De

Positu

Basis et Retis Triangulorum

impensa Regis per totam Bojoariam porrectorum ad meridianum speculae astronomicae Regiae relato azimuthis observatis et ad calculos revocatis nunc primum definito

a

Carolo Felici Seyffer.

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§. 1.

Altitudines solis 3. Mart. 1807. ex aequo observatae.

Horologium *Lepaute*.

19.h.	0′.	01″.	2.h.	50′.	23″.
	01.	10.		49.	14.
	02.	17.		48.	04.
	03.	28.		46.	56,5
	04.	38.		45.	47.
	05.	48.		44.	37.
	06.	57,5		43.	26.
	08.	08.		44.	17.

ex

ex quibus efficitur

meridies	22.h	55.′	12″, 214
Correctio		—	20, 490
AR ⊙ observata	22.	54.	51, 72 . . .

§. 2.

Ex elementis solis ad tabulas illustris *Delambre* colligitur

Longitudo solis media	11s.	10°.	19′. 26″, 3
vera	11.	11.	59. 48, 8
Ascensio recta solis media . . .	22.h	41′.	12″, 809
Aequatio temporis	+	12′.	25″, 4622
AR ⊙ vera	22.h	53′.	38″, 2712
observata (§. 1.)	22.	54.	51, 7243
Acceleratio horologii	—	01′.	13″, 4531

Obliquitas eclipticae	23°.	27′.	50″, 95
Semidiameter solis		16′.	09″, 13
Declinatio solis	7°.	04′.	08″, 3

§. 3.

Altitudines solis ex aequo 4to Martii observatae.

19.h	0′.	32″.	2.h	57′.	22″.
	01.	41.		56.	14.
	02.	49.		55.	06.
	03.	57.		53.	57.
	05.	06.		52.	48.
	06.	14.		51.	39.
	07.	24.		50.	30.
	08.	33.		49.	20.
	09.	43.		48.	11.
	10.	52.		47.	02.

19.h

19.h	12.	02.	. .	2.h	45.	51.
. .	13.	11, 5	. .		44.	41. * dubie ob nubes volantes.
. .	14.	22, 0	. .		43.	32.

Hinc meridies incorrectus . . . 22.h 58′. 56″, 959.
Correctio . . . . . — 20, 490.

AR observata . . . . 22.h 58′. 36″, 469
computata 22. 57. 22, 021
Acceleratio horologii 4to Martii . . . . — 01′. 14″, 448.
3tio Martii . . . . — 01′. 13″, 450.
diurna . . . . . — 0″, 9947.
horaria . . . . . — 0″, 03984

§. 4.

Azimutha ad chronometrum *Emerynum* observata 3tio Martii vesperi.

1.)	4.h	41′.	52″, 5	330°,	00′.
2.)		42.	44, 0		10.
3.)		43.	35, 5		20.
4.)		44.	27, 0		30.
5.)		45.	19, 5		40.
6.)		46.	11, 0		50.
7.)		47.	03, 0	331,	00.
8.)		47.	55, 0		10.
9.)		48.	46, 5		20.

Angulus inter apicem turris *Scaephtlariae* superioris et solis limbum occidentalem observatus

296°. 09′. 44″.

Comparato chronometro foris adhibito cum horologio *Lepauteano* intra speculam posito:

	Emery.				Lepaute		
ante observationes	4.h	38′.	0″.	=	3.h	32′.	55″
	4.	39.	0.	=	3.	33.	55
post observationes	4.	51.	0	=	3.	45.	57.
	4.	52.	0	=	3.	46.	57.

Acceleratio horologii prae chronometro prodit intervallo 13. minutorum — 2″ hinc 1 minuto — 0″, 1538.

§. 5.

Altitudines solis ex aequo observatae 28vo April.

22.h	33′.	25″.	.....	6.h 07′.	57″.
....	34.	28	....	06.	54.

Meridies incorrectus 2.h 20′. 41″, 0
correctio . . . — 14″, 00

AR. ☉ observata . . 2.h 20′. 26″,999
computata . . 2. 19. 26 ,051

accelerat *Lepaute* — 01′. 0″.948

30mo Aprilis.

22.h	39′.	13″.	....	6.h	17′.	30″, 5
....	40.	15.	....		16.	28.
....	41.	18.	....		15.	25.
....	42.	21.	....		14.	23.
....	43.	23, 5	....		13.	20.
....	44.	26.	....		12.	17, 5
....	45.	29.	....		11.	15, 0
....	46.	32.	....		10.	11.

22.h	47.	35.	.	.	.	.	.	6.h 09.	09.
...	48.	38.	.	.	.	.	.	08.	06.

Meridies	2.h	28′.	21″, 775
correctio . . .	—	13,	693
AR. ⊙ observata	2.h	28.	08″, 082
computata	2.h	27.	0, 427
accelerat *Lepaute*	—	01′.	07″, 655

§. 6.

Altitudines solis ex aequo Maii 1mo.

22.h	44′.	46″. 5	.	.	6.h	19′.	40″.
	45.	49.	.	.	.	18.	37.
	46.	52.	.	.	.	17.	34, 5
	47.	54.	.	.	.	16.	32, 5
	48.	57.	.	.	.	15.	29, 66
	49.	59.	.	.	.	14.	27.
	51.	02, 5	.	.	.	13.	23.
	52.	05.	.	.	.	12.	20, 75
	53.	08, 5	.	.	.	11.	17, 5
	54.	11, 5	.	.	.	10.	15.
	55.	14, 5	.	.	.	09.	12.
	56.	18, 0	.	.	.	08.	08, 5

Meridies	2.h	32′.	13″, 183
correctio . . .	—	13,	234
AR. ⊙ observata	2.h	31′.	59″, 949
computata .	2.	30.	48, 595.
Lepaute accelerat:	—	1′.	11″, 354.

1mo Maii vesperi		Maii 2do mane altitudines ex aequo.		
6.h	19′. 40″.	22.h	47′.	12″. 5 *
	18. 37.		48.	15, 0 *
	17. 34, 5		49.	18. *
	16. 32, 5		50.	19. *
	15. 29,66		51.	22. *
	14. 27,00		52.	25. *
	13. 23, 0		53.	27.
	12. 20, 5		54.	30.
	11. 17, 5		55.	33.
	10. 15,0		56.	36.
	09. 12, 0		57.	39.
	08. 08, 5		58.	42.

Nota ad sex priores observationes ob nubes adposita easdem in ambiguo esse significat.

Hinc concluditur media nox . . .	14.h	33′.	25″. 125
correctio . .	+		29, 663
AR. observata	14.	33.	54, 788
computata	14.	32.	42, 640
Lepaute accelerat . .		— 01′.	12″, 148.

Sed e re fuerit, monere, cum altitudines heri vesperi ab alio, altitudines hodie mane a me fuerint observatae, mediam noctem forsan parum certe fuisse definitam; cum oculi duorum observatorum perfacile inter se discrepent. Observationes enim hesternae a celeberrimo *Bonne*, Geographo architecturae militaris, quam ab Ingenio nominant, et militum praefecto habitae sunt.

§. 7.

§. 7.

Altitudines solis 3tio Maii ex aequo.

Lepaute.

22.h	53′.	48″, 5	.	.	.	6.h	26′.	03″, 0
	54.	51.	.	.	.		25.	0, 5
	55.	53.	.	.	.		23.	58.
	56.	56.	.	.	.		22.	55, 5
	57.	58.	.	.	.		21.	53.
	59.	01.	.	.	.		20.	50.
23.h	0.	04.	.	.	.		19.	48.
	01.	06.	.	.	.		18.	45.
	02.	09.	.	.	.		17.	42.
	03.	13.	.	.	.		16.	38.
	04.	16.	.	.	.		15.	36.
	05.	19.	.	.	.		14.	33.
	06.	22.	.	.	.		13.	30.

meridies	2.h	39′.	55″,	711
correctio			— 12,	758
AR. observata	2.h	39.	42,	953
comp.	2.	38.	26,	811

Lepaute accelerat —01′, 16″, 142

Accelerationes enim vero fuerunt

Aprilis	28vo	= 60″, 948.
	30mo	= 67, 655.
Maii	1mo meridie	= 71, 354.
	media nocte	= 72, 148.
	3tio	= 76, 142.

Quorum si meridiem 1mo Maii observatum, qui motum horologii inde a 30mo Aprilis ad 1mum Maii accelerasse, a 1mo Maii vero ad 3tium Maii retardasse perperam poneret, in rationem haud induxeris, conclusione interpolata motus fere aequabilis horologii colligetur, velut

Dif-

			Differentiae 1mae	2dae
Aprilis	28vo	— 60″, 948		
			3″, 458	
	29no	— 64 , 406		0″, 209
			3 , 249	
	30mo	— 67 , 655		0 , 211
			3 , 038	
Maii	1mo	— 70 , 693		0 , 209
			2 , 829	
	2do	— 73 , 522		0 , 209
			2 , 620	
	3tio	— 76 , 142		

Ex quibus horologium accelerare, accelerationem vero ipsam retardare, intelligitur. Methodus accelerationem inde a meridie vero ad tempus observationum accuratissime definiendi per formulam $n \Delta y + n \left(\frac{n-1}{2}\right) \Delta^2 y + \ldots$, (notantibus x verum meridiei tempus, Δx variationem diurnam, nempe $\Delta x = 24^h$, $n \Delta x$ variationem $\tau\tilde{\alpha}$ x inde a meridie usque ad observationem, y accelerationem meridiei, Δy primas, $\Delta^2 y$ secundas accelerationum differentias,) constat.

Posito $n \Delta x = a$ erit $n = \frac{a}{\Delta x} = \frac{a}{24^h}$

§. 8.

Azimutha observata theodolito 8 pollicum:
Scaephtlaria superior

		Index *Verneri*
I.	384°.	08′. 34″
II.	. . . . .	35
III.	. . . . .	24
IV.	. . . . .	36

Primae observationis medium	32″, 5
secundae	30 , 0
tertiae	32 , 0
quartae	33 , 0

Omnium medium: *Scaephtlaria* 384°. 08′. 31″, 8

§. 9.

§. 9.

Angulus limbum solis orientalem inter ac *Scaephtlariam* observatus a cel. *Bonne*:

Lepaute

20.h	12′.	01″.	. . .	243°.	30′.
	14.	48.	. . .	244.	0.
	15.	43.	. . . . .		10.
	16.	39.	. . . . .		20.
	17.	34.	. . . . .		30.
	22.	12.	. . .	245.	20.
	23.	08.	. . . . .		30.
	24.	03.	. . . . .		40.
	24.	59, 33	. . . .		50.
	26.	50.	. . .	246.	10.
	38.	54.	. . .	248.	20.
	44.	25, 5	. . .	249.	20.
	46.	17.	. . . . .		40.
	47.	12, 5	. . . . .		50.
	48.	08.	. . .	250.	0.

Angulus a me observatus:

Scaephtlaria: *Verneri* indices

I.	131°.	56′.	48″.
II.	.	. . .	44.
III.	.	. . .	49.
IV.	.	. . .	55.
medium:	131°.	56′.	49″.

Solis limbus occidentalis:

Lepaute.	8$^{h.}$	45′.	03″	. . . .	197°.	0′.
		45.	58	. . . . .		10.
Scaephtlaria		131°	56′.	48″		
	8$^{h.}$	51′.	31″,5	.	198°.	10′.

§. 10.

Observationes 1808 habitae Maii 2$^{do.}$

Altitudines solis ex aequo:

Lepaute.

22.^{h}	52′.	34″	. . . .	6.^{h}	18′.	02″.
	53.	37	. . . . .		16.	59.
	54.	40	. . . . .		15.	56.
	55.	43	. . . . .		14.	53.
	56.	45	. . . . .		13.	50.

Hinc meridies	2.^{h}	35′.	18″.
correctio	. . . —		12,769
AR. ⊙ observata	2.^{h}	35′.	05″,231
computata	2.	37.	33, 692
Retardatio horologii	+	2′.	28″,461

Exinde horologii index duobus minutis integris fuit promotus.

Maii 3$^{tio.}$

22.^{h}	54′.	53.	. . .	6.^{h}	27′.	14″,5
	55.	56.	. . . .		26.	13.
	56.	58.	. . . .		25.	10.
	58.	01.	. . . .		24.	07, 6
	59.	03.	. . . .		23.	05, 0

23.^{h}

23.h	0.	05.	.	.	.	.	22.	02, 5
	01.	08.	.	.	.	.	21.	0.
	02.	10, 5		.	.	.	19.	57, 5
	03.	14.	.	.	.	.	18.	54.
	04.	17.	.	.	.	.	17.	52.

