



De  
**P o s i t u**  
**Basis et Retis Triangulorum**

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

a  
**CAROLO FELICI SEYFFER.**

§. 1.

**A**ltitudines solis 3. Mart. 1807. ex aequo observatae.

Horologium *Lepaute.*

19.h.	o'.	o1''.	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 quibus efficitur

meridies . . . . .	22. <sup>h</sup>	55.	12''	214
Correctio . . . . .		—	20	490
AR ☉ observata . . . . .	22.	54.	51	72...

§. 2.

Ex elementis solis ad tabulas illustris *Delambre* colligitur

Longitudo solis media . . . . .	11 <sup>s</sup> .	10 <sup>o</sup> .	19'.	26'', 3
vera . . . . .	11.	11.	59.	48, 8
Ascensio recta solis media . . . . .	22. <sup>h</sup>	41'.	12'',	809
Aequatio temporis . . . . .		+ 12'.	25'',	4622
AR ☉ vera . . . . .	22. <sup>h</sup>	53'.	38'',	2712
observata (§. 1.) . . . . .	22.	54.	51,	7243

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Acceleratio horologii — 01'. 13'', 4531

Obliquitas eclipticae . . . . .	23 <sup>o</sup> .	27'.	50'',	95
Semidiameter solis . . . . .		16'.	09'',	13
Declinatio solis . . . . .	7 <sup>o</sup> .	04'.	08'',	3

§. 3.

Altitudines solis ex aequo 4<sup>to</sup> Martii observatae.

19. <sup>h</sup>	0'. 32''.	. . .	2. <sup>h</sup>	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.<sup>h</sup>

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

Hinc meridies incorrectus . . . 22.<sup>h</sup> 58'. 56'', 959.

Correctio . . . . . — 20, 490.

AR observata . . . . . 22.<sup>h</sup> 58'. 36'', 469

computata . . . . . 22. 57. 22, 021

Acceleratio horologii 4<sup>to</sup> Martii . . . . . — 01'. 14'', 448.

3<sup>to</sup> Martii . . . . . — 01'. 13'', 450.

diurna . . . . . — 0'', 9947.

horaria . . . . . — 0'', 03984

§. 4.

Azimutha ad chronometrum *Emerynum* observata

3<sup>to</sup> Martii vesperi.

1.)	4. <sup>h</sup>	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 *Lepau-*  
*teano* intra speculam posito:

	<i>Emery.</i>	=	<i>Lepaute</i>
ante observationes	4. <sup>h</sup> 38'. 0".	=	3. <sup>h</sup> 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 28<sup>vo</sup> April.

22. <sup>h</sup> 33'. 25".	. . . . .	6. <sup>h</sup> 07'. 57".
.... 34. 28 .	. . . . .	06. 54.

Meridies incorrectus	2. <sup>h</sup> 20'. 41", 0
correctio	. . . — 14", 00

AR. ☉ observata . .	2. <sup>h</sup> 20'. 26",999
computata . . . . .	2. 19. 26,051
accelerat <i>Lepaute</i>	— 01'. 0".948

30<sup>mo</sup> Aprilis.

22. <sup>h</sup> 39'. 13".	. . . . .	6. <sup>h</sup> 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.<sup>h</sup> 47.

22. <sup>h</sup>	47.	35.	.	.	.	.	.	6. <sup>h</sup>	09.	09.
...	48.	38.	.	.	.	.	.	..	08.	06.

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Meridies	2. <sup>h</sup>	28'.	21"	, 775
correctio	.	.	— 13,	693

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AR. ☉ observata	2. <sup>h</sup>	28.	08"	, 082
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computata	2. <sup>h</sup>	27.	0,	427
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accelerat <i>Lepaute</i>	—	01'.	07"	, 655
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## §. 6.

Altitudines solis ex aequo Maii 1<sup>mo</sup>.

22. <sup>h</sup>	44'.	46"	5	.	.	6. <sup>h</sup>	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. <sup>h</sup>	32'.	13"	, 183
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correctio	.	.	— 13,	234
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AR. ☉ observata	2. <sup>h</sup>	31'.	59"	, 949
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computata	2.	30.	48,	595.
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<i>Lepaute</i> accelerat:	—	1'.	11"	, 354.
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## §. 7.

Altitudines solis 3<sup>tio</sup> Maii ex aequo.

*Lepaute.*

22. <sup>h</sup>	53'. 48'', 5	. . . . .	6. <sup>h</sup>	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. <sup>h</sup>	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. <sup>h</sup> 39'. 55'', 711			
correctio	— 12, 758			
AR. observata	2. <sup>h</sup> 39. 42, 953			
comp.	2. 38. 26, 811			

*Lepaute* accelerat — 01', 16'', 142

Accelerationes enim vero fuerunt

Aprilis 28<sup>vo</sup> = 60'', 948.

30<sup>mo</sup> = 67, 655.

Maii 1<sup>mo</sup> meridie = 71, 354.

media nocte = 72, 148.

3<sup>tio</sup> = 76, 142.

Quorum si meridiem 1<sup>mo</sup> Maii observatum, qui motum horologii inde a 30<sup>mo</sup> Aprilis ad 1<sup>um</sup> Maii accelerasse, a 1<sup>mo</sup> Maii vero ad 3<sup>ium</sup> Maii retardasse perperam poneret, in rationem haud induxeris, conclusione interpolata motus fere acquabilis horologii colligetur, velut

Dif-

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

Ex quibus horologium accelerare, accelerationem vero ipsam retardare, intelligitur. Methodus accelerationem inde a meridie vero ad tempus observationum accuratissime definiendi per formulam  $n \Delta y + n \left( \frac{n-1}{2} \right) \Delta^2 y + \dots$ , (notantibus  $x$  verum meridiei tempus,  $\Delta x$  variationem diurnam, nempe  $\Delta x = 24^h$ ,  $n \Delta x$  variationem  $\tau_2 x$  inde a meridie usque ad observationem,  $y$  accelerationem meridiei,  $\Delta y$  primas,  $\Delta^2 y$  secundas accelerationum differentias,) constat.

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

## §. 8.

Azimutha observata theodolito 8 pollicum:  
*Scaephltaria superior*

	Index <i>Veneri</i>
I. 384°. 08'. 34''	
II. . . . . 35	
III. . . . . 24	
IV. . . . . 36	
Primae observationis medium	32'', 5
secundae . . . . .	30, 0
tertia . . . . .	32, 0
quartae . . . . .	33, 0
Omnium medium: <i>Scaephltaria</i>	384°. 08'. 31'', 8

## §. 9.

## §. 9.

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

*Lepaute*

20. <sup>h</sup>	12′.	01″.	. . .	243°.	36′.
	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:

*Scaephilaria: Vernerii indices*

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

## Solis limbus occidentalis:

<i>Lepaute.</i>	8 <sup>h</sup>	45'	03''	. . . . .	197°	0'
		45.	58	. . . . .		10.
<i>Scaephtlaria</i>	131°	56'	48''			
	8 <sup>h</sup>	51'	31'',5	. . . . .	198°	10'

§. 10.

Observationes 1808 habitae Maii 2<sup>do</sup>.

## Altitudines solis ex aequo:

<i>Lepaute.</i>						
22. <sup>h</sup>	52'	34''	. . . . .	6. <sup>h</sup>	18'	02''.
	53.	37	. . . . .		16.	59.
	54.	40	. . . . .		15.	56.
	55.	43	. . . . .		14.	53.
	56.	45	. . . . .		13.	50.
Hinc meridies	2. <sup>h</sup>	35'	18''.			
correctio	. . . . .	—		12,	769	
A.R. ☉ observata	2. <sup>h</sup>	35'	05'', 231			
computata	2.	37.	33, 692			
Retardatio horologii	+	2'.	28'', 461			

Exinde horologii index duobus minutis integris fuit promotus.

Maii 3<sup>tio</sup>.

