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TABULÆ ASTRONOMICÆ SOLIS & LUNÆ.

*M*eriorem motum Solis ac Lunæ theoriam in peculiari tractatione sum complexus; quæ quoniam nimis est ampla, quam ut in hoc differentiationum fasciculo locum invenire possit, tabulas motuum solis & lunæ, quas inde construxi, hic saltem in usum Astronomorum exhibere constitui. Quanquam autem tot jam extant tabulæ solares, ut hæc theoria penitus exhausta videatur, tamen has meas tabulas a ceteris satis distinctas esse arbitror. Primum enim ex collatione omnis ævi observationum satis clare equidem mihi ostendisse videor, motum solis seu potius terræ nunc aliquanto concitationem esse quam olim, annique tropici quantitatem medium ab antiquissimis temporibus ad nostram ætatem usque aliquantillum minorem esse factam: neque hinc obscure mihi colligere licuit quantitatem anni tropici medium singulis seculis uno fere minuto secundo diminui. Hanc ob causam

Euleri Opuscula.

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sunt motus solis mediæ non erit uniformis, uti in omnibus tabulis æstimatur; vel potius longitudæ solis media, quæ ex hypothesi motus æquabilis colligitur, correctione indigebit, quæ eo major erit, quo longius ab initio hujus seculi, ad quod tabulas has accomodavi, receditur: in tabula scilicet longitudinis solis mediæ eam assumsi anni quantitatem, quam pro 1700 conclusi; unde ob continuam annorum diminutionem, tam ante quam post hanc epocham longitudo solis media hic exhibita augeri debet, quam correctionem ultima tabulæ primæ columnæ indicat, ex qua patet, quo longius in antiquitatem recedamus, hanc correctionem eo magis fore notabilem.

Deinde neminem fore credo, qui dubitet, quin locus terre ab attractione lunæ pauxillulum perturberetur; hujus igitur quoque perturbationis rationem habui, hincque ultimam tabellam adieci, ex qua patet, quantum tam locus solis, quam ejus distantia a terra pro quovis ad lunam adspectu immutetur. Interim tamen suspicor nunc quidem has correctiones, quas ex assumta solis parallaxi horizontali 12 $\frac{1}{2}$ deduxeram, aliquanto fore minores; quoniam ex collatione theorizæ lunæ cum observationibus satis evidenter comperisse mihi videor, parallaxin solis horizontalem esse 10, neque discrimen semissim unius minuti secundi superare. Malum tamen hanc tabellam retinere, cum error sit imperceptibilis, donec de vera hujus perturbationis quantitate certius nobis confiterit.

Locum

Loc
servacion
summo
correctio
versum
menta,
motum
enim æi
nutio di
modi re
equiden
fixarum
dam, c
Quocir
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Pe
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Etionis,
Induxit
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Locum apogei solis, & excentricitatem orbitæ ex observationibus Celeb. Monnier, quas ipse ad hunc scopum summo studio instituit, collegi, exhibita ante commemorata correctione a luna oriunda: motum apogei autem non diversum constitui a precessione æquinoctii; quoniam argumenta, quibus Astronomi utuntur ad singularem apogei motum evincendum, non satis firma videntur. Quamvis enim ætheri resistentiam tribuamus, a qua annorum imminentio dubio procul ortum habeat; tamen inveni ab hujusmodi resistentia positionem lineæ absidum non affici: unde equidem mallem, si ulta apogei variatio respectu stellarum fixarum certo demonstrari posset, eam actioni cometæ cojusdam, qui prope terram aliquando prateriisset, adscribere. Quocirca spero, nisi hæ tabulæ observationibus satis consonantia reprehendantur, eas saltem certo perfectioni theorie solis, cui universa Astronomia innititur, esse inservituras, ne me ob hanc causam mea multiliter operam meam in hoc negotio consumisse.

Pervenio nunc ad tabulas meas lunares, quarum indolem constructionisque rationem declarare nimis foret prolixum. Tantum igitur moneo, eas ex eadem theoria attractionis, quam Neutonus felicissimo successu in Astronomiam induxit, promanasse: cui theorie etiam si jam plures tabulæ lunares superstructe perhibeantur, tamen asseverare audeo, calculum, ad quem principium attractionis deducit, tantopere fieri implicatum, ut illæ tabulæ a theoria etiamnum

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longe discrepare sint censendae: neque ego etiam profiteor me in his tabulis omnes motus inæqualitates, quas theoria continet, esse complexum; verumtamen omnes eas æquationes exhibui, quæ in observationibus sunt perceptibiles atque ultra diuidium minutum primum effurgunt. Calculum enim mihi eousque producere licuit, ut titulos seu argumenta singularum inæqualitatum ostenderet: ac plerumque quidem æquationum veram quantitatem sola theoria determinavit, nonnullas vero per observationes definire sum coactus. Quædam etiam a distantia solis à terra seu ejus parallaxi horizontali pendent, quam primo novissimas observationes fecutus, $12''$, $30''$ starueram, sed postmodum has æquationes cum observationibus comparans deprehendi, parallaxin solis 10 minutis secundis maiorem assumi non posse. Ceterum qui has tabulas cum aliis adhuc editis comparabit, non leve discrimen statim in ipsis titulis seu argumentis æquationum animadverteret; cum in plerisque utar anomalia rum solis quam lunæ excentrica, quæ quomodo ex anomalia media sit invenienda, in utrisque tabulis seorsim exposui. Deinde quoque omnes tabulas ita instruxi, ut etiamsi æquationum numerus major sit quam in illis aliis, tamen calculis faciliter labore ac breviori temporis spatio expediri possit. Denique cum omnes casse, quæ locum lunæ afficiunt, simul ejus distantiam à terra immutent, plures tabulas adjunxi, quarum ope vera distantia lunæ à terra, ac proinde ejus parallaxis horizontalis cum diametro apparente cognosci potest.

Tabula

Anno Per Jul.
14
1014
2014
3014
4014
4114
4214
4314
4414
4514
4614
4714
4814
4914
5014
5114
5214
5314
5414
5514
5614
5714
5814
5914
6014
6114
6214
6314
6414
6434
6454
6474
6494

Tebula locorum mediorum solis.

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Anno per Jul Christi	Anno Decembri anni præteriti meridiano Secundum Meridiem ultimi veteri fab nivei	Longitudo media Solis	Anomalia media Solis	Longitudo Apogei Solis	Distantia Solis à Luna	Correctio addit. ad Longit. med.
14		8° 1° 37' 31"	7° 25° 5' 10"	0° 6° 32' 21"	5° 20° 43' 25"	11° 22' 40"
1014		8 9 17 31	7 18 26 50	20 50 41	0 1 34 15	8 6 0
2014		8 16 57 31	7 11 48 30	5 9 1	6 12 25 5	5 22 40
3014		8 24 37 31	7 5 10 10	19 27 21	0 23 15 55	3 12 40
4014		9 2 17 31	6 28 31 50	23 45 41	7 4 6 45	1 36 0
4114		9 3 3 31	6 27 52 0	5 11 31	5 11 11 50	1 28 10
4214		9 3 49 31	6 27 12 10	6 37 21	3 18 16 55	1 20 40
4314		9 4 35 31	6 26 32 20	8 3 11	1 25 22 0	1 13 30
4414		9 5 21 31	6 25 52 30	9 29 1	0 2 27 5	1 6 40
4514		9 6 7 31	6 25 12 40	10 54 51	10 9 32 10	1 0 0
4614		9 6 53 31	6 24 32 50	12 20 41	8 16 37 15	54 0
4714	19 7 39 31	6 23 53 0	13 46 31	6 23 42 20		48 10
4814	1019 8 25 31	6 23 13 10	15 12 21	5 0 47 25		42 40
4914	2019 9 11 31	6 22 33 20	16 38 11	3 7 52 30		37 30
5014	3019 9 57 31	6 21 53 30	18 4 1	1 14 57 35		32 40
5114	4019 10 43 31	6 21 13 40	19 29 51	11 22 2 40		28 10
5214	5019 11 29 31	6 20 33 50	20 55 41	9 29 7 45		24 0
5314	6019 12 15 31	6 19 54 0	22 21 31	8 6 12 50		20 10
5414	7019 13 1 31	6 19 14 10	23 47 21	6 13 17 55		16 40
5514	8019 13 47 31	6 18 34 20	25 13 11	4 20 23 0		13 30
5614	9019 14 33 31	6 17 54 30	26 39 1	2 27 28 5		10 40
5714	10019 15 19 31	6 17 14 40	28 4 51	1 4 33 10		8 10
5814	11019 16 5 31	6 16 34 50	29 20 41	11 11 38 15		6 0
5914	12019 16 51 31	6 15 55 0	0 56 31	9 18 43 20		4 10
6014	13019 17 37 31	6 15 15 10	2 22 21	7 25 48 25		2 40
6114	14019 18 23 31	6 14 35 20	3 48 11	6 2 53 30		1 30
6214	15019 19 9 31	6 13 55 30	5 14 1	4 9 58 35		40
6314	16019 19 55 31	6 13 15 40	6 39 51	2 17 3 40		10
6414	17019 20 41 11	6 12 35 50	8 5 41	0 24 8 45		0
6414	17219 20 50 43	6 12 27 52	8 22 51	5 7 33 46		1
6454	17419 20 59 55	6 12 19 54	8 40 1	9 20 58 47		2
6474	17619 21 9 7	6 12 11 56	8 57 11	2 4 23 43		4
6494	17819 21 18 19	6 12 3 58	9 14 21	6 17 48 49		6
6514	18019 21 27 31	6 11 56 0	9 31 31	11 1 13 50		10
6614	19019 22 13 31	6 11 16 10	10 57 21	9 8 18 55		40

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Tabula motus medii iofis in annis.

Annis Julianis	Motus Longitude.	Motus Anom. med.	Motus Apogei.	Motus Luna a Sole.	Annis ab 1700 ad long. med.	Correcti. ab 1700 ad long. med.
1	11° 29' 45" 40"	11° 29' 44' 49"	0° 0' 51"	4° 9° 37' 23"	200° 0' 4"	
2	11 29 31 20	11 29 29 37	0 1 43	8 19 14 47	400 0 2	
3	11 29 17 0	11 29 14 26	0 2 34	0 28 52 10	600 0 4	
4	0 0 1 50	11 29 58 24	0 3 26	5 20 41 0	800 0 6	
5	11 29 47 30	11 29 43 13	0 4 17	10 0 18 23	1000 0 10	
6	11 29 33 10	11 29 28 1	0 5 9	2 9 55 47	1500 0 22	
7	11 29 18 50	11 29 12 50	0 6 0	6 19 33 10	2000 0 40	
8	0 0 3 41	11 29 56 49	0 6 52	11 11 22 0	2500 1 2	
9	11 29 49 21	11 29 41 38	0 7 43	3 20 59 23	3000 1 30	
10	11 29 35 1	11 29 26 26	0 8 35	8 0 36 47	3500 2 1	
11	11 29 20 41	11 29 11 15	0 9 26	0 10 14 10	4000 2 40	
12	0 0 5 31	11 29 55 13	0 10 18	5 2 3 1	4500 3 22	
13	11 29 51 11	11 29 40 2	0 11 9	9 11 40 24	5000 4 10	
14	11 29 36 51	11 29 24 50	0 12 1	1 21 17 48	5500 5 2	
15	11 29 22 31	11 29 9 39	0 12 52	6 0 55 11	6000 6 0	
16	0 0 7 22	11 29 53 38	0 13 44	10 22 44 1	6500 7 2	
17	11 29 53 2	11 29 38 27	0 14 35	3 2 21 24	7000 8 10	
18	11 29 38 42	11 29 23 15	0 15 27	7 11 58 48	7500 9 22	
19	11 29 24 22	11 29 8 4	0 16 18	11 21 36 11	8000 10 40	
20	0 0 9 12	11 29 52 2	0 17 10	4 13 25 1	8500 12 2	
40	0 0 18 24	11 29 44 4	0 34 20	8 26 50 2	9000 13 30	
60	0 0 27 36	11 29 36 6	0 51 30	1 10 15 3	9500 15 2	
80	0 0 36 48	11 29 28 8	1 8 40	5 23 40 4	10000 16 40	
100	0 0 46 0	11 29 20 10	1 25 50	10 7 5 5	11000 18 10	
200	0 1 32 0	11 28 40 20	2 51 40	8 14 10 10	12000 24 0	
300	0 2 18 0	11 28 0 30	4 17 30	6 21 15 15	13000 28 10	
400	0 3 4 0	11 27 20 40	5 43 20	4 28 20 20	14000 32 40	
500	0 3 50 0	11 26 40 50	7 9 10	3 5 25 25	15000 37 30	
600	0 4 36 0	11 26 1 0	8 35 0	1 12 30 30	16000 42 40	
700	0 5 22 0	11 25 21 10	10 0 50	11 19 35 35	17000 48 10	
800	0 6 8 0	11 24 41 20	11 26 40	9 26 40 40	18000 54 0	
900	0 6 54 0	11 24 1 30	12 52 30	8 3 45 45	19000 1 0 10	
1000	0 7 40 0	11 23 21 40	14 18 20	6 10 50 50	20000 1 6 40	
2000	0 8 26 0	11 9 49 20	28 36 40	0 21 41 40	25000 1 44 10	
3000	0 9 12 0	10 26 17 0	1* 12 55 0	7 2 32 30	30000 2 30 0	

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Tabula medii motus solis in mensibus.

