

Vk. 312.

Q. D. B. V.

ht. 126

ECLIPSIN. TERRAE

CIDICCC XXXIII. & D. ^{II}_{XIII} MAII

T. C. P. M.

AMPLISSIMAE. FACVLTATIS
PHILOSOPHICAE. CONSENSV

H. L. Q. ●

D I S P V T A B I T

M. GEORGE. MATHIAS. BOSE
LIPSIENS. MED. BACC.

R E S P O N D E N T E

GEORG. WILHELM. POEZINGER
SS. T. C. BARVTHO- FRANCO.

LIPSIAE. CID IC CC XXXIII. D. XVII. APRILIS.

E TYPOGRAPHIA. BREITKOPFFIANA.



G.D.B.A

卷之三

ECLIPSIN.TERRAE

C1310 CC XXXIII. A. D. M^{DC} M^{DC} M^{DC}

E.C.P.M.

DISPATIBI

ЛІСІНГ МЕД ЗАС

VIR O
EXCELENTISSIMO
CONSVLTISSIMO. ATQVE. AMPLISSIMO
DOMINO
CAROLO. FRIDERICO
ROMANO
ICTO. CELEBERRIMO

IVDICII. PROVINCIALIS
MARCHIONATVS. INFERIORIS. LVSATIAE
ET
ILLVSTRIS
FACVLTATIS. IVRIDICAE
ADSESSORI. GR AVISSION
PRAETORI
CIVITATIS. LIPSIENSIS
SPECTATISSIMO

CAM. VOTIS ARDENITISSIMIS
SONNI IN DILECTIONE
FIDO
LEGVM. TVTORI
RECTI ET. INIQVI
AD SERTORI. ET. VINDICI
CONSTANTISSIMO
PATRONO
OPTVME DE SE MERITO

CVM. VOTIS. ARDENTISSIMIS
VELIT
DEVS
OPTIMUM S MAXIMUS
TE
IN. PATRIAE. EMOLVMENTVM
IVSTITIAE. DEFENSIONEM
AMICORVM. LAETITIAM
FAMILIAE. COLVMENT
SPLENDIDISSIMAE

NESTOREOS. VSQVE. IN. ANNOS
F A V S T V M
FELICEM
C O N S E R V A R E
C V M Q V E. O B S E R V A N T I S S I M A
P V R I S S I M A E. M E N T I S
C O N T E S T A T I O N E

V A C T O R



HOC
NESTORIUS.
LETRICEN
QUID QVID EST. LABORIS. ACADEMICI
C. O. L. A. R. L.
CAMOUF OBSERVANTISSIMU
PARISIENSIS MENTIS
CONTESTATIONI

A V C T O R.



I. N. R. I. F.



Ulius Cæsar post devictam terram virtute vere heroica cælum aggrediebatur. Composuerat, vel oppresserat potius factiones in senatu, ac populum vi metuque in ordinem redegerat, cum in *Kalendario* animum ad magna natum exercere incipiebat. Quales

cycli, qualeve *Kalendarium* ante *Cæsaris* tempora apud Romanos in usu fuerit, ex *Henrici Dodwell* (a) cyclis, horumque dissertatione decima constat. Ad *Julium* vero usque curæ pontificum demandatos fuisse fastos veteres testantur. Per eorum

A autem

(a) Oxoniæ. 1701. 4m.

II PROOEMIUM.

autem sacerdotum gratiam, qui publicanis proferri, vel irritari consulto dies volebant, modo auctio, modo retractio dierum proveniebat, (a) ut cum vellent, intercalarent (b). Si cuipiam hæc de nimia pontificum licentia in *Kalendarium* non sufficiunt, consulat *Suetonium* in vita *Cæsaris* cap. XLII. toto. *Julius* autem tantæ pertæsus confusionis, primum annum a se dictum *Julianum* aperiebat, anno qui erat a parilibus V.C. 709, se quartum Cos. ante æram *Christi* 45, uti hoc *J. B. Ricciolus* (c) & *Henricus Norisius* (d) perbene docuerunt. Sane non nisi auctoritas publica huic malo remedium afferre valebat. Tanta quippe extiterat *Kalendarii* deturbatio, ut annus quarti consulatus *Cæsaris* ineundus Kalendis Januarii sub finem Octobris fuerit incepturnus, nisi *Julius* annum, quem ex *Macrobius* temporibus confusionis dicimus, dierum 445 confecerit, prouti hæc & *Censorinus* (e) & *Macrobius*

(a) *Macrob. Sat. lib. I. cap. XIV. p. 236.* edition. *Gryphianæ Lugdunensis* de An. 1556. 8. p. 254. edit. *Gronoviana. Lugd. Bat. 1670.* 8.

(b) *Ibid. cap. XIII. p. 236. Gryph. 253. Lugd.*

(c) *Joh. Bapt. Ricciolus Chronologiae Reformatae Tomo I. lib. I. cap. XXI & XXII. pag. 42. &c. Bononia. 1669. Tomi IV. fol.*

(d) *Henricus Norisius Dissertationis de paschali latinorum cyclo p. i. quæ accessit ejus annis & epochis Syromacedonum. Florentia. 1691. 4max. confer. *Setbi Calvisti* opus Chronologicum Parte IV. cap. XLVI. p. 156. seqq. Francof. & Lips. 1685. fol. *Dionysii Petavii* opus de doctrina temporum. Tomo I. lib. IV. cap. I. p. 160. item. Tomo II. lib. XIII. p. 366. Antwerpia. 1703. Tomi III. fol. median. & *Josèphi Scaligeri* emendationem temporum lib. IV. p. 227. Geneva. 1629. fol. sique multum temporis tibi est superflui, evolvere licet *Hieronymum Vecchiotti* in satis quidem raro, satis magno, sed & satis inutili opere de anno primitivo, &c. lib. VIII. p. 285. Aug. Vindel. 1621. fol. reg.*

(e) *Censorinus. De die natali cap. XX. p. 122. Cantabrigia. 1695.* 8.

crobius (a) expresse dicunt. Per pulchrum equidem ordinem intercalandi constituerat *Julius*, & plus vice simplici veteres scriptores testantur, quartum quemque annum confectum pro bissextili haberi debuisse: nihilominus tamen pontifices, necio an confusionibus assueti, an fraudibus, annis 36 intercalares confinxerant duodecim, cum ex *Julii* mente non nisi novem debuissent esse bissextiles. Anno igitur æræ *Julianæ* 38, ante *Christum* 8, *Augustus* tunc Pontifex Maximus novæ huic luxationi ibat obviam. Decernebat enim ad excludendos dies tres falso intercalatos, duodecim annos sine bissexto decurrere debere, id quod anno *Juliano* 49, a *Christo* 4 accidebat, tunc vero insuper quatuor annos præterlabi solebat, donec bissextiles jussu *Julii* anno æræ suæ 53, *Christi* 8 reassumerentur. *Macrobius*, *Censorinus*, & *Solino* (b) hæc debemus, uti & quod elegantissimæ hujus rationis annuæ ordo ab *Augusto* ad æternam rei custodiam æræ tabulæ sit incisus. Quantæ & habitæ sit redintegratio haec *Juliana*, tot commentarii in *Kalendarium Julianum-Romanum* argumentis probant validissimis. Præcipue ex quo monumenta quædam marmorea, procul dubio publica senatus auctoritate sculpta *Grutero* (c), *Mazochius* (d), *Georgio Fabricio* (e),

A 2

&

(a) *L. c.* cap. XIV. p. 237. Gryph. 255. Lugd.(b) *Solinus*. Polyhistore cap. I. p. 3. 4. confer. *Salmasium* in hunc locum. p. 14. seqq. *Trojecti ad Rhenum*. 1689. Tomi II. fol. med.(c) *Janus Gruterus Inscriptionum antiquarum* pag. CXXXIII-CXXXVI. CXXXVIII-CXLII. edit. prioris.(d) *Mazochius* p. CCLXVI. CCLXX. vel potius *Petri Apiani* & *Bartolomei Amantii* *Inscriptiones sacro sanctæ vetustatis*. Ingolstadii, in ædibus *P. Apiani*. 1533. fol.(e) *Georgius Fabricius antiquitatum romanarum* lib. II. p. 96. Basileæ. 1560. ex officina *Oporiniana*. 8.

& magno *Josepho Scaligero* (a) ansam præbuerunt, ut veteris *Kalendarii Juliani* qualitates inquirerent, donec tandem *Franciscus Blanchinus* (b) toram exhausit rem eruditissime, ac ingeniosam, suisque temporibus accuratissimam omnium methodum explanavit *Julianam*. Quid vero post *Julii* tempora *Kalendarium* hocce sit perpeßum, notius est, quam ut multa de his verba facere e re ducamus. Quot & quantæ lites post divisum præcipue imperium inter utramque ecclesiam ratione paſchatos sint exortæ, vel modice in Historia ecclesiastica versato haud potest esse incognitum. Prætereo pauca secunda in anno *Juliano* defuisse. Ac taceo hæc per sedecim secula accumulata in undecimum usque accrevisse diem. Quid *Gregorius XIII* toto ex orbe Romam vocatis Mathematicis ob hunc egerit defectum neminem fugit. Hos vero labores omnes uni, soli debemus Astronomiæ. Absque hac enim nullus annus, nullusve foret mensis. Absque *S. Urania Divus Julius Kalendarii* depravationem nullo modo corrigere valuisset, nec *Gregorius XIII* ejus restaurationem perficere potuisset, astrorum nisi motibus manum ei obstetricantem præbentibus. *Julii* equidem ævo satis erat levis, ac vacillantibus modo stans fundamentis Astronomia, sed erexit tandem caput, imo *S. Uraniam* transcendisse fere ipsos humanæ scientiæ limites, quis est quem fugiat? Quis est enim quem fugiat, quanta incrementa studium astronomicum, cum cæteris omnibus post inventio-

nem

(a) *Josephus Scaliger* de emendatione temporum. lib. IV. p. 232.
confer. *Petavium* Tomo III. p. 67. seqq.

(b) *Franciscus Blanchinus*. De Kalendario & cyclo Cæsarisi, ac de Paſchali canone S. Hippolyti martyris. Romæ. 1703. fol. conf. *Job. Georg. Grævii* Theſaurum antiquitatum romanarum, toto fere Tomo VIII. Traj. ad Rhenum, & Lugd. Bat. 1698. fol.

nem typographicæ artis sumserit. Mille annis non nisi *Claudii Ptolomæi*, & *Alphonsi X Arragoniæ Regis* tabulæ publicabantur. Tria vero ultima, cum triente seculi currentis minimum earum ter quinas exhibuerunt. Quantum insuper promoti sint calculi, quot excogitata instrumenta, qualesve detectæ inventiones, tam stat in aprico ut nimium in his esse prolixum videatur incongruum. Sed haud fere aliter fieri potuit. Divina quippe hæc scientia semper principes, ac sanguine natos regio commovit, ut studiis incumbendo astronomicis nomina sua æternitate donarent. Taceo jam Serenissimum *Wilhelnum Hassiæ Landgraviū*. Taceo Potentissimos *Fridericū II*, ac *Christianū IV* Daniae Reges, uti & *Inviçtissimum Rudolphum II*. R. J. S. A. omnes *Tychonis De Brahe* Patronos longe Munificentissimos. Nec de *Carolo II Magnæ Britanniæ Rege Potentissimo*, Astronomiæ, & rei nauticæ promotore Generosissimo multa loqui tempus permittit. Horum omnium enim laudes digne extolere non valentes, eas tantum tangere reverentia vetat & submissio. Unicus *Ludovicus M.* Rex Galliarum in Astronomiam novissimis temporibus, quicquid modo potuit, contulit. Observatorium Parisinum, arx ista *S. Uraniae* sine pari, quanti sit habendum quoad exteriora, Architecturæ periti pro merito effari vix valebunt, imitari *Perraultum*, *Vitruvium* tanquam Francorum minus audebunt. Sed quanti rivuli, vel potius cœlestes Eridani, ex inexhausto hoc totius Matheſeos oceano universum in orbem profilierint, non sine veneratione miramur. Præcipue *Dominicus Caffini* natione cœtera Italus, cui quantum debeat terra, cœlum, universum, norunt optime quibus hæc studia curæ sunt cordique, monumenta ibidem sibi extruxit omni ære perenniora, ac non nisi cum mundo ipso moritura.

A 3

Hic

Hic est, qui de cometis, de veteri Geographia & Astronomia tum Græcorum, tum Sinarum, tum Indorum, de vera telluris, de vera universi magnitudine, de singulis Cosmologiæ partibus, de omnibus æque, de omnibus immortaliter meruit. Quantum illi eclipsium doctrina debeat, filios artis latere nullo modo potest Mirum quantum hæc a *Keplero* promota, sed a *Cassino* ad apicem fere quod sit perducta asseverare nullus dubito. Quædam tamen adhuc supereſſe vel ipſe non negaret, si adhuc inter mortales vir merita degeret immortalis. Quamquam vero nostræ optime sumus gnari imbecillitatis, quamquam nulla supereſſe ſpes, fore, ut tales imitemur Atlantes; nihilominus tamen nobis thema quærentibus, quod publicum ſpecimen primitiarum eſſet academicarum, non omnium facillimum eligendum erat. Elegimus igitur diem ¹⁷, mensis Maji, anni 1733, tempore civili, ac eclipsin tunc celebrandam, non ut olim fatalem regnis, funefiam urbibus, horrendam singulis, sed potius Astronomiæ utilem, astronomis exoptatam, ac ab omnibus curiosis avide ſpectandam, (quousque nempe ejus perveniet tractus) in minimis non minus ſumma *āngeliſcia*, quam indefesso studio sumus percontati. Quod Numen Ter Optimum, Terque Maximum felix faustumque eſſe jubeat!



MONI

MONITUM.

Consideraturi hanc eclipsin duas instituimus actiones, quarum prior, de eclipsi prout toti hemisphaerio apparebit terrestri, posterior vero, prout Lipsiae observanda veniet, actura est, ubi tamen quid novilunium, medium, verum, quid eclipsis solis, quid longitudo, latitudo, parallaxis, momentum novilunii, inclinatio orbitae, via centri, cur semidiometer disci = parallaxi lunae horizontali, quid penumbra, & cur ejus semidiometer = summae semidiometrorum solis & lunae, quid umbra, & cur ejus semidiometer = differentiae eorundem luminarium semidiometrorum, quid momentum mediaram tenebrarum, arcus inter centra minimus, porro quid nobis semita primaria, secundaria, &c. &c. ut nota, vera, & a quam plurimis demonstrata Mathematicis supponimus, ne ea quæ *J. Keplerus* (a), *Ismael Bullialdus* (b), *J. B. Ricciolus* (c), *Vincentius Wing* (d), *Andreas Tacquet* (e), *Jeremias Horroccius* (f), *Thomas Streete*

- (a) *Job. Keplerus.* In Rudo'phinis. cap. XXXI. XXXII. pag. 99. 100. seqq. Ulmæ. 1627. fol.
- (b) *Ismael Bullialdus.* Astronomia Philolaica lib. IV. cap. IV. V. p. 199. 204. Parisiis. 1645. fol.
- (c) *Job. Bapt. Ricciolus.* Almagesti novi Partis I. Tomi I. lib. V. cap. XII. p. 338. & seqq. Bononia. 1651. Tomi II. fol.
- (d) *Vincentius Wing.* Astronomia Britannica lib. IV. cap. XXVI. &c. p. 196. seqq. Londini. 1669. fol.
- (e) *P. Andreas Tacquet.* S. J. operum mathematicorum. Astronomia lib. IV. Antwerpia. 1669. fol. edidit *Simon Laurentius Veterani*, ex comitibus montis calvi.
- (f) *Jeremias Horroccius.* Operum posthumorum. Disputationis V, de diagrammate Hipparchi cap. I. p. 106. seqq. Londini. 1673. 4. edidit *Johannes Wallis*. S. Th. D. R. S. S.

te (g), Christianus Wolffius (h), J. Keill (i), David Gregorius (k), Philippus de la Hire (l), Christian August Hausen (m), aliaque primi ordinis lumina (nam in præsentia e multis quosdam allegasse sufficiat) demonstrare, repetiſſle, ſicque crambem bis coctam appoſuiffe videamur. Cuilibet igitur, quem methodus instituen- di calculi ecliptici non fugit, ac cui principia Arithme- ticæ, & Geometriæ, totius Matheſeos columnarum fal- lere plene neſcientium, non ignota ſunt, cuilibet in quam horum, ſequentia luce patebunt clarius meridiana.

(g) *Thomas Streete.* Astronomiæ Carolinæ præceptis VII. &c. p. 56. ſeqq. edidit Job. Gabriel Doppelmayr Matth. P. P. No- rimbergæ. 1705. 4.

(h) *Christianus Wolffius.* In den Anfangs- Gründen der mathe- matischen Wiffenſchafften. Tomo III. Halæ 1732. Tomi IV. 8. it. in Elementis Matheſeos univerſæ. Tomo II. ibid. 1715. Tomi II. 4.

(i) *Joannes Keill.* Introductionis ad veram Astronomiam lectio- ne XI, XII, XIII, XIV. p. 296. ſeqq. Lugd. Bat. 1725. 4m. edidit G. I. s'. Graveſande.

(k) *David Gregorius.* Elementorum Astronomiæ physicae & geo- metricæ Tomo II. lib. IV. Sect. VII. VIII. Propofit XL. &c. p. 533. ſeqq. Geneva. 1726. Tomi II. 4m.

(l) *Philippus de la Hire.* Tabularum astronomicarum, Præ- pro IX, &c. p. 19. ſeqq. Parifiis. 1727. 4m.

(m) *Christian August Hausen,* in Actis eruditorum 1724. Oct. & Suppl. Tomo IX. Sect. VIII.



SECTIO I.



S E C T I O I .
DE
ECLIPSI
PRO TOTO HEMISPÆRIO.

§. I.

Si circulus penumbrosus discum primo omnium continet instantē, & ultimo omnium derelinquit, id sit in unico puncto. Ingressa vero penumbra in discum, cum circulus circulum fecat in punctis duobus, nec pluribus, nec paucioribus (Eucl. III. 10.), duas constanter habemus semitas, quarum nunc duæ simul ingrediuntur, nunc simul egrediuntur; nunc cum unius antecedens ingreditur, alterius consequens simul appellit; nunc cum unius antecedens egreditur, alterius consequens simul appellit; nunc cum unius antecedens exit, simul & alterius consequens egreditur; nunquam vero cum unius antecedens appellit, simul & alterius consequens egreditur. Præcipue harum semitarum sunt, ex ordine quo se subsequuntur in schemate,

1) Contractus primi.

2) Locorum ubi luna solem tangit orientem, aliquando & ex altera parte viæ centri.

3) Digitorum unius, duorum, &c. usque ad duodecimum crescentem ingredientem.

B

Generalia
circa
penumbram.

ex una parte
viæ centri.

4) Digo-

- 4) Digitorum duodecim, undecim, &c. usque ad primum decrecentem ingredientem, ex altera parte via centri.
- 5) Locorum ubi vel maxima, vel minima eclipsis, versus boream in nostro, versus austrum in altero hemisphærio, in momento mediarum tenebrarum sub meridiano tabularum, aliquando.
- 6) Digitorum unius, duorum, &c. usque ad duodecimum crescentem egreditem, ex altera parte via centri.
- 7) Digitorum duodecim, undecim, &c. usque ad primum decrecentem egreditem.
- 8) Locorum ubi luna solem tangit occidentem, ex altera parte via centri,
- 9) Contactus ultimi.

Ex hac data magnitudine, in medio nempe eclipses, quæ potest longitudo, latitudo, nomina locorum, & horæ in omnibus hisce locis numeratae, ubi semita cuiusvis antecedens & consequens ingreditur & egreditur, hæcque non solum pro cuiusvis digiti semita puncto antecedente, & consequente, sed & puncti in qualibet semita mediæ determinationes modo dictæ inde eruuntur. Ponamus jam non esse datam eclipses magnitudinem, sed tempus sub meridianæ tabularum, tunc aciem calculi haud quamquam effugere poterit, antecedens, consequens, aut medium semita punctum, magnitudo eclipses in locis super quæ transit chorda, longitudo, latitudo, nomina, & tempus locorum. Si tandem semita vel antecedens notum sit, vel medium, & consequens, & ex semita alterius vel appellenatis, vel ex eundem sit animus investigare proprietates, nec haæ diligenter poterunt latere astronomum. Exque his omnibus curva, quam centrum penumbrae in superficie describit telluris, una cum limite austrino & boreo, & variante incremento diametrorum macula penumbrosæ ex aucto deteguntur. Demonstrationem hactenus dictorum sequens exhibebit calculus, unde & fundamenta methodi optime licet perspicere. Hisce vero ne te immisces inquisitionibus, nisi et theorici antea sequentibus collectis elementis, ubi nos quidem novissimam MAGNI DE LA HIRE editionem, (vide notam i moniti præcedentis) in trigonometricis vero *the Mathematical Tables* (*) adhibuimus, excepto, si anguli & latera nimis parva vel magna aliud suferunt, tunc enim VLACC *Trigonometria artificiali* (**) utrebamur.

(*) Londini 1705, & 1706. 8. maxima forma.

(**) Goudæ 1633, fol.

§. II.

1732. mensis Aprilis, dies 12, tempore astronomico.

Novi-

Novilunium medium.

Pro sole.

Longitudo solis media.

Apogæum solis.

Anomalia media solis.

Æquatio centri +

Locus solis verus.

Anomalia vera solis.

Horarius solis.

Diameter solis.

Pro luna.

Longitudo lunæ media.

Apogæum lunæ.

Anomalia media lunæ.

Æquatio centri +

Locus lunæ I æquatus.

Anomalia lunæ I æquata.

Apogæum solis.

Dist. lunæ ab apogæo solis.

Locus solis verus.

Dist. lunæ a loco solis vero.

Æquatio II -

Locus lunæ II æquatus.

Anomalia lunæ II æquata.

Locus & verus.

Argumentum latitudinis.

Reductio ad eclipticam -

Locus lunæ reductus.

Locus solis verus.

Luna præcedit solem.

in secundis.

Horarius solis.

Horarius lunæ fictus.

Horarius lunæ a sole fictus.

Reductio ad eclipticam -

Horarius lunæ a sole reductus.

in secundis.

1988" motus =

3600 temporis =

124" motus =

225 temporis = 3'.45.

2'.4" igitur motus dant 3'.45" temporis, quæ a momento novilunii medi 5° 19' 17". si subtrahuntur, quippe locus lunæ distat a loco solis in excessu, restabit

Tabula

XXVIII.

5° 19' 17"

XI

1. 21. 26. 34"

XI

3. 8. 40. 49.

XIII

10. 12. 45. 54.

1. 23. 17.

XIV

1. 22. 49. 51.

XIV

10. 14. 9. 11.

2. 25.

31. 47.

XV

1. 21. 26. 45.

XV

7. 13. 46. 52.

XVI

16. 17. 39. 53.

XVI

1. 16. 30. 49.

1. 22. 56. 54.

6. 19. 10. 2.

XVII

3. 8. 40. 40.

XVII

10. 14. 16. 14.

XVII

1. 22. 49. 51.

XVII

7. 13. 44.

XVII

1. 22. 49. 50.

XVII

6. 19. 2. 58.

XV

8. 1. 58. 31.

XV

5. 20. 51. 19.

XXII

1. 22. 51. 55.

XXII

1. 22. 49. 51.

XXII

1. 22. 51. 55.

XXII

1. 22. 49. 51.

XXII

1. 22. 51. 55.

Novilunium prope verum

5^h. 15'. 32".

Contenti omnino hoc esse possemus, sed pro nimia accurateone
locus solis & lunæ iterum queratur, ut in sequente.

§. III.

| Novilunium prope verum | | Tabula | 5 ^h . 15'. 32". |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------------------------|
| Locus solis | Pro sole. | | |
| pro | Longitudo solis media. | XI | 5. 21. 26. 24. |
| Novil. prope | Apogæum solis. | XI | 3. 8. 40. 40. |
| vero. | Anomalia media solis. | XIII | 10. 12. 45. 44. |
| | Æquatio centri → | | 1. 23. 18. |
| Locus solis verus. | Locus solis verus. | | 1. 22. 49. 42. |
| | Anomalia vera solis. | XIV | 10. 14. 9. 2. |
| Locus lunæ | Horarius solis. | XIV | 2. 25. |
| pro | Diameter solis. | | 31. 47. |
| Novil. prope | | | |
| vero. | Pro luna. | | |
| | Longitudo lunæ media. | XV | 1. 21. 24. 42. |
| | Apogæum lunæ. | XV | 7. 3. 46. 51. |
| | Anomalia media lunæ. | XVI | 6. 17. 37. 51. |
| | Æquatio centri → | | 1. 29. 59. |
| | Locus lunæ I æquatus. | | 1. 22. 54. 41. |
| | Anomalia lunæ I æquata. | | 6. 19. 7. 50. |
| | Apogæum solis. | | 3. 8. 40. 40. |
| | Dist. lunæ ab apogæo solis. | | 10. 14. 14. 1. |
| | Locus solis verus. | | 1. 22. 49. 42. |
| | Dist. lunæ a loco solis vero. | | 4. 59. |
| | Æquatio II → | | 7. 4. |
| | Locus lunæ II æquatus. | | 1. 22. 47. 37. |
| | Anomalia lunæ II æquata. | | 6. 19. 0. 46. |
| | Locus II verus. | XV | 8. 1. 58. 32. |
| | Argumentum latitudinis. | | 5. 20. 49. 5. |
| | Reductio ad eclipticam → | XXII | 2. 5. |
| | Locus lunæ reductus. | | 1. 22. 49. 42. |
| | Locus solis verus. | | 1. 22. 49. 42. |
| | Locus ergo solis idem cum loco lunæ 5 ^h . 15'. 32". tempore medio, ad quod omnes hi calculi directi fuere. Sed cum tempore in vita civili apparet utimur, seu vero, longitudine media solis 1 ^h . 21 ^m . 26 ^s . 24 ^m . æquatio queratur temporis tabula III, quæ 8 ^m . 21 ^s . hoc quidem loco addatur, tempus quia medium in apparet vertendum, & sic | | |
| | Syzygia correctissima | | |
| | & | | |
| | Novilunium verum erit, | | |
| | 5 ^h . 23. 53". | | |

§. IV.

§. IV.

Jam ex anomalia lunæ vera, argumento latitudinis, & loco solis Pro confirmando schema-
quæruntur sequentia, datque te. Fig. I.

| | | |
|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|--|
| I) Anomalia lunæ vera | $6^{\circ} 19' 0'' 46''$ | |
| a) Parallaxin lunæ horiz. T.XVIII. | 61. 13. | |
| cujus correctio Tab. XXIII. — | 9. | |
| Parallaxis lunæ horiz. correcta. | $61. 4. = 3664'' = 3. 5639555.$ | |
| b) Diametrum lunæ horiz. T.XVIII. | 33. 23. | |
| cujus correctio Tab. XXIII. — | 5. | |
| Diameter lunæ horiz. correcta. | $33. 18 = 1998.$ | |
| & semidiameter horiz. correcta. | $16. 39 = 999.$ | |
| supra semidiameter solis. | $15. 53 = 953.$ | |
| semidiometrorum summa | $32. 32 = 1952 = 3. 2904798.$ | |
| quæ est semidiameter penumbra. | | |
| semidiometrorum differentia | 46. | |
| quæ est semidiameter umbra. | | |
| c) Horarium lunæ verum. T.XVIII. | 37. 57. | |
| Horarius solis ut supra | — 2. 25. | |
| Horarius lunæ a sole verus. | $35. 32 = 2132 = 3. 3287878.$ | |
| ***** | ***** | |
| II) Argumentum latitudinis | $5^{\circ} 20' 49'' 5''$ | |
| a) Latitudinem lunæ. Tab.XXI. | 48. 3 = 2883 = 3. 4598446 = TN. | |
| b) Inclinationem orbitæ Cæ XXVI. | 85. 2. 21. | |
| cujus correctio XXVII. — | 20. 28. | |
| Inclinatio orbitæ vera. | $84. 41. 53 = TNM.$ | |
| cujus complementum. | $5. 18. 7 = NTM.$ | |
| ***** | ***** | |
| III) Locus solis | $1^{\circ} 22' 49'' 42''$ | |
| a) Ang. eclipt. & meridiani. T.VIII. | $75. 17. 31 = DTP.$ | |
| b) Declinat. solis borealem. T.VI. | $18. 30. 47 = FP.$ | |
| cujus complementum | $71. 29. 13 = TP,$ seu distantia a polo P, hæcque subsequentes proper calculos vertenda in partes disci, (h. e. P. D.) hac quidem illatione. | |
| Radius : | | |
| Parallaxin lunæ horizontalem = $61'. 4'' = 3664'' = 3. 5639555 \approx$ | | |
| Distantia solis a polo = $TP = 71^{\circ} 29' 13'' = 9. 9769234:$ | | |
| Dist. solis a polo = $TP = 57. 54 = 3474 = 3. 5408789.$ | | |
| TF = $61. 4 = 3664.$ | | |
| Decl. solis borealis = $PF = in P. D. = 3. 10 = 190.$ | | |

§. V.

Constructio igitur ex accurata scala schemata, sit in figura nostra Pro momento
DTæ ecliptica, centrum terræ hæreat in T, ac durante eclipsi tota im- medianarum te-
mobile absque errore supponatur sensibili. Jam fit TN latitudo lunæ nebrarum,
in ipso novilunii momento N; TM vero arcus inter centrum telluris

T, & viam centri minimus (WOLFF. El. Geom. lat. 213.) Hæque linea TN, & TM revera quanquam sint arcus, licet tamen non solum, sed & oportet eas in hac projectione maximos tanquam circulos per centrum T transeuntes, in lineas projicere rectas. Indigemus nunc NM, seu distantia novilunii N, a momento mediarum tenebrarum M, quæ ex latitudine TN, recto ad M (Eucl. III. 3), & angulo NTM, comple-
mento nempe anguli inclinationis TNM, sic invenietur.

Radius:

$$\text{Latitudinem } TN = 48'. 3'' = 2883'' = 3. 4598446 =$$

$$\text{Complementum inclinationis } \angle NTM = 5'. 18. 7 = 8. 9656923 :$$

$$\text{Dist. novil. N a mom. med. tenebr. M} = NM = 4. 26 = 266 = 2. 4255369.$$

Pro tempore per NM.

$$\text{Horarius lunæ a sole verus} = 2132'' = 3. 3287872 :$$

$$3600 = 3. 5563025 =$$

$$NM = 4. 26 = 266 = 2. 4255369 :$$

$$5. 9818394 :$$

$$7. 30 = 450 = 2. 6530522.$$

Perveniente ad momentum mediarum tenebrarum in M luna, novilu-
nium in N jamjam est præterlapsum, unde si tempus per NM = 7'. 30''.
addatur momento novilunii N 5'. 23. 53''. resultat

Momentum mediarum tenebrarum.

$$5^b. 31'. 23''.$$

Pro distanca
centrorum
minima,

Tandem & in triangulo NTM quærendum arcus inter centra minimus TM, sic obtainendus.

$$\text{Latitudo lunæ} = TN = 48'. 3'' = 2883''.$$

$$NM = 4. 26 = 266.$$

$$+ = 52. 29 = 3149 = 3. 4981727.$$

$$- = 43. 37 = 2617 = 3. 4178037.$$

$$6. 9159764.$$

$$\text{arcus inter centra minimus } TM = 47. 51 = 2871 = 3. 4579882.$$

§. VI.

Pro initio & fine eclipseos omnimoda determinare licet. Antequam vero id aggredimur, figura nostra la explicationem, qua partes, quibus ad hoc negotio opus est, adjicere haud erit superfluum. Agitur jam de penumbra, per sex igitur circulos minores penumbram lunæ discum terræ pedetentim intelligimus obtenebrantem. Est quidem in rigore geometrico profus impossibile, conum penumbras lunæ, ibi ubi discum terræ perambulat, æqualis esse magnitudinis; attamen cum distantia lunæ a terra nullius est momenti ad ingentem solis a terra distantiam, tuto hic pro cylindro habetur conus penumbræ. Sit igitur hujus centrum in I, tunc telluris discum prima omnium vice in A contingit penumbræ.

umbra. Promoto vero centro per discum, donec veniat in via centri ad VI, telluris discum in C a penumbra vice omnium ultima palam est tangi. Linearum igitur IM=MVI investigatio fitum centri penumbra pro initio & fine exhibebit. En calculos.

$$\text{Semidiameter penumbrae} = IA = \text{VIC} = 32'. 32'' = 1952''.$$

$$\text{Parallaxis lunæ horizontalis} = AT = CT = 61. 4 = 3664.$$

$$IA + AT = IT = VIC + CT = VIT = 93. 36 = 5616.$$

$$TM = 47. 51 = 2871.$$

$$+ = 141. 27 = 8487 = 3. 9287542.$$

$$- = 45. 45 = 2745 = 3. 4385423.$$

$$7. 3672965.$$

$$IM = MVI = 80. 27 = 4827 = 3. 6836482.$$

Pro tempore per IM=MVI.

$$\text{Horarius lunæ a sole verus} = 2132 = 3. 3287872:$$

$$3600 = 3. 5563025 =$$

$$IM = MVI = 80. 27 = 4827 = 3. 6836482:$$

$$7. 2399507.$$

$$2^h 15'. 50'' \equiv \text{tempori per IM = MVI} = 8150 = 3. 9111635.$$

5. 31. 23 momentum mediarum tenebrarum.

3. 15. 33. initium eclipses A= $48^{\circ} 53'. 15''$ in partibus circuli maximi.

7. 47. 13. finis eclipses C= $116. 48. 15.$ in P. C. M.

4. 31. 40. duratio totius eclipses.

§. VII.

Ducatur nunc per puncta contactuum A & C parallela viae centri, & præter initium & finem etiam illud tempus invenire cupientes, quo punctum consequens e semita contactus primi ingreditur ad A, & punctum antecedens a semita contactus ultimi egreditur ad C, videamus ingrediente e in A, centrum hærente ad III, & exeunte a in C, ad IV. Tota igitur eo res reddit, ut portionem viae centri III M=MIV inveniamus. Notandum vero hic, nos per A puncta in superficie terræ intelligere, ubi omnia a, & c, vel antecedentia, & consequentia cuiusvis semita in penumbra ductæ appellunt, vel ingrediuntur, unde omnia puncta quæ nobis A dicuntur, (vel a & c in A) cadunt necessario inter E & H. Porro omnia C nobis sunt puncta itidem in superficie telluris, ubi eadem a, & c, vel antecedentia, & consequentia earundem semitarum in penumbra ductarum consequuntur, vel excent, unde omnia C, (vel a & c in C) cadunt inter H & D. Sit igitur

Pro
ingressu
e
& egressu
a.

i) *Pro*

1) *Pro angulo TIM = TVIM.*

$$IT = VIT = \dots 93^\circ. 36'' = 5616'' = 3.7494271:$$

Radium =

$$TM \dots = 47^\circ. 51' = 2871 = 13.4579882:$$

$$TVIM = 30^\circ. 44'. 29'' = 9.7085611:$$

$$MTI \dots = MTVI = 59. 15. 31' = BTA = BTC.$$

2) *Pro GA = GC.*

Radius:

$$IA = VIC = \dots 32. 32' = 1952 = 3.2904798 =$$

$$GIA = GVIC = 30^\circ. 44. 29' = 9.7085611:$$

$$GA = GC = \dots 16. 38' = 998 = 2.9990409.$$

3) *Pro IG = VIG.*

$$IA = VIC = \dots 32. 32' = 1952.$$

$$GA = GC = \dots 16. 38' = 998.$$

$$+ = \dots 49. 10' = 2950 = 3.4698220.$$

$$- = \dots 15. 54' = 954 = 2.9795484.$$

$$6.4493704.$$

$$IG = VIG = \dots 27. 58' = 1678 = 3.2246852.$$

4) *Pro magnitudine eclipses in locis A & C.*

$$\text{Diameter solis} = 31^\circ. 47' = 1907 = 3.2803507:$$

$$12^\circ 0' = 720' = 2.8573325:$$

$$15. 54' = 954 = 2.9795484:$$

$$5.8368809.$$

$$6^\circ. 0' = 360' = 2.5565302.$$

5) *Pro AB = CB = GM.*

$$TM = \dots = 47^\circ. 51' = 2871.$$

$$GA = GC = MB = 16. 38' = 998.$$

$$VIM = TM - MB = 31^\circ. 13' = 1873.$$

$$AT = CT \dots = 61^\circ. 4' = 3664.$$

$$+ = 92. 17' = 5537 = 3.7432745.$$

$$- = 29. 51' = 1791 = 3.2530956.$$

$$6.9963701.$$

$$AB = CB = GM = 52. 29' = 3149 = 3.4981850.$$

6) *Pro IM = VIM, & IIIM = IVM.*

$$IG = VIG = IIIG = IVG = 27. 58' = 1678.$$

$$AB = CB = GM = \dots 52. 29' = 3149.$$

$$IG + GM = VIG + GM = 80. 27' = 4827 = IM = MVI, ut supra §. VI.$$

$$GM - IIIG = GM - IVG = 24. 31' = 1471 = IIIIM = MIV.$$

7) *Pro*

$$\text{7) } \text{Pro tempore per } GM - IIIG = GM - IVG.$$

Horarius lunæ a sole verus = $2132'' = 3.3287872:$
 $3600 = 3.5563025:$
 $GM - IIIG = GM - IVG = 24'.31'' = 1471 = 3.1676127:$
 $6.7239152.$
 $41. 24 = 2484 = 3.3951280.$

Pro ingressu v, & egressu a.
 $ob. 41'.24'' = \text{tempori per } GM - IIIG = GM - IVG.$
 $5. 31. 23 \text{ momentum mediariarum tenebrarum.}$
 $4. 49. 59. \text{ ingreditur } c \text{ in A. in P.C.M. } 72'.29.45''.$
 $6. 12. 47. \text{ egreditur } a \text{ in C. in P.C.M. } 93. 11. 45.$

§. VIII.

Acquisitis hisce determinanda venit latitudo, & longitudo punctorum A & C. Supra inveniebatur $MTI = BTA = MTVI = BTC$, & ante erat (§. IV. No. III. a.) angulus eclipticae, & meridiani = $75'.17.31'' = DTP$, ejusque complementum = $14.42.29 = PTN$, sic post complem. inclinationis (§. IV. No. II. β.) = $5.18.7 = NTM$ ablatum ab angulo PTN, restare. $9.24.22 = PTM$, seu distantiam momenti mediariarum tenebrarum a meridiano eclipses, est perspicuum.

Sin igitur hic angulus

 $PTM = 9.24.22''.$

addatur BTA (§. VII. 1.) = $59.15.31$. subtrahatur a BTC = $59.15.31$. summa erit angul. PTA = $68.39.53$. diff. erit angulus PTC = $49.51.9$. cuius complementum = $21.20.7$. cuius complementum = $40.8.51$. Considerantibus igitur Δa FPA, & FPC dantur FA = angulo PTA, & FC = angulo PTC, utrobique cum rectus ad F, tum FP declinatio solis borealis (§. IV. No. III. b.) unde elicuntur PA, PC, distantia locorum A, C a polo P, quarum ea propter complementa exhibebunt latitudines A, C.

Pro latitudine A.

Radius:
 $\cos. PF = 71.29'.13'' = 9.9769234 =$
 $C.PTA = 21.20.7 = 9.5608923:$
 $\cos. PA = 20.10.54 = 9.5378157.$
 $PA = 69.49.6.$

Pro latitudine C.