22. <sup>h</sup>	54'	53.	. . . . .	6. <sup>h</sup>	27'	14'',5
	55.	56.	. . . . .		26.	13.
	56.	58.	. . . . .		25.	10.
	58.	01.	. . . . .		24.	07, 6
	59.	03.	. . . . .		23.	05, 0

23.<sup>h</sup>

23. <sup>h</sup>	0.	05.	.	.	.	22.	02, 5
	01.	08.	.	.	.	21.	0.
	02.	10, 5	.	.	.	19.	57, 5
	03.	14.	.	.	.	18.	54.
	04.	17.	.	.	.	17.	52.
Meridics incorrectus					2. <sup>h</sup>	41'. 04'',	130
correctio	.	.	.	.		— 12,	567
AR. ☉ observata	.	.	.	.	2. <sup>h</sup>	40. 51,	563
computata	.	.	.	.	2.	41. 23,	293
retardat Lepaute	.	.	.	.	+	31'',	730

## §. II.

Maii 4<sup>to</sup>. et 5<sup>to</sup>.

4 <sup>to</sup> vesperi	5 <sup>to</sup> mane
6. <sup>h</sup> 27'. 49.	23. <sup>h</sup> 4'. 21''.
28. 51.	03. 18.
29. 53.	02. 16.
31. 58.	0. 12.
33. 0.	22. <sup>h</sup> 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. <sup>h</sup> 46'. 05'', 0
correctio	. + 27, 178
AR. ☉ observata	14. <sup>h</sup> 46'. 32'', 178
computata	14. 47. 08, 829
Retardatio Lepaute	+ 36'', 651

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 Maii 5<sup>to</sup>.

22. <sup>h</sup>	51'	57''	. . . . .	6. <sup>h</sup>	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.	05.
	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 aequo	2. <sup>h</sup>	48'	38''	389
correctio	. . . . .	—	12,	219
A.R. ☉ observata	. . . . .	2. <sup>h</sup>	48.	26, 170
computata	. . . . .	2.	49.	04, 3463
Retardatio	. . . . .	+	38''	1763

§. 12.

Maii 6<sup>to</sup>.

23. <sup>h</sup>	05'. 45".	. . . . .	6. <sup>h</sup>	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. <sup>h</sup>	52'. 25", 5
correctio	. . . . .	— 11, 845
A.R. ☉ observata	. . 2.	52'. 13, 655
computata	. . 2.	52. 55, 646.
Retardatio	. . . . .	+ 41", 991

Maii 7<sup>mo</sup>.

23. <sup>h</sup>	04'. 11".	. . . . .	6. <sup>h</sup>	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. <sup>h</sup>	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 :

Maii 2 <sup>do</sup> . . . . .	+	28'', 461	Differentias
3 <sup>tio</sup> . . . . .		31, 730	2'', 269
4 <sup>to</sup> . . . . .		34, 903	3, 173
5 <sup>to</sup> . . . . .		38, 176	3, 273
6 <sup>to</sup> . . . . .		41, 991	3, 815
7 <sup>mo</sup> . . . . .		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 5<sup>to</sup> 1808.

Apex turris *Scaephtlariensis* ad *Veneri* 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.<sup>h</sup> 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.<sup>h</sup> 37'. 26''.

## Indices:

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

3) 9.<sup>h</sup> 43'. 54''

## Indices:

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

4) 9.<sup>h</sup> 50'. 23''.

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

Maii 6<sup>to</sup> Limbus solis occidentalis :

		Indices		
<i>Scaephtilaria superior</i>	I.	76°.	29'.	48''.
	II.	.	.	64.
	III.	.	.	72.
	IV.	.	.	64.
	medium	76°.	30'.	02''.

1) *Lepaute.*

9. <sup>h</sup>	21'.	56''.	I.	146°	13'.	04''.
			II.	.	.	18.
			III.	.	.	20.
			IV.	.	.	08.
			medium	146°.	13'.	10''.

2) 9. <sup>h</sup>	34'.	03''.	I.	148°.	23'.	44''.
			II.	.	.	44.
			III.	.	.	60.
			IV.	.	.	56.
			medium	148°.	23'.	51''.

3) 9. <sup>h</sup>	50'.	02''.	I.	151°.	17'.	48''.
			II.	.	.	46.
			III.	.	.	60.
			IV.	.	.	56.
			medium	151°.	17'.	52'' <sup>5</sup>

4) 9. <sup>h</sup>	57'.	01''.	I.	152°.	34'.	24''.
			II.	.	.	24.
			III.	.	.	40.
			IV.	.	.	32.
			medium	152°.	34'.	30''.

## §. 15.

## Observationes azimuthorum in rationem inductae

sit	t.	angulus horarius.
	$\delta$	declinatio solis
	$\delta^1$	$= 90^\circ \sim \delta$
	$\Phi$	Latitudo geographica
	$\Phi^1$	$= 90^\circ \sim \Phi$
	$\alpha$	Azimuthum solis
	d	Semidiameter solis
	A	angulus observatus
erit	$\alpha$	$= \lambda \sim \mu$
Cotg.	$\lambda$	$= \frac{\sin \frac{1}{2} (\delta^1 - \Phi^1)}{\sin \frac{1}{2} (\delta^1 + \Phi^1)} \text{ Cotg. } \frac{1}{2} t$
Cotg.	$\mu$	$= \frac{\cos \frac{1}{2} (\delta^1 - \Phi^1)}{\cos \frac{1}{2} (\delta^1 + \Phi^1)} \text{ Cotg. } \frac{1}{2} t$

Azimuthum apicis turris *Scaephtlariensis* super horizonte speculae astronomicae

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

ad quas quidem formulas observationum rationes retuleris.

## §. 16.

## Azimuthorum

Observatio Ima Martii 3<sup>tio</sup> 1807

<i>Emery</i>	4. <sup>h</sup>	41'.	52'',5
acceleratio	— 1.	05.	04, 43
<i>Lepaute</i>	3.	36.	48, 07
acceleratio	— 01.		13, 639
Tempus sidereum	3.	35.	34, 431
AR. ☉ media	. . . 22.	41.	12, 809

Tempus medium			
proxime accedens	4. <sup>h</sup> 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	
	$\frac{1}{2} t = 35^\circ. 09'.$	03'', 45	

$\delta$	=	6.°	59'.	38'', 35
$\delta^1$	=	96.	59.	38, 35
$\frac{1}{2} \delta^1$	=	48.	29.	49, 17
$\frac{1}{2} \phi^1$	=	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. $\lambda$	.	.	.	=	9, 8461704	Cotg. $\mu$	=	0, 5543734

$\lambda$	=	54.°	56'.	29'', 2
$\mu$	=	15.	35.	23, 5
$\alpha$	=	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.

<i>Emery</i>	4. <sup>h</sup>	42'	44''.
<i>Lepaute</i>	3.	37.	39.
Tempus sidereum	3.	36.	26, 065
medium	4.	54.	24, 893
verum . .	4.	42.	03, 96
t =	70°.	30'	59'', 4
$\frac{1}{2}$ t =	35.	15.	29, 7
$\delta$ =	6.	59.	37, 5
I =	27.	33.	35, 27
II =	69.	26.	02, 27
$\lambda$ =	55.	02.	54, 8
$\mu$ =	15.	38.	56, 3
$\alpha$ =	70.	41.	51, 1
A =	33.	44.	06, 9
D =	36°.	57'.	44'', 2

## §. 18.

## Observatio tertia eodem.

<i>Emery</i>	4. <sup>h</sup>	43'.	35'', 5
<i>Lepaute</i>	3.	38.	31, 338
Tempus sidereum	3.	37.	17, 702
medium	4.	55.	16, 3892
verum	4.	42.	55, 4623
t =	70°.	43'.	51'', 93
$\delta$ =	6.	59.	36, 71
I =	27.	33.	34, 85
II =	69.	26.	01, 85
$\mu$ =	15.	42.	29, 7
$\lambda$ =	55.	09.	19, 4
$\alpha$ =	70.	51.	49, 1
A =	33.	54.	06, 9
D =	36°.	57'.	42'', 2

59<sup>2</sup>

## §. 19.

## §. 19.

Observatio IV<sup>ta</sup> eodem.