Meridies incorrectus	2.h	41′.	04″, 130
correctio			— 12, 567
AR. ⊙ observata	2.h	40.	51, 563
computata	2.	41.	23, 293
retardat *Lepaute*	+	. .	31″, 730

§. 11.

Maii 4to. et 5to.

4to vesperi							5to manc		
6.h	27′.	49.	.	.	.	.	23.h	4′.	21″.
	28.	51.	.	.	.	.	. .	03.	18.
	29.	53.	.	.	.	.	. .	02.	16.
	31.	58.	.	.	.	.	. .	0.	12.
	33.	0.	.	.	.	.	22.h	59.	10.
	34.	02.	.	.	.	.	. .	58.	08.
	35.	04.	.	.	.	.	. .	57.	06.
	36.	06.	.	.	.	.	. .	56.	04.
	37.	08.	.	.	.	.	. .	55.	02.
	39.	11.	.	.	.	.	. .	52.	59.

Media nox incorrecta	14.h	46′.	05″, 0
correctio . .	+		27, 178
AR. ⊙ observata	14.h	46′.	32″, 178
computata	14.	47.	08, 829
Retardatio *Lepaute*	+		36″, 651

Maii 5to.

22.h	51′.	57″.	6.h	45′.	19″.
	52.	59.		44.	17, 5
	55.	02.		42.	14, 5
	56.	04.		41.	13.
	57.	06.		40.	11.
	58.	08.		39.	08, 6
	59.	10.		38.	07.
23.	0.	12.		37.	03.
	01.	14.		36.	02.
	03.	18.		33.	59.
	04.	21.		32.	56.
	06.	25.		30.	52.
	07.	28.		29.	49.
	08.	30.		28.	46, 6
	10.	35.		26.	42.
	11.	38.		25.	38, 6
	12.	41.		24.	36.
	13.	44.		23.	33.
	14	47.		22.	30.

Meridies ex æquo	2.h	48′.	38″, 389
correctio	—	12,	219
AR. ⊙ observata . .	2.h	48.	26, 170
computata . .	2.	49.	04, 3463
Retardatio	+		38″, 1763

§. 12.

§. 12.

Maii 6to.

23.h	05′.	45″.	6.h	39′.	05″.
	06.	48.		38.	03.
	07.	49.		37.	01.
	08.	52.		35.	59.
	09.	54.		34.	57.
	10.	56.		33.	54.
	11.	58.		32.	51.
	13.	01.		31.	49, 5
	14.	04.		30.	47.
	15.	07.		29.	44.
	16.	09.		28.	41, 5
	17.	12, 3		27.	38.

Meridies incorrectus		2.h	52′.	25″, 5
	correctio		—	11, 845
AR. ⊙	observata	2.	52′.	13, 655
	computata	2.	52.	55, 646.
Retardatio		+		41″, 991

Maii 7mo.

23.h	04′.	11″.	6.h	48′.	17″, 8
	05.	13.		47.	16.
	06.	14, 5		46.	14.
	07.	16.		45.	12.
	08.	18.		44.	10.
	09.	20.		43.	08.
	10.	22.		42.	06.
	11.	24.		41.	03, 5
	12.	26.		40.	02.
	18.	28.		39.	0.

Meri-

Meridies	2.h	56′.	14″, 233
Correctio			— 11 , 848
AR observata	2.	56.	02 , 385
computata	2.	56.	47 , 493
Retardatio		+	45″, 108

Motus igitur retardatus horologii *Lepaute* fuit:

		Differentiae
Maii 2do . .	+ 28″, 461	
3tio	31 , 730	2″, 269
4to	34 , 903	3 , 173
5to	38 , 176	3 , 273
6to	41 , 991	3 , 815
7mo	45 , 108	3 , 117

Sed cum in motus aequabilitate tantum tempora recte definiantur, horologio modo accelerante modo retardante angulos horarios ex ipsis temporibus observatis, inter quae azimutha intercessere, cautius ad calculos revocaveris.

§. 13.

Azimutha observata:

Maii 5to 1808.

Apex turris *Scaephtlariensis* ad *Verneri* indices

I.	76°.	31′.	0″.
II.	. . .	31.	12.
III.	. . .	31.	16.
IV.	. . .	31.	12.
medium	76°	31′.	10″.

solis

Solis Limbus orientalis:

1) *Lepaute* 9.h 30′. 37″

Indices:

I.	147°.	45′.	58″,
II.		46.	0.
III.		46.	0.
IV.		46.	0.
medium	147°.	45.	59″, 5

2) Limbus ⊙ occidentalis:

9.h 37′. 26″.

Indices:

I.	149°.	31′.	48″.
II.	. . . . .		56.
III.	. . . . .		68.
IV.	. . . . .		56.
medium	149°.	31′.	57″

3) 9.h 43′. 54″

Indices:

I.	150°.	42′.	20″
II.	. . . . .		24.
III.	. . . . .		40.
IV.	. . . . .		40
medium	150°.	42′.	31″.

4) 9.h 50′. 23″.

I.	151°.	53′.	20″.
II.	. . . . .		24.
III.	. . . . .		40.
IV.	. . . . .		40.
medium	151°.	53′.	31″.

§. 14.

Maii 6to Limbus solis occidentalis.

				Indices		
Scaephtlaria superior			I.	76°.	29′.	48″.
			II.	.	.	64.
			III.	.	.	72.
			IV.	.	.	64.
			medium	76°.	30′.	02″.
1) *Lepaute.*						
	9.h	21′.	56″. I.	146°	13′.	04″.
			II.	.	.	18.
			III.	.	.	20.
			IV.	.	.	08.
			medium	146°.	13′.	10″.
2)	9.h	34′.	03″. I.	148°.	23′.	44″.
			II.	.	.	44.
			III.	.	.	60.
			IV.	.	.	56.
			medium	148°.	23′.	51″.
3)	9.h	50′.	02″. I.	151°.	17′.	48″.
			II.	.	.	46.
			III.	.	.	60.
			IV.	.	.	56.
			medium	151°.	17′.	52″, 5
4)	9.h	57′.	01″. I.	152°.	34′.	24″.
			II.	.	.	24.
			III.	.	.	40.
			IV.	.	.	32.
			medium	152°.	34′.	30″.

§. 15.

§. 15.

Observationes azimuthorum in rationem inductae

sit t. angulus horarius.
δ declinatio solis
$\delta^1 = 90^\circ \sim \delta$
Φ Latitudo geographica
$\Phi^1 = 90^\circ \sim \Phi$
α Azimuthum solis
d Semidiameter solis
A angulus observatus

erit

$$\alpha = \lambda \sim \mu$$

$$\text{Cotg. } \lambda = \frac{\sin \frac{1}{2}(\delta^1 - \Phi^1)}{\sin \frac{1}{2}(\delta^1 + \Phi^1)} \text{ Cotg. } \tfrac{1}{2} t$$

$$\text{Cotg. } \mu = \frac{\cos \frac{1}{2}(\delta^1 - \Phi^1)}{\cos \frac{1}{2}(\delta^1 + \Phi^1)} \text{ Cotg. } \tfrac{1}{2} t$$

Azimuthum apicis turris *Scaephtlariensis* super horizonte speculae astronomicae

$$D = \alpha - (A \pm d).$$

ad quas quidem formulas observationum rationes retuleris.

§. 16.

Azimuthorum
Observatio I^ma Martii 3^tio 1807

Emery	4.h	41′.	52″,5
acceleratio	— 1.	05.	04, 43
Lepaute	3.	36.	48, 07
acceleratio	—	01.	13, 639
Tempus siderum	3.	35.	34, 431
AR. ⊙ media . . .	22.	41.	12, 809

Tem-

Tempus medium proxime accedens	4.h	54′.	21″,622
correctio . . .			— 48, 221
Tempus medium	4.	53	33, 401
Aequatio temporis . .	—	12.	20, 941
Tempus verum	4.	41.	12, 460

Angulus horarius 70°. 18′. 06″,9 = t

$\frac{1}{2}$ t = 35°. 09′. 03″, 45

δ =	6.°	59′.	38″, 35
δ^1 =	96.	59.	38, 35
$\frac{1}{2}\,\delta^1$ =	48.	29.	49, 17
$\frac{1}{2}\,\varphi^1$ =	20.	56.	13, 5
I. =	27°.	33′.	35″, 67
II. =	69.	26.	02, 67

Sin. I =	9, 6652309 . . .	Cos. =	9, 9476923
Cotg. $\frac{1}{2}$ t =	0, 1523404	=	0, 1523404
Compl. sin. II =	0, 0285995	Compl. Cos. II =	0, 4543407
Cotg. λ . . . =	9, 8461704	Cotg. μ =	0, 5543734

λ = 54°. 56′. 29″, 2

μ = 15. 35. 23, 5

α = 70°. 31′. 52″, 7

A = 33. 34. 06, 9

D = 36°. 57′. 45″, 8

Ang. observatus 33°. 50′, 16″.

Semid. solis — 16. 09, 1

A = 33°. 34′. 06″,9

§. 17.

Observatio secunda eodem.

	Emery	4.h	42′	44″.
	Lepaute	3.	37.	39.
Tempus	siderеum	3.	36.	26, 065
	medium	4.	54.	24, 893
	verum . .	4.	42.	03, 96
	t =	70°.	30′.	59″, 4
	½ t =	35.	15.	29, 7
	δ =	6.	59.	37, 5
	I =	27.	33.	35, 27
	II =	69.	26.	02, 27
	λ =	55.	02.	54, 8
	μ =	15.	38.	56, 3
	α =	70.	41.	51, 1
	A =	33.	44.	06, 9
	D =	36°.	57′.	44″, 2

§. 18.

Observatio tertia eodem.

	Emery	4.h	43′.	35″, 5
	Lepaute	3.	38.	31 , 338
Tempus	siderеum	3.	37.	17 , 702
	medium	4.	55.	16 , 3892
	verum	4.	42.	55 , 4623
	t =	70°.	43′.	51″, 93
	δ =	6.	59.	36, 71
	I =	27.	33.	34, 85
	II =	69.	26.	01, 85
	μ =	15.	42.	29, 7
	λ =	55.	09.	19, 4
	α =	70.	51.	49, 1
	A =	33.	54.	06, 9
	D =	36.°	57′.	42″, 2

§. 19.

§. 19.

Observatio IV^ta eodem.

	Emery	4.h	44′.	27″.
	Lepaute	3.	39.	22, 9713
Tempus	siderum	3.	38.	09, 3343
	medium	4.	56.	07, 880
	verum	4.	43.	46. 9601
	t =	70°.	56′.	44″, 4
	δ =	6.	59.	35, 88
	I =	27.	33.	34, 44
	II =	69.	26.	01, 44
	μ =	15.	46.	03, 4
	λ =	55.	15.	42, 9
	α =	71.	01.	46, 3
	A =	34.	04.	06, 9
	D =	36°.	57′.	39″, 4

§. 20.

Observatio V^ta eodem.

	Emery	4.h	45′.	19″, 5
	Lepaute	3.	40.	15, 6058
Tempus	siderum	3.	39.	01, 869
	medium	4.	57.	00, 371
	verum	4.	44.	39, 460
	t =	71°.	09′.	51″,9
	δ =	6.	59.	35, 04
	I =	27.	33.	34, 0
	II =	69.	26.	01, 0
	μ =	15.	49.	41, 7
	λ =	55.	22.	12, 7
	α =	71.	11.	54, 4
	A =	34.	14.	06, 9
	D =	36°.	57′.	47″, 5

§. 21.

§. 21.

Observatio VI^ta eodem.

	Emery	4.h	46′.	11″, 0
	Lepaute	3.	41.	07, 2379
Tempus	siderеum	3.	39.	53, 599
	medium	4.	57.	51, 861
	verum	4.	45.	30, 967
	t =	71°.	22.	44, 4
	δ =	6.	59.	34, 2
	I =	27.	33.	33, 6
	II =	69.	26.	00, 6
	μ =	15.	53.	16, 3
	λ =	55.	28.	34, 1
	α =	71.	21.	50, 4
	A =	34.	24.	06, 9
	D =	36°.	57′.	43″, 5

§. 22.

Observatio VII^ma eodem.

	Emery	4.h	47′.	03″.
	Lepaute	3.	41.	59, 3712
Tempus	siderеum	3.	40.	45, 733
	medium	4.	58.	43, 852
	verum	4.	46.	22, 9457
t =	71°.	35′.	44″,	1
δ =	6.	59.	33,	39
I =	27.	33.	33,	2
II =	69.	26.	00,	2
μ =	15.	56.	53,	4
λ =	55.	34.	58,	1
α =	71.	31.	51,	5
A =	34.	34.	06,	9
D =	36°.	57′.	44″,	6

Obser-

Observatio VIII^va eodem.