Mens.	Motus med.	Motus Anom. med.	Motus Apogei	Motus Luna à Sole.
Invarius	03 00 0' 0"	03 00 0' 0"	0"	03 00 0' 0"
Abruar.	1 0 33 , 18	1 0 33 14	4	0 17 54 48
Martius	1 28 9 11	1 28 9 3	8	11 29 15 15
Aprilis	2 28 42 29	2 28 42 17	12	0 17 10 3
Maius	3 28 16 40	3 28 16 24	16	0 22 53 23
Junius	4 28 49 57	4 28 49 37	20	1 0 48 10
Julius	5 28 24 8	5 28 23 43	25	1 16 31 31
Augustus	6 28 57 25	6 28 56 56	29	2 4 26 19
Septemb.	7 29 30 43	7 29 30 30	33	2 22 21 7
Oktobr.	8 29 4 54	8 29 4 17	37	2 18 4 26
Novemb.	9 29 38 11	9 29 37 30	42	3 15 59 14
Decemb.	10 29 11 22	10 29 11 36	46	3 21 43 35

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Tabula: medii motus solis in diebus.

Dies.	Motus medius solis.	Motus medius anomalie.	Motus Apogei	Motus Luna a Sole.	
	s o' "	s o' "	"	s o' "	Ho Min Secu
1	0 0 59 8	0 0 59 8	0	0 12 11 27	
2	0 1 58 17	0 1 58 17	0	0 24 22 53	
3	0 2 57 25	0 2 57 25	0	1 6 34 29	
4	0 3 56 33	0 3 56 33	0	1 18 45 47	
5	0 4 55 42	0 4 55 42	0	2 0 57 13	
6	0 5 54 50	0 5 54 50	0	2 13 8 40	
7	0 6 53 59	0 6 53 58	1	2 25 20 7	
8	0 7 53 7	0 7 53 6	1	3 7 31 33	
9	0 8 52 15	0 8 52 14	1	3 19 43 0	
10	0 9 51 23	0 9 51 22	1	4 1 54 27	
11	0 10 50 32	0 10 50 31	1	4 14 5 54	
12	0 11 49 40	0 11 49 39	1	4 26 17 20	
13	0 12 48 49	0 12 48 47	2	5 8 28 47	
14	0 13 47 57	0 13 47 55	2	5 20 40 14	
15	0 14 47 5	0 14 47 3	2	6 2 51 40	
16	0 15 46 13	0 15 46 11	2	6 15 3 7	
17	0 16 45 22	0 16 45 20	2	6 27 14 34	
18	0 17 44 30	0 17 44 28	2	7 9 26 0	
19	0 18 43 38	0 18 43 36	2	7 21 37 27	
20	0 19 42 47	0 19 42 44	3	8 3 48 53	
21	0 20 41 55	0 20 41 52	3	8 16 0 20	
22	0 21 41 3	0 21 41 0	3	8 28 11 47	
23	0 22 40 12	0 22 40 9	3	9 10 23 13	
24	0 23 39 20	0 23 39 17	3	9 22 34 40	
25	0 24 38 28	0 24 38 25	3	10 4 46 7	
26	0 25 37 37	0 25 37 34	3	10 16 57 33	
27	0 26 36 46	0 26 36 42	4	10 29 9 0	
28	0 27 35 54	0 27 35 50	4	11 11 20 27	
29	0 28 35 2	0 28 34 58	4	11 23 31 54	
30	0 29 34 10	0 29 34 6	4	0 5 43 20	
31	1 0 33 18	1 0 33 14	4	0 17 54 47	
32	1 1 32 26	1 1 32 22	4	1 0 6 14	

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Tabula motus mediū solis in horis & minutis.

Motus mediū				Motus Lunæ à Sole				Motus mediū				Motus Lunæ à Sole											
Horæ.	0	1	"	0	1	"	Horæ.	0	1	"	0	1	"	Minuta.	Minuta.	Secunda.	Minuta.	Minuta.	Secunda.				
Minuta.	1	2	3	1	2	3	Minuta.	1	2	3	1	2	3	Secunda.	1	2	IV	1	2	3	1	2	IV
1	0	2	28	0	30	28	31	1	16	23	15	44	47										
2	0	4	56	1	0	57	32	1	18	51	16	15	16										
3	0	7	24	1	31	26	33	1	21	39	16	45	45										
4	0	9	51	2	1	55	34	1	23	47	17	16	14										
5	0	12	19	2	32	23	35	1	26	15	17	46	42										
6	0	14	47	3	2	52	36	1	28	43	18	17	11										
7	0	17	15	3	33	20	37	1	31	11	18	47	39										
8	0	9	43	4	3	49	38	1	33	39	19	18	8										
9	0	22	11	4	34	17	39	1	36	6	19	48	36										
10	0	24	38	5	4	47	40	1	38	34	20	19	5										
11	0	27	6	5	35	15	41	1	41	2	20	49	33										
12	0	29	34	6	5	44	42	1	43	30	21	20	2										
13	0	32	2	6	36	12	43	1	45	58	21	50	31										
14	0	34	30	7	6	41	44	1	48	25	22	21	0										
15	0	36	58	7	37	9	45	1	50	53	22	51	28										
16	0	39	25	8	7	38	46	1	53	21	23	21	57										
17	0	41	53	8	38	7	47	1	55	49	23	52	25										
18	0	44	21	9	8	35	48	1	58	17	24	22	54										
19	0	46	49	9	39	4	49	2	0	44	24	53	22										
20	0	49	17	10	9	32	50	2	3	12	25	23	51										
21	0	51	45	10	40	1	51	2	5	40	25	54	19										
22	0	54	13	11	10	29	52	2	8	8	26	24	48										
23	0	56	40	11	40	58	53	2	10	36	26	55	17										
24	0	59	8	12	11	26	54	2	13	3	27	25	46										
25	1	1	36	12	41	55	55	2	15	31	27	56	14										
26	1	4	4	13	12	24	56	2	17	59	28	26	43										
27	1	6	32	13	42	52	57	2	20	27	28	57	11										
28	1	9	0	14	13	21	58	2	22	55	29	27	40										
29	1	11	27	14	43	50	59	2	25	23	29	58	8										
30	1	13	55	15	14	19	60	2	27	51	30	28	37										

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Æquatio Solis elliptica.

Argum. Anomalia media Solis.

Gradus	o Sign.			I. Sign.			II. Sign.		
	equ. centri Subtr.	equ.anom. Subtr.	Dist. ☽ à ♂	equ. centri Subtr.	equ.anom. Subtr.	Dist. ☽ à ♂	equ. centri Subtr.	equ.anom. Subtr.	Dist. ☽ à ♂
0° 0' 0"	0' 0" 101676	0° 56' 35"	28' 24" 101458	1° 38' 45"	49' 29" 100819	30	0° 819 30	0	1
1° 0 1 58	0 59 101676	0 58 18	29 15 101444	1 39 46	49 59 100834	29	1° 0 834 29	1	2
2° 0 3 16	1 59 101675	1 0 0	30 6 101429	1 40 46	50 29 100808	28	2° 0 808 28	2	3
3° 0 5 54	2 58 101674	1 1 41	30 57 101414	1 41 43	50 57 100783	27	3° 0 783 27	3	4
4° 0 7 52	3 57 101672	1 3 20	31 47 101398	1 42 38	51 25 100757	26	4° 0 757 26	4	5
5° 0 9 50	4 56 101670	1 4 59	32 36 101382	1 43 31	51 51 100731	25	5° 0 731 25	5	6
6° 0 11 47	5 55 101667	1 6 36	33 25 101365	1 44 23	52 17 100705	24	6° 0 705 24	6	7
7° 0 13 45	6 54 101664	1 8 12	34 13 101348	1 45 13	52 42 100679	23	7° 0 679 23	7	8
8° 0 15 43	7 53 101660	1 9 48	35 1 101331	1 46 1	53 6 100652	22	8° 0 652 22	8	9
9° 0 17 40	8 52 101656	1 11 22	35 48 101313	1 46 47	53 28 100625	21	9° 0 625 21	9	10
10° 0 19 37	9 50 101651	1 12 55	36 34 101295	1 47 31	53 50 100598	20	10° 0 598 20	10	11
11° 0 21 33	10 49 101646	1 14 26	37 20 101277	1 48 13	54 11 100571	19	11° 0 571 19	11	12
12° 0 23 29	11 47 101640	1 15 56	38 5 101258	1 48 53	54 31 100543	18	12° 0 543 18	12	13
13° 0 25 24	12 45 101634	1 17 25	38 49 101239	1 49 31	54 50 100515	17	13° 0 515 17	13	14
14° 0 27 20	13 43 101628	1 18 52	39 33 101219	1 50 8	55 8 100488	16	14° 0 488 16	14	15
15° 0 29 14	14 40 101621	1 20 18	40 16 101199	1 50 42	55 25 100460	15	15° 0 460 15	15	16
16° 0 31 8	15 38 101613	1 21 42	40 18 101179	1 51 15	55 31 100432	14	16° 0 432 14	14	17
17° 0 33 1	16 35 101605	1 23 5	41 39 101158	1 51 45	55 56 100404	13	17° 0 404 13	13	18
18° 0 34 15	17 32 101597	1 24 27	42 20 101137	1 52 14	56 10 100375	12	18° 0 375 12	12	19
19° 0 36 47	18 28 101588	1 25 47	43 0 101115	1 52 40	56 23 100347	11	19° 0 347 11	11	20
20° 0 38 39	19 25 101578	1 27 6	43 40 101093	1 53 4	56 35 100318	10	20° 0 318 10	10	21
21° 0 40 30	20 20 101568	1 28 23	44 19 101071	1 53 27	56 46 100289	9	21° 0 289 9	9	22
22° 0 41 21	21 16 101558	1 29 39	44 57 101049	1 53 47	56 56 100261	8	22° 0 261 8	8	23
23° 0 44 11	22 11 101547	1 30 53	45 34 101026	1 54 5	57 5 100232	7	23° 0 232 7	7	24
24° 0 46 0	23 5 101536	1 32 6	46 10 101003	1 54 21	57 12 100203	6	24° 0 203 6	6	25
25° 0 47 48	23 59 101524	1 33 17	46 45 100980	1 54 35	57 19 100174	5	25° 0 174 5	5	26
26° 0 49 35	24 53 101512	1 34 26	47 20 100956	1 54 47	57 25 100145	4	26° 0 145 4	4	27
27° 0 51 21	25 46 101499	1 35 33	47 53 100932	1 54 57	57 30 100116	3	27° 0 116 3	3	28
28° 0 53 7	26 39 101486	1 36 39	48 26 100908	1 55 5	57 33 100087	2	28° 0 87 2	2	29
29° 0 54 51	27 31 101472	1 37 43	48 58 100883	1 55 11	57 35 100057	1	29° 0 57 1	1	30
30° 0 56 35	28 24 101458	1 38 45	49 29 100859	1 55 14	57 37 100028	0	30° 0 28 0	0	31
	adde equ. centri	adde equ.anom.	Dist. ☽ à ♂	adde equ. centri	adde equ.anom.	Dist. ☽ à ♂	adde equ. centri	adde eq. anom.	Dist. ☽ à ♂

XI. Sign.

X. Sign.

IX. Sign.

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Æquatio Solis elliptica.

Argum. Anomalia media Solis.