<i>Emery</i>	4. <sup>h</sup>	44′	27″.
<i>Lepaute</i>	3.	39.	22, 9713
Tempus sidereum	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
Λ =	34.	04.	06, 9
D =	36°.	57′.	39″, 4

## §. 20.

Observatio V<sup>ta</sup> eodem.

<i>Emery</i>	4. <sup>h</sup>	45′.	19″, 5
<i>Lepaute</i>	3.	40.	15, 6058
Tempus sidereum	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
Λ =	34.	14.	06, 9
D =	36°.	57′.	47″, 5

## §. 21.

## §. 21.

		Observatio VI <sup>ta</sup> eodem.		
	<i>Emery</i>	4. <sup>h</sup>	46'.	11'', 0
	<i>Lepaute</i>	3.	41.	07, 2379
Tempus sidereum		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 <sup>ma</sup> eodem.		
	<i>Emery</i>	4. <sup>h</sup>	47'.	03''.
	<i>Lepaute</i>	3.	41.	59, 3712
Tempus sidereum		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<sup>va</sup> eodem.

<i>Emery</i>	4. <sup>h</sup>	47′	55″
<i>Lepaute</i>	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
<hr/>			
D =	36°.	57′.	45″, 4

Observatio IX<sup>na</sup> eodem.

<i>Emery</i>	4. <sup>h</sup>	48′	46″, 5
<i>Lepaute</i>	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
<hr/>			
D =	36°.	57′.	39″ 9

## §. 23.

Observatio Xma 1mo Maii Theolito 8. pollicum.

Lepaute 20.<sup>h</sup> 12'. 01".

AR. ☉ observata vera 30. April 2.<sup>h</sup> 28'. 08", 082.

Azimuthum observatum . . 20. 12. 01.

Differentia temporum 17.<sup>h</sup> 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 sidereum 20.<sup>h</sup> 10'. 51", 1221

medianm . . . 17. 38. 04, 351

verum . . . . 17. 41. 02, 5886

$$t = 94^\circ. 44'. 21'', 17$$

$$\delta = 14. 47. 11, 352$$

$$I = 16. 40. 10, 8$$

$$II = 58. 32. 37, 8$$

$$\lambda = 72. 48. 00, 7$$

$$\mu = 30. 36. 56, 5$$

$$\alpha = 103. 24. 57, 2$$

$$A = 140. 22. 38, 3$$

$$D = 36^\circ. 57'. 41'', 1$$

Obser-

Observatio XI<sup>ma</sup> eodem.

<i>Lepaute</i> . .	20. <sup>h</sup>	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
<hr/>				
D =	36°.	57′.	46″,	64

Observatio XII<sup>ma</sup> eodem.

<i>Lepaute</i>	20. <sup>h</sup>	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.	41.	56,	9
A =	139.	42.	38,	3
<hr/>				
D =	36°.	57′.	41″,	4

## §. 24.

Observatio XIII<sup>ta</sup> eodem.

	<i>Lepaute</i>	20. <sup>h</sup>	16'. 39".
Tempus sidereum	20.	15.	29, 12
medium	17.	42.	41, 5882
verum . .	17.	45.	39, 8527
t =	93°.	35'.	20", 209
δ =	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<sup>ta</sup> eodem.

	<i>Lepaute</i>	20. <sup>h</sup>	17'. 34".
Tempus sidereum	20.	16.	24, 1153
medium	17.	43.	36, 4364
verum	17.	46.	34, 7061
t =	93°.	21'.	19", 408
δ =	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<sup>va</sup> eodem.

<i>Lepaute</i>	20. <sup>h</sup>	22'.	12''.
Tempus sidereum	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
α =	101.	34.	57, 6
A =	138.	32.	38, 3
<hr/>			
D =	36°.	57'.	40'', 7

§. 25.

Observatio XVI<sup>ta</sup> eodem.

<i>Lepaute</i>	20. <sup>h</sup>	23'.	08''.
Tempus sidereum	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
α =	101.	24.	53, 05
A =	138.	22.	38, 3
<hr/>			
D =	36°.	57'.	45'', 25

Obser-

Observatio XVII<sup>ma</sup> eodem.

<i>Lepaute</i> . . .	20. <sup>h</sup>	24′	03″
Tempus sidereum . . .	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
<hr/>			
D =	36°.	57′.	39″, 57

Observatio XVIII<sup>va</sup> eodem.

<i>Lepaute</i> . . .	20. <sup>h</sup>	24′	59″, 3333
Tempus sidereum . . .	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
<hr/>			
D =	36°.	57′.	46″, 96

Observatio XIX<sup>na</sup> eodem.

<i>Lepaute</i>	20. <sup>h</sup>	56′.	50″.
Tempus sidereum	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
<hr/>			
D =	36°.	57′.	42″, 0

Observatio XX<sup>na</sup> eodem.

<i>Lepaute</i>	20. <sup>h</sup>	38′.	54″.
Tempus sidereum	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
<hr/>			
D =	36°.	57′.	46″, 9

Obser-

Observatio XXI<sup>ma</sup>.

Tempus observationis verum	18. <sup>h</sup>	13′	22″, 6
$\delta$ =	14. <sup>o</sup>	47′	36″, 2
$\alpha$ =	97.	34.	46, 7
D =	36.	57.	40, 6

Observatio XXII<sup>da</sup>.

Tempus verum	18. <sup>h</sup>	15′	13″, 11
$\delta$ =	14. <sup>o</sup>	47′	37″, 68
$\alpha$ =	97.	14.	46, 4
D =	36.	57.	40, 9

Observatio XXIII<sup>tia</sup>.

Tempus verum	18. <sup>h</sup>	16′	08″, 46
$\delta$ =	14. <sup>o</sup>	47′	38″, 4
$\alpha$ =	97.	04.	46, 2
D =	36.	57.	40, 1

Observatio XXIV<sup>ta</sup>.

Tempus verum	18. <sup>h</sup>	17′	03″, 81
$\delta$ =	14. <sup>o</sup>	47′	39″, 1
$\alpha$ =	96.	54.	45, 0
D =	36.	57.	41, 3

Observatio XXV<sup>ta</sup>.

Tempus verum	6. <sup>h</sup>	12′	03″, 68
$\delta$ =	14. <sup>o</sup>	56′	48″, 8
$\alpha$ =	102.	16.	46, 6
D =	36.	57.	42, 1

Obser-

Observatio XXVI<sup>ta</sup>.

Tempus verum 6.<sup>h</sup> 12'. 59'', 03  
 $\delta = 14^{\circ}$ . 56'. 49'', 47  
 $\alpha = 102$ . 26. 46, 2  
D = 36. 57. 41, 7

Observatio XXVII<sup>ma</sup>.

Tempus verum = T = 6.<sup>h</sup> 18'. 31'', 14  
 $\delta = 14^{\circ}$ . 56'. 53'', 70  
 $\alpha = 103$ . 26. 47, 8  
D = 36. 57. 43, 3

Observatio XXVIII<sup>va</sup>.

T = 6.<sup>h</sup> 41'. 07'', 31  
 $\delta = 16^{\circ}$ . 21'. 14'', 5  
 $\alpha = 108$ . 28. 32, 2  
D = 36. 57. 48, 4

§. 27.

Observationes 1808. Maii 5<sup>to</sup> habitaeObservatio XXIX<sup>na</sup>.

T = 6.<sup>h</sup> 47'. 55'', 22  
 $\delta = 16^{\circ}$ . 21'. 19'', 3  
 $\alpha = 109$ . 42. 40, 2  
D = 36. 57. 45, 5

XXX<sup>ma</sup>.