	Emery	4.h	47′.	55″.
	Lepaute	3.	42.	51, 5044
Tempus	sidereum	3.	41.	37, 8718
	medium	4.	59.	35, 8488
	verum	4.	47.	14, 9501
	t =	71°.	48′.	44″, 25
	δ =	6.	59.	32, 56
	I =	27.	33.	32, 78
	II =	69.	25.	59, 78
	μ =	16.	0.	31, 1
	λ =	55.	41.	21, 2
	α =	71.	41.	52, 3
	A =	34.	44.	06, 9
	D =	36°.	57′.	45″, 4

Observatio IX^na eodem.

	Emery	4.h	48′.	46″, 5
	Lepaute	3.	43.	43, 1341
Tempus	sidereum	3.	42.	29, 502
	medium	5.	00.	27, 337
	verum	4.	48.	06, 446
	t =	72°.	01′.	36″, 69
	δ =	6.	59.	31, 74
	I =	27.	33.	32, 87
	II =	69.	25.	59, 37
	μ =	16.	04.	07, 1
	λ	55.	47.	39, 7
	α =	71.	51.	46, 8
	A =	34.	54.	06, 9
	D =	36°.	57′.	39″ 9

§. 23.

Observatio X^ma 1^mo Maii Theodolito 8. pollicum.

Lepaute 20.^h 12′. 01″.

AR. ⊙ observata vera 30. April 2.^h 28′. 08″, 082.

Azimuthum observatum . . 20. 12. 01.

Differentia temporum 17.^h 43′, 52″, 918.

= 17, 731366

Hinc ex formula §^i. 7. erit

$n = 0, 73881$

$n - 1 = -0, 26119$

$\frac{n-1}{2} = -0, 130595$

$\Delta y = 3, 038$

$\Delta^2 y = 0, 209$

Terminus primus = + 2″, 2445

secundus = — 0, 0216

Summa = + 2″, 2229

Acceleratio 30. Apr. = 67, 655

Acceleratio tempore observationis igitur prodit

— 01′. 09″, 8779 exinde

Observationis tempus siderum 20.^h 10′. 51″, 1221

medium . . . 17. 38. 04, 351

verum 17. 41. 02, 5886

t = 94°. 44′. 21″, 17

δ = 14. 47. 11, 352

I = 16. 40. 10, 8

II = 58. 32. 37, 8

λ = 72. 48. 00, 7

μ = 30. 36. 56, 5

α = 103. 24. 57, 2

A = 140. 22. 38, 3

D = 36°. 57′. 41″, 1

Obser-

Observatio XI^ma eodem.

Lepaute . .	20.h	14′.	48″	
Tempus sidereum . . .	20.	13.	38 ,	1203
medium	17.	40.	50 ,	8893
verum	17.	43.	49 ,	1431
t =	94°.	02′.	42″,	10
δ =	14.	47.	13 ,	4907
I =	16.	40.	09 ,	755
II =	58.	32.	36 ,	755
λ =	72.	36.	09 ,	62
μ =	30.	18.	41 ,	04
α =	102.	54.	51 ,	66
A =	139.	52.	38 ,	3
D =	36°.	57′.	46″,	64

Observatio XII^ma eodem.

Lepaute	20.h	15′.	43″	
Tempus sidereum	20.	14.	33,	1184
medium	17.	41.	45,	7424
verum	17.	44.	44,	0015
t =	93°.	48′.	59″,	97
δ =	14.	47.	14 ,	1951
I =	16.	40.	09 ,	4024
II =	58.	32.	36 ,	4024
μ =	30.	12.	42 ,	68
λ =	72.	32.	14 ,	2
α =	102.	44.	56 ,	9
A =	139.	42.	38 ,	3
D =	36°,	57′.	41″,	4

§. 24.

Observatio XIII^tia eodem.

Lepaute	20.h	16′.	39″.
Tempus siderеum	20.	15.	29, 12
medium	17.	42.	41, 5882
verum . .	17.	45.	39, 8527
t =	93°.	35′.	20″, 209
♂ =	14.	47.	14, 912
I =	16.	40.	09, 044
II =	58.	32.	36, 044
λ =	72.	28.	14, 41
μ =	30.	06.	38, 10
α =	102.	34.	52, 51
A =	139.	32.	38, 3
D =	36°.	57′.	45″, 79

Observatio XIV^ta eodem.

Lepaute	20.h	17′.	34″.
Tempus siderеum	20.	16.	24 , 1153
medium	17.	43.	36 , 4364
verum	17.	46.	34 , 7061
t =	93°.	21′.	19″,408
♂ =	14.	47.	15, 6167
I =	16.	40.	08, 691
II =	58.	32.	35, 691
μ =	30.	0.	42, 03
λ =	72.	24.	17, 59
α =	102.	24.	59, 62
A =	139.	22.	38, 3
D =	36.°	57′.	38″, 68

Observatio XV^va eodem.

Lepaute	20.h	22′.	12″.	
Tempus siderеum	20.	21.	02,	1057
medium	17.	48.	13,	6677
verum	17.	51.	11,	9643
t =	92°.	12′.	0″,	5
δ =	14.	47.	19,	18
I =	16.	40.	06,	9
II =	58.	32.	33,	9
λ =	72.	04.	09,	2
μ =	29.	30.	48,	4
ϰ =	101.	34.	57,	6
A =	138.	32.	38,	3
D =	36°.	57′.	40″,	7

§. 25.

Observatio XVI^ta eodem.

Lepaute	20.h	23′.	08″.	
Tempus siderеum	20.	21.	58,	1038
medium	17.	49.	09,	5128
verum	17.	52.	07,	8148
t =	91°.	58′.	02″,	778
δ =	14.	47.	19,	894
I =	16.	40.	06,	553
II =	58.	32.	33,	553
λ =	72.	0.	03,	45
μ =	29.	24.	49,	60
ϰ =	101.	24.	53,	05
A =	138.	22.	38,	3
D =	36°.	57′.	45″,	25

Obser-

Observatio XVII^ma eodem.

Lepaute . .	20.h	24′.	03″	
Tempus siderecum . . .	20.	22.	53 ,	1019
medium	17.	50.	04 ,	3609
verum	17.	53.	02 ,	6682
t =	91°.	44′.	19″,	277
δ =	14.	47.	20 ,	598
I =	16.	40.	06 ,	201
II =	58.	32.	33 ,	201
λ =	71.	56.	00 ,	91
μ =	29.	18.	57 ,	82
α =	101.	14.	58 ,	73
A =	138.	12.	38 ,	30
D =	36°.	57′.	39″,	57

Observatio XVIII^va eodem.

Lepaute	20.h	24′.	59″,	3333
Tempus siderecum	20.	23.	49,	4332
medium	17.	51.	00,	5372
verum	17.	53.	58,	8499
t =	91°.	30′.	17″,	2508
δ =	14.	47.	21 .	3198
I =	16.	40.	05 ,	84
II =	58.	32.	32 ,	84
λ =	71.	51.	52 ,	69
μ =	29.	12.	58 ,	65
α =	101.	04.	51 ,	34
A =	138.	02.	38 ,	30
D =	36°.	57′.	46″,	96

§. 26.

Observatio XIX^na eodem.

Lepaute	20.h	56′.	50″.
Tempus siderеum	20.	25.	40, 1
medium	17.	52.	50, 9
verum	17.	55.	49, 2
t =	91°.	02′.	41″, 4
δ =	14.	47.	22, 7
I =	16.	40.	05, 1
II =	58.	32.	32, 1
μ =	29.	01.	14, 5
λ =	71.	43.	41, 7
α =	100.	44.	56, 3
A =	137.	42.	38, 3
D =	36°.	57′.	42″, 0

Observatio XX^ma eodem.

Lepaute	20.h	38′.	54″.
Tempus siderеum	20.	37.	44, 1
medium	18.	04.	52, 9
verum	18.	07.	51, 3
t =	88°.	02′.	10″, 6
δ =	14.	47.	32, 0
I =	16.	40.	00, 5
II =	58.	32.	27, 5
μ =	27.	45.	47, 0
λ =	70.	48.	52, 4
α =	98.	34.	39, 4
A =	135.	32.	26, 3
D =	36°.	57′.	46″, 9

Obser-

Observatio XXI^ma.

Tempus observationis verum		18.h	13′.	22″, 6
	δ =	14°.	47′.	36″, 2
	α =	97.	34.	46, 7
	D =	36.	57.	40, 6

Observatio XXII^da.

Tempus verum		18.h	15′.	13″, 11
	δ =	14°.	47′.	37″, 68
	α =	97.	14.	46, 4
	D =	36.	57.	40, 9

Observatio XXIII^tia.

Tempus verum		18.h	16′.	08″, 46
	δ =	14°.	47′.	38″, 4
	α =	97.	04.	46, 2
	D =	36.	57.	40, 1

Observatio XXIV^ta.

Tempus verum		18.h	17′.	03″, 81
	δ =	14°.	47′.	39″, 1
	α =	96.	54.	45, 0
	D =	36.	57.	41, 3

Observatio XXV^ta.

Tempus verum		6.h	12′.	03″, 68
	δ =	14°.	56′.	48″, 8
	α =	102.	16.	46, 6
	D =	36.	57.	42, 1

Obser-

Observatio XXVI^ta.

Tempus verum		6.h	12′.	59″, 03
	δ =	14°.	56′.	49″, 47
	α =	102.	26.	46 , 2
	D =	36.	57.	41 , 7

Observatio XXVII^ma.

Tempus verum = T =		6.h	18′.	31″, 14
	δ =	14°.	56′.	53″, 70
	α =	103.	26.	47 , 8
	D =	36.	57.	43 , 3

Observatio XXVIII^va.

T =		6.h	41′.	07″, 31
	δ =	16°.	21′.	14″, 5
	α =	108.	28.	32 , 2
	D =	36.	57.	48 , 4

§. 27.

Observationes 1808. Maii 5^to habitae

Observatio XXIX^na.

T =		6.h	47′.	55″, 22
	δ =	16°.	21′.	19″, 3
	α =	109.	42.	40, 2
	D =	36.	57.	45, 5

XXX^ma.

T =		6.h	54′.	22″, 21
	δ =	16°.	21′.	23 , 89
	α =	110.	53.	10 , 8
	D =	36.	57.	42 , 1

XXXI^ma.

XXXI^ma

T	=	7.h	00′.	50″ 18
δ	=	16°.	21′.	28″,4
α	=	112.	04.	15 , 0
D	=	36.	57.	46 , 3

XXXII^da Maii 6^to.

T	=	6.h	28′.	40″, 256
δ	=	160°.	37.	58 , 76
α	=	106.	24.	57 , 4
D	=	36.	57.	42 , 5

XXXIII^tia.

T	=	6.h	40′.	45″, 32
δ	=	16°.	38′.	07″, 17
α	=	108.	35.	44 , 7
D	=	36.	57′.	47 , 8

XXXIV^ta.

T	=	6.h	56′.	41″, 685
δ	=	16°.	38′.	18″, 29
α	=	111.	29.	39 , 7
D	=	36.	57.	41 , 3

XXXV^ta.

T	=	7.h	03′.	39″, 289
δ	=	16.°	38′.	23″, 04
α	=	112.	46.	16 , 3
D	=	36.	57.	40 , 4

§. 28.

§. 28.

Ad summam igitur omnium observationum ratione subducta azimutha prodierunt:

1807. Martii 3tio	I.	36.°	57′.	45″,8
	II.	.	.	44, 2
	III.	.	.	42, 2
	IV.	.	.	39, 4
	V.	.	.	47, 5
	VI.	.	.	43, 5
	VII.	.	.	44, 6
	VIII.	.	.	45, 4
	IX.	.	.	39, 9
Maii 1mo	X.	.	.	41, 1
	XI.	.	.	46, 6
	XII.	.	.	41, 4
	XIII.	.	.	45, 8
	XIV.	.	.	38, 7
	XV.	.	.	40, 7
	XVI.	.	.	45, 2
	XVII.	.	.	39, 6
	XVIII.	.	.	47, 0
	XIX.	.	.	42, 0
	XX.	.	.	46, 9
	XXI.	.	.	40, 6
	XXII.	.	.	40, 9
	XXIII.	.	.	40, 1
	XXIV.	.	.	41, 3
	XXV.	.	.	42, 1
	XXVI.	.	.	41, 7
	XXVII.		.	43, 3

1808. Maii 5to.	XXVIII. .	.	48″, 4
	XXIX. .	.	45, 5
	XXX. .	.	42, 1
	XXXI. .	.	46, 3
Maii 6to.	XXXII. .	.	42, 5
	XXXIII. .	.	47, 8
	XXXIV. .	.	41, 3
	XXXV. .	.	40, 4

Hinc denique, omnium medium

Azimuthum 36°. 57′. 43″, 2 *Scaephtlariam* altam inter ac meridianum speculae astronomicae Regiae.

