 <sup>h</sup> 24 <sup>m</sup> 5 | 1.3035 | 10 <sup>h</sup> 16 <sup>m</sup> 7 | +3.80 |
|                                 | 21 | .880   | .6320   | .0860   | 7.38  | 21 25.2                           | .3030  | 10 13.0                           | 3.92  |
|                                 | 22 | .890   | .6287   | .0847   | 7.45  | 21 26.0                           | .3025  | 10 9.4                            | 4.04  |
|                                 | 23 | .901   | .6254   | .0834   | 7.51  | 21 26.7                           | .3020  | 10 5.7                            | 4.16  |
|                                 | 24 | .911   | .6221   | .0821   | 7.58  | 21 27.4                           | .3014  | 10 2.1                            | 4.28  |
|                                 | 25 | .920   | .6189   | .0807   | 7.64  | 21 28.0                           | .3009  | 9 58.4                            | 4.39  |
|                                 | 26 | .930   | .6156   | .0793   | 7.71  | 21 28.6                           | .3003  | 9 54.7                            | 4.51  |
|                                 | 27 | .940   | .6124   | .0779   | 7.77  | 21 29.2                           | .2998  | 9 51.0                            | 4.62  |
|                                 | 28 | .950   | .6091   | .0765   | 7.84  | 21 29.8                           | .2992  | 9 47.3                            | 4.73  |
|                                 | 29 | .959   | .6059   | .0751   | 7.90  | 21 30.4                           | .2986  | 9 43.6                            | 4.84  |
| August                          | 30 | +0.969 | -0.6027 | +0.0737 | 7.97  | 21 30.9                           | 1.2981 | 9 39.9                            | +4.94 |
|                                 | 31 | .978   | .5995   | .0723   | 8.03  | 21 31.4                           | .2975  | 9 36.2                            | 5.05  |
|                                 | 1  | .988   | .5963   | .0708   | 8.10  | 21 31.9                           | .2969  | 9 32.4                            | 5.16  |
|                                 | 2  | 0.997  | .5932   | .0693   | 8.16  | 21 32.4                           | .2963  | 9 28.7                            | 5.27  |
|                                 | 3  | 1.006  | .5900   | .0678   | 8.22  | 21 32.8                           | .2956  | 9 24.9                            | 5.37  |
|                                 | 4  | .015   | .5869   | .0662   | 8.28  | 21 33.2                           | .2950  | 9 21.1                            | 5.47  |
|                                 | 5  | .024   | .5838   | .0647   | 8.35  | 21 33.6                           | .2944  | 9 17.3                            | 5.57  |
|                                 | 6  | .033   | .5807   | .0632   | 8.41  | 21 34.0                           | .2938  | 9 13.5                            | 5.67  |
|                                 | 7  | .042   | .5776   | .0617   | 8.47  | 21 34.4                           | .2932  | 9 9.7                             | 5.77  |
|                                 | 8  | .051   | .5746   | .0602   | 8.53  | 21 34.8                           | .2925  | 9 5.9                             | 5.86  |
|                                 | 9  | +1.060 | -0.5715 | +0.0586 | 8.59  | 21 35.1                           | 1.2919 | 9 2.0                             | +5.95 |
|                                 | 10 | .068   | .5685   | .0571   | 8.65  | 21 35.5                           | .2913  | 8 58.2                            | 6.05  |
|                                 | 11 | .077   | .5655   | .0556   | 8.71  | 21 35.8                           | .2907  | 8 54.3                            | 6.14  |
|                                 | 12 | .085   | .5625   | .0541   | 8.77  | 21 36.1                           | .2900  | 8 50.4                            | 6.23  |
|                                 | 13 | .094   | .5596   | .0525   | 8.83  | 21 36.4                           | .2894  | 8 46.5                            | 6.31  |
|                                 | 14 | .102   | .5567   | .0510   | 8.89  | 21 36.7                           | .2888  | 8 42.6                            | 6.40  |
|                                 | 15 | .110   | .5538   | .0495   | 8.95  | 21 37.0                           | .2882  | 8 38.7                            | 6.48  |
|                                 | 16 | .118   | .5510   | .0480   | 9.00  | 21 37.3                           | .2875  | 8 34.8                            | 6.57  |
|                                 | 17 | .126   | .5481   | .0465   | 9.06  | 21 37.5                           | .2869  | 8 30.8                            | 6.65  |
|                                 | 18 | .134   | .5453   | .0451   | 9.12  | 21 37.8                           | .2863  | 8 26.9                            | 6.72  |
|                                 | 19 | +1.142 | -0.5425 | +0.0436 | 9.17  | 21 38.1                           | 1.2857 | 8 22.9                            | +6.80 |
|                                 | 20 | .150   | .5397   | .0422   | 9.23  | 21 38.3                           | .2851  | 8 18.9                            | 6.88  |
|                                 | 21 | .157   | .5370   | .0408   | 9.28  | 21 38.6                           | .2845  | 8 14.9                            | 6.95  |
|                                 | 22 | .165   | .5343   | .0394   | 9.34  | 21 38.8                           | .2840  | 8 10.9                            | 7.02  |
|                                 | 23 | .173   | .5316   | .0380   | 9.39  | 21 39.0                           | .2834  | 8 6.9                             | 7.09  |
|                                 | 24 | .180   | .5290   | .0367   | 9.44  | 21 39.3                           | .2828  | 8 2.9                             | 7.15  |
|                                 | 25 | .188   | .5264   | .0354   | 9.50  | 21 39.5                           | .2823  | 7 58.8                            | 7.22  |
|                                 | 26 | .195   | .5238   | .0341   | 9.55  | 21 39.8                           | .2817  | 7 54.8                            | 7.28  |
|                                 | 27 | .202   | .5212   | .0328   | 9.60  | 21 40.0                           | .2812  | 7 50.7                            | 7.34  |
|                                 | 28 | .209   | .5187   | .0316   | 9.65  | 21 40.2                           | .2807  | 7 46.6                            | 7.40  |
| Septbr.                         | 29 | +1.217 | -0.5162 | +0.0304 | 9.70  | 21 40.5                           | 1.2802 | 7 42.6                            | +7.46 |
|                                 | 30 | .224   | .5138   | .0293   | 9.75  | 21 40.7                           | .2797  | 7 38.5                            | 7.51  |
|                                 | 31 | .231   | .5114   | .0282   | 9.80  | 21 40.9                           | .2792  | 7 34.4                            | 7.56  |
|                                 | 1  | .238   | .5090   | .0271   | 9.85  | 21 41.2                           | .2788  | 7 30.2                            | 7.61  |
|                                 | 2  | .244   | .5066   | .0260   | 9.89  | 21 41.4                           | .2783  | 7 26.1                            | 7.66  |
|                                 | 3  | .251   | .5042   | .0250   | 9.94  | 21 41.6                           | .2779  | 7 22.0                            | 7.71  |
|                                 | 4  | .258   | .5018   | .0240   | 9.99  | 21 41.8                           | .2775  | 7 17.8                            | 7.75  |
|                                 | 5  | .265   | .4995   | .0231   | 10.04 | 21 42.1                           | .2771  | 7 13.6                            | 7.79  |
|                                 | 6  | .272   | .4972   | .0222   | 10.08 | 21 42.3                           | .2767  | 7 9.5                             | 7.83  |
|                                 | 7  | .278   | .4950   | .0214   | 10.13 | 21 42.6                           | .2764  | 7 5.3                             | 7.87  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                   | x       | y       | g      | G                                 | log h  | H                               | i      |
|---------------------------------|----|---------------------|---------|---------|--------|-----------------------------------|--------|---------------------------------|--------|
| Septbr.                         | 8  | +1 <sup>s</sup> 285 | -0.4928 | +0.0206 | 10."17 | 21 <sup>h</sup> 42 <sup>m</sup> 8 | 1.2761 | 7 <sup>h</sup> 1 <sup>m</sup> 1 | +7."89 |
|                                 | 9  | .291                | .4906   | .0199   | 10.21  | 21 43.1                           | .2757  | 6 56.9                          | 7.94   |
|                                 | 10 | .298                | .4884   | .0192   | 10.26  | 21 43.4                           | .2754  | 6 52.7                          | 7.97   |
|                                 | 11 | .304                | .4863   | .0185   | 10.30  | 21 43.6                           | .2751  | 6 48.5                          | 7.99   |
|                                 | 12 | .311                | .4842   | .0179   | 10.34  | 21 43.9                           | .2749  | 6 44.3                          | 8.02   |
|                                 | 13 | .317                | .4821   | .0174   | 10.38  | 21 44.2                           | .2747  | 6 40.1                          | 8.04   |
|                                 | 14 | .324                | .4800   | .0170   | 10.43  | 21 44.5                           | .2745  | 6 35.8                          | 8.06   |
|                                 | 15 | .330                | .4779   | .0166   | 10.47  | 21 44.8                           | .2743  | 6 31.6                          | 8.08   |
|                                 | 16 | .337                | .4759   | .0162   | 10.51  | 21 45.1                           | .2741  | 6 27.3                          | 8.10   |
|                                 | 17 | .343                | .4739   | .0159   | 10.55  | 21 45.4                           | .2740  | 6 23.1                          | 8.11   |
|                                 | 18 | +1.349              | -0.4719 | +0.0156 | 10.59  | 21 45.7                           | 1.2739 | 6 18.8                          | +8.12  |
|                                 | 19 | .355                | .4700   | .0154   | 10.63  | 21 46.0                           | .2738  | 6 14.6                          | 8.13   |
|                                 | 20 | .362                | .4680   | .0152   | 10.67  | 21 46.4                           | .2737  | 6 10.3                          | 8.14   |
|                                 | 21 | .368                | .4661   | .0151   | 10.71  | 21 46.7                           | .2737  | 6 6.0                           | 8.15   |
|                                 | 22 | .374                | .4642   | .0150   | 10.74  | 21 47.1                           | .2736  | 6 1.8                           | 8.15   |
|                                 | 23 | .381                | .4623   | .0150   | 10.78  | 21 47.4                           | .2736  | 5 57.5                          | 8.15   |
|                                 | 24 | .387                | .4604   | .0151   | 10.82  | 21 47.8                           | .2737  | 5 53.2                          | 8.15   |
|                                 | 25 | .393                | .4586   | .0152   | 10.86  | 21 48.2                           | .2737  | 5 48.9                          | 8.14   |
| Oktbr.                          | 26 | .400                | .4567   | .0154   | 10.89  | 21 48.6                           | .2738  | 5 44.6                          | 8.13   |
|                                 | 27 | .406                | .4549   | .0156   | 10.93  | 21 49.0                           | .2739  | 5 40.4                          | 8.12   |
|                                 | 28 | +1.412              | -0.4530 | +0.0159 | 10.97  | 21 49.4                           | 1.2740 | 5 36.1                          | +8.11  |
|                                 | 29 | .419                | .4512   | .0162   | 11.00  | 21 49.8                           | .2741  | 5 31.8                          | 8.10   |
|                                 | 30 | .425                | .4493   | .0166   | 11.04  | 21 50.2                           | .2743  | 5 27.5                          | 8.08   |
|                                 | 1  | .431                | .4475   | .0170   | 11.08  | 21 50.7                           | .2745  | 5 23.3                          | 8.06   |
|                                 | 2  | .438                | .4457   | .0175   | 11.11  | 21 51.1                           | .2747  | 5 19.0                          | 8.04   |
|                                 | 3  | .444                | .4439   | .0181   | 11.15  | 21 51.6                           | .2750  | 5 14.7                          | 8.01   |
|                                 | 4  | .451                | .4422   | .0187   | 11.19  | 21 52.0                           | .2752  | 5 10.4                          | 7.99   |
|                                 | 5  | .457                | .4404   | .0194   | 11.22  | 21 52.5                           | .2755  | 5 6.2                           | 7.96   |
|                                 | 6  | .464                | .4387   | .0201   | 11.26  | 21 53.0                           | .2758  | 5 1.9                           | 7.93   |
|                                 | 7  | .470                | .4369   | .0209   | 11.29  | 21 53.5                           | .2762  | 4 57.6                          | 7.89   |
|                                 | 8  | +1.477              | -0.4351 | +0.0217 | 11.33  | 21 54.0                           | 1.2765 | 4 53.4                          | +7.86  |
|                                 | 9  | .484                | .4333   | .0226   | 11.36  | 21 54.6                           | .2769  | 4 49.1                          | 7.82   |
|                                 | 10 | .491                | .4315   | .0235   | 11.40  | 21 55.1                           | .2773  | 4 44.9                          | 7.78   |
|                                 | 11 | .498                | .4297   | .0245   | 11.44  | 21 55.6                           | .2777  | 4 40.6                          | 7.74   |
|                                 | 12 | .504                | .4279   | .0255   | 11.47  | 21 56.2                           | .2781  | 4 36.4                          | 7.69   |
|                                 | 13 | .511                | .4261   | .0265   | 11.51  | 21 56.7                           | .2785  | 4 32.2                          | 7.64   |
|                                 | 14 | .518                | .4243   | .0276   | 11.54  | 21 57.3                           | .2790  | 4 27.9                          | 7.59   |
|                                 | 15 | .525                | .4225   | .0287   | 11.58  | 21 57.9                           | .2794  | 4 23.7                          | 7.54   |
|                                 | 16 | .533                | .4207   | .0299   | 11.61  | 21 58.5                           | .2799  | 4 19.5                          | 7.49   |
|                                 | 17 | .540                | .4189   | .0311   | 11.65  | 21 59.0                           | .2805  | 4 15.3                          | 7.43   |
|                                 | 18 | +1.547              | -0.4171 | +0.0323 | 11.69  | 21 59.6                           | 1.2810 | 4 11.1                          | +7.37  |
|                                 | 19 | .554                | .4152   | .0336   | 11.73  | 22 0.3                            | .2815  | 4 6.9                           | 7.31   |
|                                 | 20 | .562                | .4133   | .0349   | 11.76  | 22 0.9                            | .2821  | 4 2.7                           | 7.24   |
|                                 | 21 | .569                | .4114   | .0362   | 11.80  | 22 1.5                            | .2826  | 3 58.6                          | 7.18   |
|                                 | 22 | .577                | .4095   | .0376   | 11.84  | 22 2.2                            | .2832  | 3 54.4                          | 7.11   |
|                                 | 23 | .585                | .4075   | .0390   | 11.88  | 22 2.8                            | .2838  | 3 50.3                          | 7.04   |
|                                 | 24 | .592                | .4056   | .0404   | 11.92  | 22 3.5                            | .2844  | 3 46.1                          | 6.97   |
|                                 | 25 | .600                | .4036   | .0418   | 11.96  | 22 4.1                            | .2850  | 3 42.0                          | 6.89   |
|                                 | 26 | .608                | .4016   | .0433   | 12.00  | 22 4.8                            | .2856  | 3 37.8                          | 6.81   |
|                                 | 27 | .616                | .3996   | .0448   | 12.04  | 22 5.5                            | .2862  | 3 33.7                          | 6.74   |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f       | x       | y       | g     | G                                | log h  | H                                | i     |
|---------------------------------|----|---------|---------|---------|-------|----------------------------------|--------|----------------------------------|-------|
| Oktbr.                          | 28 | +1.5624 | —0.3975 | +0.0463 | 12.08 | 22 <sup>h</sup> 6 <sup>m</sup> 1 | 1.2869 | 3 <sup>h</sup> 29 <sup>m</sup> 6 | +6.66 |
|                                 | 29 | .633    | .3954   | .0479   | 12.12 | 22 6.8                           | .2875  | 3 25.5                           | 6.57  |
|                                 | 30 | .641    | .3933   | .0494   | 12.16 | 22 7.5                           | .2881  | 3 21.4                           | 6.49  |
|                                 | 31 | .649    | .3912   | .0510   | 12.21 | 22 8.2                           | .2888  | 3 17.3                           | 6.40  |
| Novbr.                          | 1  | .658    | .3891   | .0526   | 12.25 | 22 8.9                           | .2894  | 3 13.3                           | 6.31  |
|                                 | 2  | .666    | .3869   | .0542   | 12.29 | 22 9.6                           | .2901  | 3 9.2                            | 6.22  |
|                                 | 3  | .675    | .3847   | .0558   | 12.34 | 22 10.3                          | .2907  | 3 5.2                            | 6.13  |
|                                 | 4  | .684    | .3824   | .0574   | 12.38 | 22 11.0                          | .2914  | 3 1.1                            | 6.03  |
|                                 | 5  | .693    | .3801   | .0590   | 12.43 | 22 11.7                          | .2921  | 2 57.1                           | 5.94  |
|                                 | 6  | .702    | .3778   | .0606   | 12.48 | 22 12.4                          | .2927  | 2 53.1                           | 5.84  |
|                                 | 7  | +1.711  | —0.3755 | +0.0622 | 12.52 | 22 13.1                          | 1.2934 | 2 49.1                           | +5.74 |
|                                 | 8  | .720    | .3731   | .0638   | 12.57 | 22 13.8                          | .2940  | 2 45.1                           | 5.63  |
|                                 | 9  | .729    | .3706   | .0654   | 12.62 | 22 14.5                          | .2947  | 2 41.1                           | 5.53  |
|                                 | 10 | .739    | .3681   | .0670   | 12.67 | 22 15.2                          | .2953  | 2 37.1                           | 5.42  |
|                                 | 11 | .748    | .3656   | .0686   | 12.72 | 22 15.8                          | .2960  | 2 33.1                           | 5.31  |
|                                 | 12 | .758    | .3631   | .0701   | 12.77 | 22 16.5                          | .2966  | 2 29.2                           | 5.20  |
|                                 | 13 | .767    | .3606   | .0717   | 12.82 | 22 17.2                          | .2972  | 2 25.3                           | 5.09  |
|                                 | 14 | .777    | .3580   | .0732   | 12.87 | 22 17.9                          | .2978  | 2 21.3                           | 4.98  |
|                                 | 15 | .787    | .3554   | .0747   | 12.93 | 22 18.6                          | .2984  | 2 17.4                           | 4.87  |
|                                 | 16 | .797    | .3527   | .0762   | 12.98 | 22 19.3                          | .2991  | 2 13.5                           | 4.75  |
|                                 | 17 | +1.807  | —0.3500 | +0.0777 | 13.03 | 22 20.0                          | 1.2997 | 2 9.5                            | +4.63 |
|                                 | 18 | .817    | .3472   | .0791   | 13.09 | 22 20.7                          | .3002  | 2 5.6                            | 4.52  |
|                                 | 19 | .827    | .3444   | .0806   | 13.15 | 22 21.3                          | .3008  | 2 1.8                            | 4.40  |
|                                 | 20 | .838    | .3416   | .0820   | 13.20 | 22 22.0                          | .3014  | 1 57.9                           | 4.27  |
|                                 | 21 | .848    | .3387   | .0834   | 13.26 | 22 22.7                          | .3020  | 1 54.0                           | 4.15  |
|                                 | 22 | .859    | .3358   | .0848   | 13.32 | 22 23.3                          | .3025  | 1 50.1                           | 4.03  |
|                                 | 23 | .869    | .3329   | .0862   | 13.37 | 22 24.0                          | .3031  | 1 46.3                           | 3.90  |
|                                 | 24 | .880    | .3299   | .0875   | 13.44 | 22 24.6                          | .3036  | 1 42.4                           | 3.77  |
|                                 | 25 | .891    | .3269   | .0888   | 13.50 | 22 25.2                          | .3041  | 1 38.6                           | 3.64  |
|                                 | 26 | .902    | .3238   | .0900   | 13.56 | 22 25.8                          | .3046  | 1 34.8                           | 3.52  |
|                                 | 27 | +1.912  | —0.3207 | +0.0912 | 13.62 | 22 26.5                          | 1.3051 | 1 30.9                           | +3.39 |
|                                 | 28 | .923    | .3176   | .0924   | 13.68 | 22 27.1                          | .3055  | 1 27.1                           | 3.25  |
|                                 | 29 | .935    | .3144   | .0935   | 13.75 | 22 27.6                          | .3060  | 1 23.3                           | 3.12  |
|                                 | 30 | .946    | .3112   | .0946   | 13.81 | 22 28.2                          | .3064  | 1 19.5                           | 2.99  |
| Dezbr.                          | 1  | .957    | .3080   | .0957   | 13.88 | 22 28.8                          | .3068  | 1 15.7                           | 2.85  |
|                                 | 2  | .968    | .3047   | .0967   | 13.94 | 22 29.3                          | .3072  | 1 11.9                           | 2.72  |
|                                 | 3  | .979    | .3014   | .0977   | 14.01 | 22 29.9                          | .3076  | 1 8.1                            | 2.58  |
|                                 | 4  | 1.991   | .2981   | .0986   | 14.07 | 22 30.4                          | .3080  | 1 4.3                            | 2.44  |
|                                 | 5  | 2.002   | .2948   | .0995   | 14.14 | 22 31.0                          | .3083  | 1 0.5                            | 2.30  |
|                                 | 6  | .014    | .2914   | .1003   | 14.21 | 22 31.5                          | .3087  | 0 56.8                           | 2.17  |
|                                 | 7  | +2.025  | —0.2880 | +0.1011 | 14.28 | 22 32.0                          | 1.3090 | 0 53.0                           | +2.03 |
|                                 | 8  | .037    | .2845   | .1018   | 14.35 | 22 32.4                          | .3093  | 0 49.2                           | 1.89  |
|                                 | 9  | .049    | .2810   | .1025   | 14.42 | 22 32.9                          | .3095  | 0 45.5                           | 1.74  |
|                                 | 10 | .060    | .2775   | .1031   | 14.49 | 22 33.4                          | .3098  | 0 41.7                           | 1.60  |
|                                 | 11 | .072    | .2740   | .1037   | 14.56 | 22 33.9                          | .3100  | 0 38.0                           | 1.46  |
|                                 | 12 | .084    | .2704   | .1042   | 14.63 | 22 34.3                          | .3102  | 0 34.2                           | 1.32  |
|                                 | 13 | .096    | .2668   | .1046   | 14.70 | 22 34.8                          | .3104  | 0 30.5                           | 1.18  |
|                                 | 14 | .108    | .2632   | .1050   | 14.78 | 22 35.2                          | .3105  | 0 26.7                           | 1.03  |
|                                 | 15 | .119    | .2596   | .1054   | 14.85 | 22 35.6                          | .3107  | 0 23.0                           | 0.89  |
|                                 | 16 | .131    | .2559   | .1057   | 14.92 | 22 36.0                          | .3108  | 0 19.3                           | 0.75  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                   | x       | y       | g      | G                                  | log h  | H                                 | i      |
|---------------------------------|----|---------------------|---------|---------|--------|------------------------------------|--------|-----------------------------------|--------|
| Dezbr.                          | 17 | +2 <sup>s</sup> 143 | —0.2522 | +0.1060 | 14".99 | 22 <sup>h</sup> 36 <sup>m</sup> .4 | 1.3109 | 0 <sup>h</sup> 15 <sup>m</sup> .5 | +0".60 |
|                                 | 18 | .155                | .2485   | .1062   | 15.07  | 22 36.8                            | .3110  | 0 11.8                            | 0.46   |
|                                 | 19 | .167                | .2448   | .1064   | 15.14  | 22 37.1                            | .3111  | 0 8.1                             | 0.31   |
|                                 | 20 | .179                | .2410   | .1065   | 15.22  | 22 37.4                            | .3111  | 0 4.3                             | 0.17   |
|                                 | 21 | .191                | .2373   | .1065   | 15.29  | 22 37.8                            | .3111  | 0 0.6                             | +0.02  |
|                                 | 22 | .203                | .2335   | .1065   | 15.37  | 22 38.1                            | .3111  | 23 56.8                           | —0.12  |
|                                 | 23 | .215                | .2298   | .1064   | 15.44  | 22 38.4                            | .3111  | 23 53.1                           | 0.27   |
|                                 | 24 | .227                | .2260   | .1062   | 15.52  | 22 38.7                            | .3110  | 23 49.3                           | 0.41   |
|                                 | 25 | .239                | .2222   | .1060   | 15.60  | 22 39.0                            | .3110  | 23 45.6                           | 0.56   |
|                                 | 26 | .251                | .2184   | .1058   | 15.67  | 22 39.2                            | .3109  | 23 41.8                           | 0.70   |
|                                 | 27 | +2.263              | —0.2146 | +0.1055 | 15.75  | 22 39.5                            | 1.3108 | 23 38.1                           | —0.85  |
|                                 | 28 | .275                | .2108   | .1052   | 15.83  | 22 39.7                            | .3106  | 23 34.3                           | 0.99   |
|                                 | 29 | .287                | .2070   | .1048   | 15.90  | 22 39.9                            | .3105  | 23 30.6                           | 1.13   |
|                                 | 30 | .299                | .2031   | .1044   | 15.98  | 22 40.2                            | .3103  | 23 26.8                           | 1.28   |
|                                 | 31 | .311                | .1992   | .1040   | 16.06  | 22 40.4                            | .3101  | 23 23.1                           | 1.42   |

## 1855

|        |    |                      |         |         |       |                                    |        |                                    |        |
|--------|----|----------------------|---------|---------|-------|------------------------------------|--------|------------------------------------|--------|
| Januar | 1  | —0 <sup>s</sup> .749 | —0.6341 | +0.1033 | 7".34 | 15 <sup>h</sup> 13 <sup>m</sup> .3 | 1.3098 | 23 <sup>h</sup> 19 <sup>m</sup> .3 | —1".56 |
|        | 2  | .737                 | .6361   | .1027   | 7.30  | 15 15.4                            | .3096  | 23 15.6                            | 1.70   |
|        | 3  | .726                 | .6380   | .1020   | 7.26  | 15 17.5                            | .3093  | 23 11.8                            | 1.84   |
|        | 4  | .714                 | .6399   | .1013   | 7.22  | 15 19.7                            | .3091  | 23 8.0                             | 1.99   |
|        | 5  | .702                 | .6417   | .1005   | 7.18  | 15 21.9                            | .3088  | 23 4.2                             | 2.13   |
|        | 6  | .691                 | .6434   | .0997   | 7.15  | 15 24.1                            | .3084  | 23 0.5                             | 2.27   |
|        | 7  | .679                 | .6451   | .0988   | 7.11  | 15 26.3                            | .3081  | 22 56.7                            | 2.40   |
|        | 8  | .668                 | .6467   | .0979   | 7.08  | 15 28.5                            | .3077  | 22 52.9                            | 2.54   |
|        | 9  | .657                 | .6482   | .0969   | 7.05  | 15 30.8                            | .3074  | 22 49.1                            | 2.68   |
|        | 10 | .645                 | .6497   | .0959   | 7.02  | 15 33.1                            | .3070  | 22 45.3                            | 2.82   |
|        | 11 | —0.634               | —0.6511 | +0.0949 | 6.99  | 15 35.4                            | 1.3066 | 22 41.5                            | —2.95  |
|        | 12 | .623                 | .6525   | .0938   | 6.97  | 15 37.8                            | .3061  | 22 37.6                            | 3.09   |
|        | 13 | .612                 | .6538   | .0927   | 6.94  | 15 40.1                            | .3057  | 22 33.8                            | 3.22   |
|        | 14 | .600                 | .6550   | .0915   | 6.92  | 15 42.5                            | .3052  | 22 30.0                            | 3.35   |
|        | 15 | .589                 | .6561   | .0903   | 6.89  | 15 44.8                            | .3047  | 22 26.1                            | 3.48   |
|        | 16 | .578                 | .6572   | .0891   | 6.87  | 15 47.2                            | .3042  | 22 22.3                            | 3.61   |
|        | 17 | .568                 | .6582   | .0878   | 6.85  | 15 49.6                            | .3037  | 22 18.4                            | 3.74   |
|        | 18 | .557                 | .6591   | .0865   | 6.83  | 15 52.0                            | .3032  | 22 14.5                            | 3.87   |
|        | 19 | .546                 | .6600   | .0852   | 6.82  | 15 54.4                            | .3027  | 22 10.7                            | 4.00   |
|        | 20 | .535                 | .6608   | .0838   | 6.80  | 15 56.8                            | .3021  | 22 6.8                             | 4.12   |
|        | 21 | —0.525               | —0.6615 | +0.0824 | 6.79  | 15 59.2                            | 1.3015 | 22 2.9                             | —4.25  |
|        | 22 | .515                 | .6621   | .0809   | 6.77  | 16 1.6                             | .3010  | 21 59.0                            | 4.37   |
|        | 23 | .504                 | .6627   | .0795   | 6.76  | 16 4.0                             | .3004  | 21 55.1                            | 4.49   |
|        | 24 | .494                 | .6632   | .0780   | 6.75  | 16 6.4                             | .2998  | 21 51.1                            | 4.61   |
|        | 25 | .484                 | .6637   | .0765   | 6.74  | 16 8.8                             | .2992  | 21 47.2                            | 4.73   |
|        | 26 | .474                 | .6641   | .0750   | 6.73  | 16 11.1                            | .2986  | 21 43.3                            | 4.85   |
|        | 27 | .464                 | .6644   | .0735   | 6.73  | 16 13.5                            | .2980  | 21 39.3                            | 4.97   |
|        | 28 | .454                 | .6647   | .0719   | 6.72  | 16 15.8                            | .2973  | 21 35.3                            | 5.08   |
|        | 29 | .444                 | .6649   | .0703   | 6.72  | 16 18.2                            | .2967  | 21 31.4                            | 5.19   |
|        | 30 | .435                 | .6651   | .0687   | 6.71  | 16 20.5                            | .2960  | 21 27.4                            | 5.30   |

## 1855

| <sup>12h</sup><br>M. Z. Berlin | f                    | x       | y       | g                 | G                                 | log h  | H                                 | i                  |
|--------------------------------|----------------------|---------|---------|-------------------|-----------------------------------|--------|-----------------------------------|--------------------|
| Januar 31                      | —0 <sup>s</sup> .425 | —0.6653 | +0.0671 | 6 <sup>"</sup> 71 | 16 <sup>h</sup> 22 <sup>m</sup> 8 | 1.2954 | 21 <sup>h</sup> 23 <sup>m</sup> 4 | —5 <sup>"</sup> 41 |
| Februar 1                      | .415                 | .6654   | .0655   | 6.71              | 16 25.1                           | .2947  | 21 19.4                           | 5.52               |
| 2                              | .406                 | .6654   | .0639   | 6.71              | 16 27.4                           | .2941  | 21 15.4                           | 5.62               |
| 3                              | .397                 | .6654   | .0623   | 6.71              | 16 29.6                           | .2934  | 21 11.3                           | 5.72               |
| 4                              | .388                 | .6654   | .0607   | 6.71              | 16 31.8                           | .2928  | 21 7.3                            | 5.83               |
| 5                              | .379                 | .6653   | .0591   | 6.71              | 16 34.0                           | .2921  | 21 3.2                            | 5.93               |
| 6                              | .370                 | .6652   | .0575   | 6.71              | 16 36.2                           | .2914  | 20 59.2                           | 6.02               |
| 7                              | .361                 | .6650   | .0559   | 6.72              | 16 38.4                           | .2908  | 20 55.1                           | 6.12               |
| 8                              | .352                 | .6648   | .0543   | 6.72              | 16 40.5                           | .2901  | 20 51.0                           | 6.21               |
| 9                              | .343                 | .6645   | .0527   | 6.73              | 16 42.6                           | .2895  | 20 46.9                           | 6.31               |
| 10                             | —0.335               | —0.6642 | +0.0511 | 6.73              | 16 44.7                           | 1.2888 | 20 42.8                           | —6.40              |
| 11                             | .326                 | .6639   | .0496   | 6.74              | 16 46.7                           | .2882  | 20 38.7                           | 6.48               |
| 12                             | .318                 | .6636   | .0480   | 6.75              | 16 48.8                           | .2875  | 20 34.6                           | 6.57               |
| 13                             | .309                 | .6632   | .0465   | 6.75              | 16 50.8                           | .2869  | 20 30.4                           | 6.65               |
| 14                             | .301                 | .6628   | .0450   | 6.76              | 16 52.7                           | .2862  | 20 26.3                           | 6.74               |
| 15                             | .293                 | .6624   | .0435   | 6.77              | 16 54.7                           | .2856  | 20 22.1                           | 6.82               |
| 16                             | .285                 | .6620   | .0420   | 6.78              | 16 56.6                           | .2850  | 20 17.9                           | 6.89               |
| 17                             | .277                 | .6616   | .0405   | 6.79              | 16 58.5                           | .2844  | 20 13.8                           | 6.97               |
| 18                             | .269                 | .6612   | .0391   | 6.79              | 17 0.4                            | .2838  | 20 9.6                            | 7.04               |
| 19                             | .262                 | .6607   | .0377   | 6.80              | 17 2.3                            | .2832  | 20 5.4                            | 7.11               |
| 20                             | —0.254               | —0.6602 | +0.0363 | 6.81              | 17 4.1                            | 1.2826 | 20 1.2                            | —7.18              |
| 21                             | .246                 | .6597   | .0349   | 6.82              | 17 5.9                            | .2820  | 19 57.0                           | 7.25               |
| 22                             | .239                 | .6593   | .0335   | 6.83              | 17 7.7                            | .2815  | 19 52.7                           | 7.31               |
| 23                             | .231                 | .6588   | .0322   | 6.84              | 17 9.4                            | .2809  | 19 48.5                           | 7.37               |
| 24                             | .224                 | .6583   | .0309   | 6.85              | 17 11.2                           | .2804  | 19 44.3                           | 7.43               |
| 25                             | .217                 | .6578   | .0297   | 6.86              | 17 12.9                           | .2799  | 19 40.0                           | 7.49               |
| 26                             | .209                 | .6573   | .0285   | 6.87              | 17 14.5                           | .2794  | 19 35.7                           | 7.55               |
| 27                             | .202                 | .6568   | .0274   | 6.88              | 17 16.2                           | .2789  | 19 31.5                           | 7.60               |
| 28                             | .195                 | .6563   | .0263   | 6.89              | 17 17.8                           | .2784  | 19 27.2                           | 7.65               |
| März 1                         | .188                 | .6558   | .0253   | 6.90              | 17 19.4                           | .2780  | 19 22.9                           | 7.70               |
| 2                              | —0.181               | —0.6553 | +0.0243 | 6.91              | 17 21.0                           | 1.2776 | 19 18.6                           | —7.74              |
| 3                              | .174                 | .6548   | .0234   | 6.92              | 17 22.6                           | .2772  | 19 14.3                           | 7.79               |
| 4                              | .167                 | .6543   | .0225   | 6.93              | 17 24.2                           | .2768  | 19 10.0                           | 7.83               |
| 5                              | .160                 | .6539   | .0216   | 6.94              | 17 25.7                           | .2764  | 19 5.7                            | 7.87               |
| 6                              | .154                 | .6534   | .0208   | 6.95              | 17 27.2                           | .2761  | 19 1.4                            | 7.90               |
| 7                              | .147                 | .6530   | .0200   | 6.96              | 17 28.7                           | .2758  | 18 57.1                           | 7.93               |
| 8                              | .140                 | .6526   | .0193   | 6.97              | 17 30.2                           | .2755  | 18 52.8                           | 7.96               |
| 9                              | .134                 | .6522   | .0186   | 6.97              | 17 31.7                           | .2752  | 18 48.5                           | 7.99               |
| 10                             | .127                 | .6518   | .0180   | 6.98              | 17 33.2                           | .2749  | 18 44.2                           | 8.02               |
| 11                             | .120                 | .6514   | .0174   | 6.99              | 17 34.6                           | .2747  | 18 39.8                           | 8.05               |
| 12                             | —0.114               | —0.6510 | +0.0169 | 7.00              | 17 36.0                           | 1.2745 | 18 35.5                           | —8.07              |
| 13                             | .107                 | .6507   | .0165   | 7.00              | 17 37.5                           | .2743  | 18 31.2                           | 8.09               |
| 14                             | .101                 | .6504   | .0161   | 7.01              | 17 38.9                           | .2741  | 18 26.8                           | 8.10               |
| 15                             | .094                 | .6501   | .0158   | 7.02              | 17 40.3                           | .2740  | 18 22.5                           | 8.11               |
| 16                             | .088                 | .6498   | .0155   | 7.02              | 17 41.7                           | .2739  | 18 18.2                           | 8.13               |
| 17                             | .081                 | .6495   | .0153   | 7.03              | 17 43.1                           | .2738  | 18 13.8                           | 8.14               |
| 18                             | .075                 | .6493   | .0151   | 7.03              | 17 44.5                           | .2737  | 18 9.5                            | 8.14               |
| 19                             | .069                 | .6491   | .0150   | 7.04              | 17 45.9                           | .2737  | 18 5.2                            | 8.15               |
| 20                             | .062                 | .6489   | .0150   | 7.04              | 17 47.2                           | .2736  | 18 0.9                            | 8.15               |
| 21                             | .056                 | .6487   | .0150   | 7.04              | 17 48.6                           | .2737  | 17 56.5                           | 8.15               |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g    | G                                 | log h  | H                                 | i     |
|---------------------------------|----|--------|---------|---------|------|-----------------------------------|--------|-----------------------------------|-------|
| März                            | 22 | —0.049 | —0.6485 | +0.0151 | 7.05 | 17 <sup>h</sup> 50 <sup>m</sup> 0 | 1.2737 | 17 <sup>h</sup> 52 <sup>m</sup> 2 | —8.14 |
|                                 | 23 | .043   | .6484   | .0152   | 7.05 | 17 51.3                           | .2737  | 17 47.9                           | 8.14  |
|                                 | 24 | .036   | .6483   | .0154   | 7.05 | 17 52.7                           | .2738  | 17 43.6                           | 8.13  |
|                                 | 25 | .030   | .6482   | .0157   | 7.05 | 17 54.1                           | .2739  | 17 39.3                           | 8.12  |
|                                 | 26 | .023   | .6481   | .0160   | 7.06 | 17 55.4                           | .2741  | 17 34.9                           | 8.11  |
|                                 | 27 | .017   | .6481   | .0164   | 7.06 | 17 56.8                           | .2742  | 17 30.6                           | 8.09  |
|                                 | 28 | .010   | .6480   | .0168   | 7.06 | 17 58.2                           | .2744  | 17 26.3                           | 8.07  |
|                                 | 29 | —0.004 | .6480   | .0172   | 7.06 | 17 59.6                           | .2746  | 17 22.1                           | 8.05  |
|                                 | 30 | +0.003 | .6479   | .0177   | 7.06 | 18 1.0                            | .2748  | 17 17.8                           | 8.03  |
|                                 | 31 | .009   | .6479   | .0182   | 7.06 | 18 2.4                            | .2750  | 17 13.5                           | 8.01  |
| April                           | 1  | +0.016 | —0.6479 | +0.0188 | 7.06 | 18 3.8                            | 1.2753 | 17 9.3                            | —7.98 |
|                                 | 2  | .022   | .6479   | .0195   | 7.06 | 18 5.2                            | .2756  | 17 5.0                            | 7.95  |
|                                 | 3  | .029   | .6480   | .0203   | 7.06 | 18 6.6                            | .2759  | 17 0.7                            | 7.92  |
|                                 | 4  | .036   | .6481   | .0211   | 7.05 | 18 8.1                            | .2762  | 16 56.5                           | 7.89  |
|                                 | 5  | .042   | .6482   | .0219   | 7.05 | 18 9.5                            | .2766  | 16 52.3                           | 7.85  |
|                                 | 6  | .049   | .6484   | .0228   | 7.05 | 18 11.0                           | .2769  | 16 48.0                           | 7.81  |
|                                 | 7  | .056   | .6485   | .0237   | 7.05 | 18 12.4                           | .2773  | 16 43.8                           | 7.77  |
|                                 | 8  | .063   | .6487   | .0247   | 7.04 | 18 13.9                           | .2777  | 16 39.6                           | 7.72  |
|                                 | 9  | .070   | .6488   | .0257   | 7.04 | 18 15.4                           | .2782  | 16 35.4                           | 7.68  |
|                                 | 10 | .077   | .6490   | .0267   | 7.04 | 18 16.9                           | .2786  | 16 31.2                           | 7.63  |
|                                 | 11 | +0.084 | —0.6491 | +0.0278 | 7.04 | 18 18.4                           | 1.2791 | 16 27.1                           | —7.58 |
|                                 | 12 | .091   | .6493   | .0289   | 7.03 | 18 19.9                           | .2795  | 16 22.9                           | 7.53  |
|                                 | 13 | .099   | .6494   | .0300   | 7.03 | 18 21.5                           | .2800  | 16 18.8                           | 7.47  |
|                                 | 14 | .106   | .6496   | .0312   | 7.02 | 18 23.0                           | .2805  | 16 14.6                           | 7.42  |
|                                 | 15 | .113   | .6498   | .0324   | 7.02 | 18 24.6                           | .2810  | 16 10.5                           | 7.36  |
|                                 | 16 | .121   | .6500   | .0337   | 7.02 | 18 26.2                           | .2816  | 16 6.4                            | 7.30  |
|                                 | 17 | .128   | .6502   | .0350   | 7.01 | 18 27.8                           | .2821  | 16 2.3                            | 7.24  |
|                                 | 18 | .136   | .6504   | .0363   | 7.01 | 18 29.5                           | .2826  | 15 58.2                           | 7.17  |
|                                 | 19 | .143   | .6506   | .0376   | 7.01 | 18 31.1                           | .2832  | 15 54.1                           | 7.11  |
|                                 | 20 | .151   | .6507   | .0390   | 7.01 | 18 32.8                           | .2838  | 15 50.1                           | 7.04  |
|                                 | 21 | +0.159 | —0.6508 | +0.0404 | 7.00 | 18 34.5                           | 1.2843 | 15 46.0                           | —6.97 |
|                                 | 22 | .167   | .6509   | .0418   | 7.00 | 18 36.3                           | .2849  | 15 42.0                           | 6.89  |
|                                 | 23 | .175   | .6511   | .0432   | 7.00 | 18 38.0                           | .2856  | 15 37.9                           | 6.82  |
|                                 | 24 | .183   | .6512   | .0447   | 6.99 | 18 39.8                           | .2862  | 15 33.9                           | 6.74  |
|                                 | 25 | .191   | .6513   | .0462   | 6.99 | 18 41.5                           | .2868  | 15 29.9                           | 6.66  |
|                                 | 26 | .199   | .6514   | .0477   | 6.99 | 18 43.3                           | .2874  | 15 25.9                           | 6.58  |
|                                 | 27 | .207   | .6515   | .0492   | 6.99 | 18 45.2                           | .2880  | 15 22.0                           | 6.50  |
|                                 | 28 | .216   | .6516   | .0507   | 6.99 | 18 47.0                           | .2887  | 15 18.0                           | 6.41  |
|                                 | 29 | .224   | .6516   | .0523   | 6.99 | 18 48.9                           | .2893  | 15 14.1                           | 6.33  |
|                                 | 30 | .233   | .6516   | .0538   | 6.99 | 18 50.7                           | .2899  | 15 10.1                           | 6.24  |
| Mai                             | 1  | +0.241 | —0.6516 | +0.0553 | 6.99 | 18 52.6                           | 1.2905 | 15 6.2                            | —6.15 |
|                                 | 2  | .250   | .6515   | .0568   | 6.99 | 18 54.5                           | .2912  | 15 2.3                            | 6.06  |
|                                 | 3  | .259   | .6514   | .0584   | 6.99 | 18 56.4                           | .2918  | 14 58.4                           | 5.97  |
|                                 | 4  | .268   | .6513   | .0599   | 6.99 | 18 58.4                           | .2924  | 14 54.6                           | 5.87  |
|                                 | 5  | .277   | .6512   | .0615   | 6.99 | 19 0.4                            | .2931  | 14 50.7                           | 5.78  |
|                                 | 6  | .286   | .6510   | .0630   | 7.00 | 19 2.4                            | .2937  | 14 46.9                           | 5.68  |
|                                 | 7  | .295   | .6508   | .0646   | 7.00 | 19 4.4                            | .2943  | 14 43.0                           | 5.58  |
|                                 | 8  | .304   | .6506   | .0661   | 7.01 | 19 6.4                            | .2950  | 14 39.2                           | 5.48  |
|                                 | 9  | .313   | .6503   | .0676   | 7.01 | 19 8.4                            | .2956  | 14 35.4                           | 5.38  |
|                                 | 10 | .323   | .6500   | .0691   | 7.02 | 19 10.4                           | .2962  | 14 31.6                           | 5.27  |