T = 6.<sup>h</sup> 54'. 22'', 21  
 $\delta = 16^{\circ}$ . 21'. 23, 89  
 $\alpha = 110$ . 53. 10, 8  
D = 36. 57. 42, 1

XXXI<sup>ma</sup>.

XXXI<sup>ma</sup>

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

XXXII<sup>da</sup> Maii 6<sup>to</sup>.

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

XXXIII<sup>tia</sup>.

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

XXXIV<sup>ta</sup>.

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

XXXV<sup>ta</sup>.

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

Ad summam igitur omnium observationum ratione subducta azimutha  
prodierunt:

1807. Martii 3 <sup>tio</sup>	I.	36. <sup>o</sup>	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 1 <sup>mo</sup>	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 5 <sup>to</sup> .	XXVIII. . .	48", 4
	XXIX. . .	45, 5
	XXX. . .	42, 1
	XXXI. . .	46, 3
Maii 6 <sup>to</sup> .	XXXII. . .	42, 5
	XXXIII. . .	47, 8
	XXXIV. . .	41, 3
	XXXV. . .	40, 4

Hinc denique, omnium medium

Azimuthum  $36^{\circ}. 57'. 43'', 2$  *Scaephylariam* 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 terrestri quam accuratissime definitur:

- I<sup>mo</sup> 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.
- II<sup>do</sup> Latitudo loci geographica, quam accuratissime definita, invariabilis igitur, ponitur;
- III<sup>io</sup> Itaque differentietur formula azimuthi solis.

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

erit

$$d \alpha = \frac{1}{2} d t \cot t \sin 2 \alpha - \frac{\cos \beta \sin^2 \alpha}{\cos^2 \delta \sin t} d \delta - \sin \beta \sin 2 \alpha d t.$$

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§. 30.

- 1) Terminus primus  $\frac{1}{2} dt \cot t \sin 2\alpha$  evanescet, si  $\cot t = 0$ ,  $t$  igitur  $= 90^\circ$ , sive si angulus horarius  $= 6^h$ . Ex quibus infertur: Si azimutha sub horam 6<sup>am</sup> 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  $dt$  per oppositionem tolli, *εὐκαρίστη* igitur azimutha definiendi horam sextam esse concluditur.
- 2) Terminus secundus  $\frac{\cos \beta \sin^2 \alpha}{\cos 2\delta \sin t} d\delta$  ad minimum deprimatur, si, positis  $t$ ,  $\alpha$  et  $\beta$  invariabilibus,  $\cos^2 \delta$  fit maximum, sive  $\delta = 0$ . Quanto propius igitur sol ad aequatorem accedat, tanto minoris momenti ad azimuthi rationem, si a vera declinatione solis aliquantulum aberraveris, intelligitur. Quae cum constant, 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 occidet, si  $\sin^2 \alpha = 0$  sive  $= 180^\circ$ ; ad summum autem veniet, si  $\alpha = 90^\circ$ .

Quae si cum iis, quae ante de termino primo dicta sunt, comparaveris, sequitur, angulo horario, quo  $\alpha$  aequetur 90 gradibus, ad calculos revocato, azimutha observanda eo accuratiora fore, quo serius ultra id temporis anguli horarii computati extendantur. Ad formulam quidem  $\cos t = \operatorname{tg} \delta \operatorname{Cotg} \beta$  tempora inveni

3 <sup>tio</sup>	Martii	1807.	=	5. <sup>h</sup>	35 <sup>l</sup> .
1 <sup>mo</sup>	Maii	1808.	=	5.	07.
5 <sup>to</sup>	—	—	=	4.	59.
6 <sup>to</sup>	—	—	=	4.	58.

Quae

Quae quidem cum pateat ita cecidisse, ut azimutha 1<sup>mo</sup> Maii multo post 5.<sup>h</sup> 7', hora enim sexta, plura 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.<sup>h</sup> 35', ubi  $\alpha = 90^\circ$  aequatur, definita sunt, ita mirabiliter conspirent, ut ne quidem ultra 0'', 8 temporis inter se distent, errori, qui vel ad ter mille sexcentessimam horae partem nedum plus assurgat, in azimutha, quod definiimus, nequicquam 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 invento, tantum abfuit, ut omnem, quam in definiendo posui, curam considerare 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. habitatum series:

Altitudines solis ex aequo Maii 10<sup>mo</sup> 1811. observatae.

Horologium *Lepaute*.

22. <sup>h</sup>	54'. 43''	. . .	7. <sup>h</sup>	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. <sup>h</sup> 08'. 06''			7307
correctio	. . .			— 12, 01
AR ☉ observata	3. <sup>h</sup> 07'. 54''			7207
computata	3. 05. 34, 7			
accelerat <i>Lepaute</i>	— 02'. 20''			0207

Altitudines solis ex aequo observatae Maii 12<sup>mo</sup> 1811.

*Lepaute*.

23. <sup>h</sup>	06'. 20''	. . .	7. <sup>h</sup>	25'. 32''
	07. 21.	. . .		24. 31.
	08. 22.	. . .		23. 30.
	09. 22, 5	. . .		22. 29.
	10. 23.	. . .		21. 28.
	11. 24.	. . .		20. 27.

23. <sup>h</sup>	12'. 25''	. . . . .	7. <sup>h</sup>	19'. 26''
	13. 26.	. . . . .		18. 25.
	14. 27.	. . . . .		17. 24.
	15. 28.	. . . . .		16. 23.
	16. 29, 5	. . . . .		15. 22.
Meridies incorrectus	3. <sup>h</sup>	15'. 55'', 6817		
correctio	. . . . .	— 11, 39		
AR ☉ observata	3. <sup>h</sup>	15'. 44'', 2917		
computata	3.	13. 22, 783		
acceleratio	—	02'. 21'', 5007		

Maii 13<sup>tio</sup>.

Lepaute.

23. <sup>h</sup>	14'. 13''	. . . . .	7. <sup>h</sup>	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. <sup>h</sup>	19'. 50'', 98		
correctio	. . . . .	— 11, 18		
AR ☉ observata	3. <sup>h</sup>	19'. 39'', 80		
computata	3.	17. 17, 8		
acceleratio	—	02'. 22'', 00		

§. 33.  
Maii 14<sup>to</sup>.

*Lepaute.*

23. <sup>h</sup>	05'	57''	. . .	7. <sup>h</sup>	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. <sup>h</sup>	23'	47''				4318
correctus			— 11,				30
AR ⊙ observata	3. <sup>h</sup>	23'	36''				1318
computata	3.	21.	13,				7
acceleratio	—	02'	22''				4318

Maii 17<sup>mo</sup>.*Lepaute.*

23. <sup>h</sup>	18'	47''	. . .	7. <sup>h</sup>	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. <sup>h</sup>	35'	39''				6937
correctus			— 11,				51
AR ⊙ observata	3. <sup>h</sup>	35'	28''				1837
computata	3.	33.	02,				550
accelerat Lepaute	—	02'	25''				6337

Maii

Maii 18<sup>vo</sup>.*Lepaute.*

23. <sup>h</sup>	27.	51".	. . . . .	7. <sup>h</sup>	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.<sup>h</sup> 39'. 39", 159  
 correctus . . . — 09, 94

AR ☉ observata 3.<sup>h</sup> 39'. 29", 219  
 computata 3. 37. 0, 541

accelerat *Lepaute* — 02'. 28", 678

§. 34.

Maii 19<sup>na</sup>.

23. <sup>h</sup>	28.	50", 25 . . . . .	7. <sup>h</sup>	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.<sup>h</sup> 43'. 37", 579  
 correctus . . . — 09, 750

AR ☉ observata . . 3.<sup>h</sup> 43'. 27", 829  
 computata 3. 40. 58, 892

accelerat *Lepaute* — 02'. 28", 937

Maii 19<sup>no</sup>.

Maii 19<sup>no</sup>. et 20<sup>mo</sup>.