§. 29.

Cum vero tot azimuthorum diversa supellectili ad angulos metiendos diversisque diebus habitae observationes extremis tantulum 10″, 5 a se distantes mirifice inter se congruant, videamus sub quibus conditionibus in unum ac felicem exitum spectantibus et nunquam fallentibus azimuthum loci terrestris quam accuratissime definiveris:

Imo Nihil ad rem interest, angulum a sole et a loco terrestri interceptum considerare, cum azimuthum computandum integro, si quem in observando commiseris, errore mutetur, necesse sit; ratione quidem habita omnium in metiendis angulis adhibendarum cautionum, provisionis ac diligentiae.

IIdo Latitudo loci geographica, quam accuratissime definita, invariabilis igitur, ponitur;

IIItio Itaque differentietur formula azimuthi solis.

$$\text{Cum vero sit } \operatorname{Tg} \alpha = \frac{\sin t}{\operatorname{Cos} \beta \operatorname{tg} \delta - \sin \beta \operatorname{Cos} t}$$

erit

$$d\alpha = \tfrac{1}{2}\, d t \operatorname{Cot} t \sin 2\alpha - \frac{\operatorname{Cos} \beta \sin^2 \alpha}{\operatorname{Cos}^2 \delta \sin t}\, d\delta - \sin \beta \sin 2\alpha\, d t.$$

1) Terminus primus $\frac{1}{2}$ d t Cot t sin 2 α evanescet, si Cot t = o, t igitur = 90°, sive si angulus horarius = 6^{h}. Ex quibus infertur: Si azimutha sub horam 6^{tam} mane, sive sub vesperam ad eandem horam observaveris, errorem minorem in observando angulo horario commissum tanto minoris esse momenti ad azimuthum ad calculos relatum, quanto propius angulus horarius ad horam sextam accedat, adeoque cotangente t post horam sextam signa mutante, si paullulum ante et post horam sextam observationes habueris, minores errores d t per oppositionem tolli, εὐκαιρίαν igitur azimutha definiendi horam sextam esse concluditur.

2) Terminus secundus $\frac{\text{Cos } \beta \text{ sin } {}^{2}\alpha}{\text{Cos } 2\,\delta \text{ sin } t}$ d δ ad minimum deprimitur, si, positis t, α et β invariabilibus, cos $^{2}\delta$ fit maximum, sive δ = o. Quanto propius igitur sol ad aequatorem accedat, tanto minoris momenti ad azimuthi rationem, si a vera declinatione solis aliquantulum aberraveris, intelligitur. Quae cum constent, perspicuum est aliquantulum erroris in definienda declinatione solis nunquam aliquid esse, quod rationes azimuthi subductas turbet. Habita enim eorum, quae tertio sequuntur, ratione, observatisque azimuthis ad horam sextam, posito ipso declinationis errore = 10 minutis secundis, azimuthum in rationem inductum 5 minutis secundis a vero aberrat intervallo.

3) Tertius vero terminus in nihilum occidit, si sin $^{2}\alpha$ = o sive = 180°; ad summum autem veniet, si α = 90°.

Quae si cum iis, quae ante de termino primo dicta sunt, comparaveris, sequitur, angulo horario, quo α aequetur 90 gradibus, ad calculos revocato, azimutha observanda eo accuratiora fore, quo serius ultra id temporis anguli horarii computati extendantur. Ad formulam quidem Cos t = tg δ Cotg β tempora inveni

3^{tio}	Martii	1807.	=	5.^{h}	35′.
1mo	Maii	1808.	=	5.	07.
5to	—	—	=	4.	59.
6to	—	—	=	4.	58.

Quae

Quae quidem cum pateat ita cecidisse, ut azimutha 1mo Maii multo post 5.h 7′., hora enim sexta, pluria adeo modo proxime ante, modo post eandem horam sint observata; ut observationes, si rationem et tempora, quae prosperrimos eventus polliceantur, spectes, ita comparatae sint, ut nihil optatius cadere potuerit; ut denique azimutha anni 1808. cum iis, quae tertio Martii 1807. adeo ante momentum horae 5.h 35′, ubi $\alpha = 90°$ aequatur, definita sunt, ita mirabiliter conspirent, ut ne quidem ultra 0″, 8 temporis inter se distent, errori, qui vel ad ter mille sexcentesimam horae partem nedum plus assurgat, in azimutha, quod definivimus, necquicquam loci fuisse, haud temere concluditur.

§. 31.

De azimutho hactenus theodolitis, quae ab angulis semel observandis appellant, simplicibus, quamvis accuratissime definito atque in calculos basis et retis triangulorum ad tabulas topographicas Bojoariae facientium invecto, tantum abfuit, ut omnem, quam in definiendo posui, curam considere mihi persuaderem, ut potius, cum primum mihi, tabularii rei topographicae et rationis civilis, quam ex vocabulo Status reipublicae nominant, rectori, ex AUGUSTISSIMI LIBERALISSIMIque REGIS auctoritate a viro principe summam rerum administrante et nomine et re Excellentissimo Comite de Montgelas potestas fuerit data novi theodoliti affabre constructi, quod angulos, quos metiris, repeteret, comparandi, statim in azimuthum, tamquam totius rei tabulariae topographicae firmamentum ac robur, de integro altius repetendum secundas curas ac cogitationes conferre statuerem. En! vero novas inde observationum theodolito angulos repetente 8. pollicum diametri a. 1811. habitarum series:

 §. 32.

§. 32.

Altitudines solis ex aequo Maii 10mo 1811. observatae.

Horologium *Lepaute.*

22.h	54′.	43″.	7.h	21′.	31″.
	55.	44.		20.	30.
	56.	45.		19.	29.
	57.	46.		18.	28.
	58.	47.		17.	27.
	59.	48.		16.	26.
23.	0.	48, 5		15.	25.
	01.	49.		14.	24.
	02.	50.		13.	23.
	03.	51.		12.	22.
	04.	52.		11.	21.
	05.	52, 5		10.	20.
	06.	53, 5		09.	19.

Meridies incorrectus	3.h	08′.	06″, 7307
correctio		— 12, 01	
AR ⊙ observata	3.h	07′.	54″, 7207
computata	3.	05.	34, 7
accelerat *Lepaute*		— 02′.	20″, 0207

Altitudines solis ex aequo observatae Maii 12mo 1811.

Lepaute.

23.h	06′.	20″.	7.h	25′.	32″.
	07.	21.		24.	31.
	08.	22.		23.	30.
	09.	22, 5		22.	29.
	10.	23.		21.	28.
	11.	24.		20.	27.

12.

23.h	12′.	25″.	. . .	7.h	19′.	26″.
	13.	26.	. . . . .		18.	25.
	14.	27.	. . . . .		17.	24.
	15.	28.	. . . . .		16.	23.
	16.	29, 5	. . . . .		15.	22.

Meridies incorrectus	3.h	15′.	55″, 6817
correctio	—	11 ,	39
AR ⊙ observata	3.h	15′.	44″, 2917
computata	3.	13.	22 , 783
acceleratio	—	02′.	21″, 5007

Maii 13tio.

Lepaute.

23.h	14′.	13″.	. . .	7.h	25′.	28″, 5
	15.	14.	. . . . .		24.	27 , 5
	16.	15.	. . . . .		23.	27.
	17.	16.	. . . . .		22.	26.
	18.	17.	. . . . .		21.	25.
	19.	18, 5	. . . . .		20.	24.
	20.	19.	. . . . .		19.	23.
	21.	20.	. . . . .		18.	22.
	22.	21.	. . . . .		17.	20, 5
	23.	22, 5	. . . . .		16.	20, 0
	24.	23, 5	, ...		15.	18, 5

Meridies incorrectus	3.h	19′.	50″, 98
correctio	—	11 ,	18
AR ⊙ observata	3.h	19′.	39″, 80
computata	3.	17.	17 , 8
acceleratio	—	02′.	22″, 00

§. 33.

§. 33.

Maii 14to.

Lepaute.

23.h	05′	57″. . . .	7.h	41′.	38″.
	06.	58.		40.	37.
	07.	59.		39.	36, 5
	08.	59, 5		38.	36.
	10.	0.		37.	35.
	11.	0, 5		36.	34, 5
	12.	0, 5		35.	33.
	13.	02.		34.	33.
	14.	02, 5		33.	32.
	15.	03.		32.	31.
	16.	03, 5		31.	30, 5

Meridies incorrectus	3.h	23′.	47″,	4318
correctus . . .	—	11 ,	30	
AR ⊙ observata .	3.h	23′.	36″,	1318
computata .	3.	21.	13 ,	7
acceleratio	—	02′.	22″,	4318

Maii 17mo.

Lepaute.

23.h	18′.	47″. . . .	7.h	52′.	32″, 5
	19.	47, 5		51.	32.
	20.	48.		50.	31 , 5
	21.	48, 5		49.	31 , 5
	22.	49.		48.	30.
	23.	50.		47.	29.
	24.	50, 5		46.	29.
	25.	51.		45.	28 , 5

Meridies incorrectus	3.h	35′.	39″,	6937
correctus	—	11 ,	51	
AR ⊙ observata	3.h	35′.	28″,	1837
computata	3.	33.	02 ,	550
accelerat *Lepaute*	—	02′.	25″,	6337

Maii

Maii 18vo.

Lepaute.

23.h	27′.	51″. . . .	7.h	51′.	27″, 5
	28.	51, 5		50.	27.
	29.	52.		49.	26.
	30.	52, 5		48.	25, 5
	31.	53.		47.	25.
	32.	54.		46.	24.
	33.	54, 5		45.	24.
	34.	55, 5		44.	23.
	35.	56.		43.	22.
	36.	57.		42.	21, 5
	37.	58.		41.	20.

Meridies incorrectus	3.h	39′.	39″, 159
correctus . . .	—	09,	94
AR ⊙ observata	3.h	39′.	29″, 219
computata	3.	37.	0, 541
accelerat *Lepaute*	—	02′.	28″, 678

§. 34.

Maii 19na.

23.h	28′.	50″, 25 . . .	7.h	58′.	25″, 5
	29.	51.		57.	25.
	30.	51, 5		56.	24.
	31.	52.		55.	23, 5
	32.	52, 5		54.	22, 5
	33.	53.		53.	22.
	34.	53, 5		52.	21, 5
	35.	54.		51.	20, 5
	36.	54, 5		50.	20.
	37.	55, 5		49.	19.
	38.	56.		48.	18, 5

Meridies incorrectus	3.h	43′.	37″, 579
correctus . . .	—	09,	750
AR ⊙ observata . .	3.h	43′.	27″, 829
computata	3.	40.	58, 892
accelerat *Lepaute*	—	02′.	28″, 937

Maii 19no.

Maii 19no. et 20mo.

Vesperi.		Mane.	
7.h	58′. 25″, 5 . . .	23.h	31′. 56″.
	57. 25.		32. 56.
	56. 24.		33. 56, 5
	55. 23, 5		34. 56, 5
	54. 22, 5		35. 57.
	53. 22.		36. 57, 5
	52. 21, 5		37. 58.
	51. 20, 5		38. 59.
	50. 20.		39. 59, 5

Media nox incorrecta 15.h 45′. 10″, 027
correcta . . . + 18, 130

AR observata 15.h 45′. 28″, 157
computata 15. 42. 58, 320

accelerat *Lepaute* — 02′. 29″, 837

§. 35.

Azimutha observata.

Series Ima.

1811. 17mo Maii mane.

Chronometrum *Emerynum*.				*Werneri* indices	
1.	6.h	09′.	24″.		
2.	. . .	12.	53.	I. . . .	0″.
3.	. . .	14.	48.	II. . . .	8.
4.	. . .	17.	03.	III. . . .	5.
5.	. . .	19.	01.	IV. . . .	5.
6.	. . .	21.	17.		
7.	. . .	23.	12.		
8.	. . .	25.	05		
9.	. . .	27.	02, 5		
10.	. . .	29.	15, 5	angulus decemplex = 1362°. 58′. 48″.	Ind. I
				40.	- II
medium temporum	6.h	19′.	54″, 1	48.	- III
				40.	- IV

Medium 1362°. 58′. 44″.
Correctio indicum . . . . . — 4, 5

1362°. 58′. 39″,5
Angulus simplus 136°. 17′. 51″,95

Horo-

Horologium *Lepaute* comparatum cum chronometro *Emeryno*.