Gradus	III. Sign.			IV. Sign.			V. Sign.		
	æqu. centri Subtr.	æqu. anom. Subtr.	Diff. ♂ à ♂	æqu. centri Subtr.	æqu. anom. Subtr.	Diff. ♂ à ♂	æqu. centri Subtr.	æqu. anom. Subtr.	Diff. ♂ à ♂
0	1° 55' 14"	57' 37"	100028	1° 40' 51"	50' 20"	99183	58' 41"	29' 14"	98556
1	1 55 15	57 37	99990	1 39 51	49 50	99158	56 55	28 21	98541 29
2	1 55 15	57 37	99969	1 38 49	49 19	99137	55 8	27 28	98527 28
3	1 55 13	57 36	99940	1 37 46	48 47	99107	53 40	26 34	98513 27
4	1 55 7	57 33	99911	1 36 40	48 14	99082	51 30	25 39	98499 26
5	1 55 0	57 29	99882	1 35 33	47 40	99058	49 39	24 44	98486 25
6	1 54 51	57 24	99853	1 34 23	47 5	99034	47 48	23 48	98474 24
7	1 54 40	57 18	99824	1 33 12	46 30	99010	45 55	22 52	98462 23
8	1 54 26	57 11	99794	1 31 59	45 53	98986	44 1	21 56	98450 22
9	1 54 11	57 3	99765	1 30 45	45 16	98963	42 7	20 59	98439 21
10	1 53 54	56 55	99736	1 29 29	44 38	98940	40 12	20 2	98428 20
11	1 53 39	56 45	99707	1 28 11	43 59	98917	38 16	19 4	98418 19
12	1 53 13	56 33	99678	1 26 51	43 18	98894	36 20	18 6	98409 18
13	1 52 49	56 21	99650	1 25 30	42 37	98872	34 23	17 7	93400 17
14	1 52 23	56 8	99621	1 24 7	41 56	98850	32 26	16 9	98391 16
15	1 51 55	55 54	99593	1 22 42	41 13	98829	30 27	15 10	98383 15
16	1 51 25	55 39	99564	1 21 16	40 30	98808	28 28	14 11	98375 14
17	1 50 53	55 23	99535	1 19 49	39 46	98788	26 28	13 11	98368 13
18	1 50 19	55 5	99508	1 18 20	39 2	98768	24 28	12 11	98362 12
19	1 49 43	54 47	99480	1 16 49	38 17	98748	22 27	11 11	98356 11
20	1 49 4	54 27	99452	1 15 17	37 31	98728	20 26	10 10	98350 10
21	1 48 24	54 7	99424	1 13 44	36 44	98709	18 24	9 10	98345 9
22	1 47 41	53 46	99397	1 12 8	35 57	98690	16 22	8 9	98341 8
23	1 46 17	53 24	99369	1 10 32	35 9	98672	14 20	7 8	98337 7
24	1 46 11	53 0	99342	1 8 54	34 20	98654	12 18	6 7	98333 6
25	1 45 23	52 36	99315	1 7 15	33 30	98637	10 15	5 6	98330 5
26	1 44 32	52 10	99288	1 5 35	32 40	98619	8 12	4 5	98328 4
27	1 43 39	51 44	99262	1 3 53	31 49	98603	6 9	3 4	98326 3
28	1 42 45	51 17	99235	1 2 10	30 58	98587	4 6	2 2	98325 2
29	1 41 49	50 49	99209	1 0 26	30 6	98571	2 3	1 1	98324 1
30	1 40 51	50 20	99183	0 18 41	29 14	98556	0 0	0 0	98324 0
	adde æqu. centri	adde æqu. anom.	Diff. ♂ à ♂	adde æqu. centri	adde æqu. anom.	Diff. ♂ à ♂	adde æqu. centri	adde æqu. anom.	Diff. ♂ à ♂

VIII. Sign.

VII. Sign.

T 2

VI. Sign.

Gradus

95 148 58
Equatio Solis Lunaris.

Argum. Differenz Solis & Lues.

o Sign.		I Sign.		II Sign.		III Sign.		IV Sign.		V Sign.		
S	N	Long.	Dif. & $\frac{1}{2}$	Or.								
		Add.	Add.									
0	0'	7		7'	6	13''	3	15''	0	13''	3	7'' 6 30
5	1	7		8	5	14	2	15	0	12	3	6 6 25
10	2	7		9	5	14	2	15	1	11	4	5 6 20
15	3	7		10	4	15	1	15	1	10	4	3 7 15
20	5	6		11	4	15	1	14	2	9	5	2 7 10
25	6	6		12	3	15	0	14	2	8	5	1 7 5
30	7	6		13	2	15	0	13	3	7	6	0 7 0
		Subt. Long.	Add. Dif. & $\frac{1}{2}$	Grad.								
		XI Sign.	X Sign.	IX Sign.	VIII Sign.	VII Sign.	VII Sign.	VII Sign.	VII Sign.	VI Sign.		

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Tabula mediorum Lunæ motuum
pro tempore currente stylī veteris in meridiano Londinensium.

Annū Oc. annū	Longit. med. ♂			Anomal. med.			Loc. med. ♀			Annū S. O. I. "	Mot. longit. ♀			Mot. anomalis			Mot. medi.		
	s.	o.	i.	s.	o.	i.	s.	o.	i.		s.	o.	i.	s.	o.	i.	s.	o.	i.
1 4 2 4 21	6 20 9	10	8 28 57	35	1	4. 9. 23. 3	2.28.43.13	0.19.19.43											
101 2 9 44 50	1 8 48	20	4 14 26	20	2	8.18.46. 7	5.27.16.25	1. 8.39.26											
201 0 17 43 15	2 27 27	30	0 0 15	5	3	0.28. 9.10	8.26. 9.36	1.27.59. 9											
301 10 25 35 40	2 26 6	40	7 16 3	50 B.	4	5.20.42.49	0. 7.56.45	2.17.22. 3											
401 9 3 26 5	9 4 41	50	3 1 32	35	5	10. 0. 5.52	3. 6.39.57	3. 6.41.46											
501 7 11 16 30	3 23 25	0 10	27 41	20	6	2. 9.28.55	6. 3.23. 9	3.26. 1.19											
601 1 19 6 55	10 12 4	10	6 3 50	5	7	6.18.51.59	9. 4. 6.21	4.15.21.12											
701 3 26 57 20	1 0 43	20	1 19 18	50 B.	8	11.16.25.37	0.15.53.30	5. 4.44. 5											
801 2 4 47 41	11 19 22	30	9 5 7	35	9	3.20.48.41	3.14.36.42	5.24. 3.49											
901 0 12 38 10	6 8 1	40	4 20 56	20	10	8. 0.11.44	0.13.19.54	6.13.23.12											
1001 10 20 28 35	0 26 40	50	0 6 45	5	11	0. 9.24.48	9.12. 3. 6	7. 2.43.16											
1101 8 18 19 0	7 15 20	0 1	7 22 33	50 B. F2	5. 2. 8.27	0.23.50.57	7.22. 6. 9												
1201 7 6 9 25	2 3 50	10	3 8 22	35	13	9.13.31.30	3.22.33.29	8.11.25.52											
1301 5 13 19 50	8 22 58	20	10 24 11	20	14	1.20.54.34	6.21.16.41	9. 0.45.35											
1401 3 21 10 15	3 31 17	30	6 10 0	5	15	6. 0.17.37	9.19.59.93	9.20. 5.18											
1501 1 29 40 40	9 29 56	40	1 25 48	50 B. 16	10	10.22.51.16	1. 1.47. 3	10. 9.28.12											
1601 0 7 31 5	* 38 35	50	9 18 37	35	17	3. 2.14.19	4. 0.30.15	10.28.47.56											
1701 10 15 21 30	11 7 15	0 4	27 26	20	18	7.11.37.22	6.29.13.27	11.13. 7.39											
1711 2 28 55 35	0 16 58	50	4 0 36	5	19	11.21. 0.26	9.27.16.39	0. 7.27.22											
1721 7 13 20 40	1 26 42	40	3 3 45	50 B. 20	4	13.34. 5	1. 9.43.50	0.16.50.15											
1731 11 21 52 43	4 25 25	53	2 14 26	71	40	8.26. 8.10	2.19.27.40	1.23.40.31											
1743 4 1 15 40	7 24 9	6	1 21 0	24	60	1.10.42.15	3.29.11.30	2.10.30.46											
1744 8 10 48 49	10 33 52	19	1 5 46	41	80	5.24.16.20	5. 8.55.26	3.17.21. 1											
1745 1 1 12 38	3 4 39	26	0 16 23	47	100	10. 7.50.25	6.18.39.10	5.14.11.15											
1746 1 12 35 31	1 3 32	30	11 27	4	200	8.15.40.50	1. 7.18.20	8.18.22.30											
1747 0 31 18 35	8 1 5 52	11	7 44 2	0	300	6.23.31.15	7.25.57.30	1.12.33.45											
1748 3 1 31 38	1 0 49	51	10 18 24	38	400	5. 1.21.40	2.34.36.40	5.16.45. 0											
1749 6 3 1 51 10	2 12 36	11	9 29 1	44	500	3. 9.13. 5	9. 3.15.50	10.10.56.15											
1750 3 3 18 20	4 11 19	25	9 9 41	1	600	1.17. 2.30	3.21.55. 0	2.25. 7.30											
1751 3 13 41 34	8 10 2	38	8 20 11	58	700	1.13.45.55	10.10.34.10	7. 9.18.45											
1752 7 12 4 37	11 8 45	48	8 1 2	35	800	10. 2.43.20	4.29.13.50	11.23.30. 0											
1753 0 14 38 1	1 8 20 31	57	7 31 39	41	900	8.10.33.45	1.17.52.30	4. 7.41.5											
1761 1 26 3 41	3 6 26	20	1 6 55	31	1000	6.18.14.10	6. 6.31.40	8.21.52.30											
1781 4 9 37 10	4 16 10	20	1 10 5	20	1000	1. 0.48.20	0.13. 3.20	5.13.45. 0											
1791 8 23 11 55	5 29 34	10	0 13 75	5	1300	7.25.12.30	6.19.35. 0	2. 5.37.30											
1930 7 1 3 20	0 14 33	20	7 29 3	50	14000	2.13.36.40	0.26. 6.40	10.27.30. 0											

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Tabula mediorum Lunæ motuum.

Mense.	Motus long. Lunæ.				Motus anomalie.				Motus nodi.				Dies
	S.	O.	I.	N.	S.	O.	I.	N.	O.	I.	N.		
Januarius	0	0	0	0	0	0	0	0	0	0	0	0	1
Februario	1	18	28	6	1	15	0	53	1	38	30		2
Martius	1	27	24	26	1	20	50	2	3	7	27		3
Aprillis	3	15	52	32	3	5	50	56	4	45	58		4
Majus	4	21	10	3	4	7	47	54	6	21	17		5
Junius	6	9	38	8	5	22	48	48	7	59	46		6
Julius	7	14	55	39	6	24	45	45	9	35	6		7
Augustus	9	3	23	44	8	9	46	39	11	13	36		8
Septembr.	10	21	51	50	9	24	47	30	12	52	5		9
Octoehr.	11	27	9	20	10	26	44	28	14	27	24		10
Novembr.	1	15	37	26	0	11	45	22	16	5	54		11
Decembris	2	20	54	57	1	13	42	21	17	41	14		12

25 151 56

Tabula mediorum Lunæ motuum.