Vesperis.		Mane.	
7. <sup>h</sup>	58'. 25'', 5 . . . . .	23. <sup>h</sup>	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. <sup>h</sup> 45'. 10'', 027		
correcta	. . . . . + 18, 130		
AR observata	15. <sup>h</sup> 45'. 28'', 157		
computata	15. 42. 58, 320		
accelerat <i>Lepaute</i>	— 02'. 29'', 837		

§. 35.

Azimutha observata.

Series Ima.

1811. 17<sup>mo</sup> Maii mane.Chronometrum *Emerynum*.*Wernerii* indices

1.	6. <sup>h</sup> 09'. 24''.	I.	. . . . . 0''.
2.	. . . . 12. 53.	II.	. . . . . 8.
3.	. . . . 14. 48.	III.	. . . . . 5.
4.	. . . . 17. 03.	IV.	. . . . . 5.
5.	. . . . 19. 01.		
6.	. . . . 21. 17.		
7.	. . . . 23. 12.		
8.	. . . . 25. 05		
9.	. . . . 27. 02, 5		
10.	. . . . 29. 15, 5		
medium tem- porum	6. <sup>h</sup> 19'. 54'', 1	15, 5 angulus decemplex =	1362°. 58'. 48''. Ind. I
			40. - II
			48. - III
			40. - IV

Medium 1362°. 58'. 44''.

Correctio indicum . . . . . — 4, 5

1362°. 58'. 39'', 5

Angulus simplicus 136°. 17'. 51'', 95

Horo-

Horologium *Lepaute* comparatum cum chronometro *Emeryno*.*Lepaute.*

ante observationes	{ 21. <sup>h</sup> 34'. 0" = 5. <sup>h</sup> 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<sup>da</sup>.1811. Maii 17<sup>mo</sup> mane.

Azimutha observata.

*Emery.*

1.	6. <sup>h</sup> 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. <sup>h</sup> 0. 14, 0
10.	. . . 01. 52. angulus decemplex = 1302°. 47'. 28". Ind. I
medium tem-	38. -- II
porum 6. <sup>h</sup> 53'. 30", 52	35. - III
	38. - IV

Medium 1302°. 47'. 34", 75

Correctio indicum . . . . . = 4, 5

1302°. 47'. 30", 25

Angulus simplicus = 130°. 16'. 45", 025

*Lepaute.**Emery.*

ante observationes	{ 10. <sup>h</sup> 13'. 0" = 6. <sup>h</sup> 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 temporesidereo . . . . . 1.<sup>h</sup> = -0", 0444.

Series III<sup>ia</sup>.1811. Maii 17<sup>mo</sup>. vesperi.

<i>Emery.</i>		<i>Indices Vernerii.</i>
1.	5. <sup>h</sup> 49'. 48'', 0	I. . . . . 0''.
2.	. . . 53. 58, 5	II. . . . . 10.
3.	. . . 56. 52, 0	III. . . . . 0.
4.	. . . 58. 59, 0	IV. . . . . 10.
5.	6. 0. 49, 0	<hr/>
6.	. . . 3. 39, 0	correctio . . . 5'', 0
7.	. . . 6. 28, 5	
8.	. . . 10. 05, 0	
9.	. . . 12. 29, 0	
10.	. . . 14. 28, 0	angulus decemplex = 662°. 49'. 03'', 75
medium tem- porum = 6. <sup>h</sup> . 02'. 45'', 6		correctus . . . . . — 5, 0
		<hr/>
		662°. 48'. 58'', 75
		angulus simplicus = 66°. 16'. 53, 875

	<i>Lepaute.</i>	<i>Emery.</i>
ante observationes	{ 8. <sup>h</sup> 55'. 0'' = 5. <sup>h</sup> 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<sup>h</sup> = — 0'', 06232

§. 38.

Series IV<sup>ta</sup>.1811. Maii 18<sup>vo</sup>. mane.*Emery.*

1.	5. <sup>h</sup> 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 tem-  
porum = 6.<sup>h</sup> 05'. 26'', 15

angulus decemplex 1400°. 06'. 03'', 75

correctus . . . . -3, 75

1400°. 06'. 0'', 0

angulus simplus = 140°. 0'. 36'', 0

*Indices Vernerii.*

I. . . . . 0''.

II. . . . . 5.

III. . . . . 5.

IV. . . . . 5.

correctio. . 3'', 75

*Lepaute.**Emery.*

ante observationes { 21.<sup>h</sup> 22'. 0'' = 5.<sup>h</sup> 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<sup>h</sup> = - 0'', 06232

Series V<sup>ta</sup>.1811 Maii 18<sup>vo</sup>. mane.

<i>Emery.</i>			<i>Indices Vernerii.</i>
1.	6. <sup>h</sup> 38 <sup>'</sup>	23 <sup>''</sup> , 5	I. . . . 0 <sup>''</sup> .
2.	. . . 40.	27, 5	II. . . . 10.
3.	. . . 42.	31, 0	III. . . . 0.
4.	. . . 44.	40, 5	IV. . . . 10.
5.	. . . 47.	17, 0	<hr/>
6.	. . . 48.	59, 5	correctio . . 5 <sup>''</sup>
7.	. . . 50.	59, 0	
8.	. . . 52.	27, 0	
9.	. . . 54.	03, 5	
10.	. . . 56.	10, 0	
<hr/>			
medium tem. porum 6. <sup>h</sup>	47 <sup>'</sup>	35 <sup>''</sup> , 85	ang. decemplex = 1325°. 23'. 40 <sup>''</sup> . Ind. I.
			45. - II.
			45. - III.
			40. - IV.
			<hr/>
			1325°. 23'. 42 <sup>''</sup> , 5
			correctus . . . . . 5, 0
			<hr/>
			1325°. 23'. 37 <sup>''</sup> , 5
			angulus simplicus = 132°. 32'. 21 <sup>''</sup> , 75

	<i>Lepaute.</i>	<i>Emery.</i>
ante observationes	{ 21. <sup>h</sup> 54'. 0 <sup>''</sup> .	= 6. <sup>h</sup> 20'. 07 <sup>''</sup> , 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* . . . 1<sup>h</sup> = - 0'', 06232

§. 40.

Series VI<sup>ta</sup>.1811. Maii 18<sup>vo</sup>. vesperi.*Emery*

1.	6. <sup>h</sup>	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. me-  
dium. 6.<sup>h</sup> 18'. 29'', 225

*Indices Vernerii.*

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. <sup>h</sup> 25'. 0'' = 5. <sup>h</sup> 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 . . . . 1<sup>h</sup> = - 0''. 01024

§. 41.

§. 41.

Series VII<sup>ma</sup>.1811. Maii 19<sup>no</sup>. mane.*Emery.*

1.	5. <sup>h</sup>	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

temp. me-  
dium. 6.<sup>h</sup> 4". 59", 5

*Indices Vernerii.*

I.	...	0"
II.	...	10
III.	...	5
IV.	...	5

---

correctio. . . 5"

ang. decemplex = 1409°. 19'. 5". ind. I.

10.	-	II.
5.	-	III.
5.	-	IV.

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1409°. 19'. 6", 25

correctus . . . . 5, 0

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1409°. 19'. 1", 25

angulus simplus = 140°. 55'. 55", 125

*Lepaute.**Emery.*

ante observationes	{	21. <sup>h</sup> 24'. 0" = 5. <sup>h</sup> 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* . . . . 1<sup>h</sup> = - 0", 01024

§. 42.

## §. 42.

Series VIII<sup>va</sup>.1811. Maii 19<sup>ho</sup>. mane.*Emery.*

1.	6. <sup>h</sup>	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. me- dium.	6. <sup>h</sup>	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 . . . . . I, 25

1324°. 0'. 52'', 50

angulus simplus = 132°. 24'. 05'', 25

*Lepaute**Emery*

ante observationes	}	21. <sup>h</sup>	38'. 0'' = 6 <sup>h</sup> 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 . . . . . 1<sup>h</sup> = - 0'', 01024

Series IX<sup>na</sup>.1811. Maii 19<sup>no</sup> vesperi.