Radius:
 $\cos. PF = 71.29'.13'' = 9.9769234 =$
 $C. PTC = 40.8.51 = 9.8093965:$
 $\cos. PC = 37.41.25 = 9.7863199.$
 $PC = 52.18.35.$

Cuilibet patet, has latitudines ingrediente a , & tota subsequente semita, donec & punctum ingrediatur v , ex una; egrediente vero a , ac tota consequente semita, donec & punctum exeat v , ex altera parte meridiani PT, esse easdem. Longitudines vero horum locorum inter se differunt. Ob motum enim terra circa axem volvitur ab occasu in ortum meridianus primus, unde durante totius ingressus a c

C tem-

Laticudo
&
longitudo
A & C.

tempore primus meridianus multum est in ortum promotus, obque id ipsum punctum ingressus *c* in superficie terra qua longitudinem valde differat a punto ingressus *a* necesse est, in latitudine quamquam coincidunt. Acquirenda igitur pro longitudine datur tempus *a*, & *c*, in A, & C, in, & egredientium, numeratum nempe Parisis. Ducatur igitur ex polo P per Lutetiam L circulus, (quem tamen ob perpetuum variationem Parisorum nullatenus licebat exprimere) tuncque angulus TPL supra in tempore datus metitur distantiam meridiani tabularum ab eclipeos meridiano, ac in partibus expressus aequatoris subractus, vel additus angulis TPA, vel TPC, monstrabit horum locorum, A nempe & C, intervallum & Lutetiaz. Pro varia vero angulorum constitutione, iterum si subtrahuntur, vel adduntur $20^{\circ}30'$. (longitudo nempe meridiani tabularum a primo meridiano in ortum) absoluta probabit locorum longitudi. Hæc de latitudine, & longitudine semel pro semper monuisse sufficiat.

Pro angulo APT.

$$\begin{aligned} S. PA &= .69. 49'. 6'' = 9.9724822 \\ \text{Radium=} & \\ S. PTA &= .68. 39. 53 = 19.9691677 \\ S. FPA &= .82. 55. 49 = 9.9966855 \\ APT &= .97. 4. 11. \end{aligned}$$

Pro angulo CPT.

$$\begin{aligned} S. PC &= .52. 18'. 35'' = 9.8983561 \\ \text{Radium=} & \\ S. PTC &= .49. 51. 9 = 19.8833133 \\ S. FPC &= .75. 0. 24 = 9.9849572 \\ CPT &= 104. 59. 36. \end{aligned}$$

Ingrediente *a*.

$$\begin{aligned} TPL &= 48^{\circ}53'15'' \\ APT &= 97. 4. 11. \\ APL &= 145. 57. 26. \\ LPf &= 20. 30. 0. \\ &125. 27. 26. \\ &359. 59. 60. \\ &234. 32. 34. \end{aligned}$$

Longitudo *a*
ingredientis.

Ingrediente *c*.

$$\begin{aligned} TPL &= 72^{\circ}29'.45'' \\ cPT &= 97. 4. 11. \\ cPL &= 169. 33. 56. \\ LPf &= 20. 30. 0. \\ &149. 3. 50. \\ &359. 59. 60. \\ &210. 56. 4. \end{aligned}$$

Longitudo *c*
ingredientis.

Ingrediente *a*.

$$\begin{aligned} TPL &= 93^{\circ}11'.45'' \\ APT &= 104. 59. 36. \\ aPL &= 11. 47. 51. \\ LPf &= 20. 30. 0. \end{aligned}$$

Longitudo *a*
ingredientis.

Ingrediente *c*.

$$\begin{aligned} TPL &= 116^{\circ}48'.15'' \\ CPT &= 104. 59. 36. \\ CPL &= 11. 48. 39. \\ LPf &= 20. 30. 0. \\ &8. 41. 21. \end{aligned}$$

Longitudo *c*
ingredientis.

Monendum hic, nos per Pf primum meridianum, a quo Lutetia $20^{\circ}30'$. in ortum distat, intelligere, quique per insulam Ferri ducitur, (hanc per f indico) quo & in posterum, brevitatis gratia, signo exprimemus

§. IX.

Latitudo
&
Longitudo
III & IV.

Sicut hucusque locorum, quos chorda contactus in appulsi & exitu supergreditur, determinavimus, si nunc & stationem centrorum ingredientibus & egredientibus *a*, & *c* inquirere est animus, vides, discum stringente *a*, deferente *c*, centris ad I, & VI sitis, ac nondum intra discum versantibus haud applicari possit ealculum, sed pro statione III & IV, quo sumus assedit modo, amabo, perspicias,

1) Pro

1) Pro angulo $M T III = M T IV$.

$$III M = M IV = 24'. 31'' = 1471'' = 3. 1676127:$$

$$TM = 47. 51 = 2871 = 13. 4579882 \approx$$

Radius:

$$\text{Tang. } T III M = T IV M = \frac{62'. 52'. 7''}{= 10. 2903755.}$$

$$2) MT III = MT IV = \frac{27. 7. 53.}{PTM = \frac{9. 24. 22.}{=}}$$

$$\rightarrow = PT III = \frac{36. 32. 15.}{=}$$

$$\text{Compl.} = \frac{53. 27. 45.}{=}$$

$$- = PT IV = \frac{17. 43. 31.}{=}$$

$$\text{Compl.} = \frac{72. 16. 29.}{=}$$

3) Pro latere $T III = T IV$.

$$T III M = T IV M = 62'. 52'. 7'' = 9. 9493720:$$

$$TM = 47. 51. = 2871'' = 13. 4579882 \approx$$

Radius:

$$T III = T IV = \frac{53. 46. = 3226}{= 3. 5086162.}$$

4) Pro latere $T III = T IV$ in P.C.M.

$$\text{Parallaxis lunæ} = 61. 4 = 3664 = 3. 5639555:$$

Radium =

$$T III = T IV \text{ in P.D.} = \frac{53. 46. = 3226}{= 13. 5086162.}$$

$$T III = T IV \text{ in P.C.M.} = 61. 41. 9. = 9. 9446607.$$

$$\text{Compl.} = 28. 18. 51.$$

5) Pro latitudine III.

Radius:

$$\text{Cos. PT III} = \frac{53'. 27'. 45''}{= 9. 9049682 \approx}$$

$$\text{Tang. T III} = \frac{61. 41. 9}{= 10. 2686017:}$$

$$\text{Tang. X} = \frac{56. 9. 22}{= 10. 1735699.}$$

$$TP = \frac{71. 29. 13}{= VII 4. 2}$$

$$TP - X = \frac{15. 19. 51}{= VII 4. 2}$$

$$\text{Compl.} = \frac{74. 40. 9}{= VII 4. 2}$$

$$6) \text{Cos. X} = \frac{33. 50. 38}{= 9. 7458021:}$$

$$\text{Cos. T III} = \frac{28. 18. 51}{= 9. 6700585 \approx}$$

$$\text{Cos. TP-X} = \frac{74. 40. 9}{= 9. 9842641:}$$

$$19. 6603226.$$

$$\text{Cos. P III} = \frac{55. 13. 7}{= 9. 9145205.}$$

$$P III = \frac{34. 46. 53}{= 9. 9145205.}$$

NITN^{7) Pro angulo III PT.}

| | | | | |
|---------|---|-------------|---|------------|
| S.PIII | = | 34° 46' 53" | = | 9.7562152: |
| S.PTIII | = | 36. 32. 15 | = | 9.7747714= |
| S.TIII | = | 61. 41. 9 | = | 9.9446607: |

| | | | | |
|---------|---|--------------|---|-------------|
| S.IIIPT | = | 66. 45. 0 | = | 10.7194321. |
| TPL | = | 72. 29. 45. | = | 9.9632169. |
| IIIPL | = | 139. 14. 45. | = | |
| LPf | = | 20. 30. 0. | = | |
| | | 118. 44. 45. | = | |
| | | 359. 59. 60. | = | |
| | | 241. 15. 15. | = | |

Longitudo III.

8) Pro latitudine IV.

| | | | | |
|-----------|---|-------------|---|-------------|
| Radius: | | | | |
| Cos. PTIV | = | 72. 16. 29 | = | 9.9788774= |
| Tang. TIV | = | 61. 41. 9 | = | 10.2686017: |
| Tang. X | = | 60. 30. 25 | = | 10.2474791. |
| TP | = | 71. 29. 13. | | |
| TP-X | = | 10. 58. 48. | | |
| Compl. | = | 79. 1. 12. | | |

| | | | | |
|-----------|---|-------------|---|-------------|
| 9) Cos. X | = | 29. 29. 35 | = | 9.6922458: |
| Cos. TIV | = | 28. 18. 51 | = | 9.6760585= |
| Cos. TP-X | = | 79. 1. 12 | = | 9.9919760: |
| Cos. PIV | = | 71. 2. 44 | = | 10.6680345. |
| PIV | = | 18. 57. 16. | = | 9.9757887. |

10) Pro angulo IV PT.

| | | | | |
|--------|---|---------------|---|-------------|
| S.PIV | = | 18. 57. 16 | = | 9.5116378: |
| S.PTIV | = | 17. 43. 31 | = | 9.4835207= |
| S.TIV | = | 61. 41. 9 | = | 9.9446607: |
| S.IVPT | = | 55. 36. 21 | = | 10.4281814. |
| TPL | = | 93. 11. 45. | = | 9.9165436. |
| IVPL | = | 37. 35. 24. | | |
| LPf | = | 20. 30. 0. | | |
| | | 17. 5. 24. | | |
| | | 359. 59. 60. | | |
| | | 342. 54. 36. | | |
| | | Longitudo IV. | | |

§.X.Ad

§. X.

Ad semitam hucusque labor attinebat primariam, secundariæ ^{Pro semita}_{secundaria.} nunc nos accingentes monemus, 1) centro in III, ingrediente c in primaria, una egreditur a in secundaria. 2) centro in IV, exeunte a in primaria, una appellit c in secundaria. Hæc igitur tempora cum superioribus c in A, & a in C (§. VII. 8.) sunt eadem Querendus restat igitur antecedentis a appulsus, ac exitus c consequentis. Demonstrat schema, centrum hæc ad II in momento appellantis a, ac exeunte c quod stet ad V est apertissimum. Hinc in id incumbamus, quo portio $\text{IIM} = \text{MV}$ detegatur. Ad latitudinem quod spectat, & longitudinem præcedentia (§. VIII.) consulas.

1) *Pro angulo TIII \mathbb{C} = TIV \mathbb{A} . FIG. II.*

| | | | | |
|--------------------------------------------------------------------------|----------|-----------|-------|-----------------|
| Basis $\text{T}\mathbb{C} = \text{T}\mathbb{A} =$ | 61°. 4'. | \approx | 3664" | $= 3.5639555 :$ |
| $\text{III} + \text{III}\mathbb{C} = \text{TIV} + \text{IV}\mathbb{A} =$ | 86. 18 | \approx | 5178 | $= 3.7141620 :$ |
| $\text{III} - \text{III}\mathbb{C} = \text{TIV} - \text{IV}\mathbb{A} =$ | 21. 14 | \approx | 1274 | $= 3.1051694 :$ |
| | | | | 6.8193314. |
| $\text{TX} =$ | 30. 0 | \approx | 1800 | $= 3.2553759.$ |
| $\text{TIII} = \text{TIV} =$ | 53. 46 | \approx | 3226. | §. IX. 3. |
| $\text{III}\mathbb{C} = \text{IV}\mathbb{A} =$ | 32. 32 | \approx | 1952. | |
| $\text{III} + \text{III}\mathbb{C} = \text{TIV} + \text{IV}\mathbb{A} =$ | 86. 18 | \approx | 5178. | |
| $\text{III} - \text{III}\mathbb{C} = \text{TIV} - \text{IV}\mathbb{A} =$ | 21. 14 | \approx | 1274. | |
| $\text{TX} =$ | 30. 0 | \approx | 1800. | |
| $\text{T}\mathbb{C} = \text{T}\mathbb{A} =$ | 61. 4 | \approx | 3664. | |
| $\text{T}\mathbb{C} - \text{TX} = \text{T}\mathbb{A} - \text{TX} =$ | 31. 4 | \approx | 1864. | |
| $\text{XY} = \text{Y}\mathbb{C} = \text{Y}\mathbb{A} =$ | 15. 32 | \approx | 932. | |
| $\text{TX} =$ | 30. 0 | \approx | 1800. | |
| $\text{TX} + \text{XY} = \text{TY} =$ | 45. 32 | \approx | 2732. | |

2) *Pro angulo YIII \mathbb{C} = YIV \mathbb{A} . FIG. II.*

| | | | | |
|--------------------------------------------------|------------|-----------|------|------------------|
| $\text{III}\mathbb{C} = \text{IV}\mathbb{A} =$ | 32. 32 | \approx | 1952 | $= 3.2904798 :$ |
| Radium = | | | | |
| $\text{Y}\mathbb{C} = \text{Y}\mathbb{A} =$ | 15. 32 | \approx | 932 | $= 12.9694159 :$ |
| $\text{YIII}\mathbb{C} = \text{YIV}\mathbb{A} =$ | 28. 31. 11 | \approx | | 9.6789361. |

| | | | | |
|--------------------------------------------------------------|---------------|-----------|-------------------------------------------------|------------------|
| $\text{III}\mathbb{C} = \text{IV}\mathbb{A} \text{Y} =$ | 61. 28. 49. | | | |
| $\text{III} = \text{TIV} =$ | 53. 46 | \approx | 3226 | $= 3.5086162 :$ |
| Radium = | | | | |
| $\text{YT} =$ | 45. 32. | \approx | 2732 | $= 13.4364807 :$ |
| $\text{YIII}\mathbb{T} = \text{YIV}\mathbb{T} =$ | 57°. 52'. 58" | \approx | 9.9278045. | |
| $\text{YIII}\mathbb{C} = \text{YIV}\mathbb{A} =$ | 28. 31. 11. | \approx | | |
| $\text{III}\mathbb{C} = \text{TIV}\mathbb{A} =$ | 86. 24. 9. | \approx | | |
| $\text{MIII}\mathbb{T} = \text{MIV}\mathbb{T}$ (§. IX. 1.) = | 62. 52. 7. | \approx | Recipe FIG. I. | |
| $\text{MIII}\mathbb{C} = \text{MIV}\mathbb{A} =$ | 23. 32. 2. | \approx | $\text{GIII}\mathbb{C} = \text{GIV}\mathbb{A}.$ | |

C 3

4) *Pro*

4) Pro $\text{GC} = \text{GA}$.

Radius:

$$\begin{aligned}\text{III}\mathcal{C} &= \text{IV}\mathcal{A} = 32'. 32'' = 1952'' = 3.2904798 = \\ \text{GIII}\mathcal{C} &= \text{GIV}\mathcal{A} = 23^\circ 32'. 2'' = 9.6012900 : \\ \text{GC} &= \text{GA} = 12. 59 = 779 = 12.8917698.\end{aligned}$$

5) Pro $\text{II}\mathcal{G} = \text{VG}$.

$$\begin{aligned}\text{II}\mathcal{A} &= \text{VC} = 32. 32 = 1952. \\ \text{GA} &= \text{GC} = 12. 59 = 779. \\ + &= 45. 31 = 2731 = 3.4363217. \\ - &= 19. 33 = 1173 = 3.0692980. \\ \text{II}\mathcal{G} &= \text{VG} = 29. 50 = 1790 = 3.2528098. \\ &\qquad\qquad\qquad 6.5056197.\end{aligned}$$

6) Pro magnitudine eclipses in Locis \mathcal{A} & C .

$$\begin{aligned}\text{Diameter solis} &= 31. 47 = 1907 = 3.2803507 : \\ &\quad 12'. 0' = 720' = 2.8573325 = \\ &\quad 19. 33 = 1173 = 3.0692980 : \\ &\quad 7'. 23' = 443 = 5.9266305. \\ &\qquad\qquad\qquad 2.6462798.\end{aligned}$$

7) Pro $\text{AB} = \text{CB} = \text{GM}$.

$$\begin{aligned}\text{TM} &= \frac{47}{\text{GA}=\text{GC}=\text{MB}} = \frac{51}{12. 59} = \frac{2871}{779}. \\ \text{TB} &= \text{TM} + \text{MB} = 60. 50 = 3650. \\ \text{AT} &= \text{CT} = \frac{61}{12. 4} = \frac{3664}{14}. \\ + &= 121. 54 = 7314 = 3.8641550. \\ - &= 14 = 14 = 1.1461280. \\ \text{AB} &= \text{CB} = \text{GM} = 5. 20 = 320 = 5.0102830. \\ &\qquad\qquad\qquad 2.5051415.\end{aligned}$$

8) Pro $\text{IIM} = \text{VM}$, & $\text{IIIM} = \text{IVM}$.

$$\begin{aligned}\text{II}\mathcal{G} &= \text{VG} = \text{III}\mathcal{G} = \text{IV}\mathcal{G} = 29'. 50'' = 1790'' \\ \text{AB} &= \text{CB} = \text{GM} = 5. 20 = 320 \\ \text{II}\mathcal{G} - \text{GM} &= \text{VG} - \text{GM} = 35. 10 = 2110 = \text{IIM} = \text{MV}. \\ \text{III}\mathcal{G} - \text{GM} &= \text{IVG} - \text{GM} = 24. 30 = 1470, \text{ supra } 1471 \text{ §. VII. 6.}\end{aligned}$$

9) Pro

9) *Pro tempore per II G + GM = VG + GM.*

$$\begin{array}{l} \text{Horarius lunæ a sole verus} = 2132 = 3.3287872: \\ \qquad\qquad\qquad 3600 = 3.5563025= \\ \text{II G + GM = VG + GM} = 35'.10'' = 2110 = 3.3242825: \\ \qquad\qquad\qquad 6.8805850. \\ 59.23 = 3563 = 3.5517978. \end{array}$$

10) *Pro ingressu a, & egressu c.*

$o^b. 59'.23''$ = tempori per II G + GM = VG + GM.

$5. 31. 23$ momentum mediarum tenebrarum.

4. 32. o ingressitur a. in P. C. M. $68^{\circ}. 0'. 0''$.

6. 30. 46. egreditur c. in P. C. M. 97. 41. 30.

§. XI.

1) *Pro angulo MTI = MTC.*

$$AT = CT = 61'. 4'' = 3664 = 3.5639555:$$

Radius =

$$TB = TM + MB = 60. 50 = 3650 = 13.5622929:$$

$$TMB = TCB = 84'. 59'. 23'' = 9.9983374.$$

$$MTI = MTC = 5. 0. 37 = BTI = BTC.$$

$$PTM = 9. 24. 22.$$

$$\rightarrow = PTI = 14. 24. 59.$$

$$\text{Compl.} = 75. 35. 1.$$

$$- = PTC = 4. 23. 45.$$

$$\text{Compl.} = 85. 36. 15.$$

Latitude

&

longitude

A & E

2) *Pro angulo MTII = MTV.*

$$IIIM = MV = 35'. 10'' = 2110'' = 3.3242825:$$

$$TM = 47. 51 = 2871 = 13.4579882=$$

Radius:

$$\text{Tang.} IIIM = TVM = 53'. 41'. 1'' = 10.1337057.$$

$$MTII = MTV = 36. 18. 59.$$

$$PTM = 9. 24. 22.$$

$$\rightarrow = PTII = 45. 43. 21.$$

$$\text{Compl.} = 44. 16. 39.$$

$$- = PTV = 26. 54. 37.$$

$$\text{Compl.} = 63. 5. 23.$$

3) *Pro latero III = TV.*

$$IIIM = TVM = 53'. 41'. 1'' = 9.9062051:$$

$$TM = 47. 51 = 2871 = 13.4579882=$$

Radius:

$$III = TV = 59. 23 = 3563 = 3.5517831.$$

4) *Pro*

4) *Pro latere TII = TV in P. C. M.*

$$\text{Parallaxis lunæ} = 61'. 4'' = 3664'' = 3.5639555:$$

Radium =

$$\text{TII=TV in P.D.} = 59. 23 = 3563 = 13.5517831:$$

$$\text{TII=TV in P.C.M.} = 76'. 29'. 52'' = 9.9878276.$$

$$\text{Compl.} = 13. 30. 8.$$

5) *Pro latitudine A.*

Radius:

$$\text{Cos. PF} = 71. 29. 13 = 9.9769234:$$

$$\text{Cos.PTA} = 75. 35. 1 = 9.9861050:$$

$$\text{Cos. PA} = 66. 41. 32 = 9.9630284:$$

$$\text{PA} = 23. 18. 28.$$

6) *Pro latitudine E.*

Radius:

$$\text{Cos. PF} = 71. 29. 13 = 9.9769234:$$

$$\text{Cos.PTE} = 85. 36. 15 = 9.9987205:$$

$$\text{Cos. PE} = 70. 59. 24 = 9.9756439:$$

$$\text{PE} = 19. 0. 36.$$

7) *Pro angulo APT.*

$$\text{S.PA} = 23. 18. 28 = 9.5973333:$$

$$\text{Radium} =$$

$$\text{S.PTA} = 14. 24. 59 = 19.3961417:$$

$$\text{S.FPA} = 38. 59. 36 = 9.7988084.$$

$$\text{APT} = 141. \infty. 24.$$

8) *Pro angulo EPT.*

$$\text{S.PE} = 19. 0. 36 = 9.5128619:$$

$$\text{Radium} =$$

$$\text{S.PTE} = 4. 23. 45 = 18.8844919:$$

$$\text{S.FPE} = 13. 36. 34 = 9.3716300.$$

$$\text{EPT} = 166. 23. 26.$$

Ingrediente a.

$$\text{TPL} = 68'. 0'. 0'.$$

$$\text{APT} = 141. 0. 24.$$

$$\text{APL} = 209. 0. 24.$$

$$\text{LPF} = 20. 30. 0.$$

$$188. 30. 24.$$

$$359. 59. 60.$$

$$171. 29. 36.$$

*Longitudo a
ingredientis.*

Egrediente a.

$$\text{TPL} = 72. 29'. 45''$$

$$\text{APT} = 166. 23. 26.$$

$$\text{APL} = 238. 53. 11.$$

$$\text{LPF} = 20. 30. 0.$$

$$218. 23. 11.$$

$$359. 59. 60.$$

$$141. 36. 49.$$

*Longitudo a
egredientis.*

Ingredientie c.

$$\text{TPL} = 93. 11'. 45''$$

$$\text{APT} = 141. 0. 24.$$

$$\text{APL} = 234. 12. 9.$$

$$\text{LPF} = 20. 30. 0.$$

$$213. 42. 9.$$

$$359. 59. 60.$$

$$146. 17. 51.$$

*Longitudo c
ingredientis.*

Egrediente c.

$$\text{TPL} = 97. 41'. 30''$$

$$\text{APT} = 166. 23. 26.$$

$$\text{APL} = 264. 4. 56.$$

$$\text{LPF} = 20. 30. 0.$$

$$243. 34. 56.$$

$$359. 59. 60.$$

$$116. 25. 4.$$

*Longitudo c
egredientis.*

§. XII.

§. XII.

Eruimus hucusque semitæ contactus tanquam primariae puncta sequentia:

I) a in A (§. VI. & VII.) c in A (§. VII.) a in C (§. VII.) c in C (§. VI. & VII.) horum latitudines, & longitudines, & horas in his locis numeratas (§. VIII.)

II) Secundariae respectu semitæ contactus; a in \mathcal{A} (§. X.) c in \mathcal{A} (§. VII.) a in \mathcal{C} (§. VII.) c in \mathcal{C} (§. X.) latitudines, longitudines, & horas ibi numeratas (§. XI.)

Quid si & semitam tertiam superadduceremus? Hactenus ABC supra viam centri, respectu ABC infra iter centri, secundaria fuit. Jam vero alia sepe nobis solvenda offert, abe nempe infra tramitem centram secundaria, cum qua collata ABC supra eundem nunc primaria evadit. Vides enim primaria (in posterum enim nobis ABC semper primaria erit dicenda) puncto a appellente in \mathcal{A} , simul secundaria abe ingredi punctum c in a , ex altero vero latere meridiani PT, primaria puncto c egrediente in \mathcal{C} , una secundaria abe exire a in c . Nova hujus abe introitus c in a , cum primaria ABC ingressu a in \mathcal{A} est idem, nova vero abscessus a in c , a primaria exitu c in \mathcal{C} non differt, quæ igitur tempora §. X. i. jamjam determinavimus. Calculis igitur adhuc subjiciendus est appulus a in a , & decessus c in c . Quem si laborem adhuc continuare liberet, abe pro palmaria posset haberi, cuius respectu alia abe (in figura tamen non explesia) secundaria foret, quasve operationes in immensum fere liceret adaugere, quippe quævis semita hucusque secundaria, ex qua aliis deteguntur proprietates. tunc dici meretur primaria. Fatoeque equidem tam diversa a in A & C, nec non c in A & C, totque semitas modo primarias, modo secundarias, tum supra, tum infra viam centri, harum subtilitatum non satis gnaris quodammodo videri posse obscuras; sed si modo schema I attente inspicturn cum calculis conferatur nostris omnes vincendas esse spondeo difficultates. Calculorum enim periti, statim quid rei sublit, ariolabuntur.



X.

D

1) Pro

1) *Pro angulo TIIA = TVC. FIG. III.*

| | | |
|---------------------------------------------------------------------------------|---------------------------------------------------|---------------|
| Basis $T\mathcal{A} = T\mathcal{C} =$ | $61^\circ. 4'' = 3664'' =$ | $3.5639555 :$ |
| $T\mathcal{II} + \mathcal{II}\mathcal{A} = TV + VC = 91^\circ. 55'' = 5515'' =$ | $3.7415455 =$ | |
| $T\mathcal{II} - \mathcal{II}\mathcal{A} = TV - VC = 26^\circ. 51'' = 1611'' =$ | $3.2070955.$ | |
| $TX =$ | $40^\circ. 25'' = 2425'' =$ | $6.9486410.$ |
| $T\mathcal{II} = TV =$ | $59^\circ. 23'' = 3563'' =$ | $\$ XI. 3.$ |
| $\mathcal{II}\mathcal{A} = VC =$ | $32^\circ. 32'' = 1952'' =$ | |
| $T\mathcal{II} - \mathcal{II}\mathcal{A} = TV + VC = 91^\circ. 55'' = 5515'' =$ | | |
| $T\mathcal{II} - \mathcal{II}\mathcal{A} = TV - VC = 26^\circ. 51'' = 1611'' =$ | | |
| $TX =$ | $40^\circ. 25'' = 2425'' =$ | |
| $T\mathcal{A} = TC =$ | $61^\circ. 4'' = 3664'' =$ | |
| $T\mathcal{A} - TX = TC - TX = 20^\circ. 39'' = 1239'' =$ | | |
| $XY = Y\mathcal{A} = YC =$ | $10^\circ. 19\frac{1}{2}'' = 619\frac{1}{2}'' =$ | |
| $TX =$ | $40^\circ. 25'' = 2425'' =$ | |
| $TX + XY = TY =$ | $50^\circ. 44\frac{1}{2}'' = 3044\frac{1}{2}'' =$ | |

2) *Pro angulo VIIA = YVC. FIG. III.*

| | |
|------------------------------------|---------------------------------------------------------------|
| $\mathcal{II}\mathcal{A} = VC =$ | $32^\circ. 32'' = 1952'' = 3.2904798 :$ |
| Radium = | |
| $Y\mathcal{A} = YC =$ | $10^\circ. 19\frac{1}{2}'' = 619\frac{1}{2}'' = 12.7920412 :$ |
| $VII\mathcal{A} = YVC =$ | $18^\circ. 30''. 14'' = 9.5015614 :$ |
| $\mathcal{II}\mathcal{A}Y = VCY =$ | $71^\circ. 29''. 46'' =$ |

3) *Pro angulo VIIIT = YVT. FIG. III.*

| | |
|-----------------------------|----------------------------------------------------------------|
| $T\mathcal{II} = TV =$ | $50^\circ. 29'' = 2563'' = 3.5517831 :$ |
| Radium = | |
| $YT =$ | $50^\circ. 44\frac{1}{2}'' = 3044\frac{1}{2}'' = 13.4835160 :$ |
| $VIIIT = YVT =$ | $58^\circ. 42''. 33'' = 9.9317329 :$ |
| $VII\mathcal{A} = YVC =$ | $18^\circ. 30''. 14'' =$ |
| $T\mathcal{II} = TVC =$ | $77^\circ. 12''. 47'' =$ |
| $MIIIT = MVT = (\$ XI. 2.)$ | $53^\circ. 41''. 1'' =$ |
| $MII\mathcal{A} = MVC =$ | $23^\circ. 31''. 46'' =$ |
| | <i>Recipe FIG. I.</i> |
| | $\mathcal{GII}\mathcal{A} = GVC.$ |

§. X. 3. quidem $MIIIC = MIV\mathcal{A}$, cui angulus $MII\mathcal{A} = MVC$, deberet esse *equalis*, inveniebatur $= 23^\circ. 32''. 2''$, a quo ergo $\mathcal{GII}\mathcal{A} = GVC$ $16''$ — differt. Sed taceo, cum, quod *hac* differentia in tam diffusis calculis latius sit exigua, tum quod nulla prorsus *ulterior* inde oriatur discrepantia linearum $G\mathcal{C} = G\mathcal{A}$, §. X. & $G\mathcal{A} = GC$ paragrapo praesente, a quibus cætera dependent omnia. Imo sequentes calculi cum precedentibus haud quamquam tam belle conspirare possent, si *hac* $16''$ ulius forent momenti. Quid? quod pro ampliore confirmatione, vide quam accuratissime hemicyclum implemus. FIG. III.

§. X.

| §. X. | §. hocce. |
|----------------------------------------------------------|----------------------------------------------------------|
| 2) III ^Y = IV ^A Y = 61°. 28'. 49". | 2) II ^A Y = V ^C Y = 71°. 29'. 46". |
| 2) YII ^C = YIV ^A = 28. 31. 11. | 2) YII ^A = YV ^C = 18. 30. 14. |
| 3) YIIT = YIVT = 57. 52. 58. | 3) YIIT = YVT = 58. 42. 33. |
| 3) III ^T Y = IV ^T Y = 32. 7. 2. | 3) II ^T Y = V ^T Y = 31. 17. 27. |
| 180. 0. 0. | 180. 0. 0. |

Hac quidem pro demonstratione *summae* methodi & calculorum, qua semitam ABC ; fiat iam applicatio ad secundariam abc. Datur in ea $\text{MTa} = \text{MTc}$
 compositus ex $\text{MTII} = \text{MTV} = 36°. 18'. 59".$ §. XI. 2.
 $\& \text{IIta} = \text{VTc} = 31. 17. 27.$ No. 3. hujus,
 compl. nempe $\text{VIIT} = \text{VVT}.$ Erit ergo summa $67. 36. 26 = \text{MTa} = \text{MTc}$

$$\text{PTM} = 9. 24. 22.$$

$$\rightarrow = \text{PTa} = 77. 0. 48.$$

$$\text{Compl.} = 12. 59. 12.$$

$$= = \text{PTc} = 58. 12. 4.$$

$$\text{Compl.} = 31. 47. 56.$$

porro,

$$\begin{aligned} \text{quia } \text{MTa} = \text{bTa} = \text{MTc} = \text{bTc} &= 67. 36. 26. \\ \& \text{hujus compl. } \text{baT} = \text{bcT} = 22. 23. 34. \\ \text{hoc subtracto a } \text{TalI} = \text{Tev} &= 71. 29. 46 \text{ restat} \\ \text{ball} = \text{beV} &= 49. 6. 12 = \text{gIIa} = \text{gVc}. \end{aligned}$$

Nunc ad imitationem §. VII. X.

4) Pro $\text{ga} = \text{gc}$.

Radius:

$$\begin{aligned} \text{IIa} = \text{Vc} &= 32. 32' = 1952'' = 3.2904798 = \\ \text{gIIa} = \text{gVc} &= 49. 6. 12 = 9.8784595 : \\ \text{ga} = \text{gc} &= 24. 35\frac{1}{2} = 1475\frac{1}{2} = 3.1689393. \end{aligned}$$

5) Pro $\text{IIg} = \text{Vg}$.

$$\begin{aligned} \text{IIa} = \text{Vc} &= 32. 32' = 1952. \\ \text{ga} = \text{gc} &= 24. 35\frac{1}{2} = 1475\frac{1}{2}. \\ \rightarrow = & 57. 7\frac{1}{2} = 3427\frac{1}{2} = 3.5349775. \\ - = & 7. 56\frac{1}{2} = 476\frac{1}{2} = 2.6780627. \\ & 6. 2130402. \end{aligned}$$

$$\text{IIg} = \text{Vg} = 21. 18 = 1278 = 3.1065201.$$

6) Pro magnitudine eclipses in locis a & c.

$$\text{Diameter solis} = 31. 47' = 1907' = 3.2803507:$$

$$12'. 0' = 720' = 2.8573325:$$

$$7. 56\frac{1}{2}' = 476\frac{1}{2}' = 2.6780627:$$

$$5.5353952.$$

$$3'. 0' = 180' = 2.2550445.$$

D 2

7) Pro

7) $Pro ab = cb = gM.$

$$\begin{aligned} TM &= 47'. 51'' = 2871''. \\ ga &= gc = Mb \quad 24. 35\frac{1}{2} = 1475\frac{1}{2}. \\ Tb &= TM - Mb \quad 23. 15\frac{1}{2} = 1395\frac{1}{2}. \\ aT &= cT \quad 61. 4. = 3664. \end{aligned}$$

$$\begin{aligned} 19\frac{1}{2} &= 5059\frac{1}{2} = 3.7041076. \\ 37. & 48\frac{1}{2} = 2268\frac{1}{2} = 3.3557388. \end{aligned}$$

$$7.0598464.$$

$$ab = cb = gM \approx 56. \quad 28 = 3388 = 3.5299232.$$

8) $Pro z M = 5 M, \& IIM = VM.$

$$\begin{aligned} 2g &= 5g = IIg = Vg = 21. \quad 18 = 1278. \\ ab &= cb = gM = 56. \quad 28 = 3388. \end{aligned}$$

$$\begin{aligned} 2g + gM &= 5g + gM = 77. \quad 46 = 4666 \approx zM = M5. \\ gM - IIg &= gM - Vg = 35. \quad 10 = 2110. \text{ ut supra } \S. X. 8. \end{aligned}$$

9) $Pro tempore per 2g + gM = 5g + gM.$

$$\begin{aligned} \text{Horarius lunæ a sole verus} &= 2132 = 3.3287872. \\ 2g + gM &= 5g + gM = 77. \quad 46 = 4666 = 3.6689447. \\ 2g + gM &= 5g + gM = 77. \quad 46 = 4666 = 7.2252472. \\ 2^b. 11'. 19'' &= 7879 = 3.8964600. \end{aligned}$$

10) $Pro ingressu a, \& egressu c.$

$$2^b. 11'. 19'' = \text{tempori per } 2g + gM = 5g + gM. \quad \text{momentum mediarium tenebrarum.}$$

$$\begin{aligned} 5. & 31. \quad 23. \quad \text{ingreditur } a. \text{ in P.C.M. } 50^\circ. 1'. 0''. \\ 3. & 20. \quad 4. \quad \text{egreditur } c. \text{ in P.C.M. } 115. 40. 30. \end{aligned}$$

Jam pro latitudine, & longitudine $a, \& c$ in $a, \& a, \& c$ in c videoas quæso quæ diximus $\S. VIII.$

Latitudo &
longitudo
 $a \& c$

$\S. XIII.$

1) $Pro latitudine a.$

Radius:

$$\text{Cos.PF} = 71^\circ. 29'. 13'' = 9.9769234 =$$

$$\text{Cos.PTa} = 12. 59. 12 = 9.3516496;$$

$$\text{Cos.Pa} = 12. 18. 14 = 9.3285730,$$

$$Pa = 77. 41. 46.$$

2) $Pro latitudine c.$

Radius:

$$\text{Cos.PF} = 71^\circ. 29'. 13'' = 9.9769234 =$$

$$\text{Cos.PTc} = 31. 47. 56 = 9.7217606;$$

$$\text{Cos.Pc} = 29. 58. 42 = 9.6986840,$$

$$Pc = 60. 1. 18.$$

3) Pro

3) Pro angulo a P T.

$$\begin{aligned} S.Pa &= 77^{\circ} 41' 46'' = 9.9899084: \\ \text{Radium} &= \\ S.PTa &= 77. 0. 48 = 9.9887473: \\ S.FPa &= 85. 48. 44 = 9.9988389: \\ aPT &= 94. 11. 16. \end{aligned}$$

4) Pro angulo c PT.

$$\begin{aligned} S.Pc &= 60^{\circ}. 1'. 18'' = 9.9376254: \\ \text{Radium} &= \\ S.PTc &= 58. 12. 4 = 9.9293693: \\ S.FPc &= 78. 51. 48 = 9.9917439: \\ cPT &= 101. 8. 12. \end{aligned}$$

Ingrediente a.

$$\begin{aligned} TPL &= 50^{\circ}. 1'. 0'' \\ aPT &= 94. 11. 16. \\ aPL &= 144. 12. 16. \\ LPf &= 20. 30. 0. \\ &\quad 123. 42. 16. \\ &\quad 359. 59. 60. \\ &\quad 236. 17. 44. \end{aligned}$$

Longitudo a
ingredientis.

Ingrediente c.

$$\begin{aligned} TPL &= 68^{\circ}. 0'. 0'' \\ cPT &= 94. 11. 16. \\ cPL &= 162. 11. 16. \\ LPf &= 20. 30. 0. \\ &\quad 141. 41. 16. \\ &\quad 359. 59. 60. \\ &\quad 218. 18. 44. \end{aligned}$$

Longitudo c
ingredientis.

Egrediente a.

$$\begin{aligned} TPL &= 97^{\circ} 41' 30'' \\ aPT &= 101. 8. 12. \\ aPL &= 3. 26. 42. \\ LPf &= 20. 30. 0. \\ &\quad 23. 56. 42. \end{aligned}$$

Longitudo a
egredientis.

Egrediente c.

$$\begin{aligned} TPL &= 115^{\circ} 40' 30'' \\ cPT &= 101. 8. 12. \\ cPL &= 14. 32. 18. \\ LPf &= 20. 30. 0. \\ &\quad 5. 57. 42. \end{aligned}$$

Longitudo c
egredientis.

§. XIV.

Omnia ex legibus §. IX. collati cum §. XI. 2.4. Nota tantum unam eandemque prodire latitudinem PV, sive perpendiculum cadat ex P ultra TV, sive ex V intra TP.

Latitudo
&
longitudo
II & V.

5) Pro latitudine II.