	Motus long. lunæ	Motus anomaliæ	Motus nodi.	H.	Motus long. lunæ	Motus anomaliæ	Motus nodi.	H.	Motus long. lunæ	Motus anomaliæ	Motus nodi.
Dies	S. O. 1 "	S. O. 1 "	O 1 "	H.	O 1 "	O 1 "	1 "	H.	O 1 "	O 1 "	1 "
1	0.13.10.35	0.13. 3.54	0. 3.11	1	1 " m	1 " m	m	1	1 " m	1 " m	m
2	0.26.21.10	0.26. 7.48	0. 6.21	"	m IV	m IV	m IV	"	m IV	m IV	m IV
3	1. 9.31.45	1. 9.11.42	0. 9.32	1	0.32.56	0.32.40	0. 8	31	17. 1.10	16.52.32	4. 6
4	1.22.42.20	1.22.15.36	0.12.43	2	1. 5.53	1. 5.20	0.16	32	17.34. 7	17.25.13	4.14
5	2. 5.52.55	2. 5.19.30	0.15.53	3	1.38.49	1.37.59	0.24	33	18. 7. 3	17.57.52	4.22
6	2.19. 3.30	2.18.23.24	0.19. 4	4	2.11.46	2.10.39	0.32	34	18.39.59	18.30.31	4.30
7	3. 2.14. 5	3. 1.27.18	0.22.14	5	2.44.42	2.43.18	0.40	35	19.12.55	19. 3.11	4.38
8	3.15.14.40	3.14.31.12	0.25.25	6	3.17.39	3.15.59	0.48	36	19.45.52	19.35.50	4.46
9	3.28.35.15	3.27.35. 6	0.28.36	7	3.50.35	3.48.38	0.56	37	20.18.48	20. 8.31	4.54
10	4.11.45.50	4.10.39. 0	0.31.46	8	4.23.32	4.21.18	1. 4	38	20.51.45	20.41. 9	5. 2
11	4.24.56.25	4.23.42.53	0.34.57	9	4.56.28	4.53.58	1.12	39	21.24.41	21.13.49	5.10
12	5. 8. 7. 0	5. 6.46.47	0.38. 8	10	5.29.25	5.26.38	1.19	40	21.57.38	21.46.30	5.18
13	5.21.17.35	5.19.50.41	0.41.18	11	6. 2.21	5.59.17	1.27	41	22.30.34	22.19. 9	5.26
14	6. 4.28.10	6. 2.54.35	0.44.29	12	6.35.18	6.31.57	1.35	42	23. 3.31	22.51.49	5.34
15	6.37.38.45	6.35.58.29	0.47.40	13	7. 8.14	7. 4.37	1.43	43	23.36.27	23.24.28	5.42
16	7. 0.49.20	6.29. 2.23	0.50.50	14	7.41.10	7.37.16	1.51	44	24. 9.24	23.57. 8	5.50
17	7.13.19.55	7.11. 6.17	0.54. 1	15	8.14. 7	8. 9.56	1.59	45	24.42.10	24.29.48	5.58
18	7.27.10.30	7.25.10.11	0.57.11	16	8.47. 3	8.42.36	2. 7	46	25.15.17	25. 2.29	6. 6
19	8.10.21. 5	8. 8.14. 5	1. 0.22	17	9.20. 0	9.15.16	2.15	47	25.48.13	25.35. 7	6.14
20	8.22.31.40	8.21.17.59	1. 3.33	18	9.52.10	9.47.55	2.23	48	26.21.10	26. 7.48	6.22
21	9. 6.42.35	9. 4.31.53	1. 6.43	19	10.25.33	10.20.35	2.31	49	26.54. 6	26.40.27	6.30
22	9.19.53.50	9.17.35.47	1. 9.54	20	10.58.49	10.53.15	2.39	50	27.27. 3	27.13. 7	6.38
23	10. 3. 3.25	10. 0.19.41	1.13. 1	21	11.31.46	11.25.55	2.47	51	27.59.59	27.45.46	6.46
24	10.16.14. 0	10.11.13.35	1.16.15	22	12. 4.42	11.58.34	2.55	52	28.32.56	28.18.26	6.54
25	10.29.34.35	10.26.37.39	1.19.26	23	12.37.39	12.31.19	3. 3	53	29. 5.52	28.51. 6	7. 1
26	11.18.45.10	11. 9.41.32	1.21.37	24	13.10.35	13. 3.54	3.11	54	29.38.49	29.23.47	7. 8
27	11.75.45.45	11.32.45.17	1.31.47	25	13.43.32	13.36.34	3.19	55	30.11.45	29.56.26	7.16
28	0. 8.36.20	0. 5.49.11	1.28.18	26	14.16.28	14. 9.13	3.27	56	30.44.42	30.29. 6	7.24
29	0.20. 6.41	0.18.53. 5	1.31. 9	27	14.49.25	14.41.54	3.34	57	31.17.38	31. 1.45	7.32
30	1. 5.17.31	1. 1.56.59	1.31.19	28	15.22.22	15.14.35	3.42	58	31.50.34	31.34.24	7.40
31	1.18.28. 6	1.15. 0.53	1.38.30	29	15.55.17	15.47.12	3.50	59	32.23.31	32. 7. 5	7.48
32	2. 3.38.41	1.38. 4.47	1.41.41	30	16.28.14	16.19.52	3.58	60	32.56.27	33.39.44	7.56

I. Pro Loco Lunæ in orbita.

Argum. *Anomalia media* Luna.

O	o Sign.		I. Sign.		II. Sign.		III. Sign.		IV. Sign.		V. Sign.		O
	Loc. Lun.	Subtr.	Loc. Lun.	Subtr.	Loc. Lun.	Subtr.	Loc. Lun.	Subtr.	Loc. Lun.	Subtr.	Loc. Lun.	Subtr.	
	diff.		diff.		diff.		diff.		diff.		diff.		
0	0	0	0	0	0	0	0	0	0	0	0	0	3
1	0	6.	4	3	0	42	5	14	16	6	11	33	30
2	0.12.	8	6.	4	3	6	2	17	34	6	11	49	33
3	0.18.12	6.	3	3	11	19	5	20	47	6	11	59	33
4	0.24.15	6.	4	3	16	33	5	23	55	6	12	20	23
5	0.30.19	6.	4	3	21	44	5	26	58	6	12	43	29
6	0.36.23	6.	2	3	26	52	5	29	55	6	11	48	13
7	0.42.25	6.	1	3	31	56	5	32	47	6	11	30	24
8	0.48.26	6.	1	3	36	58	5	35	33	6	11	6	12
9	0.54.27	6.	0	3	41	50	5	38	14	6	10	35	18
10	1. 0.17	5.50	3	3	46	52	4	40	49	6	9	57	26
11	1. 6.26	5.58	3	3	51	42	4	43	18	6	9	12	41
12	1.12.24	5.59	3	3	56	28	5	45	42	6	8	20	18
13	1.18.23	5.56	4	1	51	11	5	48	0	6	7	22	17
14	1.24.19	5.53	4	5	50	11	2	50	11	6	6	16	13
15	1.30.12	5.53	4	10	28	5	52	17	1	59	6	4	16
16	1.36. 5	5.53	4	15	0	4	32	5	54	6	3	44	42
17	1.41.58	5.50	4	19	28	4	24	5	56	6	2	17	38
18	1.47.48	5.49	4	23	52	4	20	5	57	1	41	4	31
19	1.53.37	5.48	4	28	12	4	16	5	59	1	47	4	26
20	1.59.25	5.44	4	32	28	4	11	6	1	12	5	12	24
21	2. 5. 9	5.44	4	36	39	4	6	6	2	42	1	22	22
22	2.11.34	5.41	4	40	45	4	2	6	4	4	1	5	33
23	2.16.34	5.37	4	44	47	3	57	6	5	21	1	51	20
24	2.22.11	5.30	4	48	44	3	54	6	6	50	1	48	15
25	2.27.50	5.35	4	51	38	3	54	6	7	32	1	46	57
26	2.33.25	5.31	4	56	17	3	49	6	8	29	1	44	30
27	2.38.58	5.29	5	0	10	3	39	6	9	18	0	41	25
28	2.44.27	5.27	5	3	49	3	34	6	10	2	0	48	25
29	2.49.54	5.24	5	7	23	3	34	6	10	39	5	35	17
30	2.55.19	5.21	5	10	52	3	29	6	11	9	5	37	30
	Add.	diff.		Add.	diff.		Add.	diff.		Add.	diff.		
	Loc. Lun.			Loc. Lun.			Loc. Lun.			Loc. Lun.			
XI. Sign.	X. Sign.		IX. Sign.			VIII. Sign.			VII. Sign.			VI. Sign.	

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Pro anomalia excentrica Lunæ.
Argum. *Anomalia media Luna.*

	o Sign. Subr.	I. Sign. Subr.	II. Sign. Subr.	III. Sign. Subr.	IV. Sign. Subr.	V. Sign. Subr.	
	XI. Sign.	X. Sign.	IX. Sign.	VIII. Sign.	VII. Sign.	VI. Sign.	G.
0	0° 0' 0"	1° 27' 56"	2° 35' 13"	3° 4' 5"	2° 44' 1"	1° 36' 46" 30	
1	0 3 3	1 30 37	2 36 53	3 4 14	2 42 28	1 33 53 29	
2	0 6 6	1 33 16	2 38 31	3 4 20	2 40 53	1 30 58 28	
3	0 9 9	1 35 55	2 40 4	3 4 22	2 39 4	1 28 1 27	
4	0 12 11	1 38 32	2 41 37	3 4 21	2 37 33	1 25 2 26	
5	0 15 14	1 41 8	2 43 6	3 4 17	2 35 49	1 22 1 25	
6	0 18 16	1 43 41	2 44 32	3 4 9	2 34 0	1 18 57 24	
7	0 21 18	1 46 13	2 45 55	3 3 58	2 32 9	1 15 53 23	
8	0 24 19	1 48 43	2 47 17	3 3 43	2 30 15	1 12 47 22	
9	0 27 21	1 51 11	2 48 34	3 3 25	2 28 18	1 9 39 21	
10	0 30 22	1 53 37	2 49 49	3 3 3	2 26 8	1 6 30 20	
11	0 33 22	1 56 3	2 51 1	3 2 38	2 24 14	1 3 19 19	
12	0 36 22	1 58 26	2 52 10	3 2 10	2 22 8	1 0 7 18	
13	0 39 21	2 0 47	2 53 16	3 1 38	2 20 0	0 56 54 17	
14	0 42 19	2 3 6	2 54 20	3 1 3	2 17 48	0 53 39 16	
15	0 45 17	2 5 22	2 55 20	3 0 25	2 15 33	0 50 23 15	
16	0 48 13	2 7 37	2 56 17	2 59 43	2 13 16	0 47 7 14	
17	0 51 10	2 9 50	2 57 10	2 58 57	2 10 56	0 43 49 13	
18	0 54 7	2 12 1	2 58 2	2 58 8	2 8 33	0 40 31 12	
19	0 57 2	2 13 10	2 58 52	2 57 17	2 6 7	0 37 12 11	
20	0 59 56	2 16 17	2 59 35	2 56 21	2 3 39	0 33 52 10	
21	1 2 49	2 18 21	3 0 17	2 55 22	2 1 9	0 30 31 9	
22	1 5 42	2 20 23	3 0 56	2 54 19	1 58 36	0 27 8 8	
23	1 8 33	2 22 22	3 1 30	2 53 14	1 56 0	0 23 46 7	
24	1 11 22	2 24 19	3 2 2	2 52 5	1 53 23	0 20 23 6	
25	1 14 12	2 26 15	3 2 32	2 50 53	1 50 42	0 17 0 5	
26	1 16 59	2 28 7	3 2 57	2 49 36	1 47 59	0 13 36 4	
27	1 19 45	2 29 57	3 3 18	2 48 18	1 45 15	0 10 12 3	
28	1 22 31	2 31 46	3 3 37	2 46 56	1 42 27	0 6 48 2	
29	1 25 14	2 33 31	3 3 53	2 45 30	1 39 38	0 3 24 1	
30	1 27 56	2 35 13	3 4 5	2 44 1	1 36 46	0 0 0 0	
	Adde XI. Sign.	Adde X. Sign.	Adde IX. Sign.	Adde VIII. Sign.	Adde VII. Sign.	Adde VI. Sign.	G.

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II. Pro Loco Lunæ in orbita.