	Lepaute.				*Emery*.		
ante observationes	21.h	34′.	0″	=	5.h	58′.	27″, 4
	21.	35.	0	=	5.	59.	27, 4
post observationes	23.	13.	0	=	7.	37.	28, 27
	23.	14.	0	=	7.	38.	28, 27

Hinc *Emery* accelerat unius minuti intervallo prae *Lepaute*, ... = 0″, 0087

Lepaute vero accelerat unius horae intervallo prae tempore sidereo . . . . . = —0″, 0444

§. 36.

Series II^da.

1811. Maii 17^mo mane.

Azimutha observata.

	Emery.		
1.	6.h	44′.	01″, 2
2.	. . .	46.	33.
3.	. . .	49.	03, 5
4.	. . .	50.	38, 5
5.	. . .	52.	53, 0
6.	. . .	55.	0, 5
7.	. . .	56.	28, 0
8.	. . .	58.	21, 0
9.	7.h	0.	14, 0
10.	. . .	01.	52.

angulus decemplex = 1302°. 47′. 28″. Ind. I
38. - II
35. - III
38. - IV

medium temporum 6.h 53′. 30″, 52

Medium 1302°. 47′. 34″, 75
Correctio indicum . . . . . — 4, 5
1302°. 47′. 30″, 25
Angulus simplus = 130°. 16′. 45″, 025

	Lepaute.				*Emery*.		
ante observationes	10.h	13′.	0″	=	6.h	37′.	27″, 75
	10.	14.	0	=	6.	38.	27, 75
post observationes	10.	43.	0	=	7.	07.	27.
	10.	44.	0	=	7.	08.	27.

retardatio chronometri *Emeryni* 1.′ = +0″,025 tardius quam *Lepaute*
accelerat *Lepaute* prae tempore sidereo . . . . . 1.h = — 0″,0444.

§. 37.

§. 37.

Series III^tia.

1811. Maii 17^mo. vesperi.

	Emery.	
1.	5.^h 49′.	48″, 0
2.	. . . 53.	58, 5
3.	. . . 56.	52, 0
4.	. . . 58.	59, 0
5.	6. 0.	49, 0
6.	. . . 3.	39, 0
7.	. . . 6.	28, 5
8.	. . . 10.	05, 0
9.	. . . 12.	29, 0
10.	. . . 14.	28, 0
medium temporum =	6.^h . 02′.	45″, 6

Indices *Verneri*.

I. . . . . 0″.
II. . . . . 10.
III. . . . 0.
IV. . . . 10.
correctio . . 5″, 0

angulus decemplex = 662°. 49′. 03″, 75
correctus . . . . — 5, 0
662.° 48′. 58″, 75
angulus simplus = 66.° 16′. 53, 875

	Lepaute.		*Emery.*
ante observationes	8.^h 55′. 0″	=	5.^h 20′. 30″
	8. 56. 0	=	5. 21. 30
post observationes	9. 19. 0	=	5. 44. 29, 5
	9. 20. 0	=	5. 45. 29, 5

Chronometrum *Emerynum* retardat 1′ = +0″,0323

Lepaute accelerat prae tempore sidereo . . 1^h = —0″,06232

§. 38.

§. 38.

Series IV^ta.

1811. Maii 18^vo. mane.

	Emery.	
1.	5.^h 58′.	13″.
2.	. . . 59.	45.
3.	6. 01.	38, 75
4.	. . . 02.	58.
5.	. . . 05.	18, 25
6.	. . . 06.	22, 5
7.	. . . 08.	01, 5
8.	. . . 09.	32, 0
9.	. . . 10.	38, 5
10.	. . . 11.	54, 0
medium temporum =	6.^h 05′.	26″,15

Indices *Verneri.*

I.	. . . . 0″.
II.	. . . 5.
III.	. . . 5.
IV.	. . . 5.
correctio	. . 3″,75

angulus decemplex 1400°. 06′. 03″, 75
correctus . . . . — 3, 75
1400°. 06′. 0″, 0
angulus simplus = 140°. 0′. 36″, 0.

	Lepaute.		*Emery.*
ante observationes	21.^h 22′. 0″	=	5.^h 48′. 08″, 5
	21. 23. 0	=	5. 49. 08, 5
post observationes	21. 54. 0	=	6. 20. 07, 75
	21. 55. 0	=	6. 21. 07, 75

Emery retardatio . . . . 1′ = + 0″, 0234

Lepaute accelerat prae tempore sidereo . . 1^h = — 0″, 06232

§. 39.

§. 39.

Series V^ta.

1811 Maii 18^vo. mane.

Emery.

1.	6.h	38′.	23″, 5
2.	. . .	40.	27 , 5
3.	. . .	42.	31 , 0
4.	. . .	44.	40 , 5
5.	. . .	47.	17 , 0
6.	. . .	48.	59 , 5
7.	. . .	50.	59 , 0
8.	. . .	52.	27 , 0
9.	. . .	54.	03 , 5
10.	. . .	56.	10 , 0
medium tem. porum	6.h	47′.	35″, 85

Indices *Verneri.*

I.	. . . 0″.
II.	. . . 10.
III.	. . . 0.
IV.	. . . 10.
correctio	. . 5″.

ang. decemplex = 1325°. 23′. 40″. Ind. I.
45. - II.
45. - III.
40. - IV.

1325°. 23′. 42″, 5
correctus 5, 0

1325°. 23′. 37″, 5
angulus simplus = 132°. 32′. 21″, 75

	Lepaute.	*Emery.*
ante observationes	21.h 54′. 0″.	= 6.h 20′. 07″, 75.
	21. 55. 0.	= 6. 21. 07 , 75.
post observationes	22. 31. 0.	= 6. 57. 06 , 75.
	22. 32. 0.	= 6. 58. 06 , 75.

Emery retardat . . . 1′ = + 0″, 027
Lepaute accelerat . . . 1h = − 0″, 06232

§. 40.

§. 40.

Series VI^ta.

1811. Maii 18^vo. vesperi.

	Emery			
1.	6.h	0′.	12″	
2.	. . .	3.	51	
3.	. . .	5.	45	
4.	. . .	7.	53	
5.	. . .	9.	31,	75
6.	. . .	11.	35	
7.	. . .	34.	6	
8.	. . .	35.	36	
9.	. . .	37.	15,	5
10.	. . .	39.	07,	0
temp. medium.		6.h 18′.	29″,	225

Indices *Verneri*.

I. . . .	0″.
II. . . .	0.
III. . . .	5.
IV. . . .	12.
correctio .	-4″,25

ang. decemplex = 685°. 16′. 50″. ind. I.
50. - II.
50. - III.
50. - IV.

685°. 16′. 50″, 0
correctus . . . . 4′, 25

685°. 16′. 45″, 75
angulus simplus = 68°. 31′. 40″, 6

	Lepaute.	*Emery*.
ante observationes	9.h 25′. 0″	= 5.h 50′. 24″, 75
	9. 26. 0	= 5. 51. 24′, 75
post observationes	10. 15. 0	= 6. 40. 23, 0
	10. 16. 0	= 6. 41. 23, 0

Emery retardat . . . . 1′ = + 0″. 0357
Lepaute accelerat . . . 1h = — 0″. 01024

§. 41.

§. 41.

Series VII^ma.

1811. Maii 19^no. mane.

Emery.

1.	5.h	58′.	54″, 5	
2.	6.	0.	28.	
3. . . .	1.	50,	5	
4. . . .	2.	58,	5	
5. . . .	4.	16.		
6. . . .	5.	56.		
7. . . .	6.	55,	5	
8. . . .	8.	11,	25	
9. . . .	9.	43,	25	
10. . . .	10.	41,	5	ang. decemplex = 1409°. 19′. 5″. ind. I.
temp. medium.	6.h	4′.	59″, 5	10. - II.
				5. - III.
				5. - IV.
				1409°. 19′. 6″, 25
				correctus 5, 0
				1409°. 19′. 1″, 25
				angulus simplus = 140°. 55′. 55′, 125

Indices *Verneri*.

I. . . .	0″
II. . . .	10
III. . . .	5
IV. . . .	5
correctio . .	5″

	Lepaute.	*Emery.*
ante observationes	21.h 24′. 0″	= 5.h 50′. 4″.
	21. 25. 0	= 5. 51. 4.
post observationes	21. 51. 0	= 6. 17. 3.
	21. 52. 0	= 6. 18. 3.

Emery retardat . . . . 1′ = + 0″, 03845
Lepaute accelerat . . . 1h = — 0″, 01024

§. 42.

§. 42.

Series VIII^va.

1811. Maii 19^no. mane.

Emery.

1.	6.h	43′.	21″,	0
2.	. . .	45.	50,	75
3.	. . .	47.	33,	0
4.	. . .	50.	28,	5
5.	. . .	51.	50,	5
6.	. . .	55.	04,	0
7.	. . .	56.	45,	0
8.	. . .	58.	56,	0
9.	. . .	0.	20,	25
10.	. . .	01.	54,	0

temp. medium.	6.h	53′.	12″, 30

Indices

I. . . .	0″.
II. . . .	0.
III. . . .	0.
IV. . . .	5.
correctio .	-1″, 25

ang. decemplex = 1324°. 0′. 50″. ind. I.
55. - II.
50. - III.
60. - IV.

1324°. 0′. 53″, 75
correctio 1, 25

1324°. 0′. 52″, 50
angulus simplus = 132°. 24′. 05″, 25

	Lepaute			*Emery*		
ante observationes	21.h	38′.	0″ =	6h	16′.	3″
	21.	51.	0 =	6.	17.	3
post observationes	22.	51.	0 =	7.	4.	0, 75
	22.	39.	0 =	7.	5.	0, 75

Emery retardat . . . . 1′ = + 0″, 0468
Lepaute accelerat . . . 1h = — 0″, 01024

§. 43

§. 43.

Series IX^na.

1811. Maii 19^no vesperi.

Emery

1.	6.h	07′.	20″,	0
2.	. . .	8.	31,	75
3.	. . .	10.	0,	0
4.	. . .	11.	18,	5
5.	. . .	13.	01,	0
6.	. . .	14.	22,	0
7.	. . .	15.	44,	0
8.	. . .	16.	54,	5
9.	. . .	18.	18,	0
10.	. . .	19.	52,	5
temp. medium.	6.h	13′.	32″,	225

Indices *Vernieri*.

I. . . . 0″.
II. . . . 15.
III. . . . 0.
IV. . . . 10.

correctio . . 6″, 25

ang. decemplex = 671°. 16′. 50″. ind. I.
55 - II.
50 - III.
55 - IV.

671°. 16′. 52″, 5
correctio . . . . 6′, 25

671°. 16′. 46″, 25
angulus simplus = 67°. 07′. 40″, 625

	Lepaute.	*Emery.*
ante observationes	9.h 32′. 0″	= 5.h 57′. 16″, 75
	9. 33. 0	= 5. 58. 16, 85
post observationes	9. 56. 0	= 6. 21. 16, 25
	9. 57. 0	= 6. 22. 16, 25

Emery retardat . . . . 1′ = + 0″ 0208
Lepaute accelerat . . . 1h = — 0″. 075

§. 44.

§. 44.

Series X^ma.

1811. Maii 19^no vesperi.

Emery.

1.	6.h	33′.	29″. 5
2.	. . .	34.	58, 5
3.	. . .	36.	23, 5
4.	. . .	37.	23, 0
5.	. . .	38.	40, 25
6.	. . .	39.	38, 5
7.	. . .	40.	47, 5
8.	. . .	41.	49, 5
9.	. . .	43.	0, 5
10.	. . .	44.	4, 0
temp. medium.	6.h	39′.	01″, 45

Indices

I. . . .	0″.
II. . . .	12.
III. . . .	0.
IV. . . .	5.
correctio . .	4″, 25

ang. decemplex = 716°. 11′. 40″. ind. I.
30. - II.
40. - III.
30. - IV.

	716°.	11′.	35″, 0
correctio	. . . .		4, 25
	716°.	11′.	30″, 75

angulus simplus = 71°. 37′. 9″, 075

	Lepaute		*Emery*
ante observationes	9.h 56′. 0″	=	6h 21′. 16″, 25
	9. 57. 0	=	6. 22. 16, 25
post observationes	10. 20. 30	=	6. 45. 15, 5
	10. 21. 30	=	6. 46. 15, 5

Emery retardat . . . 1′ = + 0″, 03
Lepaute accelerat . . 1h = — 0″, 075 prae temp. sidereo.

§. 45.

Azimutha observata ad calculos revocata.

Series I^ma.