Radius:

$$\begin{aligned} \text{Cos. PTII} &= 44^{\circ} 16' 39'' = 9.8439389: \\ \text{Tang. III} &= 76. 29. 52 = 10.6195721: \\ \text{Tang. X} &= 71. 1. 11 = 10.4635110: \\ \text{TP} &= 71. 29. 13. \\ \text{TP-X} &= 0. 28. 2. \\ \text{Compl.} &= 89. 31. 58. \end{aligned}$$

4) Pro latitudine V.

$$\begin{aligned} \text{Radius:} \\ \text{Cos. PTV} &= 63^{\circ}. 5'. 23'' = 9.9502267: \\ \text{Tang. TV} &= 76. 29. 52 = 10.6195721: \\ \text{Tang. X} &= 74. 55. 44 = 10.5697988: \\ \text{TP} &= 71. 29. 13. \\ \text{X-TP} &= 3. 26. 31. \\ \text{Compl.} &= 86. 33. 29. \end{aligned}$$

$$\begin{aligned} 2) \text{Cos. X} &= 18. 58. 49 = 9.5122075: \\ \text{Cos. III} &= 13. 30. 8 = 9.3682554: \\ \text{Cos. TP-X} &= 89. 31. 58 = 9.999856: \\ &\quad 19.3682410. \\ \text{Cos. PII} &= 45. 52. 38 = 9.8560335: \\ \text{PII} &= 44. 7. 22. \end{aligned}$$

$$\begin{aligned} 3) \text{Cos. X} &= 15. 4. 16 = 9.4150029: \\ \text{Cos. TV} &= 13. 30. 8 = 9.3682554: \\ \text{Cos. X-TP} &= 86. 33. 29 = 9.9992159: \\ &\quad 19.3674713. \\ \text{Cos. PV} &= 63. 40. 50 = 9.9524684: \\ \text{PV} &= 26. 19. 10. \end{aligned}$$

| | |
|-----------|-----------------------------|
| | 3) <i>Pro angulo IIP T.</i> |
| S. PII = | 44° 7. 22" = 9. 8427329: |
| S. PTII = | 45. 43. 21 = 9. 8548930= |
| S. TII = | 76. 29. 52 = 9. 9878276: |
| | 19. 8427206. |
| S. IPT = | 89. 34. 7 = 9. 9999877. |
| TPL = | 68. 0. 0. |
| IIP = | 157. 34. 7. |
| LPf = | 20. 30. 0. |
| | 137. 4. 7. |
| | 359. 59. 60. |
| | 222. 55. 53. |
| | Longitudo II. |

| | |
|----------|----------------------------|
| | 6) <i>Pro angulo VPT.</i> |
| S. PV = | 26° 19'. 10" = 9. 6467715: |
| S. PTV = | 26. 54. 37 = 9. 6557694= |
| S. TV = | 76. 29. 52 = 9. 9878276: |
| | 19. 6435370. |
| S. VPT = | 83. 0. 57 = 9. 9997655. |
| TPL = | 97. 41. 30. |
| VPL = | 14. 40. 33. |
| LPf = | 20. 30. 0. |
| | 5. 49. 27. |
| | Longitudo V. |

§. XV.

Pro semitis
digitorum
singulorum.

Hæcque est curiosa, & si verum fateri licet, haud nimis difficilis methodus, ex semitarum una datarum, alterius ad primariam pertinentis inveniendæ. Non vero inventionem methodi nobis adscribere audemus hanc enim referendam scimus ad Virum Magnificum CHRISTIANUM AVGUSTUM HAUSEN Mathem. P. P. (vide notam in moniti) adquæ hujus exemplum hoc quam suavissimum, quam maxime jucundissimum opus ausi sumus aggredi. Hactenus attamen dicta nondum sufficiunt ad projectionem terra eclipsiæ in plano exhibendam, nil nisi semita contactus, ejusque secundaria, & hujus secundaria determinantia proprietates. Est vero animus & præter hæc semita cujusvis digitæ, in, & egredientis, crescentis, & decrescentis, latitudinem, & longitudinem accuratissima pro designanda eclipsi perscrutari. Hos nec peniteat duros subiisse labores,

Pro limite austriño

five

locis ubi minima eclipsi o. o. versus meridiem.

1) *Pro AB = CB = GM.*

| | |
|-----------------|-----------------------------|
| TM = | 47'. 51" = 2871". |
| IA = VIC = MB = | 32. 32 = 1952. |
| TB = TM - MB = | 15. 19 = 919. |
| AT = CT = | 61. 4 = 3664. |
| + = | 76. 23 = 4583 = 3. 6611499. |
| - = | 45. 45 = 2745 = 3. 4385423. |
| AB = CB = GM = | 59. 7 = 3547 = 3. 5498461 |

2) *Pro*

2) *Pro tempore per AB = CB = GM.*

$$\text{Horarius lunæ a sole verus} = \frac{2132''}{3600} = 3.3287872:$$

$$AB = CB = GM = \frac{59'}{59'. 7''} = 3547 = 3.5498461:$$

$$7.101486.$$

$$1^b, 39'. 49'' = \text{tempori per GM} = 5989 = 3.7773614.$$

5. 31. 23 momentum mediарum tenebrarum.

$$3. 51. 34. \text{ ingreditur o. in P.C.M.} = 57'. 53'. 30''.$$

$$7. 11. 12. \text{ egreditur o. in P.C.M.} = 107. 48' \text{ o.}$$

3) *Pro angulo BTA = BTC.*

$$AT = CT = 61'. 4'' = 3664'' = 3.5639555:$$

Radium=

$$AB = CB = 59. 7 = 3547 = 13.5498461:$$

$$BTA = BTC = 75'. 28'. 27'' = 9.9858906.$$

$$PTM = \underline{9. 24. 22.}$$

$$+= PTA = 84. 52'. 49''. \text{ Compl.} = 5'. 7'. 11''.$$

$$-= PTC = 66. 4. 5''. \text{ Compl.} = 23. 55. 55.$$

4) *Pro latitudine A.*

Radius:

$$\cos. PF = 71'. 29'. 13'' = 9.9769234:$$

$$\cos. PTA = 5. 7. 11 = 8.9505454:$$

$$\cos. PA = 4. 51. 15 = 8.9274088:$$

$$PA = 85. 8. 45.$$

5) *Pro angulo APT.*

$$S. PA = 85. 8. 45 = 9.9984390:$$

Radium=

$$S. PTA = 84. 52. 49 = 19.9982639:$$

$$S. FPA = 88. 22. 23 = 9.9998249.$$

$$APT = 91. 37. 37.$$

$$TPL = 57. 53. 30.$$

$$APL = 149. 31. 7.$$

$$LPf = 20. 30. 0.$$

$$APT = 129. 1. 7.$$

$$230. 58. 53.$$

Longitudo o^d in A.

Per a', m', c', antecedens, medium, & consequens semitæ
unius digiti &c. intelligimus.

6) *Pro latitudine C.*

Radius:

$$\cos. PF = 71'. 29'. 13'' = 9.9769234:$$

$$\cos. PTC = 23. 55. 55 = 9.6081528:$$

$$\cos. PC = 22. 37. 21 = 9.5850762:$$

$$PC = 67. 22. 39.$$

7) *Pro angulo CPT.*

$$S. PC = 67. 22. 39 = 9.9652296:$$

Radium=

$$S. PTC = 66. 4. 5 = 19.9609595:$$

$$S. FPC = 81. 58. 43 = 9.9957299.$$

$$CPT = 98. 1. 17.$$

$$TPL = 107. 48. 0.$$

$$CPL = 9. 46. 43.$$

$$LPf = 20. 30. 0.$$

$$10. 43. 17.$$

Longitudo o^d in C.

Pro semita digitii unius.

1) Pro $GA = GC$.

| | | |
|------------------|--------------------|------------------|
| Diameter solis = | $31' 47'' = 1907'$ | $= MB = 89 = 8A$ |
| Ergo digitus 1 = | $2. 39 = 159$ | |
| IA = VIC = | $32. 32 = 1952$ | |
| GA = GC = | $29. 53 = 1793$ | |

2) Pro $IG = VIG$.

| | |
|------------|--------------------------------------------|
| IA = VIC = | $32. 32 = 1952$ |
| GA = GC = | $29. 53 = 1793$ |
| | $\rightarrow = 62. 25 = 3745 = 3. 5734518$ |
| | $- = 2. 39 = 159 = 2. 2013971$ |
| IG = VIG = | $12. 52 = 772 = 5. 7748489$ |
| | $= 12. 52 = 772 = 2. 8874244$ |

3) Pro $IM = MVI; GM; \& IIIM = MIV$.

| | |
|----------------------|-------------------------------------------|
| TM = | $47. 51 = 2871$ |
| GA = GC = MB = | $29. 53 = 1793$ |
| TB = TM - MB = | $17. 58 = 1078$ |
| AT = CT = | $61. 4 = 3664$ |
| | $\rightarrow = 79. 2 = 4742 = 3. 6759615$ |
| | $- = 43. 6 = 2586 = 3. 4126285$ |
| AB = CB = GM = | $58. 22 = 3502 = 3. 5442950$ |
| IG = VIG = | $12. 52 = 772$ |
| IG + GM = VIG + GM = | $71. 14 = 4274 = IM = MVL$ |
| GM - IG = GM - VIG = | $45. 30 = 2730 = IIIM = MIV$ |

4) Pro temporibus per

| | | |
|--------------------------------|--------------------------------|--------------------------------|
| IM = MVI. | GM. | IIIM = MIV. |
| $2132'' = 3. 3287872$ | $2132'' = 3. 3287872$ | $2132'' = 3. 3287872$ |
| $3600 = 3. 5563025$ | $3600 = 3. 5563025$ | $3600 = 3. 5563025$ |
| $4274 = 3. 6308345$ | $3502 = 3. 5442950$ | $2730 = 3. 4361626$ |
| | $7. 1871370$ | $6. 9924651$ |
| $7217 = 3. 8583498$ | $5913 = 3. 7718103$ | $4610 = 3. 6636779$ |
| $2^h. 0^m. 17^s$ | $1^h. 38' .33''$ | $1^h. 16'. 50''$ |
| $5. 31. 23$ m. m. t. | $5. 31. 23$ m. m. t. | $5. 31. 23$ m. m. t. |
| $3. 31. 6. a' in A.$ | $3. 52. 50. m' in A.$ | $4. 14. 33. c' in A.$ |
| $52^{\circ}. 46. 30$ in P.C.M. | $58^{\circ}. 12. 30$ in P.C.M. | $63^{\circ}. 38. 15$ in P.C.M. |
| $7. 31. 40. c' in C.$ | $7. 9. 56. m' in C.$ | $6. 48. 13. a' in C.$ |
| $112. 55. o$ in P.C.M. | $107. 29. o$ in P.C.M. | $102. 3. 15$ in P.C.M. |

5) Pro

5) Pro angulo BTA = BTC.

$$AT = CT = 61'. 4'' = 3664'' = 3.5639555:$$

$$\text{Radium} =$$

$$AB = CB = 58. 22'' = 3502'' = 13.5442950:$$

$$BTA = BTC = 72'. 53'. 22'' = 9.9803395:$$

$$PTM = 9. 24. 22. = 5007 = 11$$

$$+ PTA = 82. 17. 44.$$

$$\text{Compl.} = 7. 42. 16.$$

$$- PTC = 63. 29. 0.$$

$$\text{Compl.} = 26. 31. 0.$$

6) Pro latitudine A.

Radius:

$$\cos. PF = 71.29'.13'' = 9.9769234 =$$

$$\cos. PTA = 7.42.16 = 9.1273089:$$

$$\cos. PA = 7.18.13 = 9.1042323:$$

$$PA = 82.41.47.$$

8) Pro latitudine C.

Radius:

$$\cos. PF = 71.29'.13'' = 9.9769234 =$$

$$\cos. PTC = 26.31.0 = 9.6497807:$$

$$\cos. PC = 25.2.48 = 9.6267041.$$

$$PC = 64.57.12.$$

7) Pro angulo APT.

$$S. PA = 82.41.47 = 9.9964620:$$

$$\text{Radium} =$$

$$S. PTC = 82.17.44 = 19.9960617:$$

$$S. FPA = 87.32.26 = 9.9995997:$$

$$APT = 92.27.34.$$

9) Pro angulo CPT.

$$S. PC = 64.57.12 = 9.9571106:$$

$$\text{Radium} =$$

$$S. PTC = 63.29.0 = 19.9517282:$$

$$S. FPC = 80.59.53 = 9.9946176.$$

$$CPT = 99.0.7.$$

 a' in A.

$$TPL = 52'. 46'. 30''$$

$$a'PT = 92. 27. 34.$$

$$a'PL = 145. 14. 4.$$

$$LPf = 20. 30. 0.$$

$$124. 44. 4.$$

$$VIM = 235. 15. 56.$$

Longitudo a' ingredientis. m' in A.

$$TPL = 58'. 12'. 30''$$

$$m'PT = 92. 27. 34.$$

$$m'PL = 150. 40. 4.$$

$$LPf = 20. 30. 0.$$

$$130. 10. 4.$$

$$229. 49. 56.$$

Longitudo m' ingredientis. c' in A.

$$TPL = 63'. 38'. 15''$$

$$c'PT = 92. 27. 34.$$

$$c'PL = 156. 5. 49.$$

$$LPf = 20. 30. 0.$$

$$135. 35. 49.$$

$$224. 24. 11.$$

Longitudo c' ingredientis. a' in C.

$$TPL = 102'. 3'. 15''$$

$$a'PT = 99. 0. 7.$$

$$a'PL = 3. 3. 8.$$

$$LPf = 20. 30. 0.$$

$$17. 26. 52.$$

Longitudo a' egredientis. m' in C.

$$TPL = 107'. 29'. 0''$$

$$m'PT = 99. 0. 7.$$

$$m'PL = 8. 28. 53.$$

$$LPf = 20. 30. 0.$$

$$12. 1. 7.$$

Longitudo m' egredientis. c' in C.

$$TPL = 112'. 55'. 0''$$

$$c'PT = 99. 0. 7.$$

$$c'PL = 13. 54. 53.$$

$$LPf = 20. 30. 0.$$

$$6. 35. 7.$$

Longitudo c' egredientis.

Pro semita digitorum duorum.

1) Pro $GA = GC$.

| | | | |
|------------------|----------|-----------|--------|
| Diameter solis = | 31°. 47' | \approx | 1907°. |
| Ergo digitii 2 = | 5. 18 | \approx | 318. |
| IA = VIC = | 32. 32 | \approx | 1952. |
| GA = GC = | 27. 14 | \approx | 1634. |

2) Pro $IG = VIG$.

| | | | |
|------------|--------|-----------|-------|
| IA = VIC = | 32. 32 | \approx | 1952. |
| GA = GC = | 27. 14 | \approx | 1634. |

$$+ = \frac{59. 46}{-} = \frac{3586}{5. 18} = \frac{3.5546103}{318} = \frac{2.5024271}{6.0570374}.$$

$$IG = VIG = \frac{17. 48}{-} = \frac{1068}{1068} = \frac{3.0285187}{3.0285187}.$$

3) Pro $IM = MVI; GM; \& IIIM = MIV$.

$$TM = \frac{47'. 51'}{= 2871'}$$

$$GA = GC = MB = \frac{27. 14}{= 1634}$$

$$TB = TM - MB = \frac{20. 37}{= 1237}$$

$$AT = CT = \frac{61. 4}{= 3664}$$

$$+ = \frac{81. 41}{-} = \frac{4901}{40. 27} = \frac{3.6902847}{2427} = \frac{3.3850698}{7.0753545}.$$

$$AB = CB = GM = \frac{57. 29}{= 3449} = \frac{3.5376772}{17. 48} = \frac{1068}{1068}.$$

$$IG = VIG = \frac{75. 17}{-} = \frac{4517}{4517} = IM = MVI.$$

$$GM - IG = GM - VIG = \frac{39. 41}{-} = \frac{2381}{2381} = IIIM = MIV.$$

4) Pro temporibus per

$$IM = MVI.$$

$$2132'' = 3.3287872:$$

$$3600 = 3.5563025:$$

$$4517 = 3.6548501:$$

$$7627 = 3.8823654:$$

$$5. 31. 23 \text{ m.m.t.}$$

$$3. 24. 16. \alpha^2 \text{ in A.}$$

$$51'. 4. \circ \text{ in P.C.M.}$$

$$7. 38. 30. \alpha^2 \text{ in C.}$$

$$114. 37. 30 \text{ in P.C.M.}$$

$$2132'' = 3.3287872:$$

$$3600 = 3.5563025:$$

$$3449 = 3.5376772:$$

$$5824 = 3.7651925:$$

$$5. 31. 23 \text{ m.m.t.}$$

$$3. 54. 19. \alpha^2 \text{ in A.}$$

$$58'. 34. 45 \text{ in P.C.M.}$$

$$7. 8. 27. \alpha^2 \text{ in C.}$$

$$107. 6. 45 \text{ in P.C.M.}$$

$$2132'' = 3.3287872:$$

$$3600 = 3.5563025:$$

$$2381 = 3.3767594:$$

$$7.0939797:$$

$$1'. 37'. 4''$$

$$5. 31. 23 \text{ m.m.t.}$$

$$4020 = 3.6042747:$$

$$1'. 7'. 0''$$

$$5. 31. 23 \text{ m.m.t.}$$

$$4. 24. 23. \alpha^2 \text{ in A.}$$

$$66'. 5. 45 \text{ in P.C.M.}$$

$$6. 38. 23. \alpha^2 \text{ in C.}$$

$$99. 35. 45 \text{ in P.C.M.}$$

5) Pro angulo BTA = BTC.

$$AT = CT = 61'. 4'' \equiv 3664'' = 3.5639555:$$

Radium =

$$AB = CB = 57. 29 = 3449 = 13.5376772:$$

$$BTA = BTC = 70'. 16'. 7'' = 9.9737217:$$

$$PTM = 9. 24. 22.$$

$$+ = PTA = 79. 40. 29.$$

$$\text{Compl.} = 10. 19. 31.$$

$$- = PTC = 60. 51. 45.$$

$$\text{Compl.} = 29. 8. 15.$$

6) Pro latitudine A.

Radius:

$$\cos. PF = 71'. 29'. 13'' = 9.9769234 =$$

$$\cos. PTA = 10. 19. 31 = 9.2534258 :$$

$$\cos. PA = 9. 47. 8 = 9.2303492 :$$

$$PA = 80. 12. 52.$$

7) Pro angulo APT.

$$S.PA = 80. 12. 52 = 9.9936349:$$

$$\text{Radium} =$$

$$S.PTA = 79. 40. 29 = 19.9929095:$$

$$S.FPA = 86. 41. 21 = 9.9992746.$$

$$APT = 93. 18. 39.$$

8) Pro latitudine C.

Radius:

$$\cos. PF = 71'. 29'. 13'' = 9.9769234 =$$

$$\cos. PTC = 29. 8. 15 = 9.6874462:$$

$$\cos. PC = 27. 29. 51 = 9.6643696.$$

$$PC = 62. 30. 9.$$

9) Pro angulo CPT.

$$S.PC = 62. 30. 9 = 9.9479388:$$

$$\text{Radium} =$$

$$S.PTC = 60. 51. 45 = 19.9412399:$$

$$S.FPC = 79. 57. 45 = 9.9933011.$$

$$CPT = 100. 2. 15.$$

 α^2 in A.

$$TPL = 51'. 4'. 0'' \quad m^2 in A.$$

$$\alpha^2 PT = 93. 18. 39. \quad m^2 PT = 93. 18. 39.$$

$$\alpha^2 PL = 144. 22. 39. \quad m^2 PL = 151. 53. 24.$$

$$LPf = 20. 30. 0. \quad LPf = 20. 30. 0.$$

$$123. 52. 39. \quad 131. 23. 24.$$

$$236. 7. 21. \quad 228. 36. 36.$$

Longitudo α^2
ingredientis. α^2 in C.

$$TPL = 99'. 35'. 45'' \quad m^2 in C.$$

$$\alpha^2 PT = 100. 2. 15. \quad m^2 PT = 100. 2. 15.$$

$$\alpha^2 PL = 0. 26. 30. \quad m^2 PL = 7. 4. 30.$$

$$LPf = 20. 30. 0. \quad LPf = 20. 30. 0.$$

$$20. 56. 30. \quad 13. 25. 30.$$

Longitudo α^2
egredientis. α^2 in A.

$$TPL = 60'. 5'. 45'.$$

$$\alpha^2 PT = 93. 18. 39.$$

$$\alpha^2 PL = 159. 24. 24.$$

$$LPf = 20. 30. 0.$$

$$138. 54. 24.$$

$$221. 5. 36.$$

Longitudo α^2
ingredientis. α^2 in C.

$$TPL = 114'. 37'. 30''.$$

$$\alpha^2 PT = 100. 2. 15.$$

$$\alpha^2 PL = 14. 35. 15.$$

$$LPf = 20. 30. 0.$$

$$5. 54. 45.$$

Longitudo α^2
egredientis.

Pro semita digitorum trium.

| | |
|------------------|---------------------|
| Diameter solis = | $31' 47'' = 1907''$ |
| Ergo digiti 3 = | $7' 57'' = 477$ |
| IA = VIC = | $32' 32'' = 1952$ |
| GA = GC = | $24' 35'' = 1475$ |

2) Pro IG = VIG.

| | |
|------------|-------------------|
| IA = VIC = | $32' 32'' = 1952$ |
| GA = GC = | $24' 35'' = 1475$ |
| + = | $57' 7'' = 3427$ |
| - = | $7' 57'' = 477$ |
| IG = VIG = | $21' 19'' = 1279$ |

3) Pro IM = MVI; GM; & IIIM = MIV.

| | |
|----------------|-------------------|
| TM = | $47' 51'' = 2871$ |
| GA = GC = MB = | $24' 35'' = 1475$ |
| TB = TM - MB = | $23' 16'' = 1396$ |
| AT = CT = | $61' 4'' = 3664$ |
| + = | $84' 20'' = 5060$ |
| - = | $37' 48'' = 2268$ |

| | |
|----------------------|-------------------|
| AB = CB = GM = | $56' 28'' = 3388$ |
| IG = VIG = | $21' 19'' = 1279$ |
| IG + GM = VIG + GM = | $77' 47'' = 4667$ |
| GM - IG = GM - VIG = | $35' 9'' = 2109$ |

4) Pro temporibus per

| IM = MVI. | GM. | IIIM = MIV. |
|-------------------------------------|-------------------------------------|-------------------------------------|
| $2132'' = 3.3287872$: | $2132'' = 3.3287872$: | $2132'' = 3.3287872$: |
| $3600 = 3.5563025$ = | $3600 = 3.5563025$ = | $3600 = 3.5563025$ = |
| $4667 = 3.6690378$: | $3388 = 3.5298968$: | $2109 = 3.3240766$: |
| $7880 = 3.8965531$ | $5720 = 3.7574121$ | $3561 = 3.5515919$ |
| $2^b 11' 20''$ | $1^b 35' 20''$ | $0^b 59' 21''$ |
| $5. 31. 23 \text{ m.m.t.}$ | $5. 31. 23 \text{ m.m.t.}$ | $5. 31. 23 \text{ m.m.t.}$ |
| $3. 20. 3. a^3 \text{ in A.}$ | $3. 56. 3. m^3 \text{ in A.}$ | $4. 32. 2. c^3 \text{ in A.}$ |
| $50^\circ. 0. 45 \text{ in P.C.M.}$ | $59^\circ. 0. 45 \text{ in P.C.M.}$ | $68^\circ. 0. 30 \text{ in P.C.M.}$ |
| $7. 42. 43. c^3 \text{ in C.}$ | $7. 6. 43. m^3 \text{ in C.}$ | $6. 30. 44. a^3 \text{ in C.}$ |
| $115. 40. 45 \text{ in P.C.M.}$ | $106. 40. 45 \text{ in P.C.M.}$ | $97. 41. 0 \text{ in P.C.M.}$ |

5) Pro

5) Pro angulo BTA = BTC.

| | | |
|-------------|------------------|--------------|
| AT = CT = | 61° 4' = 3664" = | 3. 5639555: |
| Radium = | | |
| AB = CB = | 56° 28' = 3388 = | 13. 5298968: |
| BTA = BTC = | 67° 36' 15" = | 9. 9659413: |
| PTM = | 9° 24' 22" | vide §. XII, |
| + = PTA = | 77° 0' 37" | ante |
| Compl. = | 12° 59' 23" | nrum 4. |
| - = PTC = | 58° 11' 53" | & seqq. |
| Compl. = | 31° 48' 7" | |

6) Pro latitudine A.

| | |
|-----------|----------------------------|
| Radius: | 82. 42. |
| Cos.PF = | 71° 29'. 13" = 9. 9769234= |
| Cos.PTA = | 12. 59. 23 = 9. 3517504: |
| Cos.PA = | 12. 18. 24 = 9. 3286738: |
| PA = | 77. 41. 36. |

7) Pro angulo APT.

| | |
|----------|--------------------------|
| S.PA = | 77. 41. 36 = 9. 9899038: |
| Radium = | |
| S.PTA = | 77. 0. 37 = 19. 9887419: |
| S.FPA = | 85. 48. 40 = 9. 9988381: |
| APT = | 94. 11. 20. |

8) Pro latitudine C.

| | |
|-----------|----------------------------|
| Radius: | 82. 42. |
| Cos.PF = | 71° 29'. 13" = 9. 9769234= |
| Cos.PTC = | 31. 48. 7 = 9. 7217980: |
| Cos.PC = | 29. 58. 52 = 9. 6987214. |
| PC = | 60. 1. 8. |

9) Pro angulo CPT.

| | |
|----------|---------------------------|
| S.PC = | 60. 1. 8 = 9. 9376132: |
| Radium = | |
| S.PTC = | 58. 11. 53 = 19. 9293550: |
| S.FPC = | 78. 51. 43 = 9. 9917418. |
| CPT = | 101. 8. 17. |

 a^3 in A.

| | | |
|-------------------------------|--------------|------------------------|
| TPL = | 50° 0' 45" = | m^3 in A. |
| a^3 PT = | 94. 11. 20. | TPL = 59° 0' 45" = |
| a^3 PL = | 144. 12. 5. | m^3 PT = 94. 11. 20. |
| L Pf = | 20. 30. 0. | m^3 PL = 153. 12. 5. |
| | 123. 42. 5. | L Pf = 20. 30. 0. |
| | 236. 17. 55. | 132. 42. 5. |
| Longitudo a^3 ingredientis. | | 227. 17. 55. |

 c^3 in A.

| | |
|-------------------------------|--------------|
| TPL = | 68° 0' 30" = |
| c^3 PT = | 94. 11. 20. |
| c^3 PL = | 162. 11. 50. |
| L Pf = | 20. 30. 0. |
| | 141. 41. 50. |
| | 218. 18. 10. |
| Longitudo c^3 ingredientis. | |

 a^3 in C.

| | | |
|------------------------------|--------------|------------------------|
| TPL = | 97° 41' 0" = | m^3 in C. |
| a^3 PT = | 101. 8. 17. | TPL = 106° 40' 45" = |
| a^3 PL = | 3. 27. 17. | m^3 PT = 101. 8. 17. |
| L Pf = | 20. 30. 0. | m^3 PL = 5. 32. 28. |
| | 23. 57. 17. | L Pf = 30. 30. 0. |
| Longitudo a^3 egredientis. | | 14. 57. 32. |

 c^3 in C.

| | |
|------------------------------|----------------|
| TPL = | 115° 40' 45" = |
| c^3 PT = | 101. 8. 17. |
| c^3 PL = | 14. 32. 28. |
| L Pf = | 20. 30. 0. |
| | 5. 57. 32. |
| Longitudo c^3 egredientis. | |

viii (2)

Pro semita digitorum quatuor.

1) Pro $GA = GC$.

$$\begin{array}{lcl} \text{Diameter solis} & = & 31' . 47'' = 1907'' \\ \text{Ergo digitii 4} & = & 10. 36 = 636. \\ \text{IA} = \text{VIC} & = & 32. 32 = 1952. \\ \text{GA} = \text{GC} & = & 21. 56 = 1316. \end{array}$$

2) Pro $IG = VIG$.

$$\begin{array}{lcl} \text{IA} = \text{VIC} & = & 32. 32 = 1952. \\ \text{GA} = \text{GC} & = & 21. 56 = 1316. \\ & & 54. 28 = 3268 = 3. 5142826. \\ & & 10. 36 = 636 = 2. 8034571. \\ \text{IG} = \text{VIG} & = & 24. 2 = 1442 = 3. 1588695. \end{array}$$

3) Pro $IM = MVI$; GM ; & $IIIM = MIV$.

$$\begin{array}{lcl} \text{TM} & = & 47. 51 = 2871. \\ \text{GA} = \text{GC} = \text{MB} & = & 21. 56 = 1316. \\ \text{TB} = \text{TM} - \text{MB} & = & 25. 55 = 1555. \\ \text{AT} = \text{CT} & = & 61. 4 = 3664. \\ & & 86. 59 = 5219 = 3. 7175873. \\ & & 35. 9 = 2109 = 3. 3240766. \end{array}$$

$$\begin{array}{lcl} \text{AB} = \text{CB} = \text{GM} & = & 55. 18 = 3318 = 3. 5208319. \\ \text{IG} = \text{VIG} & = & 24. 2 = 1442. \\ \text{IG} + \text{GM} = \text{VIG} + \text{GM} & = & 79. 20 = 4760 = \text{IM} = \text{MVI}. \\ \text{GM} - \text{IG} = \text{GM} - \text{VIG} & = & 31. 16 = 1876 = \text{IIIM} = \text{MIV}. \end{array}$$

4) Pro temporibus per

| | | |
|---------------------------------|---------------------------------|--------------------------------|
| $IM = MVI$. | GM . | $IIIM = MIV$. |
| $2132'' = 3. 3287872:$ | $2132'' = 3. 3287872:$ | $2132'' = 3. 3287872:$ |
| $3600 = 3. 5563025:$ | $3600 = 3. 5563025:$ | $3600 = 3. 5563025:$ |
| $4760 = 3. 6776070:$ | $3318 = 3. 5208319:$ | $1876 = 3. 2732328:$ |
| $8038 = 3. 9051223.$ | $5602 = 3. 7483472.$ | $3168 = 3. 5007481.$ |
| $2^b. 13'. 58''.$ | $1^b. 33'. 22''.$ | $0^b. 52'. 48''.$ |
| $5. 31. 23 \text{ m. m. t.}$ | $5. 31. 23 \text{ m. m. t.}$ | $5. 31. 23 \text{ m. m. t.}$ |
| $3. 17. 25. a^4 \text{ in A.}$ | $3. 58. 1. m^4 \text{ in A.}$ | $4. 38. 35. c^4 \text{ in A.}$ |
| $49. 21. 15 \text{ in P.C.M.}$ | $59. 30. 15 \text{ in P.C.M.}$ | $69. 38. 45 \text{ in P.C.M.}$ |
| $7. 45. 21. c^4 \text{ in C.}$ | $7. 4. 45. m^4 \text{ in C.}$ | $6. 24. 11. a^4 \text{ in C.}$ |
| $116. 20. 15 \text{ in P.C.M.}$ | $106. 11. 15 \text{ in P.C.M.}$ | $96. 2. 45 \text{ in P.C.M.}$ |

5) Pro

3) Pro angulo BTA = BTC.

$$AT = CT = 61^\circ 4' \approx 3664'' = 3.5639555:$$

Radium

$$AB = CB = 35^\circ 18' \approx 3318'' = 13.5208319:$$

$$BTA = BTC = 64^\circ 53' 4'' = 9.9568764:$$

$$PTM = 9^\circ 24' 22''$$

$$+= PTA = 74^\circ 17' 36''$$

$$\text{Compl.} = 15^\circ 42' 24''$$

$$-= PTC = 55^\circ 28' 52''$$

$$\text{Compl.} = 34^\circ 31' 8''$$

6) Pro latitudine A.

Radius:

$$\cos.PF = 71^\circ 29' 13'' = 9.9769234 =$$

$$\cos.PTA = 15^\circ 42' 24'' = 9.4325082:$$

$$\cos.PA = 14^\circ 52' 28'' = 9.4094316.$$

$$PA = 75^\circ 7' 32''$$

7) Pro angulo APT.

$$S.PA = 75^\circ 7' 32'' = 9.9851977:$$

Radium

$$S.PTA = 74^\circ 17' 36'' = 19.9834730:$$

$$S.FPA = 84^\circ 53' 50'' = 9.9982753.$$

$$APT = 95^\circ 6' 10''$$

8) Pro latitudine C.

Radius:

$$\cos.PF = 71^\circ 29' 13'' = 9.9769234 =$$

$$\cos.PTC = 34^\circ 31' 8'' = 9.7533363:$$

$$\cos.PC = 32^\circ 30' 13'' = 9.7302597.$$

$$PC = 57^\circ 29' 47''$$

9) Pro angulo CPT.

$$S.PC = 57^\circ 29' 47'' = 9.9260118:$$

Radium

$$S.PTC = 55^\circ 28' 52'' = 19.9158953:$$

$$S.FPC = 77^\circ 40' 52'' = 9.9898835.$$

$$CPT = 102^\circ 19' 8''$$

 a° in A.

$$TPL = 49^\circ 21' 15''$$

$$a^{\circ}PT = 95^\circ 6' 10''$$

$$a^{\circ}PL = 144^\circ 27' 25''$$

$$LPF = 20^\circ 30' 0''$$

$$VIM = 123^\circ 57' 25''$$

$$236^\circ 2' 35''$$

Longitude a°
ingredientis. m° in A.

$$TPL = 59^\circ 30' 15''$$

$$m^{\circ}PT = 95^\circ 6' 10''$$

$$m^{\circ}PL = 154^\circ 36' 25''$$

$$LPF = 20^\circ 30' 0''$$

$$134^\circ 6' 25''$$

$$225^\circ 53' 35''$$

Longitude m°
ingredientis. c° in A.

$$TPL = 69^\circ 38' 45''$$

$$c^{\circ}PT = 95^\circ 6' 10''$$

$$c^{\circ}PL = 164^\circ 44' 55''$$

$$LPF = 20^\circ 30' 0''$$

$$144^\circ 14' 55''$$

$$215^\circ 45' 5''$$

Longitude c°
ingredientis. a° in C.

$$TPL = 96^\circ 2' 45''$$

$$a^{\circ}PT = 102^\circ 19' 8''$$

$$a^{\circ}PL = 6^\circ 16' 23''$$

$$LPF = 20^\circ 30' 0''$$

$$26^\circ 46' 23''$$

Longitude a°
egredientis. m° in C.

$$TPL = 106^\circ 11' 15''$$

$$m^{\circ}PT = 102^\circ 19' 8''$$

$$m^{\circ}PL = 3^\circ 52' 7''$$

$$LPF = 20^\circ 30' 0''$$

$$16^\circ 37' 53''$$

Longitude m°
egredientis. c° in C.

$$TPL = 116^\circ 20' 15''$$

$$c^{\circ}PT = 102^\circ 19' 8''$$

$$c^{\circ}PL = 14^\circ 1' 7''$$

$$LPF = 20^\circ 30' 0''$$

$$6^\circ 28' 53''$$

Longitude c°
egredientis.

Pro

Pro semita digitorum quinque.

1) $Pro GA = GC$.

| | | | |
|------------------|-------------------|----------|-------------|
| Diameter solis = | $31^{\circ} 47''$ | $1907''$ | $AT = CT$ |
| Ergo digiti 5 = | $13^{\circ} 15''$ | $795''$ | $AB = CB$ |
| IA = VIC = | $32^{\circ} 32''$ | $1952''$ | $BLA = BDC$ |
| GA = GC = | $19^{\circ} 17''$ | $1157''$ | $BTM = BTG$ |

2) $Pro IG = VIG$.

| | | |
|------------|-------------------|----------|
| IA = VIC = | $32^{\circ} 32''$ | $1952''$ |
| GA = GC = | $19^{\circ} 17''$ | $1157''$ |

$$\begin{array}{l} 51^{\circ} 49'' \\ 13^{\circ} 15'' \end{array} \begin{array}{l} 3109'' \\ 795'' \end{array} \begin{array}{l} 3.4926207. \\ 2.9003671. \end{array}$$

$$\begin{array}{l} 26. 12 \\ 26. 12 \end{array} \begin{array}{l} 1572'' \\ 1572'' \end{array} \begin{array}{l} 6.3929878. \\ 3.1964939. \end{array}$$

3) $Pro IM = MVI; GM; & IIIM = MIV.$

| | | |
|----------------|-------------------|----------|
| TM = | $47^{\circ} 51''$ | $2871''$ |
| GA = GC = MB = | $19^{\circ} 17''$ | $1157''$ |

| | | |
|----------------|-------------------|----------|
| TB = TM - MB = | $28^{\circ} 34''$ | $1714''$ |
| AT = CT = | $61^{\circ} 4''$ | $3664''$ |

| | | |
|-----------|-------------------|----------|
| AT = CT = | $89^{\circ} 38''$ | $5378''$ |
| AT = CT = | $32^{\circ} 30''$ | $1950''$ |

| | | |
|----------------|-------------------|----------|
| AB = CB = GM = | $53^{\circ} 58''$ | $3238''$ |
| IG = VIG = | $26^{\circ} 12''$ | $1572''$ |

| | | |
|----------------------|-------------------|----------|
| IG + GM = VIG + GM = | $80^{\circ} 10''$ | $4810''$ |
| GM - IG = GM - VIG = | $27^{\circ} 46''$ | $1666''$ |

4) $Pro temporibus per$

IM = MVI. GM. IIIM = MIV.

| | | |
|-----------------------|-----------------------|-----------------------|
| $2132'' = 3.3287872:$ | $2132'' = 3.3287872:$ | $2132'' = 3.3287872:$ |
| $3600 = 3.5563025:$ | $3600 = 3.5563025:$ | $3600 = 3.5563025:$ |
| $4810 = 3.6821451:$ | $3238 = 3.5103277:$ | $1666 = 3.2216750:$ |

| | | |
|---------------------|---------------------|---------------------|
| $7.2384476.$ | $7.0666302.$ | $6.7779775.$ |
| $8122 = 3.9096604.$ | $5468 = 3.7378430.$ | $2813 = 3.4491903.$ |

| | | |
|---------------------------|---------------------------|---------------------------|
| $2^h 15' 22''$ | $1^h 31' 8''$ | $0^h 46' 53''$ |
| $5^{\circ} 31' 23''$ m.t. | $5^{\circ} 31' 23''$ m.t. | $5^{\circ} 31' 23''$ m.t. |

| | | |
|-----------------------------------|-------------------------------|-------------------------------|
| $3^{\circ} 16' 1^{\circ} d$ in A. | $4^{\circ} 0' 15' m$ in A. | $4^{\circ} 44' 30' c$ in A. |
| $49^{\circ} 0' 15'$ in P.C.M. | $60^{\circ} 3' 45'$ in P.C.M. | $71^{\circ} 7' 30'$ in P.C.M. |
| $7^{\circ} 46' 45' c$ in C. | $7^{\circ} 2' 31' m$ in C. | $6^{\circ} 18' 16' d$ in C. |

| | | |
|---------------------------------|---------------------------------|-------------------------------|
| $116^{\circ} 41' 15'$ in P.C.M. | $105^{\circ} 37' 45'$ in P.C.M. | $94^{\circ} 34' 0'$ in P.C.M. |
|---------------------------------|---------------------------------|-------------------------------|

5) Pro

5) Pro angulo BTA = BTC.

| | |
|-------------|--------------------------------|
| AT = CT = | 61°. 4' = 3664" = 3.5639555: |
| Radium = | |
| AB = CB = | 53°. 58' = 3238" = 13.5103277: |
| BTA = BTC = | 62°. 6'. 32" = 9.9463722. |
| PTM = | 9. 24. 22. |
| + PTA = | 71. 30. 54. |
| Compl. = | 18. 29. 6. |
| - PTC = | 52. 42. 10. |
| Compl. = | 37. 17. 50. |

6) Pro latitudine A.

| | |
|-----------|-----------------------------|
| Radius: | |
| Cos.PF = | 71°. 29'. 13" = 9.9769234 = |
| Cos.PTA = | 18. 29. 6 = 9.5011365 : |
| Cos.PA = | 17. 29. 48 = 9.4780599. |
| PA = | 72. 30. 12. |

7) Pro angulo APT.

| | |
|----------|--------------------------|
| S.PA = | 72. 30. 12 = 9.9794275: |
| Radium = | |
| S.PTA = | 71. 30. 54 = 19.9769946: |
| S.FPA = | 83. 56. 28 = 9.9975671. |
| APT = | 96. 3. 32. |

8) Pro latitudine C.

| | |
|-----------|-----------------------------|
| Radius: | |
| Cos.PF = | 71°. 29'. 13" = 9.9769234 = |
| Cos.PTC = | 37. 17. 50 = 9.7824367: |
| Cos.PC = | 35. 4. 16 = 9.7593601. |
| PC = | 54. 55. 44. |

9) Pro angulo CPT.

| | |
|----------|--------------------------|
| S.PC = | 54. 55. 44 = 9.9129865: |
| Radium = | |
| S.PTC = | 52. 42. 10 = 19.9006417: |
| S.FPC = | 76. 24. 13 = 9.9876552. |
| CPT = | 103. 35. 47. |

| α° in A. | m° in A. | Longitudo α° ingredientis. |
|------------------------------------------|-------------------------------------|------------------------------------------|
| TPL = 49°. 0'. 15". | TPL = 60°. 3'. 45". | |
| α° PT = 96. 3. 32. | m° PT = 96. 3. 32. | |
| α° PL = 145. 3. 47. | m° PL = 156. 7. 17. | |
| LPf = 20. 30. 0. | LPf = 20. 30. 0. | |
| 124. 33. 47. | 135. 37. 17. | |
| 235. 26. 13. | 224. 22. 43. | |
| Longitudo α° ingredientis. | Longitudo m° ingredientis. | Longitudo α° ingredientis. |

| α° in A. | m° in C. | Longitudo α° ingredientis. |
|------------------------------------------|-------------------------------------|------------------------------------------|
| TPL = 60°. 3'. 45". | TPL = 105°. 37'. 45". | |
| m° PT = 96. 3. 32. | m° PT = 103. 35. 47. | |
| m° PL = 156. 7. 17. | m° PL = 2. 1. 58. | |
| LPf = 20. 30. 0. | LPf = 20. 30. 0. | |
| 135. 37. 17. | 18. 28. 2. | |
| 224. 22. 43. | | |
| Longitudo α° ingredientis. | Longitudo m° ingredientis. | Longitudo α° ingredientis. |

| α° in C. | m° in C. | Longitudo α° egredientis. |
|-----------------------------------------|------------------------------------|-----------------------------------------|
| TPL = 116°. 41'. 15". | TPL = 105°. 37'. 45". | |
| α° PT = 103. 35. 47. | m° PT = 103. 35. 47. | |
| α° PL = 13. 5. 28. | m° PL = 2. 1. 58. | |
| LPf = 20. 30. 0. | LPf = 20. 30. 0. | |
| 18. 28. 2. | | |
| Longitudo α° egredientis. | Longitudo m° egredientis. | Longitudo α° egredientis. |

Pro semita digitorum sex.