Argum. *Anomalia excentrica Solis.*

xi.	O. Sign.		I. Sign.		II. Sign.		III. Sign.		IV. Sign.		V. Sign.		Gra.
	Adde	diff.	Adde	diff.	Adde	diff.	Adde	diff.	Adde	diff.	Adde	diff.	
0	0' 0"	11"	4' 52"	10"	8' 26"	5"	9' 44"	0"	8' 26"	6"	4' 52"	9"	30
1	0 11	9	5 2	8	8 31	5	9 44	1	8 15	5	4 43	9	29
2	0 20	11	5 10	8	8 36	5	9 43	0	8 9	6	4 34	9	28
3	0 31	10	5 19	8	8 41	4	9 43	1	8 3	5	4 25	9	27
4	0 41	10	5 27	9	8 45	5	9 42	0	7 58	6	4 16	10	26
5	0 51	10	5 36	8	8 50	3	9 42	2	7 52	6	4 6	9	25
6	1 1	10	5 44	8	8 53	5	9 40	1	7 46	6	3 57	9	24
7	1 11	11	5 52	9	8 58	4	9 39	1	7 40	6	3 48	10	23
8	1 22	11	6 1	9	9 2	4	9 38	1	7 33	7	3 38	9	22
9	1 31	10	6 8	8	9 6	3	9 37	1	7 27	6	3 29	10	21
10	1 41	11	6 16	8	9 9	3	9 36	2	7 21	6	3 19	10	20
11	1 52	10	6 24	8	9 12	4	9 34	2	7 15	6	3 9	9	19
12	2 2	10	6 32	7	9 16	3	9 32	2	7 8	7	3 0	9	18
13	2 11	10	6 39	7	9 19	3	9 30	3	7 0	8	2 51	10	17
14	2 21	10	6 46	7	9 22	2	9 27	3	7	7	2 41	10	16
15	2 31	10	6 53	7	9 24	3	9 24	2	6 53	7	2 31	10	15
16	2 41	10	7 0	8	9 27	3	9 22	3	6 45	7	2 21	10	14
17	2 51	10	7 8	8	9 30	2	9 19	3	6 39	7	2 11	9	13
18	3 0	9	7 15	6	9 32	2	9 16	4	6 32	8	2 2	10	12
19	3 9	10	7 21	6	9 34	2	9 12	3	6 24	8	1 52	11	11
20	3 19	10	7 27	6	9 36	1	9 9	3	6 16	8	1 41	10	10
21	3 29	10	7 33	7	9 37	1	9 6	3	6 8	7	1 31	9	9
22	3 38	9	7 40	6	9 38	1	9 2	4	6 1	9	1 22	11	8
23	3 48	10	7 46	6	9 39	1	8 58	4	5 52	8	1 11	10	7
24	3 57	9	7 52	6	9 40	2	8 53	3	5 44	8	1 1	10	6
25	4 6	9	7 58	5	9 42	0	8 50	5	5 36	9	0 51	10	5
26	4 16	10	8 3	5	9 42	1	8 45	4	5 27	8	0 41	10	4
27	4 25	9	8 9	6	9 43	0	8 41	5	5 19	9	0 31	11	3
28	4 34	9	8 15	5	9 43	1	8 36	5	5 10	8	0 20	11	2
29	4 43	9	8 20	5	9 44	0	8 31	5	5 2	10	0 11	9	1
30	4 52	9	8 26	6	9 44	0	8 26	5	4 52	0	0 0	11	0
	Subtr.	diff.	Subtr.	diff.	Subtr.	diff.	Subtr.	diff.	Subtr.	diff.	Subtr.	diff.	Gra.
	XI. sign.		X. Sign.		IX. Sign.		VIII. Sign.		VII. Sign.		VI. Sign.		Gra.

48 155 58

III. Pro Loco Lunæ in orbita.

Argum. Subtrahatur longitudine Solis a longitudine Luna bis corretta.

	o. Sign.	I. Sign.	II. Sign.	III. Sign.	IV. Sign.	V. Sign.								
	Adde	diff.	Adde	diff.	Adde	diff.	Subtr.	diff.	Subtr.	diff.	Subtr.	diff.	Subtr.	diff.
0	0 0		19 5		28 34		1 59		31 56		30 57		1 1	37
1	1 10		29 39	0.34	27 55	0.40	3 13	1.14	32 31	0.31	30 18	0.41	1 1	37
2	2 21		30 10	0.31	27 15	0.43	4 26	1.13	33 2	0.29	29 37	0.44	1 1	37
3	3 30		30 40	0.27	26 32	0.43	5 38	1.13	33 31	0.28	28 13	0.45	1 1	36
4	4 41		31 7	0.25	25 49	0.48	6 51	1.13	33 59	0.24	27 19	0.49	1 1	34
5	5 51		31 32	0.22	25 1	0.48	8 4	1.12	34 23	0.22	26 30	0.49	1 1	34
6	7 0		31 54	0.20	24 13	0.51	9 16	1.10	34 45	0.19	25 38	0.52	1 1	33
7	8 8		32 14	0.18	23 22	0.51	10 26	1.10	35 4	0.17	24 45	0.53	1 1	32
8	9 16		32 32	0.15	22 31	0.55	11 36	1.11	35 21	0.14	23 49	0.56	1 1	31
9	10 23		32 47	0.13	21 36	0.56	12 47	1. 9	35 35	0.12	22 52	0.57	1 1	30
10	11 30		33 0	0.11	20 40	0.58	13 56	1. 8	35 47	0.10	21 53	0.59	1 1	29
11	12 35		33 11	0. 8	19 43	0.59	15 4	1. 6	35 57	0. 8	20 54	0.59	1 1	28
12	13 40		33 19	0. 5	18 43	1. 1	16 10	1. 6	36 4	0. 4	19 52	1. 2	1 1	27
13	14 44		33 24	0. 3	17 42	1. 2	17 16	1. 4	36 8	0. 2	18 50	1. 2	1 1	26
14	15 45		33 27	0. 0	16 40	1. 4	18 20	1. 4	36 10	0. 1	17 45	1. 5	1 1	25
15	16 47		33 27	0. 2	15 36	1. 4	19 24	1. 2	36 9	0. 4	16 39	1. 6	1 1	24
16	17 48		33 25	0. 5	14 32	1. 5	20 26	1. 0	36 5	0. 6	15 33	1. 6	1 1	23
17	18 47		33 20	0. 6	13 27	1. 7	21 26	1. 0	35 59	0. 8	14 26	1. 7	1 1	22
18	19 45		33 14	0.10	12 20	1. 8	22 26	0.58	35 51	0.11	13 17	1. 9	1 1	21
19	20 40		33 4	0.13	11 12	1. 9	23 24	0.56	35 40	0.14	12 8	1. 9	1 1	20
20	21 36		32 51	0.15	10 3	1.10	24 20	0.54	35 26	0.16	11 11	1.11	1 1	19
21	22 29		32 36	0.15	8 53	2.14	25 14	0.53	35 10	0.18	10 57	1.11	1 1	18
22	23 21		32 19	0.17	7 42	1.11	26 7	0.51	34 52	0.21	9 46	1.12	1 1	17
23	24 10		31 59	0.20	6 31	1.11	26 58	0.49	34 31	0.23	8 34	1.12	1 1	16
24	24 59		31 37	0.22	5 20	1.12	27 47	0.46	34 8	0.26	7 22	1.13	1 1	15
25	25 44		31 12	0.25	4 8	1.13	28 33	0.46	33 42	0.28	6 9	1.13	1 1	14
26	25 29		30 45	0.27	2 55	1.13	29 19	0.41	33 14	0.31	4 56	1.14	1 1	13
27	27 11		30 15	0.30	1 42	1.13	30 0	0.41	32 43	0.33	3 42	1.14	1 1	12
28	27 51		29 43	0.32	0 29	1.14	30 41	0.38	32 10	0.35	2 28	1.14	1 1	11
29	28 18		29 11	0.32	0 45	1.14	31 19	0.37	31 35	0.38	1 14	1.14	1 1	10
30	29 5		28 34	0.37	1 59	1.14	31 56	0.37	30 57	0.38	0 0	1.14	1 1	9
	Subtr.	diff.	Subtr.	diff.	Adde	diff.	Adde	diff.	Adde	diff.	Adde	diff.	Adde	diff.
	XI. Sign.		X. Sign.		IX. Sign.		VIII. Sign.		VII. Sign.		VI. Sign.		V. Sign.	Grad.

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IV. Pro Loco Lunæ in orbita.

Argum. A dupla distanz. ⊕ a ⊖ subr. anomalia Lunæ excentrica.

Grad.	o Sign.		I. Sign.		II. Sign.		III. Sign.		IV. Sign.		V. Sign.		C 1	
	Subr.	diff.	Subr.	diff.	Subr.	diff.	Subr.	diff.	Subr.	diff.	Subr.	diff.		
	1	2		1	2		1	2		1	2		1	
0	0	"	0	"	0	"	0	"	0	"	0	"	30	
1	0	0	1	18	0	36	19	1.	1	4	5	0.38	1.	6
2	0	1	18	1	16	0	38	5	1.	4	43	0.37	1	3
3	0	2	34	1	18	0	39	12	1.	5	20	0.35	1	3
4	0	3	52	1	17	0	40	18	1.	5	55	0.36	1	2
5	0	4	9	1	18	0	41	23	1.	6	31	0.32	1	1
6	0	5	27	1	17	0	42	27	1.	7	3	0.33	1	0
7	0	6	44	1	17	0	43	30	1.	7	36	0.30	1	0
8	0	7	44	1	17	0	44	32	1.	8	6	0.30	1	0
9	0	8	9	1	17	0	44	32	1.	8	6	0.30	1	0
10	0	9	10	1	17	0	45	34	1.	8	36	0.28	1	0
11	0	10	18	1	17	0	45	34	1.	9	0	0.28	1	0
12	0	11	35	1	16	0	46	34	1.	9	4	0.28	1	0
13	0	12	51	1	17	0	47	34	1.	9	32	0.25	1	0
14	0	13	68	1	15	0	48	33	1.	9	57	0.25	1	0
15	0	14	23	1	16	0	49	31	1	10	22	0.24	1	0
16	0	15	39	1	15	0	50	27	1	10	46	0.21	1	0
17	0	16	54	1	15	0	51	24	1	11	7	0.21	1	0
18	0	17	9	1	15	0	52	19	1	11	28	0.20	1	0
19	0	18	20	1	13	0	53	14	1	11	48	0.17	1	0
20	0	19	37	1	14	0	54	7	1	12	5	0.17	1	0
21	0	20	51	1	14	0	54	58	1	12	22	0.16	1	0
22	0	21	24	1	14	0	55	50	1	12	38	0.14	1	0
23	0	22	41	1	13	0	56	43	1	12	52	0.13	1	0
24	0	23	57	1	12	0	57	30	1	13	5	0.13	1	0
25	0	24	74	1	12	0	58	18	1	13	16	0.48	1	0
26	0	25	91	1	12	0	59	5	1	13	26	0.46	1	0
27	0	26	95	1	11	0	59	5	1	13	26	0.46	1	0
28	0	27	43	1	12	0	59	18	1	13	16	0.47	1	0
29	0	28	55	1	11	0	59	5	1	8	6	0.30	1	0
30	0	29	66	1	10	0	59	51	1	7	36	0.33	1	0
31	0	30	16	1	10	0	59	51	1	7	36	0.33	1	0
32	0	31	16	1	10	0	59	51	1	7	36	0.32	1	0
33	0	32	26	1	11	0	59	51	1	6	31	0.36	1	0
34	0	33	36	1	9	0	59	51	1	5	55	0.35	1	0
35	0	34	45	1	8	0	59	51	1	5	20	0.37	1	0
36	0	35	53	1	6	0	59	51	1	4	43	0.38	1	0
37	0	36	59	1	4	0	59	51	1	4	5	0.39	1	0
	Adde	diff.	Adde	diff.	Adde	diff.	Adde	diff.	Adde	diff.	Adde	diff.	Adde	diff.
	XI. Sign.		X. Sign.		IX. Sign.		VIII. Sign.		VII. Sign.		VI. Sign.		V. Sign.	Grad.

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V. Pro Loco Lunæ in orbita.

Argum. A dupla diff. ☽ a ☽ subtrahatur dupla anomalia Lunæ excentrica.

	o Sign. Adde	I. Sign. Adde	II. Sign. Adde	III. Sign. Adde	IV. Sign. Adde	V. Sign. Adde	
C	0' 0"	4' 12"	7' 16"	8' 24"	7' 16"	4' 12"	30
1	0 9	4 20	7 21	8 24	7 12	4 4	29
2	0 18	4 27	7 25	8 24	7 7	3 57	28
3	0 26	4 34	7 29	8 23	7 3	3 49	27
4	0 35	4 42	7 33	8 23	6 58	3 41	26
5	0 44	4 49	7 37	8 22	6 53	3 33	25
6	0 53	4 56	7 40	8 21	6 48	3 25	24
7	1 1	5 3	7 44	8 20	6 43	3 17	23
8	1 10	5 10	7 47	8 19	6 37	3 9	22
9	1 19	5 17	7 51	8 18	6 32	3 1	21
10	1 28	5 24	7 54	8 16	6 26	2 52	20
11	1 36	5 31	7 57	8 15	6 20	2 44	19
12	1 45	5 37	7 59	8 13	6 15	2 36	18
13	1 53	5 44	8 2	8 11	6 9	2 27	17
14	2 2	5 50	8 4	8 9	6 3	2 19	16
15	2 10	5 56	8 7	8 7	5 56	2 10	15
16	2 19	6 3	8 9	8 4	5 50	2 2	14
17	2 27	6 9	8 11	8 2	5 44	1 53	13
18	2 36	6 15	8 13	7 59	5 37	1 45	12
19	2 44	6 20	8 15	7 57	5 31	1 36	11
20	2 52	6 26	8 16	7 54	5 24	1 28	10
21	3 1	6 32	8 18	7 51	5 17	1 19	9
22	3 9	6 37	8 19	7 47	5 10	1 10	8
23	3 17	6 43	8 20	7 44	5 3	1 1	7
24	3 25	6 48	8 21	7 40	4 56	0 53	6
25	3 33	6 53	8 22	7 37	4 49	0 44	5
26	3 41	6 58	8 23	7 33	4 42	0 35	4
27	3 49	7 3	8 23	7 29	4 34	0 26	3
28	3 57	7 7	8 24	7 25	4 27	0 18	2
29	4 4	7 12	8 24	7 21	4 20	0 9	1
30	4 12	7 16	8 24	7 16	4 12	0 0	0
	Subtr. XI. Sign.	Subtr. X. Sign.	Subtr. IX. Sign.	Subtr. VIII. Sign.	Subtr. VII. Sign.	Subtr. VI. Sign.	Grad.