1811. Maii 17^mo. mane.

tempore chronom. *Emery* . . . $6^h.\ 19'.\ 54'',\ 1$

tempus observationis . . . $6^h.\ 19'.\ 54'',\ 1$
tempus comparationis $5.\ 58.\ 27.\ 4$
differentia $= 21'\ 26'',\ 7$

Acceleratio $21'.\ 26'',\ 7 = 21',\ 445 + 0.\ 0087 = 0'',\ 186$ Hinc

Lepaute.		*Emery.*
$21^h.\ 34'.\ 0'',\ 000$	$=$	$5^h.\ 58'.\ 27'',\ 4$
$+\ 21.\ 26,\ 514$	$=$	$+\ 21.\ 26,\ 7$
$21^h.\ 55'.\ 26'',\ 514$	$=$	$6^h.\ 19'.\ 54.\ 1$

Acceleratio *Lepaute* prae tempore sidereo $- 2'.\ 24'',\ 868$
tempus sidereum $21^h.\ 53'.\ 01'',\ 646$
Asc. ⊙ media $- 3.\ 33.\ 04,\ 308$
Medium propius accedens tempus $18^h.\ 19'.\ 57'',\ 338$
acceleratio $- 3.\ 01,\ 51$
tempus medium $18^h.\ 16'.\ 55'',\ 828$

Elementa solis ad illustr. *de Lambre.*

Longitudo.		Perigeum.	M	A	B	C	D	E	F	N
1811	$= 9^s.\ 10^o.\ 12'.\ 16'',\ 1$	$\ldots 9^s.\ 09^o.\ 40'.\ 24'',\ 0 \ldots$	125.	195.	278.	283.	494.	155.	716.	498.
Maii 16	$= 4.\ 13.\ 03.\ 44,\ 5$	$22,\ 9$	899.	567.	370.	601.	196.	31.	13.	20.
18^h.	$= \ldots\ 44.\ 21,\ 2$	$9.\ 09.\ 40.\ 46,\ 9$	24,	762.	648.	884.	690.	186.	729.	518.
16^l.	$= \ldots\ 39,\ 4$	$1.\ 24.\ 01.\ 03,\ 5$	25.	25.	2.	3.				
55'', 8	$\ldots\ 2,\ 3$	$4.\ 14.\ 20.\ 16,\ 6$	49.	787.	650.	887.				
⊙	$= 1^s\ 24^o\ 01'.\ 03'',5$	$4.\ 14.\ 20.\ 2,\ 76$		27						
Aeq. Centr.	$1.\ 20.\ 36,\ 8$			814						
Var. sec.	$- \ldots - 0,\ 2$									
A	$- \ldots - 3,\ 1$	Obliq.Eclipt. $1800 = 23^o.\ 27'.\ 57'',\ 0$								
A	$- \ldots - 0,\ 1$	Variat.secul. $- \ldots - 5,\ 92$								
A	$- \ldots - 0,\ 6$	Nutat. ☋ $= \ldots - 9,\ 5$								
B C	$- \ldots - 24,\ 1$	Nutat. ⊙ $= \ldots - 0,\ 1$								
B D	$- \ldots - 4,\ 6$	$\varepsilon = 23^o.\ 27'.\ 41',\ 48$								
B E	$- \ldots - 7,\ 2$									
B F	$- \ldots - 1,\ 0$	$\text{fin}\ \varepsilon = 9.\ 6000\ 283$								
Nut. ☋	$- \ldots - 2,\ 0$	$\text{fin}\ ⊙ = 9.\ 9153\ 236$								
Nut. ⊙	$- \ldots - 0,\ 2$	$\sin \delta = 9.\ 5153519$								
Aberr. ⊙	$- \ldots - 0,\ 9$	$\delta = 19^o.\ 07'\ 24'',\ 7$								
⊙	$1^s.\ 23^o.\ 22',\ 18'',1$									

Aeq.temp. $- 3'.\ 57'',\ 1$
Var. sec. . . . $+\ 0'',13$
Aequat. minor. $0,\ 00$
Aeq.temp. $- 3'.\ 56'',97$

tem-

tempus medium	$18^h.\ 16'.\ 55'',\ 828$
aequatio temporis	$+\ 3.\ 57,\ 26$
tempus verum	$18^h.\ 20'.\ 53'',\ 088$
complem. . .	$5.\ 39.\ 06,\ 912$
Angul. horar. $= t =$	$84°.\ 46'.\ 43'',\ 68$
$\frac{1}{2}\ t =$	$42.\ 23.\ 21,\ 84$

$\delta =$	$19°.\ 07'.\ 24'',\ 7$
$\delta' =$	$70.\ 52.\ 35,\ 3$
$\frac{1}{2}\ \delta' =$	$35.\ 26.\ 17,\ 65$
$\frac{1}{2}\ \varphi' =$	$20.\ 56.\ 13,\ 5$
(I) $=$	$14°.\ 30'.\ 04'',\ 15$
(II) $=$	$56.\ 22.\ 31,\ 15$

$\cot \frac{1}{2}\ t =$	$0.\ 039631\ 1$	. . . .	$0.\ 039631\ 1$
$\sin$ I $=$	$9.\ 3986330$	cos. I $=$	$9.\ 9859393$
C sin II $=$	$0.\ 0795205$	C. cos. II $=$	$0.\ 2566859$
$\cot \lambda =$	$9.\ 5177846$	$\cot \mu =$	$0.\ 2822563$

$\lambda = 71°.\ 45'.\ 56'',\ 7$
$\mu = 27.\ 34.\ 06,\ 8$
$\alpha = 99.\ 20.\ 03,\ 5$
D $= 136.\ 17.\ 51,\ 9$
azimuthum $= 36°.\ 57'.\ 48'',\ 4$

§. 46.

Series II^da.

Emery	$=$	$6.^h$	$53'.$	$30'',\ 52$
Lepaute	$=$	$22.$	$29.$	$03,\ 172$
tempus sidereum	$=$	$22.$	$26.$	$38,\ 302$
medium	$=$	$18.$	$50.$	$28,\ 284$
verum	$=$	$18.$	$54.$	$25,\ 544$
$\frac{1}{2}\ t$	$=$	$38.$	$11.$	$48,\ 44$
δ	$=$	$19.$	$07.$	$30,\ 0$
(I)	$=$	$14.$	$30.$	$01,\ 5$
(II)	$=$	$56.$	$22.$	$28,\ 5$
λ	$=$	$69.°$	$05'.$	$05'',\ 1$
μ	$=$	$24.$	$13.$	$48,\ 8$
α	$=$	$93.$	$18.$	$53,\ 9$
D	$=$	$130.$	$16.$	$45,\ 0$
azimuthum	$=$	$36.°$	$57'.$	$51'',\ 1$

Series

Series III^tia.

1811. Maii 17^mo. vesperi.

Emery	=	6.h	02′.	45″, 6
Lepaute	=	9.	37.	16, 69
tempus sidereum	=	9.	34.	50, 34
medium	=	5.	56.	51, 31
verum	=	6.	0.	46, 27
$\frac{1}{2}$ t	=	45°.	05′.	47″, 02
δ	=	19.	14.	05, 1
(I)	=	14.	26.	43, 95
(II)	=	56.	19.	10, 95
λ	=	73.	21.	55, 1
μ	=	29.	52.	52, 9
α	=	103.	14.	48″, 1
D	=	66.	16.	53, 9
azimuthum	=	36°.	57′.	54″, 1

Series IV^ta.

1811. Maii 18^vo. mane.

Emery	=	6.h	05′.	26″, 15
Lepaute	=	21.	39.	18, 03
tempus sidereum	=	21.	36.	50, 11
medium	=	17.	56.	52, 80
verum	=	18.	0.	49, 16
$\frac{1}{2}$ t	=	44°.	53′.	51″, 2
δ	=	19.	20.	52, 9
(I)	=	14.	23.	20, 05
(II)	=	56.	15.	47, 05
λ	=	73.	18.	22, 3
μ	=	29.	44.	24, 3
α	=	103	.02.	46, 6
D	=	140.	0.	36, 0
azimuthum	=	36.°	57.	49″, 4

§. 47.

§. 47.

Series V^ta.

1811. Maii 18^vo. manc.

Emery.	=	6.h	47′.	35″,	85
Lepaute.	=	22.	21.	30,	384
tempus siderum	=	22.	19.	02,	38
medium	=	18.	38.	58,	16
verum	=	18.	42.	54,	47
½ t	=	39°.	38′.	11″,	45
δ	=	19.	21.	16,	6
(I)	=	14.	23.	08,	2
(II)	=	56.	15.	35,	2
λ	=	70.	9.	59,	3
μ	=	25.	24.	24,	3
α	=	95.	34.	23,	4
D	=	132.	32.	21,	7
azimuthum	=	36°.	57′,	58″,	1

Series VI^ta.

1811 Maii 18^vo. vesperi.

Emery	=	6.h	18′.	29″,	225
Lepaute	=	9.	53.	5,	441
tempus sider.	=	9.	50.	36,	377
medium	=	6.	8.	38,	862
verum	=	6.	12.	34,	12
½ t	=	46.°	34′.	15″,	9
δ	=	19.	27.	42,	4
(I)	=	56.	12.	22,	3
(II)	=	14.	19.	55,	3
λ	=	74.	15.	12,	5
μ	=	31.	14.	4,	9
α	=	105.	29.	17,	4
D	=	68.	31.	40,	6
azimuthum	=	36°.	57′.	36″,	8

Series

Series VII^ma.

1811. Maii 19^no. mane.

Emery	=	6.h	4′.	59″, 5
Lepaute	=	21.	38.	56, 03
tempus sidereum	=	21.	36.	27, 19
medium	=	17.	52.	34, 04
verum	=	17.	56.	28, 45
½ t	=	45°.	26′.	26″, 5
δ	=	19.	34.	11, 5
(I)	=	14.	16.	40, 75
(II)	=	56.	09.	07, 75
λ	=	73.	41.	59, 9
μ	=	30.	16.	12, 3
α	=	103.	58.	12, 2
D	=	140.	55.	54, 1
azimuthum	=	36°.	57′.	41, 9

§. 48.

Series VIII^va.

1811. Maii 19^no. mane.

Emery	=	6.h	53.	12″, 30
Lepaute	=	22.	27.	10, 99
tempus sidereum	=	22.	24.	42, 14
medium	=	18.	40.	41, 10
verum	=	18.	44.	35″, 59
½ t	=	39°.	25′.	33″, 57
δ	=	19.	34.	37, 9
(I)	=	14.	16.	27, 55
(II)	=	56.	8.	54, 55
λ	=	70.	8.	41, 6
μ	=	25.	17.	39, 0
α	=	95.	26.	20, 6
D	=	132.	24.	05, 1
azimuthum	=	36°.	57′.	44″, 5

Series

Series IX^na.

1811. Maii 19^no. vesperi.

Emery	=	6.h	13′.	32″,	225
Lepaute	=	9.	48.	15,	813
tempus siderеum	=	9.	45.	46,	420
medium	=	5.	59.	53,	718
verum	=	6.	3.	46,	998
$\frac{1}{2}$ t	=	45.	28′.	22″,	485
δ	=	19.	40.	43,	8
(I)	=	14.	13.	24,	6
(II)	=	56.	5.	51,	6
λ	=	73.	45.	54,	4
μ	=	30.	19.	39,	0
α	=	104.	05.	33,	4
D	=	67.	7.	40,	6
azimuthum	=	36.°	57′.	52″,	8

Series X^ma.

1811. Maii 19^no. vesperi.

Emery	=	6.h	39′.	01″,	45
Lepaute	=	10.	13.	45,	73
tempus siderеum	=	10.	11.	16,	30
medium	=	6.	25.	19,	53
verum	=	6.	29.	12,	73
$\frac{1}{2}$ t	=	48.°	39′.	05″,	47
δ	=	19.	40.	57,	8
(I)	=	14.	13.	17,	6
(II)	=	56.	5.	44,	6
λ	=	75.	23.	58,	7
μ	=	33.	10.	49,	9
α	=	108.	34.	48,	6
D	=	71.	37.	9,	1
azimuthum	=	36.°	57′.	39″,	5

§. 49.

Cum igitur azimutha decem serierum sint:

Seriei	I^mae.	36°.	57′.	48″, 4
	II^dae.	. . . .		51, 1
	III^tiae.	. . . .		54, 1
	IV^tae.	. . . .		49, 4
	V^tae.	. . . .		58, 1
	VI^tae.	. . . .		36, 8
	VII^mae.	. . . .		41, 9
	VIII^vae.	. . . .		44, 5
	IX^nae.	. . . .		52, 8
	X^mae.	. . . .		39, 5

indidem efficitur azimuthorum ao. 1811 observatorum

Medium = 36°. 57′. 47″, 7

Azimuthum vero ex observationibus annis 1807. 1809. habitis Theodolito simplici fuit definitum

= 36°. 57′. 43″, 2

Itaque ergo, omnium observationum medium, azimuthum *Scaephtlariam* altam inter ac Meridianum *speculae Regiae* prodit

36°. 57′. 45″, 45

Quod quidem, si observationum diversa tempestate diversisque machinis, Theodolitis cum simplicibus tum repetentibus, habitarum vim atque naturam spectes, easdemque observationes in mediis tantum 4″,5 intervalli inter se differre consideres, azimuthum, quod saepe et diligenter pertractavimus, infra ter millesimam sexcentesimam horae partem fuisse definitum intelligitur.