1) Pro GA = GC.

| | | | |
|------------------|----------|---|--------|
| Diameter solis = | 31'. 47" | = | 1907". |
| Ergo digiti 6 = | 15. 53 | = | 953. |
| IA = VIC = | 32. 32 | = | 1952. |
| GA = GC = | 16. 39 | = | 999. |

2) Pro IG = VIG.

| | | | |
|------------|--------|---|-------|
| IA = VIC = | 32. 32 | = | 1952. |
| GA = GC = | 16. 39 | = | 999. |

$$\begin{array}{l} + = \\ - = \end{array} \begin{array}{l} 49. 11 \\ 15. 53 \end{array} \begin{array}{l} = \\ = \end{array} \begin{array}{l} 2951 \\ 953 \end{array} \begin{array}{l} = \\ = \end{array} \begin{array}{l} 3.46999692 \\ 2.9790929. \end{array}$$

$$IG = VIG = 27. 57 = 1677 = 3.2245310.$$

3) Pro IM = MVI; GM; & IIIM=MIV.

$$TM = 47'. 51" = 2871".$$

$$GA = GC = MB = 16. 39 = 999.$$

$$TB = TM - MB = 31. 12 = 1872.$$

$$AT = CT = 61. 4 = 3664.$$

$$\begin{array}{l} + = \\ - = \end{array} \begin{array}{l} 92. 16 \\ 29. 52 \end{array} \begin{array}{l} = \\ = \end{array} \begin{array}{l} 5530 \\ 1792 \end{array} \begin{array}{l} = \\ = \end{array} \begin{array}{l} 3.7431961. \\ 3.2533380. \end{array}$$

$$6.9965341.$$

$$AB = CB = GM = 52. 30 = 3150 = 3.4982670.$$

$$IG = VIG = 27. 57 = 1677.$$

$$IG + GM = VIG + GM = 80. 27 = 4827 = IM = MVI.$$

$$GM - IG = GM - VIG = 24. 33 = 1473 = IIIM = MIV.$$

4) Pro temporibus per

| IM = MVI. | GM. | IIIM = MIV |
|------------------------|------------------------|-----------------------|
| 2132" = 3.3287872: | 2132" = 3.3287872: | 2132" = 3.3287872: |
| 3600 = 3.5563025: | 3600 = 3.5563025: | 3600 = 3.5563025: |
| 4827 = 3.6836773: | 3150 = 3.4982670: | 1473 = 3.1682027: |
| 7. 2399798. | 7. 0545695. | 6. 7245052. |
| 8150 = 3.9111926. | 5318 = 3.7257823. | 2487 = 3.3957180. |
| 2°. 15'. 50". | 1°. 28'. 38". | 0°. 41'. 27". |
| 5. 31. 23 m. m. t. | 5. 31. 23 m. m. t. | 5. 31. 23 m. m. t. |
| 3°. 15. 33. d° in A. | 4°. 2. 45. m° in A. | 4°. 49. 56. d° in A. |
| 48°. 53. 15 in P. C.M. | 60°. 41. 15 in P. C.M. | 72°. 29. 0 in P. C.M. |
| 7. 47. 13. c° in C. | 7. 0. 1. m° in C. | 6. 12. 50. d° in C. |
| 116. 48. 15 in P. C.M. | 105. 0. 15 in P. C.M. | 93. 12. 30 in P. C.M. |

5) Pro

5) Pro angulo $BTA = BTC$.

| | |
|---------------|---------------------------------------|
| $AT = CT =$ | $61^\circ. 4'' = 3664'' = 3.5639555:$ |
| Radium = | |
| $AB = CB =$ | $52. 30 = 3150 = 13.4982670:$ |
| $BTA = BTC =$ | $59^\circ. 16'. 30'' = 9.9343115:$ |
| $PTM =$ | $9. 24. 22. \text{ vide } \S. VII.$ |
| $+ = PTA =$ | $68. 40. 52.$ |
| Compl. = | $21. 19. 8.$ |
| $- = PTC =$ | $49. 52. 8.$ |
| Compl. = | $40. 7. 52.$ |

6) Pro latitudine A .

| | |
|-----------------------------------------------|--|
| Radius: | |
| $\cos. PF = 71^\circ. 29'. 13'' = 9.9769234:$ | |
| $\cos. PTA = 21. 19. 8 = 9.5605741:$ | |
| $\cos. PA = 20. 9. 58 = 9.5374975.$ | |
| $PA = 69. 50. 2.$ | |

7) Pro angulo APT .

| | |
|------------------------------------|--|
| $S.PA = 69. 50. 2 = 9.9725254:$ | |
| Radium = | |
| $S.PTA = 68. 40. 52 = 19.9692161:$ | |
| $S.FPA = 82. 56. 9 = 9.9966907.$ | |
| $APT = 97. 3. 51.$ | |

8) Pro latitudine C .

| | |
|-----------------------------------------------|--|
| Radius: | |
| $\cos. PF = 71^\circ. 29'. 13'' = 9.9769234:$ | |
| $\cos. PTC = 40. 7. 52 = 9.8092491:$ | |
| $\cos. PC = 37. 40. 31 = 9.7861725.$ | |
| $PC = 52. 19. 29.$ | |

9) Pro angulo CPT .

| | |
|-----------------------------------|--|
| $S.PC = 52. 19. 29 = 9.8984440:$ | |
| Radium = | |
| $S.PTC = 49. 52. 8 = 19.8834181:$ | |
| $S.FPC = 75. 0. 54 = 9.9849741.$ | |
| $CPT = 104. 59. 6.$ | |

 a° in A .

| |
|------------------------------|
| $TPL = 48^\circ. 53'. 15''.$ |
| $a^\circ PT = 97. 3. 51.$ |
| $a^\circ PL = 145. 57. 6.$ |
| $LPf = 20. 30. 0.$ |
| $125. 27. 6.$ |

Longitudo a°
ingredientis. m° in A .

| |
|------------------------------|
| $TPL = 60^\circ. 41'. 15''.$ |
| $m^\circ PT = 97. 3. 51.$ |
| $m^\circ PL = 157. 45. 6.$ |
| $LPf = 20. 30. 0.$ |
| $137. 15. 6.$ |

Longitudo m°
ingredientis. c° in A .

| |
|-----------------------------|
| $TPL = 72^\circ. 29'. 0''.$ |
| $c^\circ PT = 97. 3. 51.$ |
| $c^\circ PL = 169. 32. 51.$ |
| $LPf = 20. 30. 0.$ |
| $149. 2. 51.$ |

Longitudo c°
ingredientis. a° in C .

| |
|------------------------------|
| $TPL = 93^\circ. 12'. 30''.$ |
| $a^\circ PT = 104. 59. 6.$ |
| $a^\circ PL = 11. 46. 36.$ |
| $LPf = 20. 30. 0.$ |
| $32. 16. 36.$ |

Longitudo a°
egredientis. m° in C .

| |
|------------------------------|
| $TPL = 105^\circ. 0'. 15''.$ |
| $m^\circ PT = 104. 59. 6.$ |
| $m^\circ PL = 0. 1. 9.$ |
| $LPf = 20. 30. 0.$ |
| $20. 28. 51.$ |

Longitudo m°
egredientis. c° in C .

| |
|-------------------------------|
| $TPL = 116^\circ. 48'. 15''.$ |
| $c^\circ PT = 104. 59. 6.$ |
| $c^\circ PL = 11. 49. 9.$ |
| $LPf = 20. 30. 0.$ |
| $8. 40. 51.$ |

Longitudo c°
egredientis.

Pro semita digitorum septem.

$$\begin{array}{lcl} 1) \text{ Pro } GA = GC & & \\ \text{Diameter solis} = & 31'. 47'' = 1907'. & = CT = TA \\ \text{Ergo digiti 7} = & 18'. 32'' = 1112'. & = CB = AS \\ IA = VIC = & 32'. 32'' = 1952'. & = BA = BIC \\ GA = GC = & 14'. 0'' = 840'. & = TM = IIM \end{array}$$

2) Pro IG = VIG.

$$\begin{array}{lcl} IA = VIC = & 32'. 32'' = 1952'. & = CT = TA \\ GA = GC = & 14'. 0'' = 840'. & = CB = AS \\ \hline + = & 46'. 32'' = 2792' = & = BA = BIC \\ - = & 18'. 32'' = 1112' = & = TM = IIM \\ & & 2.0461048. \\ & & 6.4920202. \\ IG = VIG = & 29'. 22'' = 1762' = & 3.2460101. \end{array}$$

3) Pro IM = MVI; GM; & IIM = MIV.

$$\begin{array}{lcl} TM = & 47'. 51'' = 2871'. & = CT = TA \\ GA = GC = MB = & 14'. 0'' = 840'. & = CB = AS \\ TB = TM - MB = & 33'. 51'' = 2031'. & = BA = BIC \\ AT = CT = & 61'. 4'' = 3664'. & = TM = IIM \\ \hline + = & 94'. 55'' = 5695' = & 3.7554937. \\ - = & 27'. 13'' = 1633' = & 3.2129862. \\ & & 6.9684799. \end{array}$$

$$\begin{array}{lcl} AB = CB = GM = & 50'. 50'' = 3050' = & 3.4842399. \\ IG = VIG = & 29'. 22'' = 1762'. & \\ \hline IG \rightarrow GM = VIG \rightarrow GM = & 80'. 12'' = 4812' = & IM = MVI. \\ GM - IG = GM - VIG = & 21'. 28'' = 1288' = & IIM = MIV. \end{array}$$

4) Pro temporibus per

| IM = MVI. | GM. | IIM = MIV. |
|-----------------------|-----------------------|----------------------|
| 2132'' = 3.3287872; | 2132'' = 3.3287872; | 2132'' = 3.3287872; |
| 3600 = 3.5563025 = | 3600 = 3.5563025 = | 3600 = 3.5563025 = |
| 4812 = 3.6823256 : | 3050 = 3.4842399 : | 1288 = 3.1099159 : |
| 7.2386281. | 7.0405424. | 6.6662184. |
| 8125 = 3.9098409. | 5149 = 3.7117552. | 2175 = 3.3374312. |
| 2°. 15'. 25". | 1°. 25'. 49". | 0°. 36'. 15". |
| 5. 31. 23 m.m.t. | 5. 31. 23 m.m.t. | 5. 31. 23 m.m.t. |
| 3. 15. 58. a' in A. | 4. 5. 34. m' in A. | 4. 55. 8. c' in A. |
| 48°. 59. 30 in P.C.M. | 61°. 23. 30 in P.C.M. | 73°. 47. 0 in P.C.M. |
| 7. 46. 48. c' in C. | 6. 57. 12. m' in C. | 6. 7. 38. a' in C. |
| 116. 42. o in P.C.M. | 104. 18. o in P.C.M. | 91. 54. 30 in P.C.M. |

5) Pro

5) Pro angulo BTA = BTC.

| | |
|-------------|------------------------------|
| AT = CT = | 61'. 4" = 3664" = 3.5639555: |
| Radium = | |
| AB = CB = | 50. 50. = 3050 = 13.4842399: |
| BTA = BTC = | 56°. 20'. 12" = 9.9202844: |
| PTM = | 9. 24. 22. |
| + = PTA = | 65. 44. 34. |
| Compl. = | 24. 15. 26. |
| - = PTC = | 46. 55. 50. |
| Compl. = | 43. 4. 10. |

6) Pro latitudine A.

Radius:

$\text{Cos.PF} = 71^\circ.29'.13'' = 9.9769234:$

$\text{Cos.PTA} = 24.15.26 = 9.6136661:$

$\text{Cos.PA} = 22.55.41 = 9.5905895:$

$\text{PA} = 67. 4. 19.$

7) Pro angulo APT.

$\text{S.PA} = 67. 4. 19 = 9.9642571:$

Radium =

$\text{S.PTA} = 65. 44. 34 = 19.9598568:$

$\text{S.FPA} = 81. 51. 27 = 9.9955997:$

$\text{APT} = 98. 8. 33.$

8) Pro latitudine C.

Radius:

$\text{Cos.PF} = 71^\circ.29'.13'' = 9.9769234:$

$\text{Cos.PTC} = 43. 4. 10 = 9.8343471:$

$\text{Cos.PC} = 40. 21. 25 = 9.8112705:$

$\text{PC} = 49. 38. 35.$

9) Pro angulo CPT.

$\text{S.PC} = 49. 38. 35 = 9.8819693:$

Radium =

$\text{S.PTC} = 46. 55. 50 = 19.8636360:$

$\text{S.FPC} = 73. 28. 8 = 9.9816667:$

$\text{CPT} = 106. 31. 52.$

 $a^7 \text{ in } A.$

$\text{TPL} = 48^\circ. 59'. 30''.$

$a^7\text{PT} = 98. 8. 33.$

$a^7\text{PL} = 147. 8. 3.$

$\text{LPf} = 20. 30. 0.$

$126. 38. 3.$

$233. 21. 57.$

Longitudo a^7
ingredientis. $m^7 \text{ in } A.$

$\text{TPL} = 61^\circ. 23'. 30''.$

$m^7\text{PT} = 98. 8. 33.$

$m^7\text{PL} = 159. 32. 3.$

$\text{LPf} = 20. 30. 0.$

$139. 2. 3.$

$220. 57. 57.$

Longitudo m^7
ingredientis. $c^7 \text{ in } A.$

$\text{TPL} = 73^\circ. 47'. 0''.$

$c^7\text{PT} = 98. 8. 33.$

$c^7\text{PL} = 171. 55. 33.$

$\text{LPf} = 20. 30. 0.$

$151. 25. 33.$

$208. 34. 27.$

Longitudo c^7
ingredientis. $a^7 \text{ in } C.$

$\text{TPL} = 91^\circ. 54'. 30''.$

$a^7\text{PT} = 106. 31. 52.$

$a^7\text{PL} = 14. 37. 22.$

$\text{LPf} = 20. 30. 0.$

$35. 7. 22.$

Longitudo a^7
egredientis. $m^7 \text{ in } C.$

$\text{TPL} = 104^\circ. 18'. 0''.$

$m^7\text{PT} = 106. 31. 52.$

$m^7\text{PL} = 2. 13. 52.$

$\text{LPf} = 20. 30. 0.$

$22. 43. 52.$

Longitudo m^7
egredientis. $c^7 \text{ in } C.$

$\text{TPL} = 116^\circ. 42'. 0''.$

$c^7\text{PT} = 106. 31. 52.$

$c^7\text{PL} = 10. 10. 8.$

$\text{LPf} = 20. 30. 0.$

$10. 19. 52.$

Longitudo c^7
egredientis.

Pro semita digitorum octo.

1) Pro $GA = GC$.

| | |
|------------------|-----------------------|
| Diameter solis = | $31' . 47'' = 1907''$ |
| Ergo digitii 8 = | $21. 12 = 1272.$ |
| IA = VIC = | $32. 32 = 1952.$ |
| <u>GA = GC</u> = | <u>11. 20 = 680.</u> |

2) Pro $IG = VIG$.

| | |
|-------------------|------------------------------------|
| IA = VIC = | $32. 32 = 1952.$ |
| GA = GC = | <u>11. 20 = 680.</u> |
| + = | <u>43. 52 = 2032 = 3. 4202859.</u> |
| - = | <u>21. 12 = 1272 = 3. 1044871.</u> |
| <u>IG = VIG =</u> | <u>30. 30 = 1830 = 3. 2623865.</u> |

3) Pro $IM = MVI; GM; \& IIIM = MIV$.

| | |
|----------------------|------------------------------------|
| TM = | $47. 51 = 2871.$ |
| GA = GC = MB = | <u>11. 20 = 680.</u> |
| TB = TM - MB = | <u>36. 31 = 2191.</u> |
| AT = CT = | <u>61. 4 = 3664.</u> |
| + = | <u>97. 35 = 5855 = 3. 7675269.</u> |
| - = | <u>24. 33 = 1473 = 3. 1682027.</u> |
| AB = CB = GM = | $48. 57 = 2937 = 3. 4678648.$ |
| IG = VIG = | <u>30. 30 = 1830.</u> |
| IG + GM = VIG - GM = | <u>79. 27 = 4767 = IM = MVI.</u> |
| GM - IG = GM - VIG = | <u>18. 27 = 1107 = IIIM = MIV.</u> |

4) Pro temporibus per

| IM = MVI. | GM. | IIIM = MIV. |
|--------------------------------|---------------------------------|-------------------------------|
| $2132'' = 3. 3287872:$ | $2132'' = 3. 3287872:$ | $2132'' = 3. 3287872:$ |
| $3600 = 3. 5563025:$ | $3600 = 3. 5563025:$ | $3600 = 3. 5563025:$ |
| $4767 = 3. 6782452:$ | $2937 = 3. 4678648:$ | $1107 = 3. 0441476:$ |
| $7. 2345477.$ | $7. 0241673.$ | $6. 6004501.$ |
| $8049 = 3. 9057605.$ | $4959 = 3. 6953801.$ | $1869 = 3. 2716629.$ |
| $2^h. 14'. 9''.$ | $1^h. 22'. 39''.$ | $0^h. 31'. 9''.$ |
| $5. 31. 23 \text{ m. m. t.}$ | $5. 31. 23 \text{ m. m. t.}$ | $5. 31. 23 \text{ m. m. t.}$ |
| $3. 17. 14. a^s \text{ in A.}$ | $4. 8. 44. m^s \text{ in A.}$ | $5. o. 14. a^s \text{ in A.}$ |
| $49. 18. 30 \text{ in P.C.M.}$ | $62. 11. o \text{ in P.C.M.}$ | $75. 3. 30 \text{ in P.C.M.}$ |
| $7. 45. 32. c^s \text{ in C.}$ | $6. 54. 2. m^s \text{ in C.}$ | $6. 2. 32. a^s \text{ in C.}$ |
| $116. 23. o \text{ in P.C.M.}$ | $103. 30. 30 \text{ in P.C.M.}$ | $90. 38. o \text{ in P.C.M.}$ |

5) Pro

5) Pro angulo BTA = BTC.

| | | |
|-------------|-------------------|-------------|
| AT = CT = | 61'. 4" = 3664" = | 3.5639555: |
| Radium = | | |
| AB = CB = | 48. 57 = 2937 = | 13.4678648: |
| BTA = BTC = | 53°. 16'. 29" = | 9.9039093. |
| PTM = | 9. 24. 22. | |
| + = PTA = | 62. 40. 51. | |
| Compl. = | 27. 19. 9. | |
| - = PTC = | 43. 52. 7. | |
| Compl. = | 46. 7. 53. | |

6) Pro latitudine A.

| | |
|-------------------------------------|-------------------------------------|
| Radius : | Radius : |
| Cos. PF = 71°.29'.13" = 9.9769234 = | Cos. PF = 71°.29'.13" = 9.9769234 = |
| Cos. PTA = 27. 19. 9 = 9.6617624: | Cos. PTC = 46. 7. 53 = 9.8578936: |
| Cos. PA = 25. 47. 52 = 9.6386858. | Cos. PC = 43. 7. 39 = 9.8348170. |
| PA = 64. 12. 8. | PC = 46. 52. 21. |

7) Pro angulo APT.

| | |
|-----------------------------------|----------------------------------|
| S. PA = 64. 12. 8 = 9.9544044: | S. PC = 46. 52. 21 = 9.8632242: |
| Radium = | |
| S. PTA = 62. 40. 51 = 19.9486397: | S. PTC = 43. 52. 7 = 19.8407376: |
| S. FPA = 80. 41. 7 = 9.9942353. | S. FPC = 71. 43. 16 = 9.9775134. |
| APT = 99. 18. 53. | CPT = 108. 16. 44. |

8) Pro latitudine C.

| | |
|-------------------------------------|-------------------------------------|
| Radius : | Radius : |
| Cos. PF = 71°.29'.13" = 9.9769234 = | Cos. PF = 71°.29'.13" = 9.9769234 = |
| Cos. PTC = 46. 7. 53 = 9.8578936: | Cos. PC = 43. 7. 39 = 9.8348170. |
| Cos. PC = 43. 7. 39 = 9.8348170. | PC = 46. 52. 21. |
| PC = 46. 52. 21. | |

9) Pro angulo CPT.

| | |
|----------------------------------|----------------------------------|
| S. PC = 46. 52. 21 = 9.8632242: | S. PC = 46. 52. 21 = 9.8632242: |
| Radium = | |
| S. PTC = 43. 52. 7 = 19.8407376: | S. PTC = 43. 52. 7 = 19.8407376: |
| S. FPC = 71. 43. 16 = 9.9775134. | S. FPC = 71. 43. 16 = 9.9775134. |
| CPT = 108. 16. 44. | CPT = 108. 16. 44. |

 a° in A.

| | |
|-------------------------------|-------------------------------|
| TPL = 49°. 18'. 30". | TPL = 62°. 11'. 0". |
| a° PT = 99. 18. 53. | m° PT = 99. 18. 53. |
| a° PL = 148. 37. 23. | m° PL = 161. 29. 53. |
| LPf = 20. 30. 0. | LPf = 20. 30. 0. |
| 128. 7. 23. | 140. 59. 53. |
| 231. 52. 37. | 219. 0. 7. |

Longitude a° ingredientis. m° in A.

| | |
|-------------------------------|-------------------------------|
| TPL = 103°. 30'. 30". | TPL = 103°. 30'. 30". |
| m° PT = 108. 16. 44. | m° PT = 108. 16. 44. |
| m° PL = 4. 46. 14. | m° PL = 4. 46. 14. |
| LPf = 20. 30. 0. | LPf = 20. 30. 0. |
| 38. 8. 44. | 25. 16. 14. |

Longitude a° egredientis. c° in A.

| | |
|-------------------------------|-------------------------------|
| TPL = 75°. 3'. 30". | TPL = 75°. 3'. 30". |
| c° PT = 99. 18. 53. | c° PT = 99. 18. 53. |
| c° PL = 174. 22. 23. | c° PL = 174. 22. 23. |
| LPf = 20. 30. 0. | LPf = 20. 30. 0. |
| 153. 52. 23. | 153. 52. 23. |
| 206. 7. 37. | 206. 7. 37. |

Longitude c° ingredientis. a° in C.

| | |
|-------------------------------|-------------------------------|
| TPL = 90°. 38'. 0". | TPL = 103°. 30'. 30". |
| a° PT = 108. 16. 44. | m° PT = 108. 16. 44. |
| a° PL = 17. 38. 44. | m° PL = 4. 46. 14. |
| LPf = 20. 30. 0. | LPf = 20. 30. 0. |
| 38. 8. 44. | 25. 16. 14. |

Longitude a° egredientis. m° in C.

| | |
|-------------------------------|-------------------------------|
| TPL = 103°. 30'. 30". | TPL = 103°. 30'. 30". |
| m° PT = 108. 16. 44. | m° PT = 108. 16. 44. |
| m° PL = 4. 46. 14. | m° PL = 4. 46. 14. |
| LPf = 20. 30. 0. | LPf = 20. 30. 0. |
| 25. 16. 14. | 25. 16. 14. |

Longitude m° egredientis. c° in C.

| | |
|-------------------------------|-------------------------------|
| TPL = 116°. 23'. 0". | TPL = 116°. 23'. 0". |
| c° PT = 108. 16. 44. | c° PT = 108. 16. 44. |
| c° PL = 8. 6. 16. | c° PL = 8. 6. 16. |
| LPf = 20. 30. 0. | LPf = 20. 30. 0. |
| 12. 23. 44. | 12. 23. 44. |

Longitude c° egredientis.

Pro

Pro semita digitorum novem.

1) Pro $GA = GC$.

| | |
|------------------|---------------------|
| Diameter solis = | $31' 47'' = 1907''$ |
| Ergo digitus 9 = | $23. 50 = 1430.$ |
| IA = VIC = | $32. 32 = 1952.$ |
| GA = GC = | $8. 42 = 522.$ |

2) Pro $IG = VIG$.

| | |
|------------|-------------------------------|
| IA = VIC = | $32. 32 = 1952.$ |
| GA = GC = | $8. 42 = 522.$ |
| + = | $41. 14 = 2474 = 3. 3933997.$ |
| - = | $23. 50 = 1430 = 3. 1553360.$ |
| IG = VIG = | $6. 5487357.$ |
| | $31. 21 = 1881 = 3. 2743678.$ |

3) Pro $IM = MVI; GM; \& IIIM = MIV$.

| | |
|----------------------|--------------------------------|
| TM = | $47. 51 = 2871.$ |
| GA = GC = MB = | $8. 42 = 522.$ |
| TB = TM - MB = | $39. 9 = 2349.$ |
| AT = CT = | $61. 4 = 3664.$ |
| + = | $100. 13 = 6013 = 3. 7790912.$ |
| - = | $21. 55 = 1315 = 3. 1189258.$ |
| AB = CB = GM = | $46. 52 = 2812 = 3. 4490085.$ |
| IG = VIG = | $31. 21 = 1881.$ |
| IG + GM = VIG + GM = | $78. 13 = 4693 = IM = MVI.$ |
| GM - IG = GM - VIG = | $15. 31 = 931 = IIIM = MIV.$ |

4) Pro temporibus per

| | | |
|----------------------------------------|---------------------------------------|----------------------------------------|
| IM = MVI. | GM. | IIIM = MIV. |
| $2132'' = 3. 3287872:$ | $2132'' = 3. 3287872:$ | $2132'' = 3. 3287872:$ |
| $3600 = 3. 5563025:$ | $3600 = 3. 5563025:$ | $3600 = 3. 5563025:$ |
| $4693 = 3. 0714506:$ | $2812 = 3. 4490085:$ | $931 = 2. 9689497:$ |
| $7. 2277531.$ | $7. 0053110.$ | $6. 5252522.$ |
| $7924 = 3. 8989659.$ | $4748 = 3. 6765238.$ | $1572 = 3. 1964650.$ |
| $2^h. 12'. 4''.$ | $1^h. 19'. 8''.$ | $0^h. 26'. 12''.$ |
| $5. 31. 23 \text{ m. m. t.}$ | $5. 31. 23 \text{ m. m. t.}$ | $5. 31. 23 \text{ m. m. t.}$ |
| $3. 19. 19. a^9 \text{ in A.}$ | $4. 12. 15. m^9 \text{ in A.}$ | $5. 5. 11. r^9 \text{ in A.}$ |
| $49^{\circ}. 49. 45 \text{ in P.C.M.}$ | $63^{\circ}. 3. 45 \text{ in P.C.M.}$ | $76^{\circ}. 17. 45 \text{ in P.C.M.}$ |
| $7. 43. 27. r^9 \text{ in C.}$ | $6. 50. 31. m^9 \text{ in C.}$ | $5. 57. 35. a^9 \text{ in C.}$ |
| $115. 51. 45 \text{ in P.C.M.}$ | $102. 37. 45 \text{ in P.C.M.}$ | $89. 23. 45 \text{ in P.C.M.}$ |

5) Pro

5) Pro angulo $BTA = BTC$.

| | |
|---------------|---------------------------------------|
| $AT = CT =$ | $61^\circ. 4'' = 3664'' = 3.5639555:$ |
| Radium = | |
| $AB = CB =$ | $46. 52 = 2812 = 13.4490085:$ |
| $BTA = BTC =$ | $50^\circ. 7'. 33'' = 9.8850530:$ |
| $PTM =$ | $9. 24. 22.$ |
| $+ = PTA =$ | $59. 31. 55.$ |
| Compl. = | $30. 28. 5.$ |
| $- = PTC =$ | $40. 43. 11.$ |
| Compl. = | $49. 16. 49.$ |

6) Pro latitudine A.

| | |
|---------------------------------------------|--|
| Radius: | |
| $\cos.PF = 71^\circ.29'.13'' = 9.9769234 =$ | |
| $\cos.PTA = 30. 28. 5 = 9.7050576 :$ | |
| $\cos.PA = 28. 44. 20 = 9.6819810.$ | |
| $PA = 61. 15. 40.$ | |

7) Pro angulo APT.

| | |
|------------------------------------|--|
| $S.PA = 61. 15. 40 = 9.9429104:$ | |
| Radium = | |
| $S.PTA = 59. 31. 55 = 19.9354629:$ | |
| $S.FPA = 79. 25. 10 = 9.9925525.$ | |
| $APT = 100. 34. 50.$ | |

8) Pro latitudine C.

| | |
|---------------------------------------------|--|
| Radius: | |
| $\cos.PF = 71^\circ.29'.13'' = 9.9769234 =$ | |
| $\cos.PTC = 49. 16. 49 = 9.8796176 :$ | |
| $\cos.PC = 45. 56. 47 = 9.8565410.$ | |
| $PC = 44. 3. 13.$ | |

9) Pro angulo CPT.

| | |
|------------------------------------|--|
| $S.PC = 44. 3. 13 = 9.8421917:$ | |
| Radium = | |
| $S.PTC = 40. 43. 11 = 19.8144867:$ | |
| $S.FPC = 69. 45. 5 = 9.9722950.$ | |
| $CPT = 110. 14. 55.$ | |

| a° in A. | m° in A. |
|-----------------------------------|-----------------------------------|
| $TPL = 49^\circ. 49'. 45''$ | $TPL = 63^\circ. 3'. 45''$ |
| $a^\circ PT = 100. 34. 50.$ | $m^\circ PT = 100. 34. 50.$ |
| $a^\circ PL = 150. 24. 35.$ | $m^\circ PL = 163. 38. 35.$ |
| $LPf = 20. 30. 0.$ | $LPf = 20. 30. 0.$ |
| $129. 54. 35.$ | $143. 8. 35.$ |
| $230. 5. 25.$ | $216. 51. 25.$ |
| Longitudo a° ingredientis. | Longitudo m° ingredientis. |

| c° in A. |
|-----------------------------------|
| $TPL = 70^\circ. 17'. 45''$ |
| $c^\circ PT = 100. 34. 50.$ |
| $c^\circ PL = 176. 52. 35.$ |
| $LPf = 20. 30. 0.$ |
| $156. 22. 35.$ |
| $203. 37. 25.$ |
| Longitudo c° ingredientis. |

| a° in C. | m° in C. |
|----------------------------------|----------------------------------|
| $TPL = 89^\circ. 23'. 45''$ | $TPL = 102^\circ. 37'. 45''$ |
| $a^\circ PT = 110. 14. 55.$ | $m^\circ PT = 110. 14. 55.$ |
| $a^\circ PL = 20. 51. 10.$ | $m^\circ PL = 7. 37. 10.$ |
| $LPf = 20. 30. 0.$ | $LPf = 20. 30. 0.$ |
| $41. 21. 10.$ | $28. 7. 10.$ |
| Longitudo a° egredientis. | Longitudo m° egredientis. |

| c° in C. |
|----------------------------------|
| $TPL = 115^\circ. 51'. 45''$ |
| $c^\circ PT = 110. 14. 55.$ |
| $c^\circ PL = 5. 36. 50.$ |
| $LPf = 20. 30. 0.$ |
| $14. 53. 10.$ |
| Longitudo c° egredientis. |

Pro

G

E C L I P S I S T E R R Æ

Pro semita digitorum decem.

1) Pro GA = GC.

| | | | | |
|------------------|-----|-----|---|--------|
| Diameter solis = | 31. | 47" | = | 1907". |
| Ergo digiti 10 = | 26. | 29 | = | 1589. |
| IA = VIC = | 32. | 32 | = | 1952. |
| GA = GC = | 6. | 3 | = | 363. |

= CT = TA

= CB = BA

= CTC = ATC

= MTC = MTI

= MCI = MCII

= MII = MI

2) Pro IG = VIG.

| | | | | |
|------------|-----|----|---|-------------------|
| IA = VIC = | 32. | 32 | = | 1952. |
| GA = GC = | 6. | 3 | = | 363. |
| + = | 38. | 35 | = | 2315 = 3.3645510. |
| - = | 26. | 29 | = | 1589 = 3.2011239. |
| IG = VIG = | 31. | 58 | = | 1918 = 3.2828374. |

3) Pro IM = MVI; GM; & IIIM = MIV.

| | | | | |
|----------------------|------|-----|---|-------------------|
| TM = | 47. | 51" | = | 2871. |
| GA = GC = MB = | 6. | 3 | = | 363. |
| TB = TM - MB = | 41. | 48 | = | 2508. |
| AT = CT = | 61. | 4 | = | 3664. |
| + = | 102. | 52 | = | 6172 = 3.7904259. |
| - = | 19. | 16 | = | 1156 = 3.0629578. |
| | | | | 6.8533837. |
| AB = CB = GM = | 44. | 31 | = | 2671 = 3.4266918. |
| IG = VIG = | 31. | 58 | = | 1918. |
| IG + GM = VIG - GM = | 76. | 29 | = | 4589 = IM = MVI. |
| GM - IG = GM - VIG = | 12. | 33 | = | 753 = IIIM = MIV. |

4) Pro temporibus per

| IM = MVI. | GM. | IIIM = MIV. |
|----------------------|-----------------------|----------------------|
| 2132" = 3.3287872: | 2132" = 3.3287872: | 2132" = 3.3287872: |
| 3600 = 3.5563025: | 3600 = 3.5563025: | 3600 = 3.5563025: |
| 4589 = 3.6617181: | 2671 = 3.4266918: | 753 = 2.8767950: |
| | | 6.4330975. |
| 7749 = 3.8892334. | 4510 = 3.6542071. | 1271 = 3.1043103. |
| 2°. 9'. 9". | 1°. 15'. 10". | 0°. 21'. 11". |
| 5. 31. 23 m.m.t. | 5. 31. 23 m.m.t. | 5. 31. 23 m.m.t. |
| 3. 22. 14. a° in A. | 4. 16. 13. m° in A. | 5. 10. 12. e° in A. |
| 5°. 33. 30 in P.C.M. | 64°. 3. 15 in P.C.M. | 77°. 33. o in P.C.M. |
| 7. 40. 32. c° in C. | 6. 46. 33. m° in C. | 5. 52. 34. a° in C. |
| 115. 8. o in P.C.M. | 101. 38. 15 in P.C.M. | 88. 8. 30 in P.C.M. |

5) Pro

5) Pro angulo BTA = BTC.

| | | | |
|-------------|-----------------|------------|-------------|
| AT = CT = | 61'. 4" = | 3664" = | 3.5639555: |
| Radium = | | | |
| AB = CB = | 44. 31 = | 2671 = | 13.4266918: |
| BTA = BTC = | 46°. 48'. 14" = | 9.8627363: | |
| PTM = | 9. 24. 22. | | |
| + = PTA = | 56. 12. 36. | | |
| Compl. = | 33. 47. 24. | | |
| - = PTC = | 37. 23. 52. | | |
| Compl. = | 52. 36. 8. | | |

6) Pro latitudine A.

| | |
|----------------------------------------|----------------------------------------|
| Radius: | Radius: |
| Cos. PF = 71°. 29'. 13" = 9. 9769234 = | Cos. PF = 71°. 29'. 13" = 9. 9769234 = |
| Cos. PTA = 33. 47. 24 = 9. 7451924 : | Cos. PTC = 52. 36. 8 = 9. 9000601 : |
| Cos. PA = 31. 49. 41 = 19. 7221158. | Cos. PC = 48. 52. 46 = 9. 8769835. |
| PA = 58. 10. 19. | PC = 41. 7. 14. |

7) Pro angulo APT.

| | |
|-----------------------------------|-----------------------------------|
| S.PA = 58. 10. 19 = 9. 9292321: | S.PC = 41. 7. 14 = 9. 8179919: |
| Radium = | Radium = |
| S.PTA = 56. 12. 36 = 19. 9196438: | S.PTC = 37. 23. 52 = 19. 7834355: |
| S.FPA = 78. 0. 16 = 9. 9904117. | S.FPC = 67. 26. 43 = 9. 9654436. |
| APT = 101. 59. 44. | CPT = 112. 33. 17. |

a^{ro} in A.

| | |
|-------------------------------------------------|-------------------------------------------------|
| TPL = 50. 33'. 30". | TPL = 64. 3'. 15". |
| a ^{ro} PT = 101. 59. 44. | m ^{ro} PT = 101. 59. 44. |
| a ^{ro} PL = 152. 33. 14. | m ^{ro} PL = 166. 2. 59. |
| LPf = 20. 30. 0. 132. 3. 14. 227. 56. 46. | LPf = 20. 30. 0. 145. 32. 59. 214. 27. 1. |

Longitudo *a^{ro}*
ingredientis.*m^{ro} in A.*

| |
|-----------------------------------|
| TPL = 101. 38'. 15". |
| m ^{ro} PT = 112. 33. 17. |
| m ^{ro} PL = 10. 55. 2. |
| LPf = 20. 30. 0. |
| 31. 25. 2. |

Longitudo *m^{ro}*
ingredientis.*c^{ro} in A.*

| |
|-----------------------------------|
| TPL = 77°. 33'. 0". |
| c ^{ro} PT = 101. 59. 44. |
| c ^{ro} PL = 179. 32. 44. |
| LPf = 20. 30. 0. |
| 159. 2. 44. |
| 200. 57. 16. |

Longitudo *c^{ro}*
ingredientis.*a^{ro} in C.*

| | |
|-----------------------------------|-----------------------------------|
| TPL = 88°. 8'. 30". | TPL = 101°. 38'. 15". |
| a ^{ro} PT = 112. 33. 17. | m ^{ro} PT = 112. 33. 17. |
| a ^{ro} PL = 24. 24. 47. | m ^{ro} PL = 10. 55. 2. |
| LPf = 20. 30. 0. | LPf = 20. 30. 0. |
| 44. 54. 47. | 31. 25. 2. |

Longitudo *a^{ro}*
egredientis.*m^{ro} in C.*

| |
|-----------------------------------|
| TPL = 115°. 8'. 0". |
| c ^{ro} PT = 112. 33. 17. |
| c ^{ro} PL = 2. 34. 43. |
| LPf = 20. 30. 0. |
| 17. 55. 17. |

Longitudo *m^{ro}*
egredientis.