45 158 55

VI. VII. VIII. Pro Loco Lunæ in orbita.

VI. Argum. Ad duplum differt. ☉ & ☽ ad
datur anomalia Lunæ excentrica.

VII. Argum. A duplo diff. ☉ & ☽ subtrahatur
anomalia Solis excentrica.

Grad. VII.	O Sig. I. Sig.					O Sig. I. Sig.					Grad. VII.	
	II.	III.	IV.	V.		II.	III.	IV.	V.	II.	III.	V.
	Adde	Adde	Adde	Adde		Subtr.	Subtr.	Subtr.	Subtr.	Subtr.	Subtr.	Subtr.
0	0 26 0	44 0	52 0	44 0	0 26 0	0 0 29 0	0 40 0	0 57 0	0 49 0	0 29 0	0 30 0	0 30 0
5	0 50 0	30 0	46 0	52 0	42 0	0 22 0	0 33 0	0 52 0	0 57 0	0 47 0	0 24 0	0 25 0
10	0 90 0	33 0	48 0	51 0	39 0	0 17 0	0 37 0	0 54 0	0 56 0	0 44 0	0 19 0	0 20 0
15	0 13 0	36 0	50 0	50 0	36 0	0 13 0	0 15 0	0 40 0	0 56 0	0 56 0	0 40 0	0 15 0
20	0 17 0	30 0	51 0	48 0	33 0	0 9 0	0 44 0	0 56 0	0 54 0	0 37 0	0 10 0	0 10 0
25	0 22 0	42 0	52 0	46 0	30 0	0 5 0	0 24 0	0 47 0	0 57 0	0 52 0	0 33 0	0 5 0
30	0 26 0	44 0	52 0	44 0	26 0	0 0 0	0 29 0	0 49 0	0 57 0	0 49 0	0 29 0	0 0 0
	Subtr.	Subtr.	Subtr.	Subtr.	Subtr.	Subtr.	Subtr.	Subtr.	Subtr.	Subtr.	Subtr.	Subtr.
XI.	X.	IX.	VIII.	VII.	VI.	Grad.	XL	X.	IX.	VIII.	VII.	VI.

VIII. Argum. Ad duplum differt. ☉ & ☽ addatur
anomalia Solis excentrica.

Grad. Sign.	I.					II.					III.					IV.					Grad. Sign.
	I.	II.	III.	IV.	V.	I.	II.	III.	IV.	V.	I.	II.	III.	IV.	V.	I.	II.	III.	IV.	V.	
	Subtr.	Subtr.	Subtr.	Subtr.		Subtr.	Subtr.	Subtr.	Subtr.		Subtr.	Subtr.	Subtr.	Subtr.		Subtr.	Subtr.	Subtr.	Subtr.		Grad.
0	0 0 0	0 21 0	0 36 0	0 42 0	0 36 0	0 21 0	0 18 0	0 34 0	0 34 0	0 21 0	0 18 0	0 25 0	0 25 0	0 25 0	0 25 0	0 21 0	0 14 0	0 32 0	0 14 0	0 30 0	0 30 0
5	0 0 4	0 24 0	0 38 0	0 42 0	0 34 0	0 27 0	0 40 0	0 41 0	0 32 0	0 27 0	0 14 0	0 11 0	0 11 0	0 11 0	0 11 0	0 11 0	0 11 0	0 11 0	0 11 0	0 11 0	0 11 0
10	0 7 0	0 27 0	0 40 0	0 41 0	0 32 0	0 27 0	0 40 0	0 41 0	0 30 0	0 27 0	0 14 0	0 11 0	0 11 0	0 11 0	0 11 0	0 11 0	0 11 0	0 11 0	0 11 0	0 11 0	0 11 0
15	0 11 0	0 30 0	0 41 0	0 41 0	0 30 0	0 27 0	0 40 0	0 41 0	0 30 0	0 27 0	0 14 0	0 11 0	0 11 0	0 11 0	0 11 0	0 11 0	0 11 0	0 11 0	0 11 0	0 11 0	0 11 0
20	0 14 0	0 32 0	0 41 0	0 40 0	0 27 0	0 32 0	0 41 0	0 40 0	0 27 0	0 27 0	0 7 0	0 11 0	0 11 0	0 11 0	0 11 0	0 11 0	0 11 0	0 11 0	0 11 0	0 11 0	0 11 0
25	0 18 0	0 34 0	0 42 0	0 38 0	0 24 0	0 27 0	0 34 0	0 38 0	0 24 0	0 24 0	0 4 0	0 4 0	0 4 0	0 4 0	0 4 0	0 4 0	0 4 0	0 4 0	0 4 0	0 4 0	0 4 0
30	0 21 0	0 36 0	0 42 0	0 36 0	0 21 0	0 36 0	0 42 0	0 36 0	0 21 0	0 21 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
	Adde	Adde	Adde	Adde		Adde	Adde	Adde		Adde	Adde	Adde	Adde		Adde	Adde	Adde	Adde		Grad.	
XI.	X.	IX.	VIII.	VII.	VI.	Grad.	XL	X.	IX.	VIII.	VII.	VII.	VII.	Grad.	XI.	X.	IX.	VIII.	VII.	Grad.	

45 159 54

I. Pro Longitudine nodi ascendentis.

Arum. Anomala media Linn.

Argumentum Astronomicum Mercatorum							
	I. Sign.	II. Sign.	III. Sign.	IV. Sign.	V. Sign.	Sext.	Sept.
	Sext.	Sext.	Sext.	Sext.	Sext.	Sext.	Sext.
0	0° 0'	0° 51"	1° 28"	1° 42"	1° 28"	0° 51"	30
1	0 2	0 53	1 29	1 42	1 28	0 50	29
2	0 4	0 54	1 30	1 42	1 27	0 48	28
3	0 6	0 56	1 31	1 42	1 26	0 46	27
4	0 8	0 57	1 32	1 42	1 25	0 45	26
5	0 9	0 58	1 32	1 42	1 24	0 43	25
6	0 11	1 0	1 33	1 41	1 23	0 42	24
7	0 13	1 1	1 34	1 41	1 22	0 40	23
8	0 15	1 3	1 35	1 41	1 21	0 38	22
9	0 17	1 5	1 36	1 41	1 20	0 37	21
10	0 18	1 6	1 36	1 40	1 18	0 35	20
11	0 20	1 7	1 37	1 40	1 17	0 34	19
12	0 21	1 9	1 37	1 40	1 16	0 32	18
13	0 23	1 10	1 38	1 39	1 15	0 30	17
14	0 25	1 11	1 38	1 39	1 14	0 28	16
15	0 26	1 12	1 39	1 39	1 12	0 26	15
16	0 28	1 14	1 39	1 38	1 11	0 25	14
17	0 30	1 15	1 39	1 38	1 10	0 23	13
18	0 32	1 16	1 40	1 37	1 9	0 21	12
19	0 34	1 17	1 40	1 37	1 7	0 20	11
20	0 35	1 18	1 40	1 36	1 6	0 18	10
21	0 37	1 20	1 41	1 36	1 5	0 17	9
22	0 38	1 21	1 41	1 35	1 3	0 15	8
23	0 40	1 22	1 41	1 34	1 1	0 13	7
24	0 42	1 23	1 41	1 33	1 0	0 11	6
25	0 43	1 24	1 42	1 32	0 58	0 9	5
26	0 44	1 25	1 42	1 32	0 57	0 8	4
27	0 46	1 26	1 42	1 31	0 56	0 6	3
28	0 48	1 27	1 42	1 30	0 54	0 4	2
29	0 50	1 28	1 42	1 29	0 53	0 2	1
30	0 51	1 28	1 42	1 28	0 51	0 0	0
	Addit.	Addit.	Addit.	Addit.	Addit.	Addit.	Ges.
	XI. Sign.	X. Sign.	IX. Sign.	VIII. Sign.	VII. Sign.	VI. Sign.	V. Sign.

pg 160 sp

II. Pro Longitudine nodi ascendentis.

Argum. Anomalia media Solis.

K	O. Sign.		I. Sign.		II. Sign.		III. Sign.		IV. Sign.		V. Sign.	
	Adde	Subtr.	Adde	Subtr.	Adde	Subtr.	Adde	Subtr.	Adde	Subtr.	Adde	Subtr.
0	0' 0"		3' 35"		6' 17"		7' 19"		6' 24"		3' 43"	30
1	0 8		3 41		6 21		7 19		6 20		3 36	29
2	0 15		3 48		6 25		7 19		6 17		3 29	28
3	0 23		3 55		6 29		7 19		6 13		3 22	27
4	0 30		4 2		6 32		7 18		6 8		3 15	26
5	0 38		4 8		6 35		7 18		6 5		3 8	25
6	0 45		4 14		6 38		7 17		6 1		3 1	24
7	0 53		4 20		6 41		7 17		5 56		2 54	23
8	1 0		4 26		6 44		7 16		5 51		2 47	22
9	1 8		4 32		6 47		7 15		5 46		2 41	21
10	1 15		4 38		6 50		7 14		5 41		2 33	20
11	1 22		4 44		6 52		7 13		5 36		2 25	19
12	1 29		4 49		6 54		7 11		5 31		2 17	18
13	1 37		4 54		6 57		7 10		5 26		2 11	17
14	1 44		5 0		7 0		7 8		5 21		2 3	16
15	1 51		5 6		7 2		7 7		5 16		1 56	15
16	1 59		5 11		7 4		7 5		5 10		1 47	14
17	2 5		5 16		7 5		7 3		5 5		1 40	13
18	2 13		5 21		7 8		7 1		4 59		1 32	12
19	2 20		5 27		7 9		6 59		4 53		1 25	11
20	2 27		5 32		7 11		6 56		4 47		1 17	10
21	2 34		5 37		7 12		6 53		4 41		1 9	9
22	2 40		5 41		7 13		6 50		4 35		1 2	8
23	2 47		5 46		7 14		6 47		4 29		0 54	7
24	2 54		5 51		7 15		6 44		4 23		0 47	6
25	3 2		5 56		7 16		6 41		4 17		0 38	5
26	3 9		5 59		7 17		6 38		4 10		0 31	4
27	3 15		6 4		7 17		6 35		4 3		0 23	3
28	3 22		6 8		7 18		6 32		3 57		0 16	2
29	3 28		6 13		7 18		6 28		3 50		0 8	1
30	3 35		6 17		7 19		6 24		3 43		0 0	0
	Sext.	Subtr.	Subtr.	Subtr.	Subtr.	Subtr.	Subtr.	Subtr.	Subtr.	Subtr.	Subtr.	Subtr.
	XI. Sign.	X. Sign.	IX. Sign.	VIII. Sign.	VII. Sign.	V. Sign.						

III. Pro longitudine nodi & inclinatione orbitæ ad eclipticam.

Argum. Subtrahentur longitudine nodi Ω a longitudine Solis vera.