## 1855

| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g    | G                    | log h  | H                    | i     |
|---------------------------------|----|--------|---------|---------|------|----------------------|--------|----------------------|-------|
| Mai                             | 11 | +0.332 | —0.6497 | +0.0706 | 7.02 | 19 <sup>h</sup> 12.5 | 1.2968 | 14 <sup>h</sup> 27.8 | —5.17 |
|                                 | 12 | .342   | .6493   | .0721   | 7.03 | 19 14.5              | .2974  | 14 24.0              | 5.06  |
|                                 | 13 | .352   | .6489   | .0736   | 7.04 | 19 16.6              | .2980  | 14 20.2              | 4.95  |
|                                 | 14 | .361   | .6484   | .0751   | 7.05 | 19 18.7              | .2986  | 14 16.5              | 4.84  |
|                                 | 15 | .371   | .6479   | .0765   | 7.06 | 19 20.8              | .2992  | 14 12.7              | 4.73  |
|                                 | 16 | .381   | .6473   | .0779   | 7.07 | 19 22.9              | .2997  | 14 9.0               | 4.62  |
|                                 | 17 | .391   | .6467   | .0793   | 7.08 | 19 25.0              | .3003  | 14 5.3               | 4.50  |
|                                 | 18 | .401   | .6460   | .0807   | 7.10 | 19 27.1              | .3009  | 14 1.6               | 4.39  |
|                                 | 19 | .411   | .6453   | .0820   | 7.11 | 19 29.2              | .3014  | 13 57.9              | 4.28  |
|                                 | 20 | .421   | .6445   | .0833   | 7.13 | 19 31.3              | .3019  | 13 54.2              | 4.16  |
|                                 | 21 | +0.432 | —0.6436 | +0.0846 | 7.14 | 19 33.4              | 1.3025 | 13 50.5              | —4.04 |
|                                 | 22 | .442   | .6427   | .0859   | 7.16 | 19 35.6              | .3030  | 13 46.9              | 3.92  |
|                                 | 23 | .453   | .6418   | .0872   | 7.18 | 19 37.7              | .3035  | 13 43.2              | 3.80  |
|                                 | 24 | .463   | .6408   | .0884   | 7.20 | 19 39.8              | .3040  | 13 39.6              | 3.68  |
|                                 | 25 | .474   | .6398   | .0896   | 7.22 | 19 41.9              | .3044  | 13 36.0              | 3.56  |
|                                 | 26 | .484   | .6387   | .0908   | 7.25 | 19 44.0              | .3049  | 13 32.3              | 3.43  |
|                                 | 27 | .495   | .6375   | .0919   | 7.27 | 19 46.1              | .3053  | 13 28.7              | 3.31  |
|                                 | 28 | .506   | .6363   | .0930   | 7.29 | 19 48.2              | .3058  | 13 25.1              | 3.18  |
|                                 | 29 | .517   | .6350   | .0941   | 7.32 | 19 50.3              | .3062  | 13 21.5              | 3.06  |
|                                 | 30 | .528   | .6337   | .0951   | 7.34 | 19 52.3              | .3066  | 13 17.9              | 2.93  |
| Juni                            | 31 | +0.538 | —0.6323 | +0.0961 | 7.37 | 19 54.4              | 1.3070 | 13 14.3              | —2.80 |
|                                 | 1  | .549   | .6308   | .0970   | 7.40 | 19 56.4              | .3074  | 13 10.7              | 2.67  |
|                                 | 2  | .561   | .6293   | .0979   | 7.43 | 19 58.4              | .3077  | 13 7.2               | 2.55  |
|                                 | 3  | .572   | .6277   | .0987   | 7.46 | 20 0.4               | .3081  | 13 3.6               | 2.42  |
|                                 | 4  | .583   | .6261   | .0995   | 7.50 | 20 2.4               | .3084  | 13 0.1               | 2.29  |
|                                 | 5  | .594   | .6244   | .1003   | 7.53 | 20 4.4               | .3087  | 12 56.5              | 2.15  |
|                                 | 6  | .605   | .6227   | .1011   | 7.56 | 20 6.4               | .3090  | 12 53.0              | 2.02  |
|                                 | 7  | .617   | .6209   | .1018   | 7.60 | 20 8.3               | .3092  | 12 49.4              | 1.89  |
|                                 | 8  | .628   | .6190   | .1024   | 7.64 | 20 10.3              | .3095  | 12 45.9              | 1.76  |
|                                 | 9  | .639   | .6171   | .1030   | 7.68 | 20 12.2              | .3097  | 12 42.3              | 1.63  |
|                                 | 10 | +0.651 | —0.6151 | +0.1035 | 7.72 | 20 14.0              | 1.3100 | 12 38.8              | —1.49 |
|                                 | 11 | .662   | .6131   | .1040   | 7.76 | 20 15.9              | .3102  | 12 35.3              | 1.36  |
|                                 | 12 | .674   | .6110   | .1045   | 7.80 | 20 17.7              | .3103  | 12 31.8              | 1.23  |
|                                 | 13 | .685   | .6089   | .1049   | 7.84 | 20 19.5              | .3105  | 12 28.3              | 1.09  |
|                                 | 14 | .697   | .6067   | .1053   | 7.89 | 20 21.3              | .3106  | 12 24.7              | 0.96  |
|                                 | 15 | .708   | .6045   | .1056   | 7.93 | 20 23.0              | .3108  | 12 21.2              | 0.82  |
|                                 | 16 | .720   | .6022   | .1059   | 7.98 | 20 24.8              | .3109  | 12 17.7              | 0.69  |
|                                 | 17 | .731   | .5999   | .1061   | 8.02 | 20 26.5              | .3109  | 12 14.2              | 0.55  |
|                                 | 18 | .743   | .5975   | .1063   | 8.07 | 20 28.1              | .3110  | 12 10.7              | 0.42  |
|                                 | 19 | .755   | .5950   | .1064   | 8.12 | 20 29.8              | .3111  | 12 7.2               | 0.28  |
|                                 | 20 | +0.766 | —0.5925 | +0.1065 | 8.17 | 20 31.4              | 1.3111 | 12 3.7               | —0.14 |
|                                 | 21 | .778   | .5900   | .1065   | 8.22 | 20 32.9              | .3111  | 12 0.2               | —0.01 |
|                                 | 22 | .789   | .5874   | .1065   | 8.27 | 20 34.5              | .3111  | 11 56.7              | +0.13 |
|                                 | 23 | .801   | .5848   | .1064   | 8.32 | 20 36.0              | .3111  | 11 53.2              | 0.26  |
|                                 | 24 | .812   | .5822   | .1063   | 8.38 | 20 37.5              | .3110  | 11 49.7              | 0.40  |
|                                 | 25 | .824   | .5795   | .1061   | 8.43 | 20 39.0              | .3110  | 11 46.2              | 0.53  |
|                                 | 26 | .835   | .5768   | .1059   | 8.49 | 20 40.4              | .3109  | 11 42.7              | 0.67  |
|                                 | 27 | .847   | .5741   | .1057   | 8.54 | 20 41.8              | .3108  | 11 39.2              | 0.80  |
|                                 | 28 | .859   | .5713   | .1054   | 8.60 | 20 43.2              | .3107  | 11 35.7              | 0.94  |
|                                 | 29 | .870   | .5685   | .1050   | 8.65 | 20 44.5              | .3105  | 11 32.2              | 1.07  |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                  | G                                  | log h  | H                                  | i                   |
|---------------------------------|----|----------------------|---------|---------|--------------------|------------------------------------|--------|------------------------------------|---------------------|
| Juni                            | 30 | +0 <sup>s</sup> .882 | —0.5656 | +0.1046 | 8 <sup>h</sup> .71 | 20 <sup>h</sup> 45 <sup>m</sup> .8 | 1.3104 | 11 <sup>h</sup> 28 <sup>m</sup> .7 | +1 <sup>h</sup> .21 |
| Juli                            | 1  | .893                 | .5627   | .1041   | 8.77               | 20 47.1                            | .3102  | 11 25.2                            | 1.34                |
|                                 | 2  | .904                 | .5598   | .1036   | 8.83               | 20 48.4                            | .3100  | 11 21.7                            | 1.47                |
|                                 | 3  | .916                 | .5568   | .1031   | 8.89               | 20 49.6                            | .3098  | 11 18.2                            | 1.61                |
|                                 | 4  | .927                 | .5538   | .1025   | 8.95               | 20 50.8                            | .3095  | 11 14.6                            | 1.74                |
|                                 | 5  | .939                 | .5508   | .1019   | 9.01               | 20 51.9                            | .3093  | 11 11.1                            | 1.88                |
|                                 | 6  | .950                 | .5478   | .1012   | 9.07               | 20 53.1                            | .3090  | 11 7.6                             | 2.01                |
|                                 | 7  | .961                 | .5448   | .1005   | 9.13               | 20 54.2                            | .3087  | 11 4.0                             | 2.14                |
|                                 | 8  | .972                 | .5418   | .0997   | 9.19               | 20 55.2                            | .3084  | 11 0.5                             | 2.27                |
|                                 | 9  | .984                 | .5387   | .0989   | 9.25               | 20 56.3                            | .3081  | 10 57.0                            | 2.40                |
|                                 | 10 | +0.995               | —0.5356 | +0.0981 | 9.31               | 20 57.3                            | 1.3078 | 10 53.4                            | +2.53               |
|                                 | 11 | 1.006                | .5325   | .0972   | 9.37               | 20 58.3                            | .3074  | 10 49.8                            | 2.65                |
|                                 | 12 | .017                 | .5294   | .0963   | 9.44               | 20 59.2                            | .3071  | 10 46.3                            | 2.78                |
|                                 | 13 | .028                 | .5263   | .0953   | 9.50               | 21 0.1                             | .3067  | 10 42.7                            | 2.91                |
|                                 | 14 | .039                 | .5232   | .0943   | 9.56               | 21 1.0                             | .3063  | 10 39.1                            | 3.04                |
|                                 | 15 | .050                 | .5200   | .0932   | 9.62               | 21 1.9                             | .3059  | 10 35.6                            | 3.16                |
|                                 | 16 | .060                 | .5168   | .0921   | 9.69               | 21 2.8                             | .3054  | 10 32.0                            | 3.28                |
|                                 | 17 | .071                 | .5136   | .0910   | 9.75               | 21 3.6                             | .3050  | 10 28.4                            | 3.41                |
|                                 | 18 | .082                 | .5104   | .0899   | 9.81               | 21 4.4                             | .3045  | 10 24.8                            | 3.53                |
|                                 | 19 | .092                 | .5073   | .0887   | 9.88               | 21 5.2                             | .3041  | 10 21.2                            | 3.65                |
|                                 | 20 | +1.103               | —0.5041 | +0.0875 | 9.94               | 21 5.9                             | 1.3036 | 10 17.5                            | +3.77               |
|                                 | 21 | .113                 | .5010   | .0863   | 10.01              | 21 6.7                             | .3031  | 10 13.9                            | 3.89                |
|                                 | 22 | .124                 | .4978   | .0850   | 10.07              | 21 7.4                             | .3026  | 10 10.3                            | 4.01                |
|                                 | 23 | .134                 | .4947   | .0837   | 10.13              | 21 8.1                             | .3021  | 10 6.6                             | 4.13                |
|                                 | 24 | .144                 | .4915   | .0824   | 10.19              | 21 8.8                             | .3016  | 10 2.9                             | 4.25                |
|                                 | 25 | .155                 | .4884   | .0810   | 10.26              | 21 9.4                             | .3010  | 9 59.3                             | 4.36                |
|                                 | 26 | .165                 | .4852   | .0797   | 10.32              | 21 10.1                            | .3005  | 9 55.6                             | 4.48                |
|                                 | 27 | .175                 | .4821   | .0783   | 10.38              | 21 10.7                            | .2999  | 9 51.9                             | 4.59                |
|                                 | 28 | .185                 | .4789   | .0769   | 10.45              | 21 11.3                            | .2993  | 9 48.2                             | 4.70                |
|                                 | 29 | .194                 | .4758   | .0755   | 10.51              | 21 11.9                            | .2988  | 9 44.5                             | 4.81                |
|                                 | 30 | +1.204               | —0.4726 | +0.0741 | 10.57              | 21 12.4                            | 1.2982 | 9 40.8                             | +4.92               |
| August                          | 31 | .214                 | .4695   | .0726   | 10.64              | 21 13.0                            | .2976  | 9 37.1                             | 5.03                |
|                                 | 1  | .223                 | .4664   | .0711   | 10.70              | 21 13.5                            | .2970  | 9 33.3                             | 5.13                |
|                                 | 2  | .233                 | .4634   | .0696   | 10.76              | 21 14.0                            | .2964  | 9 29.6                             | 5.24                |
|                                 | 3  | .242                 | .4603   | .0681   | 10.82              | 21 14.5                            | .2958  | 9 25.8                             | 5.34                |
|                                 | 4  | .252                 | .4573   | .0666   | 10.88              | 21 15.0                            | .2952  | 9 22.0                             | 5.45                |
|                                 | 5  | .261                 | .4542   | .0651   | 10.94              | 21 15.5                            | .2946  | 9 18.2                             | 5.55                |
|                                 | 6  | .271                 | .4512   | .0635   | 11.00              | 21 15.9                            | .2939  | 9 14.4                             | 5.65                |
|                                 | 7  | .280                 | .4482   | .0620   | 11.06              | 21 16.3                            | .2933  | 9 10.6                             | 5.74                |
|                                 | 8  | .289                 | .4452   | .0605   | 11.12              | 21 16.8                            | .2927  | 9 6.8                              | 5.84                |
|                                 | 9  | +1.297               | —0.4422 | +0.0590 | 11.18              | 21 17.2                            | 1.2921 | 9 3.0                              | +5.93               |
|                                 | 10 | .306                 | .4392   | .0574   | 11.24              | 21 17.6                            | .2914  | 8 59.1                             | 6.02                |
|                                 | 11 | .315                 | .4363   | .0559   | 11.30              | 21 18.0                            | .2908  | 8 55.2                             | 6.12                |
|                                 | 12 | .324                 | .4334   | .0544   | 11.36              | 21 18.4                            | .2902  | 8 51.4                             | 6.21                |
|                                 | 13 | .332                 | .4305   | .0529   | 11.42              | 21 18.8                            | .2895  | 8 47.5                             | 6.29                |
|                                 | 14 | .341                 | .4276   | .0514   | 11.48              | 21 19.2                            | .2889  | 8 43.6                             | 6.38                |
|                                 | 15 | .349                 | .4248   | .0499   | 11.53              | 21 19.5                            | .2883  | 8 39.7                             | 6.47                |
|                                 | 16 | .358                 | .4220   | .0484   | 11.59              | 21 19.9                            | .2877  | 8 35.7                             | 6.55                |
|                                 | 17 | .366                 | .4192   | .0469   | 11.64              | 21 20.2                            | .2871  | 8 31.8                             | 6.63                |
|                                 | 18 | .374                 | .4165   | .0455   | 11.70              | 21 20.5                            | .2865  | 8 27.8                             | 6.71                |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g     | G                                 | log h  | H                                | i     |
|---------------------------------|----|----------------------|---------|---------|-------|-----------------------------------|--------|----------------------------------|-------|
| August                          | 19 | +1. <sup>s</sup> 382 | −0.4138 | +0.0440 | 11"75 | 21 <sup>h</sup> 20 <sup>m</sup> 9 | 1.2859 | 8 <sup>h</sup> 23 <sup>m</sup> 9 | +6"78 |
|                                 | 20 | .390                 | .4111   | .0426   | 11.81 | 21 21.2                           | .2853  | 8 19.9                           | 6.86  |
|                                 | 21 | .398                 | .4084   | .0411   | 11.86 | 21 21.5                           | .2847  | 8 15.9                           | 6.93  |
|                                 | 22 | .406                 | .4057   | .0397   | 11.92 | 21 21.8                           | .2841  | 8 11.9                           | 7.00  |
|                                 | 23 | .414                 | .4031   | .0383   | 11.97 | 21 22.1                           | .2835  | 8 7.9                            | 7.07  |
|                                 | 24 | .422                 | .4005   | .0370   | 12.02 | 21 22.4                           | .2830  | 8 3.9                            | 7.14  |
|                                 | 25 | .429                 | .3979   | .0357   | 12.07 | 21 22.7                           | .2824  | 7 59.8                           | 7.20  |
|                                 | 26 | .437                 | .3954   | .0344   | 12.12 | 21 23.0                           | .2818  | 7 55.8                           | 7.27  |
|                                 | 27 | .444                 | .3929   | .0331   | 12.17 | 21 23.3                           | .2813  | 7 51.7                           | 7.33  |
|                                 | 28 | .452                 | .3904   | .0319   | 12.22 | 21 23.6                           | .2808  | 7 47.6                           | 7.39  |
|                                 | 29 | +1.459               | −0.3879 | +0.0307 | 12.27 | 21 23.9                           | 1.2803 | 7 43.6                           | +7.44 |
|                                 | 30 | .466                 | .3855   | .0295   | 12.32 | 21 24.2                           | .2798  | 7 39.5                           | 7.50  |
|                                 | 31 | .474                 | .3831   | .0284   | 12.37 | 21 24.5                           | .2793  | 7 35.4                           | 7.55  |
| Septbr.                         | 1  | .481                 | .3807   | .0273   | 12.42 | 21 24.8                           | .2789  | 7 31.2                           | 7.60  |
|                                 | 2  | .488                 | .3783   | .0263   | 12.46 | 21 25.1                           | .2784  | 7 27.1                           | 7.65  |
|                                 | 3  | .495                 | .3760   | .0253   | 12.51 | 21 25.4                           | .2780  | 7 23.0                           | 7.70  |
|                                 | 4  | .502                 | .3737   | .0243   | 12.56 | 21 25.7                           | .2776  | 7 18.8                           | 7.74  |
|                                 | 5  | .509                 | .3715   | .0234   | 12.60 | 21 26.0                           | .2772  | 7 14.7                           | 7.78  |
|                                 | 6  | .516                 | .3693   | .0225   | 12.65 | 21 26.3                           | .2768  | 7 10.5                           | 7.82  |
|                                 | 7  | .523                 | .3671   | .0217   | 12.69 | 21 26.6                           | .2765  | 7 6.3                            | 7.86  |
|                                 | 8  | +1.530               | −0.3649 | +0.0209 | 12.73 | 21 26.9                           | 1.2761 | 7 2.1                            | +7.89 |
|                                 | 9  | .537                 | .3628   | .0201   | 12.78 | 21 27.2                           | .2758  | 6 57.9                           | 7.93  |
|                                 | 10 | .543                 | .3607   | .0194   | 12.82 | 21 27.5                           | .2755  | 6 53.7                           | 7.96  |
|                                 | 11 | .550                 | .3586   | .0187   | 12.86 | 21 27.8                           | .2752  | 6 49.5                           | 7.99  |
|                                 | 12 | .557                 | .3565   | .0181   | 12.90 | 21 28.1                           | .2750  | 6 45.3                           | 8.01  |
|                                 | 13 | .563                 | .3545   | .0176   | 12.94 | 21 28.5                           | .2747  | 6 41.1                           | 8.04  |
|                                 | 14 | .570                 | .3525   | .0171   | 12.98 | 21 28.8                           | .2745  | 6 36.9                           | 8.06  |
|                                 | 15 | .577                 | .3505   | .0167   | 13.02 | 21 29.1                           | .2743  | 6 32.6                           | 8.08  |
|                                 | 16 | .583                 | .3485   | .0163   | 13.06 | 21 29.4                           | .2742  | 6 28.4                           | 8.10  |
|                                 | 17 | .590                 | .3465   | .0160   | 13.10 | 21 29.8                           | .2740  | 6 24.1                           | 8.11  |
|                                 | 18 | +1.596               | −0.3446 | +0.0157 | 13.14 | 21 30.1                           | 1.2739 | 6 19.9                           | +8.12 |
|                                 | 19 | .603                 | .3427   | .0154   | 13.18 | 21 30.5                           | .2738  | 6 15.6                           | 8.13  |
|                                 | 20 | .609                 | .3408   | .0152   | 13.22 | 21 30.8                           | .2737  | 6 11.3                           | 8.14  |
|                                 | 21 | .616                 | .3389   | .0151   | 13.26 | 21 31.2                           | .2737  | 6 7.1                            | 8.15  |
|                                 | 22 | .622                 | .3370   | .0150   | 13.29 | 21 31.6                           | .2737  | 6 2.8                            | 8.15  |
|                                 | 23 | .629                 | .3352   | .0150   | 13.33 | 21 31.9                           | .2736  | 5 58.5                           | 8.15  |
|                                 | 24 | .635                 | .3334   | .0151   | 13.37 | 21 32.3                           | .2737  | 5 54.2                           | 8.15  |
|                                 | 25 | .642                 | .3316   | .0152   | 13.40 | 21 32.7                           | .2737  | 5 50.0                           | 8.14  |
|                                 | 26 | .648                 | .3298   | .0153   | 13.44 | 21 33.1                           | .2738  | 5 45.7                           | 8.14  |
|                                 | 27 | .655                 | .3280   | .0155   | 13.47 | 21 33.5                           | .2739  | 5 41.4                           | 8.13  |
|                                 | 28 | +1.662               | −0.3262 | +0.0158 | 13.51 | 21 33.9                           | 1.2740 | 5 37.1                           | +8.12 |
|                                 | 29 | .668                 | .3245   | .0161   | 13.54 | 21 34.4                           | .2741  | 5 32.8                           | 8.10  |
|                                 | 30 | .675                 | .3227   | .0165   | 13.58 | 21 34.8                           | .2743  | 5 28.6                           | 8.09  |
| Oktbr.                          | 1  | .681                 | .3210   | .0169   | 13.61 | 21 35.2                           | .2745  | 5 24.3                           | 8.07  |
|                                 | 2  | .688                 | .3193   | .0174   | 13.65 | 21 35.7                           | .2747  | 5 20.0                           | 8.04  |
|                                 | 3  | .694                 | .3176   | .0180   | 13.68 | 21 36.1                           | .2749  | 5 15.7                           | 8.02  |
|                                 | 4  | .701                 | .3159   | .0186   | 13.72 | 21 36.6                           | .2752  | 5 11.5                           | 7.99  |
|                                 | 5  | .708                 | .3142   | .0192   | 13.75 | 21 37.0                           | .2754  | 5 7.2                            | 7.96  |
|                                 | 6  | .715                 | .3125   | .0199   | 13.79 | 21 37.5                           | .2757  | 5 2.9                            | 7.93  |
|                                 | 7  | .722                 | .3108   | .0207   | 13.82 | 21 38.0                           | .2761  | 4 58.7                           | 7.90  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                  | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|------------------------------------|--------|-----------------------------------|---------------------|
| Oktbr.                          | 8  | +1 <sup>s</sup> .729 | —0.3091 | +0.0215 | 13 <sup>h</sup> .85 | 21 <sup>h</sup> 38 <sup>m</sup> .5 | 1.2764 | 4 <sup>h</sup> 54 <sup>m</sup> .4 | +7 <sup>h</sup> .87 |
|                                 | 9  | .735                 | .3074   | .0224   | 13.89               | 21 39.0                            | .2768  | 4 50.2                            | 7.83                |
|                                 | 10 | .742                 | .3058   | .0233   | 13.92               | 21 39.5                            | .2771  | 4 45.9                            | 7.79                |
|                                 | 11 | .749                 | .3041   | .0242   | 13.95               | 21 40.1                            | .2775  | 4 41.7                            | 7.75                |
|                                 | 12 | .757                 | .3024   | .0252   | 13.99               | 21 40.6                            | .2780  | 4 37.4                            | 7.70                |
|                                 | 13 | .764                 | .3007   | .0262   | 14.02               | 21 41.1                            | .2784  | 4 33.2                            | 7.65                |
|                                 | 14 | .771                 | .2990   | .0273   | 14.06               | 21 41.7                            | .2788  | 4 19.0                            | 7.60                |
|                                 | 15 | .778                 | .2973   | .0284   | 14.09               | 21 42.2                            | .2793  | 4 24.7                            | 7.55                |
|                                 | 16 | .786                 | .2956   | .0296   | 14.12               | 21 42.8                            | .2798  | 4 20.5                            | 7.50                |
|                                 | 17 | .793                 | .2939   | .0308   | 14.16               | 21 43.3                            | .2803  | 4 16.3                            | 7.44                |
|                                 | 18 | +1.800               | —0.2922 | +0.0320 | 14.19               | 21 43.9                            | 1.2809 | 4 12.1                            | +7.38               |
|                                 | 19 | .808                 | .2904   | .0333   | 14.23               | 21 44.5                            | .2814  | 4 7.9                             | 7.32                |
|                                 | 20 | .816                 | .2887   | .0346   | 14.26               | 21 45.1                            | .2819  | 4 3.8                             | 7.26                |
|                                 | 21 | .823                 | .2869   | .0359   | 14.30               | 21 45.7                            | .2825  | 3 59.6                            | 7.19                |
|                                 | 22 | .831                 | .2851   | .0373   | 14.34               | 21 46.3                            | .2831  | 3 55.4                            | 7.13                |
|                                 | 23 | .839                 | .2833   | .0387   | 14.37               | 21 46.9                            | .2836  | 3 51.3                            | 7.06                |
|                                 | 24 | .847                 | .2815   | .0401   | 14.41               | 21 47.5                            | .2842  | 3 47.1                            | 6.98                |
|                                 | 25 | .855                 | .2796   | .0415   | 14.45               | 21 48.1                            | .2848  | 3 43.0                            | 6.91                |
|                                 | 26 | .863                 | .2777   | .0430   | 14.48               | 21 48.8                            | .2854  | 3 38.8                            | 6.83                |
|                                 | 27 | .871                 | .2758   | .0445   | 14.52               | 21 49.4                            | .2861  | 3 34.7                            | 6.75                |
|                                 | 28 | +1.880               | —0.2739 | +0.0460 | 14.56               | 21 50.1                            | 1.2867 | 3 30.6                            | +6.67               |
|                                 | 29 | .888                 | .2719   | .0476   | 14.60               | 21 50.7                            | .2873  | 3 26.5                            | 6.59                |
|                                 | 30 | .897                 | .2699   | .0491   | 14.64               | 21 51.4                            | .2880  | 3 22.4                            | 6.51                |
|                                 | 31 | .905                 | .2679   | .0507   | 14.68               | 21 52.0                            | .2886  | 3 18.3                            | 6.42                |
| Novbr.                          | 1  | .914                 | .2659   | .0522   | 14.72               | 21 52.7                            | .2893  | 3 14.3                            | 6.33                |
|                                 | 2  | .923                 | .2639   | .0538   | 14.76               | 21 53.3                            | .2899  | 3 10.2                            | 6.24                |
|                                 | 3  | .931                 | .2618   | .0554   | 14.80               | 21 54.0                            | .2906  | 3 6.1                             | 6.15                |
|                                 | 4  | .940                 | .2596   | .0570   | 14.85               | 21 54.6                            | .2912  | 3 2.1                             | 6.06                |
|                                 | 5  | .950                 | .2575   | .0586   | 14.89               | 21 55.3                            | .2919  | 2 58.1                            | 5.96                |
|                                 | 6  | .959                 | .2553   | .0602   | 14.93               | 21 56.0                            | .2926  | 2 54.1                            | 5.86                |
|                                 | 7  | +1.968               | —0.2531 | +0.0618 | 14.98               | 21 56.6                            | 1.2932 | 2 50.0                            | +5.76               |
|                                 | 8  | .977                 | .2509   | .0634   | 15.02               | 21 57.3                            | .2939  | 2 46.0                            | 5.66                |
|                                 | 9  | .987                 | .2486   | .0650   | 15.07               | 21 58.0                            | .2945  | 2 42.1                            | 5.55                |
|                                 | 10 | 1.996                | .2463   | .0666   | 15.11               | 21 58.7                            | .2952  | 2 38.1                            | 5.45                |
|                                 | 11 | 2.006                | .2440   | .0682   | 15.16               | 21 59.3                            | .2958  | 2 34.1                            | 5.34                |
|                                 | 12 | .016                 | .2416   | .0697   | 15.21               | 22 0.0                             | .2964  | 2 30.1                            | 5.23                |
|                                 | 13 | .026                 | .2392   | .0713   | 15.26               | 22 0.7                             | .2971  | 2 26.2                            | 5.12                |
|                                 | 14 | .036                 | .2367   | .0728   | 15.30               | 22 1.4                             | .2977  | 2 22.3                            | 5.01                |
|                                 | 15 | .046                 | .2342   | .0743   | 15.35               | 22 2.0                             | .2983  | 2 18.3                            | 4.89                |
|                                 | 16 | .056                 | .2317   | .0758   | 15.40               | 22 2.7                             | .2989  | 2 14.4                            | 4.78                |
|                                 | 17 | +2.066               | —0.2292 | +0.0773 | 15.46               | 22 3.4                             | 1.2995 | 2 10.5                            | +4.66               |
|                                 | 18 | .076                 | .2266   | .0788   | 15.51               | 22 4.0                             | .3001  | 2 6.6                             | 4.54                |
|                                 | 19 | .087                 | .2240   | .0803   | 15.56               | 22 4.7                             | .3007  | 2 2.7                             | 4.42                |
|                                 | 20 | .097                 | .2213   | .0817   | 15.61               | 22 5.3                             | .3013  | 1 58.8                            | 4.30                |
|                                 | 21 | .108                 | .2186   | .0831   | 15.67               | 22 6.0                             | .3018  | 1 55.0                            | 4.18                |
|                                 | 22 | .119                 | .2158   | .0845   | 15.72               | 22 6.6                             | .3024  | 1 51.1                            | 4.06                |
|                                 | 23 | .129                 | .2130   | .0859   | 15.78               | 22 7.3                             | .3029  | 1 47.2                            | 3.93                |
|                                 | 24 | .140                 | .2101   | .0872   | 15.84               | 22 7.9                             | .3035  | 1 43.4                            | 3.80                |
|                                 | 25 | .151                 | .2072   | .0885   | 15.90               | 22 8.6                             | .3040  | 1 39.5                            | 3.68                |
|                                 | 26 | .162                 | .2043   | .0897   | 15.95               | 22 9.2                             | .3045  | 1 35.7                            | 3.55                |

## 1855

| <sup>12<sup>h</sup></sup><br>M. Z. Berlin | f                   | x       | y       | g                  | G                                | log h  | H                                | i                  |
|-------------------------------------------|---------------------|---------|---------|--------------------|----------------------------------|--------|----------------------------------|--------------------|
| Novbr. 27                                 | +2 <sup>s</sup> 173 | —0.2014 | +0.0909 | 16 <sup>h</sup> 01 | 22 <sup>h</sup> 9 <sup>m</sup> 8 | 1.3050 | 1 <sup>h</sup> 31 <sup>m</sup> 9 | +3 <sup>h</sup> 42 |
| 28                                        | .184                | .1984   | .0921   | 16.07              | 22 10.4                          | .3054  | 1 28.1                           | 3.29               |
| 29                                        | .196                | .1954   | .0932   | 16.13              | 22 11.0                          | .3059  | 1 24.2                           | 3.15               |
| 30                                        | .207                | .1923   | .0943   | 16.20              | 22 11.6                          | .3063  | 1 20.4                           | 3.02               |
| Dezbr. 1                                  | .218                | .1892   | .0954   | 16.26              | 22 12.2                          | .3068  | 1 16.6                           | 2.89               |
| 2                                         | .230                | .1860   | .0964   | 16.32              | 22 12.8                          | .3072  | 1 12.8                           | 2.75               |
| 3                                         | .241                | .1828   | .0974   | 16.38              | 22 13.4                          | .3075  | 1 9.0                            | 2.61               |
| 4                                         | .253                | .1796   | .0984   | 16.45              | 22 13.9                          | .3079  | 1 5.2                            | 2.48               |
| 5                                         | .265                | .1764   | .0993   | 16.51              | 22 14.5                          | .3083  | 1 1.5                            | 2.34               |
| 6                                         | .276                | .1731   | .1001   | 16.58              | 22 15.0                          | .3086  | 0 57.7                           | 2.20               |
| 7                                         | +2.288              | —0.1698 | +0.1009 | 16.65              | 22 15.6                          | 1.3089 | 0 53.9                           | +2.06              |
| 8                                         | .300                | .1665   | .1016   | 16.71              | 22 16.1                          | .3092  | 0 50.2                           | 1.92               |
| 9                                         | .312                | .1631   | .1023   | 16.78              | 22 16.6                          | .3095  | 0 46.4                           | 1.78               |
| 10                                        | .324                | .1597   | .1029   | 16.85              | 22 17.1                          | .3097  | 0 42.6                           | 1.64               |
| 11                                        | .336                | .1563   | .1035   | 16.92              | 22 17.6                          | .3099  | 0 38.9                           | 1.50               |
| 12                                        | .348                | .1529   | .1040   | 16.99              | 22 18.1                          | .3101  | 0 35.1                           | 1.35               |
| 13                                        | .360                | .1494   | .1045   | 17.06              | 22 18.6                          | .3103  | 0 31.4                           | 1.21               |
| 14                                        | .372                | .1459   | .1049   | 17.13              | 22 19.0                          | .3105  | 0 27.6                           | 1.07               |
| 15                                        | .384                | .1423   | .1053   | 17.20              | 22 19.5                          | .3107  | 0 23.9                           | 0.93               |
| 16                                        | .396                | .1387   | .1057   | 17.27              | 22 19.9                          | .3108  | 0 20.2                           | 0.78               |
| 17                                        | +2.408              | —0.1351 | +0.1060 | 17.34              | 22 20.4                          | 1.3109 | 0 16.4                           | +0.64              |
| 18                                        | .420                | .1315   | .1062   | 17.41              | 22 20.8                          | .3110  | 0 12.7                           | 0.49               |
| 19                                        | .432                | .1279   | .1064   | 17.49              | 22 21.2                          | .3111  | 0 9.0                            | 0.35               |
| 20                                        | .444                | .1242   | .1065   | 17.56              | 22 21.6                          | .3111  | 0 5.2                            | 0.20               |
| 21                                        | .456                | .1206   | .1065   | 17.63              | 22 22.0                          | .3111  | 0 1.5                            | +0.06              |
| 22                                        | .469                | .1169   | .1065   | 17.71              | 22 22.3                          | .3111  | 23 57.7                          | —0.09              |
| 23                                        | .481                | .1132   | .1064   | 17.78              | 22 22.7                          | .3111  | 23 54.0                          | 0.23               |
| 24                                        | .493                | .1095   | .1063   | 17.86              | 22 23.0                          | .3110  | 23 50.2                          | 0.38               |
| 25                                        | .505                | .1058   | .1061   | 17.93              | 22 23.4                          | .3110  | 23 46.5                          | 0.52               |
| 26                                        | .517                | .1020   | .1059   | 18.01              | 22 23.7                          | .3109  | 23 42.8                          | 0.67               |
| 27                                        | +2.529              | —0.0983 | +0.1056 | 18.08              | 22 24.0                          | 1.3108 | 23 39.0                          | —0.81              |
| 28                                        | .542                | .0945   | .1053   | 18.16              | 22 24.3                          | .3107  | 23 35.3                          | 0.95               |
| 29                                        | .554                | .0907   | .1049   | 18.23              | 22 24.6                          | .3105  | 23 31.5                          | 1.10               |
| 30                                        | .566                | .0869   | .1045   | 18.31              | 22 24.9                          | .3103  | 23 27.8                          | 1.24               |
| 31                                        | .578                | .0831   | .1041   | 18.38              | 22 25.2                          | .3101  | 23 24.0                          | 1.38               |

## 1856

|          |                     |         |         |                   |                                   |        |                                   |                    |
|----------|---------------------|---------|---------|-------------------|-----------------------------------|--------|-----------------------------------|--------------------|
| Januar 1 | —0 <sup>s</sup> 482 | —0.5992 | +0.1034 | 8 <sup>h</sup> 04 | 16 <sup>h</sup> 28 <sup>m</sup> 2 | 1.3099 | 23 <sup>h</sup> 20 <sup>m</sup> 3 | —1 <sup>h</sup> 53 |
| 2        | .470                | .6001   | .1028   | 8.02              | 16 30.3                           | .3097  | 23 16.5                           | 1.67               |
| 3        | .458                | .6010   | .1022   | 8.00              | 16 32.5                           | .3094  | 23 12.7                           | 1.81               |
| 4        | .446                | .6018   | .1015   | 7.98              | 16 34.7                           | .3091  | 23 8.9                            | 1.95               |
| 5        | .434                | .6025   | .1007   | 7.97              | 16 36.9                           | .3088  | 23 5.2                            | 2.09               |
| 6        | .422                | .6032   | .0999   | 7.96              | 16 39.1                           | .3085  | 23 1.4                            | 2.23               |
| 7        | .410                | .6038   | .0990   | 7.94              | 16 41.3                           | .3082  | 22 57.6                           | 2.37               |
| 8        | .399                | .6043   | .0981   | 7.93              | 16 43.6                           | .3078  | 22 53.8                           | 2.51               |
| 9        | .387                | .6048   | .0972   | 7.92              | 16 45.8                           | .3075  | 22 50.0                           | 2.65               |
| 10       | .376                | .6052   | .0962   | 7.91              | 16 48.0                           | .3071  | 22 46.2                           | 2.78               |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g    | G                                 | log h  | H                                 | i     |
|---------------------------------|----|--------|---------|---------|------|-----------------------------------|--------|-----------------------------------|-------|
| Januar                          | 11 | —0.364 | —0.6056 | +0.0952 | 7.91 | 16 <sup>h</sup> 50 <sup>m</sup> 2 | 1.3067 | 22 <sup>h</sup> 42 <sup>m</sup> 4 | —2.92 |
|                                 | 12 | .353   | .6059   | .0941   | 7.90 | 16 52.4                           | .3062  | 22 38.5                           | 3.05  |
|                                 | 13 | .342   | .6061   | .0930   | 7.90 | 16 54.6                           | .3058  | 22 34.7                           | 3.19  |
|                                 | 14 | .330   | .6062   | .0918   | 7.90 | 16 56.8                           | .3053  | 22 30.9                           | 3.32  |
|                                 | 15 | .319   | .6063   | .0906   | 7.90 | 16 59.0                           | .3048  | 22 27.1                           | 3.45  |
|                                 | 16 | .308   | .6063   | .0894   | 7.90 | 17 1.2                            | .3043  | 22 23.2                           | 3.58  |
|                                 | 17 | .297   | .6062   | .0881   | 7.90 | 17 3.4                            | .3038  | 22 19.4                           | 3.71  |
|                                 | 18 | .286   | .6061   | .0868   | 7.90 | 17 5.5                            | .3033  | 22 15.5                           | 3.84  |
|                                 | 19 | .275   | .6059   | .0855   | 7.90 | 17 7.7                            | .3028  | 22 11.6                           | 3.97  |
|                                 | 20 | .264   | .6057   | .0842   | 7.91 | 17 9.8                            | .3023  | 22 7.7                            | 4.09  |
|                                 | 21 | —0.253 | —0.6054 | +0.0828 | 7.91 | 17 11.9                           | 1.3017 | 22 3.8                            | —4.22 |
|                                 | 22 | .243   | .6050   | .0814   | 7.92 | 17 14.0                           | .3011  | 21 59.9                           | 4.34  |
|                                 | 23 | .232   | .6046   | .0799   | 7.93 | 17 16.1                           | .3005  | 21 56.0                           | 4.46  |
|                                 | 24 | .222   | .6041   | .0784   | 7.94 | 17 18.2                           | .2999  | 21 52.1                           | 4.58  |
|                                 | 25 | .211   | .6036   | .0769   | 7.95 | 17 20.2                           | .2993  | 21 48.2                           | 4.70  |
|                                 | 26 | .201   | .6030   | .0754   | 7.96 | 17 22.2                           | .2987  | 21 44.2                           | 4.82  |
|                                 | 27 | .191   | .6024   | .0739   | 7.97 | 17 24.2                           | .2981  | 21 40.3                           | 4.94  |
|                                 | 28 | .181   | .6018   | .0724   | 7.98 | 17 26.2                           | .2975  | 21 36.3                           | 5.05  |
|                                 | 29 | .171   | .6011   | .0708   | 8.00 | 17 28.1                           | .2969  | 21 32.3                           | 5.16  |
|                                 | 30 | .161   | .6004   | .0692   | 8.01 | 17 30.0                           | .2962  | 21 28.3                           | 5.27  |
| Februar                         | 31 | —0.151 | —0.5997 | +0.0676 | 8.03 | 17 31.9                           | 1.2956 | 21 24.3                           | —5.38 |
|                                 | 1  | .141   | .5989   | .0659   | 8.04 | 17 33.8                           | .2949  | 21 20.3                           | 5.49  |
|                                 | 2  | .132   | .5981   | .0643   | 8.06 | 17 35.7                           | .2942  | 21 16.3                           | 5.60  |
|                                 | 3  | .122   | .5972   | .0627   | 8.08 | 17 37.5                           | .2936  | 21 12.3                           | 5.70  |
|                                 | 4  | .113   | .5963   | .0611   | 8.09 | 17 39.3                           | .2929  | 21 8.3                            | 5.80  |
|                                 | 5  | .104   | .5954   | .0595   | 8.11 | 17 41.0                           | .2923  | 21 4.2                            | 5.90  |
|                                 | 6  | .094   | .5945   | .0579   | 8.13 | 17 42.8                           | .2916  | 21 0.2                            | 6.00  |
|                                 | 7  | .085   | .5936   | .0563   | 8.15 | 17 44.5                           | .2909  | 20 56.1                           | 6.10  |
|                                 | 8  | .077   | .5926   | .0547   | 8.17 | 17 46.2                           | .2903  | 20 52.0                           | 6.19  |
|                                 | 9  | .068   | .5916   | .0531   | 8.19 | 17 47.8                           | .2896  | 20 47.9                           | 6.29  |
|                                 | 10 | —0.059 | —0.5906 | +0.0515 | 8.21 | 17 49.5                           | 1.2890 | 20 43.8                           | —6.38 |
|                                 | 11 | .050   | .5896   | .0499   | 8.23 | 17 51.1                           | .2883  | 20 39.7                           | 6.46  |
|                                 | 12 | .041   | .5886   | .0484   | 8.25 | 17 52.6                           | .2877  | 20 35.6                           | 6.55  |
|                                 | 13 | .033   | .5876   | .0468   | 8.27 | 17 54.2                           | .2870  | 20 31.5                           | 6.63  |
|                                 | 14 | .024   | .5865   | .0453   | 8.29 | 17 55.7                           | .2864  | 20 27.3                           | 6.72  |
|                                 | 15 | .016   | .5854   | .0438   | 8.31 | 17 57.2                           | .2858  | 20 23.1                           | 6.80  |
|                                 | 16 | —0.008 | .5843   | .0423   | 8.33 | 17 58.7                           | .2852  | 20 19.0                           | 6.87  |
|                                 | 17 | 0.000  | .5832   | .0408   | 8.35 | 18 0.2                            | .2845  | 20 14.8                           | 6.95  |
|                                 | 18 | +0.008 | .5822   | .0394   | 8.38 | 18 1.7                            | .2839  | 20 10.6                           | 7.02  |
|                                 | 19 | .016   | .5811   | .0380   | 8.40 | 18 3.1                            | .2833  | 20 6.4                            | 7.10  |
|                                 | 20 | +0.024 | —0.5801 | +0.0366 | 8.42 | 18 4.5                            | 1.2828 | 20 2.2                            | —7.17 |
|                                 | 21 | .032   | .5790   | .0352   | 8.44 | 18 5.8                            | .2822  | 19 58.0                           | 7.23  |
|                                 | 22 | .040   | .5780   | .0339   | 8.46 | 18 7.2                            | .2816  | 19 53.8                           | 7.30  |
|                                 | 23 | .047   | .5769   | .0326   | 8.48 | 18 8.5                            | .2811  | 19 49.5                           | 7.36  |
|                                 | 24 | .055   | .5759   | .0313   | 8.50 | 18 9.9                            | .2805  | 19 45.3                           | 7.42  |
|                                 | 25 | .062   | .5749   | .0300   | 8.52 | 18 11.2                           | .2800  | 19 41.0                           | 7.48  |
|                                 | 26 | .070   | .5739   | .0288   | 8.54 | 18 12.5                           | .2795  | 19 36.8                           | 7.53  |
|                                 | 27 | .077   | .5729   | .0276   | 8.56 | 18 13.7                           | .2790  | 19 32.5                           | 7.59  |
|                                 | 28 | .085   | .5719   | .0265   | 8.58 | 18 14.9                           | .2785  | 19 28.2                           | 7.64  |
|                                 | 29 | .092   | .5709   | .0255   | 8.60 | 18 16.2                           | .2781  | 19 24.0                           | 7.69  |