§. 50.

Sed eum olim jam tum, eum Tabularium rei topographicae instituteretur, azimuthum Monachii turris ecclesiae divae Virginis septentrionalis a Celeberrimo Astronomo Henry, Geographo architecturae militaris, quam ab Ingenio nominant, et militum

Prae-

Praefecto fuit definitum, e re fuerit et observationes, et quae inde mihi azimutha de novo ad calculos revocata prodierunt, cum noſtris ad meridianum ejusdem Eccleſiae referendis comparare. En observationes a Celeberrimo aſtronomo Henry habitas, quarum archetypus in Tabulario rei topographicae extat.

§. 51.

Altitudines Solis ex aequo.

28vo. Aprilis 1802.

	Mane.	Vesperi.
	Series I.	
	19.h 20′. 24″, 8	4.h 53′. 57″, 2
	20. 56, 4	53. 25, 7
	21. 29, 4	52. 53, 4
	22. 2, 0	52. 20, 6
	22. 24, 8	51. 48, 0
	23. 7, 3	51. 15, 1
	23. 40, 0	50. 42, 5
	24. 12, 5	50. 9, 6
	24. 45, 8	49. 36, 8
	25. 17, 6	49. 4, 5
	25. 49, 8	48. 32, 4
	Series II.	
	19.h 53′. 6″, 5	4.h 21′. 14, 0
	53. 40, 2	20. 39, 0
	54. 12, 5	19. 5, 4
	54. 45, 8	19. 31, 9
	55. 19, 7	18. 59, 3
	55. 52, 2	18. 25, 6
	56. 25, 3	17. 53, 0
	56. 57, 8	17. 20, 8
	57. 30, 0	16. 47, 5
	58. 4, 0	16. 15, 0
tempus horologii	58. 36, 4	15. 33, 2
meridie vero	0.h 6′. 54″, 3	0.h 6′. 54″, 6

Observationes azimuthorum.

28vo. Aprilis 1812.

Tempora horologii.

Series	A.	B.	C.	D.
	6.h 24′. 43″, 5	6.h 36′. 42″, 8	6.h 55′. 36″, 0	6.h 59′. 25″, 4
	25. 54, 6	37. 41, 0	56. 35, 5	7. 2. 22, 5
	26. 47, 7	38. 24, 2	47. 58, 2	0. 12, 0
Barometrum = 26′. 2″, 4	27. 42, 4	39. 21, 0	48. 56, 5	1. 1, 7
	28. 25, 6	40. 4, 3	49. 38, 6	1. 46, 0
Thermometrum = + 11°, 8	29. 34. 7	40. 52, 5	50. 25, 4	2. 53, 8
	30. 20, 8	41. 27, 7	51. 6, 2	3. 26, 3
	31. 9, 9	42. 14, 0	51. 53, 7	3. 59, 3
	31. 57, 4	43. 0, 0	52. 30, 4	4. 31, 6
	32. 51, 3	43. 51, 8	53. 14, 0	5. 4, 8
			53. 57, 8	5. 40, 4
			54. 50, 0	6. 11, 4
medium omnium temporum	6.h 28′. 56″, 8	6.h 40′. 21″, 9	6.h 52′. 13″, 5	7.h 3′. 2″, 9
angulus multiplex decimalis	1389°, 5260	1368°, 0325	1613°, 9260	158°, 9145
angulus simplus decimalis	138, 9526	136, 8032	134, 4938	132, 3262
angulus simplus sexagesimalis	125.° 3′. 26″, 4	123.° 7′. 22″, 5	121.° 2′. 40″, 0	119.° 5′. 36″, 9

Obser-

Observationes azimuthorum.

28^vo. Aprilis 1802.

Tempora horologii.

Series.	E.	F.	G.	H.
	17.^h 19′. 58″, 4	17.^h 29′. 48″, 4	17.^h 40′. 42″, 4	17.^h 51′. 1″, 4
	21. 8, 7	30. 27, 3	41. 1, 3	51. 57, 7
	22. 7, 3	31. 6, 0	41. 9, 5	52. 33, 7
Barometrum = 26′. 2″, 4	22. 59, 5	31. 49, 0	42. 27, 3	53. 17, 5
	23. 49, 3	32. 29, 2	43. 5, 7	54. 7, 3
Thermometrum = + 11,° 2	24. 29, 5	33. 28, 6	43. 50, 4	54. 59, 0
	25. 22, 8	34. 14, 0	44. 22, 0	55. 37, 4
	25. 59, 5	34. 49, 5	45. 13, 6	56. 37, 0
	26. 40, 0	35. 40, 4	45. 56, 7	57. 18, 2
	27. 13, 2	36. 24, 5	46. 39, 3	57. 56, 0
			47. 17, 4	58. 30, 6
			47. 52, 3	59. 20, 8
medium omnium temporum	17.^h 23′. 58″, 8	17^h 33′. 22″, 7	17^h 44′. 9″, 0	17^h 55′. 16″, 4
angulus multip. ex decimalis	265°, 6570	286°, 3025	370°, 6280	406°, 2915
angulus simplus decimalis	26, 5657	28, 6302	31, 2190	33, 8576
angulus simplus sexagesimalis	23°. 54′. 32″, 9	25°. 46′. 2″, 0	28°. 5′. 49″, 6	36°. 28′. 18″, 8

§. 52.

Altitudines solis ex aequo.

29no. Aprilis 1812.

	Mane.			Vesperi.		
			Series I.			
19.h	14′.	4″,	0	5.h 4′.	10″,	2
	14.	36,	3	3.	38,	0
	15.	18,	2	3.	5,	0
	15.	39,	5	2.	34,	2
	16.	12,	0	2.	2,	4
	16.	46,	0	1.	28,	0
	17.	18,	3	0.	55,	6
	17.	50,	0	0.	23,	4
	18.	23,	0	4. 59.	50,	8
	18.	5,	8	59.	17,	8
	19.	28,	2	58.	44,	4
			Series II.			
19.h	30′.	18″,	0	5.h 47′.	54″,	4
	30.	51,	5	47.	20,	9
	31.	23,	7	46.	49,	0
	31.	56,	6	46.	15,	5
	32.	28,	8	45.	43,	5
	33.	1,	9	45.	11,	4
	33.	33,	5	44.	39,	0
	34.	6,	5	44.	4,	6
	34.	39,	5	43.	32,	6
	35.	12,	4	43.	0,	0
	35.	44,	5	42.	27,	5
tempus horologii meridie vero	0.h	8′.	5″, 3	0.h	8′.	50″, 4

Obser-

Observationes azimuthorum.

29^no. Aprilis 1802.

Tempora horologii.

	Series I.	K.	L.	M.
	6.h 30′. 47″, 5	6.h 40′. 3″, 0	6.h 48′. 42″, 0	6.h 56′. 45″, 0
	31. 45, 5	40. 46, 0	49. 26, 0	57. 22, 7
Barometrum = 26′. 3″, 5	32. 21, 4	41. 25, 8	50. 2, 0	58. 2, 2
	33. 2, 0	42. 4, 0	50. 40, 3	58. 49, 4
Thermometrum = + 17°, 3	33. 44, 2	42. 36, 3	51. 21, 4	59. 38, 4
	34. 35, 5	43. 22, 2	52. 0. 8	7. 0. 20, 6
	35. 12, 6	44. 2, 0	52. 32, 4	1. 4, 5
	35. 54, 6	44. 50, 0	53. 15, 0	1. 46, 2
	36. 33, 6	45. 27, 5		2. 22, 0
	37. 20, 7	46. 3, 6		2. 53, 5
				3. 36, 3
				4. 22, 2
medium omnium temporum	6.h 34′. 7″, 7	6h 43′. 4″, 3	6.h 51′. 0, 3	7.h 0′. 35″. 2
angulus multiplex decimalis	1381°, 0625	1364°, 1860	1079°, 1000	1595°, 8755
angulus simplus decimalis	138, 1062	136, 4186	134, 9872	132, 9896
angulus simplus sexagesimalis	124.° 17′. 44″, 2	122.° 46′. 36″, 3	121.° 23′. 55″, 5	119.° 41′. 26″, 4

Obser-

Observationes azimuthorum.

29^no. Aprilis 1802.

Tempora horologii.

Series	N.	O.	P.
	17.h 51′. 31″, 0	18.h 1′. 58″, 4	18.h 14′. 47″, 5
	52. 24, 5	2. 52, 2	15. 49, 4
	53. 6, 2	3. 43, 4	16. 40, 0
	54. 1, 0	4. 35, 6	17. 31, 5
Barometrum = 26′. 4″, 8	54. 58, 8	5. 31, 6	18. 23, 6
Thermometrum + 12°, 2	55. 38, 5	6. 13, 0	19. 6, 0
	56. 23, 0	6. 56, 7	20. 5, 0
	57. 6, 5	7. 57, 5	20. 51, 8
	57. 51, 4	8. 55, 9	21. 36, 3
	58. 40, 5	9. 51, 3	22. 16, 9
			23. 6, 5
			24. 8, 0
medium omnium temporum	17.h 55′. 10′, 1	18.h 5′. 51″, 6	18.h 19′, 31″, 9
angulus multiplex decimalis	331°, 9055	357°, 1905	469°, 0165
angulus simplus decimalis	33, 1905	25, 7621	39, 0847
angulus simplus sexagesimalis	29°. 52′. 17″, 4	32°. 11′. 9″, 4	35°. 10′. 34″, 5

§. 53.

Altitudines solis ex aequo.

Manc.				Vesperi.			
			Series I.				
19.h	49′.	49″,	5	4.h	32′.	24″,	5
	50.	22,	0		31.	52,	5
	50.	55,	3		31.	19,	0
	51.	27,	6		30.	46,	4
	52.	0,	8		30.	13,	7
	52.	35,	0		29.	39,	3
	53.	8,	2		29.	6,	1
	53.	41,	8		28.	32,	4
	54.	13,	4		28.	0,	6
			Series II.				
20.h	2′.	25″,	8	4.h	19′.	45″,	6
	2.	59,	2		19.	13,	5
	3.	31,	5		18.	40,	2
	4.	5,	7		18.	6,	5
	4.	37,	7		17.	34,	7
	5.	10,	4		16.	59,	8
	5.	43,	0		16.	28,	0
	6.	17,	3		15.	53,	9
	6.	50,	0		15.	21,	0
	7.	24,	1		14.	47,	2
	7.	57,	9		14.	14,	0
tempus horologii meridie vero	0.h	10′.	52″, 3	0.h	10′.	51″,	3

Altitudines solis ex aequo.

7mo. Maii 1812.

Mane.			Vesperi.		
		Series I.			
19.h	2′.	33″, 2	5.h	0′.	7″, 5
	2.	26, 0	4.	59.	35, 8
	3.	28, 3		59.	2, 0
	4.	1, 0		58.	29, 8
	4.	33, 5		57.	56, 2
	5.	4, 5		57.	23, 5
	5.	37, 8		56.	52, 4
	6.	10, 0		56.	20, 6
	6.	41, 2		55.	48, 0
	7.	15, 3		55.	15, 0
	7.	47, 4		54.	43, 2

tempus horologii meridie vero 0.h 1′. 0″, 8

Series II.

19.h	13′.	20″, 2	4.h	49′.	18″, 5
	13.	34, 5		48.	44, 5
	14.	16, 0		48.	12, 0
	14.	48, 5		47.	40, 2
	15.	21, 0		47.	7, 8
	15.	53, 4		46.	35, 2
	16.	25, 9		46.	3, 8
	16.	58, 5		45.	30, 4
	17.	31, 0		44.	57, 6
	18.	2, 3		44.	26, 8
	18.	35, 8		43.	53, 2

tempus horologii meridie vero 0.h 1′. 0″, 8

Obser-

Observationes azimuthorum

7mo. Maii 1802.

Tempora horologii.