Grade.	VI. Sign.			VII. Sign.			VIII. Sign.			Gradus
	Adde	differ.	Inclin.	Adde	differ.	Inclin.	Adde	differ.	Inclin.	
0° 0' 0"	0° 0' 0"	0° 0' 0"	0° 0' 0"	0° 12' 34"	0° 12' 34"	0° 12' 52"	0° 17' 16"	0° 4' 46"	30°	
0° 0' 0"	3° 16'	5° 17'	5° 17'	1° 21' 4"	1° 21' 4"	1° 30'	5° 12' 37"	5° 4' 32"	29°	
1° 0' 316"	3° 15'	5° 17'	4°	1° 22' 27"	1° 23'	5° 12' 21"	1° 15' 37"	1° 4' 18"	28°	
2° 0' 632"	3° 14'	5° 17'	3°	1° 23' 43"	1° 16'	5° 12' 6"	1° 12' 1"	1° 51'	27°	
3° 0' 948"	3° 13'	5° 17'	2°	1° 24' 53"	1° 10'	5° 11' 50"	1° 10' 5"	1° 56'	26°	
4° 0' 1258"	3° 12'	5° 16'	1° 58"	1° 25' 56"	1° 3'	5° 11' 33"	1° 8' 4"	2° 1"	25°	
5° 0' 1610"	3° 11'	5° 16'	58"	0° 58"	0° 38"	5° 11' 17"	1° 5' 58"	2° 6"	24°	
6° 0' 1927"	3° 9'	5° 16'	55"	1° 26' 54"	0° 50"	5° 11' 11"	1° 3' 47"	2° 11"	23°	
7° 0' 2230"	3° 8'	5° 16'	46"	1° 27' 44"	0° 44"	5° 10' 45"	1° 1' 33"	2° 14"	22°	
8° 0' 2538"	3° 7'	5° 16'	38"	1° 28' 28"	0° 38"	5° 10' 28"	0° 59' 16"	2° 17"	21°	
9° 0' 2845"	3° 4'	5° 16'	41"	1° 29' 6"	0° 31"	5° 10' 110"	0° 56' 54"	2° 22"	20°	
10° 0' 3149"	3° 0'	5° 16'	35"	1° 29' 37"	0° 26"	5° 9' 540"	0° 54' 28"	2° 26"	19°	
11° 0' 3449"	2° 58'	5° 16'	28"	1° 30' 3"	0° 19"	5° 9' 370"	0° 51' 58"	2° 30"	18°	
12° 0' 3747"	2° 56'	5° 16'	21"	1° 30' 22"	0° 12"	5° 9' 200"	0° 49' 25"	2° 33"	17°	
13° 0' 4043"	2° 52'	5° 16'	13"	1° 30' 34"	0° 3"	5° 9' 300"	0° 46' 48"	2° 37"	16°	
14° 0' 4331"	2° 50'	5° 15'	5"	1° 30' 37"	0° 4"	5° 8' 460"	0° 44' 7"	2° 41"	15°	
15° 0' 4625"	2° 45'	5° 15'	57"	1° 30' 35"	0° 8"	5° 8' 290"	0° 41' 23"	2° 44"	14°	
16° 0' 4910"	2° 41'	5° 15'	48"	1° 30' 25"	0° 15"	5° 8' 120"	0° 38' 37"	2° 46"	13°	
17° 0' 5133"	2° 37'	5° 15'	38"	1° 30' 10"	0° 22"	5° 7' 550"	0° 35' 49"	2° 48"	12°	
18° 0' 5428"	2° 34'	5° 15'	28"	1° 29' 48"	0° 29"	5° 7' 380"	0° 32' 59"	2° 50"	11°	
19° 0' 571"	2° 28'	5° 15'	17"	1° 29' 19"	0° 36"	5° 7' 210"	0° 30' 7"	2° 52"	10°	
20° 0' 5940"	2° 24'	5° 15'	6"	1° 28' 43"	0° 41"	5° 7' 100"	0° 27' 11"	2° 56"	9°	
21° 1' 154"	2° 24'	5° 14'	54"	1° 25' 2"	0° 48"	5° 6' 490"	0° 24' 14"	2° 57"	8°	
22° 1' 414"	2° 19'	4° 14'	43"	1° 27' 14"	0° 54"	5° 6' 330"	0° 21' 16"	2° 58"	7°	
23° 1' 627"	2° 14'	4° 14'	30"	1° 26' 26"	1° 0"	5° 6' 170"	0° 18' 17"	2° 59"	6°	
24° 1' 836"	2° 9'	4° 14'	19"	1° 25' 20"	1° 6"	5° 6' 100"	0° 15' 16"	3° 1"	5°	
25° 1' 1040"	2° 4'	4° 14'	11"	1° 24' 54"	1° 11"	5° 5' 450"	0° 12' 34"	3° 2"	4°	
26° 1' 1239"	2° 9'	4° 13'	51"	1° 23' 53"	1° 18"	5° 5' 300"	0° 9' 11"	3° 3"	3°	
27° 1' 1431"	2° 47'	4° 13'	36"	1° 21' 41"	1° 24"	5° 5' 150"	0° 6' 7"	3° 4"	2°	
28° 1' 1618"	2° 47'	4° 13'	21"	1° 20' 31"	1° 29"	5° 5' 000"	0° 3' 4"	3° 3"	1°	
29° 1' 1719"	2° 41'	4° 13'	7"	1° 18' 52"	1° 36"	5° 4' 460"	0° 0"	3° 4"	0°	
30° 1' 1934"	2° 35'	4° 12'	52"	1° 17' 16"						
	Subtr.	differ.	Inclin.	Subtr.	differ.	Inclin.	Subtr.	differ.	Inclin.	
V. Sign.	X.	IV. Sign.	X.	IX. Sign.	X.	III. Sign.	X.	IX. Sign.	III. Sign.	Gradus
XI.										

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**IV. Prima columnna pro longitudine nodi, tertia pro inclinatione
ad eclipticam.**

V. I

Argum. Subtrahatur Longitudo Solis a longitudine Luna.

Gradus.	VI. Sign.		VII. Sign.		VIII. Sign.		IX. Sign.		Gradus.
	Subtr.	diff.	Subtr.	diff.	Subtr.	diff.	Adde	diff.	
0	0' 0"	16"	42"	6' 28"	21"	6' 28"	21"	30	0
1	0 16	16	42	6 34	20	6 18	22	29	1
2	0 31	16	42	6 41	18	6 9	23	28	2
3	0 47	15	41	6 47	17	5 19	25	27	3
4	1 2	16	41	6 54	15	5 50	26	26	4
5	1 18	15	41	7 0	14	5 40	27	25	5
6	1 33	15	41	7 4	12	5 30	28	24	6
7	1 48	15	40	7 8	11	5 19	29	23	7
8	2 3	15	40	7 13	10	5 9	30	22	8
9	2 18	15	39	7 17	8	4 58	31	21	9
10	2 33	14	39	7 20	7	4 48	32	20	10
11	2 47	14	38	7 22	6	4 35	33	19	11
12	3 1	14	38	7 24	4	4 22	34	18	12
13	3 16	14	37	7 25	2	4 10	35	17	13
14	3 30	14	36	7 27	1	3 57	35	16	14
15	3 44	13	36	7 28	0	3 44	36	15	15
16	3 57	13	35	7 27	1	3 30	36	14	16
17	4 10	12	35	7 25	2	3 16	37	13	17
18	4 22	13	34	7 24	4	3 1	38	12	18
19	4 35	12	37	7 22	6	2 47	38	11	19
20	4 42	11	31	7 20	7	2 33	39	10	20
21	4 58	11	31	7 17	8	2 18	39	9	21
22	5 9	10	30	7 13	10	2 3	40	8	22
23	5 19	11	29	7 8	11	1 48	40	7	23
24	5 30	10	28	7 4	12	1 33	41	6	24
25	5 40	10	27	7 0	14	1 18	41	5	25
26	5 50	9	26	6 54	15	1 2	41	4	26
27	5 59	10	25	6 47	17	0 47	41	3	27
28	6 9	9	23	6 41	18	0 31	42	2	28
29	6 18	10	22	6 34	20	0 16	42	1	29
30	6 28	21	6 28	21	0 0	42	0	30	
	Adde	diff.	Subtr.	Adde	diff.	Adde	diff.	Adde	Gradus.
	V.	Sign.		IV.	X.	III.	IX.		
	IX.	Sign.		X.	Sign.	III.	Sign.		

V. Prima columnna pro longitudine nodi & reductione loci Lunæ ad eclipticam, secunda pro inclinatione ad eclipticam.
Argum. Subtrahatur longitudine Solis a longitudine Luna.

Sign.	VI. Sign.		VII. Sign.		VIII. Sign.		Subtr.	Gradus
	Adde	Adde	Adde	Adde	Adde	Subtr.		
0	0' 0"	38"	6' 2"	19"	6' 2"	19"	30	
1	0 15	38	6 9	18	5 55	20	29	
2	0 30	38	6 15	17	5 47	21	28	
3	0 44	38	6 21	16	5 39	23	27	
4	0 58	37	6 27	14	5 30	24	26	
5	1 12	37	6 32	13	5 20	25	25	
6	1 27	37	6 37	11	5 10	26	24	
7	1 41	37	6 41	10	5 0	27	23	
8	1 55	36	6 45	9	4 50	28	22	
9	2 9	36	6 48	8	4 39	29	21	
10	2 23	36	6 51	7	4 28	30	20	
11	2 37	36	6 54	6	4 17	31	19	
12	2 50	35	6 56	4	4 5	32	18	
13	3 3	35	6 57	2	3 53	33	17	
14	3 16	34	6 57	1	3 41	33	16	
15	3 29	34	6 57	0	3 29	34	15	
16	3 41	33	6 57	1	3 16	34	14	
17	3 53	33	6 57	2	3 3	35	13	
18	4 5	32	6 56	4	2 50	35	12	
19	4 17	31	6 54	6	2 37	36	11	
20	4 28	30	6 51	7	2 23	36	10	
21	4 39	29	6 48	8	2 9	36	9	
22	4 50	28	6 45	9	1 55	36	8	
23	5 0	27	6 41	10	1 41	37	7	
24	5 10	26	6 37	11	1 27	37	6	
25	5 20	25	6 32	13	1 12	37	5	
26	5 30	24	6 27	14	0 58	37	4	
27	5 39	23	6 21	16	0 44	38	3	
28	5 47	21	6 15	17	0 30	38	2	
29	5 55	20	6 9	18	0 15	38	1	
30	6 2	19	6 2	19	0 0	38	0	
	Subtr.	Adde	Subtr.	Subtr.	Subtr.	Subtr.	Subtr.	Gradus
	V. Sign.		IV. Sign.		III. Sign.		XI. Sign.	
	XI. Sign.		X. Sign.		IX. Sign.			

Equario primæ columnæ hujus tabula juxta tulos applicata dat equationem nodi, sed adversus titulos applicata dat reductionem Lunæ ad eclipticam.

35 164 58

I. Pro distantia Lunæ a Terra.
Argum. *Anomalia media Luna.*

No.	O. Sign.		I. Sign.		II. Sign.		III. Sign.		IV. Sign.		V. Sign.		II. Proc.	
	D a t	diff.	D a t	diff.	D a t	diff.	D a t	diff.	D a t	diff.	D a t	diff.	S a	O. Subt.
0	105364		104713	43	102892	76	100292	94	97546	85	95433	30	0	12
1	105363	1	104670	43	102816	79	100198	93	97461	85	95382	51	1	12
2	105361	2	104626	44	102737	78	100105	94	97376	84	95333	49	2	12
3	105357	4	104580	46	102659	79	100011	94	97292	82	95286	46	3	12
4	105352	5	104532	48	102580	81	99917	94	97210	82	95240	45	4	12
5	105345	7	104483	49	102499	82	99823	94	97128	81	95195	45	5	12
6	105337	8	104433	50	102417	82	99729	93	97047	79	95152	43	6	12
7	105328	9	104383	50	102335	82	99636	95	96968	80	95111	41	7	12
8	105317	11	104330	53	102253	82	99541	94	96888	78	95072	39	8	12
9	105304	13	104277	53	102169	84	99447	92	96810	77	95033	36	9	12
10	105290	14	104222	55	102085	84	99355	94	96733	76	94997	36	10	12
11	105274	16	104165	57	102001	84	99261	94	99657	75	94961	33	11	12
12	105258	16	104108	57	101916	85	99168	93	96582	74	94928	32	12	12
13	105240	18	104050	58	101829	87	99075	93	96508	74	94896	30	13	12
14	105220	20	103991	59	101742	87	98982	93	96434	72	94867	29	14	12
15	105200	20	103930	61	101655	87	98890	92	96362	71	94835	28	15	12
16	105177	23	103868	62	101567	88	98797	93	96291	71	94814	25	14	16
17	105152	25	103805	63	101478	89	98705	92	96222	69	94789	25	13	17
18	105137	25	103741	64	101390	88	98613	91	96153	67	94767	22	12	18
19	105121	26	103676	65	101300	90	98522	91	96086	67	94745	22	11	19
20	105072	29	103610	66	101211	89	98431	91	96019	67	94726	19	10	20
21	105043	29	103543	67	101120	91	98340	91	95954	65	94708	18	9	21
22	105011	32	103475	68	101030	90	98249	91	95890	64	94694	14	8	22
23	104975	33	103403	70	100938	92	98160	89	95829	61	94680	14	7	23
24	104945	33	103334	71	100847	91	98070	90	95768	59	94668	12	6	24
25	104909	36	103263	71	100755	92	97981	89	95709	59	94658	10	5	25
26	104873	36	103192	71	100662	93	97892	89	95651	58	94650	8	4	26
27	104835	37	103118	74	100570	92	97804	89	95595	56	94643	7	3	27
28	104796	39	103044	74	100477	93	97718	86	95540	55	94640	3	2	28
29	104755	41	102969	75	100385	92	97632	86	95486	54	94637	3	1	29
30	104713	41	102892	77	100292	93	97546	86	95433	53	94636	1	0	30
	D a t	diff.	D a t	diff.	D a t	diff.	D a t	diff.	D a t	diff.	D a t	diff.	S a	Si
	XL. Sign.		X. Sign.		IX. Sign.		VIII. Sign.		VII. Sign.		VI. Sign.		G	12

Pro distantia Lunæ a terra.
rgum. Anomalia excentr. Solis.