## 1856

| 12 <sup>h</sup><br>M. Z. Berlin |    | f       | x       | y       | g    | G                                  | log h  | H                                  | i     |
|---------------------------------|----|---------|---------|---------|------|------------------------------------|--------|------------------------------------|-------|
| März                            | 1  | +0.8099 | -0.5700 | +0.0245 | 8.62 | 18 <sup>h</sup> 17 <sup>m</sup> .4 | 1.2777 | 19 <sup>h</sup> 19 <sup>m</sup> .7 | -7.73 |
|                                 | 2  | .106    | .5691   | .0236   | 8.64 | 18 18.6                            | .2773  | 19 15.4                            | 7.78  |
|                                 | 3  | .113    | .5682   | .0227   | 8.66 | 18 19.8                            | .2769  | 19 11.1                            | 7.82  |
|                                 | 4  | .120    | .5673   | .0218   | 8.68 | 18 20.9                            | .2765  | 19 6.8                             | 7.86  |
|                                 | 5  | .127    | .5664   | .0210   | 8.70 | 18 22.1                            | .2762  | 19 2.5                             | 7.89  |
|                                 | 6  | .134    | .5655   | .0202   | 8.71 | 18 23.3                            | .2758  | 18 58.2                            | 7.93  |
|                                 | 7  | .141    | .5647   | .0194   | 8.73 | 18 24.4                            | .2755  | 18 53.8                            | 7.96  |
|                                 | 8  | .148    | .5638   | .0187   | 8.75 | 18 25.5                            | .2752  | 18 49.5                            | 7.99  |
|                                 | 9  | .154    | .5630   | .0181   | 8.76 | 18 26.7                            | .2750  | 18 45.2                            | 8.01  |
|                                 | 10 | .161    | .5622   | .0175   | 8.78 | 18 27.8                            | .2747  | 18 40.9                            | 8.04  |
|                                 | 11 | +0.168  | -0.5615 | +0.0170 | 8.79 | 18 28.9                            | 1.2745 | 18 36.6                            | -8.06 |
|                                 | 12 | .175    | .5608   | .0166   | 8.81 | 18 30.0                            | .2743  | 18 32.2                            | 8.08  |
|                                 | 13 | .181    | .5601   | .0162   | 8.82 | 18 31.1                            | .2741  | 18 27.9                            | 8.10  |
|                                 | 14 | .188    | .5594   | .0159   | 8.83 | 18 32.2                            | .2740  | 18 23.6                            | 8.11  |
|                                 | 15 | .195    | .5587   | .0156   | 8.85 | 18 33.2                            | .2739  | 18 19.2                            | 8.12  |
|                                 | 16 | .201    | .5581   | .0154   | 8.86 | 18 34.3                            | .2738  | 18 14.9                            | 8.13  |
|                                 | 17 | .208    | .5575   | .0152   | 8.87 | 18 35.4                            | .2737  | 18 10.5                            | 8.14  |
|                                 | 18 | .215    | .5569   | .0151   | 8.88 | 18 36.5                            | .2737  | 18 6.2                             | 8.15  |
|                                 | 19 | .221    | .5564   | .0150   | 8.90 | 18 37.6                            | .2736  | 18 1.9                             | 8.15  |
|                                 | 20 | .228    | .5558   | .0150   | 8.91 | 18 38.6                            | .2736  | 17 57.6                            | 8.15  |
| April                           | 21 | +0.234  | -0.5553 | +0.0151 | 8.92 | 18 39.7                            | 1.2737 | 17 53.3                            | -8.15 |
|                                 | 22 | .241    | .5548   | .0153   | 8.93 | 18 40.8                            | .2737  | 17 48.9                            | 8.14  |
|                                 | 23 | .248    | .5543   | .0155   | 8.94 | 18 41.9                            | .2738  | 17 44.6                            | 8.13  |
|                                 | 24 | .254    | .5538   | .0157   | 8.95 | 18 42.9                            | .2739  | 17 40.3                            | 8.12  |
|                                 | 25 | .261    | .5534   | .0160   | 8.95 | 18 44.0                            | .2740  | 17 36.0                            | 8.11  |
|                                 | 26 | .267    | .5530   | .0163   | 8.96 | 18 45.1                            | .2742  | 17 31.7                            | 8.09  |
|                                 | 27 | .274    | .5527   | .0167   | 8.97 | 18 46.2                            | .2743  | 17 27.4                            | 8.08  |
|                                 | 28 | .281    | .5523   | .0171   | 8.98 | 18 47.3                            | .2745  | 17 23.1                            | 8.06  |
|                                 | 29 | .287    | .5520   | .0176   | 8.98 | 18 48.4                            | .2747  | 17 18.8                            | 8.04  |
|                                 | 30 | .294    | .5516   | .0181   | 8.99 | 18 49.5                            | .2750  | 17 14.5                            | 8.01  |
|                                 | 31 | +0.301  | -0.5513 | +0.0187 | 9.00 | 18 50.6                            | 1.2752 | 17 10.3                            | -7.99 |
|                                 | 1  | .308    | .5510   | .0194   | 9.00 | 18 51.8                            | .2755  | 17 6.0                             | 7.96  |
|                                 | 2  | .315    | .5507   | .0201   | 9.01 | 18 52.9                            | .2758  | 17 1.8                             | 7.93  |
|                                 | 3  | .321    | .5504   | .0209   | 9.01 | 18 54.1                            | .2761  | 16 57.5                            | 7.89  |
|                                 | 4  | .328    | .5502   | .0217   | 9.02 | 18 55.2                            | .2765  | 16 53.3                            | 7.86  |
|                                 | 5  | .335    | .5499   | .0226   | 9.02 | 18 56.4                            | .2769  | 16 49.1                            | 7.82  |
|                                 | 6  | .342    | .5497   | .0235   | 9.03 | 18 57.6                            | .2773  | 16 44.8                            | 7.78  |
|                                 | 7  | .349    | .5495   | .0245   | 9.03 | 18 58.7                            | .2777  | 16 40.6                            | 7.74  |
|                                 | 8  | .357    | .5493   | .0255   | 9.04 | 18 59.9                            | .2781  | 16 36.4                            | 7.69  |
|                                 | 9  | .364    | .5491   | .0265   | 9.04 | 19 1.1                             | .2785  | 16 32.3                            | 7.64  |
|                                 | 10 | +0.371  | -0.5489 | +0.0276 | 9.04 | 19 2.4                             | 1.2790 | 16 28.1                            | -7.59 |
|                                 | 11 | .378    | .5487   | .0287   | 9.05 | 19 3.6                             | .2794  | 16 23.9                            | 7.54  |
|                                 | 12 | .386    | .5485   | .0298   | 9.05 | 19 4.8                             | .2799  | 16 19.8                            | 7.49  |
|                                 | 13 | .393    | .5483   | .0310   | 9.06 | 19 6.1                             | .2804  | 16 15.6                            | 7.43  |
|                                 | 14 | .401    | .5482   | .0322   | 9.06 | 19 7.3                             | .2809  | 16 11.5                            | 7.37  |
|                                 | 15 | .408    | .5480   | .0334   | 9.06 | 19 8.6                             | .2814  | 16 7.4                             | 7.31  |
|                                 | 16 | .416    | .5478   | .0347   | 9.07 | 19 9.9                             | .2820  | 16 3.3                             | 7.25  |
|                                 | 17 | .424    | .5476   | .0360   | 9.07 | 19 11.2                            | .2825  | 15 59.2                            | 7.19  |
|                                 | 18 | .431    | .5474   | .0373   | 9.07 | 19 12.5                            | .2831  | 15 55.1                            | 7.12  |
|                                 | 19 | .439    | .5472   | .0387   | 9.08 | 19 13.9                            | .2836  | 15 51.0                            | 7.05  |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                  | G                                  | log h  | H                                  | i                   |
|---------------------------------|----|----------------------|---------|---------|--------------------|------------------------------------|--------|------------------------------------|---------------------|
| April                           | 20 | +0 <sup>s</sup> .447 | -0.5470 | +0.0401 | 9 <sup>m</sup> .08 | 19 <sup>h</sup> 15 <sup>m</sup> .3 | 1.2842 | 15 <sup>h</sup> 47 <sup>m</sup> .0 | -6 <sup>m</sup> .98 |
|                                 | 21 | .455                 | .5468   | .0415   | 9.09               | 19 16.6                            | .2848  | 15 42.9                            | 6.91                |
|                                 | 22 | .463                 | .5466   | .0429   | 9.09               | 19 18.0                            | .2854  | 15 38.9                            | 6.84                |
|                                 | 23 | .472                 | .5464   | .0444   | 9.10               | 19 19.4                            | .2860  | 15 34.9                            | 6.76                |
|                                 | 24 | .480                 | .5461   | .0459   | 9.10               | 19 20.8                            | .2866  | 15 30.9                            | 6.68                |
|                                 | 25 | .488                 | .5458   | .0474   | 9.11               | 19 22.2                            | .2873  | 15 26.9                            | 6.60                |
|                                 | 26 | .497                 | .5455   | .0489   | 9.11               | 19 23.6                            | .2879  | 15 22.9                            | 6.52                |
|                                 | 27 | .505                 | .5452   | .0504   | 9.12               | 19 25.0                            | .2885  | 15 19.0                            | 6.43                |
|                                 | 28 | .514                 | .5448   | .0519   | 9.13               | 19 26.5                            | .2891  | 15 15.0                            | 6.35                |
|                                 | 29 | .522                 | .5444   | .0535   | 9.13               | 19 27.9                            | .2898  | 15 11.1                            | 6.26                |
| Mai                             | 30 | +0.531               | -0.5440 | +0.0550 | 9.14               | 19 29.4                            | 1.2904 | 15 7.2                             | -6.17               |
|                                 | 1  | .540                 | .5436   | .0565   | 9.15               | 19 30.9                            | .2910  | 15 3.3                             | 6.08                |
|                                 | 2  | .549                 | .5432   | .0580   | 9.16               | 19 32.4                            | .2917  | 14 59.4                            | 5.99                |
|                                 | 3  | .558                 | .5427   | .0596   | 9.17               | 19 33.9                            | .2923  | 14 55.5                            | 5.90                |
|                                 | 4  | .567                 | .5422   | .0611   | 9.18               | 19 35.4                            | .2929  | 14 51.6                            | 5.80                |
|                                 | 5  | .576                 | .5417   | .0627   | 9.19               | 19 36.9                            | .2936  | 14 47.8                            | 5.70                |
|                                 | 6  | .586                 | .5411   | .0642   | 9.20               | 19 38.4                            | .2942  | 14 44.0                            | 5.60                |
|                                 | 7  | .595                 | .5405   | .0658   | 9.21               | 19 40.0                            | .2948  | 14 40.1                            | 5.50                |
|                                 | 8  | .604                 | .5399   | .0673   | 9.23               | 19 41.5                            | .2954  | 14 36.3                            | 5.40                |
|                                 | 9  | .614                 | .5392   | .0688   | 9.24               | 19 43.1                            | .2960  | 14 32.5                            | 5.30                |
|                                 | 10 | +0.624               | -0.5385 | +0.0703 | 9.25               | 19 44.7                            | 1.2967 | 14 28.7                            | -5.19               |
|                                 | 11 | .633                 | .5378   | .0718   | 9.27               | 19 46.2                            | .2973  | 14 24.9                            | 5.09                |
|                                 | 12 | .643                 | .5370   | .0732   | 9.28               | 19 47.8                            | .2978  | 14 21.1                            | 4.98                |
|                                 | 13 | .653                 | .5362   | .0747   | 9.30               | 19 49.4                            | .2984  | 14 17.4                            | 4.87                |
|                                 | 14 | .663                 | .5354   | .0761   | 9.32               | 19 51.0                            | .2990  | 14 13.6                            | 4.76                |
|                                 | 15 | .673                 | .5345   | .0775   | 9.33               | 19 52.6                            | .2996  | 14 9.9                             | 4.64                |
|                                 | 16 | .683                 | .5335   | .0789   | 9.35               | 19 54.2                            | .3002  | 14 6.2                             | 4.53                |
|                                 | 17 | .693                 | .5325   | .0803   | 9.37               | 19 55.8                            | .3007  | 14 2.5                             | 4.42                |
|                                 | 18 | .704                 | .5314   | .0817   | 9.40               | 19 57.3                            | .3013  | 13 58.8                            | 4.30                |
|                                 | 19 | .714                 | .5303   | .0830   | 9.42               | 19 58.9                            | .3018  | 13 55.1                            | 4.19                |
| Juni                            | 20 | +0.724               | -0.5292 | +0.0843 | 9.44               | 20 0.5                             | 1.3023 | 13 51.4                            | -4.07               |
|                                 | 21 | .735                 | .5280   | .0856   | 9.46               | 20 2.1                             | .3028  | 13 47.8                            | 3.95                |
|                                 | 22 | .746                 | .5268   | .0869   | 9.49               | 20 3.7                             | .3033  | 13 44.1                            | 3.83                |
|                                 | 23 | .756                 | .5255   | .0881   | 9.51               | 20 5.3                             | .3038  | 13 40.5                            | 3.71                |
|                                 | 24 | .767                 | .5242   | .0893   | 9.54               | 20 6.9                             | .3043  | 13 36.8                            | 3.58                |
|                                 | 25 | .778                 | .5228   | .0905   | 9.57               | 20 8.4                             | .3048  | 13 33.2                            | 3.46                |
|                                 | 26 | .789                 | .5214   | .0916   | 9.60               | 20 10.0                            | .3052  | 13 29.6                            | 3.34                |
|                                 | 27 | .800                 | .5199   | .0927   | 9.63               | 20 11.6                            | .3057  | 13 26.0                            | 3.22                |
|                                 | 28 | .811                 | .5183   | .0938   | 9.66               | 20 13.1                            | .3061  | 13 22.4                            | 3.09                |
|                                 | 29 | .822                 | .5168   | .0948   | 9.69               | 20 14.7                            | .3065  | 13 18.8                            | 2.96                |
|                                 | 30 | +0.833               | -0.5152 | +0.0958 | 9.72               | 20 16.2                            | 1.3069 | 13 15.2                            | -2.83               |
|                                 | 31 | .844                 | .5135   | .0968   | 9.76               | 20 17.8                            | .3073  | 13 11.6                            | 2.71                |
|                                 | 1  | .855                 | .5118   | .0977   | 9.79               | 20 19.3                            | .3076  | 13 8.0                             | 2.58                |
|                                 | 2  | .866                 | .5100   | .0986   | 9.82               | 20 20.8                            | .3080  | 13 4.5                             | 2.45                |
|                                 | 3  | .878                 | .5081   | .0994   | 9.86               | 20 22.3                            | .3083  | 13 0.9                             | 2.32                |
|                                 | 4  | .889                 | .5062   | .1002   | 9.90               | 20 23.7                            | .3086  | 12 57.4                            | 2.19                |
|                                 | 5  | .900                 | .5043   | .1009   | 9.94               | 20 25.2                            | .3089  | 12 53.8                            | 2.06                |
|                                 | 6  | .912                 | .5023   | .1016   | 9.98               | 20 26.7                            | .3092  | 12 50.3                            | 1.92                |
|                                 | 7  | .923                 | .5003   | .1022   | 10.02              | 20 28.1                            | .3094  | 12 46.7                            | 1.79                |
|                                 | 8  | .935                 | .4982   | .1028   | 10.06              | 20 29.6                            | .3097  | 12 43.2                            | 1.66                |

## 1856

| <sup>12<sup>h</sup></sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                 | log h  | H                                  | i                   |
|-------------------------------------------|----|----------------------|---------|---------|---------------------|-----------------------------------|--------|------------------------------------|---------------------|
| Juni                                      | 9  | +0 <sup>s</sup> .946 | —0.4961 | +0.1034 | 10 <sup>h</sup> .10 | 20 <sup>h</sup> 31 <sup>m</sup> 0 | 1.3099 | 12 <sup>h</sup> 39 <sup>m</sup> .7 | —1 <sup>h</sup> .53 |
|                                           | 10 | .958                 | .4939   | .1039   | 10.15               | 20 32.4                           | .3101  | 12 36.1                            | 1.39                |
|                                           | 11 | .970                 | .4917   | .1044   | 10.19               | 20 33.7                           | .3103  | 12 32.6                            | 1.26                |
|                                           | 12 | .981                 | .4894   | .1048   | 10.24               | 20 35.1                           | .3105  | 12 29.1                            | 1.12                |
|                                           | 13 | 0.993                | .4871   | .1052   | 10.28               | 20 36.4                           | .3106  | 12 25.6                            | 0.99                |
|                                           | 14 | 1.005                | .4847   | .1055   | 10.33               | 20 37.8                           | .3107  | 12 22.1                            | 0.85                |
|                                           | 15 | .016                 | .4823   | .1058   | 10.38               | 20 39.1                           | .3108  | 12 18.6                            | 0.72                |
|                                           | 16 | .028                 | .4799   | .1060   | 10.43               | 20 40.4                           | .3109  | 12 15.1                            | 0.58                |
|                                           | 17 | .040                 | .4774   | .1062   | 10.48               | 20 41.6                           | .3110  | 12 11.6                            | 0.45                |
|                                           | 18 | .052                 | .4749   | .1063   | 10.53               | 20 42.9                           | .3111  | 12 8.1                             | 0.31                |
|                                           | 19 | +1.063               | —0.4723 | +0.1064 | 10.58               | 20 44.1                           | 1.3111 | 12 4.6                             | —0.18               |
|                                           | 20 | .075                 | .4697   | .1065   | 10.63               | 20 45.3                           | .3111  | 12 1.1                             | —0.04               |
|                                           | 21 | .087                 | .4670   | .1065   | 10.69               | 20 46.5                           | .3111  | 11 57.6                            | +0.09               |
|                                           | 22 | .099                 | .4643   | .1064   | 10.74               | 20 47.7                           | .3111  | 11 54.1                            | 0.23                |
|                                           | 23 | .110                 | .4616   | .1063   | 10.80               | 20 48.8                           | .3111  | 11 50.6                            | 0.36                |
|                                           | 24 | .122                 | .4589   | .1062   | 10.85               | 20 50.0                           | .3110  | 11 47.1                            | 0.50                |
|                                           | 25 | .134                 | .4561   | .1060   | 10.91               | 20 51.1                           | .3109  | 11 43.6                            | 0.63                |
|                                           | 26 | .145                 | .4533   | .1057   | 10.96               | 20 52.1                           | .3108  | 11 40.1                            | 0.77                |
|                                           | 27 | .157                 | .4505   | .1054   | 11.02               | 20 53.2                           | .3107  | 11 36.6                            | 0.91                |
|                                           | 28 | .169                 | .4476   | .1051   | 11.08               | 20 54.2                           | .3106  | 11 33.0                            | 1.04                |
|                                           | 29 | +1.180               | —0.4447 | +0.1047 | 11.14               | 20 55.3                           | 1.3104 | 11 29.5                            | +1.17               |
|                                           | 30 | .192                 | .4418   | .1043   | 11.19               | 20 56.3                           | .3102  | 11 26.0                            | 1.31                |
| Juli                                      | 1  | .203                 | .4388   | .1038   | 11.25               | 20 57.3                           | .3100  | 11 22.5                            | 1.44                |
|                                           | 2  | .215                 | .4358   | .1033   | 11.31               | 20 58.2                           | .3098  | 11 19.0                            | 1.58                |
|                                           | 3  | .227                 | .4328   | .1027   | 11.37               | 20 59.2                           | .3096  | 11 15.5                            | 1.71                |
|                                           | 4  | .238                 | .4298   | .1021   | 11.43               | 21 0.1                            | .3094  | 11 12.0                            | 1.84                |
|                                           | 5  | .250                 | .4268   | .1014   | 11.49               | 21 1.0                            | .3091  | 11 8.4                             | 1.98                |
|                                           | 6  | .261                 | .4238   | .1007   | 11.55               | 21 1.9                            | .3088  | 11 4.9                             | 2.11                |
|                                           | 7  | .272                 | .4207   | .0999   | 11.62               | 21 2.7                            | .3085  | 11 1.4                             | 2.24                |
|                                           | 8  | .284                 | .4176   | .0991   | 11.68               | 21 3.5                            | .3082  | 10 57.8                            | 2.37                |
|                                           | 9  | +1.295               | —0.4145 | +0.0983 | 11.74               | 21 4.3                            | 1.3079 | 10 54.3                            | +2.50               |
|                                           | 10 | .306                 | .4113   | .0974   | 11.80               | 21 5.1                            | .3075  | 10 50.7                            | 2.62                |
|                                           | 11 | .317                 | .4082   | .0965   | 11.87               | 21 5.9                            | .3072  | 10 47.1                            | 2.75                |
|                                           | 12 | .329                 | .4051   | .0955   | 11.93               | 21 6.7                            | .3068  | 10 43.6                            | 2.88                |
|                                           | 13 | .340                 | .4020   | .0945   | 11.99               | 21 7.4                            | .3064  | 10 40.0                            | 3.00                |
|                                           | 14 | .351                 | .3989   | .0935   | 12.05               | 21 8.1                            | .3060  | 10 36.4                            | 3.13                |
|                                           | 15 | .362                 | .3957   | .0924   | 12.12               | 21 8.8                            | .3055  | 10 32.8                            | 3.25                |
|                                           | 16 | .372                 | .3925   | .0913   | 12.18               | 21 9.5                            | .3051  | 10 29.3                            | 3.38                |
|                                           | 17 | .383                 | .3893   | .0902   | 12.24               | 21 10.2                           | .3047  | 10 25.7                            | 3.50                |
|                                           | 18 | .394                 | .3861   | .0890   | 12.31               | 21 10.8                           | .3042  | 10 22.0                            | 3.63                |
|                                           | 19 | +1.405               | —0.3830 | +0.0878 | 12.37               | 21 11.5                           | 1.3037 | 10 18.4                            | +3.75               |
|                                           | 20 | .415                 | .3798   | .0866   | 12.43               | 21 12.1                           | .3033  | 10 14.8                            | 3.87                |
|                                           | 21 | .426                 | .3767   | .0854   | 12.50               | 21 12.7                           | .3028  | 10 11.2                            | 3.98                |
|                                           | 22 | .437                 | .3736   | .0841   | 12.56               | 21 13.3                           | .3022  | 10 7.5                             | 4.10                |
|                                           | 23 | .447                 | .3705   | .0828   | 12.62               | 21 13.8                           | .3017  | 10 3.8                             | 4.22                |
|                                           | 24 | .457                 | .3674   | .0814   | 12.69               | 21 14.4                           | .3012  | 10 0.2                             | 4.34                |
|                                           | 25 | .468                 | .3642   | .0800   | 12.75               | 21 14.9                           | .3006  | 9 56.5                             | 4.45                |
|                                           | 26 | .478                 | .3610   | .0786   | 12.81               | 21 15.4                           | .3000  | 9 52.8                             | 4.56                |
|                                           | 27 | .488                 | .3578   | .0772   | 12.88               | 21 15.9                           | .2995  | 9 49.1                             | 4.67                |
|                                           | 28 | .498                 | .3547   | .0758   | 12.94               | 21 16.4                           | .2989  | 9 45.4                             | 4.78                |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                  | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|------------------------------------|--------|-----------------------------------|---------------------|
| Juli                            | 29 | +1. <sup>s</sup> 508 | —0.3516 | +0.0744 | 13. <sup>h</sup> 00 | 21 <sup>h</sup> 16 <sup>m</sup> .9 | 1.2983 | 9 <sup>h</sup> 41 <sup>m</sup> .7 | +4. <sup>s</sup> 89 |
|                                 | 30 | .518                 | .3485   | .0730   | 13.06               | 21 17.4                            | .2978  | 9 38.0                            | 5.00                |
| August                          | 31 | .527                 | .3454   | .0715   | 13.13               | 21 17.8                            | .2972  | 9 34.2                            | 5.11                |
|                                 | 1  | .537                 | .3423   | .0700   | 13.19               | 21 18.3                            | .2966  | 9 30.5                            | 5.21                |
|                                 | 2  | .547                 | .3393   | .0685   | 13.25               | 21 18.7                            | .2959  | 9 26.7                            | 5.32                |
|                                 | 3  | .556                 | .3363   | .0670   | 13.31               | 21 19.1                            | .2953  | 9 22.9                            | 5.42                |
|                                 | 4  | .566                 | .3333   | .0655   | 13.37               | 21 19.5                            | .2947  | 9 19.2                            | 5.52                |
|                                 | 5  | .575                 | .3303   | .0639   | 13.43               | 21 19.9                            | .2941  | 9 15.4                            | 5.62                |
|                                 | 6  | .584                 | .3273   | .0624   | 13.49               | 21 20.3                            | .2935  | 9 11.5                            | 5.72                |
|                                 | 7  | .594                 | .3243   | .0609   | 13.55               | 21 20.7                            | .2929  | 9 7.7                             | 5.82                |
|                                 | 8  | +1.603               | —0.3214 | +0.0594 | 13.61               | 21 21.1                            | 1.2922 | 9 3.9                             | +5.91               |
|                                 | 9  | .612                 | .3185   | .0578   | 13.67               | 21 21.4                            | .2916  | 9 0.0                             | 6.00                |
|                                 | 10 | .620                 | .3156   | .0563   | 13.72               | 21 21.8                            | .2910  | 8 56.2                            | 6.09                |
|                                 | 11 | .629                 | .3127   | .0548   | 13.78               | 21 22.1                            | .2903  | 8 52.3                            | 6.18                |
|                                 | 12 | .638                 | .3098   | .0533   | 13.84               | 21 22.5                            | .2897  | 8 48.4                            | 6.27                |
|                                 | 13 | .647                 | .3070   | .0517   | 13.90               | 21 22.8                            | .2891  | 8 44.5                            | 6.36                |
|                                 | 14 | .655                 | .3042   | .0502   | 13.95               | 21 23.1                            | .2885  | 8 40.6                            | 6.44                |
|                                 | 15 | .664                 | .3014   | .0487   | 14.01               | 21 23.5                            | .2878  | 8 36.7                            | 6.53                |
|                                 | 16 | .672                 | .2986   | .0472   | 14.06               | 21 23.8                            | .2872  | 8 32.8                            | 6.61                |
|                                 | 17 | .681                 | .2958   | .0457   | 14.12               | 21 24.1                            | .2866  | 8 28.8                            | 6.69                |
|                                 | 18 | +1.689               | —0.2931 | +0.0443 | 14.17               | 21 24.4                            | 1.2860 | 8 24.8                            | +6.76               |
|                                 | 19 | .697                 | .2904   | .0429   | 14.23               | 21 24.7                            | .2854  | 8 20.9                            | 6.84                |
|                                 | 20 | .705                 | .2878   | .0415   | 14.28               | 21 25.0                            | .2848  | 8 16.9                            | 6.91                |
|                                 | 21 | .713                 | .2852   | .0401   | 14.33               | 21 25.2                            | .2842  | 8 12.9                            | 6.98                |
|                                 | 22 | .721                 | .2826   | .0387   | 14.38               | 21 25.5                            | .2837  | 8 8.9                             | 7.05                |
|                                 | 23 | .729                 | .2800   | .0373   | 14.44               | 21 25.8                            | .2831  | 8 4.8                             | 7.12                |
|                                 | 24 | .737                 | .2775   | .0360   | 14.49               | 21 26.1                            | .2825  | 8 0.8                             | 7.19                |
|                                 | 25 | .745                 | .2749   | .0347   | 14.54               | 21 26.4                            | .2820  | 7 56.7                            | 7.25                |
|                                 | 26 | .752                 | .2724   | .0334   | 14.59               | 21 26.7                            | .2814  | 7 52.7                            | 7.31                |
|                                 | 27 | .760                 | .2699   | .0322   | 14.64               | 21 26.9                            | .2809  | 7 48.6                            | 7.37                |
|                                 | 28 | +1.768               | —0.2675 | +0.0310 | 14.69               | 21 27.2                            | 1.2804 | 7 44.5                            | +7.43               |
|                                 | 29 | .775                 | .2651   | .0298   | 14.74               | 21 27.5                            | .2799  | 7 40.4                            | 7.49                |
|                                 | 30 | .782                 | .2627   | .0287   | 14.78               | 21 27.7                            | .2795  | 7 36.3                            | 7.54                |
|                                 | 31 | .790                 | .2604   | .0276   | 14.83               | 21 28.0                            | .2790  | 7 32.2                            | 7.59                |
| Septbr.                         | 1  | .797                 | .2581   | .0265   | 14.88               | 21 28.3                            | .2785  | 7 28.1                            | 7.64                |
|                                 | 2  | .804                 | .2558   | .0255   | 14.92               | 21 28.6                            | .2781  | 7 24.0                            | 7.69                |
|                                 | 3  | .811                 | .2535   | .0245   | 14.97               | 21 28.8                            | .2777  | 7 19.8                            | 7.73                |
|                                 | 4  | .819                 | .2513   | .0236   | 15.01               | 21 29.1                            | .2773  | 7 15.7                            | 7.77                |
|                                 | 5  | .826                 | .2491   | .0227   | 15.06               | 21 29.4                            | .2769  | 7 11.5                            | 7.81                |
|                                 | 6  | .833                 | .2469   | .0219   | 15.10               | 21 29.7                            | .2766  | 7 7.3                             | 7.85                |
|                                 | 7  | +1.840               | —0.2448 | +0.0211 | 15.14               | 21 30.0                            | 1.2762 | 7 3.2                             | +7.89               |
|                                 | 8  | .847                 | .2427   | .0203   | 15.19               | 21 30.2                            | .2759  | 6 59.0                            | 7.92                |
|                                 | 9  | .854                 | .2406   | .0196   | 15.23               | 21 30.5                            | .2756  | 6 54.8                            | 7.95                |
|                                 | 10 | .860                 | .2385   | .0189   | 15.27               | 21 30.8                            | .2753  | 6 50.6                            | 7.98                |
|                                 | 11 | .867                 | .2364   | .0183   | 15.31               | 21 31.1                            | .2750  | 6 46.3                            | 8.01                |
|                                 | 12 | .874                 | .2344   | .0177   | 15.35               | 21 31.4                            | .2748  | 6 42.1                            | 8.03                |
|                                 | 13 | .881                 | .2324   | .0172   | 15.39               | 21 31.7                            | .2746  | 6 37.9                            | 8.05                |
|                                 | 14 | .888                 | .2304   | .0167   | 15.43               | 21 32.0                            | .2744  | 6 33.6                            | 8.07                |
|                                 | 15 | .894                 | .2285   | .0163   | 15.47               | 21 32.3                            | .2742  | 6 29.4                            | 8.09                |
|                                 | 16 | .901                 | .2266   | .0160   | 15.51               | 21 32.7                            | .2741  | 6 25.1                            | 8.11                |

## 1856

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                  | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|------------------------------------|--------|-----------------------------------|---------------------|
| Septbr.                         | 17 | +1 <sup>s</sup> .908 | —0.2247 | +0.0157 | 15 <sup>h</sup> .55 | 21 <sup>h</sup> 33 <sup>m</sup> .0 | 1.2739 | 6 <sup>h</sup> 20 <sup>m</sup> .9 | +8 <sup>s</sup> .12 |
|                                 | 18 | .914                 | .2228   | .0155   | 15.58               | 21 33.3                            | .2738  | 6 16.6                            | 8.13                |
|                                 | 19 | .921                 | .2209   | .0153   | 15.62               | 21 33.6                            | .2738  | 6 12.4                            | 8.14                |
|                                 | 20 | .928                 | .2190   | .0152   | 15.66               | 21 34.0                            | .2737  | 6 8.1                             | 8.14                |
|                                 | 21 | .934                 | .2172   | .0151   | 15.70               | 21 34.3                            | .2737  | 6 3.8                             | 8.15                |
|                                 | 22 | .941                 | .2154   | .0151   | 15.73               | 21 34.6                            | .2737  | 5 59.6                            | 8.15                |
|                                 | 23 | .948                 | .2136   | .0151   | 15.77               | 21 35.0                            | .2737  | 5 55.3                            | 8.15                |
|                                 | 24 | .954                 | .2118   | .0152   | 15.80               | 21 35.4                            | .2737  | 5 51.0                            | 8.14                |
|                                 | 25 | .961                 | .2101   | .0153   | 15.84               | 21 35.7                            | .2738  | 5 46.7                            | 8.14                |
|                                 | 26 | .968                 | .2083   | .0155   | 15.87               | 21 36.1                            | .2738  | 5 42.4                            | 8.13                |
|                                 | 27 | +1.974               | —0.2066 | +0.0157 | 15.91               | 21 36.5                            | 1.2739 | 5 38.1                            | +8.12               |
|                                 | 28 | .981                 | .2048   | .0160   | 15.94               | 21 36.9                            | .2741  | 5 33.9                            | 8.11                |
|                                 | 29 | .988                 | .2031   | .0164   | 15.98               | 21 37.3                            | .2742  | 5 29.6                            | 8.09                |
|                                 | 30 | 1.994                | .2014   | .0169   | 16.01               | 21 37.7                            | .2744  | 5 25.3                            | 8.07                |
| Oktbr.                          | 1  | 2.001                | .1997   | .0174   | 16.05               | 21 38.1                            | .2746  | 5 21.0                            | 8.05                |
|                                 | 2  | .008                 | .1980   | .0179   | 16.08               | 21 38.5                            | .2749  | 5 16.8                            | 8.03                |
|                                 | 3  | .015                 | .1963   | .0185   | 16.11               | 21 38.9                            | .2751  | 5 12.5                            | 8.00                |
|                                 | 4  | .021                 | .1946   | .0191   | 16.15               | 21 39.3                            | .2754  | 5 8.2                             | 7.97                |
|                                 | 5  | .028                 | .1929   | .0198   | 16.18               | 21 39.8                            | .2757  | 5 4.0                             | 7.94                |
|                                 | 6  | .035                 | .1913   | .0205   | 16.22               | 21 40.2                            | .2760  | 4 59.7                            | 7.91                |
|                                 | 7  | +2.042               | —0.1896 | +0.0213 | 16.25               | 21 40.7                            | 1.2763 | 4 55.5                            | +7.87               |
|                                 | 8  | .049                 | .1880   | .0222   | 16.28               | 21 41.1                            | .2767  | 4 51.2                            | 7.84                |
|                                 | 9  | .056                 | .1863   | .0231   | 16.32               | 21 41.6                            | .2771  | 4 46.9                            | 7.80                |
|                                 | 10 | .064                 | .1847   | .0240   | 16.35               | 21 42.1                            | .2775  | 4 42.7                            | 7.76                |
|                                 | 11 | .071                 | .1830   | .0250   | 16.38               | 21 42.6                            | .2779  | 4 38.4                            | 7.71                |
|                                 | 12 | .078                 | .1814   | .0260   | 16.42               | 21 43.0                            | .2783  | 4 34.2                            | 7.67                |
|                                 | 13 | .085                 | .1797   | .0271   | 16.45               | 21 43.5                            | .2787  | 4 30.0                            | 7.72                |
|                                 | 14 | .093                 | .1780   | .0282   | 16.48               | 21 44.0                            | .2792  | 4 25.8                            | 7.57                |
|                                 | 15 | .100                 | .1763   | .0293   | 16.52               | 21 44.5                            | .2797  | 4 21.5                            | 7.51                |
|                                 | 16 | .108                 | .1746   | .0305   | 16.55               | 21 45.0                            | .2802  | 4 17.3                            | 7.46                |
|                                 | 17 | +2.115               | —0.1729 | +0.0317 | 16.59               | 21 45.6                            | 1.2807 | 4 13.1                            | +7.40               |
|                                 | 18 | .123                 | .1712   | .0330   | 16.62               | 21 46.1                            | .2813  | 4 9.0                             | 7.34                |
|                                 | 19 | .131                 | .1694   | .0343   | 16.66               | 21 46.6                            | .2818  | 4 4.8                             | 7.27                |
|                                 | 20 | .138                 | .1677   | .0356   | 16.69               | 21 47.2                            | .2824  | 4 0.6                             | 7.21                |
|                                 | 21 | .146                 | .1659   | .0370   | 16.73               | 21 47.7                            | .2829  | 3 56.4                            | 7.14                |
|                                 | 22 | .154                 | .1641   | .0384   | 16.76               | 21 48.3                            | .2835  | 3 52.3                            | 7.07                |
|                                 | 23 | .162                 | .1623   | .0398   | 16.80               | 21 48.8                            | .2841  | 3 48.1                            | 7.00                |
|                                 | 24 | .171                 | .1605   | .0412   | 16.83               | 21 49.4                            | .2847  | 3 44.0                            | 6.93                |
|                                 | 25 | .179                 | .1586   | .0426   | 16.87               | 21 50.0                            | .2853  | 3 39.8                            | 6.85                |
|                                 | 26 | .187                 | .1567   | .0441   | 16.91               | 21 50.6                            | .2859  | 3 35.7                            | 6.77                |
|                                 | 27 | +2.196               | —0.1548 | +0.0456 | 16.95               | 21 51.2                            | 1.2865 | 3 31.6                            | +6.69               |
|                                 | 28 | .204                 | .1529   | .0471   | 16.99               | 21 51.7                            | .2872  | 3 27.5                            | 6.61                |
|                                 | 29 | .213                 | .1510   | .0487   | 17.02               | 21 52.3                            | .2878  | 3 23.4                            | 6.53                |
|                                 | 30 | .222                 | .1490   | .0502   | 17.06               | 21 52.9                            | .2885  | 3 19.3                            | 6.44                |
|                                 | 31 | .230                 | .1470   | .0518   | 17.10               | 21 53.5                            | .2891  | 3 15.2                            | 6.35                |
| Novbr.                          | 1  | .239                 | .1450   | .0534   | 17.14               | 21 54.1                            | .2898  | 3 11.2                            | 6.26                |
|                                 | 2  | .248                 | .1429   | .0550   | 17.19               | 21 54.7                            | .2904  | 3 7.1                             | 6.17                |
|                                 | 3  | .257                 | .1408   | .0566   | 17.23               | 21 55.3                            | .2911  | 3 3.1                             | 6.08                |
|                                 | 4  | .266                 | .1387   | .0582   | 17.27               | 21 55.9                            | .2917  | 2 59.1                            | 5.98                |
|                                 | 5  | .276                 | .1366   | .0598   | 17.31               | 21 56.5                            | .2924  | 2 55.0                            | 5.88                |

## 1856

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                  | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|------------------------------------|--------|-----------------------------------|---------------------|
| Novbr.                          | 6  | +2 <sup>s</sup> .285 | —0.1345 | +0.0614 | 17 <sup>h</sup> .35 | 21 <sup>h</sup> 57 <sup>m</sup> .1 | 1.2930 | 2 <sup>h</sup> 51 <sup>m</sup> .0 | +5 <sup>s</sup> .78 |
|                                 | 7  | .294                 | .1323   | .0630   | 17.40               | 21 57.8                            | .2937  | 2 47.0                            | 5.68                |
|                                 | 8  | .304                 | .1301   | .0646   | 17.44               | 21 58.4                            | .2944  | 2 43.0                            | 5.58                |
|                                 | 9  | .314                 | .1278   | .0662   | 17.49               | 21 59.0                            | .2950  | 2 39.0                            | 5.47                |
|                                 | 10 | .323                 | .1255   | .0678   | 17.54               | 21 59.6                            | .2957  | 2 35.1                            | 5.37                |
|                                 | 11 | .333                 | .1232   | .0694   | 17.58               | 22 0.2                             | .2963  | 2 31.1                            | 5.26                |
|                                 | 12 | .343                 | .1208   | .0709   | 17.63               | 22 0.8                             | .2969  | 2 27.2                            | 5.15                |
|                                 | 13 | .353                 | .1184   | .0724   | 17.68               | 22 1.4                             | .2975  | 2 23.2                            | 5.04                |
|                                 | 14 | .363                 | .1159   | .0739   | 17.73               | 22 2.0                             | .2981  | 2 19.3                            | 4.92                |
|                                 | 15 | .373                 | .1134   | .0754   | 17.78               | 22 2.7                             | .2988  | 2 15.4                            | 4.81                |
|                                 | 16 | +2.384               | —0.1109 | +0.0769 | 17.83               | 22 3.3                             | 1.2994 | 2 11.4                            | +4.69               |
|                                 | 17 | .394                 | .1083   | .0784   | 17.88               | 22 3.9                             | .2999  | 2 7.5                             | 4.57                |
|                                 | 18 | .405                 | .1057   | .0799   | 17.93               | 22 4.5                             | .3005  | 2 3.6                             | 4.45                |
|                                 | 19 | .415                 | .1031   | .0813   | 17.98               | 22 5.1                             | .3011  | 1 59.8                            | 4.33                |
|                                 | 20 | .426                 | .1004   | .0827   | 18.04               | 22 5.7                             | .3017  | 1 55.9                            | 4.21                |
|                                 | 21 | .437                 | .0977   | .0841   | 18.09               | 22 6.3                             | .3023  | 1 52.0                            | 4.09                |
|                                 | 22 | .448                 | .0949   | .0855   | 18.15               | 22 6.9                             | .3028  | 1 48.2                            | 3.96                |
|                                 | 23 | .459                 | .0921   | .0868   | 18.20               | 22 7.5                             | .3033  | 1 44.3                            | 3.83                |
|                                 | 24 | .470                 | .0893   | .0881   | 18.26               | 22 8.1                             | .3039  | 1 40.5                            | 3.71                |
|                                 | 25 | .481                 | .0864   | .0894   | 18.32               | 22 8.6                             | .3044  | 1 36.6                            | 3.58                |
|                                 | 26 | +2.492               | —0.0835 | +0.0906 | 18.38               | 22 9.2                             | 1.3048 | 1 32.8                            | +3.45               |
|                                 | 27 | .503                 | .0805   | .0918   | 18.44               | 22 9.8                             | .3053  | 1 29.0                            | 3.32                |
|                                 | 28 | .515                 | .0775   | .0930   | 18.50               | 22 10.3                            | .3058  | 1 25.2                            | 3.19                |
|                                 | 29 | .526                 | .0745   | .0941   | 18.56               | 22 10.9                            | .3062  | 1 21.4                            | 3.05                |
|                                 | 30 | .537                 | .0714   | .0952   | 18.62               | 22 11.4                            | .3066  | 1 17.5                            | 2.92                |
| Dezbr.                          | 1  | .549                 | .0683   | .0962   | 18.68               | 22 12.0                            | .3070  | 1 13.7                            | 2.78                |
|                                 | 2  | .561                 | .0652   | .0972   | 18.74               | 22 12.5                            | .3074  | 1 9.9                             | 2.65                |
|                                 | 3  | .572                 | .0621   | .0981   | 18.81               | 22 13.1                            | .3078  | 1 6.2                             | 2.51                |
|                                 | 4  | .584                 | .0589   | .0990   | 18.87               | 22 13.6                            | .3082  | 1 2.4                             | 2.37                |
|                                 | 5  | .596                 | .0557   | .0998   | 18.94               | 22 14.1                            | .3085  | 0 58.6                            | 2.24                |
|                                 | 6  | +2.608               | —0.0524 | +0.1006 | 19.00               | 22 14.6                            | 1.3088 | 0 54.8                            | +2.10               |
|                                 | 7  | .620                 | .0491   | .1014   | 19.07               | 22 15.1                            | .3091  | 0 51.1                            | 1.95                |
|                                 | 8  | .632                 | .0458   | .1021   | 19.13               | 22 15.6                            | .3094  | 0 47.3                            | 1.81                |
|                                 | 9  | .644                 | .0424   | .1028   | 19.20               | 22 16.1                            | .3097  | 0 43.5                            | 1.67                |
|                                 | 10 | .656                 | .0390   | .1034   | 19.27               | 22 16.5                            | .3099  | 0 39.8                            | 1.53                |
|                                 | 11 | .668                 | .0356   | .1039   | 19.34               | 22 17.0                            | .3101  | 0 36.0                            | 1.39                |
|                                 | 12 | .680                 | .0322   | .1044   | 19.41               | 22 17.4                            | .3103  | 0 32.3                            | 1.25                |
|                                 | 13 | .692                 | .0287   | .1048   | 19.48               | 22 17.9                            | .3105  | 0 28.5                            | 1.10                |
|                                 | 14 | .704                 | .0252   | .1052   | 19.55               | 22 18.3                            | .3106  | 0 24.8                            | 0.96                |
|                                 | 15 | .716                 | .0217   | .1056   | 19.62               | 22 18.7                            | .3108  | 0 21.1                            | 0.82                |
|                                 | 16 | +2.728               | —0.0181 | +0.1059 | 19.69               | 22 19.2                            | 1.3109 | 0 17.3                            | +0.67               |
|                                 | 17 | .741                 | .0145   | .1061   | 19.76               | 22 19.6                            | .3110  | 0 13.6                            | 0.53                |
|                                 | 18 | .753                 | .0109   | .1063   | 19.83               | 22 20.0                            | .3110  | 0 9.9                             | 0.38                |
|                                 | 19 | .765                 | .0073   | .1064   | 19.91               | 22 20.4                            | .3111  | 0 6.1                             | 0.24                |
|                                 | 20 | .778                 | —0.0036 | .1064   | 19.98               | 22 20.7                            | .3111  | 0 2.4                             | +0.09               |
|                                 | 21 | .790                 | 0.0000  | .1064   | 20.05               | 22 21.1                            | .3111  | 23 58.7                           | —0.05               |
|                                 | 22 | .802                 | +0.0037 | .1064   | 20.13               | 22 21.5                            | .3111  | 23 54.9                           | 0.20                |
|                                 | 23 | .814                 | .0074   | .1063   | 20.20               | 22 21.8                            | .3111  | 23 51.2                           | 0.34                |
|                                 | 24 | .827                 | .0111   | .1062   | 20.27               | 22 22.1                            | .3110  | 23 47.4                           | 0.49                |
|                                 | 25 | .839                 | .0148   | .1060   | 20.35               | 22 22.5                            | .3109  | 23 43.7                           | 0.63                |