G 2

Pro

Pro semita digitorum undecim.

| | | |
|-------------------|---------------------|------------|
| Diameter solis ≈ | $31' 47'' = 1907''$ | = TD = TA |
| Ergo digitii 11 ≈ | $29. 8 = 1748$ | = mm = 8A |
| IA = VIC ≈ | $32. 32 = 1952$ | = 8C = 8A |
| GA = GC ≈ | $3. 24 = 204$ | = AT = MIV |

2) Pro IG = VIG.

| | | |
|------------|-----------------|---------|
| IA = VIC ≈ | $32. 32 = 1952$ | = C = C |
| GA = GC ≈ | $3. 24 = 204$ | = C = C |
| → ≈ | $35. 56 = 2156$ | = C = C |
| - ≈ | $29. 8 = 1748$ | = C = C |
| IG = VIG ≈ | $32. 21 = 1941$ | = C = C |

3) Pro IM = MVI; GM; & IIIM = MIV.

| | | |
|----------------------|-----------------------------------|---------|
| TM = | $47. 51 = 2871$ | = A = A |
| GA = GC = MB = | $3. 24 = 204$ | = A = A |
| TB = TM - MB = | $44. 27 = 2667$ | = A = A |
| AT = CT = | $61. 4 = 3664$ | = A = A |
| → = | $105. 31 = 6331$ | = A = A |
| - = | $16. 37 = 997$ | = A = A |
| AB = CB = GM = | $41. 52 = 2512 \approx 3.4000837$ | = A = A |
| IG = VIG = | $32. 21 = 1941$ | = A = A |
| IG + GM = VIG + GM = | $74. 13 = 4453 = IM = MVI$ | = A = A |
| GM - IG = GM - VIG = | $9. 31 = 571 = IIIM = MIV$ | = A = A |

4) Pro temporibus per

| IM = MVI. | GM. | IIIM = MIV. |
|---------------------------------|---------------------------------|--------------------------------|
| $2132'' = 3.3287872:$ | $2132'' = 3.3287872:$ | $2132'' = 3.3287872:$ |
| $3600 = 3.5563025:$ | $3600 = 3.5563025:$ | $3600 = 3.5563025:$ |
| $4453 = 3.6486527:$ | $2512 = 3.4000837:$ | $571 = 2.7566361:$ |
| $7.2049552.$ | $6.9563862.$ | $6.3129386.$ |
| $7519 = 3.8761680.$ | $4242 = 3.6275990.$ | $964 = 2.9841514.$ |
| $2^b. 5'. 19''.$ | $1^b. 10'. 42''.$ | $0^b. 16'. 4''.$ |
| $5. 31. 23 \text{ m.m.t.}$ | $5. 31. 23 \text{ m.m.t.}$ | $5. 31. 23 \text{ m.m.t.}$ |
| $3. 26. 4.a'' \text{ in A.}$ | $4. 20. 41.m'' \text{ in A.}$ | $5. 15. 19.c'' \text{ in A.}$ |
| $51. 31. 0 \text{ in P.C.M.}$ | $65. 10. 15 \text{ in P.C.M.}$ | $78. 49. 45 \text{ in P.C.M.}$ |
| $7. 36. 42.c'' \text{ in C.}$ | $6. 42. 5.m'' \text{ in C.}$ | $5. 47. 27.a'' \text{ in C.}$ |
| $114. 10. 30 \text{ in P.C.M.}$ | $100. 31. 15 \text{ in P.C.M.}$ | $86. 51. 45 \text{ in P.C.M.}$ |

5) Pro

5) Pro angulo $BTA = BTC$.

| | |
|---------------|-----------------------------------------|
| $AT = CT =$ | $61^\circ. 4'' = 3664'' = 3.5639555:$ |
| Radium = | |
| $AB = CB =$ | $41^\circ. 52'' = 2512'' = 13.4000837:$ |
| $BTA = BTC =$ | $43^\circ. 17'. 24'' = 9.8361282.$ |
| $PTM =$ | $9. 24. 22.$ |
| $+ = PTA =$ | $52. 41. 46.$ |
| Compl. = | $37. 18. 14.$ |
| $- = PTC =$ | $33. 53. 2.$ |
| Compl. = | $56. 6. 58.$ |

6) Pro latitudine A.

| | |
|---------------------------------------------|--|
| Radius: | |
| $\cos.PF = 71^\circ.29'.13'' = 9.9769234 =$ | |
| $\cos.PTA = 37.18.14 = 9.7825030:$ | |
| $\cos.PA = 35.4.38 = 9.7594264.$ | |
| $PA = 54.55.22.$ | |

7) Pro angulo APT.

| | |
|----------------------------------|--|
| $S.PA = 54.55.22 = 9.9129540:$ | |
| Radium = | |
| $S.PTA = 52.41.46 = 19.9006032:$ | |
| $S.FPA = 76.24.1 = 9.9876492.$ | |
| $APT = 103.35.59.$ | |

8) Pro latitudine C.

| | |
|---------------------------------------------|--|
| Radius: | |
| $\cos.PF = 71^\circ.29'.13'' = 9.9769234 =$ | |
| $\cos.PTC = 56.6.58 = 9.9191666:$ | |
| $\cos.PC = 51.55.32 = 9.8960900.$ | |
| $PC = 38.4.28.$ | |

9) Pro angulo CPT.

| | |
|---------------------------------|--|
| $S.PC = 38.4.28 = 9.7900633:$ | |
| Radium = | |
| $S.PTC = 33.53.2 = 19.7462540:$ | |
| $S.FPC = 64.41.43 = 9.9561907.$ | |
| $CPT = 115.18.17.$ | |

 $a'' \text{ in } A.$

| | |
|-----------------------------|------------------------------|
| $TPL = 51^\circ. 31'. 0''.$ | $TPL = 65^\circ. 10'. 15''.$ |
| $a''PT = 103. 35. 59.$ | $m''PT = 103. 35. 59.$ |
| $a''PL = 155. 6. 59.$ | $m''PL = 168. 46. 14.$ |
| $LPf = 20. 30. 0.$ | $LPf = 20. 30. 0.$ |
| $134. 36. 59.$ | $148. 16. 14.$ |

VII.

Longitudo a''
ingredientis. $m'' \text{ in } A.$

| |
|------------------------------|
| $TPL = 65^\circ. 10'. 15''.$ |
| $m''PT = 103. 35. 59.$ |
| $m''PL = 168. 46. 14.$ |
| $LPf = 20. 30. 0.$ |
| $211. 43. 46.$ |

 $c'' \text{ in } A.$

| |
|------------------------------|
| $TPL = 78^\circ. 49'. 45''.$ |
| $c''PT = 103. 35. 59.$ |
| $c''PL = 182. 25. 44.$ |
| $LPf = 20. 30. 0.$ |
| $161. 55. 44.$ |

Longitudo c''
ingredientis. $a'' \text{ in } C.$

| | |
|------------------------------|-------------------------------|
| $TPL = 86^\circ. 51'. 45''.$ | $TPL = 100^\circ. 31'. 15''.$ |
| $a''PT = 115. 18. 17.$ | $m''PT = 115. 18. 17.$ |
| $a''PL = 28. 26. 32.$ | $m''PL = 14. 47. 2.$ |
| $LPf = 20. 30. 0.$ | $LPf = 20. 30. 0.$ |
| $48. 56. 32.$ | $35. 17. 2.$ |

 $m'' \text{ in } C.$

| |
|-------------------------------|
| $TPL = 100^\circ. 31'. 15''.$ |
| $m''PT = 115. 18. 17.$ |
| $m''PL = 14. 47. 2.$ |
| $LPf = 20. 30. 0.$ |
| $35. 17. 2.$ |

 $c'' \text{ in } C.$

| |
|-------------------------------|
| $TPL = 114^\circ. 10'. 30''.$ |
| $c''PT = 115. 18. 17.$ |
| $c''PL = 1. 7. 47.$ |
| $LPf = 20. 30. 0.$ |
| $21. 37. 47.$ |

Longitudo c''
egredientis.Longitudo a''
egredientis.

vol (2)

G 3

Pro

Pro semita digitorum duodecim infra viam centri.

1) Pro $GA = GC$.

$$\begin{array}{rcl} \text{Diameter solis} & = & 1 \\ \text{Ergo digitii } 12 & = & \frac{1}{12} \\ \text{IA} = \text{VIC} & = & 31' . 47'' = 1907'' \\ \text{GA} = \text{GC} & = & \underline{32' . 32'' = 1952''} \\ & & 45 = 45 \end{array}$$

2) Pro $IG = VIG$.

$$\begin{array}{rcl} \text{IA} = \text{VIC} & = & 32' . 32'' = 1952'' \\ \text{GA} = \text{GC} & = & 45 = 45 \\ + = & & 33' . 17'' = 1997'' = 3.3003781 \\ - = & & 31' . 47'' = 1907'' = 3.2803507 \\ \text{IG} = \text{VIG} & = & \underline{6.5807288} \\ & & 32' . 31'' = 1951'' = 3.2903644 \end{array}$$

3) Pro $IM = MVI$; GM ; & $IIIM = MIV$.

$$\begin{array}{rcl} \text{TM} & = & 47' . 51'' = 2871'' \\ \text{GA} = \text{GC} = \text{MB} & = & 45 = 45 \\ \text{TB} = \text{TM} - \text{MB} & = & 47' . 6'' = 2826'' \\ \text{AT} = \text{CT} & = & \underline{61' . 4'' = 3664''} \\ + = & & 108' . 10'' = 6490'' = 3.8122447 \\ - = & & 13' . 58'' = 838'' = \underline{2.9232440} \\ & & 6.7354887 \end{array}$$

$$\begin{array}{rcl} \text{AB} = \text{CB} = \text{GM} & = & 38' . 52'' = 2332'' = 3.3677443 \\ \text{IG} = \text{VIG} & = & \underline{32' . 31'' = 1951''} \\ \text{IG} + \text{GM} = \text{VIG} + \text{GM} & = & 71' . 23'' = 4283'' = \text{IM} = \text{MVI} \\ \text{GM} - \text{IG} = \text{GM} - \text{VIG} & = & 6' . 21'' = 381'' = \text{IIIM} = \text{MIV} \end{array}$$

4) Pro temporibus per

$$\begin{array}{rcc} \text{IM} = \text{MVI}. & \text{GM}. & \text{IIIM} = \text{MIV}. \\ \begin{array}{l} 2132'' = 3.3287872 : \\ 3600 = 3.5563025 : \\ 4283 = 3.6317481 : \\ & 7.1880506, \\ 7232 = 3.8592634 : \\ & 2^{\circ} . 0' . 32'', \\ & 5' . 31' . 23 \text{ m. m. t.} \\ & 3.30.51.a^{12} \text{ in A.} \\ & 52^{\circ} . 42' . 45 \text{ in P. C. M.} \\ & 7.31.55.e^{12} \text{ in C.} \\ 112.58.45 \text{ in P. C. M.} \end{array} & \begin{array}{l} 2132'' = 3.3287872 : \\ 3600 = 3.5563025 : \\ 2332 = 3.3677443 : \\ & 6.9240468, \\ 3938 = 3.5952596 : \\ & 1^{\circ} . 5' . 38'', \\ & 5' . 31' . 23 \text{ m. m. t.} \\ & 4.25.45.m^{12} \text{ in A.} \\ 66^{\circ} . 26' . 15 \text{ in P. C. M.} \\ 6.37.1.m^{12} \text{ in C.} \\ 99.15.15 \text{ in P. C. M.} \end{array} & \begin{array}{l} 2132'' = 3.3287872 : \\ 3600 = 3.5563025 : \\ 381 = 2.5809250 : \\ & 6.1372275, \\ 643 = 2.8084403 : \\ & 0^{\circ} . 10' . 43'', \\ & 5' . 31' . 23 \text{ m. m. t.} \\ & 5.20.40.e^{12} \text{ in A.} \\ 80^{\circ} . 10' . 0 \text{ in P. C. M.} \\ 5.42.6.a^{12} \text{ in C.} \\ 85.31.30 \text{ in P. C. M.} \end{array} \end{array}$$

5) Pro

| | |
|--------------------------|--------------------------------|
| 5) Pro angulo BTA = BTC. | |
| AT = CT = | 61°. 4' = 3664" = 3.5639555: |
| Radium = | |
| AB = CB = | 38°. 52' = 2332" = 13.3677443: |
| BTA = BTC = | 39°. 31'. 49" = 9.8037888: |
| PTM = | 9. 24. 22. = 90 = 90 |
| + = PTA = | 48. 56. 11. |
| Compl. = | 41. 3. 49. |
| - = PTC = | 30. 7. 27. |
| Compl. = | 59. 52. 33. = 90 = 90 |

| | |
|-----------------------------------|--|
| 6) Pro latitudine A. | |
| Radius: | |
| Cos.PF = 71°.29'.13" = 9.9769234= | |
| Cos.PTA = 41. 3. 49 = 9.8174969: | |
| Cos.PA = 38. 31. 42 = 9.7944203. | |
| PA = 51. 28. 18. = 9.8933735: | |

| | |
|-----------------------------------|--|
| 7) Pro angulo APT. | |
| S. PA = 51. 28. 18 = 9.8933735: | |
| Radium = | |
| S. PTA = 48. 56. 11 = 19.8773603: | |
| S. FPA = 74. 32. 11 = 9.9839868. | |
| APT = 105. 27. 49. | |

| | |
|-----------------------------------|--|
| 8) Pro latitudine C. | |
| Radius: | |
| Cos.PF = 71°.29'.13" = 9.9769234= | |
| Cos.PTC = 59. 52. 33 = 9.9369859: | |
| Cos.PC = 55. 6. 10 = 9.9139093. | |
| PC = 34. 53. 50. = 90 = 90 | |

| | |
|----------------------------------|--|
| 9) Pro angulo CPT. | |
| S. PC = 34. 53. 50 = 9.7574766: | |
| Radium = | |
| S. PTC = 30. 7. 27 = 19.7005961: | |
| S. FPC = 61. 18. 41 = 9.9431195. | |
| CPT = 118. 41. 19. | |

| a^{12} in A. | m^{12} in A. |
|----------------------------------|----------------------------------|
| TPL = 52°. 42'. 45". | TPL = 66°. 26'. 15". |
| a^{12} PT = 105. 27. 49. | m^{12} PT = 105. 27. 49. |
| a^{12} PL = 158. 10. 34. | m^{12} PL = 171. 54. 4. |
| LPf = 20. 30. 0. | LPf = 20. 30. 0. |
| 137. 40. 34. 222. 19. 26. | 151. 24. 4. 208. 35. 56. |
| Longitudo a^{12} ingredientis. | Longitudo m^{12} ingredientis. |

| m^{12} in A. | c^{12} in A. |
|----------------------------------|----------------------------------|
| TPL = 66°. 26'. 15". | TPL = 80°. 10'. 0". |
| m^{12} PT = 105. 27. 49. | c^{12} PT = 105. 27. 49. |
| m^{12} PL = 171. 54. 4. | c^{12} PL = 185. 37. 49. |
| LPf = 20. 30. 0. | LPf = 20. 30. 0. |
| 151. 24. 4. 208. 35. 56. | 165. 7. 49. 194. 52. 11. |
| Longitudo m^{12} ingredientis. | Longitudo c^{12} ingredientis. |

| a^{12} in C. | m^{12} in C. |
|---------------------------------|---------------------------------|
| TPL = 85°. 31'. 30". | TPL = 99°. 15'. 15". |
| a^{12} PT = 118. 41. 19. | m^{12} PT = 118. 41. 19. |
| a^{12} PL = 33. 9. 49. | m^{12} PL = 19. 26. 4. |
| LPf = 20. 30. 0. | LPf = 20. 30. 0. |
| 53. 39. 49. | 39. 56. 4. |
| Longitudo a^{12} egredientis. | Longitudo m^{12} egredientis. |

| m^{12} in C. | c^{12} in C. |
|---------------------------------|---------------------------------|
| TPL = 99°. 15'. 15". | TPL = 112°. 58'. 45". |
| m^{12} PT = 118. 41. 19. | c^{12} PT = 118. 41. 19. |
| m^{12} PL = 19. 26. 4. | c^{12} PL = 5. 42. 34. |
| LPf = 20. 30. 0. | LPf = 20. 30. 0. |
| 39. 56. 4. | 26. 12. 34. |
| Longitudo m^{12} egredientis. | Longitudo c^{12} egredientis. |

Pro

Pro semita digitorum duodecim supra viam centri.

$$\begin{aligned}
 \text{Diameter solis} &= 1 \\
 \text{Ergo digiti } 12 &= 31'. 47'' = 1907''. \\
 \text{II} &= \text{VI} \text{G} \\
 \text{G} \text{A} &= \text{G} \text{C} = 45 = 45.
 \end{aligned}$$

$$\begin{aligned}
 \text{I} \text{G} &= \text{VI} \text{G} = 32. 32 = 1952. \\
 \text{ut supra ad digitos } 12 & \\
 \text{infra viam centri.} &
 \end{aligned}$$

$$\begin{aligned}
 \text{I} \text{G} &= \text{VI} \text{G} = 47. 15 = 2871. 18 = 3. 8182259. \\
 \text{G} \text{M} &= \text{M} \text{V} = 45 = 45. \\
 \text{T} \text{B} &= \text{T} \text{M} + \text{M} \text{B} = 48. 36 = 2916. \\
 \text{A} \text{T} &= \text{C} \text{T} = 61. 4 = 3664. \\
 \text{A} \text{B} &= \text{C} \text{B} = \text{G} \text{M} = 109. 40 = 6580 = 3. 8182259. \\
 \text{I} \text{G} &= \text{VI} \text{G} = 12. 28 = 748 = 2. 873916. \\
 \text{I} \text{G} + \text{G} \text{M} &= \text{VI} \text{G} + \text{G} \text{M} = 36. 59 = 2219 = 6. 6921275. \\
 \text{I} \text{G} - \text{G} \text{M} &= \text{VI} \text{G} - \text{G} \text{M} = 32. 31 = 1951. \\
 \text{I} \text{M} &= \text{M} \text{V} = 69. 30 = 4170 = \text{I} \text{M} = \text{M} \text{V}. \\
 \text{G} \text{M} - \text{I} \text{G} &= \text{G} \text{M} - \text{VI} \text{G} = 4. 28 = 268 = \text{III} \text{M} = \text{M} \text{IV}.
 \end{aligned}$$

4) Pro temporibus per

$$\begin{array}{lll}
 \text{IM} = \text{MVI.} & \text{GM.} & \text{III} \text{M} = \text{MIV.} \\
 2132'' = 3. 3287872; & 2132'' = 3. 3287872; & 2132'' = 3. 3287872: \\
 3600 = 3. 5563025; & 3600 = 3. 5563025; & 3600 = 3. 5563025: \\
 4170 = 3. 6201361; & 2219 = 3. 3460637; & 268 = 2. 4281348: \\
 & 6. 9023662. & 5. 9844373. \\
 & 3746 = 3. 5735790. & 452 = 2. 6556501. \\
 & 1. 57'. 21''. & 0. 7'. 32''. \\
 & 5. 31. 23 m. m. t. & 5. 31. 23 m. m. t. \\
 & 3. 34. 2. a¹² in A. & 4. 28. 57. m¹² in A. \\
 & 53'. 30. 30 in P.C.M. & 67'. 14. 15 in P.C.M. \\
 & 7. 28. 44. c¹² in C. & 6. 33. 49. m¹² in C. \\
 & 112. 11. 0 in P.C.M. & 98. 27. 15 in P.C.M. \\
 & 5. 23. 51. c¹² in A. & 5. 38. 55. a¹² in C. \\
 & 80'. 57. 45 in P.C.M. & 84. 43. 45 in P.C.M.
 \end{array}$$

5) Pro

5) Pro angulo $\text{BTA} = \text{BTE}$.

$$\text{AT} = \text{CT} = 61'. 4'' = 3664'' = 3.5639555:$$

Radium =

$$\text{AB} = \text{CB} = 36. 59 = 2219 = 13.3460637:$$

$$\text{BTA} = \text{BTE} = 37. 15'. 51'' = 9.7821082.$$

$$\text{PTM} = 9. 24. 22.$$

$$+ = \text{PTA} = 46. 40. 13.$$

$$\text{Compl.} = 43. 19. 47.$$

$$- = \text{PTC} = 27. 51. 29.$$

$$\text{Compl.} = 62. 8. 31.$$

6) Pro latitudine A .

Radius:

$$\text{Cos.PF} = 71^\circ 29'. 13'' = 9.9769234 =$$

$$\text{Cos.PTA} = 43. 19. 47 = 9.8364481:$$

$$\text{Cos.PT} = 40. 35. 36 = 9.8133715.$$

$$\text{PT} = 49. 24. 24.$$

7) Pro angulo APT .

$$\text{S.PA} = 49. 24. 24 = 9.8804403:$$

Radium =

$$\text{S.PTA} = 46. 40. 13 = 19.8617834:$$

$$\text{S.FPA} = 73. 19. 32 = 9.9813431.$$

$$\text{APT} = 106. 40. 28.$$

 a^{12} in A .

$$\text{TPL} = 53. 30'. 30''.$$

$$a^{12}\text{PT} = 106. 40. 28.$$

$$a^{12}\text{PL} = 160. 10. 58.$$

$$\text{LPf} = 20. 30. 0.$$

$$139. 40. 58.$$

$$220. 19. 2.$$

Longitudo a^{12}

ingredientis.

 m^{12} in A .

$$\text{TPL} = 67. 14'. 15''.$$

$$m^{12}\text{PT} = 106. 40. 28.$$

$$m^{12}\text{PL} = 173. 54. 43.$$

$$\text{LPf} = 20. 30. 0.$$

$$153. 24. 43.$$

$$206. 35. 17.$$

Longitudo m^{12}

ingredientis.

 a^{12} in C .

$$\text{TPL} = 84. 43'. 45''.$$

$$a^{12}\text{PT} = 120. 59. 44.$$

$$a^{12}\text{PL} = 36. 15. 59.$$

$$\text{LPf} = 20. 30. 0.$$

$$56. 45. 59.$$

Longitudo a^{12}

egredientis.

8) Pro latitudine C .

Radius:

$$\text{Cos.PF} = 71^\circ 29'. 13'' = 9.9769234 =$$

$$\text{Cos.PTC} = 62. 8. 31 = 9.9465053:$$

$$\text{Cos.PC} = 56. 58. 1 = 9.9234287.$$

$$\text{PC} = 33. 1. 59.$$

9) Pro angulo CPT .

$$\text{S.PC} = 33. 1. 59 = 9.7364944:$$

Radium =

$$\text{S.PTC} = 27. 51. 29 = 19.6695797:$$

$$\text{S.FPC} = 59. 0. 16 = 9.9330853$$

$$\text{CPT} = 120. 59. 44.$$

 a^{12} in A .

$$\text{TPL} = 80. 57'. 45''.$$

$$c^{12}\text{PT} = 106. 40. 28.$$

$$c^{12}\text{PL} = 187. 38. 13.$$

$$\text{LPf} = 20. 30. 0.$$

$$167. 8. 13.$$

$$192. 51. 47.$$

Longitudo c^{12}

ingredientis.

 m^{12} in A .

$$\text{TPL} = 112. 11'. 0''.$$

$$c^{12}\text{PT} = 120. 59. 44.$$

$$c^{12}\text{PL} = 8. 48. 44.$$

$$\text{LPf} = 20. 30. 0.$$

$$29. 18. 44.$$

Longitudo m^{12}

ingredientis.

H

Pro

Pro semita digitorum undecim.

1) $Pro \text{G}\mathcal{A} = \text{G}\mathcal{C}$.

$$\begin{array}{lcl} \text{Diameter solis} & = & 31'. 47'' = 1907'. \\ \text{Ergo digitii } 11 & = & 29. 8 = 1748. \\ \text{IA} = \text{VI}\mathcal{C} & = & 32. 32 = 1952. \\ \text{GA} = \text{G}\mathcal{C} & = & 3. 24 = 204. \end{array}$$

2) $Pro \text{IG} = \text{VI}\mathcal{G}$.

$$\begin{array}{lcl} \text{IG} = \text{VI}\mathcal{G} & = & 32. 21 = 1941. \\ & & \text{ut supra ad, digitos} \\ & & \text{infra viam centri.} \end{array}$$

3) $Pro IM = MVI; \text{GM}; \& IIIM = MIV.$

$$\begin{array}{ll} \text{TM} = & 47. 51 = 2871. \\ \text{GA} = \text{GC} = \text{MB} = & 3. 24 = 204. \\ \text{TB} = \text{TM} + \text{MB} = & 51. 15 = 3075. \\ \text{AT} = \text{CT} = & 61. 4 = 3664. \\ + = & 112. 19 = 6739 = 3. 8285955. \\ - = & 9. 49 = 589 = 2. 7701153. \\ & & & , 6. 5987108. \\ \text{MB} = \text{CB} = \text{GM} = & 33. 12 = 1992 = 3. 2993554. \\ \text{IG} = \text{VI}\mathcal{G} = & 32. 21 = 1941. \\ \text{IG} + \text{GM} = \text{VI}\mathcal{G} + \text{GM} = 65. 33 = 3933 = \text{IM} = \text{MVI}. \\ \text{GM} - \text{IG} = \text{GM} - \text{VI}\mathcal{G} = 51 = 51 = \text{IIIM} = \text{MIV}. \end{array}$$

4) $Pro temporibus per$

| $IM = MVI.$ | $\text{GM}.$ | $IIIM = MIV.$ |
|-------------------------------------------|-------------------------------------------|-------------------------------------------|
| $2132'' = 3. 3287872 :$ | $2132'' = 3. 3287872 :$ | $2132'' = 3. 3287872 :$ |
| $3600 = 3. 5563025 =$ | $3600 = 3. 5563025 =$ | $3600 = 3. 5563025 =$ |
| $3933 = 3. 5947239 :$ | $1992 = 3. 2993554 :$ | $51 = 1. 7075702 :$ |
| $7. 1510264.$ | $6. 8556579.$ | $5. 2638727.$ |
| $6641 = 3. 8222392.$ | $3364 = 3. 5268707.$ | $86 = 1. 9350855.$ |
| $1^b. 50'. 41''.$ | $0^b. 56'. 4''.$ | $0^b. 1^b. 26''.$ |
| $5. 31. 23 \text{ m. m. t.}$ | $5. 31. 23 \text{ m. m. t.}$ | $5. 31. 23 \text{ m. m. t.}$ |
| $3. 40. 42. a'' \text{ in } \mathcal{U}.$ | $4. 35. 19. m'' \text{ in } \mathcal{U}.$ | $5. 29. 57. c'' \text{ in } \mathcal{U}.$ |
| $55'. 10. 30 \text{ in P.C.M.}$ | $68'. 49. 45 \text{ in P.C.M.}$ | $82'. 29. 15 \text{ in P.C.M.}$ |
| $7. 22. 4. c'' \text{ in } \mathcal{C}.$ | $6. 27. 27. m'' \text{ in } \mathcal{C}.$ | $5. 32. 49. a'' \text{ in } \mathcal{C}.$ |
| $110. 31. 0 \text{ in P.C.M.}$ | $96. 51. 45 \text{ in P.C.M.}$ | $83. 12. 15 \text{ in P.C.M.}$ |

5) Pro

5) Pro angulo $\text{BTA} = \text{BTC}$.

| | |
|-----------------------------|------------------------------|
| $\text{AT} = \text{CT} =$ | 61°. 4" = 3664" = 3.5639555: |
| Radium = | |
| $\text{AB} = \text{CB} =$ | 33. 12. = 1992 = 13.2993554: |
| $\text{BTA} = \text{BTC} =$ | 32°. 56'. 22" = 9.7353999: |
| $\text{PTM} =$ | 9. 24. 22. |
| $+ = \text{PTA} =$ | 42. 20. 44. |
| Compl. = | 47. 39. 16. |
| $- = \text{PTC} =$ | 23. 32. 0. |
| Compl. = | 66. 28. 0. |

6) Pro latitudine A .

Radius:

$$\begin{aligned}\text{Cos.PF} &= 71^{\circ}.29'.13" = 9.9769234 \\ \text{Cos.PTA} &= 47.39.16 = 9.8687007 \\ \text{Cos.PA} &= 44.29.43 = 9.8456241 \\ \text{PA} &= 45.30.17.\end{aligned}$$

7) Pro angulo APT .

$$\begin{aligned}\text{S.PA} &= 45.30.17 = 9.8532773 \\ \text{Radium} &= \\ \text{S.PTA} &= 42.20.44 = 19.8284023 \\ \text{S.FPA} &= 70.47.33 = 9.9751250 \\ \text{APT} &= 109.12.27.\end{aligned}$$

8) Pro latitudine C .

$$\begin{aligned}\text{Radius:} \\ \text{Cos.PF} &= 71^{\circ}.29'.13" = 9.9769234 \\ \text{Cos.PTC} &= 66.28.0 = 9.9622878 \\ \text{Cos.PC} &= 60.23.13 = 9.9392112 \\ \text{PC} &= 29.36.47.\end{aligned}$$

9) Pro angulo CPT .

$$\begin{aligned}\text{S.PC} &= 29.36.47 = 9.6938499 \\ \text{Radium} &= \\ \text{S.PTC} &= 23.32.0 = 19.6012803 \\ \text{S.FPC} &= 53.54.16 = 9.9074304 \\ \text{CPT} &= 126.5.44.\end{aligned}$$

 a'' in A .

$$\begin{aligned}\text{TPL} &= 55^{\circ}.10'.30" \\ a''\text{PT} &= 109.12.27. \\ a''\text{PL} &= 164.22.57. \\ \text{LPf} &= 20.30.0. \\ &\quad 143.52.57. \\ &\quad 216.7.3.\end{aligned}$$

Longitudo a''
ingredientis. m'' in A .

$$\begin{aligned}\text{TPL} &= 68.49'.45" \\ m''\text{PT} &= 109.12.27. \\ m''\text{PL} &= 178.2.12. \\ \text{LPf} &= 20.30.0. \\ &\quad 157.32.12. \\ &\quad 202.27.48.\end{aligned}$$

Longitudo m''
ingredientis. c'' in A .

$$\begin{aligned}\text{TPL} &= 82^{\circ}.29'.15" \\ c''\text{PT} &= 109.12.27. \\ c''\text{PL} &= 191.41.42. \\ \text{LPf} &= 20.30.0. \\ &\quad 171.11.42. \\ &\quad 188.48.18.\end{aligned}$$

Longitudo c''
ingredientis. a'' in C .

$$\begin{aligned}\text{TPL} &= 83^{\circ}.12'.15" \\ a''\text{PT} &= 126.5.44. \\ a''\text{PL} &= 42.53.29. \\ \text{LPf} &= 20.30.0. \\ &\quad 63.23.29.\end{aligned}$$

Longitudo a''
egredientis. m'' in C .

$$\begin{aligned}\text{TPL} &= 90.51'.45" \\ m''\text{PT} &= 126.5.44. \\ m''\text{PL} &= 29.13.59. \\ \text{LPf} &= 20.30.0. \\ &\quad 49.43.59.\end{aligned}$$

Longitudo m''
egredientis. c'' in C .

$$\begin{aligned}\text{TPL} &= 110^{\circ}.31'.0" \\ c''\text{PT} &= 126.5.44. \\ c''\text{PL} &= 15.34.44. \\ \text{LPf} &= 20.30.0. \\ &\quad 36.4.44.\end{aligned}$$

Longitudo c''
egredientis.

Pro semita digitorum decem.

1) Pro $\text{G}\mathcal{A} = \text{G}\mathcal{C}$.

$$\begin{array}{rcl} \text{Diameter solis} & = & 31^{\circ} 47' \approx 1907. \\ \text{Ergo digitii } 10 & = & 31^{\circ} 26. 29 \approx 1589. \\ \text{IA} = \text{VIG} & = & 32. 32 \approx 1952. \\ \text{GA} = \text{GC} & = & 6. 3 = 363. \end{array}$$

2) Pro $\text{IG} = \text{VIG}$.

$$\begin{array}{rcl} \text{IG} = \text{VIG} & = & 31. 58 \approx 1918. \\ & & \text{ut supra ad digitos} \\ & & 10 \end{array}$$

infra viam centri.

3) Pro $\text{IM} = \text{MVI}; \text{GM}; \& \text{IIM} = \text{MIV}$.

$$\begin{array}{rcl} \text{TM} & = & 47. 51 = 2871. \\ \text{GA} + \text{GC} = \text{MB} & = & 6. 3 = 363. \\ \text{TB} = \text{TM} + \text{MB} & = & 53. 54 = 3234. \\ \text{AT} = \text{CT} = & & 61. 4 = 3664. \\ & + & 114. 58 = 6898 = 3. 8387232. \\ & - & 7. 10 = 430 = 2. 6334685. \\ & & 6. 4721917. \\ \text{AB} = \text{CB} = \text{GM} & = & 28. 42 = 1722 = 3. 2360958. \\ \text{IG} = \text{VIG} & = & 31. 58 = 1918. \\ \text{IG} + \text{GM} = \text{VIG} + \text{GM} & = & 60. 40 = 3640 = \text{IM} = \text{MVI}. \\ \text{IG} - \text{GM} = \text{VIG} - \text{GM} & = & 3. 16 = 196 = \text{IIM} = \text{MIV}. \end{array}$$

4) Pro temporibus per

$$\begin{array}{rcl} \text{IM} = \text{MVI}. & & \text{GM}. & & \text{IIM} = \text{MIV}. \\ 2132'' = 3. 3287872 : & 2132'' = 3. 3287872 : & 2132'' = 3. 3287872 : & & \\ 3600 = 3. 5563025 : & 3600 = 3. 5563025 : & 3600 = 3. 5563025 : & & \\ 3640 = 3. 5611014 : & 1722 = 3. 2360958 : & 196 = 2. 2922561 : & & \\ & 7. 1174039. & 6. 7923983. & 5. 8485586. & \\ 6146 = 3. 7886167. & 2908 = 3. 4636111. & 331 = 2. 5197714. & & \\ 1^h. 42'. 26''. & 6^h. 48'. 28''. & 6^h. 5'. 31''. & & \\ 5. 31. 23 m. m. t. & 5. 31. 23 m. m. t. & 5. 31. 23 m. m. t. & & \\ 3. 48. 57. d^{10} \text{ in A.} & 4. 42. 55. m^{10} \text{ in A.} & 5. 25. 52. d^{10} \text{ in C.} & & \\ 57. 14. 15 \text{ in P.C.M.} & 70. 43. 45 \text{ in P.C.M.} & 81. 28. o \text{ in P.C.M.} & & \\ 7. 13. 49. c^{10} \text{ in C.} & 6. 19. 51. m^{10} \text{ in C.} & 5. 36. 54. c^{10} \text{ in A.} & & \\ 108. 27. 15 \text{ in P.C.M.} & 94. 57. 45 \text{ in P.C.M.} & 84. 13. 30 \text{ in P.C.M.} & & \end{array}$$

5) Pro

5) Pro angulo $\mathfrak{B}TA = \mathfrak{B}TC$.

$$\mathfrak{B}T = \mathfrak{C}T = 61^\circ. 4'' = 3664'' = 3.5639555:$$

Radium =

$$\mathfrak{B}B = \mathfrak{C}B = 28. 42 = 1722 = 13.2360958:$$

$$\mathfrak{B}TA = \mathfrak{B}TC = 28^\circ. 2'. 14'' = 9.6721403:$$

$$PTM = 9. 24. 22.$$

$$+ = PT\mathfrak{A} = 37. 26. 36.$$

$$\text{Compl.} = 52. 33. 24.$$

$$- = PT\mathfrak{C} = 18. 37. 52.$$

$$\text{Compl.} = 71. 22. 8.$$

6) Pro latitudine \mathfrak{A} .

Radius:

$$\cos. PF = 71^\circ. 29'. 13'' = 9.9769234 =$$

$$\cos. PT\mathfrak{A} = 52. 33. 24 = 9.8997959:$$

$$\cos. PA = 48. 50. 22 = 9.8767193.$$

$$\mathfrak{P}\mathfrak{A} = 41. 9. 38.$$

7) Pro angulo $\mathfrak{A}PT$.

$$S.PA = 41. 9. 38 = 9.8183389:$$

Radium =

$$S.PT\mathfrak{A} = 37. 26. 36 = 19.7838868:$$

$$S.FPA = 67. 28. 43 = 9.9655479.$$

$$\mathfrak{A}PT = 112. 31. 17.$$

8) Pro latitudine \mathfrak{C} .

Radius:

$$\cos. PF = 71^\circ. 29'. 13'' = 9.9769234 =$$

$$\cos. PT\mathfrak{C} = 71. 22. 8 = 9.9766228:$$

$$\cos. PC = 63. 58. 9 = 9.9535462,$$

$$PC = 26. 1. 51.$$

9) Pro angulo $\mathfrak{C}PT$.

$$S.PC = 26. 1. 51 = 9.6423208:$$

Radium =

$$S.PT\mathfrak{C} = 18. 37. 52 = 19.5044353:$$

$$S.FPC = 46. 43. 0 = 9.8621145.$$

$$\mathfrak{C}PT = 133. 17. 0.$$

 a^{10} in \mathfrak{A} .

$$TPL = 57^\circ. 14'. 15''.$$

$$a^{10}PT = 112. 31. 17.$$

$$a^{10}PL = 169. 45. 32.$$

$$LPf = 20. 30. 0.$$

$$149. 15. 32.$$

$$210. 44. 28.$$

Longitudo a^{10}
ingredientis. m^{10} in \mathfrak{A} .

$$TPL = 70^\circ. 43'. 45''.$$

$$m^{10}PT = 112. 31. 17.$$

$$m^{10}PL = 183. 15. 2.$$

$$LPf = 20. 30. 0.$$

$$162. 45. 2.$$

$$197. 14. 58.$$

Longitudo m^{10}
ingredientis. c^{10} in \mathfrak{A} .

$$TPL = 84^\circ. 13'. 30''.$$

$$c^{10}PT = 112. 31. 17.$$

$$c^{10}PL = 196. 44. 47.$$

$$LPf = 20. 30. 0.$$

$$176. 14. 47.$$

$$187. 45. 13.$$

Longitudo c^{10}
ingredientis. a^{10} in \mathfrak{C} .

$$TPL = 81^\circ. 28'. 0''.$$

$$a^{10}PT = 133. 17. 0.$$

$$a^{10}PL = 51. 49. 0.$$

$$LPf = 20. 30. 0.$$

$$72. 19. 0.$$

 m^{10} in \mathfrak{C} .

$$TPL = 94^\circ. 57'. 45''.$$

$$m^{10}PT = 133. 17. 0.$$

$$m^{10}PL = 38. 19. 15.$$

$$LPf = 20. 30. 0.$$

$$58. 49. 15.$$

Longitudo m^{10}
egredientis. c^{10} in \mathfrak{C} .

$$TPL = 108^\circ. 27'. 15''.$$

$$c^{10}PT = 133. 17. 0.$$

$$c^{10}PL = 24. 49. 45.$$

$$LPf = 20. 30. 0.$$

$$45. 19. 45.$$

Longitudo c^{10}
egredientis.