III. Pro distantia Lunæ a terra.
Argum. Subst. longitudo Solis a longitudine Da bis corretta.

O	I.					II.					III.					IV.					V.				
	Subt.	I.	Subt.	Subt.	Add.	Adde	V.	Subt.	Sign.	I.	Sign.	II.	Adde	diff.	III.	Adde	diff.	IV.	Adde	diff.	Subt.	diff.	Subt.	diff.	
0	12	10	5	0	5	10	687	1	334	21	370	22	715	1	342	23	380	22	30						
1	12	10	5	0	5	10	686	1	313	22	392	20	714	2	319	22	402	21	29						
2	12	10	4	0	5	10	685	2	291	22	412	20	712	3	297	23	423	20	28						
3	12	9	4	0	5	10	683	3	269	23	432	20	709	4	274	23	443	21	27						
4	12	9	4	1	5	10	680	3	246	23	452	19	705	4	250	23	464	19	25						
5	12	9	4	1	6	11	676	4	223	23	471	18	701	5	227	23	483	19	24						
6	12	9	4	1	6	11	672	4	200	23	489	18	696	6	203	24	502	18	23						
7	12	9	4	1	6	11	665	6	177	24	507	17	690	7	179	24	520	18	22						
8	12	9	4	2	6	11	659	7	153	24	524	17	683	8	155	25	538	17	21						
9	12	9	4	2	6	11	652	8	129	25	541	15	675	9	130	25	555	16	20						
10	12	8	4	2	7	11	641	9	104	24	556	16	666	9	105	25	571	16	19						
11	12	8	3	2	7	11	635	10	80	25	572	14	657	10	80	26	587	15	18						
12	12	8	3	2	7	11	625	10	55	24	586	14	647	11	54	25	602	14	17						
13	12	8	3	3	7	11	615	11	31	25	600	14	636	12	4	25	616	14	16						
14	12	8	3	3	7	12	604	11	6	24	614	12	624	13	25	630	12	15							
15	12	8	3	3	8	12	592	12	18	25	626	12	611	13	21	25	642	13	15						
16	12	7	3	3	8	12	579	14	4	25	638	11	598	16	46	25	655	11	13						
17	11	7	3	3	8	12	565	14	67	25	649	10	582	14	71	25	666	10	12						
18	11	7	2	3	8	12	551	14	92	24	659	9	568	15	96	25	576	10	11						
19	11	7	2	3	8	12	537	15	116	24	668	9	553	16	121	25	686	9	10						
20	11	7	2	4	8	12	522	16	140	25	677	8	537	17	146	25	695	8	9						
21	11	6	2	4	9	12	506	17	165	24	685	7	520	17	171	24	703	7	8						
22	11	6	2	4	9	12	489	17	189	24	692	5	503	19	195	25	710	7	7						
23	11	6	1	4	9	12	472	18	213	23	697	5	484	19	220	23	717	5	6						
24	11	6	1	4	9	12	454	19	236	23	702	4	465	19	243	24	722	5	5						
25	11	6	1	4	9	12	435	19	259	23	706	4	446	20	267	24	727	4	4						
26	10	5	1	4	9	12	416	20	282	23	710	2	426	20	291	23	731	3	3						
27	10	5	0	4	9	12	396	20	305	22	712	2	406	21	314	23	734	2	2						
28	10	5	0	4	10	12	376	21	327	22	714	1	385	21	337	22	736	1	1						
29	10	5	0	5	10	12	355	21	349	21	715	0	364	22	359	21	737	1	0						
30	10	5	0	5	10	12	334	21	370	715	0	342	23	380	21	738									

Subt.	Subt.	Subt.	Adde	Add.	Add.	Subt.	diff.	Adde	diff.	Adde	diff.	Subt.	diff.	XI.	X.	IX.	VIII.	VII.	VI.	V.											
XI.	X.	IX.	VIII.	VII.	VI.	XI.	X.	X.	X.	X.	X.	X.	X.	X.	X.	X.	X.	X.	X.	X.	X.	X.	X.	X.	X.	X.	X.	X.	X.	X.	X.

IV. Pro distantia Luna a Terra.

Argum. A dupla dist. ⊕ a D subtr. anom. Luna excentr.

V. Pro distantia Jæ a Terra

Argum. A dupla dist. ⊕ a D subtr. dupla anom. Luna excentr.

No.	Sign.	I. Sign.	II.		III.		IV.		V.		VI.		A d	
			Adde	diff.	Adde	diff.	Subt.	diff.	Subt.	diff.	Subt.	Subt.	Adde	
0999	O	865	9	500	16	O	18	500	14	865	9	118	102	30
1999	I	856	9	484	15	18	17	514	15	874	8	118	101	29
2998	I	847	9	469	16	35	18	529	14	882	7	118	100	28
3997	I	837	9	453	15	53	18	543	14	889	8	118	99	27
4996	I	828	10	438	15	71	16	557	16	897	8	118	98	26
5995	2	818	10	423	7	87	17	573	14	905	7	118	97	25
6993	2	808	10	406	16	104	18	587	14	912	7	117	96	24
7991	2	798	11	390	16	122	17	601	14	919	7	117	94	23
8989	2	787	11	374	17	139	17	615	14	926	7	117	93	22
9986	3	776	11	357	16	156	17	629	13	933	6	117	92	21
10984	2	765	12	341	16	173	18	642	13	939	5	116	90	20
11981	3	753	12	325	17	191	17	655	13	944	6	116	89	19
12978	3	742	11	308	15	208	17	668	14	950	5	115	88	18
13974	4	731	13	293	17	225	17	682	11	955	6	115	86	17
14972	4	718	13	276	17	242	17	693	11	961	4	114	85	16
15965	5	706	13	258	16	258	18	706	12	965	5	114	83	15
16961	4	693	11	242	17	276	17	718	13	970	4	113	82	14
17955	6	682	11	225	17	293	17	731	11	974	4	113	80	13
18950	5	668	14	208	17	308	17	742	11	978	3	112	78	12
19944	6	655	13	191	18	325	16	753	12	981	3	112	77	11
20939	5	642	13	173	18	341	16	765	11	984	2	111	76	10
21933	6	629	13	156	17	357	17	776	11	986	3	110	74	9
22926	7	615	14	139	17	374	17	787	11	989	2	109	72	8
23919	7	601	14	122	17	390	16	798	10	991	2	109	71	7
24912	7	587	14	104	18	406	17	808	10	993	2	108	70	6
25905	7	573	14	87	17	423	15	818	10	995	1	107	68	5
26897	8	557	16	71	16	438	15	828	9	996	1	106	66	4
27889	8	543	14	53	18	453	16	837	10	997	1	105	65	3
28882	7	529	14	35	18	469	15	847	9	998	1	104	63	2
29874	8	514	15	18	17	484	16	856	9	999	0	103	61	1
30865	9	500	14	0	18	500	16	865	9	999	0	102	59	0
		Adde	diff.	Adde	diff.	Adde	diff.	Subt.	diff.	Subt.	diff.	Subt.	Subt.	Adde
		XI.	X.	IX.	VIII.	VII.	VI.	XI.	X.	X.	IX.	VIII.	VII.	VI.

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VI. VII. VIII. Pro distantia Lunæ a Terra.

VI. Argum. *Ad duplam distant. ☽ a ☽ ad-*
datur anomalia Luna excentrica.

Grad. o	o Sig.		I. Sig.		II.		III.		IV.		V.	
	Subtr.	Subtr.	Subtr.	Adde	Adde	Adde	Adde	Adde	Adde	Adde	Subtr.	Subtr.
0 34	30	17	0	17	30	30	0	19	16	9	0	9
5 34	28	15	3	20	31	25	5	19	15	8	2	11
10 33	26	12	6	22	32	20	10	18	14	6	3	12
15 33	24	9	9	24	33	15	15	18	13	5	5	13
20 32	22	6	12	26	33	10	20	17	12	3	6	14
25 31	20	3	15	28	34	5	25	17	11	2	8	15
30 30	17	0	17	30	34	0	30	16	9	0	9	16
	Subtr.	Subtr.	Subtr.	Adde	Adde	Adde		Adde	Adde	Adde	Subtr.	Subtr.
	XI.	X.	IX.	VIII.	VII.	VI.	Grad.	XI.	X.	IX.	VIII.	VII.

VII. Argum. *Ad dupla dist. ☽ a ☽ subtrahatur*
anomalia Solis excentrica.

Grad. o	o Sig.		I. Sig.		II.		III.		IV.		V.	
	Subtr.	Subtr.	Subtr.	Adde	Adde	Adde	Adde	Adde	Adde	Adde	Subtr.	Subtr.
0 34	30	17	0	19	16	9	0	9	16	30		
5 34	28	15	3	19	15	8	2	11	17	25		
10 33	26	12	6	18	14	6	3	12	17	20		
15 33	24	9	9	18	13	5	5	13	17	15		
20 32	22	6	12	17	12	3	6	14	18	10		
25 31	20	3	15	17	11	2	8	15	19	5		
30 30	17	0	17	16	9	0	9	16	19	0		
	Subtr.	Subtr.	Subtr.	Adde	Adde	Adde	Subtr.	Subtr.	Subtr.	Subtr.	Subtr.	Subtr.
	XI.	X.	IX.	VIII.	VII.	VI.	Grad.	XI.	X.	IX.	VIII.	VII.

VIII. Argum. *Ad duplam distant. ☽ a ☽ addatur*
anomalia Solis excentrica.

Grad. o	o Sign.		I.		II.		III.		IV.		V.	
	Adde	Adde	Adde	Adde	Subtr.							
0 14	12	7	0	7	12	30						
5 14	12	6	2	8	12	25						
10 13	11	5	3	9	13	20						
15 13	10	4	4	10	13	15						
20 13	9	3	5	11	13	10						
25 12	8	2	6	12	14	5						
30 12	7	0	7	12	12	14						
	Adde	Adde	Adde	Adde	Subtr.							
	XI.	X.	IX.	VIII.	VII.	VI.	Grad.	XI.	X.	IX.	VIII.	VII.

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Pro Diametro apparente & Parallaxi Lunæ horizontali.

dist. Te a g	diam. appar.	Parall. horiz.	dist. Te a g	diam. appar.	Parall. horiz.
92500	34' 3"	61' 59"	100000	31' 30"	57' 20"
92750	33 57	61 49	100250	31 25	57 11
93000	33 52	61 39	100500	31 20	57 3
93250	33 46	61 29	100750	31 15	56 54
93500	33 41	61 20	101000	31 11	56 46
93750	33 36	61 10	101250	31 6	56 37
94000	33 31	61 0	101500	31 2	56 29
94250	33 25	60 50	101750	30 57	56 20
94500	33 20	60 40	102000	30 53	56 12
94750	33 15	60 31	102250	30 48	56 4
95000	33 10	60 21	102500	30 44	55 56
95250	33 4	60 11	102750	30 39	55 48
95500	32 59	60 2	103000	30 35	55 40
95750	32 54	59 52	103250	30 30	55 32
96000	32 49	59 43	103500	30 26	55 24
96250	32 43	59 33	103750	30 21	55 16
96500	32 38	59 24	104000	30 17	55 8
96750	32 35	59 15	104250	30 12	55 0
97000	32 28	59 6	104500	30 8	54 52
97250	32 23	58 57	104750	30 4	54 44
97500	32 18	58 48	105000	30 0	54 37
97750	32 13	58 39	105250	29 55	54 29
98000	32 9	58 30	105500	29 51	54 21
98250	32 4	58 21	105750	29 47	54 13
98500	31 59	58 12	106000	29 43	54 5
98750	31 54	58 3	106250	29 38	53 57
99000	31 49	57 54	106500	29 34	53 50
99250	31 44	57 45	106750	29 30	53 42
99500	31 39	57 37	107000	29 26	53 35
99750	31 34	57 28	107250	29 22	53 27
100000	31 30	57 20	107500	29 18	53 20