<i>Emery</i>				<i>Indices Vernerii.</i>
1.	6. <sup>h</sup> 07'.	20",	0	I. . . . 0".
2.	. . . . 8.	31,	75	II. . . . 15.
3.	. . . . 10.	0,	0	III. . . . 0.
4.	. . . . 11.	18,	5	IV. . . . 10.
5.	. . . . 13.	01,	0	<hr/>
6.	. . . . 14.	22,	0	correctio . . 6", 25
7.	. . . . 15.	44,	0	
8.	. . . . 16.	54,	5	
9.	. . . . 18.	18,	0	
10.	. . . . 19.	52,	5	ang. decemplex = 671°. 16'. 50". ind. I.
temp. me- dium.	6. <sup>h</sup> 13'.	32",	225	55 - II.
				50 - III.
				55 - IV.
				<hr/>
				671°. 16'. 52", 5
				correctio . . . . 6', 25
				<hr/>
				671°. 16'. 46", 25
				angulus simplicus = 67°. 07'. 40", 625

	<i>Lepaute.</i>	<i>Emery.</i>
ante observationes	9. <sup>h</sup> 32'. 0" = 5. <sup>h</sup> 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* . . . . 1<sup>h</sup> = - 0". 075

§. 44.

Series X<sup>ma</sup>.1811. Maii 19<sup>no</sup> vesperi.*Emery.*

1.	6. <sup>h</sup>	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. me-  
dium. 6.<sup>h</sup> 39′ 01″, 45

Indices

I.	...	0″.
II.	...	12.
III.	...	0.
IV.	...	5.
<hr/>		
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. <sup>h</sup> 56′. 0″ = 6 <sup>h</sup> 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 . . 1<sup>h</sup> = - 0″, 075 prae temp. sidereo.

## §. 45.

Azimutha observata ad calculos revocata.

Series Ima.

1811. Maii 17<sup>mo</sup>. mane.tempore chronom. *Emery* . . . 6<sup>h</sup>. 19'. 54'', 1tempus observationis . . . 6<sup>h</sup>. 19'. 54'', 1

tempus comparationis 5. 58. 27, 4

differentia = 21' 26'', 7

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

<i>Lepaute.</i>	<i>Emery.</i>
21 <sup>h</sup> . 34'. 0'', 000	= 5 <sup>h</sup> . 58'. 27'', 4
+ 21. 26, 514	= + 21. 26, 7
21 <sup>h</sup> . 55'. 26'', 514	= 6 <sup>h</sup> . 19'. 54. 1

Acceleratio *Lepaute* prae tempore sidereo — 2'. 24'', 868tempus sidereum 21<sup>h</sup>. 53'. 01'', 646

Asc. ☉ media — 3. 33. 04, 308

Medium propius accedens tempus 18<sup>h</sup>. 19'. 57'', 338

acceleratio — 3. 01, 51

tempus medium 18<sup>h</sup>. 16'. 55'', 828Elementa solis ad illustr. *de Lambre.*

Longitudo.	Perigeum.	M	A	B	C	D	E	F	N
1811 = 9 <sup>s</sup> . 10°. 12'. 16'', 1	..... 9 <sup>s</sup> . 09°. 40'. 24'', 0	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 <sup>h</sup> . = . . . . . 44. 21, 2	9. 09. 40. 46, 9	24.	762.	648.	884.	690.	186.	729.	518.
16 <sup>h</sup> . = . . . . . 39, 4	1. 24. 01. 03, 5	25.	25.	2.	3.				
55'', 8 . . . . . 2, 3	4. 14. 20. 16, 6	49.	787.	650.	887.				
☉ . . 1 <sup>s</sup> 24° 01'. 03'', 5	4. 14. 20. 2, 76					27			
Aeq. Centr. 1. 20. 36, 8						814			
Var. sec. - - - - - 0, 2									
A { - - - - - 3, 1	Obliq. Eclipt. 1800 = 23°. 27'. 57'', 0							Aeq. temp. — 3'. 57'', 1	
- - - - - 0, 1	Variat. secul. - - - - - 5, 92							Var. sec. . . . + 0'', 13	
- - - - - 0, 6	Nutat. ☉ = - - - - - 9, 5							Aequat. minor. 0, 00	
BC - - - - - 24, 1	Nutat. ☉ = - - - - - 0, 1							Aeq. temp. — 3'. 56'', 97	
BD - - - - - 4, 6	= 23°. 27'. 41', 48								
BE - - - - - 7, 2									
BF - - - - - 1, 0	fin ε = 9. 6000 283								
Nut. ☉ - - - - - 2, 0	fin ☉ = 9. 9153 236								
Nut. ☉ - - - - - 0, 2	sin δ = 9. 51535 19								
Aberr. ☉ - - - - - 0, 9	δ = 19°. 07' 24'', 7								
☉ 1 <sup>s</sup> . 23°. 22', 18'', 1									

tem-

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

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

$\cot \frac{1}{2} t = 0. 0396311$  . . . . .  $0. 0396311$   
 $\sin I = 9. 3986330$      $\text{cof. I} = 9. 9859393$   
 $C \sin II = 0. 0795205$      $C. \text{cof. II} = 0. 2566859$   


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 $\cot \lambda = 9. 5177846$      $\cot \mu = 0. 2822563$   
 $\lambda = 71^{\circ}. 45'. 56'', 7$   
 $\mu = 27. 34. 06, 8$   
 $\alpha = 99. 20. 03, 5$   
 $D = 136. 17. 51, 9$   
 azimuthum = 36°. 57'. 48'', 4

## §. 46.

Series II<sup>da</sup>.

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

Series III<sup>ta</sup>.1811. Maii 17<sup>mo</sup>. vesperi.

<i>Emery</i>	=	6. <sup>h</sup> 02'. 45'', 6
<i>Lepaute</i>	=	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
$\delta$	=	19. 14. 05, 1
(I)	=	14. 26. 43, 95
(II)	=	56. 19. 10, 95
$\lambda$	=	73. 21. 55, 1
$\mu$	=	29. 52. 52, 9
$\alpha$	=	103. 14. 48'', 1
D	=	66. 16. 53, 9
azimuthum	=	36°. 57'. 54'', 1

Series IV<sup>ta</sup>.1811. Maii 18<sup>vo</sup>. mane.

<i>Emery</i>	=	6. <sup>h</sup> 05'. 26'', 15
<i>Lepaute</i>	=	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
$\delta$	=	19. 20. 52, 9
(I)	=	14. 23. 20, 05
(II)	=	56. 15. 47, 05
$\lambda$	=	73. 18. 22, 3
$\mu$	=	29. 44. 24, 3
$\alpha$	=	103. 02. 46, 6
D	=	140. 0. 36, 0
azimuthum	=	36.° 57. 49'', 4

## §. 47.

Series V<sup>ta</sup>.1811. Maii 18<sup>vo</sup>. mane.

<i>Emery.</i>	=	6. <sup>h</sup> 47'. 35",	85
<i>Lepaute.</i>	=	22. 21. 30,	384
tempus sidereum	=	22. 19. 02,	38
medium	=	18. 38. 58,	16
verum	=	18. 42. 54,	47
$\frac{1}{2}$ t	=	39°. 38'. 11",	45
$\delta$	=	19. 21. 16,	6
(I)	=	14. 23. 08,	2
(II)	=	56. 15. 35,	2
$\lambda$	=	70. 9. 59,	3
$\mu$	=	25. 24. 24,	3
$\alpha$	=	95. 34. 23,	4
D	=	132. 32. 21,	7
azimuthum	=	36°. 57'. 58",	1

Series VI<sup>ta</sup>.1811 Maii 18<sup>vo</sup>. vesperi.