Pro

Pro semita digitorum novem.

1) Pro $\text{G}\ddot{\alpha} = \text{G}\dot{\epsilon}$.

$$\begin{array}{lcl} \text{Diameter solis} & = & 31'. 47'' = 1907''. \\ \text{Ergo digiti } 9 & = & 23. 50 = 1430. \\ \text{I}\ddot{\alpha} = \text{VI}\dot{\epsilon} & = & 32. 32 = 1952. \\ \text{G}\ddot{\alpha} = \text{G}\dot{\epsilon} & = & 8. 42 = 522. \end{array}$$

2) Pro $\text{I}\dot{\epsilon} = \text{VI}\dot{\epsilon}$.

$$\begin{array}{lcl} \text{I}\dot{\epsilon} = \text{VI}\dot{\epsilon} & = & 31. 21 = 1881. \\ & & \text{ut supra ad digitos} \\ & & 9 \\ & & \text{infra viam centri.} \end{array}$$

3) Pro $\text{I}\dot{\epsilon} \text{M} = \text{MVI}; \text{G}\dot{\epsilon} \text{M}; \& \text{IIIM} = \text{MIV}$.

$$\begin{array}{lcl} \text{TM} & = & 47'. 51'' = 2871''. \\ \text{G}\ddot{\alpha} = \text{G}\dot{\epsilon} = \text{M}\ddot{\beta} & = & 8. 42 = 522. \\ \text{T}\ddot{\beta} = \text{TM} + \text{M}\ddot{\beta} & = & 56. 33 = 3393. \\ \text{WT} = \text{CT} & = & 61. 4 = 3664. \\ + & = & 117. 37 = 7057 = 3. 8486201. \\ - & = & 4. 31 = 271 = 2. 4329693. \\ & & 6. 2815894. \\ \text{U}\ddot{\beta} = \text{C}\ddot{\beta} = \text{G}\dot{\epsilon} \text{M} & = & 23. 3 = 1383 = 3. 1407947. \\ \text{I}\dot{\epsilon} = \text{VI}\dot{\epsilon} & = & 31. 21 = 1881. \\ \text{I}\dot{\epsilon} + \text{G}\dot{\epsilon} \text{M} = \text{VI}\dot{\epsilon} + \text{G}\dot{\epsilon} \text{M} & = & 54. 24 = 3264 = \text{IM} = \text{MVI}. \\ \text{I}\dot{\epsilon} - \text{G}\dot{\epsilon} \text{M} = \text{VI}\dot{\epsilon} - \text{G}\dot{\epsilon} \text{M} & = & 8. 18 = 498 = \text{IIIM} = \text{MIV}. \end{array}$$

4) Pro temporibus per

$$\text{IM} = \text{MVI}.$$

$$\begin{array}{l} 2132'' = 3.3287872 : \\ 3600 = 3.5563025 : \\ 3264 = 3.5137502 : \\ & 7.0700527. \\ 5511 & = 3.7412655. \\ & 1^h. 31'. 51''. \\ & 5. 31. 23 \text{ m.m.t.} \\ & 3. 59. 32. a^9 \text{ in } \mathfrak{A}. \\ & 59^\circ. 53. \text{ o in P.C.M.} \\ & 7. 3. 14. c^9 \text{ in } \mathfrak{C}. \\ & 105. 48. 30 \text{ in P.C.M.} \end{array}$$

$$\text{G.M.}$$

$$\begin{array}{l} 2132'' = 3.3287872 : \\ 3600 = 3.5563025 : \\ 1383 = 3.1407947 : \\ & 6.6970972. \\ 2335 & = 3.3683100. \\ & 0^\circ. 38'. 55''. \\ & 5. 31. 23 \text{ m.m.t.} \\ & 4. 52. 28. m^9 \text{ in } \mathfrak{A}. \\ & 73^\circ. 7. \text{ o in P.C.M.} \\ & 6. 10. 18. m^9 \text{ in } \mathfrak{C}. \\ & 92. 34. 30 \text{ in P.C.M.} \end{array}$$

$$\text{IIIM} = \text{MIV}.$$

$$\begin{array}{l} 2132'' = 3.3287872 : \\ 3600 = 3.5563025 : \\ 498 = 2.6972293 : \\ & 6.2535318. \\ 841 & = 2.9247446. \\ & 0^\circ. 14'. 1''. \\ & 5. 31. 23 \text{ m.m.t.} \\ & 5. 17. 22. a^9 \text{ in } \mathfrak{C}. \\ & 79^\circ. 20. 30 \text{ in P.C.M.} \\ & 5. 45. 24. c^9 \text{ in } \mathfrak{A}. \\ & 86. 21. \text{ o in P.C.M.} \end{array}$$

5) Pro

5) Pro angulo $\mathfrak{B}TA = \mathfrak{B}TC$.

| | |
|-------------------------------------|---------------------------------------|
| $\mathfrak{A}T = \mathfrak{C}T =$ | $61^\circ. 4'' = 3664'' = 3.5639555:$ |
| Radium = | |
| $\mathfrak{B}B = \mathfrak{C}B =$ | $23. 3 = 1383 = 13.1407947:$ |
| $\mathfrak{B}TA = \mathfrak{B}TC =$ | $22^\circ. 10'. 29'' = 9.5768392:$ |
| PTM = | $9. 24. 22.$ |
| $+ = PT\mathfrak{A} =$ | $31. 34. 51.$ |
| Compl. = | $58. 25. 9.$ |
| $- = PT\mathfrak{C} =$ | $12. 46. 7.$ |
| Compl. = | $77. 13. 53.$ |

6) Pro latitudine \mathfrak{A} .

| | |
|--------------------------|-------------------------------------|
| Radius: | |
| Cos. PF = | $71^\circ. 29'. 13'' = 9.9769234 =$ |
| Cos. PT \mathfrak{A} = | $58. 25. 9 = 9.9303897:$ |
| Cos. PA = | $53. 53. 0 = 9.9073131.$ |
| PA = | $36. 7. 0.$ |

7) Pro angulo $\mathfrak{A}PT$.

| | |
|------------------------|----------------------------|
| S. PA = | $36. 7. 0 = 9.7704332:$ |
| Radium = | |
| S. PT \mathfrak{A} = | $31. 34. 51 = 19.7190834:$ |
| S. FP \mathfrak{A} = | $62. 41. 1 = 9.9486502.$ |
| APT = | $117. 18. 59.$ |

8) Pro latitudine \mathfrak{C} .

| | |
|--------------------------|-------------------------------------|
| Radius: | |
| Cos. PF = | $71^\circ. 29'. 13'' = 9.9769234 =$ |
| Cos. PT \mathfrak{C} = | $77. 13. 53 = 9.9891251:$ |
| Cos. PC = | $67. 38. 18 = 9.9660485.$ |
| PC = | $22. 21. 42.$ |

9) Pro angulo $\mathfrak{C}PT$.

| | |
|------------------------|---------------------------|
| S. PC = | $22. 21. 42 = 9.5802995:$ |
| Radium = | |
| S. PT \mathfrak{C} = | $12. 46. 7 = 19.3444202:$ |
| S. FP \mathfrak{C} = | $35. 30. 56 = 9.7641207.$ |
| CPT = | $144. 29. 4.$ |

 a° in \mathfrak{A} .

| | |
|--------------------------------------|----------------|
| TPL = | $59. 53'. 0''$ |
| a° PT = | $117. 18. 59.$ |
| a° PL = | $177. 11. 59.$ |
| LPf = | $20. 30. 0.$ |
| | $156. 41. 59.$ |
| | $203. 18. 1.$ |
| Longitudo a° ingredientis. | |

 m° in \mathfrak{A} .

| | |
|--------------------------------------|---------------------|
| TPL = | $73^\circ. 7'. 0''$ |
| m° PT = | $117. 18. 59.$ |
| m° PL = | $190. 25. 59.$ |
| LPf = | $20. 30. 0.$ |
| | $169. 55. 59.$ |
| | $190. 4. 1.$ |
| Longitudo m° ingredientis. | |

 c° in \mathfrak{A} .

| | |
|--------------------------------------|----------------------|
| TPL = | $86^\circ. 21'. 0''$ |
| c° PT = | $117. 18. 59.$ |
| c° PL = | $203. 39. 59.$ |
| LPf = | $20. 30. 0.$ |
| | $183. 9. 59.$ |
| | $176. 50. 1.$ |
| Longitudo c° ingredientis. | |

 a° in \mathfrak{C} .

| | |
|-------------------------------------|-----------------|
| TPL = | $79. 20'. 30''$ |
| a° PT = | $144. 29. 4.$ |
| a° PL = | $65. 8. 34.$ |
| LPf = | $20. 30. 0.$ |
| | $85. 38. 34.$ |
| Longitudo a° egredientis. | |

 m° in \mathfrak{C} .

| | |
|-------------------------------------|-----------------------|
| TPL = | $92^\circ. 34'. 30''$ |
| m° PT = | $144. 29. 4.$ |
| m° PL = | $51. 54. 34.$ |
| LPf = | $20. 30. 0.$ |
| | $72. 24. 34.$ |
| Longitudo m° egredientis. | |

 c° in \mathfrak{C} .

| | |
|-------------------------------------|------------------------|
| TPL = | $105^\circ. 48'. 30''$ |
| c° PT = | $144. 29. 4.$ |
| c° PL = | $38. 40. 34.$ |
| LPf = | $20. 30. 0.$ |
| | $59. 10. 34.$ |
| Longitudo c° egredientis. | |

Pro

Pro semita digitorum octo.

1) *Pro GA=GC.*

| | | |
|--------------------------------------|------------|--------|
| Diameter solis = | 31'. 47" = | 1907". |
| Ergo digitii 8 = | 21. 12 = | 1272. |
| I ^{II} = VI ^{II} = | 32. 32 = | 1952. |
| GA = GC = | II. 20 = | 680. |

2) *Pro IG = VI^{II}.*

| | | |
|-------------------------|--------------------|-------|
| IG = VI ^{II} = | 30. 30 = | 1830. |
| ut supra ad digitos 8 | infra viam centri. | |

3) *Pro IM = MVI; GM; & IIIM = MIV.*

| | |
|--------------------------------------------------------------|-----------------------------|
| TM = | 47. 51 = 2871. |
| GA = GC = MB = | II. 20 = 680. |
| TB = TM + MB = | 59. 11 = 3551. |
| AT = CT = | 61. 4 = 3664. |
| → = | 120. 15 = 7215 = 3.8582363. |
| - = | 1. 53 = 113 = 2.0530784. |
| WB = CB = GM = | 15. 3 = 903 = 2.9556573. |
| IG = VI ^{II} = | 30. 30 = 1830. |
| IG + GM = VI ^{II} + GM = 45. 33 = 2733 = IM = MVI. | |
| IG - GM = VI ^{II} - GM = 15. 27 = 927 = IIIM = MIV. | |

4) *Pro temporibus per*

| IM = MVI. | GM. | IIIM = MIV. |
|---------------------------------|---------------------------------|---------------------------------|
| 2132" = 3.3287872: | 2132" = 3.3287872: | 2132" = 3.3287872: |
| 3600 = 3.5563025 = | 3600 = 3.5563025 = | 3600 = 3.5563025 = |
| 2733 = 3.4366396: | 903 = 2.9556573: | 927 = 2.9670797: |
| 6.9929421. | 6.5119598. | 6.5233822. |
| 4615 = 3.6641549. | 1525 = 3.1831726. | 1565 = 3.1945950. |
| 1°. 16'. 55". | 0°. 25'. 25". | 0°. 26'. 5". |
| 5. 31. 23 m. m. t. | 5. 31. 23 m. m. t. | 5. 31. 23 m. m. t. |
| 4. 14. 28. a ³ in A. | 5. 58. m ³ in A. | 5. 18. a ³ in C. |
| 63°. 37. o in P. C. M. | 76°. 29. 30 in P. C. M. | 76°. 19. 30 in P. C. M. |
| 6. 48. 18. c ³ in C. | 5. 56. 48. m ³ in C. | 5. 57. 28. c ³ in A. |
| 102. 4. 30 in P. C. M. | 89. 12. o in P. C. M. | 89. 22. o in P. C. M. |

5) *Pro*

5) Pro angulo $\mathfrak{B}\Gamma\mathfrak{A} = \mathfrak{B}\Gamma\mathfrak{C}$.

| | | |
|---------------------------------------------------------------------|-------------------|--------------|
| $\mathfrak{A}\mathfrak{T} = \mathfrak{C}\mathfrak{T} =$ | 61'. 4" = 3664" = | 3. 5639555: |
| Radium = | | |
| $\mathfrak{A}\mathfrak{B} = \mathfrak{C}\mathfrak{B} =$ | 15. 3. = 903 = | 12. 9556573: |
| $\mathfrak{B}\Gamma\mathfrak{A} = \mathfrak{B}\Gamma\mathfrak{C} =$ | 14'. 16'. 0" = | 9. 3917018. |
| PTM = | 9. 24. 22. | |
| + = PT \mathfrak{A} = | 23. 40. 22. | |
| Compl. = | 66. 19. 38. | |
| - = PT \mathfrak{C} = | 4. 51. 38. | |
| Compl. = | 85. 8. 22. | |

6) Pro latitudine \mathfrak{A} .

Radius:

$\text{Cos.PF} = 71^{\circ} 29'. 13'' = 9. 9769234 =$

$\text{Cos.PT}\mathfrak{A} = 66. 19. 38 = 9. 9618260 :$

$\text{Cos.PA} = 60. 16. 48 = 9. 9387494.$

$\mathfrak{PA} = 29. 43. 12.$

7) Pro angulo $\mathfrak{A}\mathfrak{P}\mathfrak{T}$.

$S.\mathfrak{PA} = 29. 43. 12 = 9. 6952731 :$

Radium =

$S.\text{PT}\mathfrak{A} = 23. 40. 22 = 19. 6036992 :$

$S.\text{FP}\mathfrak{A} = 54. 5. 7 = 9. 9084261.$

$\mathfrak{APT} = 125. 54. 53.$

8) Pro latitudine \mathfrak{C} .

Radius:

$\text{Cos.PF} = 71^{\circ} 29'. 13'' = 9. 9769234 =$

$\text{Cos.PTC} = 85. 8. 22 = 9. 9984354 :$

$\text{Cos.PC} = 70. 52. 52 = 9. 9753588.$

$\mathfrak{PC} = 19. 7. 8.$

9) Pro angulo $\mathfrak{C}\mathfrak{P}\mathfrak{T}$.

$S.\text{PC} = 19. 7. 8 = 9. 5152503 :$

Radium =

$S.\text{PTC} = 4. 51. 38 = 18. 9280416 :$

$S.\text{FPC} = 14. 59. 34 = 9. 4127913.$

$\mathfrak{CPT} = 165. 0. 26.$

| a° in \mathfrak{A} . | m° in \mathfrak{A} . | c° in \mathfrak{A} . |
|----------------------------------------|----------------------------------------|----------------------------------------|
| $TPL = 63^{\circ}. 37'. 0''.$ | $TPL = 76^{\circ}. 29'. 30''.$ | $TPL = 89^{\circ}. 22'. 0''.$ |
| $a^{\circ}\text{PT} = 125. 54. 53.$ | $m^{\circ}\text{PT} = 125. 54. 53.$ | $c^{\circ}\text{PT} = 125. 54. 53.$ |
| $a^{\circ}\text{PL} = 189. 31. 53.$ | $m^{\circ}\text{PL} = 202. 24. 23.$ | $c^{\circ}\text{PL} = 215. 16. 53.$ |
| $\text{LPf} = 20. 30. 0.$ | $\text{LPf} = 20. 30. 0.$ | $\text{LPf} = 20. 30. 0.$ |
| $169. 1. 53.$ | $181. 54. 23.$ | $194. 46. 53.$ |
| $190. 58. 7.$ | $178. 5. 37.$ | $105. 13. 7.$ |
| Longitudo a° ingredientis. | Longitudo m° ingredientis. | Longitudo c° ingredientis. |

| a° in \mathfrak{C} . | m° in \mathfrak{C} . | c° in \mathfrak{C} . |
|---------------------------------------|---------------------------------------|---------------------------------------|
| $TPL = 76^{\circ}. 19'. 30''.$ | $TPL = 89^{\circ}. 12'. 0''.$ | $TPL = 102^{\circ}. 4'. 30''.$ |
| $a^{\circ}\text{PT} = 165. 0. 26.$ | $m^{\circ}\text{PT} = 165. 0. 26.$ | $c^{\circ}\text{PT} = 165. 0. 26.$ |
| $a^{\circ}\text{PL} = 88. 40. 56.$ | $m^{\circ}\text{PL} = 75. 48. 26.$ | $c^{\circ}\text{PL} = 62. 55. 56.$ |
| $\text{LPf} = 20. 30. 0.$ | $\text{LPf} = 20. 30. 0.$ | $\text{LPf} = 20. 30. 0.$ |
| $109. 10. 56.$ | $96. 18. 26.$ | $83. 25. 56.$ |
| Longitudo a° egredientis. | Longitudo m° egredientis. | Longitudo c° egredientis. |

Pro

Pro semita digitorum septem. 30'

1) Pro $\text{G}\mathcal{A}$ = $\text{G}\mathcal{C}$.

$$\begin{array}{rcl} \text{Diameter solis} & = & 31' . 47'' = 1907''. \\ \text{Ergo digitus } 7.30' & = & 19. 51 = 1191. \\ \text{II} = \text{VI} \mathcal{C} & = & 32. 32 = 1952. \\ \text{GA} = \text{GC} & = & 12. 41 = 761. \end{array}$$

2) Pro IG = $\text{VI} \mathcal{G}$.

$$\begin{array}{rcl} \text{II} = \text{VI} \mathcal{C} & = & 32. 32 = 1952. \\ \text{GA} = \text{GC} & = & 12. 41 = 761. \\ + & = & 45. 13 = 2713 = 3. 4334498. \\ - & = & 19. 51 = 1191 = 3. 0759118. \\ \text{IG} = \text{VI} \mathcal{G} & = & 29. 58 = 1798 = 6. 5093616. \\ & & 29. 58 = 1798 = 3. 2546808. \end{array}$$

3) Pro $\text{IM} = \text{MVI}; \text{GM}; \& \text{IIIM} = \text{MIV}$.

$$\begin{array}{rcl} \text{TM} = & 47. 51 = 2871. \\ \text{GA} = \text{GC} = \text{MB} = & 12. 41 = 761. \\ \text{TB} = \text{TM} + \text{MB} = & 60. 32 = 3632. \\ \text{AT} = \text{CT} = & 61. 4 = 3664. \\ + & 121. 36 = 7296 = 3. 8630848. \\ - & 32 = 32 = 1. 5051500. \\ & & 5. 3682348. \end{array}$$

$$\begin{array}{rcl} \text{AB} = \text{CB} = \text{GM} = & 8. 4 = 484 = 2. 6841174. \\ \text{IG} = \text{VI} \mathcal{G} = & 29. 58 = 1798. \end{array}$$

$$\begin{array}{rcl} \text{IG} + \text{GM} = \text{VI} \mathcal{G} + \text{GM} = 38. 2 = 2282 = \text{IM} = \text{MVI}. \\ \text{IG} - \text{GM} = \text{VI} \mathcal{G} - \text{GM} = 21. 54 = 1314 = \text{IIIM} = \text{MIV}. \end{array}$$

4) Pro temporibus per

| $\text{IM} = \text{MVI}$ | GM | $\text{IIIM} = \text{MIV}$ |
|---------------------------------------------|---------------------------------------------|---------------------------------------------|
| $2132'' = 3. 3287872:$ | $2132'' = 3. 3287872:$ | $2132'' = 3. 3287872:$ |
| $3600 = 3. 5563025:$ | $3600 = 3. 5563025:$ | $3600 = 3. 5563025:$ |
| $2282 = 3. 3583156:$ | $484 = 2. 6841174:$ | $1314 = 3. 1185954:$ |
| $6. 9146181.$ | $6. 2404199.$ | $6. 6748979.$ |
| $3853 = 3. 5858309.$ | $816 = 2. 9116327.$ | $2219 = 3. 3461107.$ |
| $1^h. 4'. 13''.$ | $0^h. 13'. 36''.$ | $0^h. 36'. 59''.$ |
| $5. 31. 23 \text{ m.m.t.}$ | $5. 31. 23 \text{ m.m.t.}$ | $5. 31. 23 \text{ m.m.t.}$ |
| $4. 27. 10. d^{7\frac{1}{2}} \text{ in A.}$ | $5. 17. 47. m^{7\frac{1}{2}} \text{ in A.}$ | $4. 54. 24. d^{7\frac{1}{2}} \text{ in C.}$ |
| $66. 47. 30 \text{ in P.C.M.}$ | $79. 26. 45 \text{ in P.C.M.}$ | $73. 36. 0 \text{ in P.C.M.}$ |
| $6. 35. 36. c^{7\frac{1}{2}} \text{ in C.}$ | $5. 44. 59. m^{7\frac{1}{2}} \text{ in C.}$ | $6. 8. 22. c^{7\frac{1}{2}} \text{ in A.}$ |
| $98. 54. 0 \text{ in P.C.M.}$ | $86. 14. 45 \text{ in P.C.M.}$ | $92. 5. 30 \text{ in P.C.M.}$ |

5) Pro

5) Pro angulo $\beta\text{TA} = \beta\text{TC}$.

| | |
|-------------------------------------|-------------------------------------------------|
| $\alpha\text{TA} = \text{CT}$ | $61^\circ 4'' = 3664'' = 3.5639555:$ |
| Radium | $=$ |
| $\alpha\beta = \text{CB}$ | $8^\circ 4'' = 484'' = 12.6841174:$ |
| $\beta\text{TA} = \beta\text{TC} =$ | $7^\circ 34' 41'' = 9.1201619. = \text{MP}$ |
| $\text{PTM} =$ | $9^\circ 24' 22'' = \text{HT}$ |
| $\rightarrow = \text{PTA} =$ | $16^\circ 59' 3'' = \text{HM} = 90 = \text{KO}$ |
| Compl. = | $73^\circ 0' 57''$ |
| $\leftarrow = \text{PTC} =$ | $1^\circ 49' 41''$ |
| Compl. = | $88^\circ 10' 19''$ |

6) Pro latitudine α .

| | |
|-------------------------------------------------|--|
| Radius: | |
| $\cos.PF = 71^\circ 29' 13'' = 9.9769234 =$ | |
| $\cos.PT\alpha = 73^\circ 0' 57'' = 9.9806330:$ | |
| $\cos.PA = 65^\circ 4' 46'' = 9.9575564.$ | |
| $PA = 24.55.14.$ | |

7) Pro angulo αPT .

| | |
|--------------------------------------|--|
| $S.PA = 24.55.14 = 9.6246545:$ | |
| Radium = | |
| $S.PT\alpha = 16.59.3 = 19.4655426:$ | |
| $S.FPA = 43.53.16 = 9.8408881.$ | |
| $2PT = 136.6.44.$ | |

8) Pro latitudine ϵ .

| | |
|---------------------------------------------|--|
| Radius: | |
| $\cos.PF = 71^\circ 29' 13'' = 9.9769234 =$ | |
| $\cos.PTC = 88.10.19 = 9.9997789:$ | |
| $\cos.PC = 71^\circ 24' 0'' = 9.9767023.$ | |
| $PC = 18.36.0.$ | |

9) Pro angulo CPT .

| | |
|---------------------------------|--|
| $S.PC = 18.36.0 = 9.5037353:$ | |
| Radium = | |
| $S.PTC = 1.49.41 = 18.5037891:$ | |
| $S.FPC = 5.44.24 = 9.0000538.$ | |
| $CPT = 174.15.36.$ | |

 $a^{\frac{7}{2}} \text{ in } \alpha.$

| | |
|----------------------------------------------|----------------------------------------------|
| $TPL = 66^\circ 47' 30''$ | $TPL = 79^\circ 26' 45''$ |
| $a^{\frac{7}{2}}PT = 136.6.44.$ | $m^{\frac{7}{2}}PT = 136.6.44.$ |
| $a^{\frac{7}{2}}PL = 202.54.14.$ | $m^{\frac{7}{2}}PL = 215.33.29.$ |
| $LPf = 20.30.0.$ | $LPf = 20.30.0.$ |
| $182.24.14.$ | $195.3.29.$ |
| $177.35.46.$ | $164.56.31.$ |
| Longitudo $a^{\frac{7}{2}}$ ingredientis. | Longitudo $m^{\frac{7}{2}}$ ingredientis. |

 $a^{\frac{7}{2}} \text{ in } \epsilon.$

| | |
|---------------------------------------------|---------------------------------------------|
| $TPL = 73^\circ 36' 0''$ | $TPL = 86^\circ 14' 45''$ |
| $a^{\frac{7}{2}}PT = 174.15.36.$ | $m^{\frac{7}{2}}PT = 174.15.36.$ |
| $a^{\frac{7}{2}}PL = 247.51.36.$ | $m^{\frac{7}{2}}PL = 260.30.21.$ |
| $LPf = 20.30.0.$ | $LPf = 20.30.0.$ |
| $227.21.36.$ | $240.0.21.$ |
| $132.38.24.$ | $119.59.39.$ |
| Longitudo $a^{\frac{7}{2}}$ egredientis. | Longitudo $m^{\frac{7}{2}}$ egredientis. |

 $m^{\frac{7}{2}} \text{ in } \alpha.$ $c^{\frac{7}{2}} \text{ in } \alpha.$ $c^{\frac{7}{2}} \text{ in } \epsilon.$

Pro limite boreo
five

Loco H, ubi minima eclipsis versus boream.

$$\begin{array}{lcl} \text{TM} & = & 47'. 51'' = 2871''. \\ \text{TH} & = & 61. 4 = 3664. \\ \text{G}\mathcal{A} & = \text{G}\mathcal{C} & \text{MH} = 13. 13 = 793. \end{array}$$

2) *Pro I\mathcal{G} = VI\mathcal{G}*.

$$\begin{array}{lcl} \text{IA} & = \text{VIE} & 32. 32 = 1952. \\ \text{G}\mathcal{A} & = \text{G}\mathcal{C} & \text{MH} = 13. 13 = 793. \\ + & = 45. & 45 = 2745 = 3.4385423. \\ - & = 19. & 19 = 1159 = 3.0640834. \\ \hline \text{I}\mathcal{G} & = \text{VI}\mathcal{G} & = 29. \quad 44 = 1784 = 3.2513128. \end{array}$$

3) *Pro magnitudine eclipses in loco H.*

$$\begin{array}{lcl} \text{Diameter solis} & = 31. & 47 = 1907 = 3.2803507: \\ & 12' & 0' = 720' = 2.8573325: \\ & 19. & 19 = 1159 = 3.0640834: \\ & 7' & 18' = 438' = 5.9214159: \\ & & & 2.6410652. \end{array}$$

4) *Pro tempore per I\mathcal{G} = VI\mathcal{G}*.

$$\begin{array}{lcl} \text{Horarius lunæ a sole verus} & = 2132'' = 3.3287872: \\ & 3600 & = 3.5563025: \\ \text{I}\mathcal{G} = \text{VI}\mathcal{G} & = 29. \quad 44 = 1784 = 3.2513128: \\ & & 6.8076153. \\ 0^b. 50'. 12'' = \text{tempori per I}\mathcal{G} = \text{VI}\mathcal{G} & = 3012 = 3.4788281. \\ 5. 31. 23 \text{ momentum mediarum tenebrarum.} \\ 4. 41. 11 \text{ a in A \& C. in P. C. M. } 70'. 17'. 45''. \\ 6. 21. 35 \text{ c in A \& C. in P. C. M. } 95. 23. 45''. \end{array}$$

5) *Pro latitudine H.*

Radius:
 $\cos.PF = 71^\circ.29'.13'' = 9.9769234:$
 $\cos.PTM = 80.35.38 = 9.9941212:$
 $\cos.PH = 69.18.34 = 9.9710446.$
 $PH = 20.41.26.$

6) *Pro angulo HPT.*

$$\begin{array}{lcl} \text{S.PH} & = 20. 41. 26 = 9.5481689: \\ \text{Radium=} & & \\ \text{S.PTM} & = 9. 24. 22 = 19.2133347: \\ \text{S.FPH} & = 27. 33. 8 = 9.6651658. \\ \text{HPT} & = 152. 26. 52. & \end{array}$$

TPL=

| | | | | |
|-------|--------------|------|------|-----------------------|
| TPL = | 82°. | 50'. | 45". | §. V. = 5°. 31'. 23". |
| HPT = | 152. | 26. | 52. | |
| HPL = | 235. | 17. | 37. | |
| LPf = | 20. | 30. | 0. | |
| | 214. | 47. | 37. | |
| | 145. | 12. | 23. | |
| | Longitudo H. | | | |

§. XVI.

Determinavimus hucusque loca, ubi

I.a, infra viam centri, & ex una parte PT

Repetitio sa
precedente
tractatorum.

- 1) sol a limbo lunæ raditur, nullam patiens eclipsin, seu ubi m° in A,
(hoc enim casu a° & c° vel nulla sunt, vel potius cum m° eadem)
i. e. limitem austrinum.
- 2) ingrediuntur omnia puncta a seu antecedentia
- 3) - - - - - m seu media
- 4) - - - - - c seu consequentia

semitarum cuiusvis digiti.

- 5) sol totalem ulla fine mora patitur defectum.

I.b, supra viam centri, & ex eadem parte PT

- 1) sol totalem ulla fine mora patitur obscurationem.
- 2) ingrediuntur omnia puncta a seu antecedentia
- 3) - - - - - m seu media
- 4) - - - - - c seu consequentia

semitarum cuiusvis digiti, usque ad limitem boreum.

Semper & ubique ex oriente sole.

II.a, supra viam centri, & ex altera parte PT

- 1) egrediuntur omnia puncta a seu antecedentia
- 2) - - - - - m seu media
- 3) - - - - - c seu consequentia

semitarum cuiusvis digiti a limite boreo.

- 4) sol totalem ulla fine mora patitur eclipsin.

II.b, infra viam centri, & ex eadem parte PT

- 1) sol totale ulla fine mora patitur deliquium.
- 2) egrediuntur omnia puncta a seu antecedentia
- 3) - - - - - m seu media
- 4) - - - - - c seu consequentia

semitarum cuiusvis digiti.

- 5) sol a limbo lunæ tangitur, nullis laboribus affectus, seu ubi a° ,
 m° , c° in C, i. e. limitem austrinum.

Semper & ubique occidente sole.

Tandem & stabilivimus locum in tellure H, seu limitem boreum, ob-
servantem minimam eclipsin, ex omnibus arcton versus fitis regionibus.
Miræ revera hujus loci sunt affectiones. Ibidem enim (in zona frigi-
da) oritur sol, incipit eclipsis. Sol transit per meridianum in maxima
ob-

obscuratione. Occidit sol (in zona frigida) definit eclipsis. Brevisimis, singulorum digitorum singula a , m , c , in A, & C eruimus. Hinc vero folia (ut Celeberrimo EUSTACHIO MANFREDIO (*) appellare has curvas placuit) facillime possunt projici. Cave tamen, ne forsan ejus curvam, initium eclipsis oriente sole, cum nostro a in A, finis eclipsis oriente sole, cum nostro a in C; ac finis eclipsis occidente sole, cum nostro c in C confundas. Incident quidem hac nostra a & c in modo dictas curvas Manfredianas, sed a semitis digitorum illius plane differunt. Quod ut perspicias, consulatur Fig. I. In qua semita digitorum, ABC e.g. descripta in tellure per a m c penumbra, punctum H quasi polum respiciunt, FT vero est axis mundi, circa quem ejusque polum P tota volvit terra. Sin igitur in A, appulerit a cujusdam semita, huic A in superficie terræ (v. §. VII.) motu diurno, ab occasu E, per meridianum FPT, ortum versus ad D circumrotato, ac describenti motu suo parallelum æquatori A Q, obscuratio maxima, minor evadet, quam pro semita supergrediente hunc locum A in ipso momento ortus solis, esse deberet. Continget enim, cum A semita inferiori, ac adeo pauciorum digitorum subjectum erit, quam tunc, cum a , alias ABC in A appellebat. Contra cum supra viam centri in \mathcal{A} , appulerit a cujusdam semita, hoc \mathcal{A} in superficie terræ describens motu suo diurno parallelum æquatori \mathcal{A} Q, obscurationem maximam, majorem observabit, quam pro semita supergrediente hunc locum \mathcal{A} in ipso momento ortus solis, esse deberet. Continget quippe, cum \mathcal{A} tramiti inferiori, ac propterea plurium digitorum subjacebit, quam tunc, cum a , alias ABC in \mathcal{A} ingrediebatur. E contra sin in \mathcal{C} , exierit a cujusdam semita, hoc \mathcal{C} in superficie terræ motu diurno, ab occasu E, per meridianum FPT, ortum versus ad D circumvolatum, ac describens motu suo parallelum æquatori \mathcal{C} Q, obscurationem maximam, minorem spectavit, quam pro semita supergressura hunc locum \mathcal{C} in ipso momento occclusus solis, fuisse deberet. Contigit etenim, cum \mathcal{C} semita superiori, ac ob id ipsum pauciorum digitorum subjectum fuit, quam tunc, cum a , alias ABC in \mathcal{C} exhibet. Tandem cum infra viam centri in \mathcal{C} , exierit a cujusdam semita, hoc \mathcal{C} in superficie terræ describens motu suo diurno parallelum æquatori QC, obscurationem maximam, majorem vidit, quam pro semita supergressura hunc locum \mathcal{C} in ipso momento occclusus solis, fuisse deberet. Contigit siquidem, cum \mathcal{C} tramiti superiori, ac hinc plurium digitorum subiacevit, quam tunc, cum a , alias ABC in \mathcal{C} egredietur. Sunt igitur puncta a in A, initium eclipsis oriente sole; c in A, finis eclipsis oriente sole; a in C, initium eclipsis occidente sole; c in C, finis eclipsis occidente sole, sed haec interest differentia, quod, quamquam in appulso a & c , ac corundem exitu, certa semita digitæ quæsti transeat per certa loca, hæc tamen loca ideo non obscurationem tot digitorum, quot

(*) EUSTACHIUS MANFREDIUS. Ephemeridum celestium, Tomi I, Libri I, præcepto LV. pag. 73. circa finem. Bononiae 1715. Tomi II. 4.

quot semita indicat, sicut observatura, cum e contra in foliis Celeberrimi MANFREDII, sua loca per qua transit semita digitorum 3, 6, 9, 12 &c. spectatura sint deliquium tot digitorum, quot semita characteristicus numerus 3, 6, 9, 12, monstrat. Sed in fine obtinendarum scilicet curvarum folium constituentium, Manfrediana, & nostra puncta paria faciunt, in nostris, curva Manfrediana, titulis, summa eclipsis oriente, occidente sole, indicata, adamissim correspondentibus. Parati quidem nunc eramus, qui methodum Cassinianam (*), projicienda eclipses solares, (**), a Celeberrimo MANFREDIO in supra citatis, & novissimis Ephemeridibus (†) usurpatam, distincte aperiemus, hucusque enim, quantum nobis quidem constat, nemo eandem ita, ut a tyronibus capi queat, sibi declarandam sumit: sed confiderantibus, tyrones post omnem adhibitam diligentiam, post multa schemata, post filum sermonis satis longe continuatum, nos vel non esse intellectuos, vel, si & maxime assicuros, vix tamen, & ne vix quidem talem projectionem ausuros, illi vero, qui altiores in Matheis se cere progressus itidem labores nostros inutiles fore, hanc viam ipsi detegere valentibus, hac quidem vice tali introductione supercedendum videbatur, hujusmodi præcipue cum Celeberrimus MANFREDIUS projectiones usque ad annum 1750 jam exhibuit, quibus cum his methodis collatis, sagaci calculorum perserutatori, principiis præcipue Geometriæ, Astronomiæ, Opticæ, ac Perspectivæ imbuto, non nimium erit difficile, terram eclipsatam hac methodo proprio marte projicere. Hæc duo tantum adhuc monenda censui. 1) §. VII. semitam digitorum sex, §. XII. digitorum trium adepti sumus. Horum igitur §§ numeri, numeris earundem semitarum §. XV. inventis, perfecte debent esse æquales. Sed quia

§. VII.

§. XV.

- $$\begin{array}{ll} 2) GA = GC = 16'. 38'' = 998'' \leftarrow & 1) GA = GC = 16'. 39'' = 999''. \\ 3) IA - GA = 15. 54 = 954 > & 2) IA - GA = 15. 53 = 953. \text{ inde} \\ 5) AB = CB = 52. 29 = 3149 \leftarrow & 3) AB = CB = 52. 30 = 3150. \text{ ergo} \end{array}$$

§. VIII.

- $$\begin{array}{ll} PA = 69'. 49'. 6'' & \leftarrow 6) PA = 69'. 50'. 2''. \\ PC = 52. 18. 35. & \leftarrow 8) PC = 52. 19. 29. \text{ ex hoc} \\ APT = 97. 4. 11. & \triangleright 7) APT = 97. 3. 51. \\ CPT = 104. 59. 36. & \triangleright 9) CPT = 104. 59. 54. \text{ Hæc igitur} \\ & \text{accuratissime convenient legibus sphæricis. Porro quia} \end{array}$$

(*) Voyez l' Histoire de l' Academie Royale des Sciences. Année 1699, pag. 76, comme aussi les Mémoires de l' Academie Royale des Sciences. Année 1699, pag. 276, & suiv. A Paris 1702, 4. Edition première. confer l' Hist. 1700, pag. 103, suiv. A Paris. 1703, 4. Edition première. Les Mem. 1705, pag. 196, suiv. A Paris. 1706, 4. L' Hist. 1706, pag. 115, les Mem. de la même année, pag. 255, suiv. A Paris. 1707, 4. L' Hist. 1708, pag. 105, les Mem. de la même année, pag. 410, A Paris. 1709, 4. les Mem. 1715, pag. 71, suiv. A Paris. 1718, 4.

(**) V. JOAN. BAPT. DU HAMEL Regia scientiarum Academiae Historia. Lib. I. Sect. IX. cap. 3. articulo II. it. lib. III. Sect. I. cap. 3. articulo VIII. IX.

(†) Bononiæ, 1725. Tomi II. 4.

§. XII.

§. XII.