## 1856

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g      | G                                  | log h  | H                                  | i      |
|---------------------------------|----|----------------------|---------|---------|--------|------------------------------------|--------|------------------------------------|--------|
| Dezbr.                          | 26 | +2 <sup>s</sup> .851 | +0.0185 | +0.1057 | 20".42 | 22 <sup>h</sup> 22 <sup>m</sup> .8 | 1.3108 | 23 <sup>h</sup> 39 <sup>m</sup> .9 | —0".78 |
|                                 | 27 | .863                 | .0222   | .1054   | 20.50  | 22 23.1                            | .3107  | 23 36.2                            | 0.92   |
|                                 | 28 | .875                 | .0260   | .1050   | 20.57  | 22 23.4                            | .3105  | 23 32.4                            | 1.06   |
|                                 | 29 | .888                 | .0297   | .1046   | 20.65  | 22 23.7                            | .3104  | 23 28.7                            | 1.21   |
|                                 | 30 | .900                 | .0335   | .1042   | 20.72  | 22 24.0                            | .3102  | 23 24.9                            | 1.35   |
|                                 | 31 | .912                 | .0373   | .1037   | 20.80  | 22 24.3                            | .3100  | 23 21.2                            | 1.49   |

## 1857

|         |    |                      |         |         |       |                                    |        |                                    |        |
|---------|----|----------------------|---------|---------|-------|------------------------------------|--------|------------------------------------|--------|
| Januar  | 1  | —0 <sup>s</sup> .147 | —0.5759 | +0.1029 | 8".50 | 17 <sup>h</sup> 34 <sup>m</sup> .1 | 1.3097 | 23 <sup>h</sup> 17 <sup>m</sup> .4 | —1".63 |
|         | 2  | .135                 | .5758   | .1023   | 8.51  | 17 36.2                            | .3095  | 23 13.6                            | 1.77   |
|         | 3  | .123                 | .5757   | .1016   | 8.51  | 17 38.3                            | .3092  | 23 9.9                             | 1.92   |
|         | 4  | .111                 | .5755   | .1009   | 8.51  | 17 40.4                            | .3089  | 23 6.1                             | 2.06   |
|         | 5  | .100                 | .5752   | .1001   | 8.52  | 17 42.5                            | .3086  | 23 2.3                             | 2.20   |
|         | 6  | .088                 | .5749   | .0992   | 8.52  | 17 44.6                            | .3083  | 22 58.5                            | 2.34   |
|         | 7  | .076                 | .5745   | .0983   | 8.53  | 17 46.7                            | .3079  | 22 54.7                            | 2.47   |
|         | 8  | .064                 | .5741   | .0974   | 8.54  | 17 48.8                            | .3075  | 22 50.9                            | 2.61   |
|         | 9  | .053                 | .5736   | .0964   | 8.55  | 17 50.8                            | .3072  | 22 47.1                            | 2.75   |
|         | 10 | .041                 | .5730   | .0954   | 8.56  | 17 52.8                            | .3068  | 22 43.3                            | 2.89   |
|         | 11 | —0.030               | —0.5724 | +0.0944 | 8.57  | 17 54.9                            | 1.3063 | 22 39.5                            | —3.02  |
|         | 12 | .018                 | .5717   | .0933   | 8.59  | 17 56.9                            | .3059  | 22 35.7                            | 3.16   |
|         | 13 | —0.007               | .5710   | .0921   | 8.60  | 17 58.9                            | .3054  | 22 31.8                            | 3.29   |
|         | 14 | +0.005               | .5702   | .0909   | 8.62  | 18 0.9                             | .3049  | 22 28.0                            | 3.42   |
|         | 15 | .016                 | .5693   | .0897   | 8.64  | 18 2.8                             | .3045  | 22 24.2                            | 3.55   |
|         | 16 | .027                 | .5684   | .0884   | 8.65  | 18 4.7                             | .3040  | 22 20.3                            | 3.68   |
|         | 17 | .038                 | .5674   | .0871   | 8.67  | 18 6.6                             | .3035  | 22 16.4                            | 3.81   |
|         | 18 | .049                 | .5664   | .0858   | 8.70  | 18 8.5                             | .3029  | 22 12.5                            | 3.94   |
|         | 19 | .060                 | .5653   | .0845   | 8.72  | 18 10.4                            | .3024  | 22 8.7                             | 4.06   |
|         | 20 | .071                 | .5642   | .0831   | 8.74  | 18 12.2                            | .3018  | 22 4.8                             | 4.19   |
|         | 21 | +0.082               | —0.5631 | +0.0817 | 8.76  | 18 14.0                            | 1.3013 | 22 0.9                             | —4.31  |
|         | 22 | .092                 | .5619   | .0802   | 8.78  | 18 15.8                            | .3007  | 21 57.0                            | 4.43   |
|         | 23 | .103                 | .5607   | .0787   | 8.81  | 18 17.6                            | .3001  | 21 53.1                            | 4.55   |
|         | 24 | .113                 | .5594   | .0772   | 8.83  | 18 19.3                            | .2995  | 21 49.1                            | 4.67   |
|         | 25 | .124                 | .5581   | .0758   | 8.86  | 18 21.0                            | .2989  | 21 45.2                            | 4.79   |
|         | 26 | .134                 | .5568   | .0743   | 8.89  | 18 22.7                            | .2983  | 21 41.2                            | 4.91   |
|         | 27 | .144                 | .5555   | .0728   | 8.91  | 18 24.3                            | .2977  | 21 37.3                            | 5.02   |
|         | 28 | .154                 | .5541   | .0712   | 8.94  | 18 25.9                            | .2970  | 21 33.3                            | 5.14   |
|         | 29 | .164                 | .5527   | .0695   | 8.97  | 18 27.5                            | .2964  | 21 29.3                            | 5.25   |
|         | 30 | .174                 | .5513   | .0679   | 9.00  | 18 29.1                            | .2957  | 21 25.3                            | 5.36   |
|         | 31 | +0.184               | —0.5499 | +0.0663 | 9.03  | 18 30.7                            | 1.2951 | 21 21.3                            | —5.47  |
| Februar | 1  | .194                 | .5484   | .0647   | 9.06  | 18 32.2                            | .2944  | 21 17.3                            | 5.57   |
|         | 2  | .204                 | .5469   | .0631   | 9.08  | 18 33.7                            | .2937  | 21 13.3                            | 5.67   |
|         | 3  | .213                 | .5454   | .0615   | 9.11  | 18 35.1                            | .2931  | 21 9.2                             | 5.78   |
|         | 4  | .223                 | .5439   | .0599   | 9.14  | 18 36.6                            | .2924  | 21 5.2                             | 5.88   |
|         | 5  | .232                 | .5424   | .0583   | 9.18  | 18 38.0                            | .2918  | 21 1.1                             | 5.98   |
|         | 6  | .241                 | .5408   | .0567   | 9.21  | 18 39.4                            | .2911  | 20 57.1                            | 6.07   |
|         | 7  | .250                 | .5393   | .0551   | 9.24  | 18 40.8                            | .2904  | 20 53.0                            | 6.17   |
|         | 8  | .259                 | .5377   | .0535   | 9.27  | 18 42.1                            | .2898  | 20 48.9                            | 6.26   |
|         | 9  | .268                 | .5362   | .0519   | 9.30  | 18 43.4                            | .2891  | 20 44.8                            | 6.35   |

| $12^h$<br>M. Z. Berlin | f      | x       | y       | g     | G                                 | log h  | H                                 | i     |
|------------------------|--------|---------|---------|-------|-----------------------------------|--------|-----------------------------------|-------|
| Februar 10             | +0.277 | -0.5347 | +0.0503 | 9.33  | 18 <sup>h</sup> 44 <sup>m</sup> 7 | 1.2885 | 20 <sup>h</sup> 40 <sup>m</sup> 7 | -6.44 |
| 11                     | .286   | .5332   | .0488   | 9.36  | 18 46.0                           | .2878  | 20 36.6                           | 6.53  |
| 12                     | .294   | .5317   | .0472   | 9.39  | 18 47.2                           | .2872  | 20 32.5                           | 6.61  |
| 13                     | .303   | .5302   | .0457   | 9.42  | 18 48.4                           | .2866  | 20 28.3                           | 6.70  |
| 14                     | .311   | .5286   | .0441   | 9.45  | 18 49.6                           | .2859  | 20 24.1                           | 6.78  |
| 15                     | .320   | .5271   | .0426   | 9.48  | 18 50.8                           | .2853  | 20 20.0                           | 6.85  |
| 16                     | .328   | .5255   | .0411   | 9.51  | 18 52.0                           | .2847  | 20 15.8                           | 6.93  |
| 17                     | .336   | .5240   | .0397   | 9.54  | 18 53.2                           | .2841  | 20 11.6                           | 7.01  |
| 18                     | .344   | .5225   | .0383   | 9.57  | 18 54.3                           | .2835  | 20 7.4                            | 7.08  |
| 19                     | .352   | .5210   | .0369   | 9.60  | 18 55.4                           | .2829  | 20 3.2                            | 7.15  |
| 20                     | +0.360 | -0.5195 | +0.0355 | 9.63  | 18 56.5                           | 1.2823 | 19 59.0                           | -7.22 |
| 21                     | .368   | .5181   | .0342   | 9.66  | 18 57.6                           | .2818  | 19 54.8                           | 7.28  |
| 22                     | .376   | .5167   | .0328   | 9.69  | 18 58.6                           | .2812  | 19 50.6                           | 7.34  |
| 23                     | .383   | .5153   | .0315   | 9.72  | 18 59.7                           | .2806  | 19 46.3                           | 7.41  |
| 24                     | .391   | .5139   | .0302   | 9.75  | 19 0.8                            | .2801  | 19 42.1                           | 7.46  |
| 25                     | .399   | .5125   | .0290   | 9.78  | 19 1.8                            | .2796  | 19 37.8                           | 7.52  |
| 26                     | .406   | .5111   | .0279   | 9.80  | 19 2.8                            | .2791  | 19 33.5                           | 7.57  |
| 27                     | .413   | .5097   | .0268   | 9.83  | 19 3.8                            | .2787  | 19 29.3                           | 7.63  |
| 28                     | .421   | .5084   | .0258   | 9.86  | 19 4.7                            | .2782  | 19 25.0                           | 7.68  |
| März 1                 | .428   | .5071   | .0248   | 9.88  | 19 5.7                            | .2778  | 19 20.7                           | 7.72  |
| 2                      | +0.435 | -0.5058 | +0.0238 | 9.91  | 19 6.7                            | 1.2774 | 19 16.4                           | -7.77 |
| 3                      | .443   | .5046   | .0229   | 9.93  | 19 7.6                            | .2770  | 19 12.1                           | 7.81  |
| 4                      | .450   | .5034   | .0220   | 9.96  | 19 8.6                            | .2766  | 19 7.8                            | 7.85  |
| 5                      | .457   | .5022   | .0212   | 9.98  | 19 9.5                            | .2763  | 19 3.5                            | 7.88  |
| 6                      | .464   | .5010   | .0204   | 10.01 | 19 10.4                           | .2759  | 19 59.2                           | 7.92  |
| 7                      | .470   | .4998   | .0196   | 10.03 | 19 11.4                           | .2756  | 18 54.9                           | 7.95  |
| 8                      | .477   | .4987   | .0189   | 10.05 | 19 12.3                           | .2753  | 18 50.6                           | 7.98  |
| 9                      | .484   | .4976   | .0183   | 10.07 | 19 13.2                           | .2750  | 18 46.2                           | 8.01  |
| 10                     | .491   | .4966   | .0177   | 10.10 | 19 14.1                           | .2748  | 18 41.9                           | 8.03  |
| 11                     | .498   | .4956   | .0172   | 10.12 | 19 15.0                           | .2745  | 18 37.6                           | 8.06  |
| 12                     | +0.505 | -0.4945 | +0.0167 | 10.14 | 19 15.9                           | 1.2743 | 18 33.3                           | -8.08 |
| 13                     | .512   | .4934   | .0163   | 10.16 | 19 16.8                           | .2742  | 18 28.9                           | 8.09  |
| 14                     | .519   | .4924   | .0159   | 10.18 | 19 17.7                           | .2740  | 18 24.6                           | 8.11  |
| 15                     | .525   | .4915   | .0156   | 10.20 | 19 18.6                           | .2739  | 18 20.3                           | 8.12  |
| 16                     | .532   | .4906   | .0154   | 10.21 | 19 19.5                           | .2738  | 18 15.9                           | 8.13  |
| 17                     | .539   | .4897   | .0152   | 10.23 | 19 20.4                           | .2737  | 18 11.6                           | 8.14  |
| 18                     | .545   | .4888   | .0151   | 10.25 | 19 21.3                           | .2737  | 18 7.3                            | 8.14  |
| 19                     | .552   | .4880   | .0150   | 10.27 | 19 22.2                           | .2736  | 18 3.0                            | 8.15  |
| 20                     | .559   | .4872   | .0150   | 10.28 | 19 23.1                           | .2736  | 17 58.6                           | 8.15  |
| 21                     | .565   | .4864   | .0151   | 10.30 | 19 24.0                           | .2737  | 17 54.3                           | 8.15  |
| 22                     | +0.572 | -0.4856 | +0.0152 | 10.32 | 19 24.9                           | 1.2737 | 17 50.0                           | -8.14 |
| 23                     | .579   | .4849   | .0154   | 10.33 | 19 25.8                           | .2738  | 17 45.7                           | 8.13  |
| 24                     | .585   | .4841   | .0156   | 10.35 | 19 26.7                           | .2739  | 17 41.3                           | 8.12  |
| 25                     | .592   | .4834   | .0159   | 10.36 | 19 27.6                           | .2740  | 17 37.0                           | 8.11  |
| 26                     | .599   | .4827   | .0162   | 10.37 | 19 28.6                           | .2742  | 17 32.7                           | 8.10  |
| 27                     | .606   | .4820   | .0166   | 10.39 | 19 29.5                           | .2743  | 17 28.4                           | 8.08  |
| 28                     | .612   | .4813   | .0170   | 10.40 | 19 30.4                           | .2745  | 17 24.1                           | 8.06  |
| 29                     | .619   | .4807   | .0175   | 10.41 | 19 31.4                           | .2747  | 17 19.8                           | 8.04  |
| 30                     | .626   | .4801   | .0180   | 10.43 | 19 32.3                           | .2749  | 17 15.6                           | 8.02  |
| 31                     | .633   | .4795   | .0186   | 10.44 | 19 33.3                           | .2751  | 17 11.3                           | 7.99  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f       | x       | y       | g     | G                                 | log h  | H                                | i     |
|---------------------------------|----|---------|---------|---------|-------|-----------------------------------|--------|----------------------------------|-------|
| April                           | 1  | +0.8640 | —0.4789 | +0.0192 | 10.45 | 19 <sup>h</sup> 34 <sup>m</sup> 3 | 1.2754 | 17 <sup>h</sup> 7 <sup>m</sup> 1 | —7.96 |
|                                 | 2  | .647    | .4783   | .0199   | 10.46 | 19 35.3                           | .2757  | 17 2.8                           | 7.93  |
|                                 | 3  | .654    | .4777   | .0207   | 10.47 | 19 36.2                           | .2761  | 16 58.6                          | 7.90  |
|                                 | 4  | .661    | .4772   | .0215   | 10.48 | 19 37.2                           | .2764  | 16 54.3                          | 7.87  |
|                                 | 5  | .668    | .4766   | .0224   | 10.49 | 19 38.2                           | .2768  | 16 50.1                          | 7.83  |
|                                 | 6  | .675    | .4761   | .0233   | 10.51 | 19 39.2                           | .2772  | 16 45.9                          | 7.79  |
|                                 | 7  | .682    | .4755   | .0242   | 10.52 | 19 40.2                           | .2776  | 16 41.7                          | 7.75  |
|                                 | 8  | .689    | .4750   | .0252   | 10.53 | 19 41.2                           | .2780  | 16 37.5                          | 7.70  |
|                                 | 9  | .696    | .4745   | .0262   | 10.54 | 19 42.3                           | .2784  | 16 33.3                          | 7.65  |
|                                 | 10 | .704    | .4740   | .0273   | 10.55 | 19 43.3                           | .2789  | 16 29.1                          | 7.60  |
|                                 | 11 | +0.711  | —0.4735 | +0.0284 | 10.56 | 19 44.4                           | 1.2793 | 16 24.9                          | —7.55 |
|                                 | 12 | .718    | .4730   | .0295   | 10.57 | 19 45.4                           | .2798  | 16 20.8                          | 7.50  |
|                                 | 13 | .726    | .4725   | .0307   | 10.58 | 19 46.5                           | .2803  | 16 16.6                          | 7.44  |
|                                 | 14 | .734    | .4720   | .0319   | 10.59 | 19 47.6                           | .2808  | 16 12.5                          | 7.39  |
|                                 | 15 | .741    | .4715   | .0331   | 10.60 | 19 48.7                           | .2813  | 16 8.4                           | 7.33  |
|                                 | 16 | .749    | .4710   | .0344   | 10.61 | 19 49.8                           | .2818  | 16 4.3                           | 7.27  |
|                                 | 17 | .757    | .4705   | .0357   | 10.62 | 19 50.9                           | .2824  | 16 0.2                           | 7.20  |
|                                 | 18 | .764    | .4699   | .0370   | 10.63 | 19 52.0                           | .2829  | 15 56.1                          | 7.14  |
|                                 | 19 | .772    | .4694   | .0383   | 10.64 | 19 53.2                           | .2835  | 15 52.0                          | 7.07  |
|                                 | 20 | .781    | .4688   | .0397   | 10.65 | 19 54.3                           | .2841  | 15 48.0                          | 7.00  |
|                                 | 21 | +0.789  | —0.4682 | +0.0411 | 10.66 | 19 55.5                           | 1.2847 | 15 43.9                          | —6.93 |
|                                 | 22 | .797    | .4676   | .0425   | 10.68 | 19 56.7                           | .2853  | 15 39.9                          | 6.85  |
|                                 | 23 | .805    | .4670   | .0440   | 10.69 | 19 57.9                           | .2859  | 15 35.9                          | 6.78  |
|                                 | 24 | .813    | .4664   | .0455   | 10.70 | 19 59.0                           | .2865  | 15 31.9                          | 6.70  |
|                                 | 25 | .822    | .4658   | .0470   | 10.71 | 20 0.2                            | .2871  | 15 27.9                          | 6.62  |
|                                 | 26 | .830    | .4651   | .0485   | 10.73 | 20 1.4                            | .2877  | 15 23.9                          | 6.54  |
|                                 | 27 | .839    | .4644   | .0500   | 10.74 | 20 2.6                            | .2884  | 15 19.9                          | 6.46  |
|                                 | 28 | .847    | .4637   | .0515   | 10.75 | 20 3.9                            | .2890  | 15 16.0                          | 6.37  |
|                                 | 29 | .856    | .4630   | .0531   | 10.77 | 20 5.1                            | .2896  | 15 12.0                          | 6.28  |
|                                 | 30 | .865    | .4622   | .0546   | 10.78 | 20 6.3                            | .2903  | 15 8.1                           | 6.19  |
| Mai                             | 1  | +0.874  | —0.4614 | +0.0562 | 10.80 | 20 7.6                            | 1.2909 | 15 4.2                           | —6.10 |
|                                 | 2  | .883    | .4606   | .0577   | 10.82 | 20 8.8                            | .2915  | 15 0.3                           | 6.01  |
|                                 | 3  | .892    | .4598   | .0593   | 10.83 | 20 10.1                           | .2922  | 14 56.4                          | 5.92  |
|                                 | 4  | .901    | .4589   | .0608   | 10.85 | 20 11.4                           | .2928  | 14 52.6                          | 5.82  |
|                                 | 5  | .910    | .4580   | .0624   | 10.87 | 20 12.7                           | .2934  | 14 48.7                          | 5.73  |
|                                 | 6  | .920    | .4571   | .0639   | 10.89 | 20 13.9                           | .2940  | 14 44.9                          | 5.63  |
|                                 | 7  | .929    | .4561   | .0654   | 10.91 | 20 15.2                           | .2947  | 14 41.1                          | 5.53  |
|                                 | 8  | .938    | .4551   | .0669   | 10.93 | 20 16.5                           | .2953  | 14 37.2                          | 5.43  |
|                                 | 9  | .948    | .4541   | .0684   | 10.95 | 20 17.8                           | .2959  | 14 33.4                          | 5.32  |
|                                 | 10 | .958    | .4530   | .0699   | 10.97 | 20 19.1                           | .2965  | 14 29.6                          | 5.22  |
|                                 | 11 | +0.968  | —0.4519 | +0.0713 | 10.99 | 20 20.4                           | 1.2971 | 14 25.8                          | —5.11 |
|                                 | 12 | .977    | .4508   | .0728   | 11.01 | 20 21.7                           | .2977  | 14 22.1                          | 5.00  |
|                                 | 13 | .987    | .4496   | .0743   | 11.03 | 20 23.0                           | .2983  | 14 18.3                          | 4.89  |
|                                 | 14 | 0.997   | .4484   | .0758   | 11.06 | 20 24.3                           | .2989  | 14 14.6                          | 4.78  |
|                                 | 15 | 1.007   | .4472   | .0772   | 11.09 | 20 25.7                           | .2994  | 14 10.8                          | 4.67  |
|                                 | 16 | .017    | .4459   | .0786   | 11.11 | 20 27.0                           | .3000  | 14 7.1                           | 4.56  |
|                                 | 17 | .028    | .4445   | .0800   | 11.14 | 20 28.3                           | .3006  | 14 3.4                           | 4.45  |
|                                 | 18 | .038    | .4431   | .0814   | 11.17 | 20 29.6                           | .3011  | 13 59.7                          | 4.33  |
|                                 | 19 | .048    | .4417   | .0827   | 11.20 | 20 30.9                           | .3017  | 13 56.0                          | 4.22  |
|                                 | 20 | .059    | .4402   | .0840   | 11.23 | 20 32.2                           | .3022  | 13 52.3                          | 4.10  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                  | G                                 | log h  | H                                 | i                  |
|---------------------------------|----|----------------------|---------|---------|--------------------|-----------------------------------|--------|-----------------------------------|--------------------|
| Mai                             | 21 | +1. <sup>s</sup> 070 | —0.4387 | +0.0853 | 11 <sup>h</sup> 26 | 20 <sup>h</sup> 33 <sup>m</sup> 5 | 1.3027 | 13 <sup>h</sup> 48 <sup>m</sup> 6 | —3 <sup>h</sup> 98 |
|                                 | 22 | .080                 | .4371   | .0866   | 11.29              | 20 34.8                           | .3032  | 13 45.0                           | 3.86               |
|                                 | 23 | .091                 | .4355   | .0878   | 11.32              | 20 36.1                           | .3037  | 13 41.3                           | 3.74               |
|                                 | 24 | .102                 | .4338   | .0890   | 11.35              | 20 37.3                           | .3042  | 13 37.7                           | 3.61               |
|                                 | 25 | .113                 | .4321   | .0902   | 11.39              | 20 38.6                           | .3047  | 13 34.1                           | 3.49               |
|                                 | 26 | .124                 | .4303   | .0913   | 11.42              | 20 39.9                           | .3051  | 13 30.5                           | 3.37               |
|                                 | 27 | .135                 | .4285   | .0924   | 11.46              | 20 41.1                           | .3056  | 13 26.9                           | 3.25               |
|                                 | 28 | .146                 | .4267   | .0935   | 11.50              | 20 42.4                           | .3060  | 13 23.3                           | 3.12               |
|                                 | 29 | .157                 | .4248   | .0946   | 11.53              | 20 43.7                           | .3064  | 13 19.7                           | 2.99               |
|                                 | 30 | .168                 | .4229   | .0956   | 11.57              | 20 44.9                           | .3068  | 13 16.1                           | 2.86               |
| Juni                            | 31 | +1.179               | —0.4209 | +0.0966 | 11.61              | 20 46.1                           | 1.3072 | 13 12.5                           | —2.74              |
|                                 | 1  | .190                 | .4189   | .0975   | 11.65              | 20 47.4                           | .3076  | 13 8.9                            | 2.61               |
|                                 | 2  | .202                 | .4168   | .0984   | 11.69              | 20 48.6                           | .3079  | 13 5.3                            | 2.48               |
|                                 | 3  | .213                 | .4147   | .0992   | 11.73              | 20 49.8                           | .3082  | 13 1.8                            | 2.35               |
|                                 | 4  | .224                 | .4126   | .1000   | 11.78              | 20 51.0                           | .3085  | 12 58.2                           | 2.22               |
|                                 | 5  | .236                 | .4104   | .1007   | 11.82              | 20 52.2                           | .3088  | 12 54.7                           | 2.09               |
|                                 | 6  | .247                 | .4081   | .1014   | 11.87              | 20 53.3                           | .3091  | 12 51.1                           | 1.96               |
|                                 | 7  | .259                 | .4058   | .1021   | 11.91              | 20 54.5                           | .3094  | 12 47.6                           | 1.82               |
|                                 | 8  | .270                 | .4035   | .1027   | 11.96              | 20 55.7                           | .3096  | 12 44.0                           | 1.69               |
|                                 | 9  | .282                 | .4011   | .1033   | 12.01              | 20 56.8                           | .3099  | 12 40.5                           | 1.56               |
|                                 | 10 | +1.294               | —0.3987 | +0.1038 | 12.06              | 20 57.9                           | 1.3101 | 12 37.0                           | —1.42              |
|                                 | 11 | .305                 | .3962   | .1043   | 12.11              | 20 59.0                           | .3103  | 12 33.5                           | 1.29               |
|                                 | 12 | .317                 | .3937   | .1047   | 12.16              | 21 0.1                            | .3104  | 12 30.0                           | 1.16               |
|                                 | 13 | .329                 | .3912   | .1051   | 12.21              | 21 1.2                            | .3106  | 12 26.4                           | 1.02               |
|                                 | 14 | .340                 | .3886   | .1054   | 12.26              | 21 2.2                            | .3107  | 12 22.9                           | 0.89               |
|                                 | 15 | .352                 | .3860   | .1057   | 12.31              | 21 3.3                            | .3108  | 12 19.4                           | 0.75               |
|                                 | 16 | .364                 | .3833   | .1059   | 12.36              | 21 4.3                            | .3109  | 12 15.9                           | 0.62               |
|                                 | 17 | .376                 | .3806   | .1061   | 12.42              | 21 5.3                            | .3110  | 12 12.4                           | 0.48               |
|                                 | 18 | .388                 | .3779   | .1063   | 12.47              | 21 6.3                            | .3110  | 12 8.9                            | 0.35               |
|                                 | 19 | .400                 | .3752   | .1064   | 12.53              | 21 7.3                            | .3111  | 12 5.4                            | 0.21               |
|                                 | 20 | +1.411               | —0.3724 | +0.1065 | 12.58              | 21 8.2                            | 1.3111 | 12 1.9                            | —0.07              |
|                                 | 21 | .423                 | .3696   | .1065   | 12.64              | 21 9.2                            | .3111  | 11 58.4                           | +0.06              |
|                                 | 22 | .435                 | .3667   | .1064   | 12.70              | 21 10.1                           | .3111  | 11 54.9                           | 0.20               |
|                                 | 23 | .447                 | .3638   | .1063   | 12.76              | 21 11.0                           | .3111  | 11 51.4                           | 0.33               |
|                                 | 24 | .458                 | .3609   | .1062   | 12.81              | 21 11.9                           | .3110  | 11 47.9                           | 0.47               |
|                                 | 25 | .470                 | .3579   | .1060   | 12.87              | 21 12.8                           | .3109  | 11 44.4                           | 0.60               |
|                                 | 26 | .482                 | .3549   | .1058   | 12.93              | 21 13.7                           | .3108  | 11 40.9                           | 0.74               |
|                                 | 27 | .494                 | .3519   | .1055   | 12.99              | 21 14.5                           | .3107  | 11 37.4                           | 0.87               |
|                                 | 28 | .505                 | .3489   | .1052   | 13.05              | 21 15.3                           | .3106  | 11 33.9                           | 1.01               |
|                                 | 29 | .517                 | .3460   | .1048   | 13.11              | 21 16.2                           | .3104  | 11 30.4                           | 1.14               |
| Juli                            | 30 | +1.529               | —0.3429 | +0.1044 | 13.17              | 21 17.0                           | 1.3103 | 11 26.9                           | +1.28              |
|                                 | 1  | .540                 | .3398   | .1039   | 13.24              | 21 17.7                           | .3101  | 11 23.4                           | 1.41               |
|                                 | 2  | .552                 | .3367   | .1034   | 13.30              | 21 18.5                           | .3099  | 11 19.9                           | 1.54               |
|                                 | 3  | .564                 | .3336   | .1028   | 13.36              | 21 19.3                           | .3097  | 11 16.3                           | 1.68               |
|                                 | 4  | .575                 | .3305   | .1022   | 13.42              | 21 20.0                           | .3094  | 11 12.8                           | 1.81               |
|                                 | 5  | .587                 | .3273   | .1015   | 13.49              | 21 20.7                           | .3092  | 11 9.3                            | 1.94               |
|                                 | 6  | .598                 | .3242   | .1008   | 13.55              | 21 21.4                           | .3089  | 11 5.8                            | 2.08               |
|                                 | 7  | .610                 | .3210   | .1001   | 13.61              | 21 22.1                           | .3086  | 11 2.2                            | 2.21               |
|                                 | 8  | .621                 | .3178   | .0993   | 13.68              | 21 22.7                           | .3083  | 10 58.7                           | 2.34               |
|                                 | 9  | .632                 | .3146   | .0985   | 13.74              | 21 23.4                           | .3080  | 10 55.1                           | 2.46               |

## 1857

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                  | log h  | H                                  | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|------------------------------------|--------|------------------------------------|---------------------|
| Juli                            | 10 | +1 <sup>s</sup> .644 | —0.3114 | +0.0976 | 13 <sup>h</sup> .80 | 21 <sup>h</sup> 24 <sup>m</sup> .0 | 1.3076 | 10 <sup>h</sup> 51 <sup>m</sup> .6 | +2 <sup>s</sup> .59 |
|                                 | 11 | .655                 | .3082   | .0967   | 13.87               | 21 24.6                            | .3073  | 10 48.0                            | 2.72                |
|                                 | 12 | .666                 | .3050   | .0958   | 13.93               | 21 25.2                            | .3069  | 10 44.4                            | 2.85                |
|                                 | 13 | .678                 | .3018   | .0948   | 14.00               | 21 25.8                            | .3065  | 10 40.9                            | 2.97                |
|                                 | 14 | .689                 | .2986   | .0938   | 14.06               | 21 26.4                            | .3061  | 10 37.3                            | 3.10                |
|                                 | 15 | .700                 | .2954   | .0927   | 14.13               | 21 26.9                            | .3057  | 10 33.7                            | 3.22                |
|                                 | 16 | .710                 | .2922   | .0916   | 14.19               | 21 27.5                            | .3052  | 10 30.1                            | 3.35                |
|                                 | 17 | .721                 | .2890   | .0905   | 14.26               | 21 28.0                            | .3048  | 10 26.5                            | 3.47                |
|                                 | 18 | .732                 | .2858   | .0893   | 14.32               | 21 28.5                            | .3043  | 10 22.9                            | 3.60                |
|                                 | 19 | .743                 | .2826   | .0881   | 14.39               | 21 29.0                            | .3038  | 10 19.3                            | 3.72                |
|                                 | 20 | +1.754               | —0.2794 | +0.0869 | 14.45               | 21 29.5                            | 1.3034 | 10 15.7                            | +3.84               |
|                                 | 21 | .764                 | .2762   | .0857   | 14.51               | 21 30.0                            | .3029  | 10 12.0                            | 3.96                |
|                                 | 22 | .775                 | .2730   | .0844   | 14.58               | 21 30.5                            | .3024  | 10 8.4                             | 4.07                |
|                                 | 23 | .785                 | .2698   | .0831   | 14.64               | 21 30.9                            | .3018  | 10 4.7                             | 4.19                |
|                                 | 24 | .796                 | .2666   | .0817   | 14.71               | 21 31.3                            | .3013  | 10 1.0                             | 4.31                |
|                                 | 25 | .806                 | .2634   | .0803   | 14.77               | 21 31.8                            | .3007  | 9 57.4                             | 4.42                |
|                                 | 26 | .816                 | .2602   | .0789   | 14.83               | 21 32.2                            | .3002  | 9 53.7                             | 4.54                |
|                                 | 27 | .827                 | .2571   | .0775   | 14.90               | 21 32.6                            | .2996  | 9 50.0                             | 4.65                |
|                                 | 28 | .837                 | .2539   | .0762   | 14.96               | 21 33.0                            | .2990  | 9 46.3                             | 4.76                |
|                                 | 29 | .847                 | .2508   | .0748   | 15.02               | 21 33.4                            | .2985  | 9 42.6                             | 4.87                |
| August                          | 30 | +1.857               | —0.2476 | +0.0734 | 15.09               | 21 33.7                            | 1.2979 | 9 38.9                             | +4.97               |
|                                 | 31 | .866                 | .2445   | .0719   | 15.15               | 21 34.1                            | .2973  | 9 35.1                             | 5.08                |
|                                 | 1  | .876                 | .2414   | .0704   | 15.21               | 21 34.5                            | .2967  | 9 31.4                             | 5.19                |
|                                 | 2  | .886                 | .2384   | .0688   | 15.27               | 21 34.8                            | .2961  | 9 27.6                             | 5.29                |
|                                 | 3  | .895                 | .2353   | .0673   | 15.33               | 21 35.2                            | .2955  | 9 23.9                             | 5.40                |
|                                 | 4  | .905                 | .2323   | .0658   | 15.39               | 21 35.5                            | .2949  | 9 20.1                             | 5.50                |
|                                 | 5  | .914                 | .2292   | .0643   | 15.45               | 21 35.8                            | .2942  | 9 16.3                             | 5.60                |
|                                 | 6  | .924                 | .2262   | .0628   | 15.51               | 21 36.1                            | .2936  | 9 12.5                             | 5.70                |
|                                 | 7  | .933                 | .2232   | .0613   | 15.57               | 21 36.4                            | .2930  | 9 8.7                              | 5.79                |
|                                 | 8  | .942                 | .2203   | .0598   | 15.63               | 21 36.7                            | .2924  | 9 4.8                              | 5.89                |
|                                 | 9  | +1.951               | —0.2174 | +0.0582 | 15.69               | 21 37.0                            | 1.2917 | 9 1.0                              | +5.98               |
|                                 | 10 | .960                 | .2145   | .0567   | 15.75               | 21 37.3                            | .2911  | 8 57.1                             | 6.07                |
|                                 | 11 | .969                 | .2116   | .0551   | 15.81               | 21 37.6                            | .2905  | 8 53.2                             | 6.16                |
|                                 | 12 | .978                 | .2088   | .0536   | 15.86               | 21 37.9                            | .2899  | 8 49.3                             | 6.25                |
|                                 | 13 | .987                 | .2060   | .0521   | 15.92               | 21 38.1                            | .2892  | 8 45.5                             | 6.34                |
|                                 | 14 | 1.996                | .2032   | .0506   | 15.98               | 21 38.4                            | .2886  | 8 41.6                             | 6.42                |
|                                 | 15 | 2.004                | .2004   | .0491   | 16.03               | 21 38.6                            | .2880  | 8 37.6                             | 6.51                |
|                                 | 16 | .013                 | .1976   | .0476   | 16.09               | 21 38.9                            | .2874  | 8 33.7                             | 6.59                |
|                                 | 17 | .021                 | .1948   | .0461   | 16.15               | 21 39.1                            | .2868  | 8 29.8                             | 6.67                |
|                                 | 18 | .029                 | .1920   | .0446   | 16.20               | 21 39.4                            | .2861  | 8 25.8                             | 6.75                |
|                                 | 19 | +2.037               | —0.1893 | +0.0432 | 16.25               | 21 39.6                            | 1.2855 | 8 21.8                             | +6.82               |
|                                 | 20 | .046                 | .1867   | .0418   | 16.31               | 21 39.9                            | .2850  | 8 17.8                             | 6.89                |
|                                 | 21 | .054                 | .1841   | .0404   | 16.36               | 21 40.1                            | .2844  | 8 13.9                             | 6.97                |
|                                 | 22 | .062                 | .1816   | .0391   | 16.41               | 21 40.3                            | .2838  | 8 9.8                              | 7.04                |
|                                 | 23 | .070                 | .1790   | .0377   | 16.46               | 21 40.6                            | .2832  | 8 5.8                              | 7.11                |
|                                 | 24 | .078                 | .1765   | .0364   | 16.51               | 21 40.8                            | .2827  | 8 1.8                              | 7.17                |
|                                 | 25 | .085                 | .1740   | .0351   | 16.56               | 21 41.0                            | .2821  | 7 57.7                             | 7.24                |
|                                 | 26 | .093                 | .1715   | .0338   | 16.61               | 21 41.3                            | .2816  | 7 53.7                             | 7.30                |
|                                 | 27 | .101                 | .1690   | .0325   | 16.66               | 21 41.5                            | .2810  | 7 49.6                             | 7.36                |
|                                 | 28 | .108                 | .1666   | .0313   | 16.71               | 21 41.7                            | .2805  | 7 45.5                             | 7.42                |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                   | x       | y       | g                  | G                                 | log h  | H                                | i                  |
|---------------------------------|----|---------------------|---------|---------|--------------------|-----------------------------------|--------|----------------------------------|--------------------|
| August                          | 29 | +2 <sup>s</sup> 116 | —0.1642 | +0.0301 | 16 <sup>h</sup> 76 | 21 <sup>h</sup> 42 <sup>m</sup> 0 | 1.2800 | 7 <sup>h</sup> 41 <sup>m</sup> 4 | +7 <sup>h</sup> 47 |
|                                 | 30 | .123                | .1619   | .0290   | 16.81              | 21 42.2                           | .2796  | 7 37.3                           | 7.52               |
| Septbr.                         | 31 | .131                | .1595   | .0279   | 16.85              | 21 42.4                           | .2791  | 7 33.2                           | 7.58               |
|                                 | 1  | .138                | .1572   | .0268   | 16.90              | 21 42.7                           | .2787  | 7 29.1                           | 7.63               |
|                                 | 2  | .145                | .1549   | .0258   | 16.95              | 21 42.9                           | .2782  | 7 25.0                           | 7.67               |
|                                 | 3  | .153                | .1526   | .0248   | 16.99              | 21 43.1                           | .2778  | 7 20.8                           | 7.72               |
|                                 | 4  | .160                | .1503   | .0238   | 17.04              | 21 43.3                           | .2774  | 7 16.7                           | 7.76               |
|                                 | 5  | .167                | .1481   | .0229   | 17.08              | 21 43.6                           | .2770  | 7 12.5                           | 7.80               |
|                                 | 6  | .174                | .1460   | .0220   | 17.12              | 21 43.8                           | .2766  | 7 8.3                            | 7.84               |
|                                 | 7  | .181                | .1439   | .0212   | 17.17              | 21 44.1                           | .2763  | 7 4.2                            | 7.88               |
|                                 | 8  | +2.188              | —0.1418 | +0.0204 | 17.21              | 21 44.3                           | 1.2760 | 7 0.0                            | +7.91              |
|                                 | 9  | .195                | .1397   | .0197   | 17.25              | 21 44.6                           | .2756  | 6 55.8                           | 7.94               |
|                                 | 10 | .202                | .1376   | .0190   | 17.29              | 21 44.8                           | .2753  | 6 51.6                           | 7.97               |
|                                 | 11 | .209                | .1356   | .0184   | 17.33              | 21 45.1                           | .2751  | 6 47.4                           | 8.00               |
|                                 | 12 | .216                | .1336   | .0178   | 17.37              | 21 45.4                           | .2748  | 6 43.1                           | 8.03               |
|                                 | 13 | .222                | .1316   | .0173   | 17.41              | 21 45.6                           | .2746  | 6 38.9                           | 8.05               |
|                                 | 14 | .229                | .1296   | .0168   | 17.45              | 21 45.9                           | .2744  | 6 34.7                           | 8.07               |
|                                 | 15 | .236                | .1277   | .0164   | 17.49              | 21 46.2                           | .2743  | 6 30.4                           | 8.09               |
|                                 | 16 | .243                | .1257   | .0161   | 17.53              | 21 46.4                           | .2741  | 6 26.2                           | 8.10               |
|                                 | 17 | .249                | .1238   | .0158   | 17.57              | 21 46.7                           | .2740  | 6 21.9                           | 8.12               |
|                                 | 18 | +2.256              | —0.1219 | +0.0155 | 17.61              | 21 47.0                           | 1.2739 | 6 17.7                           | +8.13              |
|                                 | 19 | .263                | .1200   | .0153   | 17.65              | 21 47.3                           | .2738  | 6 13.4                           | 8.14               |
|                                 | 20 | .270                | .1181   | .0152   | 17.68              | 21 47.6                           | .2737  | 6 9.1                            | 8.14               |
|                                 | 21 | .276                | .1163   | .0151   | 17.72              | 21 47.9                           | .2737  | 6 4.9                            | 8.15               |
|                                 | 22 | .283                | .1145   | .0150   | 17.76              | 21 48.2                           | .2737  | 6 0.6                            | 8.15               |
|                                 | 23 | .289                | .1127   | .0150   | 17.79              | 21 48.5                           | .2737  | 5 56.3                           | 8.15               |
|                                 | 24 | .296                | .1109   | .0151   | 17.83              | 21 48.8                           | .2737  | 5 52.0                           | 8.14               |
|                                 | 25 | .303                | .1092   | .0152   | 17.86              | 21 49.2                           | .2737  | 5 47.8                           | 8.14               |
|                                 | 26 | .310                | .1074   | .0154   | 17.90              | 21 49.5                           | .2738  | 5 43.5                           | 8.13               |
|                                 | 27 | .316                | .1057   | .0156   | 17.93              | 21 49.8                           | .2739  | 5 39.2                           | 8.12               |
|                                 | 28 | +2.323              | —0.1039 | +0.0159 | 17.97              | 21 50.2                           | 1.2740 | 5 34.9                           | +8.11              |
|                                 | 29 | .330                | .1022   | .0163   | 18.00              | 21 50.5                           | .2742  | 5 30.6                           | 8.09               |
|                                 | 30 | .336                | .1004   | .0167   | 18.04              | 21 50.9                           | .2744  | 5 26.3                           | 8.08               |
| Oktbr.                          | 1  | .343                | .0987   | .0172   | 18.07              | 21 51.3                           | .2746  | 5 22.1                           | 8.06               |
|                                 | 2  | .350                | .0970   | .0177   | 18.11              | 21 51.6                           | .2748  | 5 17.8                           | 8.03               |
|                                 | 3  | .357                | .0953   | .0183   | 18.14              | 21 52.0                           | .2750  | 5 13.5                           | 8.01               |
|                                 | 4  | .364                | .0936   | .0189   | 18.17              | 21 52.4                           | .2753  | 5 9.3                            | 7.98               |
|                                 | 5  | .371                | .0919   | .0196   | 18.21              | 21 52.8                           | .2756  | 5 5.0                            | 7.95               |
|                                 | 6  | .378                | .0902   | .0203   | 18.24              | 21 53.2                           | .2759  | 5 0.7                            | 7.92               |
|                                 | 7  | .385                | .0885   | .0211   | 18.28              | 21 53.6                           | .2762  | 4 56.5                           | 7.88               |
|                                 | 8  | +2.392              | —0.0868 | +0.0219 | 18.31              | 21 54.0                           | 1.2766 | 4 52.2                           | +7.85              |
|                                 | 9  | .399                | .0851   | .0228   | 18.34              | 21 54.4                           | .2770  | 4 48.0                           | 7.81               |
|                                 | 10 | .406                | .0834   | .0237   | 18.38              | 21 54.9                           | .2774  | 4 43.7                           | 7.77               |
|                                 | 11 | .413                | .0817   | .0247   | 18.41              | 21 55.3                           | .2778  | 4 39.5                           | 7.72               |
|                                 | 12 | .420                | .0801   | .0257   | 18.45              | 21 55.7                           | .2782  | 4 35.2                           | 7.68               |
|                                 | 13 | .428                | .0784   | .0268   | 18.48              | 21 56.2                           | .2786  | 4 31.0                           | 7.63               |
|                                 | 14 | .435                | .0767   | .0279   | 18.51              | 21 56.6                           | .2791  | 4 26.8                           | 7.58               |
|                                 | 15 | .443                | .0750   | .0290   | 18.55              | 21 57.1                           | .2796  | 4 22.6                           | 7.52               |
|                                 | 16 | .450                | .0733   | .0302   | 18.58              | 21 57.5                           | .2801  | 4 18.4                           | 7.47               |
|                                 | 17 | .458                | .0715   | .0314   | 18.62              | 21 58.0                           | .2806  | 4 14.2                           | 7.41               |