<i>Emery</i>	=	6. <sup>h</sup> 18'. 29",	225
<i>Lepaute</i>	=	9. 53. 5,	441
tempus sider.	=	9. 50. 36,	377
medium	=	6. 8. 38,	862
verum	=	6. 12. 34,	12
$\frac{1}{2}$ t	=	46°. 34'. 15",	9
$\delta$	=	19. 27. 42,	4
(I)	=	56. 12. 22,	3
(II)	=	14. 19. 55,	3
$\lambda$	=	74. 15. 12,	5
$\mu$	=	31. 14. 4,	9
$\alpha$	=	105. 29. 17,	4
D	=	68. 31. 40,	6
azimuthum	=	36°. 57'. 36",	8

Series

Series VII<sup>ma</sup>.1811. Maii 19<sup>no</sup>. mane.

<i>Emery</i>	=	6. <sup>h</sup>	4′	59″	5
<i>Lepaute</i>	=	21.	38.	56,	03
tempus sidereum	=	21.	36.	27,	19
medium	=	17.	52.	34,	04
verum	=	17.	56.	28,	45
$\frac{1}{2} t$	=	45°.	26′.	26″	5
$\delta$	=	19.	34.	11,	5
(I)	=	14.	16.	40,	75
(II)	=	56.	09.	07,	75
$\lambda$	=	73.	41.	59,	9
$\mu$	=	30.	16.	12,	3
$\alpha$	=	103.	58.	12,	2
D	=	140.	55.	54,	1
azimuthum	=	36°.	57′.	41,	9

§. 48.

Series VIII<sup>va</sup>.1811. Maii 19<sup>no</sup>. mane.

<i>Emery</i>	=	6. <sup>h</sup>	53.	12″	30
<i>Lepaute</i>	=	22.	27.	10,	99
tempus sidereum	=	22.	24.	42,	14
medium	=	18.	40.	41,	10
verum	=	18.	44.	35″	59
$\frac{1}{2} t$	=	39°.	25′.	33″	57
$\delta$	=	19.	34.	37,	9
(I)	=	14.	16.	27,	55
(II)	=	56.	8.	54,	55
$\lambda$	=	70.	8.	41,	6
$\mu$	=	25.	17.	39,	0
$\alpha$	=	95.	26.	20,	6
D	=	132.	24.	05,	1
azimuthum	=	36°.	57′.	44″	5

Series

Series IX<sup>na</sup>.1811. Maii 19<sup>no</sup>. vesperi.

<i>Emery</i>	=	6. <sup>h</sup> 13'. 32'',	225
<i>Lepaute</i>	=	9. 48. 15,	813
tempus sidereum	=	9. 45. 46,	420
medium	=	5. 59. 53,	718
verum	=	6. 3. 46,	998
$\frac{1}{2}$ t	=	45. 28'. 22'',	485
$\delta$	=	19. 40. 43,	8
(I)	=	14. 13. 24,	6
(II)	=	56. 5. 51,	6
$\lambda$	=	73. 45. 54,	4
$\mu$	=	30. 19. 39,	0
$\alpha$	=	104. 05. 33,	4
D	=	67. 7. 40,	6
azimuthum	=	36. <sup>o</sup> 57'. 52'',	8

Series X<sup>ma</sup>.1811. Maii 19<sup>no</sup>. vesperi.

<i>Emery</i>	=	6. <sup>h</sup> 39'. 01'',	45
<i>Lepaute</i>	=	10. 13. 45,	73
tempus sidereum	=	10. 11. 16,	30
medium	=	6. 25. 19,	53
verum	=	6. 29. 12,	73
$\frac{1}{2}$ t	=	48. <sup>o</sup> 39'. 05'',	47
$\delta$	=	19. 40. 57,	8
(I)	=	14. 13. 17,	6
(II)	=	56. 5. 44,	6
$\lambda$	=	75. 23. 58,	7
$\mu$	=	33. 10. 49,	9
$\alpha$	=	108. 34. 48,	6
D	=	71. 37. 9,	1
azimuthum	=	36. <sup>o</sup> 57'. 39'',	5

Cum igitur azimutha decem serierum sint:

Seriei	I <sup>mae.</sup>	36°.	57'.	48",	4
	II <sup>dae.</sup>	.	.	.	51, 1
	III <sup>tiae.</sup>	.	.	.	54, 1
	IV <sup>tae.</sup>	.	.	.	49, 4
	V <sup>tae.</sup>	.	.	.	58, 1
	VI <sup>tae.</sup>	.	.	.	36, 8
	VII <sup>mae.</sup>	.	.	.	41, 9
	VIII <sup>vae.</sup>	.	.	.	44, 5
	IX <sup>nae.</sup>	.	.	.	52, 8
	X <sup>mae.</sup>	.	.	.	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 sexcentessimam horae partem fuisse definitum intelligitur.

Sed cum olim jam tum, eum Tabularium rei topographicae institueretur, azimuthum Monachii turris ecclesiae divinae 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.

28<sup>vo</sup>. Aprilis 1802.

Mane.

Vesperis.

## Series I.

19. <sup>h</sup> 20'. 24'', 8	4. <sup>h</sup> 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. <sup>h</sup> 53'. 6'', 5	4. <sup>h</sup> 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. <sup>h</sup> 6'. 54'', 3	0. <sup>h</sup> 6'. 54'', 6

## Observationes azimuthorum.

28<sup>vo</sup>. Aprilis 1812.

Tempora horologii.

Series	A.	B.	C.	D.
	6. <sup>h</sup> 24'. 43'', 5	6. <sup>h</sup> 36'. 42'', 8	6. <sup>h</sup> 55'. 36'', 0	6. <sup>h</sup> 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 <sup>o</sup> , 2	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. <sup>h</sup> 28'. 56'', 8	6. <sup>h</sup> 40'. 21'', 9	6. <sup>h</sup> 52'. 13'', 5	7. <sup>h</sup> 3'. 2'', 9
angulus multiplex decimalis	1389°, 5260	1368°, 0325	1613°, 9260	158°, 9145
angulus simplex decimalis	138, 9526	136, 8032	134, 4938	132, 3262
angulus simplex sexagesimalis	125.° 3'. 26'', 4	123.° 7'. 22'', 5	121.° 2'. 40'', 0	119.° 5'. 36'', 9

Obser-

## Observationes azimuthorum.

28<sup>vo</sup>. Aprilis 1802.

Tempora horologii.

Series.	E.	F.	G.	H.
	17. <sup>h</sup> 19'. 58'', 4	17. <sup>h</sup> 29'. 48'', 4	17. <sup>h</sup> 40'. 42'', 4	17. <sup>h</sup> 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.<sup>h</sup> 23'. 58'', 8    17.<sup>h</sup> 33'. 22'', 7    17.<sup>h</sup> 44'. 9'', 0    17.<sup>h</sup> 55'. 16'', 4

angulus multiplex decimalis 265°, 6570    286°, 3025    370°, 6280    406°, 2915

angulus simplex decimalis 26, 5657    28, 6302    31, 2190    33, 8576

angulus simplex sexagesimalis 23°. 54'. 32'', 9    25°. 46'. 2'', 0    28°. 5'. 49'', 6    36°. 28'. 18'', 8

## §. 52.

Altitudines solis ex aequo.

29<sup>no</sup>. Aprilis 1812.

Mane.

Vesperi.

## Series I.

19. <sup>h</sup> 14'. 4", 0	5. <sup>h</sup> 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. <sup>h</sup> 30'. 18", 0	5. <sup>h</sup> 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 o.<sup>h</sup> 8'. 5", 3o.<sup>h</sup> 8'. 50", 4

Obser-

## Observationes azimuthorum.

29<sup>no</sup>. Aprilis 1802.

Tempora horologii.