- 4) ga = gc = $24^\circ 35' \frac{1}{2}'' = 1475\frac{1}{2}''$ ▷ 1) GA=GC= $24^\circ 35' = 1475'$
 5) Ila - ga = $7.56 \frac{1}{2}'' = 476\frac{1}{2}''$ ▷ 2) IA-GA = $7.57 = 477$. inde
 7) ab = cb = $56.28 = 3.5299232$ ▷ 3) AB=CB= $56.28 = 3.5298968$. ergo

§. XIII.

- 1) Pa = $77^\circ 41' 46''$. ▷ 6) PA = $77^\circ 41' 36''$.
 2) Pc = 60. I. 18. ▷ 8) PC = 60. I. 8. ex hoc
 3) aPT = 94. II. 16. ▷ 7) APT = 94. II. 20.
 4) cPT = 101. 8. 12. ▷ 9) CPT = 101. 8. 17. Igitur &
 hæc *ἀναλογία* legibus respondent sphæricis. 2) In charta geogra-
 phica Manfrediana, nostra *m*, curvæ summae eclipseos horizontalis fa-
 tis quidem exacte responder, quod & de eorum *m* latitudine æque val-
 let ac longitudine, immo eandem harmoniam inter latitudines ac
 longitudines primæ & ultimæ phasæ deprehendere licet, quas nos
 quidem §. VIII. constituiimus. Sed ad magnitudinem eclipseos in ha-
 rum phasium locis quid spectat, vix toleranda est differentia, quippe
 quæ unum & dimidium digiti æquare videtur. Haud tamen credi-
 derim, nos per tam grande spatiū a vero aberrasse, nec tot diversa
 loca, per tam multivarias vias acquisita, ac optime nihilominus sibi corre-
 spondentia, tam enormē errorem calculi sapere videntur. Sed ad-
 huc multo minus veri speciem refert, acutissimo M A N F R E D I O
 quiddam irrepisse, quod ejus circulos turbare valuerit. Diffe-
 rentiam igitur hanc, omni reverentia EI debita, simpliciter hic indi-
 casse sat habeamus.

§. XVII.

Transitio ad
umbram.

Nihil jam superesse videtur, nisi forsitan, si non pro singulis, ast
 tamen pro 3, 6, 9, 12 digitis, ac quinis, denis, vel quindenis minutis
 semitas in tellure determinare velimus. Sed cum fere nihil tanto la-
 bore dignum inde sperandum videtur, & tamen omnia §. I. a nobis
 promissa facillima pro methodis nostris sunt soluta, ita ut vix varians
 positio tum meridiani FPT, tum Parisiiorum Lutetiarum, tum anguli LPF
 tantam possit producere diversitatem, quam non ex comparatione
 cum nostris calculis cuilibet perspicere foret facile, tandem ad um-
 bram nos convertamus plenam. Hic vero haud quaquam opus esse
 censemus, multis describere verborum ambagibus, quid per *Tv*¹,
Tv², *To*, *Tw*, *Ts*, *Tn*, &c. volumus intelligi, cuilibet enim quartam
 consideranti figuram, hæc multo clariora omnino, quam amplis erunt
 explicationibus. Unicum hoc adjiciemus, pro octo stationibus cen-
 trorum, nos tum varias diametros maculæ umbrosæ, tum varios dia-
 metrorum angulos, tum varias distantias centri umbrae, partim a cen-
 tro disce *T*, partim a momento medianarum tenebrarum *M* inquisivisse,
 has vero octo stationes sequentes esse.

x. in

1. in contactu umbræ externo.
2. in contactu umbræ interno.
3. in momento novilunii N.
4. in momento mediarij tenebrarum M.
5. in meridiano J.
6. in latitudine centri maxima K.
7. in contactu umbræ interno.
8. in contactu umbræ externo.

Antequam tamen hæc aggredimur, tempus, & loca quærenda erunt, quibus sol centraliter tectus oritur & occidit, pro quibus sit in Fig. I.U, & u. Cumque nec pro statione 5ta J, nec 6ta K summe necessaria habeamus, & hæc antea inveniantur.

§. XVIII.

1) *Pro UM = uM.*

$$\begin{aligned} UT = uT &= 61'. 4'' = 3664''. \\ TM &= 47. 51' = 2871'. \\ + = u &= 108. 55' = 6535' = 3.8152456. \\ - = &= 13. 13' = 793' = 2.8992732. \end{aligned}$$

Pro inicio &
fine eclipses
centralis.

$$UM = uM = 37. 56' = 2276' = 3.3572594.$$

2) *Pro tempore per UM = uM.*

$$\begin{aligned} \text{Horarius lunæ a sole verus} &= 2132'' = 3.3287872 : \\ &= 3600'' = 3.5563025 : \\ UM = uM &= 37. 56' = 2276' = 3.3572594 : \\ &= 6.9135619. \end{aligned}$$

$$1^b. 4'. 4'' = \text{tempori per UM} = uM = 3844' = 3.5847747.$$

5. 31. 23 momentum mediarij tenebrarum.

4. 27. 19. initium eclipses centralis U = $66^{\circ}49'.45''$ in P.C.M.6. 35. 27. finis eclipses centralis u = $98.51.45'$ in P.C.M.

2. 8. 8. duratio eclipses toralis, centralis.

§. XIX.

1) *Pro angulo MTU = MTu.*

Laticudo &
longitude
U & u.

$$UT = uT = 61'. 4'' = 3664'' = 3.5639555:$$

$$\text{Radium} = 47. 51' = 2871' = 13.4579882:$$

$$TM = 51'. 34'. 51'' = 9.8940327.$$

$$TUM = TuM = 38. 25. 9.$$

$$MTU = MTu = 9. 24. 22.$$

$$PTM = PTu = 47. 49. 31. \text{ Compl.} = 42^{\circ}10'.29''.$$

$$+ = PTU = 29. 0. 47. \text{ Compl.} = 60. 59. 13.$$

K

2) *Pro*

2) Pro latitudine U.

Radius:

$$\text{Cos.PF} = 71^{\circ} 29' . 13'' = 9. 9769234 =$$

$$\text{Cos.PTU} = 42. 10. 29 = 9. 8269772 :$$

$$\text{Cos.PU} = 39. 32. 33 = x9. 8039006.$$

$$\text{PU} = 50. 27. 27.$$

3) Pro angulo UPT.

$$\text{S.PU} = 50. 27. 27 = 9. 8871403 :$$

Radium:

$$\text{S.PTU} = 47. 49. 31 = 19. 8698773 :$$

$$\text{S.FPU} = 73. 57. 7 = 9. 9827370.$$

$$\text{UPT} = 106. 2. 53.$$

$$\text{TPL} = 66. 49. 45.$$

$$\text{UPL} = 172. 52. 38.$$

$$\text{LPf} = 20. 30. 0.$$

$$152. 22. 38.$$

$$207. 37. 22.$$

Longitudo U.

4) Pro latitudine u.

Radius:

$$\text{Cos.PF} = 71^{\circ} 29' . 13'' = 9. 9769234 =$$

$$\text{Cos.PTu} = 60. 59. 13'' = 9. 9417644 :$$

$$\text{Cos.Pu} = 56. 1. 20 = x9. 9186878.$$

$$\text{Pu} = 33. 58. 40.$$

5) Pro angulo u.PT.

$$\text{S.Pu} = 33. 58. 40 = 9. 7473118 :$$

Radium:

$$\text{S.PTu} = 29. 0. 47 = 19. 6857497 :$$

$$\text{S.FPu} = 60. 12. 29 = 9. 9384379.$$

$$\text{uPT} = 119. 47. 31.$$

$$\text{TPL} = 98. 51. 45.$$

$$\text{uPL} = 20. 55. 46.$$

$$\text{LPf} = 20. 30. 0.$$

$$41. 25. 46.$$

Longitudo u.

§. XX.

1) Pro MJ.

$$\text{Pro statione quinta. Radius : } \text{J. Tang.PTM} = 9. 824', 22'' = 9. 2192136 =$$

$$\text{TM} = 47. 51' = 2871'' = 3. 4570882 :$$

$$\text{MJ} = 7. 56 = 476 = x2. 6772018.$$

2) Pro tempore per MJ.

$$\text{Horarius lunæ a sole verus} = 2132 = 3. 3287872 :$$

$$3600 = 3. 5563025 :$$

$$\text{MJ} = 7. 56 = 476 = 2. 6772018 :$$

$$6. 2335043.$$

$$ob. 13'. 23'' = \text{tempori per MJ} = 803 = 2. 9047171.$$

$$5. 31. 23 \text{ momentum mediariarum tenebrarum.}$$

$$5. 44. 46. \text{ centrum in meridiano J} = 86^{\circ}, 11', 30''. \text{ in P.C.M.}$$

3) Pro latere TJ.

$$\text{S.PTM} = 9. 24. 22 = 9. 2133347 :$$

$$\text{MJ} = 7. 56 = 476 = 12. 6772018 :$$

$$\text{Radius} = 48. 30 = 2910 = 3. 4638671.$$

§. XXI.

§ XXI.

Supra §. XVI. paullo post repetitionem jamjam innuimus, punctum H esse polum viae centri, & omnium chordarum ABC in tellure per a m c penumbra descriptarum. Sin igitur per H ducti intelligentur circuli maximi e.g. HU, HN, HM, Hu &c. hi omnes circulo Uu, eidemque parallelis perpendiculariter insisterent. Transibit igitur & eorum unus per polum P, ideoque PK circulus maximus transiens per polum H insisteret. viae centri, transiens vero & per polum P metietur distantiam viae centri minimam a polo. §. vero V. TM determinabatur in P. D: haec igitur si transformata in P.C.M. subtrahatur a TH = 90°, relinquit HM = HK, ab hac si auferatur PH, (§. XV. pro limite boreo. 5.) restabit HM - HP = HK - HP = 90° - HM - HP = 90° - HM + HP = 90° - HK - HP = 90° - HK + HP = TM + HP = 90° - PK = latitudini maxima centri. Quarentibus postea latus TK, non incongruum videbatur, in gratiam tyronum duplice apponere Δi TPK solutionem, in quarum una perpendicular ex K intra TP, in altera vero ex T ultra KP cadens illis duplice solutionem optime ramam coharentem demonstrat.

1) Pro TM in P.C.M. ac PK.

Parallaxis lunæ horiz. = ET = DT = TH = 61° 4' = 3664" = 3.5639555.
Radius =

$$TM = \text{in P.D.} = \frac{47.51}{51.34.51} = \frac{2871}{9.8949327} = 13.4579882:$$

$$TM = \text{in P.C.M.} = \frac{51.34.51}{90.0.0} = 9.8949327. \quad \text{§. XIX. 1.}$$

$$TH = \frac{90}{38.25.9} = 20.41.26.$$

$$HP (\text{§. XV. pro limite boreo. 5.}) = \frac{38.25.9}{20.41.26}.$$

$$HM - HP = HK - HP = PK = 17.43.43. \text{ ergo} \\ \text{latitudo centri maxima} = \text{Compl. PK} = 72.16.17.$$

2 a) Pro latere TK.

Radius:

$$\text{Cos. TPK} = 62°.26'.52" = 9.9477226 =$$

$$\text{Tang. TP} = 71.29.13 = 10.4751514:$$

$$\text{Tang. X} = 69.18.34 = 10.4228740:$$

$$KP = 17.43.43:$$

$$X-KP = 51.34.51:$$

$$\text{Compl.} = 38.25.9:$$

§. XV.
Pro limite
boreo,
5, & 6.

2 b) Pro latere TK.

Radius:

$$\text{Cos. TPK} = 62°.26'.52" = 9.9477226 =$$

$$\text{Tang. KP} = 17.43.43 = 9.5047304:$$

$$\text{Tang. X} = 15.49.29 = 19.4524530:$$

$$TP = 71.29.13:$$

$$TP-X = 55.39.44:$$

$$\text{Compl.} = 34.20.16:$$

Cos.

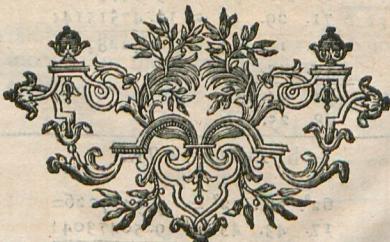
K 2

| | | | |
|----------|--------------------------------------|----------|-------------------------------------|
| Cos. X | $= 20^\circ 41'.26'' = 9.5481689 :$ | Cos. X | $= 74^\circ 10'.31'' = 9.9832204 :$ |
| Cos.TP | $= 18^\circ 39'.47'' = 9.59177299 :$ | Cos.KP | $= 72^\circ 16'.17'' = 9.9788693 :$ |
| Cos.X-KP | $= 38^\circ 25'.09'' = 9.79337824 :$ | Cos.TP-X | $= 34^\circ 20'.16'' = 9.7513335 :$ |
| Cos.TK | $= 33^\circ 56'.54'' = 9.7469813 :$ | Cos.TK | $= 33^\circ 56'.54'' = 9.7302028 :$ |
| TK | $= 56^\circ 3.6.11 :$ | TK | $= 56^\circ 3.6.11 :$ |

3) *Pro TK in P.D.*
 Radius: MT
 Parallaxin lunæ horiz. $= 61'.4'' = 3664'' = 3.5639555$
 TK = in P.C.M. $= 56^\circ 3.6.11 = 9.9188381$
 TK = in P.D. $= 50.39 = 3039 = 3.4827936$

4) *Pro MK.*
 TM $= 47'.15'' = .2871''$
 TK $= 50.39 = 3039$
 $\rightarrow = 98.30 = 5910 = 3.7715875$
 $\rightarrow = 2.48 = 168 = 2.2253093$
 5.9908968
 MK $= 16.36 = 996 = 2.9984484$

5) *Pro tempore per MK.*
 Horarius lunæ a sole verus $= 2132'' = 3.3287872$
 $\rightarrow = 3600 = 3.5563025$
 MK $= 16.36 = 996 = 2.9984484$
 6.5547509
 $0.28'.3'' = \text{tempori per MK} = 1683 = 3.2259637$
 $5.31.23$ momentum mediarum tenebrarum.
 $5.59.26.$ centrum in latitudine maxima K $= 89^\circ 51'.30''$ in P.C.M.



§. XXII.

Sumendo nunc figuram quartam erit.

| $TV^1 = TV^3$ | $TV^2 = TV^7$ | TV^3 | TV^4 | Pro TV^* in P. D. |
|------------------------|-------------------------------|-------------------------------|-------------------------------|------------------------|
| $Ts^1 = Ts^8 = 3664''$ | $Tn^2 = Tn^7 = 3664''$ | vide §. IV. No. II. a. | vide §. V. & §. XXI. 1. | |
| $sV = +46.$ | $nV = -46.$ | $TV^3 = 2883''$ | $TV^4 = 2871''$ | |
| $TV^1 = TV^8 = 3710$ | $TV^2 = TV^7 = 3618$ | | | |
| Parall. lunæ | 3. 5639555: | 3. 5639555: | 3. 5639555: | in P. C. M. |
| Radium | | | | |
| TV in P. D. = | 13. 5584686: | 13. 4598446: | 13. 4579882: | |
| TV in P. C. M. = | 9. 9945131. 80°. 54'. 41". | 9. 8958891. 51°. 53'. 30". | 9. 8940327. 51°. 34'. 51". | |
| Compl. TV = | 9. 5. 19. | 38. 6. 30. | 38. 25. 9. | |
| | TV^2 | TV^3 | | TV in P. D. |
| | vide §. XX. 3. | vide §. XXI. 3. | | |
| | $TV^5 = 2910''$ | $TV^6 = 3039''$ | | |
| Parall. lunæ | 3. 5639555: | 3. 5639555: | | in P. C. M. |
| Radium | | | | |
| TV in P. D. = | 13. 4638671: | 13. 4827936: | | |
| TV in P. C. M. = | 9. 8999116. 52°. 34'. 36". | 9. 9188381. 56°. 3'. 6". | | |
| Compl. TV = | 37. 25. 24. | 33. 56. 54. | | |

§. XXIII.

| $Ts^1 = Ts^3$ | $Ts^2 = Ts^7$ | Ts^3 | Ts^4 | Pro Ts^* in P. D. |
|------------------------|-----------------------------|-----------------------------|-------------------------------|------------------------|
| $Ts^1 = Ts^8 = 3664''$ | $TV^2 = TV^7 = 3618''$ | $TV^3 = 2883''$ | $TV^4 = 2871''$ | |
| $sV = -46.$ | $V = -46.$ | $sV = -46.$ | $sV = -46.$ | |
| $Ts^2 = Ts^7 = 3572$ | $Ts^3 = 2837$ | $Ts^4 = 2825$ | | |
| Parall. lunæ | 3. 5639555: | 3. 5639555: | 3. 5639555: | in P. C. M. |
| Radium | | | | |
| Ts in P. D. = | 13. 5529115: | 13. 4528593: | 13. 4510185: | |
| Ts in P. C. M. = | 9. 9889560. 90°. 0'. 0". | 9. 8889038. 77°. 8'. 0". | 9. 8870630. 50°. 44'. 27". | |
| Compl. Ts = | 12. 52. 0. | 39. 15. 33. | 39. 33. 17. | |

Parall.

ECLIPSIS TERRÆ

| Ts in D. P. | Ts ² | Ts ⁶ |
|----------------|------------------------------|--------------------------|
| | TV ² = 2910". | TV ⁶ = 3039". |
| | sV = -46. | sV = -46. |
| | Ts ⁵ = 2864. | Ts ⁶ = 2993. |
| in P. C. M. | Parall. lunæ = 3. 5639555: | 3. 5639555: |
| | Radium = | |
| | Ts in P. D. = 13. 4569730: | 13. 4761067: |
| | Ts in P. C. M. = 9. 8930175. | 9. 9121512: |
| | 51°. 24'. 45". | 54°. 46'. 21". |
| | Compl. Ts = 38. 35. 15. | 35. 13. 39. |

§. XXIV.

| Pro Ta in P. D. | Tn ² = Tn ⁸ . | Tn ² = Tn ⁷ . | Tn ³ . | Tn ⁴ . |
|--------------------|-------------------------------------------|--------------------------------------------|--------------------------|--------------------------|
| | TV = TV ² = 3710". | TV ² = TV ⁷ = 3618". | TV ³ = 2883". | TV ⁴ = 2871". |
| | nV = +46. | nV = +46. | nV = +46. | nV = +46. |
| | Tn ² = Tn ⁸ = 3756. | Tn ² = Tn ⁷ = 3664. | Tn ³ = 2929. | Tn ⁴ = 2917. |
| in P. C. M. | Parall. lunæ = | | 3. 5639555: | 3. 5639555: |
| | Radium = | | | |
| | Tn in P. D. = | | 13. 4667194: | 13. 4649364: |
| | Tn in P. C. M. = | 90°. 0'. 0". | 9. 9027639. | 9. 9009809. |
| | Compl. Tn = | | 53°. 4'. 22". | 52°. 45'. 42". |
| | | | 36. 55. 38. | 37. 14. 18. |

| Tn in P. D. | Tn ⁵ . | Tn ⁶ . |
|----------------|------------------------------|--------------------------|
| | TV = 2910". | TV ⁶ = 3039". |
| | nV = -46. | nV = +46. |
| | Tn ⁵ = 2956. | Tn ⁶ = 3085. |
| in P. C. M. | Parall. lunæ = 3. 5639555: | 3. 5639555: |
| | Radium = | |
| | Tn in P. D. = 13. 4707044: | 13. 4892552: |
| | Tn in P. C. M. = 9. 9067489. | 9. 9252997. |
| | 53°. 46'. 53". | 57°. 20'. 58". |
| | Compl. Tn = 36. 13. 7. | 32. 39. 2. |

§. XXV.

Si jam Ts ex TV, vel TV ex Tn aufertur, residua erunt Vs & Vn, semidiametri inferior & superior in P. D. vel C. M. Has autem accuratius nosse cupientes, in leucas marinas, a hexapedas convertamus sequentem in modum, Gradus semidiametrorum multiplicentur per 20, quot nempe leucas = 57°61 toises gallicis unus gradus in superficie terræ continet(*), ac

(*) Voyez les Mem. de L'A. R. d. S. 1718, pag. 245. suiv. A Paris, 1719. 4. principalement la suite de la même année, pag. 247. A Paris, 1720. 4. confer la mesure de la terre par Mr. Picard, Article XI, pag. 46, qui se trouve dans le quatrième tome des ouvrages adoptez par l'Academie Royale des sciences, A la Haye, 1731. Tomes V. 4. confer l'Hist, 1721 pag. 72. A Paris, 1722. 4.

PRO

pro adhærentibus minutis & secundis fiat: Ut $3600''$, ad 57061 toises, ita scrupula gradibus adhærentia, ad numerum des toises competentes. Productum divisum per $2853\frac{1}{2}$, tamen toises continet una leuca maris, ac additum leucis graduum supra inventis, monstrabit leucas marinas cum hexapedis adhærentibus, æquivalentes gradibus & scrupulis propositis.

| | Vs ² = Vs ⁷ . | Vs ³ . | Vs ⁴ . |
|-------------------|-------------------------------------|-------------------------|-------------------------|
| TV. §. XXII. | $80^\circ. 54'. 41''$. | $51^\circ. 53'. 30''$. | $51^\circ. 34'. 51''$. |
| Ts. §. XXIII. | 77. 8. 0. | 50. 44. 27. | 50. 26. 43. |
| Vs - - - | 3. 46. 41. | 1. 9. 3. | 1. 8. 8. |
| Scrup. adhærentia | 2801. | 543. | 488. |
| $3600''$ - - - | 3. 5563025: | 3. 5563025: | 3. 5563025: |
| 57061 Toises | 4. 7563394= | 4. 7563394= | 4. 7563394= |
| Scrup. adhærentia | 3. 4473131: | 2. 7347998: | 2. 6884198: |
| Toif. competentes | 8. 2036525. | 7. 4911392. | 7. 4447592. |
| Productum | 4. 6473500= | 3. 9348367= | 3. 8884567= |
| Divisor - - - | 44397 Toises. | 8607 Toises. | 7735 Toises. |
| | 2853. Leuca 60. | 2853. Leuca 20. | 2853. Leuca 20. |
| | 15867. | 8559. | 5706. |
| | 2853. | 75. | 2. |
| | 14265. | 48. | |
| | Leuca. | Toises. | Leuca. |
| | 1602. | 23. | 22. |
| | Toises. | Leuca. | Toises. |

in P. C. M.

in leuca
marinis.

| | Vs ⁵ . | Vs ⁶ . |
|-------------------|-------------------------|-----------------------|
| TV. §. XXII. | $52^\circ. 34'. 36''$. | $56^\circ. 3'. 6''$. |
| Ts. §. XXIII. | 51. 24. 45. | 54. 46. 21. |
| Vs - - - | 1. 9. 51. | 1. 16. 45. |
| Scrup. adhærentia | 591. | 1005. |
| $3600''$ - - - | 3. 5563025: | 3. 5563025: |
| 57061 Toises | 4. 7563394= | 4. 7563394= |
| Scrup. adhærentia | 2. 7715875: | 3. 0021661: |
| Toif. competentes | 7. 5279269. | 7. 7585055. |
| Productum | 3. 9716244= | 4. 2022030= |
| Divisor - - - | 9368 Toises. | 15930 Toises. |
| | 2853. Leuca 20. | 2853. Leuca 20. |
| | 8559. | 3. 14265. |
| | 809. | 23. |
| | Toises. | Leuca. |
| | | 1665. |
| | | 25. |
| | | Leuca. |

Vs
in P. C. M.in leuca
marinis.

§. XXVI.

Pro Vn
in
P.C.M.

M.O.Tat

in leucis
marinis.

| | Vn ² = Vn ⁷ . | Vn ³ . | Vn ⁴ . |
|----------------------------|-------------------------------------|-------------------|-------------------|
| TV. §. XXII. = | 80° 54'. 41". | 51° 53'. 30". | 51° 34'. 51". |
| Tn. §. XXIV. = | 90. 0. 0. | 53. 4. 22. | 52. 45. 42. |
| Vn. - - - = | 9. 5. 19. | 1. 10. 52. | 1. 10. 51. |
| Scrup. adhaerentia = | 319. | 652. | 651. |
| 3600" - - = | 3. 5563025: | 3. 5563025: | 3. 5563025: |
| 57061 Toises = | 4. 7563394= | 4. 7563394= | 4. 7563394= |
| Scrup. adhaerentia = | 2. 5037907: | 2. 8142476: | 2. 8135810: |
| Toif. competentes = | 7. 2601301. | 7. 5705870. | 7. 5699204. |
| Productum = 5056 Toises. | 3. 7038276= | 4. 0142845= | 4. 0136179= |
| Divisor = 2853. Leucæ 180. | 10334 Toises. | 10319 Toises. | 10319 Toises. |
| 2203. | 1. 8559. | 3. 8559. | 3. |
| Toif. | 181. 1775. | 23. 1760. | 23. |
| Leucæ | Toises | Leucæ | Toises |
| | | | Leucæ. |

Vn
in P. C. M.in leucis
marinis.

| | Vn ² . | Vn ⁶ . |
|---------------------------|-------------------|-------------------|
| TV. §. XXII. = | 52° 34'. 36". | 56°. 3'. 6". |
| Tn. §. XXIV. = | 53. 46. 53. | 57. 20. 58. |
| Vn. - - - = | 1. 12. 17. | 1. 17. 52. |
| Scrup. adhaerentia = | 737. | 1072. |
| 3600" - - = | 3. 5563025: | 3. 5563025: |
| 57061 Toises = | 4. 7563394= | 4. 7563394= |
| Scrup. adhaerentia = | 2. 8674675: | 3. 0301948: |
| Toif. competentes = | 7. 6238069. | 7. 7865342. |
| Productum = 11682 Toises. | 4. 0675044= | 4. 2302317= |
| Divisor = 2853. Leucæ 20. | 16992 Toises. | 2853 Leucæ 20. |
| 11412. | 4. 14265 | 5. |
| 270. | 24. 2727. | 25. |
| Toifes | Leucæ. | Toifes |
| | | Leucæ. |



§. XXVII.

§. XXVII.

| | $Vs^2 + Vn^2 = Vs^7 + Vn^7.$ | $Vs^3 + Vn^3.$ | $Vs^4 + Vn^4.$ | Pro $Vs + Vn$ in P. C. M. |
|-----------------------|------------------------------------------|-----------------------------------------|--------------------|---------------------------------|
| Vs. §. XXV. = | 3°. 46'. 41". | 1°. 9'. 3". | 1°. 8'. 8". | |
| Vn. §. XXVI. = | 9. 5. 19. | 1. 10. 52. | 1. 10. 51. | |
| $Vs \rightarrow Vn$ = | 12. 52. 0. | 2. 19. 55. | 2. 18. 59. | |
| Vs. §. XXV. = | 75 L. 1602 T. | 23 L. 48 T. | 22 L. 2029 T. | |
| Vn. §. XXVI. = | 181. 2203. | 23. 1775. | 23. 1760. | |
| $Vs \rightarrow Vn$ = | 256. 3805. 2853. 257. L 952 T. | 46 L 1823 T. 46 L 936 T. | 45. 3789. 2853. | |
| | $Vs^5 + Vn^5.$ | $Vs^6 + Vn^6.$ | | in leucis marinis, |
| Vs. §. XXV. = | 1°. 9'. 51". | 1°. 16'. 45". | | |
| Vn. §. XXVI. = | 1. 12. 17. | 1. 17. 52. | | |
| $Vs \rightarrow Vn$ = | 2. 22. 8. | 2. 34. 37. | | |
| Vs. §. XXV. = | 23 L. 809 T. | 25 L. 1665 T. | | |
| Vn. §. XXVI. = | 24. 270. | 25. 2727. | | |
| $Vs \rightarrow Vn$ = | 47 L. 1079 T. | 50. 4392. 2853. 51 L. 1539 T. | | |

§. XXVIII.

Vel brevius & una operatione.

| | $Sn^2 = Sn^7.$ | $Sn^3.$ | $Sn^4.$ | Pro sn in P. C. M. |
|-------------------|-----------------|-----------------|----------------|----------------------------|
| Ts. §. XXIII. = | 77°. 8'. 0". | 50°. 44'. 27". | 50°. 26'. 43". | |
| Tn. §. XXIV. = | 90. 0. 0. | 53. 4. 22. | 52. 45. 42. | |
| sn. §. XXVII. = | 12. 52. 0. | 2. 19. 55. | 2. 18. 59. | |
| Scrup. adhærentia | 3120. | 1195. | 1139. | |
| 3600" | 3. 5563025: | 3. 5563025: | 3. 5563025: | |
| 57061 Toises. | 4. 7563394= | 4. 7563394= | 4. 7563394= | |
| Scrup. adhærentia | 3. 4941540 : | 3. 0773679: | 3. 0565237: | |
| Toif. competentes | 8. 2504940. | 7. 8337073. | 7. 8128631. | |
| Productum | 4. 6941915= | 4. 2774048= | 4. 2565606= | |
| Divisor | 49453 Toises. | 18941 Toises. | 18054 Toises. | |
| =2853. Leucæ 240. | 2853. Leucæ 40. | 2853. Leucæ 40. | | |
| 20923. | 17. 17118. | 6. 17118. | 6. | |
| 2853. | 257. 1823. | 46. 936. | 46. | |
| 19971. | Leucæ. Toises. | Leucæ. Toises. | Leucæ. | |
| 952. Toises. | | | | |

L

Ts. §. XXIII.

| in P. C. M. | sn ⁴ | sn ⁵ | sn ⁶ |
|-----------------------|---------------------|-----------------|-----------------|
| | Ts. §. XXIII. = | 51° 24' 45" | 54° 46' 21" |
| | Tn. §. XXIV. = | 53. 46. 53. | 57. 20. 58. |
| | sn. §. XXVII. = | 2. 22. 8. | 2. 34. 37. |
| | Scrup. adhærentia = | 1328. | 2077. |
| in leucis marinis. | 3600" = | 3. 5563025. | 3. 5563025. |
| | 57061 Toifses = | 4. 7563394 = | 4. 7563394 = |
| | Scrup. adhærentia = | 3. 1231981. | 3. 3174365: |
| | | 7. 8795375. | 8. 0737759. |
| | Toif. competentes = | 4. 3232350 = | 4. 5174734 = |
| | Productum = | 21049 Toifses. | 32921 Toifses. |
| | Divisor = | 2853. Leucæ 40. | 2853. Leucæ 40. |
| | 19971. | 7. | 11. |
| | | 4391. | |
| | 1078. Toifses. | 47. 2853. | 51. |
| | | 1538. Toifses. | Leucæ. |

Vides tamen hanc methodum pro roborando diametro sufficere quidem, sed femidiametrum inferiorem & superiorem, tanquam diversos, te inde haud nancisci posse.

§. XXIX.

| Pro MV. in P. D. | MV ¹ = MV ² . | MV ² = MV ³ . | MV ³ . |
|---------------------|-------------------------------------|-------------------------------------|-------------------------------------------------|
| TM §. V. = | 47'.51" = 2871". | 47'.51" = 2871". | 47'.50" $\frac{7}{10}$ = 2870" $\frac{7}{10}$. |
| TV §. XXII. = | 61. 50 = 3710. | 60. 18 = 3618. | 48. 3 = 2883. |
| + | 109. 41 = 6581. | 108. 9 = 6489. | 95. 53 $\frac{7}{10}$ = 5753 $\frac{7}{10}$. |
| - | 13. 59 = 839. | 12. 27 = 747. | 12 $\frac{1}{10}$ = 12 $\frac{3}{5}$. |
| + | 3. 8182919. | 3. 8121778. | 3. 7599472. |
| - | 2. 9237620. | 2. 8733206. | 1. 0896098. |
| | 6. 7420539. | 6. 6854984. | 4. 8495570. |
| | 3. 3710269. | 3. 3427492. | 2. 4247785. |
| MV - - - = | 39. 10 = 2350. | 36. 42 = 2202. | 4. 26 = 266. |
| | | | vide §. V. |

TM §. V.

| | MV ^s . | MV ^s . |
|-------------|-------------------------------------------------|----------------------------------------------|
| TM §. V. | = $47' 50'' \frac{7}{10} = 2870'' \frac{7}{10}$ | $47' 51'' = 2871''$ |
| TV §. XXII. | = $48' 29'' \frac{8}{10} = 2909'' \frac{8}{10}$ | $50' 39'' = 3039''$ |
| + = | $96. 20'' \frac{1}{10} = 5780'' \frac{1}{10}$ | $98. 30'' = 5910''$ |
| - = | $39'' \frac{1}{10} = 39'' \frac{1}{10}$ | $2. 48'' = 168''$ |
| + = | $3. 7619654$ | $3. 7715875$ |
| - = | $1. 5921641$ | $2. 2253093$ |
| | $5. 3541295$ | $5. 9968968$ |
| | $2. 6770647$ | $2. 9984484$ |
| MV - - - | = $7. 55'' \frac{4}{10} = 475'' \frac{4}{10}$ | $16. 36'' \frac{4}{10} = 996'' \frac{4}{10}$ |
| | vide §. XX. 3. 1. | vide §. XXI. 3. 4. |

MV
in P. D.

§. XXX.

| | MV ^t = MV ^s . | MV ^z = MV ⁷ . | Pro temporibus per MV. |
|---------------------------|--------------------------------------|-------------------------------------|------------------------|
| Hor. lunæ a sole 2132'' = | 3. 3287872 : | 3. 3287872 : | |
| 3600 = | 3. 5563025 = | 3. 5563025 = | |
| MV §. XXIX. = | 3. 3710269 : | 3. 3427492 : | |
| | 6. 9273294. | 6. 8990517. | |
| | 3. 5985422. | 3. 5702645. | |
| Tempus per MV | = 1 ^b . 6'. 8'' = 3968''. | 1 ^b . 1'. 58'' = 3718''. | |
| Mom. med. tenebr. | = 5. 31. 23. | 5. 31. 23. | |
| | 4. 25. 15. centrum in 1. | 4. 29. 25. centrum in 2. | |
| | 66. 18. 45 in P. C. M. | 67. 21. 15 in P. C. M. | |
| | 6. 37. 31. centrum in 8. | 6. 33. 21. centrum in 7. | |
| | 99. 22. 45 in P. C. M. | 98. 20. 15 in P. C. M. | |

| | MV ^t . | MV ^s . | MV ^z . |
|---------------------------|--------------------------------------|-------------------------------------|-------------------------------------|
| Hor. lunæ a sole 2132'' = | 3. 3287872 : | 3. 3287872 : | 3. 3287872 : |
| 3600 = | 3. 5563025 = | 3. 5563025 = | 3. 5563025 = |
| MV §. XXIX. = | 2. 4247785 : | 2. 6770647 : | 2. 9984484 : |
| | 5. 9810810. | 6. 2333672. | 6. 5547509. |
| | 2. 6522938. | 2. 9045800. | 3. 2259637. |
| Tempus per MV | = 0 ^b . 7'. 30'' = 450''. | 0 ^b . 13'. 23'' = 803''. | 0 ^b . 28'. 3'' = 1683''. |
| Mom. med. tenebr. | = 5. 31. 23. | 5. 31. 23. | 5. 31. 23. |
| | 5. 23. 53. | 5. 44. 46. | 5. 59. 26. |
| | 80. 58. 15 in P.C.M. | 86. 11. 30 in P.C.M. | 89. 51. 30 in P.C.M. |
| | centrum in 3. | centrum in 5. | centrum in 6. |
| | vide §. III. | vide §. XX. 2. | vide §. XXI. 5. |

§. XXXI.

Pro MV
in p.c.m.

Jam ex MV ad imitationem §§. XXIII. & XXIV. Mo & Mw facilia sunt inventu. Si postea per subductionem eruras Vo & Vw in partibus circuli maximi determinare cupis, stat in aprico, UMu esse circumulum non maximum, non enim per centrum transit, primo igitur MV, Mo, Mw §§. seqq. eruantur in partibus circuli minoris (h. e. p. c. m.) Sunt vero circuli in ratione radiorum, (*) fiat igitur postea, ut DT=ET, ad UM=uM, sic p. c. m. UM=uM, ad respondentes P. C. M. DT=ET. Sit igitur

(*)APPUS Alexandrinus. Lib. V. Theor. 10. Prop. II. Bononiæ. 1660. fol.

| | MV ² = MV ⁷ . | MV ³ . §. V. | MV ³ . §. XX. 2. | MV ⁶ . §. XXI. 5. |
|------------------|-------------------------------------|------------------------------|------------------------------|-------------------------------|
| UM = uM = | 3. 3572594: | 3. 3572594: | 3. 3572594: | 3. 3572594: |
| Radium = | | | | |
| MV in P. D. = | 13. 3427492: | 12. 4247785: | 12. 6770647: | 12. 9984484: |
| MV in p. c. m. = | 9. 9854898. 75°. 16'. 17". | 9. 0675191. 6°. 42'. 31". | 9. 3198053. 12°. 3'. 15". | 9. 6411890. 25°. 57'. 20". |

§. XXXII.

Pro Mo
in P. D.

| Mo ¹ & Mo ² . | Mo ² & Mo ⁷ . | Mo ³ . |
|-----------------------------------------|-----------------------------------------|-------------------------|
| MV ¹ =MV ⁸ =2350" | MV ² =MV ⁷ =2202" | MV ³ = 266". |
| oV = -+46. | oV = -+46. | oV ≈ -46. |
| Mo ¹ = * 2304. | Mo ² = * 2156. | Mo ³ = 220. |
| Mo ⁸ = ** 2396. | Mo ⁷ = ** 2248. | |

| Mo ⁴ . | Mo ⁵ . | Mo ⁶ . |
|-----------------------|---------------------------|----------------------------|
| MV ⁴ = o". | MV ⁵ = 475" 4. | MV ⁶ = 996" 15. |
| oV = -+46. | oV = -+46. | oV = -46. |
| Mo ⁴ = 46. | Mo ⁵ = 521 4. | Mo ⁶ = 1042 4. |
| † | | |

| in p. c. m. | Mo ² . | Mo ³ . | Mo ⁴ . |
|------------------|---------------------------------|------------------------------|-------------------------------|
| UM = uM = | 3. 3572594: | 3. 3572594: | 3. 3572594 : |
| Radium = | | | |
| Mo in P. D. = | 13. 3336488: | 12. 3424227: | 11. 6627578: |
| Mo in p. c. m. = | 9. 9763894: * 71°. 16'. 40". | 8. 9851633. 5°. 32'. 45". | 8. 3054984. 1°. 9'. 28". † |

| | Mo ⁵ . | Mo ⁶ . | Mo ⁷ . |
|------------------|-------------------------------|-----------------------------|----------------------------------|
| UM = uM = | 3. 3572594: | 3. 3572594: | 3. 3572594: |
| Radium = | | | |
| Mo in P. D. = | 12. 7171705: | 13. 0180344: | 13. 3517963: |
| Mo in p. c. m. = | 9. 3599111. 13°. 14'. 26". | 9. 660775. 27°. 15'. 7". | 9. 9945369. ** 80°. 55'. 52". |

§. XXXIII.