## 1857

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                  | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|------------------------------------|--------|-----------------------------------|---------------------|
| Oktbr.                          | 18 | +2 <sup>s</sup> .466 | —0.0697 | +0.0327 | 18 <sup>h</sup> .65 | 21 <sup>h</sup> 58 <sup>m</sup> .5 | 1.2811 | 4 <sup>h</sup> 10 <sup>m</sup> .0 | +7 <sup>s</sup> .35 |
|                                 | 19 | .473                 | .0679   | .0340   | 18.69               | 21 59.0                            | .2817  | 4 5.8                             | 7.29                |
|                                 | 20 | .481                 | .0661   | .0353   | 18.73               | 21 59.5                            | .2822  | 4 1.6                             | 7.22                |
|                                 | 21 | .489                 | .0643   | .0366   | 18.76               | 21 59.9                            | .2828  | 3 57.4                            | 7.16                |
|                                 | 22 | .497                 | .0625   | .0380   | 18.80               | 22 0.4                             | .2834  | 3 53.3                            | 7.09                |
|                                 | 23 | .505                 | .0606   | .0394   | 18.84               | 22 1.0                             | .2840  | 3 49.1                            | 7.02                |
|                                 | 24 | .513                 | .0587   | .0408   | 18.87               | 22 1.5                             | .2846  | 3 45.0                            | 6.94                |
|                                 | 25 | .521                 | .0568   | .0423   | 18.91               | 22 2.0                             | .2852  | 3 40.8                            | 6.87                |
|                                 | 26 | .530                 | .0549   | .0438   | 18.95               | 22 2.5                             | .2858  | 3 36.7                            | 6.79                |
|                                 | 27 | .538                 | .0530   | .0453   | 18.99               | 22 3.0                             | .2864  | 3 32.6                            | 6.71                |
|                                 | 28 | +2.547               | —0.0510 | +0.0468 | 19.03               | 22 3.6                             | 1.2870 | 3 28.5                            | +6.63               |
|                                 | 29 | .555                 | .0490   | .0484   | 19.07               | 22 4.1                             | .2877  | 3 24.4                            | 6.55                |
|                                 | 30 | .564                 | .0470   | .0499   | 19.11               | 22 4.6                             | .2883  | 3 20.3                            | 6.46                |
|                                 | 31 | .573                 | .0450   | .0515   | 19.15               | 22 5.2                             | .2890  | 3 16.2                            | 6.38                |
| Novbr.                          | 1  | .581                 | .0430   | .0530   | 19.19               | 22 5.7                             | .2896  | 3 12.2                            | 6.29                |
|                                 | 2  | .590                 | .0409   | .0546   | 19.23               | 22 6.2                             | .2903  | 3 8.1                             | 6.19                |
|                                 | 3  | .600                 | .0388   | .0562   | 19.27               | 22 6.8                             | .2909  | 3 4.1                             | 6.10                |
|                                 | 4  | .609                 | .0366   | .0578   | 19.32               | 22 7.3                             | .2916  | 3 0.0                             | 6.01                |
|                                 | 5  | .618                 | .0344   | .0594   | 19.36               | 22 7.9                             | .2922  | 2 56.0                            | 5.91                |
|                                 | 6  | .627                 | .0322   | .0610   | 19.41               | 22 8.4                             | .2929  | 2 52.0                            | 5.81                |
|                                 | 7  | +2.637               | —0.0300 | +0.0626 | 19.45               | 22 9.0                             | 1.2935 | 2 48.0                            | +5.71               |
|                                 | 8  | .646                 | .0277   | .0642   | 19.50               | 22 9.5                             | .2942  | 2 44.0                            | 5.60                |
|                                 | 9  | .656                 | .0254   | .0658   | 19.54               | 22 10.1                            | .2948  | 2 40.0                            | 5.50                |
|                                 | 10 | .666                 | .0230   | .0674   | 19.59               | 22 10.6                            | .2955  | 2 36.0                            | 5.39                |
|                                 | 11 | .676                 | .0206   | .0690   | 19.64               | 22 11.2                            | .2961  | 2 32.1                            | 5.29                |
|                                 | 12 | .685                 | .0182   | .0705   | 19.69               | 22 11.7                            | .2968  | 2 28.1                            | 5.18                |
|                                 | 13 | .695                 | .0158   | .0721   | 19.74               | 22 12.3                            | .2974  | 2 24.2                            | 5.06                |
|                                 | 14 | .706                 | .0133   | .0736   | 19.78               | 22 12.8                            | .2980  | 2 20.2                            | 4.95                |
|                                 | 15 | .716                 | .0108   | .0751   | 19.84               | 22 13.4                            | .2986  | 2 16.3                            | 4.83                |
|                                 | 16 | .726                 | .0082   | .0766   | 19.89               | 22 13.9                            | .2992  | 2 12.4                            | 4.72                |
|                                 | 17 | +2.736               | —0.0056 | +0.0781 | 19.94               | 22 14.5                            | 1.2998 | 2 8.5                             | +4.60               |
| Dezbr.                          | 18 | .747                 | .0029   | .0796   | 19.99               | 22 15.0                            | .3004  | 2 4.6                             | 4.48                |
|                                 | 19 | .758                 | —0.0002 | .0810   | 20.05               | 22 15.6                            | .3010  | 2 0.7                             | 4.36                |
|                                 | 20 | .768                 | +0.0025 | .0824   | 20.10               | 22 16.1                            | .3015  | 1 56.8                            | 4.24                |
|                                 | 21 | .779                 | .0053   | .0838   | 20.16               | 22 16.6                            | .3021  | 1 53.0                            | 4.12                |
|                                 | 22 | .790                 | .0081   | .0852   | 20.21               | 22 17.2                            | .3027  | 1 49.1                            | 3.99                |
|                                 | 23 | .801                 | .0109   | .0865   | 20.27               | 22 17.7                            | .3032  | 1 45.3                            | 3.86                |
|                                 | 24 | .812                 | .0138   | .0878   | 20.33               | 22 18.2                            | .3037  | 1 41.4                            | 3.74                |
|                                 | 25 | .823                 | .0167   | .0891   | 20.39               | 22 18.7                            | .3042  | 1 37.6                            | 3.61                |
|                                 | 26 | .834                 | .0197   | .0903   | 20.45               | 22 19.3                            | .3047  | 1 33.7                            | 3.48                |
|                                 | 27 | +2.846               | +0.0227 | +0.0915 | 20.51               | 22 19.8                            | 1.3052 | 1 29.9                            | +3.35               |
|                                 | 28 | .857                 | .0257   | .0927   | 20.57               | 22 20.3                            | .3057  | 1 26.1                            | 3.22                |
|                                 | 29 | .868                 | .0287   | .0938   | 20.63               | 22 20.8                            | .3061  | 1 22.3                            | 3.08                |
|                                 | 30 | .880                 | .0318   | .0949   | 20.69               | 22 21.3                            | .3065  | 1 18.5                            | 2.95                |
|                                 | 1  | .892                 | .0349   | .0959   | 20.75               | 22 21.7                            | .3070  | 1 14.7                            | 2.82                |
|                                 | 2  | .903                 | .0381   | .0969   | 20.82               | 22 22.2                            | .3074  | 1 10.9                            | 2.68                |
|                                 | 3  | .915                 | .0413   | .0979   | 20.88               | 22 22.7                            | .3077  | 1 7.1                             | 2.54                |
|                                 | 4  | .927                 | .0445   | .0988   | 20.94               | 22 23.2                            | .3081  | 1 3.3                             | 2.41                |
|                                 | 5  | .938                 | .0478   | .0996   | 21.01               | 22 23.6                            | .3084  | 0 59.5                            | 2.27                |
|                                 | 6  | .950                 | .0511   | .1004   | 21.08               | 22 24.1                            | .3087  | 0 55.7                            | 2.13                |

## 1857

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                  | G                                  | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|--------------------|------------------------------------|--------|-----------------------------------|---------------------|
| Dezbr.                          | 7  | +2 <sup>s</sup> .962 | +0.0544 | +0.1012 | 21 <sup>"</sup> 14 | 22 <sup>h</sup> 24 <sup>m</sup> .5 | 1.3090 | 0 <sup>h</sup> 52 <sup>m</sup> .0 | +1 <sup>"</sup> .99 |
|                                 | 8  | .974                 | .0578   | .1019   | 21.21              | 22 25.0                            | .3093  | 0 48.2                            | 1.85                |
|                                 | 9  | .986                 | .0612   | .1026   | 21.28              | 22 25.4                            | .3096  | 0 44.5                            | 1.71                |
|                                 | 10 | 2.998                | .0646   | .1032   | 21.35              | 22 25.8                            | .3098  | 0 40.7                            | 1.56                |
|                                 | 11 | 3.010                | .0680   | .1037   | 21.42              | 22 26.2                            | .3100  | 0 36.9                            | 1.42                |
|                                 | 12 | .022                 | .0715   | .1042   | 21.49              | 22 26.7                            | .3102  | 0 33.2                            | 1.28                |
|                                 | 13 | .034                 | .0750   | .1047   | 21.56              | 22 27.1                            | .3104  | 0 29.4                            | 1.14                |
|                                 | 14 | .047                 | .0785   | .1051   | 21.63              | 22 27.5                            | .3106  | 0 25.7                            | 1.00                |
|                                 | 15 | .059                 | .0820   | .1055   | 21.70              | 22 27.8                            | .3107  | 0 22.0                            | 0.85                |
|                                 | 16 | .071                 | .0855   | .1058   | 21.77              | 22 28.2                            | .3109  | 0 18.3                            | 0.71                |
|                                 | 17 | +3.083               | +0.0891 | +0.1061 | 21.84              | 22 28.6                            | 1.3110 | 0 14.5                            | +0.56               |
|                                 | 18 | .096                 | .0927   | .1063   | 21.91              | 22 28.9                            | .3110  | 0 10.8                            | 0.42                |
|                                 | 19 | .108                 | .0963   | .1064   | 21.98              | 22 29.3                            | .3111  | 0 7.0                             | 0.27                |
|                                 | 20 | .120                 | .1000   | .1064   | 22.06              | 22 29.6                            | .3111  | 0 3.3                             | +0.13               |
|                                 | 21 | .132                 | .1037   | .1064   | 22.13              | 22 30.0                            | .3111  | 23 59.6                           | —0.02               |
|                                 | 22 | .145                 | .1074   | .1064   | 22.21              | 22 30.3                            | .3111  | 23 55.8                           | 0.16                |
|                                 | 23 | .157                 | .1111   | .1063   | 22.28              | 22 30.6                            | .3111  | 23 52.1                           | 0.31                |
|                                 | 24 | .169                 | .1148   | .1062   | 22.35              | 22 30.9                            | .3110  | 23 48.3                           | 0.45                |
|                                 | 25 | .182                 | .1185   | .1060   | 22.43              | 22 31.2                            | .3109  | 23 44.6                           | 0.60                |
|                                 | 26 | .194                 | .1222   | .1058   | 22.50              | 22 31.5                            | .3108  | 23 40.8                           | 0.74                |
|                                 | 27 | +3.206               | +0.1259 | +0.1055 | 22.58              | 22 31.8                            | 1.3107 | 23 37.1                           | —0.89               |
|                                 | 28 | .218                 | .1297   | .1052   | 22.65              | 22 32.0                            | .3106  | 23 33.3                           | 1.03                |
|                                 | 29 | .230                 | .1334   | .1048   | 22.73              | 22 32.3                            | .3104  | 23 29.6                           | 1.17                |
|                                 | 30 | .243                 | .1372   | .1043   | 22.80              | 22 32.6                            | .3102  | 23 25.8                           | 1.31                |
|                                 | 31 | .255                 | .1410   | .1038   | 22.88              | 22 32.8                            | .3100  | 23 22.1                           | 1.46                |

## 1858

|        |    |                      |         |         |                    |                                    |        |                                    |                     |
|--------|----|----------------------|---------|---------|--------------------|------------------------------------|--------|------------------------------------|---------------------|
| Januar | 1  | +0 <sup>s</sup> .195 | —0.5713 | +0.1031 | 8 <sup>"</sup> .60 | 18 <sup>h</sup> 34 <sup>m</sup> .0 | 1.3098 | 23 <sup>h</sup> 18 <sup>m</sup> .3 | —1 <sup>"</sup> .60 |
|        | 2  | .207                 | .5704   | .1025   | 8.62               | 18 36.0                            | .3095  | 23 14.6                            | 1.74                |
|        | 3  | .219                 | .5694   | .1018   | 8.64               | 18 38.1                            | .3093  | 23 10.8                            | 1.88                |
|        | 4  | .231                 | .5683   | .1011   | 8.66               | 18 40.1                            | .3090  | 23 7.0                             | 2.02                |
|        | 5  | .243                 | .5672   | .1003   | 8.68               | 18 42.0                            | .3087  | 23 3.2                             | 2.16                |
|        | 6  | .255                 | .5660   | .0995   | 8.70               | 18 44.0                            | .3083  | 22 59.4                            | 2.30                |
|        | 7  | .267                 | .5648   | .0986   | 8.73               | 18 45.9                            | .3080  | 22 55.6                            | 2.44                |
|        | 8  | .278                 | .5635   | .0977   | 8.75               | 18 47.8                            | .3076  | 22 51.8                            | 2.58                |
|        | 9  | .290                 | .5621   | .0967   | 8.78               | 18 49.7                            | .3073  | 22 48.0                            | 2.72                |
|        | 10 | .302                 | .5607   | .0957   | 8.81               | 18 51.6                            | .3069  | 22 44.2                            | 2.85                |
|        | 11 | +0.313               | —0.5593 | +0.0946 | 8.84               | 18 53.4                            | 1.3064 | 22 40.4                            | —2.99               |
|        | 12 | .325                 | .5578   | .0935   | 8.87               | 18 55.2                            | .3060  | 22 36.6                            | 3.12                |
|        | 13 | .336                 | .5563   | .0924   | 8.90               | 18 57.0                            | .3055  | 22 32.8                            | 3.26                |
|        | 14 | .348                 | .5547   | .0912   | 8.93               | 18 58.8                            | .3051  | 22 28.9                            | 3.39                |
|        | 15 | .359                 | .5531   | .0900   | 8.96               | 19 0.5                             | .3046  | 22 25.1                            | 3.52                |
|        | 16 | .370                 | .5515   | .0887   | 8.99               | 19 2.2                             | .3041  | 22 21.2                            | 3.65                |
|        | 17 | .381                 | .5498   | .0874   | 9.03               | 19 3.9                             | .3036  | 22 17.4                            | 3.78                |
|        | 18 | .392                 | .5481   | .0861   | 9.06               | 19 5.5                             | .3031  | 22 13.5                            | 3.91                |
|        | 19 | .403                 | .5463   | .0848   | 9.10               | 19 7.1                             | .3025  | 22 9.6                             | 4.03                |
|        | 20 | .414                 | .5445   | .0834   | 9.13               | 19 8.7                             | .3020  | 22 5.7                             | 4.16                |

## 1858

| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                 | log h  | H                                | i     |
|---------------------------------|----|--------|---------|---------|-------|-----------------------------------|--------|----------------------------------|-------|
| Januar                          | 21 | +0.425 | -0.5427 | +0.0820 | 9.17  | 19 <sup>h</sup> 10 <sup>m</sup> 3 | 1.3014 | 22 <sup>h</sup> 1 <sup>m</sup> 8 | -4.28 |
|                                 | 22 | .436   | .5408   | .0805   | 9.21  | 19 11.8                           | .3008  | 21 57.9                          | 4.40  |
|                                 | 23 | .446   | .5390   | .0791   | 9.24  | 19 13.3                           | .3002  | 21 54.0                          | 4.52  |
|                                 | 24 | .457   | .5371   | .0776   | 9.28  | 19 14.8                           | .2996  | 21 50.1                          | 4.65  |
|                                 | 25 | .467   | .5352   | .0761   | 9.32  | 19 16.3                           | .2990  | 21 46.1                          | 4.76  |
|                                 | 26 | .477   | .5333   | .0746   | 9.36  | 19 17.7                           | .2984  | 21 42.2                          | 4.88  |
|                                 | 27 | .487   | .5314   | .0731   | 9.40  | 19 19.1                           | .2978  | 21 38.2                          | 5.00  |
|                                 | 28 | .498   | .5294   | .0715   | 9.44  | 19 20.4                           | .2972  | 21 34.3                          | 5.11  |
|                                 | 29 | .508   | .5274   | .0699   | 9.48  | 19 21.8                           | .2965  | 21 30.3                          | 5.22  |
|                                 | 30 | .518   | .5254   | .0683   | 9.52  | 19 23.1                           | .2959  | 21 26.3                          | 5.33  |
| Februar                         | 31 | +0.528 | -0.5234 | +0.0667 | 9.56  | 19 24.4                           | 1.2952 | 21 22.3                          | -5.44 |
|                                 | 1  | .537   | .5214   | .0651   | 9.60  | 19 25.6                           | .2946  | 21 18.3                          | 5.54  |
|                                 | 2  | .547   | .5195   | .0635   | 9.64  | 19 26.9                           | .2939  | 21 14.3                          | 5.65  |
|                                 | 3  | .556   | .5175   | .0619   | 9.68  | 19 28.1                           | .2932  | 21 10.2                          | 5.75  |
|                                 | 4  | .566   | .5155   | .0603   | 9.72  | 19 29.3                           | .2926  | 21 6.2                           | 5.85  |
|                                 | 5  | .575   | .5135   | .0587   | 9.76  | 19 30.4                           | .2919  | 21 2.1                           | 5.95  |
|                                 | 6  | .584   | .5115   | .0570   | 9.80  | 19 31.6                           | .2913  | 20 58.1                          | 6.05  |
|                                 | 7  | .593   | .5095   | .0554   | 9.84  | 19 32.7                           | .2906  | 20 54.0                          | 6.15  |
|                                 | 8  | .602   | .5075   | .0538   | 9.88  | 19 33.8                           | .2899  | 20 49.9                          | 6.24  |
|                                 | 9  | .611   | .5055   | .0522   | 9.91  | 19 34.8                           | .2893  | 20 45.8                          | 6.33  |
|                                 | 10 | +0.620 | -0.5035 | +0.0506 | 9.95  | 19 35.9                           | 1.2886 | 20 41.7                          | -6.42 |
|                                 | 11 | .629   | .5016   | .0491   | 9.99  | 19 36.9                           | .2880  | 20 37.6                          | 6.51  |
|                                 | 12 | .638   | .4996   | .0475   | 10.03 | 19 38.0                           | .2874  | 20 33.5                          | 6.59  |
|                                 | 13 | .646   | .4977   | .0460   | 10.07 | 19 39.0                           | .2867  | 20 29.3                          | 6.68  |
|                                 | 14 | .655   | .4958   | .0445   | 10.11 | 19 39.9                           | .2861  | 20 25.1                          | 6.76  |
|                                 | 15 | .663   | .4939   | .0430   | 10.15 | 19 40.9                           | .2854  | 20 21.0                          | 6.84  |
|                                 | 16 | .671   | .4920   | .0415   | 10.18 | 19 41.8                           | .2848  | 20 16.8                          | 6.91  |
|                                 | 17 | .679   | .4902   | .0401   | 10.22 | 19 42.8                           | .2842  | 20 12.6                          | 6.99  |
|                                 | 18 | .688   | .4883   | .0387   | 10.26 | 19 43.7                           | .2836  | 20 8.4                           | 7.06  |
|                                 | 19 | .696   | .4865   | .0373   | 10.30 | 19 44.6                           | .2830  | 20 4.2                           | 7.13  |
| März                            | 20 | +0.703 | -0.4847 | +0.0359 | 10.33 | 19 45.5                           | 1.2825 | 20 0.0                           | -7.20 |
|                                 | 21 | .711   | .4829   | .0345   | 10.37 | 19 46.3                           | .2819  | 19 55.8                          | 7.27  |
|                                 | 22 | .719   | .4811   | .0331   | 10.40 | 19 47.2                           | .2813  | 19 51.6                          | 7.33  |
|                                 | 23 | .727   | .4794   | .0318   | 10.44 | 19 48.1                           | .2808  | 19 47.4                          | 7.39  |
|                                 | 24 | .735   | .4777   | .0305   | 10.47 | 19 48.9                           | .2802  | 19 43.1                          | 7.45  |
|                                 | 25 | .742   | .4760   | .0293   | 10.51 | 19 49.8                           | .2797  | 19 38.8                          | 7.51  |
|                                 | 26 | .750   | .4743   | .0282   | 10.54 | 19 50.6                           | .2792  | 19 34.6                          | 7.56  |
|                                 | 27 | .757   | .4727   | .0271   | 10.57 | 19 51.4                           | .2788  | 19 30.3                          | 7.62  |
|                                 | 28 | .764   | .4711   | .0260   | 10.61 | 19 52.2                           | .2783  | 19 26.0                          | 7.67  |
|                                 | 1  | .772   | .4695   | .0250   | 10.64 | 19 53.0                           | .2779  | 19 21.7                          | 7.71  |
|                                 | 2  | +0.779 | -0.4679 | +0.0240 | 10.67 | 19 53.8                           | 1.2775 | 19 17.5                          | -7.75 |
|                                 | 3  | .786   | .4664   | .0231   | 10.70 | 19 54.5                           | .2771  | 19 13.2                          | 7.79  |
|                                 | 4  | .793   | .4649   | .0222   | 10.73 | 19 55.3                           | .2767  | 19 8.9                           | 7.83  |
|                                 | 5  | .800   | .4634   | .0214   | 10.76 | 19 56.1                           | .2763  | 19 4.6                           | 7.87  |
|                                 | 6  | .807   | .4620   | .0206   | 10.79 | 19 56.9                           | .2760  | 19 0.2                           | 7.91  |
|                                 | 7  | .814   | .4606   | .0198   | 10.82 | 19 57.7                           | .2757  | 18 55.9                          | 7.94  |
|                                 | 8  | .821   | .4592   | .0191   | 10.84 | 19 58.4                           | .2754  | 18 51.6                          | 7.97  |
|                                 | 9  | .828   | .4578   | .0184   | 10.87 | 19 59.2                           | .2751  | 18 47.3                          | 8.00  |
|                                 | 10 | .835   | .4564   | .0178   | 10.90 | 19 59.9                           | .2748  | 18 43.0                          | 8.03  |
|                                 | 11 | .842   | .4551   | .0172   | 10.93 | 20 0.7                            | .2746  | 18 38.6                          | 8.05  |

1858

| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                 | log h  | H                                  | i     |
|---------------------------------|----|--------|---------|---------|-------|-----------------------------------|--------|------------------------------------|-------|
| März                            | 12 | +0.849 | -0.4538 | +0.0167 | 10.95 | 20 <sup>h</sup> 1 <sup>m</sup> .5 | 1.2744 | 18 <sup>h</sup> 34 <sup>m</sup> .3 | -8.07 |
|                                 | 13 | .855   | .4525   | .0163   | 10.98 | 20 2.2                            | .2742  | 18 30.0                            | 8.09  |
|                                 | 14 | .862   | .4513   | .0160   | 11.00 | 20 3.0                            | .2741  | 18 25.6                            | 8.11  |
|                                 | 15 | .869   | .4501   | .0157   | 11.03 | 20 3.7                            | .2739  | 18 21.3                            | 8.12  |
|                                 | 16 | .876   | .4489   | .0155   | 11.05 | 20 4.5                            | .2738  | 18 17.0                            | 8.13  |
|                                 | 17 | .882   | .4478   | .0153   | 11.07 | 20 5.3                            | .2737  | 18 12.6                            | 8.14  |
|                                 | 18 | .889   | .4467   | .0152   | 11.10 | 20 6.0                            | .2737  | 18 8.3                             | 8.14  |
|                                 | 19 | .896   | .4456   | .0151   | 11.12 | 20 6.8                            | .2737  | 18 4.0                             | 8.15  |
|                                 | 20 | .902   | .4445   | .0151   | 11.14 | 20 7.6                            | .2736  | 17 59.7                            | 8.15  |
|                                 | 21 | .909   | .4434   | .0151   | 11.16 | 20 8.4                            | .2737  | 17 55.4                            | 8.15  |
|                                 | 22 | +0.915 | -0.4424 | +0.0152 | 11.18 | 20 9.2                            | 1.2737 | 17 51.0                            | -8.14 |
|                                 | 23 | .922   | .4414   | .0154   | 11.20 | 20 9.9                            | .2738  | 17 46.7                            | 8.13  |
|                                 | 24 | .929   | .4404   | .0156   | 11.22 | 20 10.7                           | .2739  | 17 42.4                            | 8.12  |
|                                 | 25 | .936   | .4394   | .0158   | 11.24 | 20 11.5                           | .2740  | 17 38.1                            | 8.11  |
|                                 | 26 | .942   | .4384   | .0161   | 11.26 | 20 12.4                           | .2741  | 17 33.8                            | 8.10  |
|                                 | 27 | .949   | .4374   | .0164   | 11.28 | 20 13.2                           | .2743  | 17 29.5                            | 8.09  |
|                                 | 28 | .956   | .4365   | .0168   | 11.30 | 20 14.0                           | .2744  | 17 25.2                            | 8.07  |
|                                 | 29 | .962   | .4356   | .0173   | 11.32 | 20 14.8                           | .2746  | 17 20.9                            | 8.05  |
|                                 | 30 | .969   | .4347   | .0178   | 11.33 | 20 15.7                           | .2748  | 17 16.6                            | 8.02  |
|                                 | 31 | .976   | .4338   | .0184   | 11.35 | 20 16.5                           | .2751  | 17 12.4                            | 8.00  |
| April                           | 1  | +0.983 | -0.4330 | +0.0190 | 11.37 | 20 17.3                           | 1.2754 | 17 8.1                             | -7.97 |
|                                 | 2  | .990   | .4321   | .0197   | 11.39 | 20 18.2                           | .2757  | 17 3.8                             | 7.94  |
|                                 | 3  | 0.997  | .4312   | .0205   | 11.41 | 20 19.1                           | .2760  | 16 59.6                            | 7.91  |
|                                 | 4  | 1.004  | .4303   | .0213   | 11.42 | 20 20.0                           | .2763  | 16 55.3                            | 7.88  |
|                                 | 5  | .011   | .4294   | .0221   | 11.44 | 20 20.8                           | .2767  | 16 51.1                            | 7.84  |
|                                 | 6  | .018   | .4286   | .0230   | 11.46 | 20 21.7                           | .2771  | 16 46.9                            | 7.80  |
|                                 | 7  | .025   | .4278   | .0239   | 11.47 | 20 22.6                           | .2775  | 16 42.7                            | 7.76  |
|                                 | 8  | .032   | .4270   | .0249   | 11.49 | 20 23.5                           | .2779  | 16 38.5                            | 7.71  |
|                                 | 9  | .039   | .4262   | .0259   | 11.51 | 20 24.4                           | .2783  | 16 34.3                            | 7.66  |
|                                 | 10 | .047   | .4254   | .0270   | 11.52 | 20 25.4                           | .2788  | 16 30.1                            | 7.62  |
|                                 | 11 | +1.054 | -0.4246 | +0.0281 | 11.54 | 20 26.3                           | 1.2792 | 16 25.9                            | -7.56 |
|                                 | 12 | .061   | .4238   | .0292   | 11.56 | 20 27.3                           | .2797  | 16 21.8                            | 7.51  |
|                                 | 13 | .069   | .4230   | .0304   | 11.57 | 20 28.2                           | .2802  | 16 17.6                            | 7.46  |
|                                 | 14 | .076   | .4221   | .0316   | 11.59 | 20 29.2                           | .2807  | 16 13.5                            | 7.40  |
|                                 | 15 | .084   | .4213   | .0328   | 11.61 | 20 30.2                           | .2812  | 16 9.4                             | 7.34  |
|                                 | 16 | .092   | .4204   | .0340   | 11.62 | 20 31.1                           | .2817  | 16 5.2                             | 7.28  |
|                                 | 17 | .099   | .4195   | .0353   | 11.64 | 20 32.1                           | .2822  | 16 1.1                             | 7.22  |
|                                 | 18 | .107   | .4186   | .0366   | 11.66 | 20 33.1                           | .2828  | 15 57.1                            | 7.15  |
|                                 | 19 | .115   | .4177   | .0380   | 11.68 | 20 34.2                           | .2834  | 15 53.0                            | 7.09  |
|                                 | 20 | .123   | .4168   | .0394   | 11.69 | 20 35.2                           | .2839  | 15 48.9                            | 7.02  |
|                                 | 21 | +1.131 | -0.4159 | +0.0408 | 11.71 | 20 36.2                           | 1.2845 | 15 44.9                            | -6.95 |
|                                 | 22 | .139   | .4149   | .0422   | 11.73 | 20 37.3                           | .2851  | 15 40.9                            | 6.87  |
|                                 | 23 | .147   | .4139   | .0436   | 11.75 | 20 38.3                           | .2857  | 15 36.9                            | 6.80  |
|                                 | 24 | .156   | .4129   | .0451   | 11.77 | 20 39.3                           | .2863  | 15 32.8                            | 6.72  |
|                                 | 25 | .164   | .4119   | .0466   | 11.79 | 20 40.4                           | .2870  | 15 28.8                            | 6.64  |
|                                 | 26 | .172   | .4109   | .0481   | 11.81 | 20 41.5                           | .2876  | 15 24.9                            | 6.56  |
|                                 | 27 | .181   | .4099   | .0496   | 11.83 | 20 42.5                           | .2882  | 15 20.9                            | 6.48  |
|                                 | 28 | .190   | .4088   | .0511   | 11.85 | 20 43.6                           | .2888  | 15 16.9                            | 6.39  |
|                                 | 29 | .198   | .4077   | .0527   | 11.88 | 20 44.7                           | .2895  | 15 13.0                            | 6.30  |
|                                 | 30 | .207   | .4066   | .0542   | 11.90 | 20 45.8                           | .2901  | 15 9.1                             | 6.22  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g     | G                                 | log h  | H                                | i     |
|---------------------------------|----|----------------------|---------|---------|-------|-----------------------------------|--------|----------------------------------|-------|
| Mai                             | 1  | +1. <sup>s</sup> 216 | —0.4055 | +0.0558 | 11.92 | 20 <sup>h</sup> 46 <sup>m</sup> 9 | 1.2907 | 15 <sup>h</sup> 5 <sup>m</sup> 2 | —6.13 |
|                                 | 2  | .225                 | .4043   | .0573   | 11.95 | 20 48.0                           | .2914  | 15 1.3                           | 6.03  |
|                                 | 3  | .234                 | .4031   | .0589   | 11.97 | 20 49.1                           | .2920  | 14 57.4                          | 5.94  |
|                                 | 4  | .243                 | .4018   | .0604   | 12.00 | 20 50.2                           | .2926  | 14 53.5                          | 5.85  |
|                                 | 5  | .252                 | .4005   | .0620   | 12.02 | 20 51.3                           | .2933  | 14 49.7                          | 5.75  |
|                                 | 6  | .261                 | .3992   | .0635   | 12.05 | 20 52.4                           | .2939  | 14 45.8                          | 5.65  |
|                                 | 7  | .271                 | .3979   | .0650   | 12.07 | 20 53.5                           | .2945  | 14 42.0                          | 5.55  |
|                                 | 8  | .280                 | .3965   | .0665   | 12.10 | 20 54.6                           | .2951  | 14 38.2                          | 5.45  |
|                                 | 9  | .290                 | .3951   | .0680   | 12.13 | 20 55.8                           | .2958  | 14 34.3                          | 5.35  |
|                                 | 10 | .300                 | .3936   | .0695   | 12.16 | 20 56.9                           | .2964  | 14 30.5                          | 5.24  |
|                                 | 11 | +1.309               | —0.3921 | +0.0710 | 12.19 | 20 58.0                           | 1.2970 | 14 26.7                          | —5.14 |
|                                 | 12 | .319                 | .3906   | .0725   | 12.22 | 20 59.1                           | .2976  | 14 23.0                          | 5.03  |
|                                 | 13 | .329                 | .3890   | .0740   | 12.25 | 21 0.2                            | .2982  | 14 19.2                          | 4.92  |
|                                 | 14 | .339                 | .3874   | .0755   | 12.28 | 21 1.4                            | .2987  | 14 15.5                          | 4.81  |
|                                 | 15 | .349                 | .3858   | .0769   | 12.31 | 21 2.5                            | .2993  | 14 11.7                          | 4.70  |
|                                 | 16 | .359                 | .3841   | .0783   | 12.35 | 21 3.6                            | .2999  | 14 8.0                           | 4.59  |
|                                 | 17 | .369                 | .3824   | .0797   | 12.38 | 21 4.7                            | .3005  | 14 4.3                           | 4.47  |
|                                 | 18 | .379                 | .3806   | .0810   | 12.42 | 21 5.8                            | .3010  | 14 0.6                           | 4.36  |
|                                 | 19 | .390                 | .3788   | .0824   | 12.46 | 21 6.9                            | .3015  | 13 56.9                          | 4.24  |
|                                 | 20 | .400                 | .3769   | .0837   | 12.49 | 21 8.0                            | .3021  | 13 53.2                          | 4.13  |
|                                 | 21 | +1.411               | —0.3750 | +0.0850 | 12.53 | 21 9.1                            | 1.3026 | 13 49.5                          | —4.01 |
|                                 | 22 | .421                 | .3731   | .0863   | 12.57 | 21 10.2                           | .3031  | 13 45.9                          | 3.89  |
|                                 | 23 | .432                 | .3712   | .0876   | 12.61 | 21 11.3                           | .3036  | 13 42.2                          | 3.77  |
|                                 | 24 | .443                 | .3692   | .0888   | 12.65 | 21 12.4                           | .3041  | 13 38.6                          | 3.64  |
|                                 | 25 | .454                 | .3671   | .0900   | 12.69 | 21 13.5                           | .3046  | 13 35.0                          | 3.52  |
|                                 | 26 | .464                 | .3650   | .0911   | 12.73 | 21 14.5                           | .3050  | 13 31.3                          | 3.40  |
|                                 | 27 | .475                 | .3629   | .0922   | 12.78 | 21 15.6                           | .3055  | 13 27.7                          | 3.28  |
|                                 | 28 | .486                 | .3607   | .0933   | 12.82 | 21 16.6                           | .3059  | 13 24.1                          | 3.15  |
|                                 | 29 | .497                 | .3585   | .0944   | 12.86 | 21 17.7                           | .3063  | 13 20.5                          | 3.02  |
|                                 | 30 | .508                 | .3562   | .0954   | 12.91 | 21 18.7                           | .3067  | 13 16.9                          | 2.90  |
| Juni                            | 31 | +1.520               | —0.3539 | +0.0964 | 12.96 | 21 19.7                           | 1.3071 | 13 13.3                          | —2.77 |
|                                 | 1  | .531                 | .3515   | .0973   | 13.00 | 21 20.8                           | .3075  | 13 9.8                           | 2.64  |
|                                 | 2  | .542                 | .3491   | .0982   | 13.05 | 21 21.8                           | .3078  | 13 6.2                           | 2.51  |
|                                 | 3  | .553                 | .3467   | .0990   | 13.10 | 21 22.8                           | .3082  | 13 2.7                           | 2.38  |
|                                 | 4  | .565                 | .3442   | .0998   | 13.15 | 21 23.8                           | .3085  | 12 59.1                          | 2.25  |
|                                 | 5  | .576                 | .3417   | .1005   | 13.20 | 21 24.7                           | .3088  | 12 55.5                          | 2.12  |
|                                 | 6  | .588                 | .3392   | .1012   | 13.25 | 21 25.7                           | .3091  | 12 52.0                          | 1.99  |
|                                 | 7  | .599                 | .3366   | .1019   | 13.30 | 21 26.6                           | .3093  | 12 48.4                          | 1.86  |
|                                 | 8  | .611                 | .3340   | .1025   | 13.35 | 21 27.6                           | .3096  | 12 44.9                          | 1.72  |
|                                 | 9  | .622                 | .3313   | .1031   | 13.41 | 21 28.5                           | .3098  | 12 41.4                          | 1.59  |
|                                 | 10 | +1.634               | —0.3286 | +0.1036 | 13.46 | 21 29.4                           | 1.3100 | 12 37.8                          | —1.46 |
|                                 | 11 | .646                 | .3259   | .1041   | 13.52 | 21 30.3                           | .3102  | 12 34.3                          | 1.32  |
|                                 | 12 | .657                 | .3231   | .1046   | 13.57 | 21 31.2                           | .3104  | 12 30.8                          | 1.19  |
|                                 | 13 | .669                 | .3203   | .1050   | 13.63 | 21 32.1                           | .3105  | 12 27.3                          | 1.05  |
|                                 | 14 | .680                 | .3174   | .1053   | 13.69 | 21 32.9                           | .3107  | 12 23.8                          | 0.92  |
|                                 | 15 | .692                 | .3145   | .1056   | 13.74 | 21 33.8                           | .3108  | 12 20.3                          | 0.78  |
|                                 | 16 | .704                 | .3116   | .1059   | 13.80 | 21 34.6                           | .3109  | 12 16.7                          | 0.65  |
|                                 | 17 | .716                 | .3087   | .1061   | 13.86 | 21 35.4                           | .3110  | 12 13.2                          | 0.51  |
|                                 | 18 | .727                 | .3057   | .1063   | 13.92 | 21 36.2                           | .3110  | 12 9.7                           | 0.38  |
|                                 | 19 | .739                 | .3027   | .1064   | 13.98 | 21 37.0                           | .3111  | 12 6.2                           | 0.24  |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                  | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|------------------------------------|--------|-----------------------------------|---------------------|
| Juni                            | 20 | +1 <sup>s</sup> .751 | —0.2997 | +0.1065 | 14 <sup>h</sup> .04 | 21 <sup>h</sup> 37 <sup>m</sup> .8 | 1.3111 | 12 <sup>h</sup> 2 <sup>m</sup> .7 | —0 <sup>s</sup> .11 |
|                                 | 21 | .763                 | .2967   | .1065   | 14.10               | 21 38.6                            | .3111  | 11 59.3                           | +0.03               |
|                                 | 22 | .775                 | .2936   | .1065   | 14.16               | 21 39.3                            | .3111  | 11 55.8                           | 0.16                |
|                                 | 23 | .786                 | .2905   | .1064   | 14.23               | 21 40.0                            | .3111  | 11 52.3                           | 0.30                |
|                                 | 24 | .798                 | .2874   | .1063   | 14.29               | 21 40.8                            | .3110  | 11 48.8                           | 0.43                |
|                                 | 25 | .810                 | .2843   | .1061   | 14.35               | 21 41.5                            | .3110  | 11 45.3                           | 0.57                |
|                                 | 26 | .821                 | .2812   | .1059   | 14.41               | 21 42.1                            | .3109  | 11 41.8                           | 0.70                |
|                                 | 27 | .833                 | .2780   | .1056   | 14.48               | 21 42.8                            | .3108  | 11 38.2                           | 0.84                |
|                                 | 28 | .845                 | .2748   | .1053   | 14.54               | 21 43.5                            | .3106  | 11 34.7                           | 0.97                |
|                                 | 29 | .856                 | .2716   | .1049   | 14.61               | 21 44.1                            | .3105  | 11 31.2                           | 1.11                |
| Juli                            | 30 | +1.868               | —0.2684 | +0.1045 | 14.67               | 21 44.7                            | 1.3103 | 11 27.7                           | +1.24               |
|                                 | 1  | .880                 | .2651   | .1040   | 14.74               | 21 45.4                            | .3101  | 11 24.2                           | 1.38                |
|                                 | 2  | .891                 | .2619   | .1035   | 14.80               | 21 46.0                            | .3099  | 11 20.7                           | 1.51                |
|                                 | 3  | .903                 | .2586   | .1029   | 14.87               | 21 46.6                            | .3097  | 11 17.2                           | 1.65                |
|                                 | 4  | .914                 | .2554   | .1023   | 14.93               | 21 47.1                            | .3095  | 11 13.7                           | 1.78                |
|                                 | 5  | .926                 | .2521   | .1017   | 15.00               | 21 47.7                            | .3092  | 11 10.1                           | 1.91                |
|                                 | 6  | .937                 | .2488   | .1010   | 15.06               | 21 48.2                            | .3090  | 11 6.6                            | 2.04                |
|                                 | 7  | .949                 | .2455   | .1003   | 15.13               | 21 48.7                            | .3087  | 11 3.1                            | 2.17                |
|                                 | 8  | .960                 | .2422   | .0995   | 15.20               | 21 49.2                            | .3084  | 10 59.5                           | 2.30                |
|                                 | 9  | .971                 | .2389   | .0987   | 15.26               | 21 49.7                            | .3080  | 10 56.0                           | 2.43                |
|                                 | 10 | +1.983               | —0.2356 | +0.0978 | 15.33               | 21 50.2                            | 1.3077 | 10 52.4                           | +2.56               |
|                                 | 11 | 1.994                | .2323   | .0969   | 15.39               | 21 50.7                            | .3073  | 10 48.9                           | 2.69                |
|                                 | 12 | 2.005                | .2289   | .0960   | 15.46               | 21 51.2                            | .3070  | 10 45.3                           | 2.82                |
|                                 | 13 | .016                 | .2256   | .0950   | 15.53               | 21 51.6                            | .3066  | 10 41.7                           | 2.94                |
|                                 | 14 | .027                 | .2223   | .0940   | 15.59               | 21 52.1                            | .3062  | 10 38.2                           | 3.07                |
|                                 | 15 | .038                 | .2190   | .0929   | 15.66               | 21 52.5                            | .3057  | 10 34.6                           | 3.19                |
|                                 | 16 | .049                 | .2157   | .0918   | 15.73               | 21 52.9                            | .3053  | 10 31.0                           | 3.32                |
|                                 | 17 | .060                 | .2124   | .0907   | 15.79               | 21 53.3                            | .3049  | 10 27.4                           | 3.44                |
|                                 | 18 | .071                 | .2091   | .0896   | 15.86               | 21 53.7                            | .3044  | 10 23.8                           | 3.56                |
|                                 | 19 | .082                 | .2059   | .0884   | 15.92               | 21 54.1                            | .3040  | 10 20.2                           | 3.69                |
| August                          | 20 | +2.092               | —0.2026 | +0.0872 | 15.99               | 21 54.5                            | 1.3035 | 10 16.6                           | +3.81               |
|                                 | 21 | .103                 | .1994   | .0860   | 16.05               | 21 54.8                            | .3030  | 10 12.9                           | 3.93                |
|                                 | 22 | .113                 | .1961   | .0847   | 16.12               | 21 55.2                            | .3025  | 10 9.3                            | 4.05                |
|                                 | 23 | .124                 | .1929   | .0834   | 16.18               | 21 55.5                            | .3020  | 10 5.6                            | 4.16                |
|                                 | 24 | .134                 | .1896   | .0821   | 16.25               | 21 55.9                            | .3014  | 10 1.9                            | 4.28                |
|                                 | 25 | .145                 | .1864   | .0807   | 16.31               | 21 56.2                            | .3009  | 9 58.3                            | 4.40                |
|                                 | 26 | .155                 | .1832   | .0793   | 16.38               | 21 56.5                            | .3003  | 9 54.6                            | 4.51                |
|                                 | 27 | .165                 | .1800   | .0779   | 16.44               | 21 56.8                            | .2997  | 9 50.9                            | 4.62                |
|                                 | 28 | .175                 | .1768   | .0765   | 16.51               | 21 57.1                            | .2992  | 9 47.2                            | 4.73                |
|                                 | 29 | .185                 | .1736   | .0751   | 16.57               | 21 57.4                            | .2986  | 9 43.5                            | 4.84                |
|                                 | 30 | +2.195               | —0.1704 | +0.0737 | 16.63               | 21 57.7                            | 1.2980 | 9 39.8                            | +4.95               |
|                                 | 31 | .205                 | .1673   | .0722   | 16.70               | 21 57.9                            | .2975  | 9 36.0                            | 5.06                |
|                                 | 1  | .214                 | .1642   | .0707   | 16.76               | 21 58.2                            | .2968  | 9 32.3                            | 5.16                |
|                                 | 2  | .224                 | .1611   | .0692   | 16.82               | 21 58.4                            | .2962  | 9 28.5                            | 5.27                |
|                                 | 3  | .234                 | .1580   | .0677   | 16.88               | 21 58.7                            | .2956  | 9 24.8                            | 5.37                |
|                                 | 4  | .243                 | .1550   | .0662   | 16.94               | 21 58.9                            | .2950  | 9 21.0                            | 5.47                |
|                                 | 5  | .253                 | .1520   | .0646   | 17.01               | 21 59.2                            | .2944  | 9 17.2                            | 5.57                |
|                                 | 6  | .262                 | .1490   | .0631   | 17.07               | 21 59.4                            | .2938  | 9 13.4                            | 5.67                |
|                                 | 7  | .271                 | .1460   | .0616   | 17.13               | 21 59.6                            | .2932  | 9 9.6                             | 5.77                |
|                                 | 8  | .280                 | .1430   | .0601   | 17.18               | 21 59.8                            | .2925  | 9 5.7                             | 5.86                |