Series	Q.	R.
	6.h 33′. 34″,4	6.h 47′. 16″, 2
	34. 37, 8	48. 4, 6
	35. 31, 3	48. 46, 8
	36. 18, 2	49. 31, 3
Barometrum = 26″. 6‴, 4	37. 7, 2	50. 4, 2
Thermometrum = + 13°, 8	37. 55, 4	50. 42, 8
	38. 47, 7	51. 18, 3
	39. 23, 0	52. 3, 4
	40. 9, 3	52. 52, 0
	40. 48, 0	53. 32, 8
	41. 30, 0	54. 13, 8
	42. 10, 2	55. 1, 7

medium omnium temporum 6.h 38′. 9″,4 ∞ 6.h 51′. 7″,3

angulus multiplex decimalis 1608°, 1850 1578°, 5085

angulus simplus sexagesimalis 120.° 36′. 49″, 7 118.° 23′. 17″, 3

§. 54.

Altitudines solis ex aequo.

8^vo. Maii 1802.

Mane.			Vesperi.		
		Series I.			
18.h	45′.	33″, 5	5.h	21′.	5″, 8
	46.	6, 8		20.	33, 0
	46.	38, 6		20.	0, 6
	47.	13, 0		19.	27, 8
	47.	45, 2		18.	55, 5
	48.	17, 8		18.	21, 7
	48.	49, 0		17.	50, 5
	49.	21, 5		17.	18, 0
	49.	51, 2		16.	45, 3
	50.	26, 6		16.	12, 0
	50.	59, 8		15.	39, 6

tempus horologii meridie vero 0.h 3′. 4″, 6

		Series II.			
19.h	7′.	13″, 0	4.h	59′.	25″, 6
	7.	45, 5		58.	51, 8
	8.	17, 7		58.	20, 0
	8.	50, 0		57.	46, 6
	9.	23, 2		57.	14, 5
	9.	55, 0		56.	42, 7
	10.	28, 0		56.	9, 2
	11.	1, 0		55.	37, 0
	11,	33, 0		55.	4, 8
	12.	5, 5		54.	32, 5
	12.	37, 5		54.	0, 0

tempus horologii meridie vero 0.h 3′. 4″, 6

Obser-

Observationes azimuthorum

8vo. Maii 1802.

Tempora horologii.

Series	S.	T.
	6.h 26′. 29″, 0	6.h 38′. 28″, 7
	27. 34, 4	39. 27, 4
	28. 16, 6	40. 4, 5
	28. 58, 5	40. 49, 0
Barometrum = 26″. 5‴, 4	29. 40, 0	41. 24, 2
Thermometrum = + 15°, 7	30. 29, 7	42. 5, 3
	31. 9, 2	42. 43, 4
	31. 52, 8	43. 19, 0
	32. 31, 3	43. 55, 5
	33. 13, 3	44. 51, 3
	33. 51, 1	45. 46, 5
	34. 31, 6	46. 25, 2
medium omnium temporum	6.h 30′. 43″, 1	6.h 42. 26, 7
angulus multiplex decimalis	1626°, 4765	1600, 5525
angulus simplus sexagesimalis	121.° 59′, 8″ 5	120.° 2′. 29″, 4

Altitudines solis ex aequo.

9$^{no.}$ Maii 1802.

Mane.			Vesperi.		
	Series I.				
20.^{h}	9′.	10″, 5	4.^{h}	1′.	23″, 5
	9.	43, 8		0.	50, 8
	10.	16, 7		0.	18, 5
	10.	50, 0	3.	59.	44, 0
	11.	22, 8		59.	11, 8
	11.	56, 2		58.	37, 3
	12.	29, 8		58.	5, 2
	13.	2, 4		57.	32, 5
	13.	35, 9		56.	57, 2
	14.	9, 0		56.	25, 2
	14.	21, 5		55.	51, 8

tempus horologii meridie vero 0.^{h} 5′. 5″, 3

	Series II.				
20.^{h}	20′.	16″, 0	3.^{h}	50′.	17″, 0
	20.	48, 6		49.	45, 0
	21.	21, 5		49.	10, 5
	21.	55, 4		48.	38, 0
	22.	28, 3		48.	5, 0
	23.	2, 5		47.	31. 3
	23.	35, 2		46.	59, 8
	24.	8, 9		46.	25, 5
	24.	42, 6		45.	50, 6
	25.	16, 6		45.	17, 5
	25.	49, 8		44.	43, 6

tempus horologii meridie vero 0.^{h} 5′. 5″, 4

§. 55.

Quas quidem observationes a celeberrimo Henry habitas de integro ad Calculos revocare facile tanti fuerit.

Sint igitur

h = distantiae verae solis a vertice;
β' = complemento latitudinis loci geographicae;
t = angulo horario;
δ = declinationi solis;
δ' = complemento ejusdem declinationis;
z = azimutho solis;
r = refractioni solis;
p = parallaxi altitudinis solis;
h' = distantiae apparenti solis a vertice, $= h - r + p$
d = distantiae apparenti objecti terrestris a vertice;
d' = distantiae solis observatae ab objecto terrestri;
α = angulo, quem objectum terrestre et sol in vertice obtendunt;
m = reductioni stationis ad centrum;
n = semidiametro solis;

Et ad azimutha, Circulo repetente Tobiae Mayeri, quem a Borda nominant, observata, ad calculos revocanda sequentes fecerint formulae:

$$\operatorname{tg} x = \operatorname{cotg} \beta \cos t$$
$$y = \delta \sec x$$

cos

$$\cos h = \sin\beta \frac{\cos y}{\cos x}$$

$$\sin z = \frac{\sin t \cos \delta}{\sin h}$$

$$\frac{R' = d + h' + d'}{2} - d$$

$$\frac{R' = d + h' + d'}{2} - h'$$

$$\sin^2 \tfrac{1}{2}\alpha = \frac{\sin R \sin R'}{\sin d \sin h'}$$

fuit vero $\beta =$ 48°. 08′. 20″, 8
$d =$ 90°. 14′. 20″,
$m = -$ 25″ vesperi;
$m = -$ 21″, 9 mane;
azimuthum $= \alpha - m + n - z$ vesperi
$= -(\alpha - m + n) + z$ mane.

§. 56.

En typus calculi seriei A.

Tempus verum = 6.h 21′. 31″, 2
$t =$ 95°. 22′. 48″
$\delta =$ 14°. 05′. 01″, 8

eotg β = 9,9523232 . . .	sin β = 9,8720206 . . .	sin t = 9,9980826
cos t = 8,9720213 n . .	cos y = 9,2076000 . . .	cos δ = 9,9867452
tg x = 8,9243445 n	C cos x = 0,0015273 . .	C sin h = 0,0031786
	cos h = 9,0811479	sin z = 9,9880062

x	= —	4°.	48′.	08″.
δ′	=	75.	54.	58, 2
y	=	80°.	43′.	06″, 2
h	=	83°.	04′.	35″, 3
— r	=	—	06.	32, 4
+ p	=	—		08, 8
h′	=	82°.	58′.	11″, 7
d	=	90.	14.	20, 0
d′	=	125.	03.	26, 4
Summa	=	298.	15.	58, 1
dimidium	=	149.	07,	59, 0
— d	=	90.	14.	20
R	=	58.	53.	39.
		149.	07.	59, 0
— h′	= —	82.	58.	11, 7
R′	=	96.	09.	47, 3

sin R	=	9,9325825		
sin R′	=	9,9612785		
C sin d	=	0,0000038		
C sin h′	=	0,0032782		
$\sin^2 \frac{1}{2}\alpha$	=	19,8971430		
$\sin \frac{1}{2}\alpha$	=	9,9485715		
$\frac{1}{2}\alpha$	=	62°.	39′.	48″, 4
α	=	125°.	19′.	36″, 8
+ n	=	. . . .	15′.	53″, 8
		125°.	35′.	30″, 6
— (z+m)	=	76.	36.	11, 8
Denique azimuthum	=	48°	59′	18″, 8

z	=	76°.	35′.	46″, 8
m	=			25, 0
z+m	=	76°.	36′.	11. 8

§. 57.

Itaque azimuthum

seriei	A =	48°.	59′.	18″,	8
Ex iisdem calulis mihi prodierunt:	B =	48.	59.	24,	2
	C =	48.	59.	32,	2
	D =	48.	59.	41,	4
	E =	48.	59.	49,	7
	F =	49.	04.	23,	6 *
	G =	48.	59.	67,	1
	H =	48.	59.	56,	5
	I =	48.	59.	28,	4
	K =	48.	59.	31,	3
	L =	48.	59.	44,	9
	M =	48.	59.	44,	8
	N =	48.	55.	45,	2 *
	O =	48.	56.	04,	2 *
	P =	48.	59.	43,	7
	Q =	48.	59.	51,	8
	R =	48.	59.	42,	7
	S =	48.	59.	05,	2
	T =	48.	59.	19,	0
Hinc omnium medium	=	48°.	59′.	37″,	6

Exclusis seriebus F, N, O, quibus observationibus scripturae mendum inesse facile tibi persuaseris. Ullum vero mendum, idemque apertum, in archetypo litura corrigere religioni habui.

§. 58.

§. 58.

Sed cum Triangulum: Specula Regis astronomica, Pontes Scaphonii, et turris divae virginis: Satis accurate sit cognitum, ex datis angulis ad

Speculam Regiam = 88°. 18'. 17", 54
Pontes Scaphonios = 7°. 54'. 13", 30
Turrem divae Virginis = 83. 47. 29, 16

ex data distantia ejusdem turris a specula astronomica = 2555, 89 metris, ex azimutho supra invento, cognitaque positione geographica speculae Regis astronomicae, cum ex siderum inerrantium occultationibus, tum ex solis eclipsibus, tum variis ac multiplicibus observationibus primum a me definita, nimirum Longitudine = 29°. 16'. 23", 4 Latitudine = 48°. 07'. 33", 0.

Facile concluditur Latitudo Turris divae Virginis Monachii, in media fere urbe sitae, = 48°. 08'. 20". 8 Longitudo vero = 29°. 14'. 42", 401 Azimuthum autem speculam astronomicam inter ac meridianum ejusdem Turris = 125°. 14'. 48", 18.

§. 59.

Ex quibus denique, angulo Aufkirchen et Scaephtlariam altam inter = 160°. 02'. 32", 6 alionde cognito, azimuthum a celeberrimo militum Praefecto Henry observatum, si ad Speculam Regiam et Pontes Scaphonios referas, colligitur = 36°. 57'. 38", 71 quod a nostro tantum 06", 74 intervalli ut differret contigit.

§. 60.

Itaque ergo omnium et observationum et calculorum momenta diligentissime perpendens in azimutho a me supra definito, quod Basis et Retis triangulorum per Bojoariam impensa Regis porrectorum edendarumque Tabularum Regni topographicarum firmamentum ac fundamentum posui, omnino standum putaverim.

Typothetae menda a benevolo lectore tollantur:

				legas velim
Pag.	452	lin. 7	nutorum	minutorum
—	—	— 13	14, 00	14, 001
—	—	— 18	3′ —	39′
—	455	— 3	3″, 3	3″, 0
—	456	— 17	addatur post pollicum	1mo Maii 1807
—	461	— 13	16′. 9″	16′. 9″, 5
—	—	— ult.	28″	28″, 5
—	466	— 18	9,8461-04	9,84617o8
—	467	— 23	16″, 3892	16″, 3890
—	470	— 24	32, 87	32, 37
—	471	— 2	Thedolito	Theodolito
—	473	— 7	20″, 209	02″, 209
—	479	— 8	160°	16°
—	—	— 22	39″, 289	39″, 689
—	481	— ult.	$\sin\beta \sin^2\alpha\, dt$	$\sin\beta \sin^2\alpha\, dt$
—	482	— 11	$\frac{\cos\beta \sin^2\alpha}{\cos 2\delta \sin t}$	$\frac{\cos\beta \sin^2\alpha}{\cos^2\delta \sin t}$
—	485	— 10	2′. 21″, 5007	2′. 21″, 5087
—	486	— 10	35′. 33″	35′. 33″, 5
—	—	— 26	48′. 30″	48′. 30″, 5
—	—	— 27	47′. 29″	47″. 29″, 5
—	487	— 8	46′. 24″	46″. 24″, 5
—	495	— 23	21h. 38′	21h. 50′
—	—	— 25	22h. 51′	22h. 38′
—	498	— 9	21,445 + 0,0087	21,445 × 0,0087
—	—	— ult.	23°	25°
—	499	— 4	$\frac{1}{5}\varphi'$	$\frac{1}{2}\varphi'$
—	500	— 14	48″, 1	48″, 0
—	505	— 3	ejusdem Ecclesiae referendis	speculae relata
—	506	— 10	11°, 2	17°, 2
—	—	— 18	158°	1587°
—	507	— 18	370°	374°
—	—	— 20	36°	30°
—	508	— 3	1812	1802
—	—	— 8	18″, 2	8″ 2
—	—	— 5	42″, 0	42″, 8
—	509	— 14	3″, 6	6″, 3
—	510	— 19	25°	25°
—	512	— 2	1812	1802