	Series	I.	K.	L.	M.
	6. <sup>h</sup>	30'. 47'', 5	6. <sup>h</sup> 40'. 3'', 0	6. <sup>h</sup> 48'. 42'', 0	6. <sup>h</sup> 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. <sup>h</sup>	34'. 7'', 7	6. <sup>h</sup> 43'. 4'', 3	6. <sup>h</sup> 51'. 0, 3	7. <sup>h</sup> 0'. 35'', 2
angulus multiplex decimalis	1381°, 0625	1364°, 1860	1079°, 1000	1595°, 8755	
angulus simplex decimalis	138, 1062	136, 4186	134, 9872	132, 9896	
angulus simplex sexagesimalis	124.° 17'. 44'', 2	122.° 46'. 36'', 3	121.° 23'. 55'', 5	119.° 41'. 26'', 4	

Obser-

## Observationes azimuthorum.

29<sup>no</sup>. Aprilis 1802.

Tempora horologii.

	Series	N.	O.	P.
	17. <sup>h</sup>	51'. 31'', 0	18. <sup>h</sup> 1'. 58'', 4	18. <sup>h</sup> 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  
temporum17.<sup>h</sup> 55''. 10', 1    18.<sup>h</sup> 5'. 51'', 6    18.<sup>h</sup> 19', 31'', 9

angulus multiplex decimalis    331°, 9055    357°, 1905    469°, 0165

angulus simplex decimalis    33, 1905    25, 7621    39, 0847

angulus simplex  
sexagesimalis

29°. 52'. 17'', 4    32°. 11'. 9'', 4    35°. 10'. 34'', 5

§. 53.

Altitudines solis ex aequo.

Mane.	Series I.	Vesperi.
19. <sup>h</sup> 49'. 49", 5		4. <sup>h</sup> 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. <sup>h</sup> 2'. 25", 8	4. <sup>h</sup> 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, 0	14. 14, 0

tempus horologii  
 meridie vero    0.<sup>h</sup> 10'. 52", 3      0.<sup>h</sup> 10'. 51", 3

Alti-

—————  
 Altitudines solis ex aequo.

7<sup>mo</sup>. Maii 1812.

Mane.

Vesperi.

Series I.

19. <sup>h</sup>	2'. 33", 2		5. <sup>h</sup>	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.<sup>h</sup> 1'. 0", 8

Series II.

19. <sup>h</sup>	13'. 20", 2		4. <sup>h</sup>	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.<sup>h</sup> 1'. 0", 8

Obser-

## Observationes azimuthorum

7<sup>mo</sup>. Maii 1802.

Tempora horologii.

Series	Q.	R.
	6. <sup>h</sup> 33'. 34'', 4	6. <sup>h</sup> 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.<sup>h</sup> 38'. 9'', 4 ∞ 6.<sup>h</sup> 51'. 7'', 3

angulus multiplex decimalis 1608°, 1850 1578°, 5085

angulus simplex sexagesimalis 120.° 36'. 49'', 7 118.° 23'. 17'', 3

## §. 54.

Altitudines solis ex aequo.

8<sup>vo</sup>. Maii 1802.

Mane.

Vesperi.

## Series I.

18. <sup>h</sup>	45'. 33'', 5	5. <sup>h</sup>	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.<sup>h</sup> 3'. 4'', 6

## Series II.

19. <sup>h</sup>	7'. 13'', 0	4. <sup>h</sup>	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.<sup>h</sup> 3'. 4'', 6

Obser-

## Observationes azimuthorum

8vo. Maii 1802.

Tempora horologii.

Series	S.	T.
	6. <sup>h</sup> 26'. 29'', 0	6. <sup>h</sup> 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.<sup>h</sup> 30'. 43'', 1 6.<sup>h</sup> 42. 26. 7

angulus multiplex decimalis 1626°, 4765 1600, 5525

angulus simplicis sexagesimalis 121.° 59', 8'' 5 120.° 2'. 29'', 4

Altitudines solis ex aequo.

9<sup>no</sup>. Maii 1802.

Mane.	Series I.	Vesperi.
20. <sup>h</sup> 9'. 10", 5		4. <sup>h</sup> 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.<sup>h</sup> 5'. 5", 3

Series II.	
20. <sup>h</sup> 20'. 16", 0	3. <sup>h</sup> 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.<sup>h</sup> 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;  
 $\beta'$  = complemento latitudinis loci geographicae;  
 $t$  = angulo horario;  
 $\delta$  = declinationi solis;  
 $\delta'$  = 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;  
 $\alpha$  = 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:

$$\begin{aligned} \operatorname{tg} x &= \cotg \beta \operatorname{cost} \\ y &= \delta \cos x \end{aligned}$$

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

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

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

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

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

$$\text{fuit vero } \beta = 48^\circ. 08'. 20'', 8$$

$$d = 90^\circ. 14'. 20'',$$

$$m = -25'' \text{ vesperi;}$$

$$m = -21'', 9 \text{ mane;}$$

$$\text{azimuthum} = \alpha - m + n - z \text{ vesperi}$$

$$= -(\alpha - m + n) + z \text{ mane.}$$

§. 56.

En typus calculi seriei A.

$$\text{Tempus verum} = 6^{\text{h}} 21'. 31'', 2$$

$$t = 95^\circ. 22'. 48'''$$

$$\delta = 14^\circ. 05'. 01'', 8$$

$$\text{eotg } \beta = 9,9523232 \dots \sin \beta = 9,8720206 \dots \sin t = 9,9980826$$

$$\cos t = 8,9720213 \text{ n} \dots \cos y = 9,2076000 \dots \cos \delta = 9,9867452$$

$$\text{tg } x = 8,9243445 \text{ n} \quad \frac{C \cos x = 0,0015273}{\cos h = 9,0811479} \dots \frac{C \sin h = 0,0031786}{\sin z = 9,9880062}$$

$x = - 4^{\circ}. 48'. 08''.$	
$\delta' = 75. 54. 58, 2$	
$y = 80^{\circ}. 43'. 06'', 2$	
$h = 83^{\circ}. 04'. 35'', 3$	
$-r = - 06. 32, 4$	
$+p = - 08, 8$	
$h' = 82^{\circ}. 58'. 11'', 7$	
$d = 90. 14. 20, 0$	
$d' = 125. 03. 26, 4$	
$\text{Summa} = 298. 15. 58, 1$	
$\text{dimidium} = 149. 07. 59, 0$	
$-d = 90. 14. 20$	
$R = 58. 53. 39.$	
$149. 07. 59, 0$	
$-h' = - 82. 58. 11, 7$	
$R' = 96. 09. 47, 3$	
$\sin R = 9.9325825$	$z = 76^{\circ}. 35'. 46'', 8$
$\sin R' = 9.0612785$	$m = 25, 0$
$C \sin d = 0.0000038$	$z+m = 76^{\circ}. 36'. 11. 8$
$C \sin h' = 0.0032782$	
$\sin^2 \frac{1}{2} \alpha = 19.8971430$	
$5 \sin \frac{1}{2} \alpha = 9.9485715$	
$\frac{1}{2} \alpha = 62^{\circ}. 39'. 48'', 4$	
$\alpha = 125^{\circ}. 19'. 36'', 8$	
$+n = \dots 15'. 53'', 8$	
$125^{\circ}. 35'. 30'', 6$	
$-(z+m) = 76. 36. 11, 8$	
$\text{Denique azimuthum} = 48^{\circ} 59' 18'', 8$	

## 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.

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

$$\text{Speculam Regiam} = 88^{\circ}. 18'. 17'', 54$$

$$\text{Pontes Scaphonios} = 7^{\circ}. 54'. 13'', 30$$

$$\text{Turrem divae Virginis} = 83. 47. 29, 16$$

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 =  $29^{\circ}. 16'. 23'', 4$  Latitudine =  $48^{\circ}. 07'. 33'', 0$ .

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

## §. 59.

Ex quibus denique, angulo Aufkirchen et Scaephtlariam altam inter =  $160^{\circ}. 02'. 32'', 6$  aliunde cognito, azimuthum a celeberrimo militum Praefecto Henry observatum, si ad Speculam Regiam et Pontes Scaphonios referas, colligitur =  $36^{\circ}. 57'. 38'', 71$  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.