## 1858

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                 | log h  | H                                | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|-----------------------------------|--------|----------------------------------|---------------------|
| August                          | 9  | +2 <sup>s</sup> .289 | —0.1401 | +0.0585 | 17 <sup>h</sup> .24 | 22 <sup>h</sup> 0 <sup>m</sup> .1 | 1.2919 | 9 <sup>h</sup> 1 <sup>m</sup> .9 | +5 <sup>s</sup> .96 |
|                                 | 10 | .298                 | .1372   | .0570   | 17.30               | 22 0.3                            | .2913  | 8 58.0                           | 6.05                |
|                                 | 11 | .307                 | .1343   | .0555   | 17.36               | 22 0.5                            | .2906  | 8 54.2                           | 6.14                |
|                                 | 12 | .316                 | .1314   | .0540   | 17.42               | 22 0.7                            | .2900  | 8 50.3                           | 6.23                |
|                                 | 13 | .325                 | .1285   | .0525   | 17.47               | 22 0.9                            | .2894  | 8 46.4                           | 6.32                |
|                                 | 14 | .333                 | .1257   | .0510   | 17.53               | 22 1.1                            | .2888  | 8 42.5                           | 6.40                |
|                                 | 15 | .342                 | .1229   | .0495   | 17.59               | 22 1.3                            | .2881  | 8 38.6                           | 6.49                |
|                                 | 16 | .350                 | .1201   | .0480   | 17.64               | 22 1.5                            | .2875  | 8 34.7                           | 6.57                |
|                                 | 17 | .359                 | .1174   | .0465   | 17.70               | 22 1.6                            | .2869  | 8 30.7                           | 6.65                |
|                                 | 18 | .367                 | .1147   | .0451   | 17.75               | 22 1.8                            | .2863  | 8 26.8                           | 6.73                |
|                                 | 19 | +2.375               | —0.1120 | +0.0436 | 17.80               | 22 2.0                            | 1.2857 | 8 22.8                           | +6.80               |
|                                 | 20 | .383                 | .1094   | .0422   | 17.86               | 22 2.2                            | .2851  | 8 18.8                           | 6.88                |
|                                 | 21 | .391                 | .1068   | .0408   | 17.91               | 22 2.4                            | .2845  | 8 14.8                           | 6.95                |
|                                 | 22 | .399                 | .1042   | .0394   | 17.96               | 22 2.5                            | .2840  | 8 10.8                           | 7.02                |
|                                 | 23 | .407                 | .1016   | .0380   | 18.01               | 22 2.7                            | .2834  | 8 6.8                            | 7.09                |
|                                 | 24 | .415                 | .0991   | .0367   | 18.06               | 22 2.9                            | .2828  | 8 2.8                            | 7.16                |
|                                 | 25 | .423                 | .0966   | .0353   | 18.11               | 22 3.1                            | .2823  | 7 58.7                           | 7.22                |
|                                 | 26 | .430                 | .0941   | .0340   | 18.16               | 22 3.3                            | .2817  | 7 54.6                           | 7.28                |
|                                 | 27 | .438                 | .0917   | .0327   | 18.21               | 22 3.4                            | .2812  | 7 50.6                           | 7.35                |
|                                 | 28 | .445                 | .0893   | .0315   | 18.26               | 22 3.6                            | .2807  | 7 46.5                           | 7.40                |
|                                 | 29 | +2.453               | —0.0869 | +0.0303 | 18.31               | 22 3.8                            | 1.2802 | 7 42.4                           | +7.46               |
|                                 | 30 | .460                 | .0845   | .0292   | 18.36               | 22 4.0                            | .2797  | 7 38.3                           | 7.51                |
|                                 | 31 | .468                 | .0822   | .0281   | 18.40               | 22 4.2                            | .2792  | 7 34.2                           | 7.56                |
| Septbr.                         | 1  | .475                 | .0799   | .0270   | 18.45               | 22 4.3                            | .2788  | 7 30.1                           | 7.61                |
|                                 | 2  | .482                 | .0776   | .0260   | 18.49               | 22 4.5                            | .2783  | 7 26.0                           | 7.66                |
|                                 | 3  | .489                 | .0754   | .0250   | 18.54               | 22 4.7                            | .2779  | 7 21.8                           | 7.71                |
|                                 | 4  | .496                 | .0732   | .0240   | 18.58               | 22 4.9                            | .2775  | 7 17.7                           | 7.75                |
|                                 | 5  | .504                 | .0710   | .0231   | 18.63               | 22 5.1                            | .2771  | 7 13.5                           | 7.79                |
|                                 | 6  | .511                 | .0688   | .0222   | 18.67               | 22 5.3                            | .2767  | 7 9.3                            | 7.83                |
|                                 | 7  | .518                 | .0667   | .0214   | 18.72               | 22 5.5                            | .2764  | 7 5.2                            | 7.87                |
|                                 | 8  | +2.525               | —0.0646 | +0.0206 | 18.76               | 22 5.7                            | 1.2761 | 7 1.0                            | +7.90               |
|                                 | 9  | .531                 | .0625   | .0199   | 18.80               | 22 5.9                            | .2757  | 6 56.8                           | 7.94                |
|                                 | 10 | .538                 | .0604   | .0192   | 18.84               | 22 6.1                            | .2754  | 6 52.6                           | 7.97                |
|                                 | 11 | .545                 | .0583   | .0185   | 18.88               | 22 6.3                            | .2751  | 6 48.4                           | 7.99                |
|                                 | 12 | .552                 | .0563   | .0179   | 18.92               | 22 6.5                            | .2749  | 6 44.2                           | 8.02                |
|                                 | 13 | .559                 | .0543   | .0174   | 18.96               | 22 6.8                            | .2747  | 6 39.9                           | 8.04                |
|                                 | 14 | .565                 | .0523   | .0170   | 19.00               | 22 7.0                            | .2745  | 6 35.7                           | 8.06                |
|                                 | 15 | .572                 | .0504   | .0166   | 19.04               | 22 7.2                            | .2743  | 6 31.4                           | 8.08                |
|                                 | 16 | .579                 | .0484   | .0162   | 19.08               | 22 7.4                            | .2741  | 6 27.2                           | 8.10                |
|                                 | 17 | .585                 | .0465   | .0159   | 19.12               | 22 7.7                            | .2740  | 6 22.9                           | 8.11                |
|                                 | 18 | +2.592               | —0.0446 | +0.0156 | 19.16               | 22 7.9                            | 1.2739 | 6 18.7                           | +8.12               |
|                                 | 19 | .599                 | .0427   | .0154   | 19.20               | 22 8.2                            | .2738  | 6 14.4                           | 8.13                |
|                                 | 20 | .605                 | .0408   | .0152   | 19.23               | 22 8.5                            | .2737  | 6 10.2                           | 8.14                |
|                                 | 21 | .612                 | .0390   | .0151   | 19.27               | 22 8.7                            | .2737  | 6 5.9                            | 8.15                |
|                                 | 22 | .618                 | .0371   | .0150   | 19.31               | 22 9.0                            | .2737  | 6 1.6                            | 8.15                |
|                                 | 23 | .625                 | .0353   | .0150   | 19.34               | 22 9.2                            | .2737  | 5 57.4                           | 8.15                |
|                                 | 24 | .632                 | .0335   | .0151   | 19.38               | 22 9.5                            | .2737  | 5 53.1                           | 8.14                |
|                                 | 25 | .638                 | .0317   | .0152   | 19.42               | 22 9.8                            | .2737  | 5 48.8                           | 8.14                |
|                                 | 26 | .645                 | .0299   | .0154   | 19.45               | 22 10.1                           | .2738  | 5 44.5                           | 8.13                |
|                                 | 27 | .652                 | .0281   | .0156   | 19.49               | 22 10.4                           | .2739  | 5 40.2                           | 8.12                |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                   | x       | y       | g                  | G                                 | log h  | H                                | i                  |
|---------------------------------|----|---------------------|---------|---------|--------------------|-----------------------------------|--------|----------------------------------|--------------------|
| Septbr.                         | 28 | +2 <sup>s</sup> 658 | −0.0263 | +0.0159 | 19 <sup>h</sup> 52 | 22 <sup>h</sup> 10 <sup>m</sup> 7 | 1.2740 | 5 <sup>h</sup> 35 <sup>m</sup> 9 | +8 <sup>h</sup> 11 |
|                                 | 29 | .665                | .0245   | .0162   | 19.56              | 22 11.0                           | .2742  | 5 31.7                           | 8.10               |
|                                 | 30 | .672                | .0227   | .0166   | 19.60              | 22 11.3                           | .2743  | 5 27.4                           | 8.08               |
| Oktbr.                          | 1  | .678                | .0210   | .0171   | 19.63              | 22 11.7                           | .2745  | 5 23.1                           | 8.06               |
|                                 | 2  | .685                | .0192   | .0176   | 19.67              | 22 12.1                           | .2748  | 5 18.8                           | 8.04               |
|                                 | 3  | .692                | .0175   | .0182   | 19.70              | 22 12.3                           | .2750  | 5 14.6                           | 8.01               |
|                                 | 4  | .699                | .0158   | .0188   | 19.73              | 22 12.6                           | .2753  | 5 10.3                           | 7.98               |
|                                 | 5  | .705                | .0141   | .0195   | 19.77              | 22 13.0                           | .2755  | 5 6.0                            | 7.95               |
|                                 | 6  | .712                | .0123   | .0202   | 19.80              | 22 13.3                           | .2758  | 5 1.8                            | 7.92               |
|                                 | 7  | .719                | .0106   | .0210   | 19.84              | 22 13.7                           | .2762  | 4 57.5                           | 7.89               |
|                                 | 8  | +2.726              | −0.0088 | +0.0218 | 19.88              | 22 14.1                           | 1.2765 | 4 53.3                           | +7.85              |
|                                 | 9  | .733                | .0071   | .0227   | 19.91              | 22 14.5                           | .2769  | 4 49.0                           | 7.82               |
|                                 | 10 | .741                | .0053   | .0236   | 19.95              | 22 14.8                           | .2773  | 4 44.8                           | 7.78               |
|                                 | 11 | .748                | .0035   | .0245   | 19.98              | 22 15.2                           | .2777  | 4 40.5                           | 7.73               |
|                                 | 12 | .755                | −0.0018 | .0255   | 20.02              | 22 15.6                           | .2781  | 4 36.3                           | 7.69               |
|                                 | 13 | .762                | 0.0000  | .0265   | 20.05              | 22 16.0                           | .2785  | 4 32.0                           | 7.64               |
|                                 | 14 | .769                | +0.0017 | .0276   | 20.09              | 22 16.4                           | .2790  | 4 27.8                           | 7.59               |
|                                 | 15 | .777                | .0035   | .0287   | 20.12              | 22 16.8                           | .2795  | 4 23.6                           | 7.54               |
|                                 | 16 | .784                | .0053   | .0299   | 20.16              | 22 17.2                           | .2800  | 4 19.4                           | 7.48               |
|                                 | 17 | .792                | .0071   | .0312   | 20.19              | 22 17.6                           | .2805  | 4 15.2                           | 7.43               |
|                                 | 18 | +2.799              | +0.0089 | +0.0324 | 20.23              | 22 18.1                           | 1.2810 | 4 11.0                           | +7.37              |
|                                 | 19 | .807                | .0108   | .0337   | 20.27              | 22 18.5                           | .2815  | 4 6.8                            | 7.31               |
|                                 | 20 | .814                | .0127   | .0350   | 20.31              | 22 18.9                           | .2821  | 4 2.6                            | 7.24               |
|                                 | 21 | .822                | .0146   | .0363   | 20.34              | 22 19.4                           | .2827  | 3 58.4                           | 7.17               |
|                                 | 22 | .830                | .0165   | .0376   | 20.38              | 22 19.8                           | .2832  | 3 54.3                           | 7.11               |
|                                 | 23 | .838                | .0185   | .0390   | 20.42              | 22 20.3                           | .2838  | 3 50.1                           | 7.04               |
|                                 | 24 | .846                | .0205   | .0404   | 20.46              | 22 20.8                           | .2844  | 3 46.0                           | 6.96               |
|                                 | 25 | .855                | .0225   | .0419   | 20.50              | 22 21.2                           | .2850  | 3 41.8                           | 6.89               |
|                                 | 26 | .863                | .0245   | .0434   | 20.54              | 22 21.7                           | .2856  | 3 37.7                           | 6.81               |
|                                 | 27 | .871                | .0265   | .0449   | 20.58              | 22 22.2                           | .2862  | 3 33.6                           | 6.73               |
| Novbr.                          | 28 | +2.880              | +0.0285 | +0.0464 | 20.62              | 22 22.6                           | 1.2869 | 3 29.5                           | +6.65              |
|                                 | 29 | .888                | .0306   | .0479   | 20.66              | 22 23.1                           | .2875  | 3 25.4                           | 6.57               |
|                                 | 30 | .897                | .0327   | .0495   | 20.71              | 22 23.6                           | .2882  | 3 21.3                           | 6.48               |
|                                 | 31 | .905                | .0348   | .0511   | 20.75              | 22 24.1                           | .2888  | 3 17.2                           | 6.40               |
|                                 | 1  | .914                | .0369   | .0528   | 20.79              | 22 24.5                           | .2895  | 3 13.1                           | 6.31               |
|                                 | 2  | .923                | .0391   | .0544   | 20.84              | 22 25.0                           | .2901  | 3 9.1                            | 6.22               |
|                                 | 3  | .932                | .0413   | .0561   | 20.88              | 22 25.5                           | .2908  | 3 5.0                            | 6.12               |
|                                 | 4  | .941                | .0436   | .0577   | 20.93              | 22 26.0                           | .2914  | 3 1.0                            | 6.03               |
|                                 | 5  | .950                | .0459   | .0593   | 20.97              | 22 26.5                           | .2921  | 2 57.0                           | 5.93               |
|                                 | 6  | .959                | .0482   | .0608   | 21.02              | 22 27.0                           | .2927  | 2 53.0                           | 5.83               |
|                                 | 7  | +2.969              | +0.0505 | +0.0624 | 21.06              | 22 27.5                           | 1.2934 | 2 49.0                           | +5.73              |
|                                 | 8  | .978                | .0529   | .0639   | 21.11              | 22 27.9                           | .2940  | 2 45.0                           | 5.63               |
|                                 | 9  | .988                | .0553   | .0655   | 21.16              | 22 28.4                           | .2947  | 2 41.0                           | 5.52               |
|                                 | 10 | 2.997               | .0578   | .0670   | 21.21              | 22 28.9                           | .2953  | 2 37.0                           | 5.42               |
|                                 | 11 | 3.007               | .0603   | .0686   | 21.26              | 22 29.4                           | .2960  | 2 33.0                           | 5.31               |
|                                 | 12 | .017                | .0628   | .0701   | 21.31              | 22 29.9                           | .2966  | 2 29.1                           | 5.20               |
|                                 | 13 | .027                | .0653   | .0717   | 21.36              | 22 30.4                           | .2972  | 2 25.1                           | 5.09               |
|                                 | 14 | .037                | .0679   | .0732   | 21.41              | 22 30.9                           | .2978  | 2 21.2                           | 4.98               |
|                                 | 15 | .047                | .0705   | .0747   | 21.47              | 22 31.4                           | .2985  | 2 17.3                           | 4.86               |
|                                 | 16 | .057                | .0732   | .0762   | 21.52              | 22 31.9                           | .2991  | 2 13.3                           | 4.75               |

## 1858

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                  | log h  | H                                | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|------------------------------------|--------|----------------------------------|---------------------|
| Novbr.                          | 17 | +3 <sup>s</sup> .067 | +0.0759 | +0.0777 | 21 <sup>"</sup> .57 | 22 <sup>h</sup> 32 <sup>m</sup> .4 | 1.2997 | 2 <sup>h</sup> 9 <sup>m</sup> .4 | +4 <sup>"</sup> .63 |
|                                 | 18 | .078                 | .0787.  | .0792   | 21.63               | 22 32.8                            | .3003  | 2 5.5                            | 4.51                |
|                                 | 19 | .088                 | .0815   | .0806   | 21.69               | 22 33.3                            | .3008  | 2 1.6                            | 4.39                |
|                                 | 20 | .099                 | .0843   | .0820   | 21.74               | 22 33.8                            | .3014  | 1 57.8                           | 4.27                |
|                                 | 21 | .110                 | .0871   | .0834   | 21.80               | 22 34.3                            | .3020  | 1 53.9                           | 4.15                |
|                                 | 22 | .120                 | .0900   | .0848   | 21.86               | 22 34.7                            | .3025  | 1 50.0                           | 4.02                |
|                                 | 23 | .131                 | .0929   | .0861   | 21.91               | 22 35.2                            | .3031  | 1 46.2                           | 3.90                |
|                                 | 24 | .142                 | .0959   | .0875   | 21.97               | 22 35.7                            | .3036  | 1 42.3                           | 3.77                |
|                                 | 25 | .153                 | .0989   | .0888   | 22.04               | 22 36.1                            | .3041  | 1 38.5                           | 3.64                |
|                                 | 26 | .164                 | .1020   | .0900   | 22.10               | 22 36.6                            | .3046  | 1 34.7                           | 3.51                |
| Dezbr.                          | 27 | +3.175               | +0.1051 | +0.0912 | 22.16               | 22 37.0                            | 1.3051 | 1 30.8                           | +3.38               |
|                                 | 28 | .187                 | .1082   | .0924   | 22.22               | 22 37.4                            | .3056  | 1 27.0                           | 3.25                |
|                                 | 29 | .198                 | .1113   | .0935   | 22.28               | 22 37.9                            | .3060  | 1 23.2                           | 3.12                |
|                                 | 30 | .209                 | .1145   | .0946   | 22.35               | 22 38.3                            | .3064  | 1 19.4                           | 2.98                |
|                                 | 1  | .221                 | .1177   | .0957   | 22.41               | 22 38.8                            | .3069  | 1 15.6                           | 2.85                |
|                                 | 2  | .232                 | .1209   | .0967   | 22.48               | 22 39.2                            | .3073  | 1 11.8                           | 2.71                |
|                                 | 3  | .244                 | .1242   | .0977   | 22.54               | 22 39.6                            | .3076  | 1 8.0                            | 2.58                |
|                                 | 4  | .256                 | .1275   | .0986   | 22.61               | 22 40.0                            | .3080  | 1 4.2                            | 2.44                |
|                                 | 5  | .267                 | .1308   | .0995   | 22.68               | 22 40.4                            | .3083  | 1 0.4                            | 2.30                |
|                                 | 6  | .279                 | .1342   | .1003   | 22.74               | 22 40.8                            | .3087  | 0 56.7                           | 2.16                |
|                                 | 7  | +3.291               | +0.1376 | +0.1011 | 22.81               | 22 41.2                            | 1.3090 | 0 52.9                           | +2.02               |
|                                 | 8  | .303                 | .1410   | .1018   | 22.88               | 22 41.6                            | .3093  | 0 49.1                           | 1.88                |
|                                 | 9  | .315                 | .1444   | .1025   | 22.95               | 22 41.9                            | .3095  | 0 45.4                           | 1.74                |
|                                 | 10 | .327                 | .1479   | .1031   | 23.02               | 22 42.3                            | .3098  | 0 41.6                           | 1.60                |
|                                 | 11 | .339                 | .1514   | .1036   | 23.09               | 22 42.7                            | .3100  | 0 37.9                           | 1.46                |
|                                 | 12 | .350                 | .1549   | .1041   | 23.16               | 22 43.0                            | .3102  | 0 34.1                           | 1.31                |
|                                 | 13 | .362                 | .1584   | .1046   | 23.23               | 22 43.4                            | .3104  | 0 30.4                           | 1.17                |
|                                 | 14 | .375                 | .1620   | .1050   | 23.30               | 22 43.7                            | .3105  | 0 26.6                           | 1.03                |
|                                 | 15 | .387                 | .1656   | .1053   | 23.37               | 22 44.0                            | .3107  | 0 22.9                           | 0.89                |
|                                 | 16 | .399                 | .1692   | .1056   | 23.44               | 22 44.4                            | .3108  | 0 19.2                           | 0.74                |
|                                 | 17 | +3.411               | +0.1728 | +0.1059 | 23.52               | 22 44.7                            | 1.3109 | 0 15.4                           | +0.60               |
|                                 | 18 | .423                 | .1764   | .1062   | 23.59               | 22 45.0                            | .3110  | 0 11.7                           | 0.45                |
|                                 | 19 | .435                 | .1801   | .1064   | 23.66               | 22 45.3                            | .3111  | 0 7.9                            | 0.31                |
|                                 | 20 | .447                 | .1838   | .1065   | 23.74               | 22 45.6                            | .3111  | 0 4.2                            | 0.16                |
|                                 | 21 | .460                 | .1875   | .1065   | 23.81               | 22 45.8                            | .3111  | 0 0.5                            | +0.02               |
|                                 | 22 | .472                 | .1912   | .1065   | 23.89               | 22 46.1                            | .3111  | 23 56.7                          | -0.13               |
|                                 | 23 | .484                 | .1949   | .1064   | 23.96               | 22 46.4                            | .3111  | 23 53.0                          | 0.27                |
|                                 | 24 | .496                 | .1986   | .1063   | 24.03               | 22 46.6                            | .3110  | 23 49.2                          | 0.42                |
|                                 | 25 | .508                 | .2023   | .1061   | 24.11               | 22 46.9                            | .3110  | 23 45.5                          | 0.56                |
|                                 | 26 | .521                 | .2061   | .1058   | 24.18               | 22 47.1                            | .3109  | 23 41.7                          | 0.71                |
|                                 | 27 | +3.533               | +0.2098 | +0.1055 | 24.26               | 22 47.4                            | 1.3108 | 23 38.0                          | -0.85               |
|                                 | 28 | .545                 | .2136   | .1052   | 24.33               | 22 47.6                            | .3106  | 23 34.2                          | 0.99                |
|                                 | 29 | .557                 | .2173   | .1048   | 24.41               | 22 47.8                            | .3105  | 23 30.5                          | 1.14                |
|                                 | 30 | .569                 | .2211   | .1044   | 24.49               | 22 48.0                            | .3103  | 23 26.7                          | 1.28                |
|                                 | 31 | .581                 | .2249   | .1040   | 24.56               | 22 48.2                            | .3101  | 23 23.0                          | 1.42                |

## 1859

| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                  | log h  | H                                  | i     |
|---------------------------------|----|--------|---------|---------|-------|------------------------------------|--------|------------------------------------|-------|
| Januar                          | 1  | +0.522 | —0.5863 | +0.1033 | 8.30  | 19 <sup>h</sup> 36 <sup>m</sup> .7 | 1.3098 | 23 <sup>h</sup> 19 <sup>m</sup> .2 | —1.56 |
|                                 | 2  | .534   | .5845   | .1027   | 8.33  | 19 38.6                            | .3096  | 23 15.5                            | 1.71  |
|                                 | 3  | .545   | .5827   | .1020   | 8.37  | 19 40.4                            | .3093  | 23 11.7                            | 1.85  |
|                                 | 4  | .557   | .5808   | .1013   | 8.41  | 19 42.3                            | .3091  | 23 7.9                             | 1.99  |
|                                 | 5  | .569   | .5789   | .1005   | 8.44  | 19 44.1                            | .3088  | 23 4.1                             | 2.13  |
|                                 | 6  | .581   | .5769   | .0997   | 8.48  | 19 45.9                            | .3084  | 23 0.4                             | 2.27  |
|                                 | 7  | .593   | .5749   | .0988   | 8.52  | 19 47.6                            | .3081  | 22 56.6                            | 2.41  |
|                                 | 8  | .604   | .5728   | .0979   | 8.57  | 19 49.4                            | .3077  | 22 52.8                            | 2.55  |
|                                 | 9  | .616   | .5707   | .0969   | 8.61  | 19 51.0                            | .3074  | 22 49.0                            | 2.68  |
|                                 | 10 | .627   | .5686   | .0959   | 8.65  | 19 52.7                            | .3070  | 22 45.2                            | 2.82  |
|                                 | 11 | +0.639 | —0.5664 | +0.0949 | 8.70  | 19 54.3                            | 1.3066 | 22 41.3                            | —2.96 |
|                                 | 12 | .650   | .5642   | .0938   | 8.74  | 19 55.9                            | .3061  | 22 37.5                            | 3.09  |
|                                 | 13 | .661   | .5619   | .0927   | 8.78  | 19 57.5                            | .3057  | 22 33.7                            | 3.22  |
|                                 | 14 | .673   | .5596   | .0915   | 8.83  | 19 59.0                            | .3052  | 22 29.9                            | 3.36  |
|                                 | 15 | .684   | .5573   | .0903   | 8.88  | 20 0.5                             | .3047  | 22 26.0                            | 3.49  |
|                                 | 16 | .695   | .5550   | .0890   | 8.92  | 20 2.0                             | .3042  | 22 22.2                            | 3.62  |
|                                 | 17 | .706   | .5527   | .0878   | 8.97  | 20 3.4                             | .3037  | 22 18.3                            | 3.75  |
|                                 | 18 | .717   | .5503   | .0865   | 9.02  | 20 4.8                             | .3032  | 22 14.4                            | 3.88  |
|                                 | 19 | .728   | .5479   | .0852   | 9.06  | 20 6.2                             | .3027  | 22 10.5                            | 4.00  |
|                                 | 20 | .739   | .5455   | .0838   | 9.11  | 20 7.5                             | .3021  | 22 6.7                             | 4.13  |
|                                 | 21 | +0.750 | —0.5431 | +0.0824 | 9.16  | 20 8.9                             | 1.3015 | 22 2.8                             | —4.25 |
|                                 | 22 | .760   | .5407   | .0809   | 9.21  | 20 10.1                            | .3009  | 21 58.9                            | 4.37  |
|                                 | 23 | .771   | .5383   | .0794   | 9.26  | 20 11.4                            | .3004  | 21 55.0                            | 4.50  |
|                                 | 24 | .781   | .5358   | .0779   | 9.31  | 20 12.6                            | .2998  | 21 51.0                            | 4.62  |
|                                 | 25 | .791   | .5334   | .0764   | 9.36  | 20 13.8                            | .2992  | 21 47.1                            | 4.74  |
|                                 | 26 | .802   | .5309   | .0749   | 9.41  | 20 14.9                            | .2986  | 21 43.1                            | 4.85  |
|                                 | 27 | .812   | .5284   | .0734   | 9.46  | 20 16.1                            | .2980  | 21 39.2                            | 4.97  |
|                                 | 28 | .822   | .5259   | .0719   | 9.51  | 20 17.2                            | .2973  | 21 35.2                            | 5.08  |
|                                 | 29 | .832   | .5234   | .0703   | 9.56  | 20 18.2                            | .2967  | 21 31.2                            | 5.19  |
|                                 | 30 | .842   | .5210   | .0687   | 9.60  | 20 19.3                            | .2960  | 21 27.3                            | 5.30  |
| Februar                         | 31 | +0.852 | —0.5185 | +0.0671 | 9.65  | 20 20.3                            | 1.2954 | 21 23.3                            | —5.41 |
|                                 | 1  | .861   | .5161   | .0655   | 9.70  | 20 21.3                            | .2947  | 21 19.3                            | 5.52  |
|                                 | 2  | .871   | .5136   | .0638   | 9.75  | 20 22.3                            | .2941  | 21 15.2                            | 5.62  |
|                                 | 3  | .880   | .5112   | .0622   | 9.80  | 20 23.3                            | .2934  | 21 11.2                            | 5.73  |
|                                 | 4  | .890   | .5088   | .0606   | 9.85  | 20 24.2                            | .2927  | 21 7.2                             | 5.83  |
|                                 | 5  | .899   | .5064   | .0590   | 9.90  | 20 25.1                            | .2921  | 21 3.1                             | 5.93  |
|                                 | 6  | .908   | .5040   | .0574   | 9.94  | 20 26.0                            | .2914  | 20 59.1                            | 6.03  |
|                                 | 7  | .917   | .5017   | .0558   | 9.99  | 20 26.9                            | .2908  | 20 55.0                            | 6.12  |
|                                 | 8  | .926   | .4993   | .0542   | 10.04 | 20 27.8                            | .2901  | 20 50.9                            | 6.22  |
|                                 | 9  | .935   | .4970   | .0526   | 10.09 | 20 28.6                            | .2894  | 20 46.8                            | 6.31  |
|                                 | 10 | +0.944 | —0.4947 | +0.0510 | 10.13 | 20 29.5                            | 1.2888 | 20 42.7                            | —6.40 |
|                                 | 11 | .952   | .4924   | .0495   | 10.18 | 20 30.3                            | .2882  | 20 38.6                            | 6.49  |
|                                 | 12 | .961   | .4901   | .0479   | 10.22 | 20 31.1                            | .2875  | 20 34.5                            | 6.57  |
|                                 | 13 | .969   | .4879   | .0464   | 10.27 | 20 31.8                            | .2869  | 20 30.3                            | 6.66  |
|                                 | 14 | .978   | .4857   | .0449   | 10.31 | 20 32.6                            | .2862  | 20 26.2                            | 6.74  |
|                                 | 15 | .986   | .4835   | .0434   | 10.36 | 20 33.3                            | .2856  | 20 22.0                            | 6.82  |
|                                 | 16 | 0.994  | .4813   | .0419   | 10.40 | 20 34.1                            | .2850  | 20 17.8                            | 6.90  |
|                                 | 17 | 1.002  | .4791   | .0404   | 10.44 | 20 34.8                            | .2844  | 20 13.6                            | 6.97  |
|                                 | 18 | .010   | .4769   | .0390   | 10.49 | 20 35.5                            | .2838  | 20 9.5                             | 7.04  |
|                                 | 19 | .018   | .4748   | .0376   | 10.53 | 20 36.2                            | .2832  | 20 5.3                             | 7.12  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                  | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|------------------------------------|--------|-----------------------------------|---------------------|
| Februar                         | 20 | +1 <sup>s</sup> .026 | —0.4727 | +0.0362 | 10 <sup>h</sup> .57 | 20 <sup>h</sup> 36 <sup>m</sup> .9 | 1.2826 | 20 <sup>h</sup> 1 <sup>m</sup> .1 | —7 <sup>h</sup> .18 |
|                                 | 21 | .034                 | .4706   | .0348   | 10.61               | 20 37.6                            | .2820  | 19 56.8                           | 7.25                |
|                                 | 22 | .041                 | .4686   | .0334   | 10.66               | 20 38.3                            | .2815  | 19 52.6                           | 7.32                |
|                                 | 23 | .049                 | .4666   | .0321   | 10.70               | 20 38.9                            | .2809  | 19 48.4                           | 7.38                |
|                                 | 24 | .057                 | .4646   | .0308   | 10.74               | 20 39.6                            | .2804  | 19 44.1                           | 7.44                |
|                                 | 25 | .064                 | .4627   | .0296   | 10.77               | 20 40.3                            | .2798  | 19 39.9                           | 7.49                |
|                                 | 26 | .071                 | .4607   | .0285   | 10.81               | 20 40.9                            | .2794  | 19 35.6                           | 7.55                |
|                                 | 27 | .079                 | .4588   | .0274   | 10.85               | 20 41.6                            | .2789  | 19 31.3                           | 7.60                |
|                                 | 28 | .086                 | .4569   | .0263   | 10.89               | 20 42.2                            | .2784  | 19 27.1                           | 7.65                |
| März                            | 1  | .093                 | .4551   | .0253   | 10.93               | 20 42.9                            | .2780  | 19 22.8                           | 7.70                |
|                                 | 2  | +1.100               | —0.4533 | +0.0243 | 10.96               | 20 43.5                            | 1.2776 | 19 18.5                           | —7.75               |
|                                 | 3  | .108                 | .4516   | .0234   | 11.00               | 20 44.1                            | .2772  | 19 14.2                           | 7.79                |
|                                 | 4  | .115                 | .4498   | .0225   | 11.03               | 20 44.7                            | .2768  | 19 9.9                            | 7.83                |
|                                 | 5  | .121                 | .4481   | .0216   | 11.07               | 20 45.4                            | .2764  | 19 5.6                            | 7.87                |
|                                 | 6  | .128                 | .4464   | .0208   | 11.10               | 20 46.0                            | .2761  | 19 1.3                            | 7.90                |
|                                 | 7  | .135                 | .4447   | .0200   | 11.14               | 20 46.6                            | .2757  | 18 57.0                           | 7.93                |
|                                 | 8  | .142                 | .4430   | .0193   | 11.17               | 20 47.3                            | .2754  | 18 52.7                           | 7.97                |
|                                 | 9  | .149                 | .4414   | .0186   | 11.20               | 20 47.9                            | .2752  | 18 48.3                           | 7.99                |
|                                 | 10 | .156                 | .4398   | .0180   | 11.23               | 20 48.5                            | .2749  | 18 44.0                           | 8.02                |
|                                 | 11 | .162                 | .4383   | .0174   | 11.26               | 20 49.2                            | .2747  | 18 39.7                           | 8.05                |
|                                 | 12 | +1.169               | —0.4368 | +0.0169 | 11.29               | 20 49.8                            | 1.2745 | 18 35.4                           | —8.07               |
|                                 | 13 | .176                 | .4353   | .0165   | 11.32               | 20 50.4                            | .2743  | 18 31.0                           | 8.09                |
|                                 | 14 | .182                 | .4338   | .0161   | 11.35               | 20 51.1                            | .2741  | 18 26.7                           | 8.10                |
|                                 | 15 | .189                 | .4323   | .0158   | 11.38               | 20 51.7                            | .2740  | 18 22.4                           | 8.11                |
|                                 | 16 | .196                 | .4309   | .0155   | 11.41               | 20 52.3                            | .2739  | 18 18.0                           | 8.13                |
|                                 | 17 | .202                 | .4295   | .0153   | 11.44               | 20 53.0                            | .2738  | 18 13.7                           | 8.13                |
|                                 | 18 | .209                 | .4281   | .0151   | 11.47               | 20 53.7                            | .2737  | 18 9.4                            | 8.14                |
|                                 | 19 | .215                 | .4268   | .0150   | 11.49               | 20 54.3                            | .2737  | 18 5.0                            | 8.15                |
|                                 | 20 | .222                 | .4255   | .0150   | 11.52               | 20 55.0                            | .2736  | 18 0.7                            | 8.15                |
|                                 | 21 | .228                 | .4242   | .0150   | 11.55               | 20 55.7                            | .2737  | 17 56.4                           | 8.15                |
|                                 | 22 | +1.235               | —0.4229 | +0.0151 | 11.57               | 20 56.3                            | 1.2737 | 17 52.1                           | —8.14               |
|                                 | 23 | .242                 | .4216   | .0152   | 11.60               | 20 57.0                            | .2738  | 17 47.7                           | 8.14                |
|                                 | 24 | .248                 | .4203   | .0154   | 11.62               | 20 57.7                            | .2738  | 17 43.4                           | 8.13                |
|                                 | 25 | .255                 | .4190   | .0157   | 11.65               | 20 58.4                            | .2739  | 17 39.1                           | 8.12                |
|                                 | 26 | .261                 | .4178   | .0160   | 11.67               | 20 59.1                            | .2741  | 17 34.8                           | 8.10                |
|                                 | 27 | .268                 | .4166   | .0163   | 11.70               | 20 59.9                            | .2742  | 17 30.5                           | 8.09                |
|                                 | 28 | .274                 | .4154   | .0167   | 11.72               | 21 0.6                             | .2744  | 17 26.2                           | 8.07                |
|                                 | 29 | .281                 | .4142   | .0172   | 11.75               | 21 1.3                             | .2746  | 17 21.9                           | 8.05                |
|                                 | 30 | .288                 | .4130   | .0177   | 11.77               | 21 2.1                             | .2748  | 17 17.7                           | 8.03                |
|                                 | 31 | .295                 | .4118   | .0183   | 11.79               | 21 2.8                             | .2750  | 17 13.4                           | 8.00                |
| April                           | 1  | +1.301               | —0.4107 | +0.0189 | 11.82               | 21 3.6                             | 1.2753 | 17 9.1                            | —7.98               |
|                                 | 2  | .308                 | .4095   | .0196   | 11.84               | 21 4.3                             | .2756  | 17 4.9                            | 7.95                |
|                                 | 3  | .315                 | .4084   | .0203   | 11.86               | 21 5.1                             | .2759  | 17 0.6                            | 7.92                |
|                                 | 4  | .321                 | .4072   | .0211   | 11.89               | 21 5.9                             | .2762  | 16 56.4                           | 7.88                |
|                                 | 5  | .328                 | .4061   | .0219   | 11.91               | 21 6.7                             | .2766  | 16 52.1                           | 7.85                |
|                                 | 6  | .335                 | .4049   | .0228   | 11.93               | 21 7.5                             | .2770  | 16 47.9                           | 7.81                |
|                                 | 7  | .342                 | .4038   | .0237   | 11.96               | 21 8.3                             | .2774  | 16 43.7                           | 7.77                |
|                                 | 8  | .349                 | .4026   | .0247   | 11.98               | 21 9.1                             | .2778  | 16 39.5                           | 7.72                |
|                                 | 9  | .357                 | .4015   | .0257   | 12.00               | 21 9.9                             | .2782  | 16 35.3                           | 7.68                |
|                                 | 10 | .364                 | .4003   | .0268   | 12.03               | 21 10.7                            | .2786  | 16 31.1                           | 7.63                |

| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                                 | log h  | H                                 | i     |
|---------------------------------|----|--------|---------|---------|-------|-----------------------------------|--------|-----------------------------------|-------|
| April                           | 11 | +1.371 | —0.3992 | +0.0279 | 12.05 | 21 <sup>h</sup> 11 <sup>m</sup> 6 | 1.2791 | 16 <sup>h</sup> 26 <sup>m</sup> 9 | —7.58 |
|                                 | 12 | .378   | .3980   | .0290   | 12.07 | 21 12.4                           | .2796  | 16 22.8                           | 7.52  |
|                                 | 13 | .385   | .3968   | .0301   | 12.10 | 21 13.3                           | .2801  | 16 18.6                           | 7.47  |
|                                 | 14 | .393   | .3956   | .0313   | 12.12 | 21 14.2                           | .2806  | 16 14.5                           | 7.41  |
|                                 | 15 | .400   | .3944   | .0325   | 12.14 | 21 15.0                           | .2811  | 16 10.4                           | 7.36  |
|                                 | 16 | .408   | .3932   | .0337   | 12.17 | 21 15.9                           | .2816  | 16 6.3                            | 7.30  |
|                                 | 17 | .415   | .3920   | .0350   | 12.19 | 21 16.8                           | .2821  | 16 2.2                            | 7.23  |
|                                 | 18 | .423   | .3907   | .0363   | 12.22 | 21 17.7                           | .2827  | 15 58.1                           | 7.17  |
|                                 | 19 | .431   | .3894   | .0376   | 12.24 | 21 18.6                           | .2832  | 15 54.0                           | 7.10  |
|                                 | 20 | .439   | .3881   | .0390   | 12.27 | 21 19.5                           | .2838  | 15 49.9                           | 7.04  |
|                                 | 21 | +1.447 | —0.3868 | +0.0404 | 12.29 | 21 20.4                           | 1.2844 | 15 45.9                           | —6.96 |
|                                 | 22 | .455   | .3855   | .0418   | 12.32 | 21 21.4                           | .2850  | 15 41.8                           | 6.89  |
|                                 | 23 | .463   | .3842   | .0433   | 12.35 | 21 22.3                           | .2856  | 15 37.8                           | 6.82  |
|                                 | 24 | .471   | .3828   | .0448   | 12.38 | 21 23.2                           | .2862  | 15 33.8                           | 6.74  |
|                                 | 25 | .479   | .3814   | .0463   | 12.40 | 21 24.2                           | .2868  | 15 29.8                           | 6.66  |
|                                 | 26 | .487   | .3800   | .0478   | 12.43 | 21 25.1                           | .2874  | 15 25.8                           | 6.58  |
|                                 | 27 | .496   | .3786   | .0494   | 12.46 | 21 26.1                           | .2881  | 15 21.8                           | 6.50  |
|                                 | 28 | .504   | .3771   | .0509   | 12.49 | 21 27.0                           | .2887  | 15 17.9                           | 6.41  |
|                                 | 29 | .513   | .3756   | .0524   | 12.52 | 21 28.0                           | .2893  | 15 13.9                           | 6.32  |
|                                 | 30 | .521   | .3741   | .0539   | 12.55 | 21 29.0                           | .2899  | 15 10.0                           | 6.24  |
| Mai                             | 1  | +1.530 | —0.3725 | +0.0555 | 12.58 | 21 29.9                           | 1.2906 | 15 6.1                            | —6.15 |
|                                 | 2  | .539   | .3709   | .0570   | 12.61 | 21 30.9                           | .2912  | 15 2.2                            | 6.06  |
|                                 | 3  | .548   | .3693   | .0585   | 12.64 | 21 31.9                           | .2918  | 14 58.3                           | 5.96  |
|                                 | 4  | .557   | .3677   | .0600   | 12.68 | 21 32.8                           | .2925  | 14 54.4                           | 5.87  |
|                                 | 5  | .566   | .3660   | .0616   | 12.71 | 21 33.8                           | .2931  | 14 50.6                           | 5.77  |
|                                 | 6  | .575   | .3643   | .0631   | 12.75 | 21 34.8                           | .2937  | 14 46.7                           | 5.67  |
|                                 | 7  | .584   | .3626   | .0646   | 12.78 | 21 35.8                           | .2944  | 14 42.9                           | 5.57  |
|                                 | 8  | .593   | .3609   | .0661   | 12.82 | 21 36.7                           | .2950  | 14 39.1                           | 5.47  |
|                                 | 9  | .603   | .3591   | .0676   | 12.85 | 21 37.7                           | .2956  | 14 35.3                           | 5.37  |
|                                 | 10 | .612   | .3572   | .0691   | 12.89 | 21 38.7                           | .2962  | 14 31.5                           | 5.27  |
|                                 | 11 | +1.622 | —0.3553 | +0.0706 | 12.93 | 21 39.6                           | 1.2968 | 14 27.7                           | —5.17 |
|                                 | 12 | .632   | .3534   | .0721   | 12.96 | 21 40.6                           | .2974  | 14 23.9                           | 5.06  |
|                                 | 13 | .641   | .3514   | .0736   | 13.00 | 21 41.6                           | .2980  | 14 20.1                           | 4.95  |
|                                 | 14 | .651   | .3494   | .0750   | 13.04 | 21 42.6                           | .2986  | 14 16.4                           | 4.84  |
|                                 | 15 | .661   | .3474   | .0765   | 13.09 | 21 43.5                           | .2992  | 14 12.6                           | 4.72  |
|                                 | 16 | .671   | .3453   | .0779   | 13.13 | 21 44.5                           | .2998  | 14 8.9                            | 4.61  |
|                                 | 17 | .681   | .3432   | .0793   | 13.17 | 21 45.4                           | .3003  | 14 5.2                            | 4.50  |
|                                 | 18 | .691   | .3410   | .0807   | 13.21 | 21 46.4                           | .3009  | 14 1.5                            | 4.39  |
|                                 | 19 | .701   | .3388   | .0821   | 13.26 | 21 47.3                           | .3014  | 13 57.8                           | 4.27  |
|                                 | 20 | .712   | .3366   | .0834   | 13.30 | 21 48.3                           | .3020  | 13 54.1                           | 4.16  |
|                                 | 21 | +1.722 | —0.3343 | +0.0847 | 13.35 | 21 49.2                           | 1.3025 | 13 50.4                           | —4.04 |
|                                 | 22 | .733   | .3320   | .0860   | 13.39 | 21 50.1                           | .3030  | 13 46.7                           | 3.91  |
|                                 | 23 | .743   | .3297   | .0873   | 13.44 | 21 51.0                           | .3035  | 13 43.1                           | 3.79  |
|                                 | 24 | .754   | .3273   | .0885   | 13.49 | 21 51.9                           | .3040  | 13 39.5                           | 3.67  |
|                                 | 25 | .764   | .3248   | .0897   | 13.54 | 21 52.8                           | .3045  | 13 35.8                           | 3.55  |
|                                 | 26 | .775   | .3223   | .0908   | 13.59 | 21 53.7                           | .3049  | 13 32.2                           | 3.43  |
|                                 | 27 | .786   | .3198   | .0919   | 13.64 | 21 54.6                           | .3053  | 13 28.6                           | 3.31  |
|                                 | 28 | .797   | .3173   | .0930   | 13.69 | 21 55.5                           | .3058  | 13 25.0                           | 3.18  |
|                                 | 29 | .807   | .3148   | .0941   | 13.74 | 21 56.4                           | .3062  | 13 21.4                           | 3.05  |
|                                 | 30 | .818   | .3122   | .0952   | 13.79 | 21 57.2                           | .3066  | 13 17.8                           | 2.93  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                   | x       | y       | g                  | G                                 | log h  | H                                 | i                  |
|---------------------------------|----|---------------------|---------|---------|--------------------|-----------------------------------|--------|-----------------------------------|--------------------|
| Mai                             | 31 | +1 <sup>s</sup> 829 | —0.3096 | +0.0962 | 13 <sup>h</sup> 84 | 21 <sup>h</sup> 58 <sup>m</sup> 1 | 1.3070 | 13 <sup>h</sup> 14 <sup>m</sup> 2 | —2 <sup>s</sup> 80 |
| Juni                            | 1  | .840                | .3069   | .0971   | 13.90              | 21 58.9                           | .3074  | 13 10.6                           | 2.67               |
|                                 | 2  | .851                | .3042   | .0980   | 13.95              | 21 59.7                           | .3077  | 13 7.1                            | 2.54               |
|                                 | 3  | .863                | .3014   | .0988   | 14.01              | 22 0.5                            | .3081  | 13 3.5                            | 2.41               |
|                                 | 4  | .874                | .2986   | .0996   | 14.07              | 22 1.3                            | .3084  | 12 59.9                           | 2.28               |
|                                 | 5  | .885                | .2958   | .1004   | 14.12              | 22 2.1                            | .3087  | 12 56.4                           | 2.15               |
|                                 | 6  | .897                | .2930   | .1011   | 14.18              | 22 2.9                            | .3090  | 12 52.8                           | 2.02               |
|                                 | 7  | .908                | .2901   | .1018   | 14.24              | 22 3.7                            | .3093  | 12 49.3                           | 1.89               |
|                                 | 8  | .919                | .2872   | .1024   | 14.29              | 22 4.5                            | .3095  | 12 45.7                           | 1.76               |
|                                 | 9  | .931                | .2842   | .1030   | 14.35              | 22 5.2                            | .3097  | 12 42.2                           | 1.62               |
|                                 | 10 | +1.942              | —0.2812 | +0.1036 | 14.41              | 22 5.9                            | 1.3100 | 12 38.7                           | —1.49              |
|                                 | 11 | .954                | .2781   | .1041   | 14.47              | 22 6.6                            | .3102  | 12 35.2                           | 1.36               |
|                                 | 12 | .965                | .2751   | .1046   | 14.54              | 22 7.3                            | .3104  | 12 31.7                           | 1.22               |
|                                 | 13 | .977                | .2720   | .1050   | 14.60              | 22 8.0                            | .3105  | 12 28.1                           | 1.09               |
|                                 | 14 | 1.988               | .2689   | .1053   | 14.66              | 22 8.7                            | .3106  | 12 24.6                           | 0.95               |
|                                 | 15 | 2.000               | .2658   | .1056   | 14.72              | 22 9.4                            | .3108  | 12 21.1                           | 0.82               |
|                                 | 16 | .011                | .2627   | .1059   | 14.78              | 22 10.1                           | .3109  | 12 17.6                           | 0.68               |
|                                 | 17 | .023                | .2595   | .1061   | 14.85              | 22 10.7                           | .3109  | 12 14.1                           | 0.55               |
|                                 | 18 | .035                | .2563   | .1063   | 14.91              | 22 11.3                           | .3110  | 12 10.6                           | 0.41               |
|                                 | 19 | .046                | .2531   | .1064   | 14.98              | 22 12.0                           | .3111  | 12 7.1                            | 0.28               |
|                                 | 20 | +2.058              | —0.2499 | +0.1065 | 15.04              | 22 12.6                           | 1.3111 | 12 3.6                            | —0.14              |
|                                 | 21 | .070                | .2466   | .1065   | 15.11              | 22 13.2                           | .3111  | 12 0.1                            | 0.00               |
|                                 | 22 | .081                | .2433   | .1065   | 15.17              | 22 13.7                           | .3111  | 11 56.6                           | +0.13              |
|                                 | 23 | .093                | .2400   | .1064   | 15.24              | 22 14.3                           | .3111  | 11 53.1                           | 0.27               |
|                                 | 24 | .104                | .2367   | .1063   | 15.31              | 22 14.8                           | .3110  | 11 49.6                           | 0.40               |
|                                 | 25 | .116                | .2334   | .1061   | 15.37              | 22 15.4                           | .3110  | 11 46.1                           | 0.54               |
|                                 | 26 | .127                | .2301   | .1059   | 15.44              | 22 15.9                           | .3109  | 11 42.6                           | 0.67               |
|                                 | 27 | .139                | .2267   | .1057   | 15.51              | 22 16.4                           | .3108  | 11 39.1                           | 0.81               |
|                                 | 28 | .151                | .2233   | .1054   | 15.57              | 22 16.9                           | .3107  | 11 35.6                           | 0.94               |
|                                 | 29 | .162                | .2199   | .1050   | 15.64              | 22 17.4                           | .3105  | 11 32.1                           | 1.08               |
|                                 | 30 | +2.174              | —0.2166 | +0.1046 | 15.71              | 22 17.9                           | 1.3104 | 11 28.6                           | +1.21              |
| Juli                            | 1  | .185                | .2132   | .1041   | 15.78              | 22 18.4                           | .3102  | 11 25.1                           | 1.34               |
|                                 | 2  | .197                | .2098   | .1036   | 15.85              | 22 18.8                           | .3100  | 11 21.6                           | 1.48               |
|                                 | 3  | .208                | .2064   | .1031   | 15.91              | 22 19.3                           | .3098  | 11 18.0                           | 1.61               |
|                                 | 4  | .219                | .2029   | .1025   | 15.98              | 22 19.7                           | .3095  | 11 14.5                           | 1.75               |
|                                 | 5  | .231                | .1995   | .1018   | 16.05              | 22 20.1                           | .3093  | 11 11.0                           | 1.88               |
|                                 | 6  | .242                | .1961   | .1011   | 16.12              | 22 20.5                           | .3090  | 11 7.5                            | 2.01               |
|                                 | 7  | .253                | .1927   | .1004   | 16.19              | 22 20.8                           | .3087  | 11 3.9                            | 2.14               |
|                                 | 8  | .265                | .1893   | .0997   | 16.26              | 22 21.2                           | .3084  | 11 0.4                            | 2.27               |
|                                 | 9  | .276                | .1859   | .0989   | 16.32              | 22 21.6                           | .3081  | 10 56.8                           | 2.40               |
|                                 | 10 | +2.287              | —0.1825 | +0.0981 | 16.39              | 22 21.9                           | 1.3078 | 10 53.3                           | +2.53              |
|                                 | 11 | .298                | .1791   | .0972   | 16.46              | 22 22.3                           | .3074  | 10 49.7                           | 2.66               |
|                                 | 12 | .309                | .1757   | .0962   | 16.53              | 22 22.6                           | .3071  | 10 46.2                           | 2.79               |
|                                 | 13 | .320                | .1723   | .0952   | 16.60              | 22 22.9                           | .3067  | 10 42.6                           | 2.91               |
|                                 | 14 | .331                | .1689   | .0942   | 16.67              | 22 23.2                           | .3063  | 10 39.0                           | 3.04               |
|                                 | 15 | .342                | .1655   | .0931   | 16.73              | 22 23.5                           | .3058  | 10 35.4                           | 3.16               |
|                                 | 16 | .353                | .1621   | .0921   | 16.80              | 22 23.8                           | .3054  | 10 31.9                           | 3.29               |
|                                 | 17 | .363                | .1588   | .0910   | 16.87              | 22 24.1                           | .3050  | 10 28.3                           | 3.41               |
|                                 | 18 | .374                | .1554   | .0899   | 16.94              | 22 24.4                           | .3045  | 10 24.7                           | 3.54               |
|                                 | 19 | .385                | .1521   | .0887   | 17.00              | 22 24.7                           | .3041  | 10 21.0                           | 3.66               |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                  | G                                 | log h  | H                                 | i                  |
|---------------------------------|----|----------------------|---------|---------|--------------------|-----------------------------------|--------|-----------------------------------|--------------------|
| Juli                            | 20 | +2 <sup>s</sup> .395 | —0.1487 | +0.0875 | 17 <sup>h</sup> 07 | 22 <sup>h</sup> 24 <sup>m</sup> 9 | 1.3036 | 10 <sup>h</sup> 17 <sup>m</sup> 4 | +3 <sup>h</sup> 78 |
|                                 | 21 | .406                 | .1454   | .0863   | 17.14              | 22 25.1                           | .3031  | 10 13.8                           | 3.90               |
|                                 | 22 | .416                 | .1421   | .0850   | 17.20              | 22 25.4                           | .3026  | 10 10.1                           | 4.02               |
|                                 | 23 | .427                 | .1388   | .0837   | 17.27              | 22 25.6                           | .3021  | 10 6.5                            | 4.14               |
|                                 | 24 | .437                 | .1355   | .0824   | 17.33              | 22 25.8                           | .3015  | 10 2.8                            | 4.25               |
|                                 | 25 | .447                 | .1323   | .0810   | 17.40              | 22 26.1                           | .3010  | 9 59.1                            | 4.37               |
|                                 | 26 | .457                 | .1290   | .0796   | 17.46              | 22 26.3                           | .3004  | 9 55.5                            | 4.48               |
|                                 | 27 | .467                 | .1258   | .0782   | 17.53              | 22 26.5                           | .2999  | 9 51.8                            | 4.59               |
|                                 | 28 | .477                 | .1226   | .0768   | 17.59              | 22 26.7                           | .2993  | 9 48.1                            | 4.70               |
|                                 | 29 | .487                 | .1194   | .0754   | 17.66              | 22 26.8                           | .2988  | 9 44.4                            | 4.81               |
| August                          | 30 | +2.496               | —0.1162 | +0.0740 | 17.72              | 22 27.0                           | 1.2982 | 9 40.7                            | +4.92              |
|                                 | 31 | .506                 | .1131   | .0726   | 17.78              | 22 27.2                           | .2976  | 9 36.9                            | 5.03               |
|                                 | 1  | .516                 | .1100   | .0711   | 17.85              | 22 27.4                           | .2970  | 9 33.2                            | 5.14               |
|                                 | 2  | .525                 | .1069   | .0696   | 17.91              | 22 27.5                           | .2964  | 9 29.4                            | 5.24               |
|                                 | 3  | .535                 | .1038   | .0681   | 17.97              | 22 27.7                           | .2958  | 9 25.7                            | 5.35               |
|                                 | 4  | .544                 | .1008   | .0665   | 18.03              | 22 27.8                           | .2951  | 9 21.9                            | 5.45               |
|                                 | 5  | .553                 | .0978   | .0650   | 18.09              | 22 28.0                           | .2945  | 9 18.1                            | 5.55               |
|                                 | 6  | .563                 | .0948   | .0635   | 18.15              | 22 28.1                           | .2939  | 9 14.3                            | 5.65               |
|                                 | 7  | .572                 | .0918   | .0620   | 18.21              | 22 28.3                           | .2933  | 9 10.5                            | 5.75               |
|                                 | 8  | .581                 | .0888   | .0605   | 18.27              | 22 28.4                           | .2927  | 9 6.7                             | 5.84               |
|                                 | 9  | +2.590               | —0.0858 | +0.0589 | 18.33              | 22 28.5                           | 1.2921 | 9 2.8                             | +5.94              |
|                                 | 10 | .598                 | .0829   | .0574   | 18.39              | 22 28.7                           | .2914  | 8 59.0                            | 6.03               |
|                                 | 11 | .607                 | .0800   | .0559   | 18.45              | 22 28.8                           | .2908  | 8 55.1                            | 6.12               |
|                                 | 12 | .616                 | .0772   | .0544   | 18.50              | 22 28.9                           | .2902  | 8 51.2                            | 6.21               |
|                                 | 13 | .624                 | .0744   | .0528   | 18.56              | 22 29.0                           | .2895  | 8 47.4                            | 6.30               |
|                                 | 14 | .633                 | .0716   | .0513   | 18.62              | 22 29.2                           | .2889  | 8 43.5                            | 6.38               |
|                                 | 15 | .641                 | .0688   | .0498   | 18.67              | 22 29.3                           | .2883  | 8 39.5                            | 6.47               |
|                                 | 16 | .650                 | .0661   | .0483   | 18.73              | 22 29.4                           | .2877  | 8 35.6                            | 6.55               |
|                                 | 17 | .658                 | .0634   | .0468   | 18.78              | 22 29.5                           | .2870  | 8 31.7                            | 6.63               |
|                                 | 18 | .666                 | .0607   | .0454   | 18.83              | 22 29.6                           | .2864  | 8 27.7                            | 6.71               |
|                                 | 19 | +2.674               | —0.0580 | +0.0439 | 18.89              | 22 29.7                           | 1.2858 | 8 23.7                            | +6.78              |
|                                 | 20 | .682                 | .0554   | .0425   | 18.94              | 22 29.8                           | .2852  | 8 19.8                            | 6.86               |
|                                 | 21 | .690                 | .0528   | .0411   | 18.99              | 22 30.0                           | .2847  | 8 15.8                            | 6.93               |
|                                 | 22 | .698                 | .0502   | .0397   | 19.05              | 22 30.1                           | .2841  | 8 11.8                            | 7.00               |
|                                 | 23 | .706                 | .0476   | .0383   | 19.10              | 22 30.2                           | .2835  | 8 7.8                             | 7.07               |
|                                 | 24 | .713                 | .0451   | .0370   | 19.15              | 22 30.3                           | .2830  | 8 3.7                             | 7.14               |
|                                 | 25 | .721                 | .0426   | .0356   | 19.20              | 22 30.4                           | .2824  | 7 59.7                            | 7.21               |
|                                 | 26 | .728                 | .0402   | .0343   | 19.24              | 22 30.5                           | .2818  | 7 55.6                            | 7.27               |
|                                 | 27 | .736                 | .0378   | .0330   | 19.29              | 22 30.7                           | .2813  | 7 51.6                            | 7.33               |
|                                 | 28 | .743                 | .0354   | .0318   | 19.34              | 22 30.8                           | .2808  | 7 47.5                            | 7.39               |
| Septbr.                         | 29 | +2.751               | —0.0330 | +0.0306 | 19.39              | 22 30.9                           | 1.2803 | 7 43.4                            | +7.45              |
|                                 | 30 | .758                 | .0306   | .0295   | 19.44              | 22 31.0                           | .2798  | 7 39.3                            | 7.50               |
|                                 | 31 | .765                 | .0283   | .0284   | 19.48              | 22 31.1                           | .2793  | 7 35.2                            | 7.55               |
|                                 | 1  | .772                 | .0260   | .0273   | 19.53              | 22 31.3                           | .2789  | 7 31.1                            | 7.60               |
|                                 | 2  | .779                 | .0237   | .0263   | 19.58              | 22 31.4                           | .2784  | 7 27.0                            | 7.65               |
|                                 | 3  | .786                 | .0215   | .0253   | 19.62              | 22 31.5                           | .2780  | 7 22.8                            | 7.70               |
|                                 | 4  | .793                 | .0193   | .0243   | 19.66              | 22 31.7                           | .2776  | 7 18.7                            | 7.74               |
|                                 | 5  | .800                 | .0171   | .0234   | 19.71              | 22 31.8                           | .2772  | 7 14.5                            | 7.78               |
|                                 | 6  | .807                 | .0150   | .0225   | 19.75              | 22 32.0                           | .2768  | 7 10.4                            | 7.82               |
|                                 | 7  | .814                 | .0129   | .0217   | 19.79              | 22 32.1                           | .2765  | 7 6.2                             | 7.86               |

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| <sup>12<sup>h</sup></sup><br>M. Z. Berlin | f                   | x       | y       | g                  | G                                 | log h   | H                               | i                  |
|-------------------------------------------|---------------------|---------|---------|--------------------|-----------------------------------|---------|---------------------------------|--------------------|
| Septbr. 8                                 | +2 <sup>s</sup> 821 | —0.0108 | +0.0209 | 19 <sup>h</sup> 84 | 22 <sup>h</sup> 32 <sup>m</sup> 3 | I. 2761 | 7 <sup>h</sup> 2 <sup>m</sup> 0 | +7 <sup>h</sup> 89 |
| 9                                         | .828                | .0087   | .0201   | 19.88              | 22 32.4                           | .2758   | 6 57.8                          | 7.93               |
| 10                                        | .834                | .0066   | .0194   | 19.92              | 22 32.6                           | .2755   | 6 53.6                          | 7.96               |
| 11                                        | .841                | .0046   | .0187   | 19.96              | 22 32.7                           | .2752   | 6 49.4                          | 7.99               |
| 12                                        | .848                | .0025   | .0181   | 20.00              | 22 32.9                           | .2749   | 6 45.2                          | 8.01               |
| 13                                        | .854                | —0.0005 | .0175   | 20.04              | 22 33.1                           | .2747   | 6 40.9                          | 8.04               |
| 14                                        | .861                | +0.0015 | .0171   | 20.08              | 22 33.3                           | .2745   | 6 36.7                          | 8.06               |
| 15                                        | .867                | .0034   | .0167   | 20.12              | 22 33.5                           | .2743   | 6 32.5                          | 8.08               |
| 16                                        | .874                | .0054   | .0163   | 20.16              | 22 33.7                           | .2742   | 6 28.2                          | 8.10               |
| 17                                        | .880                | .0073   | .0160   | 20.20              | 22 33.9                           | .2740   | 6 24.0                          | 8.11               |
| 18                                        | +2.887              | +0.0092 | +0.0157 | 20.24              | 22 34.1                           | I. 2739 | 6 19.7                          | +8.12              |
| 19                                        | .893                | .0111   | .0154   | 20.27              | 22 34.3                           | .2738   | 6 15.5                          | 8.13               |
| 20                                        | .900                | .0130   | .0152   | 20.31              | 22 34.5                           | .2737   | 6 11.2                          | 8.14               |
| 21                                        | .906                | .0149   | .0151   | 20.35              | 22 34.7                           | .2737   | 6 6.9                           | 8.14               |
| 22                                        | .913                | .0168   | .0150   | 20.39              | 22 34.9                           | .2737   | 6 2.7                           | 8.15               |
| 23                                        | .919                | .0186   | .0150   | 20.43              | 22 35.1                           | .2736   | 5 58.4                          | 8.15               |
| 24                                        | .926                | .0205   | .0151   | 20.46              | 22 35.4                           | .2737   | 5 54.1                          | 8.15               |
| 25                                        | .932                | .0223   | .0152   | 20.50              | 22 35.6                           | .2737   | 5 49.8                          | 8.14               |
| 26                                        | .939                | .0242   | .0153   | 20.54              | 22 35.9                           | .2738   | 5 45.5                          | 8.14               |
| 27                                        | .945                | .0260   | .0155   | 20.57              | 22 36.1                           | .2739   | 5 41.2                          | 8.13               |
| 28                                        | +2.952              | +0.0278 | +0.0158 | 20.61              | 22 36.4                           | I. 2740 | 5 37.0                          | +8.11              |
| 29                                        | .958                | .0296   | .0161   | 20.65              | 22 36.6                           | .2741   | 5 32.7                          | 8.10               |
| 30                                        | .964                | .0315   | .0165   | 20.68              | 22 36.9                           | .2743   | 5 28.4                          | 8.08               |
| Oktbr. 1                                  | .971                | .0333   | .0169   | 20.72              | 22 37.2                           | .2745   | 5 24.1                          | 8.06               |
| 2                                         | .977                | .0351   | .0174   | 20.76              | 22 37.5                           | .2747   | 5 19.9                          | 8.04               |
| 3                                         | .984                | .0369   | .0180   | 20.79              | 22 37.8                           | .2749   | 5 15.6                          | 8.02               |
| 4                                         | .991                | .0387   | .0186   | 20.83              | 22 38.1                           | .2752   | 5 11.3                          | 7.99               |
| 5                                         | 2.997               | .0405   | .0192   | 20.86              | 22 38.4                           | .2755   | 5 7.1                           | 7.96               |
| 6                                         | 3.004               | .0423   | .0199   | 20.90              | 22 38.7                           | .2758   | 5 2.8                           | 7.93               |
| 7                                         | .011                | .0441   | .0207   | 20.94              | 22 39.0                           | .2761   | 4 58.5                          | 7.90               |
| 8                                         | +3.018              | +0.0459 | +0.0215 | 20.97              | 22 39.3                           | I. 2764 | 4 54.3                          | +7.86              |
| 9                                         | .025                | .0478   | .0224   | 21.01              | 22 39.7                           | .2768   | 4 50.0                          | 7.83               |
| 10                                        | .031                | .0496   | .0233   | 21.05              | 22 40.0                           | .2772   | 4 45.8                          | 7.79               |
| 11                                        | .038                | .0515   | .0242   | 21.08              | 22 40.3                           | .2776   | 4 41.5                          | 7.75               |
| 12                                        | .045                | .0533   | .0252   | 21.12              | 22 40.7                           | .2780   | 4 37.3                          | 7.70               |
| 13                                        | .053                | .0552   | .0262   | 21.16              | 22 41.0                           | .2784   | 4 33.0                          | 7.65               |
| 14                                        | .060                | .0570   | .0273   | 21.19              | 22 41.4                           | .2789   | 4 28.8                          | 7.60               |
| 15                                        | .067                | .0589   | .0284   | 21.23              | 22 41.8                           | .2793   | 4 24.6                          | 7.55               |
| 16                                        | .074                | .0608   | .0296   | 21.27              | 22 42.1                           | .2798   | 4 20.4                          | 7.50               |
| 17                                        | .081                | .0627   | .0309   | 21.31              | 22 42.5                           | .2804   | 4 16.2                          | 7.44               |
| 18                                        | +3.089              | +0.0646 | +0.0321 | 21.35              | 22 42.9                           | I. 2809 | 4 12.0                          | +7.38              |
| 19                                        | .096                | .0666   | .0334   | 21.39              | 22 43.2                           | .2814   | 4 7.8                           | 7.32               |
| 20                                        | .104                | .0686   | .0347   | 21.43              | 22 43.6                           | .2820   | 4 3.6                           | 7.26               |
| 21                                        | .111                | .0706   | .0360   | 21.47              | 22 44.0                           | .2825   | 3 59.5                          | 7.19               |
| 22                                        | .119                | .0726   | .0373   | 21.51              | 22 44.4                           | .2831   | 3 55.3                          | 7.12               |
| 23                                        | .127                | .0747   | .0387   | 21.55              | 22 44.8                           | .2837   | 3 51.1                          | 7.05               |
| 24                                        | .135                | .0767   | .0401   | 21.59              | 22 45.2                           | .2843   | 3 47.0                          | 6.98               |
| 25                                        | .143                | .0788   | .0415   | 21.63              | 22 45.6                           | .2849   | 3 42.8                          | 6.91               |
| 26                                        | .151                | .0809   | .0430   | 21.67              | 22 46.0                           | .2855   | 3 38.7                          | 6.83               |
| 27                                        | .159                | .0830   | .0445   | 21.72              | 22 46.5                           | .2861   | 3 34.6                          | 6.75               |

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| 12 <sup>b</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                   | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|-------------------------------------|--------|-----------------------------------|---------------------|
| Oktbr.                          | 28 | +3 <sup>s</sup> .167 | +0.0852 | +0.0460 | 21 <sup>"</sup> .76 | 22 <sup>h</sup> .46 <sup>m</sup> .9 | 1.2867 | 3 <sup>h</sup> 30 <sup>m</sup> .5 | +6 <sup>"</sup> .67 |
|                                 | 29 | .176                 | .0874   | .0476   | 21.80               | 22 47.3                             | .2874  | 3 26.4                            | 6.59                |
|                                 | 30 | .184                 | .0896   | .0491   | 21.85               | 22 47.7                             | .2880  | 3 22.3                            | 6.50                |
|                                 | 31 | .192                 | .0919   | .0507   | 21.89               | 22 48.1                             | .2886  | 3 18.2                            | 6.42                |
| Novbr.                          | 1  | .201                 | .0942   | .0522   | 21.94               | 22 48.6                             | .2893  | 3 14.1                            | 6.33                |
|                                 | 2  | .210                 | .0965   | .0538   | 21.99               | 22 49.0                             | .2900  | 3 10.1                            | 6.24                |
|                                 | 3  | .218                 | .0988   | .0554   | 22.03               | 22 49.4                             | .2906  | 3 6.0                             | 6.15                |
|                                 | 4  | .227                 | .1012   | .0570   | 22.08               | 22 49.9                             | .2913  | 3 2.0                             | 6.05                |
|                                 | 5  | .236                 | .1036   | .0587   | 22.13               | 22 50.3                             | .2919  | 2 58.0                            | 5.96                |
|                                 | 6  | .245                 | .1061   | .0603   | 22.18               | 22 50.7                             | .2926  | 2 53.9                            | 5.86                |
|                                 | 7  | +3.255               | +0.1086 | +0.0619 | 22.23               | 22 51.1                             | 1.2932 | 2 49.9                            | +5.76               |
|                                 | 8  | .264                 | .1111   | .0635   | 22.28               | 22 51.6                             | .2939  | 2 45.9                            | 5.66                |
|                                 | 9  | .273                 | .1136   | .0651   | 22.33               | 22 52.0                             | .2945  | 2 41.9                            | 5.55                |
|                                 | 10 | .283                 | .1162   | .0667   | 22.38               | 22 52.4                             | .2952  | 2 37.9                            | 5.45                |
|                                 | 11 | .292                 | .1188   | .0683   | 22.43               | 22 52.9                             | .2958  | 2 34.0                            | 5.34                |
|                                 | 12 | .302                 | .1214   | .0698   | 22.49               | 22 53.3                             | .2965  | 2 30.0                            | 5.23                |
|                                 | 13 | .311                 | .1241   | .0713   | 22.54               | 22 53.7                             | .2971  | 2 26.1                            | 5.12                |
|                                 | 14 | .321                 | .1268   | .0728   | 22.59               | 22 54.1                             | .2977  | 2 22.2                            | 5.01                |
|                                 | 15 | .331                 | .1295   | .0743   | 22.65               | 22 54.6                             | .2983  | 2 18.2                            | 4.89                |
|                                 | 16 | .341                 | .1323   | .0758   | 22.70               | 22 55.0                             | .2989  | 2 14.3                            | 4.78                |
|                                 | 17 | +3.351               | +0.1351 | +0.0773 | 22.76               | 22 55.4                             | 1.2995 | 2 10.4                            | +4.66               |
|                                 | 18 | .361                 | .1380   | .0788   | 22.82               | 22 55.8                             | .3001  | 2 6.5                             | 4.54                |
|                                 | 19 | .372                 | .1409   | .0803   | 22.88               | 22 56.2                             | .3007  | 2 2.6                             | 4.42                |
|                                 | 20 | .382                 | .1438   | .0817   | 22.93               | 22 56.6                             | .3013  | 1 58.7                            | 4.30                |
|                                 | 21 | .393                 | .1468   | .0831   | 22.99               | 22 57.1                             | .3018  | 1 54.8                            | 4.18                |
|                                 | 22 | .403                 | .1498   | .0845   | 23.06               | 22 57.5                             | .3024  | 1 51.0                            | 4.05                |
|                                 | 23 | .414                 | .1528   | .0859   | 23.12               | 22 57.9                             | .3029  | 1 47.1                            | 3.93                |
|                                 | 24 | .425                 | .1559   | .0872   | 23.18               | 22 58.3                             | .3035  | 1 43.3                            | 3.80                |
|                                 | 25 | .435                 | .1590   | .0885   | 23.24               | 22 58.7                             | .3040  | 1 39.4                            | 3.67                |
|                                 | 26 | .446                 | .1622   | .0897   | 23.30               | 22 59.1                             | .3045  | 1 35.6                            | 3.54                |
| Dezbr.                          | 27 | +3.457               | +0.1654 | +0.0909 | 23.37               | 22 59.4                             | 1.3050 | 1 31.8                            | +3.41               |
|                                 | 28 | .468                 | .1686   | .0921   | 23.43               | 22 59.8                             | .3054  | 1 27.9                            | 3.28                |
|                                 | 29 | .479                 | .1718   | .0933   | 23.50               | 23 0.2                              | .3059  | 1 24.1                            | 3.15                |
|                                 | 30 | .491                 | .1751   | .0944   | 23.56               | 23 0.6                              | .3063  | 1 20.3                            | 3.02                |
|                                 | 1  | .502                 | .1784   | .0955   | 23.63               | 23 0.9                              | .3068  | 1 16.5                            | 2.88                |
|                                 | 2  | .513                 | .1817   | .0965   | 23.69               | 23 1.3                              | .3072  | 1 12.7                            | 2.75                |
|                                 | 3  | .525                 | .1850   | .0975   | 23.76               | 23 1.6                              | .3076  | 1 8.9                             | 2.61                |
|                                 | 4  | .536                 | .1884   | .0984   | 23.83               | 23 2.0                              | .3079  | 1 5.1                             | 2.47                |
|                                 | 5  | .548                 | .1918   | .0993   | 23.90               | 23 2.3                              | .3083  | 1 1.3                             | 2.34                |
|                                 | 6  | .559                 | .1952   | .1001   | 23.97               | 23 2.6                              | .3086  | 0 57.6                            | 2.20                |
|                                 | 7  | +3.571               | +0.1987 | +0.1009 | 24.04               | 23 3.0                              | 1.3089 | 0 53.8                            | +2.06               |
|                                 | 8  | .583                 | .2022   | .1016   | 24.11               | 23 3.3                              | .3092  | 0 50.0                            | 1.91                |
|                                 | 9  | .594                 | .2057   | .1023   | 24.18               | 23 3.6                              | .3095  | 0 46.3                            | 1.77                |
|                                 | 10 | .606                 | .2093   | .1029   | 24.25               | 23 3.9                              | .3097  | 0 42.5                            | 1.63                |
|                                 | 11 | .618                 | .2129   | .1035   | 24.32               | 23 4.2                              | .3099  | 0 38.8                            | 1.49                |
|                                 | 12 | .630                 | .2165   | .1040   | 24.39               | 23 4.5                              | .3101  | 0 35.0                            | 1.35                |
|                                 | 13 | .641                 | .2201   | .1045   | 24.46               | 23 4.8                              | .3103  | 0 31.3                            | 1.21                |
|                                 | 14 | .653                 | .2237   | .1049   | 24.54               | 23 5.1                              | .3105  | 0 27.5                            | 1.06                |
|                                 | 15 | .665                 | .2273   | .1053   | 24.61               | 23 5.3                              | .3107  | 0 23.8                            | 0.92                |
|                                 | 16 | .677                 | .2310   | .1057   | 24.68               | 23 5.6                              | .3108  | 0 20.1                            | 0.78                |

## 1859

| <sup>12<sup>h</sup></sup><br>M. Z. Berlin | f                    | x       | y       | g                   | G                                 | log h  | H                                 | i                   |
|-------------------------------------------|----------------------|---------|---------|---------------------|-----------------------------------|--------|-----------------------------------|---------------------|
| Dezbr. 17                                 | +3 <sup>s</sup> .689 | +0.2346 | +0.1060 | 24 <sup>h</sup> .76 | 23 <sup>h</sup> 5 <sup>m</sup> .8 | 1.3109 | 0 <sup>h</sup> 16 <sup>m</sup> .3 | +0 <sup>h</sup> .63 |
| 18                                        | .701                 | .2383   | .1062   | 24.83               | 23 6.1                            | .3110  | 0 12.6                            | 0.49                |
| 19                                        | .713                 | .2420   | .1064   | 24.90               | 23 6.3                            | .3111  | 0 8.9                             | 0.34                |
| 20                                        | .725                 | .2457   | .1065   | 24.98               | 23 6.6                            | .3111  | 0 5.1                             | 0.20                |
| 21                                        | .737                 | .2495   | .1065   | 25.05               | 23 6.8                            | .3111  | 0 1.4                             | +0.05               |
| 22                                        | .749                 | .2532   | .1065   | 25.13               | 23 7.0                            | .3111  | 23 57.6                           | —0.09               |
| 23                                        | .761                 | .2569   | .1064   | 25.20               | 23 7.2                            | .3111  | 23 53.9                           | 0.24                |
| 24                                        | .773                 | .2606   | .1063   | 25.28               | 23 7.4                            | .3110  | 23 50.1                           | 0.38                |
| 25                                        | .785                 | .2643   | .1061   | 25.35               | 23 7.6                            | .3110  | 23 46.4                           | 0.53                |
| 26                                        | .797                 | .2681   | .1059   | 25.43               | 23 7.8                            | .3109  | 23 42.6                           | 0.67                |
| 27                                        | +3.809               | +0.2718 | +0.1056 | 25.50               | 23 8.0                            | 1.3108 | 23 38.9                           | —0.82               |
| 28                                        | .821                 | .2756   | .1053   | 25.58               | 23 8.1                            | .3107  | 23 35.1                           | 0.96                |
| 29                                        | .833                 | .2794   | .1049   | 25.65               | 23 8.3                            | .3105  | 23 31.4                           | 1.10                |
| 30                                        | .845                 | .2832   | .1045   | 25.73               | 23 8.5                            | .3103  | 23 27.6                           | 1.24                |
| 31                                        | .857                 | .2870   | .1040   | 25.81               | 23 8.6                            | .3101  | 23 23.9                           | 1.39                |

## 1860

|          |                      |         |         |                    |                                    |        |                                    |                     |
|----------|----------------------|---------|---------|--------------------|------------------------------------|--------|------------------------------------|---------------------|
| Januar 1 | +0 <sup>s</sup> .797 | —0.6142 | +0.1034 | 7 <sup>h</sup> .73 | 20 <sup>h</sup> 48 <sup>m</sup> .5 | 1.3099 | 23 <sup>h</sup> 20 <sup>m</sup> .2 | —1 <sup>h</sup> .53 |
| 2        | .809                 | .6116   | .1028   | 7.79               | 20 50.1                            | .3097  | 23 16.4                            | 1.67                |
| 3        | .821                 | .6089   | .1021   | 7.84               | 20 51.7                            | .3094  | 23 12.6                            | 1.81                |
| 4        | .832                 | .6062   | .1014   | 7.90               | 20 53.3                            | .3091  | 23 8.8                             | 1.95                |
| 5        | .844                 | .6034   | .1007   | 7.95               | 20 54.8                            | .3088  | 23 5.1                             | 2.10                |
| 6        | .856                 | .6007   | .0999   | 8.01               | 20 56.3                            | .3085  | 23 1.3                             | 2.24                |
| 7        | .867                 | .5979   | .0990   | 8.06               | 20 57.7                            | .3082  | 22 57.5                            | 2.37                |
| 8        | .879                 | .5951   | .0981   | 8.12               | 20 59.1                            | .3078  | 22 53.7                            | 2.51                |
| 9        | .890                 | .5923   | .0972   | 8.17               | 21 0.5                             | .3074  | 22 49.9                            | 2.65                |
| 10       | .901                 | .5895   | .0962   | 8.23               | 21 1.8                             | .3071  | 22 46.1                            | 2.79                |
| 11       | +0.913               | —0.5866 | +0.0952 | 8.29               | 21 3.1                             | 1.3067 | 22 42.3                            | —2.92               |
| 12       | .924                 | .5837   | .0941   | 8.35               | 21 4.4                             | .3062  | 22 38.4                            | 3.06                |
| 13       | .935                 | .5808   | .0930   | 8.41               | 21 5.6                             | .3058  | 22 34.6                            | 3.19                |
| 14       | .946                 | .5779   | .0918   | 8.46               | 21 6.8                             | .3053  | 22 30.8                            | 3.32                |
| 15       | .957                 | .5750   | .0906   | 8.52               | 21 8.0                             | .3048  | 22 27.0                            | 3.46                |
| 16       | .968                 | .5721   | .0894   | 8.58               | 21 9.1                             | .3043  | 22 23.1                            | 3.59                |
| 17       | .979                 | .5691   | .0881   | 8.64               | 21 10.2                            | .3038  | 22 19.2                            | 3.72                |
| 18       | 0.990                | .5662   | .0868   | 8.70               | 21 11.2                            | .3033  | 22 15.4                            | 3.84                |
| 19       | 1.001                | .5633   | .0854   | 8.76               | 21 12.2                            | .3028  | 22 11.5                            | 3.97                |
| 20       | .011                 | .5603   | .0841   | 8.81               | 21 13.2                            | .3023  | 22 7.6                             | 4.10                |
| 21       | +1.022               | —0.5574 | +0.0827 | 8.87               | 21 14.2                            | 1.3017 | 22 3.7                             | —4.22               |
| 22       | .032                 | .5544   | .0813   | 8.93               | 21 15.1                            | .3011  | 21 59.8                            | 4.35                |
| 23       | .043                 | .5515   | .0798   | 8.99               | 21 16.0                            | .3005  | 21 55.9                            | 4.47                |
| 24       | .053                 | .5485   | .0783   | 9.05               | 21 16.9                            | .2999  | 21 52.0                            | 4.59                |
| 25       | .063                 | .5456   | .0768   | 9.11               | 21 17.8                            | .2993  | 21 48.1                            | 4.71                |
| 26       | .073                 | .5427   | .0754   | 9.17               | 21 18.6                            | .2987  | 21 44.1                            | 4.83                |
| 27       | .083                 | .5398   | .0739   | 9.23               | 21 19.4                            | .2981  | 21 40.2                            | 4.94                |
| 28       | .093                 | .5369   | .0724   | 9.29               | 21 20.2                            | .2975  | 21 36.2                            | 5.05                |
| 29       | .103                 | .5341   | .0708   | 9.34               | 21 21.0                            | .2969  | 21 32.2                            | 5.17                |
| 30       | .112                 | .5312   | .0692   | 9.40               | 21 21.7                            | .2962  | 21 28.2                            | 5.28                |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f      | x       | y       | g     | G                    | log h  | H                    | i     |
|---------------------------------|----|--------|---------|---------|-------|----------------------|--------|----------------------|-------|
| Januar                          | 31 | +1.122 | -0.5284 | +0.0676 | 9.46  | 21 <sup>h</sup> 22.4 | 1.2955 | 21 <sup>h</sup> 24.2 | -5.39 |
| Februar                         | 1  | .132   | .5256   | .0659   | 9.51  | 21 23.1              | .2949  | 21 20.2              | 5.49  |
|                                 | 2  | .141   | .5228   | .0643   | 9.57  | 21 23.8              | .2942  | 21 16.2              | 5.60  |
|                                 | 3  | .150   | .5200   | .0626   | 9.62  | 21 24.5              | .2936  | 21 12.2              | 5.70  |
|                                 | 4  | .159   | .5173   | .0610   | 9.68  | 21 25.1              | .2929  | 21 8.2               | 5.80  |
|                                 | 5  | .168   | .5146   | .0594   | 9.73  | 21 25.8              | .2923  | 21 4.1               | 5.90  |
|                                 | 6  | .177   | .5119   | .0578   | 9.79  | 21 26.4              | .2916  | 21 0.0               | 6.00  |
|                                 | 7  | .186   | .5092   | .0562   | 9.84  | 21 27.0              | .2909  | 20 56.0              | 6.10  |
|                                 | 8  | .195   | .5066   | .0546   | 9.89  | 21 27.5              | .2903  | 20 51.9              | 6.19  |
|                                 | 9  | .203   | .5040   | .0530   | 9.95  | 21 28.1              | .2896  | 20 47.8              | 6.29  |
|                                 | 10 | +1.212 | -0.5014 | +0.0514 | 10.00 | 21 28.7              | 1.2889 | 20 43.7              | -6.38 |
|                                 | 11 | .221   | .4988   | .0498   | 10.05 | 21 29.2              | .2883  | 20 39.6              | 6.47  |
|                                 | 12 | .229   | .4963   | .0483   | 10.10 | 21 29.7              | .2877  | 20 35.5              | 6.55  |
|                                 | 13 | .238   | .4938   | .0468   | 10.15 | 21 30.3              | .2870  | 20 31.3              | 6.64  |
|                                 | 14 | .246   | .4913   | .0453   | 10.20 | 21 30.8              | .2864  | 20 27.2              | 6.72  |
|                                 | 15 | .254   | .4888   | .0437   | 10.25 | 21 31.3              | .2858  | 20 23.0              | 6.80  |
|                                 | 16 | .262   | .4864   | .0422   | 10.30 | 21 31.8              | .2851  | 20 18.8              | 6.88  |
|                                 | 17 | .270   | .4840   | .0407   | 10.35 | 21 32.3              | .2845  | 20 14.7              | 6.95  |
|                                 | 18 | .277   | .4816   | .0393   | 10.39 | 21 32.8              | .2839  | 20 10.5              | 7.03  |
|                                 | 19 | .285   | .4792   | .0379   | 10.44 | 21 33.3              | .2833  | 20 6.3               | 7.10  |
|                                 | 20 | +1.393 | -0.4769 | +0.0365 | 10.49 | 21 33.7              | 1.2828 | 20 2.1               | -7.17 |
|                                 | 21 | .300   | .4746   | .0351   | 10.53 | 21 34.2              | .2822  | 19 57.9              | 7.23  |
|                                 | 22 | .308   | .4724   | .0338   | 10.58 | 21 34.7              | .2816  | 19 53.6              | 7.30  |
|                                 | 23 | .316   | .4702   | .0325   | 10.62 | 21 35.1              | .2810  | 19 49.4              | 7.36  |
|                                 | 24 | .323   | .4680   | .0312   | 10.67 | 21 35.6              | .2805  | 19 45.2              | 7.42  |
|                                 | 25 | .330   | .4658   | .0299   | 10.71 | 21 36.1              | .2800  | 19 40.9              | 7.48  |
|                                 | 26 | .337   | .4637   | .0287   | 10.75 | 21 36.5              | .2795  | 19 36.6              | 7.54  |
|                                 | 27 | .345   | .4616   | .0276   | 10.80 | 21 37.0              | .2790  | 19 32.4              | 7.59  |
|                                 | 28 | .352   | .4595   | .0265   | 10.84 | 21 37.4              | .2785  | 19 28.1              | 7.64  |
|                                 | 29 | .359   | .4575   | .0255   | 10.88 | 21 37.9              | .2781  | 19 23.8              | 7.69  |
| März                            | 1  | +1.366 | -0.4555 | +0.0245 | 10.92 | 21 38.3              | 1.2777 | 19 19.5              | -7.74 |
|                                 | 2  | .373   | .4535   | .0236   | 10.96 | 21 38.8              | .2773  | 19 15.2              | 7.78  |
|                                 | 3  | .379   | .4516   | .0227   | 11.00 | 21 39.3              | .2769  | 19 11.0              | 7.82  |
|                                 | 4  | .386   | .4497   | .0218   | 11.03 | 21 39.7              | .2765  | 19 6.7               | 7.86  |
|                                 | 5  | .393   | .4478   | .0210   | 11.07 | 21 40.2              | .2762  | 19 2.3               | 7.89  |
|                                 | 6  | .399   | .4459   | .0202   | 11.11 | 21 40.7              | .2758  | 18 58.0              | 7.93  |
|                                 | 7  | .406   | .4441   | .0194   | 11.15 | 21 41.1              | .2755  | 18 53.7              | 7.96  |
|                                 | 8  | .413   | .4423   | .0187   | 11.18 | 21 41.6              | .2752  | 18 49.4              | 7.99  |
|                                 | 9  | .419   | .4405   | .0181   | 11.22 | 21 42.1              | .2750  | 18 45.1              | 8.01  |
|                                 | 10 | .426   | .4387   | .0175   | 11.25 | 21 42.6              | .2747  | 18 40.8              | 8.04  |
|                                 | 11 | +1.432 | -0.4370 | +0.0170 | 11.29 | 21 43.1              | 1.2745 | 18 36.4              | -8.06 |
|                                 | 12 | .439   | .4353   | .0166   | 11.32 | 21 43.6              | .2743  | 18 32.1              | 8.08  |
|                                 | 13 | .445   | .4336   | .0162   | 11.36 | 21 44.1              | .2741  | 18 27.8              | 8.10  |
|                                 | 14 | .452   | .4319   | .0159   | 11.39 | 21 44.6              | .2740  | 18 23.4              | 8.11  |
|                                 | 15 | .458   | .4302   | .0156   | 11.42 | 21 45.1              | .2739  | 18 19.1              | 8.12  |
|                                 | 16 | .464   | .4286   | .0154   | 11.46 | 21 45.6              | .2738  | 18 14.7              | 8.13  |
|                                 | 17 | .471   | .4270   | .0152   | 11.49 | 21 46.2              | .2737  | 18 10.4              | 8.14  |
|                                 | 18 | .477   | .4254   | .0151   | 11.52 | 21 46.7              | .2737  | 18 6.1               | 8.14  |
|                                 | 19 | .484   | .4239   | .0150   | 11.55 | 21 47.3              | .2736  | 18 1.8               | 8.15  |
|                                 | 20 | .490   | .4223   | .0150   | 11.58 | 21 47.8              | .2736  | 17 57.5              | 8.15  |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                  | log h  | H                                  | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|------------------------------------|--------|------------------------------------|---------------------|
| März                            | 21 | +1 <sup>s</sup> .496 | —0.4208 | +0.0151 | 11 <sup>h</sup> .61 | 21 <sup>h</sup> 48 <sup>m</sup> .4 | 1.2737 | 17 <sup>h</sup> 53 <sup>m</sup> .1 | —8 <sup>h</sup> .14 |
|                                 | 22 | .503                 | .4192   | .0153   | 11.64               | 21 49.0                            | .2737  | 17 48.8                            | 8.14                |
|                                 | 23 | .509                 | .4177   | .0155   | 11.68               | 21 49.5                            | .2738  | 17 44.5                            | 8.13                |
|                                 | 24 | .515                 | .4162   | .0157   | 11.71               | 21 50.1                            | .2739  | 17 40.2                            | 8.12                |
|                                 | 25 | .522                 | .4147   | .0160   | 11.74               | 21 50.7                            | .2740  | 17 35.8                            | 8.11                |
|                                 | 26 | .528                 | .4132   | .0163   | 11.77               | 21 51.3                            | .2742  | 17 31.5                            | 8.09                |
|                                 | 27 | .535                 | .4117   | .0167   | 11.79               | 21 51.9                            | .2744  | 17 27.2                            | 8.08                |
|                                 | 28 | .541                 | .4102   | .0171   | 11.82               | 21 52.6                            | .2746  | 17 22.9                            | 8.06                |
|                                 | 29 | .547                 | .4088   | .0176   | 11.85               | 21 53.2                            | .2748  | 17 18.7                            | 8.04                |
|                                 | 30 | .554                 | .4073   | .0181   | 11.88               | 21 53.8                            | .2750  | 17 14.4                            | 8.01                |
| April                           | 31 | +1.560               | —0.4059 | +0.0187 | 11.91               | 21 54.5                            | 1.2752 | 17 10.2                            | —7.98               |
|                                 | 1  | .567                 | .4045   | .0194   | 11.94               | 21 55.1                            | .2755  | 17 5.9                             | 7.96                |
|                                 | 2  | .574                 | .4030   | .0201   | 11.97               | 21 55.8                            | .2758  | 17 1.6                             | 7.92                |
|                                 | 3  | .580                 | .4015   | .0209   | 12.00               | 21 56.5                            | .2761  | 16 57.4                            | 7.89                |
|                                 | 4  | .587                 | .4001   | .0217   | 12.03               | 21 57.2                            | .2765  | 16 53.1                            | 7.86                |
|                                 | 5  | .593                 | .3986   | .0226   | 12.06               | 21 57.9                            | .2769  | 16 48.9                            | 7.82                |
|                                 | 6  | .600                 | .3971   | .0235   | 12.09               | 21 58.6                            | .2773  | 16 44.7                            | 7.78                |
|                                 | 7  | .607                 | .3956   | .0245   | 12.12               | 21 59.3                            | .2777  | 16 40.5                            | 7.73                |
|                                 | 8  | .614                 | .3941   | .0255   | 12.15               | 22 0.0                             | .2781  | 16 36.3                            | 7.69                |
|                                 | 9  | .621                 | .3926   | .0265   | 12.18               | 22 0.7                             | .2785  | 16 32.1                            | 7.64                |
|                                 | 10 | +1.628               | —0.3911 | +0.0276 | 12.21               | 22 1.5                             | 1.2790 | 16 28.0                            | —7.59               |
|                                 | 11 | .635                 | .3896   | .0287   | 12.24               | 22 2.2                             | .2795  | 16 23.8                            | 7.54                |
|                                 | 12 | .642                 | .3881   | .0298   | 12.27               | 22 2.9                             | .2799  | 16 19.6                            | 7.48                |
|                                 | 13 | .649                 | .3866   | .0310   | 12.30               | 22 3.7                             | .2804  | 16 15.5                            | 7.43                |
|                                 | 14 | .656                 | .3850   | .0322   | 12.33               | 22 4.5                             | .2809  | 16 11.4                            | 7.37                |
|                                 | 15 | .664                 | .3834   | .0334   | 12.36               | 22 5.2                             | .2815  | 16 7.2                             | 7.31                |
|                                 | 16 | .671                 | .3818   | .0347   | 12.39               | 22 6.0                             | .2820  | 16 3.1                             | 7.25                |
|                                 | 17 | .678                 | .3802   | .0360   | 12.43               | 22 6.8                             | .2825  | 15 59.0                            | 7.19                |
|                                 | 18 | .686                 | .3786   | .0373   | 12.46               | 22 7.6                             | .2831  | 15 55.0                            | 7.12                |
|                                 | 19 | .694                 | .3769   | .0387   | 12.49               | 22 8.4                             | .2836  | 15 50.9                            | 7.05                |
|                                 | 20 | +1.701               | —0.3752 | +0.0401 | 12.53               | 22 9.2                             | 1.2842 | 15 46.9                            | —6.98               |
|                                 | 21 | .709                 | .3735   | .0415   | 12.56               | 22 10.0                            | .2848  | 15 42.8                            | 6.91                |
|                                 | 22 | .717                 | .3718   | .0429   | 12.60               | 22 10.8                            | .2854  | 15 38.8                            | 6.83                |
|                                 | 23 | .725                 | .3700   | .0443   | 12.63               | 22 11.6                            | .2860  | 15 34.8                            | 6.76                |
|                                 | 24 | .733                 | .3682   | .0457   | 12.67               | 22 12.4                            | .2867  | 15 30.8                            | 6.68                |
|                                 | 25 | .741                 | .3664   | .0472   | 12.70               | 22 13.3                            | .2873  | 15 26.8                            | 6.60                |
|                                 | 26 | .749                 | .3646   | .0487   | 12.74               | 22 14.1                            | .2879  | 15 22.8                            | 6.52                |
|                                 | 27 | .757                 | .3628   | .0503   | 12.78               | 22 14.9                            | .2885  | 15 18.8                            | 6.43                |
|                                 | 28 | .766                 | .3609   | .0519   | 12.82               | 22 15.7                            | .2892  | 15 14.9                            | 6.35                |
|                                 | 29 | .774                 | .3590   | .0535   | 12.85               | 22 16.5                            | .2898  | 15 11.0                            | 6.26                |
| Mai                             | 30 | +1.783               | —0.3570 | +0.0550 | 12.89               | 22 17.4                            | 1.2904 | 15 7.0                             | —6.17               |
|                                 | 1  | .791                 | .3550   | .0566   | 12.93               | 22 18.2                            | .2911  | 15 3.1                             | 6.08                |
|                                 | 2  | .800                 | .3530   | .0581   | 12.97               | 22 19.0                            | .2917  | 14 59.3                            | 5.99                |
|                                 | 3  | .808                 | .3510   | .0597   | 13.01               | 22 19.8                            | .2923  | 14 55.4                            | 5.89                |
|                                 | 4  | .817                 | .3489   | .0612   | 13.06               | 22 20.7                            | .2930  | 14 51.5                            | 5.80                |
|                                 | 5  | .826                 | .3468   | .0628   | 13.10               | 22 21.5                            | .2936  | 14 47.7                            | 5.70                |
|                                 | 6  | .835                 | .3447   | .0643   | 13.14               | 22 22.3                            | .2942  | 14 43.8                            | 5.60                |
|                                 | 7  | .844                 | .3425   | .0658   | 13.18               | 22 23.2                            | .2948  | 14 40.0                            | 5.50                |
|                                 | 8  | .853                 | .3403   | .0673   | 13.23               | 22 24.0                            | .2955  | 14 36.2                            | 5.40                |
|                                 | 9  | .863                 | .3381   | .0688   | 13.27               | 22 24.8                            | .2961  | 14 32.4                            | 5.29                |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                   | x       | y       | g                  | G                                 | log h  | H                                 | i                  |
|---------------------------------|----|---------------------|---------|---------|--------------------|-----------------------------------|--------|-----------------------------------|--------------------|
| Mai                             | 10 | +1 <sup>s</sup> 872 | —0.3358 | +0.0703 | 13 <sup>h</sup> 32 | 22 <sup>h</sup> 25 <sup>m</sup> 6 | 1.2967 | 14 <sup>h</sup> 28 <sup>m</sup> 6 | —5 <sup>s</sup> 19 |
|                                 | 11 | .882                | .3335   | .0718   | 13.36              | 22 26.5                           | .2973  | 14 24.8                           | 5.08               |
|                                 | 12 | .891                | .3312   | .0732   | 13.41              | 22 27.3                           | .2979  | 14 21.0                           | 4.97               |
|                                 | 13 | .901                | .3288   | .0747   | 13.46              | 22 28.1                           | .2985  | 14 17.3                           | 4.86               |
|                                 | 14 | .910                | .3263   | .0761   | 13.51              | 22 28.9                           | .2990  | 14 13.5                           | 4.75               |
|                                 | 15 | .920                | .3238   | .0776   | 13.56              | 22 29.7                           | .2996  | 14 9.8                            | 4.64               |
|                                 | 16 | .930                | .3213   | .0790   | 13.61              | 22 30.5                           | .3002  | 14 6.1                            | 4.53               |
|                                 | 17 | .940                | .3188   | .0804   | 13.66              | 22 31.2                           | .3007  | 14 2.4                            | 4.42               |
|                                 | 18 | .949                | .3162   | .0818   | 13.71              | 22 32.0                           | .3013  | 13 58.7                           | 4.30               |
|                                 | 19 | .959                | .3136   | .0831   | 13.76              | 22 32.8                           | .3018  | 13 55.0                           | 4.19               |
|                                 | 20 | +1.970              | —0.3110 | +0.0844 | 13.82              | 22 33.5                           | 1.3023 | 13 51.3                           | —4.07              |
|                                 | 21 | .980                | .3083   | .0857   | 13.87              | 22 34.3                           | .3029  | 13 47.6                           | 3.94               |
|                                 | 22 | 1.990               | .3056   | .0870   | 13.92              | 22 35.0                           | .3034  | 13 44.0                           | 3.82               |
|                                 | 23 | 2.001               | .3029   | .0882   | 13.98              | 22 35.7                           | .3039  | 13 40.3                           | 3.70               |
|                                 | 24 | .011                | .3001   | .0894   | 14.03              | 22 36.5                           | .3043  | 13 36.7                           | 3.58               |
|                                 | 25 | .022                | .2973   | .0906   | 14.09              | 22 37.2                           | .3048  | 13 33.1                           | 3.46               |
|                                 | 26 | .032                | .2944   | .0917   | 14.15              | 22 37.9                           | .3052  | 13 29.5                           | 3.34               |
|                                 | 27 | .043                | .2915   | .0928   | 14.21              | 22 38.6                           | .3057  | 13 25.9                           | 3.21               |
|                                 | 28 | .053                | .2886   | .0938   | 14.26              | 22 39.3                           | .3061  | 13 22.3                           | 3.09               |
|                                 | 29 | .064                | .2857   | .0948   | 14.32              | 22 40.0                           | .3065  | 13 18.7                           | 2.96               |
|                                 | 30 | +2.075              | —0.2827 | +0.0958 | 14.38              | 22 40.6                           | 1.3069 | 13 15.1                           | —2.83              |
|                                 | 31 | .086                | .2797   | .0968   | 14.44              | 22 41.3                           | .3073  | 13 11.5                           | 2.70               |
| Juni                            | 1  | .096                | .2767   | .0977   | 14.50              | 22 42.0                           | .3077  | 13 7.9                            | 2.57               |
|                                 | 2  | .107                | .2736   | .0986   | 14.57              | 22 42.6                           | .3080  | 13 4.4                            | 2.44               |
|                                 | 3  | .119                | .2705   | .0994   | 14.63              | 22 43.2                           | .3083  | 13 0.8                            | 2.31               |
|                                 | 4  | .130                | .2674   | .1002   | 14.69              | 22 43.8                           | .3086  | 12 57.3                           | 2.18               |
|                                 | 5  | .141                | .2643   | .1009   | 14.75              | 22 44.4                           | .3089  | 12 53.7                           | 2.05               |
|                                 | 6  | .152                | .2611   | .1016   | 14.82              | 22 45.0                           | .3092  | 12 50.1                           | 1.92               |
|                                 | 7  | .163                | .2579   | .1022   | 14.88              | 22 45.6                           | .3095  | 12 46.6                           | 1.79               |
|                                 | 8  | .174                | .2547   | .1028   | 14.94              | 22 46.2                           | .3097  | 12 43.1                           | 1.65               |
|                                 | 9  | +2.185              | —0.2515 | +0.1034 | 15.01              | 22 46.7                           | 1.3099 | 12 39.5                           | —1.52              |
|                                 | 10 | .197                | .2482   | .1039   | 15.07              | 22 47.3                           | .3101  | 12 36.0                           | 1.39               |
|                                 | 11 | .208                | .2449   | .1044   | 15.14              | 22 47.8                           | .3103  | 12 32.5                           | 1.25               |
|                                 | 12 | .219                | .2416   | .1048   | 15.21              | 22 48.3                           | .3105  | 12 29.0                           | 1.12               |
|                                 | 13 | .230                | .2383   | .1052   | 15.27              | 22 48.8                           | .3106  | 12 25.5                           | 0.98               |
|                                 | 14 | .242                | .2350   | .1055   | 15.34              | 22 49.3                           | .3107  | 12 22.0                           | 0.85               |
|                                 | 15 | .253                | .2316   | .1058   | 15.41              | 22 49.8                           | .3108  | 12 18.4                           | 0.72               |
|                                 | 16 | .264                | .2282   | .1060   | 15.48              | 22 50.3                           | .3109  | 12 14.9                           | 0.58               |
|                                 | 17 | .276                | .2248   | .1062   | 15.54              | 22 50.7                           | .3110  | 12 11.4                           | 0.44               |
|                                 | 18 | .287                | .2214   | .1063   | 15.61              | 22 51.2                           | .3111  | 12 7.9                            | 0.31               |
|                                 | 19 | +2.299              | —0.2180 | +0.1064 | 15.68              | 22 51.6                           | 1.3111 | 12 4.4                            | —0.17              |
|                                 | 20 | .310                | .2146   | .1065   | 15.75              | 22 52.0                           | .3111  | 12 0.9                            | —0.04              |
|                                 | 21 | .322                | .2110   | .1065   | 15.82              | 22 52.4                           | .3111  | 11 57.5                           | +0.10              |
|                                 | 22 | .333                | .2076   | .1064   | 15.89              | 22 52.8                           | .3111  | 11 54.0                           | 0.23               |
|                                 | 23 | .344                | .2041   | .1063   | 15.96              | 22 53.2                           | .3111  | 11 50.5                           | 0.37               |
|                                 | 24 | .356                | .2007   | .1062   | 16.03              | 22 53.6                           | .3110  | 11 47.0                           | 0.50               |
|                                 | 25 | .367                | .1972   | .1060   | 16.10              | 22 54.0                           | .3109  | 11 43.5                           | 0.64               |
|                                 | 26 | .378                | .1937   | .1057   | 16.17              | 22 54.3                           | .3108  | 11 39.9                           | 0.77               |
|                                 | 27 | .390                | .1902   | .1054   | 16.24              | 22 54.7                           | .3107  | 11 36.4                           | 0.91               |
|                                 | 28 | .401                | .1867   | .1051   | 16.31              | 22 55.0                           | .3106  | 11 32.9                           | 1.04               |

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| <sup>12<sup>h</sup></sup><br>M. Z. Berlin |    | f                    | x       | y       | g      | G                                  | log h  | H                                  | i      |
|-------------------------------------------|----|----------------------|---------|---------|--------|------------------------------------|--------|------------------------------------|--------|
| Juni                                      | 29 | +2. <sup>s</sup> 412 | —0.1832 | +0.1047 | 16."38 | 22 <sup>h</sup> 55 <sup>m</sup> .3 | 1.3104 | 11 <sup>h</sup> 29 <sup>m</sup> .4 | +1."18 |
|                                           | 30 | .424                 | .1796   | .1043   | 16.45  | 22 55.6                            | .3102  | 11 25.9                            | 1.31   |
| Juli                                      | 1  | .435                 | .1761   | .1038   | 16.52  | 22 55.9                            | .3101  | 11 22.4                            | 1.45   |
|                                           | 2  | .446                 | .1726   | .1033   | 16.59  | 22 56.2                            | .3098  | 11 18.9                            | 1.58   |
|                                           | 3  | .457                 | .1691   | .1027   | 16.66  | 22 56.5                            | .3096  | 11 15.4                            | 1.71   |
|                                           | 4  | .468                 | .1656   | .1021   | 16.73  | 22 56.7                            | .3094  | 11 11.9                            | 1.85   |
|                                           | 5  | .480                 | .1621   | .1014   | 16.80  | 22 57.0                            | .3091  | 11 8.3                             | 1.98   |
|                                           | 6  | .491                 | .1586   | .1007   | 16.87  | 22 57.2                            | .3088  | 11 4.8                             | 2.11   |
|                                           | 7  | .502                 | .1552   | .0999   | 16.94  | 22 57.5                            | .3085  | 11 1.2                             | 2.24   |
|                                           | 8  | .513                 | .1517   | .0991   | 17.01  | 22 57.7                            | .3082  | 10 57.7                            | 2.37   |
|                                           | 9  | +2.524               | —0.1482 | +0.0982 | 17.08  | 22 57.9                            | 1.3079 | 10 54.1                            | +2.50  |
|                                           | 10 | .534                 | .1447   | .0973   | 17.15  | 22 58.1                            | .3075  | 10 50.6                            | 2.63   |
|                                           | 11 | .545                 | .1413   | .0964   | 17.22  | 22 58.3                            | .3072  | 10 47.0                            | 2.76   |
|                                           | 12 | .556                 | .1379   | .0954   | 17.29  | 22 58.5                            | .3068  | 10 43.5                            | 2.88   |
|                                           | 13 | .567                 | .1345   | .0944   | 17.36  | 22 58.6                            | .3064  | 10 39.9                            | 3.01   |
|                                           | 14 | .578                 | .1311   | .0934   | 17.42  | 22 58.8                            | .3059  | 10 36.3                            | 3.13   |
|                                           | 15 | .588                 | .1277   | .0923   | 17.49  | 22 59.0                            | .3055  | 10 32.7                            | 3.26   |
|                                           | 16 | .598                 | .1242   | .0912   | 17.56  | 22 59.1                            | .3051  | 10 29.1                            | 3.38   |
|                                           | 17 | .609                 | .1208   | .0901   | 17.63  | 22 59.3                            | .3046  | 10 25.5                            | 3.51   |
|                                           | 18 | .619                 | .1174   | .0890   | 17.70  | 22 59.4                            | .3042  | 10 21.9                            | 3.63   |
|                                           | 19 | +2.630               | —0.1141 | +0.0878 | 17.76  | 22 59.5                            | 1.3037 | 10 18.3                            | +3.75  |
|                                           | 20 | .640                 | .1108   | .0866   | 17.83  | 22 59.7                            | .3032  | 10 14.7                            | 3.87   |
|                                           | 21 | .650                 | .1075   | .0853   | 17.90  | 22 59.8                            | .3027  | 10 11.0                            | 3.99   |
|                                           | 22 | .660                 | .1042   | .0840   | 17.96  | 22 59.9                            | .3022  | 10 7.4                             | 4.11   |
|                                           | 23 | .670                 | .1010   | .0827   | 18.03  | 23 0.0                             | .3017  | 10 3.7                             | 4.22   |
|                                           | 24 | .680                 | .0978   | .0813   | 18.09  | 23 0.1                             | .3011  | 10 0.0                             | 4.34   |
|                                           | 25 | .690                 | .0946   | .0799   | 18.16  | 23 0.2                             | .3006  | 9 56.3                             | 4.46   |
|                                           | 26 | .700                 | .0914   | .0785   | 18.22  | 23 0.3                             | .3000  | 9 52.7                             | 4.57   |
|                                           | 27 | .710                 | .0882   | .0771   | 18.28  | 23 0.4                             | .2994  | 9 49.0                             | 4.68   |
|                                           | 28 | .719                 | .0850   | .0757   | 18.35  | 23 0.5                             | .2989  | 9 45.3                             | 4.79   |
| August                                    | 29 | +2.729               | —0.0818 | +0.0743 | 18.41  | 23 0.5                             | 1.2983 | 9 41.6                             | +4.90  |
|                                           | 30 | .738                 | .0787   | .0729   | 18.47  | 23 0.6                             | .2978  | 9 37.8                             | 5.00   |
|                                           | 31 | .748                 | .0756   | .0715   | 18.54  | 23 0.7                             | .2972  | 9 34.1                             | 5.11   |
|                                           | 1  | .757                 | .0725   | .0700   | 18.60  | 23 0.7                             | .2965  | 9 30.4                             | 5.22   |
|                                           | 2  | .766                 | .0695   | .0685   | 18.66  | 23 0.8                             | .2959  | 9 26.6                             | 5.32   |
|                                           | 3  | .775                 | .0665   | .0669   | 18.72  | 23 0.8                             | .2953  | 9 22.8                             | 5.43   |
|                                           | 4  | .784                 | .0635   | .0654   | 18.78  | 23 0.9                             | .2947  | 9 19.0                             | 5.53   |
|                                           | 5  | .793                 | .0605   | .0639   | 18.84  | 23 0.9                             | .2941  | 9 15.2                             | 5.63   |
|                                           | 6  | .802                 | .0576   | .0624   | 18.90  | 23 1.0                             | .2935  | 9 11.4                             | 5.72   |
|                                           | 7  | .811                 | .0547   | .0608   | 18.96  | 23 1.0                             | .2928  | 9 7.6                              | 5.82   |
|                                           | 8  | +2.820               | —0.0518 | +0.0593 | 19.01  | 23 1.1                             | 1.2922 | 9 3.8                              | +5.91  |
|                                           | 9  | .828                 | .0489   | .0577   | 19.07  | 23 1.1                             | .2916  | 8 59.9                             | 6.01   |
|                                           | 10 | .837                 | .0461   | .0562   | 19.13  | 23 1.2                             | .2909  | 8 56.0                             | 6.10   |
|                                           | 11 | .845                 | .0433   | .0547   | 19.18  | 23 1.2                             | .2903  | 8 52.2                             | 6.19   |
|                                           | 12 | .854                 | .0405   | .0532   | 19.24  | 23 1.2                             | .2897  | 8 48.3                             | 6.28   |
|                                           | 13 | .862                 | .0377   | .0517   | 19.30  | 23 1.3                             | .2891  | 8 44.4                             | 6.36   |
|                                           | 14 | .870                 | .0350   | .0502   | 19.35  | 23 1.3                             | .2884  | 8 40.5                             | 6.45   |
|                                           | 15 | .879                 | .0323   | .0487   | 19.40  | 23 1.3                             | .2878  | 8 36.6                             | 6.53   |
|                                           | 16 | .887                 | .0296   | .0472   | 19.46  | 23 1.4                             | .2872  | 8 32.6                             | 6.61   |
|                                           | 17 | .894                 | .0270   | .0457   | 19.51  | 23 1.4                             | .2866  | 8 28.7                             | 6.69   |

## 1860

| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g      | G                                | log h  | H                                | i      |
|---------------------------------|----|----------------------|---------|---------|--------|----------------------------------|--------|----------------------------------|--------|
| August                          | 18 | +2. <sup>s</sup> 902 | —0.0244 | +0.0442 | 19."56 | 23 <sup>h</sup> 1 <sup>m</sup> 5 | 1.2860 | 8 <sup>h</sup> 24 <sup>m</sup> 7 | +6."77 |
|                                 | 19 | .910                 | .0218   | .0428   | 19.61  | 23 1.5                           | .2854  | 8 20.7                           | 6.84   |
|                                 | 20 | .918                 | .0193   | .0414   | 19.66  | 23 1.5                           | .2848  | 8 16.7                           | 6.91   |
|                                 | 21 | .925                 | .0167   | .0400   | 19.72  | 23 1.6                           | .2842  | 8 12.7                           | 6.99   |
|                                 | 22 | .933                 | .0142   | .0387   | 19.77  | 23 1.6                           | .2837  | 8 8.7                            | 7.06   |
|                                 | 23 | .940                 | .0117   | .0373   | 19.82  | 23 1.7                           | .2831  | 8 4.7                            | 7.12   |
|                                 | 24 | .948                 | .0094   | .0360   | 19.86  | 23 1.7                           | .2825  | 8 0.7                            | 7.19   |
|                                 | 25 | .955                 | .0070   | .0347   | 19.91  | 23 1.8                           | .2820  | 7 56.6                           | 7.26   |
|                                 | 26 | .962                 | .0046   | .0334   | 19.96  | 23 1.8                           | .2814  | 7 52.5                           | 7.32   |
|                                 | 27 | .970                 | —0.0022 | .0321   | 20.01  | 23 1.9                           | .2809  | 7 48.5                           | 7.38   |
|                                 | 28 | +2.977               | +0.0001 | +0.0309 | 20.05  | 23 1.9                           | 1.2804 | 7 44.4                           | +7.43  |
|                                 | 29 | .984                 | .0024   | .0297   | 20.10  | 23 2.0                           | .2799  | 7 40.3                           | 7.49   |
|                                 | 30 | .991                 | .0047   | .0286   | 20.15  | 23 2.1                           | .2794  | 7 36.2                           | 7.54   |
|                                 | 31 | 2.998                | .0070   | .0275   | 20.19  | 23 2.1                           | .2790  | 7 32.1                           | 7.59   |
| Septbr.                         | 1  | 3.005                | .0092   | .0265   | 20.24  | 23 2.2                           | .2785  | 7 28.0                           | 7.64   |
|                                 | 2  | .011                 | .0114   | .0255   | 20.28  | 23 2.3                           | .2781  | 7 23.8                           | 7.69   |
|                                 | 3  | .018                 | .0136   | .0245   | 20.32  | 23 2.4                           | .2777  | 7 19.7                           | 7.73   |
|                                 | 4  | .025                 | .0157   | .0236   | 20.36  | 23 2.5                           | .2773  | 7 15.5                           | 7.78   |
|                                 | 5  | .031                 | .0178   | .0227   | 20.41  | 23 2.5                           | .2769  | 7 11.4                           | 7.81   |
|                                 | 6  | .038                 | .0199   | .0219   | 20.45  | 23 2.6                           | .2766  | 7 7.2                            | 7.85   |
|                                 | 7  | +3.045               | +0.0220 | +0.0211 | 20.49  | 23 2.7                           | 1.2762 | 7 3.0                            | +7.89  |
|                                 | 8  | .051                 | .0241   | .0203   | 20.53  | 23 2.8                           | .2759  | 6 58.8                           | 7.92   |
|                                 | 9  | .058                 | .0261   | .0196   | 20.58  | 23 2.9                           | .2756  | 6 54.6                           | 7.95   |
|                                 | 10 | .064                 | .0281   | .0189   | 20.62  | 23 3.0                           | .2753  | 6 50.4                           | 7.98   |
|                                 | 11 | .070                 | .0301   | .0183   | 20.66  | 23 3.2                           | .2750  | 6 46.2                           | 8.01   |
|                                 | 12 | .077                 | .0321   | .0177   | 20.70  | 23 3.3                           | .2748  | 6 42.0                           | 8.03   |
|                                 | 13 | .083                 | .0341   | .0172   | 20.74  | 23 3.4                           | .2746  | 6 37.7                           | 8.06   |
|                                 | 14 | .089                 | .0361   | .0167   | 20.78  | 23 3.6                           | .2744  | 6 33.5                           | 8.07   |
|                                 | 15 | .096                 | .0380   | .0163   | 20.82  | 23 3.7                           | .2742  | 6 29.3                           | 8.09   |
|                                 | 16 | .102                 | .0400   | .0160   | 20.85  | 23 3.9                           | .2741  | 6 25.0                           | 8.11   |
|                                 | 17 | +3.108               | +0.0419 | +0.0157 | 20.89  | 23 4.0                           | 1.2739 | 6 20.8                           | +8.12  |
|                                 | 18 | .115                 | .0438   | .0155   | 20.93  | 23 4.2                           | .2738  | 6 16.5                           | 8.13   |
|                                 | 19 | .121                 | .0457   | .0153   | 20.97  | 23 4.3                           | .2738  | 6 12.2                           | 8.14   |
|                                 | 20 | .127                 | .0476   | .0152   | 21.01  | 23 4.5                           | .2737  | 6 8.0                            | 8.14   |
|                                 | 21 | .133                 | .0495   | .0151   | 21.04  | 23 4.7                           | .2737  | 6 3.7                            | 8.15   |
|                                 | 22 | .139                 | .0514   | .0151   | 21.08  | 23 4.8                           | .2737  | 5 59.4                           | 8.15   |
|                                 | 23 | .146                 | .0533   | .0151   | 21.12  | 23 5.0                           | .2737  | 5 55.2                           | 8.15   |
|                                 | 24 | .152                 | .0551   | .0152   | 21.16  | 23 5.2                           | .2737  | 5 50.9                           | 8.14   |
|                                 | 25 | .158                 | .0570   | .0153   | 21.19  | 23 5.4                           | .2738  | 5 46.6                           | 8.14   |
|                                 | 26 | .164                 | .0589   | .0155   | 21.23  | 23 5.6                           | .2738  | 5 42.3                           | 8.13   |
|                                 | 27 | +3.171               | +0.0608 | +0.0157 | 21.27  | 23 5.8                           | 1.2739 | 5 38.0                           | +8.12  |
|                                 | 28 | .177                 | .0626   | .0160   | 21.31  | 23 6.1                           | .2741  | 5 33.7                           | 8.10   |
|                                 | 29 | .183                 | .0645   | .0164   | 21.34  | 23 6.3                           | .2742  | 5 29.4                           | 8.09   |
|                                 | 30 | .189                 | .0664   | .0168   | 21.38  | 23 6.5                           | .2744  | 5 25.2                           | 8.07   |
| Oktbr.                          | 1  | .195                 | .0683   | .0173   | 21.42  | 23 6.7                           | .2746  | 5 20.9                           | 8.05   |
|                                 | 2  | .202                 | .0701   | .0179   | 21.46  | 23 7.0                           | .2749  | 5 16.6                           | 8.02   |
|                                 | 3  | .208                 | .0720   | .0185   | 21.49  | 23 7.2                           | .2751  | 5 12.4                           | 8.00   |
|                                 | 4  | .215                 | .0738   | .0192   | 21.53  | 23 7.5                           | .2754  | 5 8.1                            | 7.97   |
|                                 | 5  | .221                 | .0757   | .0199   | 21.57  | 23 7.8                           | .2757  | 5 3.8                            | 7.94   |
|                                 | 6  | .228                 | .0775   | .0206   | 21.61  | 23 8.0                           | .2760  | 4 59.6                           | 7.90   |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                   | G                                 | log h  | H                                 | i                   |
|---------------------------------|----|----------------------|---------|---------|---------------------|-----------------------------------|--------|-----------------------------------|---------------------|
| Oktbr.                          | 7  | +3 <sup>s</sup> .234 | +0.0794 | +0.0214 | 21 <sup>h</sup> .64 | 23 <sup>h</sup> 8 <sup>m</sup> .3 | 1.2763 | 4 <sup>h</sup> 55 <sup>m</sup> .3 | +7 <sup>h</sup> .87 |
|                                 | 8  | .241                 | .0813   | .0222   | 21.68               | 23 8.6                            | .2767  | 4 51.1                            | 7.83                |
|                                 | 9  | .247                 | .0832   | .0231   | 21.72               | 23 8.9                            | .2771  | 4 46.8                            | 7.80                |
|                                 | 10 | .254                 | .0851   | .0240   | 21.76               | 23 9.2                            | .2775  | 4 42.6                            | 7.76                |
|                                 | 11 | .261                 | .0871   | .0250   | 21.80               | 23 9.5                            | .2779  | 4 38.3                            | 7.71                |
|                                 | 12 | .268                 | .0890   | .0260   | 21.84               | 23 9.8                            | .2783  | 4 34.1                            | 7.66                |
|                                 | 13 | .275                 | .0910   | .0271   | 21.88               | 23 10.1                           | .2787  | 4 29.8                            | 7.61                |
|                                 | 14 | .281                 | .0929   | .0282   | 21.92               | 23 10.4                           | .2792  | 4 25.6                            | 7.56                |
|                                 | 15 | .288                 | .0949   | .0293   | 21.96               | 23 10.7                           | .2797  | 4 21.4                            | 7.51                |
|                                 | 16 | .296                 | .0969   | .0305   | 22.00               | 23 11.0                           | .2802  | 4 17.2                            | 7.45                |
|                                 | 17 | +3.303               | +0.0990 | +0.0317 | 22.04               | 23 11.3                           | 1.2807 | 4 13.0                            | +7.40               |
|                                 | 18 | .310                 | .1011   | .0330   | 22.08               | 23 11.7                           | .2813  | 4 8.8                             | 7.34                |
|                                 | 19 | .317                 | .1032   | .0343   | 22.12               | 23 12.0                           | .2818  | 4 4.6                             | 7.27                |
|                                 | 20 | .324                 | .1053   | .0356   | 22.16               | 23 12.3                           | .2824  | 4 0.5                             | 7.21                |
|                                 | 21 | .332                 | .1074   | .0370   | 22.21               | 23 12.7                           | .2829  | 3 56.3                            | 7.14                |
|                                 | 22 | .339                 | .1095   | .0384   | 22.25               | 23 13.0                           | .2835  | 3 52.2                            | 7.07                |
|                                 | 23 | .347                 | .1117   | .0398   | 22.29               | 23 13.4                           | .2841  | 3 48.0                            | 7.00                |
|                                 | 24 | .355                 | .1139   | .0412   | 22.34               | 23 13.7                           | .2847  | 3 43.8                            | 6.92                |
|                                 | 25 | .363                 | .1161   | .0427   | 22.38               | 23 14.1                           | .2853  | 3 39.7                            | 6.85                |
|                                 | 26 | .370                 | .1184   | .0442   | 22.43               | 23 14.5                           | .2859  | 3 35.6                            | 6.77                |
|                                 | 27 | +3.378               | +0.1207 | +0.0457 | 22.47               | 23 14.8                           | 1.2866 | 3 31.5                            | +6.69               |
|                                 | 28 | .386                 | .1230   | .0472   | 22.52               | 23 15.2                           | .2872  | 3 27.4                            | 6.61                |
|                                 | 29 | .395                 | .1254   | .0488   | 22.57               | 23 15.5                           | .2878  | 3 23.3                            | 6.53                |
|                                 | 30 | .403                 | .1278   | .0503   | 22.61               | 23 15.9                           | .2885  | 3 19.2                            | 6.44                |
|                                 | 31 | .411                 | .1302   | .0519   | 22.66               | 23 16.3                           | .2891  | 3 15.1                            | 6.35                |
| Novbr.                          | 1  | .419                 | .1327   | .0534   | 22.71               | 23 16.6                           | .2898  | 3 11.1                            | 6.26                |
|                                 | 2  | .428                 | .1352   | .0550   | 22.76               | 23 17.0                           | .2904  | 3 7.0                             | 6.17                |
|                                 | 3  | .436                 | .1377   | .0566   | 22.81               | 23 17.4                           | .2911  | 3 3.0                             | 6.08                |
|                                 | 4  | .445                 | .1402   | .0582   | 22.86               | 23 17.7                           | .2918  | 2 58.9                            | 5.98                |
|                                 | 5  | .454                 | .1427   | .0599   | 22.91               | 23 18.1                           | .2924  | 2 54.9                            | 5.88                |
|                                 | 6  | +3.463               | +0.1453 | +0.0615 | 22.96               | 23 18.5                           | 1.2931 | 2 50.9                            | +5.78               |
|                                 | 7  | .472                 | .1479   | .0631   | 23.02               | 23 18.9                           | .2937  | 2 46.9                            | 5.68                |
|                                 | 8  | .481                 | .1506   | .0647   | 23.07               | 23 19.2                           | .2944  | 2 42.9                            | 5.58                |
|                                 | 9  | .490                 | .1533   | .0663   | 23.13               | 23 19.6                           | .2950  | 2 38.9                            | 5.47                |
|                                 | 10 | .499                 | .1560   | .0679   | 23.18               | 23 20.0                           | .2957  | 2 34.9                            | 5.36                |
|                                 | 11 | .509                 | .1588   | .0695   | 23.24               | 23 20.3                           | .2963  | 2 31.0                            | 5.26                |
|                                 | 12 | .518                 | .1616   | .0710   | 23.29               | 23 20.7                           | .2969  | 2 27.0                            | 5.15                |
|                                 | 13 | .528                 | .1644   | .0725   | 23.35               | 23 21.0                           | .2975  | 2 23.1                            | 5.03                |
|                                 | 14 | .537                 | .1673   | .0740   | 23.41               | 23 21.4                           | .2982  | 2 19.2                            | 4.92                |
|                                 | 15 | .547                 | .1702   | .0755   | 23.46               | 23 21.8                           | .2988  | 2 15.2                            | 4.80                |
|                                 | 16 | +3.557               | +0.1731 | +0.0770 | 23.52               | 23 22.1                           | 1.2994 | 2 11.3                            | +4.69               |
|                                 | 17 | .567                 | .1761   | .0785   | 23.58               | 23 22.5                           | .3000  | 2 7.4                             | 4.57                |
|                                 | 18 | .577                 | .1791   | .0799   | 23.64               | 23 22.8                           | .3005  | 2 3.5                             | 4.45                |
|                                 | 19 | .587                 | .1822   | .0813   | 23.71               | 23 23.1                           | .3011  | 1 59.6                            | 4.33                |
|                                 | 20 | .597                 | .1853   | .0827   | 23.77               | 23 23.5                           | .3017  | 1 55.8                            | 4.21                |
|                                 | 21 | .608                 | .1884   | .0841   | 23.83               | 23 23.8                           | .3023  | 1 51.9                            | 4.08                |
|                                 | 22 | .618                 | .1915   | .0855   | 23.89               | 23 24.2                           | .3028  | 1 48.1                            | 3.96                |
|                                 | 23 | .628                 | .1947   | .0869   | 23.96               | 23 24.5                           | .3033  | 1 44.2                            | 3.83                |
|                                 | 24 | .639                 | .1979   | .0882   | 24.02               | 23 24.8                           | .3039  | 1 40.4                            | 3.70                |
|                                 | 25 | .650                 | .2012   | .0895   | 24.09               | 23 25.1                           | .3044  | 1 36.5                            | 3.57                |

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| 12 <sup>h</sup><br>M. Z. Berlin |    | f                    | x       | y       | g                  | G                                  | log h  | H                                 | i                  |
|---------------------------------|----|----------------------|---------|---------|--------------------|------------------------------------|--------|-----------------------------------|--------------------|
| Novbr.                          | 26 | +3 <sup>s</sup> .660 | +0.2045 | +0.0907 | 24 <sup>"</sup> 15 | 23 <sup>h</sup> 25 <sup>m</sup> .4 | 1.3049 | 1 <sup>h</sup> 32 <sup>m</sup> .7 | +3 <sup>"</sup> 45 |
|                                 | 27 | .671                 | .2078   | .0919   | 24.22              | 23 25.7                            | .3053  | 1 28.9                            | 3.31               |
|                                 | 28 | .682                 | .2111   | .0930   | 24.28              | 23 26.0                            | .3058  | 1 25.1                            | 3.18               |
|                                 | 29 | .693                 | .2145   | .0941   | 24.35              | 23 26.3                            | .3062  | 1 21.2                            | 3.05               |
|                                 | 30 | .704                 | .2179   | .0952   | 24.42              | 23 26.6                            | .3067  | 1 17.4                            | 2.91               |
| Dezbr.                          | 1  | .715                 | .2213   | .0962   | 24.49              | 23 26.9                            | .3071  | 1 13.6                            | 2.78               |
|                                 | 2  | .726                 | .2247   | .0972   | 24.56              | 23 27.2                            | .3075  | 1 9.8                             | 2.64               |
|                                 | 3  | .737                 | .2282   | .0981   | 24.63              | 23 27.5                            | .3078  | 1 6.0                             | 2.51               |
|                                 | 4  | .748                 | .2317   | .0990   | 24.70              | 23 27.8                            | .3082  | 1 2.3                             | 2.37               |
|                                 | 5  | .760                 | .2352   | .0998   | 24.77              | 23 28.0                            | .3085  | 0 58.5                            | 2.23               |
|                                 | 6  | +3.771               | +0.2387 | +0.1006 | 24.84              | 23 28.3                            | 1.3088 | 0 54.7                            | +2.09              |
|                                 | 7  | .783                 | .2423   | .1014   | 24.91              | 23 28.5                            | .3091  | 0 51.0                            | 1.95               |
|                                 | 8  | .794                 | .2459   | .1021   | 24.98              | 23 28.8                            | .3094  | 0 47.2                            | 1.81               |
|                                 | 9  | .806                 | .2495   | .1028   | 25.05              | 23 29.0                            | .3097  | 0 43.4                            | 1.67               |
|                                 | 10 | .817                 | .2531   | .1034   | 25.13              | 23 29.2                            | .3099  | 0 39.7                            | 1.52               |
|                                 | 11 | .829                 | .2567   | .1039   | 25.20              | 23 29.4                            | .3101  | 0 35.9                            | 1.38               |
|                                 | 12 | .840                 | .2604   | .1044   | 25.27              | 23 29.7                            | .3103  | 0 32.2                            | 1.24               |
|                                 | 13 | .852                 | .2640   | .1048   | 25.34              | 23 29.9                            | .3105  | 0 28.4                            | 1.10               |
|                                 | 14 | .863                 | .2677   | .1052   | 25.42              | 23 30.1                            | .3106  | 0 24.7                            | 0.96               |
|                                 | 15 | .875                 | .2714   | .1056   | 25.49              | 23 30.3                            | .3108  | 0 21.0                            | 0.81               |
|                                 | 16 | +3.887               | +0.2751 | +0.1059 | 25.57              | 23 30.5                            | 1.3109 | 0 17.2                            | +0.67              |
|                                 | 17 | .898                 | .2788   | .1061   | 25.64              | 23 30.6                            | .3110  | 0 13.5                            | 0.52               |
|                                 | 18 | .910                 | .2825   | .1063   | 25.72              | 23 30.8                            | .3111  | 0 9.8                             | 0.38               |
|                                 | 19 | .922                 | .2862   | .1064   | 25.79              | 23 31.0                            | .3111  | 0 6.0                             | 0.23               |
|                                 | 20 | .934                 | .2900   | .1064   | 25.87              | 23 31.1                            | .3111  | 0 2.3                             | +0.09              |
|                                 | 21 | .945                 | .2937   | .1064   | 25.94              | 23 31.3                            | .3111  | 23 58.6                           | —0.06              |
|                                 | 22 | .957                 | .2975   | .1064   | 26.02              | 23 31.4                            | .3111  | 23 54.8                           | 0.20               |
|                                 | 23 | .969                 | .3012   | .1063   | 26.09              | 23 31.6                            | .3111  | 23 51.1                           | 0.35               |
|                                 | 24 | .981                 | .3049   | .1062   | 26.17              | 23 31.7                            | .3110  | 23 47.3                           | 0.49               |
|                                 | 25 | .992                 | .3086   | .1060   | 26.24              | 23 31.8                            | .3109  | 23 43.6                           | 0.64               |
|                                 | 26 | +4.004               | +0.3124 | +0.1057 | 26.32              | 23 32.0                            | 1.3108 | 23 39.8                           | —0.78              |
|                                 | 27 | .016                 | .3161   | .1054   | 26.39              | 23 32.1                            | .3107  | 23 36.1                           | 0.93               |
|                                 | 28 | .028                 | .3199   | .1050   | 26.47              | 23 32.2                            | .3105  | 23 32.3                           | 1.07               |
|                                 | 29 | .039                 | .3236   | .1046   | 26.54              | 23 32.3                            | .3104  | 23 28.6                           | 1.21               |
|                                 | 30 | .051                 | .3274   | .1042   | 26.62              | 23 32.4                            | .3102  | 23 24.8                           | 1.35               |
|                                 | 31 | .062                 | .3312   | .1037   | 26.69              | 23 32.5                            | .3100  | 23 21.1                           | 1.49               |