§. XXXIII.

| Mw ¹ = & Mw ³ . | Mw ² = & Mw ⁷ . | Mw ³ . |
|---------------------------------------|---------------------------------------|------------------------|
| $MV^1 = MV^3 = 2350''$ | $MV^2 = MV^7 = 2202''$ | $MV^3 = 266''$ |
| wV = + 46. | wV = - 46. | wV = + 46. |
| Mw ¹ = ** 2396. | Mw ² = ** 2248. | Mw ³ = 312. |
| Mw ⁸ = * 2304. | Mw ⁷ = * 2156. | |

Pro Mw
in P. D.

| Mw ⁴ . | Mw ⁵ . | Mw ⁶ . |
|----------------------------|----------------------------------------|----------------------------------------|
| $MV^4 = 0''$ | $MV^5 = 475'' \frac{4}{15}$ | $MV^6 = 996'' \frac{4}{15}$ |
| wV = + 46. | wV = - 46. | wV = - 46. |
| Mw ⁴ = 46. † | Mw ⁵ = 429 $\frac{4}{15}$. | Mw ⁶ = 950 $\frac{4}{15}$. |

| | Mw ² . | Mw ³ . | Mw ⁴ . |
|------------------|---------------------------------|-----------------------------|----------------------------|
| UM = uM = | 3. 3572594: | 3. 3572594: | 3. 3572594: |
| Radium = | | | |
| Mw in P. D. = | 13. 3517963: | 12. 4941546: | 11. 6627578: |
| Mw in p. c. m. = | 9. 9945369: ** 80° 55' .52". | 9. 1368952: 7° 52'. 39". | 8. 3054984: 1° 9'. 28". |

in p. c. m.

| | Mw ⁵ . | Mw ⁶ . | Mw ⁷ . |
|------------------|------------------------------|------------------------------|--------------------------------|
| UM = uM = | 3. 3572594: | 3. 3572594: | 3. 3572594: |
| Radium = | | | |
| Mw in P. D. = | 12. 6328617: | 12. 9779060: | 13. 3336488: |
| Mw in p. c. m. = | 9. 2756023: 10° 52'. 21". | 9. 6206466: 24° 40'. 35". | 9. 9763894: * 71° 16'. 40". |



§. XXXIV.

| Pro Vo | | Vo ² . | Vo ³ . | Vo ⁴ . |
|-----------------------|---------------------|-------------------------|--------------------------|--------------------------|
| in p. c. m. | MV. §. XXXI. | = 75°. 16'. 17". | = 6°. 42'. 31". | = 0°. 0'. 0". |
| | Mo. §. XXXII. | = 71. 16. 40. | = 5. 32. 45. | = 1. 9. 28. |
| | Vo | = 3. 59. 37. 14377. | = 1. 9. 46. 4186. | = 1. 9. 28. 4168. |
| in P. C. M. | DT = ET | = 3. 5639555: | = 3. 5639555: | = 3. 5639555: |
| | UM = uM | = 3. 3572594 = | = 3. 3572594 = | = 3. 3572594 = |
| | Vo in p. c. m. | = 4. 1576683 : | = 3. 6217992 : | = 3. 6199277: |
| in leucis marinis. | | 7. 5149277. | 0. 9790580. | 6. 9771871. |
| | Vo in P. C. M. | = 3. 9500722 = 8932" | = 3. 4151031 = 2001" | = 3. 4132316 = 2590" |
| | Scrupula adhærentia | = 1732. | = 0°. 43'. 21". 2601. | = 0°. 43'. 10". 2590. |
| | 3600" | = 3. 5563025 : | = 3. 5563025 : | = 3. 5563025 : |
| | 57061 Toises | = 4. 7563394 = | = 4. 7563394 = | = 4. 7563394 = |
| | Scrupula adhærentia | = 3. 2385479: | = 3. 4151031 : | = 3. 4132316: |
| | | 7. 9948873. | 8. 17° 4425. | 8. 1695710. |
| | Toises competentes | = 4. 4385848 = | = 4. 6151400 = | = 4. 6132685 = |
| | Productum | = 27453 Toises. | = 41223 Toises. | = 41046 Toises. |
| | Divisor | = 2853. Leucæ 40. | = 2853. Leucæ 14. | = 2853. Leucæ 14. |
| | | 23677. 9. | 12603. | 12516. |
| | | 1776. 49. | 2833. | 2853. |
| | Toises. | Leucæ. | 11412. | 11412. |
| | | | 1281. | 1104. |
| | | * | Toises. | Toises. |

| Pro Vo | | Vo ² . | Vo ³ . | Vo ⁴ . |
|-------------|---------------------|--------------------------|--------------------------|--------------------------|
| in p. c. m. | MV. §. XXXI. | = 12°. 3'. 15". | = 25°. 57'. 29". | = 75°. 16'. 17". |
| | Mo. §. XXXII. | = 13. 14. 26. | = 27. 15. 7. | = 80. 55. 52. |
| | Vo | = 1. 11. 11. 4271. | = 1. 17. 38. 4658. | = 5. 39. 35. 20375. |
| in P. C. M. | DT = ET | = 3. 5639555: | = 3. 5639555: | = 3. 5639555: |
| | UM = uM | = 3. 3572594 = | = 3. 3572594 = | = 3. 3572594 = |
| | Vo in p. c. m. | = 3. 6305296 : | = 3. 6681995 : | = 4. 3090976: |
| | | 6. 9877890. | 7. 0254589. | 7. 06° 3570: |
| | Vo in P. C. M. | = 3. 4238335 = 2654" | = 3. 4015031 = 2894" | = 4. 1024015 = 12660" |
| | Scrupula adhærentia | = 0°. 44'. 14'. 2654. | = 0°. 48'. 14'. 2804. | = 3°. 31'. 0". 1860. |
| | 3600" | = 3. 5563025 : | = 3. 5563025 : | = 3. 5563025 : |
| | 57061 Toises | = 4. 7563394 = | = 4. 7563394 = | = 4. 7563394 = |
| | Scrupula adhærentia | = 3. 4238335: | = 3. 4015034: | = 3. 2605129: |
| | | 8. 1801729. | 8. 2178428. | 8. 0238523. |
| | Toises competentes | = 4. 6238704 = | = 4. 6615403 = | = 4. 4605408 = |
| | Productum | = 42060 Toises. | = 45872 Toises. | = 29481 Toises. |
| | Divisor | = 2853. Leucæ 14. | = 2853. Leucæ 16. | = 2853. Leucæ 60. |
| | | 13530. | 17342. | 951. |
| | | 2853. | 2853. | Toises. |
| | | 11412. | 17118. | 10. |
| | | 2118. | 224. | Leucæ. |
| | Toises. | | Toises. | ** |

§. XXXV.

§. XXXV.

| | Vw ² . | Vw ³ . | Vw ⁴ . |
|---------------------|-------------------|-------------------|-------------------|
| MV. §. XXXI. | 75° 16' 17" | 6° 42' 31" | 0° 0' 0" |
| Mw. §. XXXIII. | 80° 55' 52" | 7° 52' 39" | 1° 9' 28" |
| Vw | 5° 39' 35" | 1° 10' 8" | 1° 9' 28" |
| | 20375. | 4208. | 4168. |
| DT = ET | 3. 5039555: | 3. 5039555: | 3. 5039555: |
| UM = uM | 3. 3572594= | 3. 3572594= | 3. 3572594= |
| Vw in p. c. m. | 4. 3009076: | 3. 6240757: | 3. 6199277: |
| | 7. 6663570. | 6. 9813351. | 6. 9771871. |
| Vw in P. C. M. | 4. 1024015= | 3. 4173796= | 3. 4132316= |
| | 12660" | 2014" | 2590" |
| Scrupula adhærentia | 3° 31' 0" | 0° 43' 34" | 0° 43' 10" |
| | 1860. | 2614. | 2590. |
| 3600" | 3. 5563025: | 3. 5563025: | 3. 5563025: |
| 57061 Toises | 4. 7563394= | 4. 7563394= | 4. 7563394= |
| Scrupula adhærentia | 3. 2095120: | 3. 4173796: | 3. 4132316: |
| | 8. 0258523. | 8. 1737190. | 8. 1695710. |
| Toises competentes | 4. 4095498= | 4. 6174165= | 4. 6132685= |
| Productum | 29481 Toises. | 41440 Toises. | 41046 Toises. |
| Divisor | 2852. | Leucæ 60. | Leucæ 14. |
| | 951. | 10. | 12516. |
| Toises. | 70. | 2853. | 2853. |
| | | 11412. | 11412. |
| | | 1498. | 1104. |
| | | Toises. | Toises. |

Pro Vw
in p. c. m.

in P. C. M.

in leucis
marinis.

| | Vw ⁵ . | Vw ⁶ . | Vw ⁷ . |
|---------------------|-------------------|-------------------|-------------------|
| MV. §. XXXI. | 12° 3' 15" | 25° 57' 29" | 75° 16' 17" |
| Mw. §. XXXIII. | 10° 52' 21" | 24° 40' 35" | 71° 16' 40" |
| Vw | 1° 10' 54" | 1° 10' 54" | 3° 59' 37" |
| | 4254. | 4614. | 14377. |
| DT = ET | 3. 5039555: | 3. 5039555: | 3. 5039555: |
| UM = uM | 3. 3572594= | 3. 3572594= | 3. 3572594= |
| Vw in p. c. m. | 3. 0287975: | 3. 6640776: | 4. 1576683: |
| | 6. 9860569. | 7. 0213370. | 7. 5142977. |
| Vw in P. C. M. | 3. 4221014= | 3. 4573815= | 3. 9509722= |
| | 2642" | 2867" | 8932" |
| Scrupula adhærentia | 0° 44' 3" | 0° 47' 47" | 2° 28' 52" |
| | 2643. | 2807. | 1732. |
| 3600" | 3. 5563025: | 3. 5563025: | 3. 5563025: |
| 57061 Toises | 4. 7563394= | 4. 7563394= | 4. 7563394= |
| Scrupula adhærentia | 3. 4221014: | 3. 4573815: | 3. 2385479: |
| | 8. 1784408. | 8. 2137200. | 7. 9948873. |
| Toises competentes | 4. 6221383= | 4. 6574184= | 4. 4385848= |
| Productum | 41893 Toises. | 45438 Toises. | 27453 Toises. |
| Divisor | 2852. | Leucæ 14. | 2853. Leucæ 40. |
| | 13303. | 10908. | 25677. |
| | 2853. | 2853. | — 9. |
| | 11412. | 14265. | 1770. |
| | 1951. | 2643. | 49. |
| Toises. | Toises. | Toises. | Leucæ. |

Pro Vw
in p. c. m.

in P. C. M.

in leucis
marinis.

§. XXXVI.

§. XXXVI.

| Pro Vo + Vw | $VO^2 + VW^2 = VO^7 + VW^7$ | $VO^3 + VW^3$ | $VO^4 + VW^4$ |
|------------------------------------------|-----------------------------|---------------|---------------|
| in p. c. m. Vo. §. XXXIV. = | 3° 59'. 37". | 1° 9'. 46". | 1° 9'. 28". |
| Vw. §. XXXV. = | 5. 39. 35. | 1. 10. 8. | 1. 9. 28. |
| Vo + VW = | 9. 39. 12. | 2. 19. 54. | 2. 18. 56. |
| in P. C. M. Vo. §. XXXIV. = | 2. 28. 52. | 0. 43. 21. | 0. 43. 10. |
| Vw. §. XXXV. = | 3. 31. 0. | 0. 43. 34. | 0. 43. 10. |
| Vo + VW = | 5. 59. 52. | 1. 26. 55. | 1. 26. 20. |
| in leucis marinis. Vo. §. XXXIV. = | 49L. 1776T. | 14L. 1281T. | 14L. 1104T. |
| Vw. §. XXXV. = | 70. 951. | 14. 1498. | 14. 1104. |
| Vo + VW = | 119L. 2727T. | 28L. 2779T. | 28L. 2208T. |
| | * | | † |

| Pro Vo + Vw | $VO^5 + VW^5$ | $VO^6 + VW^6$ | $VO^7 + VW^7 = VO^2 + VW^2$ |
|------------------------------------------|--------------------|--------------------|-----------------------------|
| in p. c. m. Vo. §. XXXIV. = | 1° 11'. 11". | 1° 17'. 38". | 5° 39'. 35". |
| Vw. §. XXXV. = | 1. 10. 54. | 1. 16. 54. | 3. 59. 37. |
| Vo + VW = | 2. 22. 5. | 2. 34. 32. | 9. 39. 12. |
| in P. C. M. Vo. §. XXXIV. = | 0. 44. 14. | 0. 48. 14. | 3. 31. 0. |
| Vw. §. XXXV. = | 0. 44. 3. | 0. 47. 47. | 2. 28. 52. |
| Vo + VW = | 1. 28. 17. | 1. 36. 1. | 5. 59. 52. |
| in leucis marinis. Vo. §. XXXIV. = | 14L. 2118T. | 16L. 224T. | 70L. 951T. |
| Vw. §. XXXV. = | 14. 1951. | 15. 2643. | 49. 1776. |
| Vo + VW = | 28. 4069. 2853. | 31. 2867. 2853. | 119L. 2727T. * |
| | 29L. 1216T. | 32L. 14T. | |



§. XXXVII.

§. XXXVII.

| | OW ² . | OW ³ . | OW ⁴ . |
|---------------------|----------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------|
| Mo. §. XXXII. | = 71°. 16'. 40". | = 5°. 32'. 45". | = 1°. 9'. 28". |
| Mw. §. XXXIII. | = 80. 55. 52. | = 7. 52. 39. | = 1. 9. 28. |
| ow §. XXXVI. | = 9. 39. 12. 34752. | = 2. 19. 54. 8394. | = 2. 18. 56. 8336. |
| DT = ET | = 3. 5039555: | = 3. 5039555: | = 3. 5039555: |
| UM = uM | = 3. 3572594: | = 3. 3572594: | = 3. 3572594: |
| ow in p. c. m. | = 4. 5409798: | = 3. 9239690: | = 3. 9209577: |
| ow in P. C. M. | = 7. 8982392: 4. 3342837: 21592": 5°. 59'. 52". | = 7. 2812284: 3. 7172729: 5215": 1°. 26'. 55". | = 7. 2782171: 3. 7142616: 5179": 1°. 26'. 19". |
| Scrupula adhærentia | = 3592. | | = 1579. |
| 360°" | = 3. 5503025: | = 3. 5503025: | = 3. 5503025: |
| 57061 Toises | = 4. 7503394: | = 4. 7503394: | = 4. 7503394: |
| Scrupula adhærentia | = 3. 5553363: | = 3. 7172729: | = 3. 7142616: |
| Toises competentes | = 8. 3116757: 4. 7553732: | = 8. 4730123: 4. 9173098: | = 8. 4706510: 4. 9142985: |
| Productum | = 56934 Toises, | = 82663 Toises. | = 82092 Toises. |
| Divisor | = 2853. Leucæ 100. | = 57061. Leucæ 20. | = 57061. Leucæ 20. |
| | = 2840. 19. | = 2560. 8. | = 25031. 8. |
| | = 2853. 119. | = 2853. 28. | = 2853. 28. |
| | = 25677. Leucæ. | = 22824. Leucæ. | = 22824. Leucæ. |
| | = 2727. Toises. | = 2778. Toises | = 2207. Toises. |
| | * | | + |

Pro ow
in p. c. m.

in P. C. M.

in leucus
marinis.

| | OW ⁵ . | OW ⁶ . | OW ⁷ . |
|---------------------|------------------------------|------------------------------|------------------------------|
| Mo. §. XXXII. | = 13°. 14'. 26". | = 27°. 15'. 7". | = 80°. 55'. 52". |
| Mw. §. XXXIII. | = 10. 52. 21. | = 24. 40. 35. | = 71. 16. 40. |
| ow §. XXXVI. | = 2. 22. 5. 8525. | = 2. 34. 32. 9272. | = 9. 39. 12. 34752. |
| DT = ET | = 3. 5039555: | = 3. 5039555: | = 3. 5039555: |
| UM = uM | = 3. 3572594: | = 3. 3572594: | = 3. 3572594: |
| ow in p. c. m. | = 3. 9306944: | = 3. 9674734: | = 4. 5409798: |
| ow in P. C. M. | = 7. 2879538: 3. 7239983: | = 7. 3244328: 3. 7604773: | = 7. 8982392: 4. 3342837: |
| | = 5297": 1°. 28'. 17". | = 5761": 1°. 36'. 1". | = 21592": 5°. 59'. 52". |
| Scrupula adhærentia | = 1697. | = 2161. | = 3592. |
| 360°" | = 3. 5503025: | = 3. 5503025: | = 3. 5503025: |
| 57061 Toises | = 4. 7503394: | = 4. 7503394: | = 4. 7503394: |
| Scrupula adhærentia | = 3. 7239983: | = 3. 7604773: | = 3. 5553363: |
| Toises competentes | = 8. 4803377: 4. 9240352: | = 8. 5168167: 4. 9605142: | = 8. 3116757: 4. 7553732: |
| Productum | = 83953 Toises. | = 91309 Toises. | = 56934 Toises. |
| Divisor | = 57061. Leucæ 20. | = 57061. Leucæ 20. | = 2853. Leucæ 100. |
| | = 20892. 9. | = 34248. 12. | = 28404. 19. |
| | = 2853. 29. | = 2853. 32. | = 2853. 119. |
| | = 25677. Leucæ. | = 5718. Leucæ. | = 25677. Leucæ. |
| | = 1215. Toises. | = 2853. | = 2727. Toises. |
| | | = 5706. | |
| | | = 12. Toises. | * |

Pro ow
in p. c. m.

in P. C. M.

in leucus
marinis.

§. XXXVIII.

Labor omnia vincit improbus, & duris urgens in rebus cupidō (*). Cupidissime igitur continuemus, ac MTV, uti & MVT, angulos nempe sub quibus diameter maxima & minor sepe interfecant, investigemus.

| | $MTV^x = MTV^y$ | $MTV^z = MTV^w$ | MTV^v |
|-------------------------|-----------------|-----------------|--------------|
| $TM \circ. V. = 2871 =$ | 3. 4579882: | 3. 4579882: | 3. 4579882: |
| VM | 13. 3710269= | 13. 3427492= | 12. 4255309= |
| Radius : | | | |
| MTV | 9. 9130387= | 9. 8847610= | 8. 9675487= |
| MVT | 39°. 18'. 6". | 37°. 29'. 10". | 5°. 18'. 7". |
| | 50. 41. 54. | 52. 30. 50. | 84. 41. 53. |
| | vide §. XXIX. | vide §. XXIX. | vide §. V. |

| | MTV ^{s.} | MTV ^o |
|-------------------|-------------------|------------------|
| TM §. V. = 2871 = | 3. 4579882 : | 3. 4579882 : |
| VM = | 12. 6772018 = | 12. 9984484 = |
| Radius: | | |
| | 9. 2192136 = | 9. 5404602 = |
| MTV = | 9°. 24'. 22". | 19°. 8'. 32". |
| MVT = | 80°. 35. 38. | 70°. 51. 28. |
| | vide §. XX. 1. | vide §. XXI. 4. |

§. XXXIX

| Pro angulis | | PTV ¹ & PTV ² . | PTV ² & PTV ⁷ . |
|--------------|-----------------------------------------|---------------------------------------|---------------------------------------|
| MTV \pm | MTV. §. XXXVIII. = | 39°. 18'. 6". | 37°. 29'. 10". |
| PTM \equiv | PTM. §. VIII. = | 9. 24. 22. | 9. 24. 22. |
| PTV. | PTV ¹ . PTV ² . = | 48. 42. 28. | 46. 53. 32. |
| | Compl. = | 41. 17. 32. | 43. 6. 28. |
| | PTV ² . PTV ⁷ . = | 29. 53. 44. | 28. 4. 48. |
| | Compl. = | 60. 6. 16. | 61. 55. 12. |

| | PTV ^{3.} | PTV ^{4.} | PTV ^{5.} | PTV ^{6.} |
|--------------------|-------------------|-------------------|-------------------|-------------------|
| MTV. §. XXXVIII. = | 5°. 18'. 7". | 0°. 0'. 0". | 9°. 24'. 22". | 19°. 8'. 32". |
| PTM. §. VIII. = | 9. 24. 22. | 9. 24. 22. | 9. 24. 22. | 9. 24. 22. |
| PTV. = | 14. 42. 29. | 9. 24. 22. | 0. 0. 0. | 9. 44. 10. |
| Compl. = | 75. 17. 31. | 80. 35. 38. | 90. 0. 0. | 80. 15. 50. |
| | vide §. VIII. | vide §. VIII. | | |

(*) VIRG. Georg. I. 145.

6. XL

§. XL.

| | MTo ¹ . | MTo ² . | MTo ³ . | MTo ⁴ . |
|---------------------|--------------------|--------------------|--------------------|--------------------|
| TM. §. V. = 2871" = | 3.4579882: | 3.4579882: | 3.4579882: | 3.4579882: |
| oM. §. XXXII. = | 13.3624825 = | 13.3336488 = | 12.3424227 = | 11.6627578 = |
| Radius : | | | | |
| MTo | = 9.9044943 = | 9.8756606 = | 8.8844345 = | 8.2047696 = |
| MoT | = 38° 45'. 1". | 36° 54'. 28". | 4° 22'. 57". | 0° 55'. 5". |
| | = 51. 14. 59. | 53. 5. 32. | 85. 37. 3. | 89. 4. 55. |
| | * | ** | | † |

Pro angulo
MTo
&
MoT.

| | MTo ⁵ . | MTo ⁶ . | MTo ⁷ . | MTo ⁸ . |
|---------------------|--------------------|--------------------|--------------------|--------------------|
| TM. §. V. = 2871" = | 3.4579882: | 3.4579882: | 3.4579882: | 3.4579882: |
| oM. §. XXXII. = | 12.7171705 = | 13.0180344 = | 13.3517963 = | 13.3794868 = |
| Radius : | | | | |
| MTo | = 9.2591823 = | 9.5600462 = | 9.8938081 = | 9.9214986 = |
| MoT | = 10° 17'. 39". | 19° 57'. 25". | 38°. 3'. 50". | 39° 50'. 59". |
| | = 79. 42. 21. | 70. 2. 35. | 51. 56. 10. | 50. 9. 1. |
| | *** | *** | *** | *** |

§. XLI.

| | MTw ¹ . | MTw ² . | MTw ³ . | MTw ⁴ . |
|---------------------|--------------------|--------------------|--------------------|--------------------|
| TM. §. V. = 2871" = | 3.4579882: | 3.4579882: | 3.4579882: | 3.4579882: |
| wM. §. XXXIII. = | 13.3794868 = | 13.3517963 = | 12.4941546 = | 11.6627578 = |
| Radius : | | | | |
| MTw | = 9.9214986 = | 9.8938081 = | 9.0361664 = | 8.2047696 = |
| MwT | = 39° 50'. 59". | 38°. 3'. 50". | 6°. 12'. 10". | 0° 55'. 5". |
| | = 50. 9. 1. | 51. 56. 10. | 83. 47. 50. | 89. 4. 55. |
| | *** | *** | | † |

Pro angulo
MTw
&
MwT.

| | MTw ⁵ . | MTw ⁶ . | MTw ⁷ . | MTw ⁸ . |
|---------------------|--------------------|--------------------|--------------------|--------------------|
| TM. §. V. = 2871" = | 3.4579882: | 3.4579882: | 3.4579882: | 3.4579882: |
| wM. §. XXXIII. = | 12.6328617 = | 12.9779060 = | 13.3336488 = | 13.3624825 = |
| Radius : | | | | |
| MTw | = 9.1748735 = | 9.5199178 = | 9.8756606 = | 9.9044943 = |
| MwT | = 8°. 30'. 26". | 18°. 19'. 5" | 30°. 54'. 28". | 38°. 45'. 1". |
| | = 81. 29. 34. | 71. 40. 55. | 53. 5. 32. | 51. 14. 59. |
| | | ** | | * |

§. XLII.

| Pro angulis MTo ⁺ PTM= | PTo ^{1.} | PTo ^{2.} | PTo ^{3.} | PTo ^{4.} |
|-----------------------------------------|-------------------|-------------------|-------------------|-------------------|
| MTo. §. XL. | = 38°. 45'. 1". | 36°. 54'. 28". | 4°. 22'. 57". | 0°. 55'. 5". |
| PTM. §. VIII. | = 9. 24. 22. | 9. 24. 22. | 9. 24. 22. | 9. 24. 22. |
| PTo. | = 48. 9. 23. | 46. 18. 50. | 13. 47. 19. | 8. 29. 17. |
| Compl. | = 41. 50. 37. | 43. 41. 10. | 76. 12. 41. | 81. 30. 43. |

| Pro angulis MTo ⁺ PTM= | PTo ^{5.} | PTo ^{6.} | PTo ^{7.} | PTo ^{8.} |
|-----------------------------------------|-------------------|-------------------|-------------------|-------------------|
| MTo. §. XL. | = 10°. 17'. 39". | 19°. 57'. 25". | 38°. 3'. 50". | 39°. 50'. 59". |
| PTM. §. VIII. | = 9. 24. 22. | 9. 24. 22. | 9. 24. 22. | 9. 24. 22. |
| PTo. | = 0. 53. 17. | 10. 33. 3. | 28. 39. 28. | 30. 26. 37. |
| Compl. | = 89. 6. 43. | 79. 26. 57. | 61. 20. 32. | 59. 33. 23. |

§. XLIII.

| Pro angulis MTw ⁺ PTM= | PTw ^{1.} | PTw ^{2.} | PTw ^{3.} | PTw ^{4.} |
|-----------------------------------------|-------------------|-------------------|-------------------|-------------------|
| MTw. §. XLI. | = 39°. 50'. 59". | 38°. 3'. 50". | 6°. 12'. 10". | 0°. 55'. 5". |
| PTM. §. VIII. | = 9. 24. 22. | 9. 24. 22. | 9. 24. 22. | 9. 24. 22. |
| PTw. | = 49. 15. 21. | 47. 28. 12. | 15. 36. 32. | 10. 19. 27. |
| Compl. | = 40. 44. 39. | 42. 31. 48. | 74. 23. 28. | 79. 40. 33. |

| Pro angulis MTw ⁺ PTM= | PTw ^{5.} | PTw ^{6.} | PTw ^{7.} | PTw ^{8.} |
|-----------------------------------------|-------------------|-------------------|-------------------|-------------------|
| MTw. §. XLI. | = 8°. 30'. 26". | 18°. 19'. 5". | 30°. 54'. 28". | 38°. 45'. 1". |
| PTM. §. VIII. | = 9. 24. 22. | 9. 24. 22. | 9. 24. 22. | 9. 24. 22. |
| PTw. | = 0. 53. 56. | 8. 54. 43. | 27. 30. 6. | 29. 20. 39. |
| Compl. | = 89. 6. 4. | 81. 5. 17. | 62. 29. 54. | 60. 39. 21. |

§. XLIV.

| Pro angulo oTV. | oTV ^{1.} | oTV ^{2.} | oTV ^{3.} | oTV ^{4.} |
|--------------------|-------------------|-------------------|-------------------|-------------------|
| MTV. §. XXXVIII. | = 39°. 18'. 6". | 37°. 29'. 10". | 5°. 18'. 7". | 0°. 0'. 0". |
| MTo. §. XL. | = 38. 45. 1. | 36. 54. 28. | 4. 22. 57. | 0. 55. 5. |
| oTV. | = 0. 33. 5. | 0. 34. 42. | 0. 55. 10. | 0. 55. 5. † |

| Pro angulo oTV. | oTV ^{1.} | oTV ^{2.} | oTV ^{3.} | oTV ^{4.} |
|--------------------|-------------------|-------------------|-------------------|--------------------|
| MTV. §. XXXVIII. | = 9°. 24'. 22". | 19°. 8'. 32". | 37°. 29'. 10". | 39°. 18'. 6". |
| MTo. §. XL. | = 10. 17. 39. | 19. 57. 25. | 38. 3. 50. | 39. 50. 59. |
| oTV. | = 0. 53. 17. | 0. 48. 53. | 0. 34. 40. | 0. 32. 53. **** |

§. XLV.

§. XLV.

| | wTV ¹ . | wTV ² . | wTV ³ . | wTV ⁴ . |
|--------------------|--------------------|--------------------|--------------------|--------------------|
| MTV. §. XXXVIII. = | 39°. 18'. 6" | 37°. 29'. 10" | 5°. 18'. 7" | 0°. 0'. 0". |
| MTw. §. XLI. = | 39. 50. 59. | 38. 3. 50. | 6. 12. 10. | 0. 55. 5. |
| wTV. = | 0. 32. 53. | 0. 34. 40. | 0. 54. 3. | 0. 55. 5. |
| | **** | *** | | † |

Pro angulo
wTV.

| | wTV ⁵ . | wTV ⁶ . | wTV ⁷ . | wTV ⁸ . |
|--------------------|--------------------|--------------------|--------------------|--------------------|
| MTV. §. XXXVIII. = | 9°. 24'. 22" | 19°. 8'. 32" | 37°. 29'. 10" | 39°. 18'. 6" |
| MTw. §. XLI. = | 8. 30. 26. | 18. 19. 5. | 36. 54. 28. | 38. 45. 1. |
| wTV. = | 0. 53. 56. | 0. 49. 27. | 0. 34. 42. | 0. 33. 5. |
| | | ** | I. | * |

Pro angulo
wTV.

| | oTV ¹ + wTV ¹ . | oTV ² + wTV ² . | oTV ³ + wTV ³ . |
|-----------------|---------------------------------------|---------------------------------------|---------------------------------------|
| oTV. §. XLIV. = | 0°. 33'. 5". | 0°. 34'. 42". | 0°. 55'. 10". |
| wTV. §. XLV. = | 0. 32. 53. | 0. 34. 40. | 0. 54. 3. |
| oTV + wTV = | * I. 5. 58. | ** I. 9. 22. | I. 49. 13. |

Pro angulis
oTV + wTV.

| | oTV ⁴ + wTV ⁴ . | oTV ⁵ + wTV ⁵ . | oTV ⁶ + wTV ⁶ . |
|-----------------|---------------------------------------|---------------------------------------|---------------------------------------|
| oTV. §. XLIV. = | 0°. 55'. 5". | 0°. 53'. 17". | 0°. 48'. 53". |
| wTV. §. XLV. = | 0. 55. 5. | 0. 53. 56. | 0. 49. 27. |
| oTV + wTV = | † I. 50. 10. | I. 47. 13. | I. 38. 20. |

Pro angulis
oTV + wTV.

| | oTV ⁷ + wTV ⁷ . | oTV ⁸ + wTV ⁸ . |
|-----------------|---------------------------------------|---------------------------------------|
| oTV. §. XLIV. = | 0°. 34'. 40". | 0°. 32'. 53". |
| wTV. §. XLV. = | 0. 34. 42. | 0. 33. 5. |
| oTV + wTV = | ** I. 9. 22. | * I. 5. 58. |

Pro angulis
oTV + wTV.

| | oTw ¹ . | oTw ² . | oTw ³ . | oTw ⁴ . |
|----------------|--------------------|--------------------|--------------------|--------------------|
| MTo. §. XL. = | 38°. 45'. 1". | 36°. 54'. 28". | 4°. 22'. 57". | 0°. 55'. 5". |
| MTw. §. XLI. = | 39. 50. 59. | 38. 3. 50. | 6. 12. 10. | 0. 55. 5. |
| oTw. = | * I. 5. 58. | ** I. 9. 22. | I. 49. 13. | † I. 50. 10. |

Pro angulo
oTw.

| | oTw ⁵ . | oTw ⁶ . | oTw ⁷ . | oTw ⁸ . |
|----------------|--------------------|--------------------|--------------------|--------------------|
| MTo. §. XL. = | 10°. 17'. 39". | 19°. 57'. 25". | 38°. 3'. 50". | 39°. 50'. 59". |
| MTw. §. XLI. = | 8. 30. 26. | 18. 19. 5. | 36. 54. 28. | 38. 45. 1. |
| oTw. = | I. 47. 13. | I. 38. 20. | ** I. 9. 22. | * I. 5. 58. |

Pro angulo
oTw.

§. XLVIII.

| Pro To in P. D. | To ¹ | To ² | To ³ | To ⁴ |
|--------------------|-----------------|-----------------|-----------------|-----------------|
| MoT. §. XL. | = 9.8920286: | 9.9028745: | 9.9987283: | 9.9999442: |
| TM. §. V.=2871" | = 13.4579882= | 13.4579882= | 13.4579882= | 13.4579882= |
| Radius: | | | | |
| To | = 3.5659596= | 3.5551137= | 3.4592599= | 3.4580440= |
| | * 3681" | ** 3590" | 2879" | 2871" |
| Par. lunæ=3664" | | | | |
| Radium | | 3.5639555: | 3.5639555: | 3.5639555: |
| To in P. D. | | 13.5551137: | 13.4592599: | 13.4580440: |
| To in P. C. M. | | 9.9911582= | 9.8953044= | 9.8940885= |
| Compl. | | 78°. 28'. 40". | 51°. 47'. 36". | 51°. 35'. 25". |
| | | 11. 31. 20. | 38. 12. 24. | 38. 24. 35.† |

| Pro To in P. D. | To ⁵ | To ⁶ | To ⁷ | To ⁸ |
|--------------------|-----------------|-----------------|-----------------|-----------------|
| MoT. §. XL. | = 9.929524: | 9.9731045: | 9.8961535: | 9.8852073: |
| TM. §. V.=2871" | = 13.4579882= | 13.4579882= | 13.4579882= | 13.4579882= |
| Radius: | | | | |
| To | = 3.4650358= | 3.4848837= | 3.5618347= | 3.5727809= |
| | 2918" | 3054" | *** 3646" | **** 3739" |
| Par. lunæ=3664" | 3.5639555: | 3.5639555: | 3.5639555: | |
| Radium | | | | |
| To in P. D. | = 13.4650358: | 13.4848837: | 13.5618347: | |
| To in P. C. M. | = 9.9010803= | 9.9209282= | 9.9978792= | |
| | 52°. 46'. 44". | 56°. 27'. 52". | 84°. 20'. 32". | |
| Compl. | = 37. 13. 16. | 33. 32. 8. | 5. 39. 28. | |

§. XLIX.

| Pro Tw in P. D. | Tw ¹ | Tw ² | Tw ³ | Tw ⁴ |
|--------------------|-----------------|-----------------|-----------------|-----------------|
| MwT. §. XLI. | = 9.8852073: | 9.8961535: | 9.9974500: | 9.9999442: |
| TM. §. V.=2871" | = 13.4579882= | 13.4579882= | 13.4579882= | 13.4579882= |
| Radius : | | | | |
| Tw | = 3.5727809= | 3.5618347= | 3.4605382= | 3.4580440= |
| | **** 3739. | *** 3646". | 2888". | 2871". |
| Par. lunæ=3664" | | 3.5639555: | 3.5639555: | 3.5639555: |
| Radium | | | | |
| To in P. D. | | 13.5618347: | 13.4605382: | 13.4580440: |
| To in P. C. M. | | 9.9978792= | 9.8965827= | 9.8940885= |
| | 84°. 20'. 32". | 52°. 0'. 31". | 51°. 35'. 25". | |
| Compl. | | 5. 39. 28. | 37. 59. 29. | 38. 24. 35.† |

MWT

| | TW ^s . | TW ^r | TW ^t : | TW ^b . |
|---------------------|-------------------|-----------------|-------------------|-------------------|
| MwT. §. XLI. = | 9.9951951: | 9.9774156: | 9.9028745: | 9.8920286: |
| TM. §. V. = 2871 = | 13.4579882: | 13.4579882: | 13.4579882: | 13.4579882: |
| Radius: | | | | |
| Tw | = 3.4627931: | 3.4805726: | 3.5551137: | 3.5659596: |
| | 2903" | 3024" | * 3590" | * 3681" |
| Par.lunaæ = 3664" = | 3.5639555: | 3.5639555: | 3.5639555: | 3.5639555: |
| Radium | = | | | |
| Tw in P. D. = | 13.4627931: | 13.4805726: | 13.5551137: | 13.5551137: |
| Tw in P. C. M. = | 9.8988376: | 9.9166171: | 9.9911582: | 9.9911582: |
| | 52°. 23'. 31". | 55°. 37'. 12". | 78°. 28'. 40". | 78°. 28'. 40". |
| Compl. | = 37. 36. 29. | 34. 22. 48. | 11. 31. 20. | |

Pro Tw
in P. D.

in P. C.M.

§. L.

Non male cessit labor quem hucusque sumus prosecuti. Vides enim tam accuratissime sibi respondere quæsita, ut majorem sperare *angeli* nefas videatur. Negandum tamen interim non est, totam hanc arithmeticam suspectæ quodammodo posse censeri fidei, supponentem nempe conum penumbra esse cylindrum, quod, quamquam uti supra §. VI. indicavimus, hic veritati prorsus nihil oblit, rigor tamen geometrici examen ferre haud valer. Non quidem fuisset impossibile, pandere, quot secundis conus umbræ in transitu per tellurem decrecat a diametro umbræ ut cylindri considerata, tuncque vel Euclidis subjecere calculos ipsi nulli vereremur. Sed cum tanta calculi acies vix ullius sit fructus, methodus vulgaris satis omnino superque videtur accurata, supponens nimurum umbram cylindricam. Igitur pro quavis octo stationum (§. XVII.) quinque frequentia triangula PTV,

Defensio
calculatorum.

PTs, PTn, PTo, PTw solvamus, punctorum V, s, n, o, w, latitudinem, longitudinem, ac tempus determinantia.



§. LI.

| Pro Triangulo PTV. | | Pro statione secunda. | §. LI. | Pro statione tertia. |
|--------------------|-----------------------------------------------|-----------------------|------------------------------------------------|----------------------|
| | | 1) Pro latitudine 2. | | 1) Pro latitudine 3. |
| | Radius: | | Radius: | |
| §. XXXIX. | Cos. PTV. = $43^{\circ} 6' 28''$ = 9.8346578= | | Cos. PTV. = $75^{\circ} 17' 31''$ = 9.9855307= | |
| §. XXII. | Tang. TV. = $80.54.41$ = 10.7959611: | | Tang. TV. = $51.53.30$ = 10.1054984: | |
| | Tang. X. = $76.49.30$ = 10.6306189. | | Tang. X. = $50.57.40$ = 10.0910291. | |
| | TP. = <u>71.29.13.</u> | | TP. = <u>71.29.13.</u> | |
| | X-TP. = <u>5.20.17.</u> | | TP-X. = <u>20.31.33.</u> | |
| | Compl. = <u>84.39.43.</u> | | Compl. = <u>69.28.27.</u> | |
| | 2. | | | 2. |
| §. XXII. | Cos. X. = $13.10.30$ = 9.3577938: | | Cos. X. = $39.2.20$ = 9.7992355: | |
| | Cos. TV. = $9.5.19$ = 9.1985519= | | Cos. TV. = $38.6.30$ = 9.7903909= | |
| | C. X-TP. = $84.39.43$ = <u>9.9981125:</u> | | C. TP-X = $69.28.27$ = <u>9.9715144:</u> | |
| | | 19.1966644. | | 19.7619053. |
| | Cos. PV. = $43.37.58$ = 9.8388706. | | Cos. PV. = $66.34.58$ = 9.9626698. | |
| | PV. = $46.22.2.$ | | PV. = $23.25.2.$ | |
| | 3) Pro angulo VPT. | | 3) Pro angulo VPT. | |
| §. XXXIX. | S.PV. = $46.22.2$ = 9.8596049: | | S.PV. = $23.25.2$ = 9.5992538: | |
| §. XXII. | S.PTV. = $46.53.32$ = 9.8633642= | | S.PTV. = $14.42.29$ = 9.4046522= | |
| | S.TV. = $80.54.41$ = <u>9.9945130:</u> | | S.TV. = $51.53.30$ = <u>9.8958893:</u> | |
| | | 19.8578772. | | 19.3005415. |
| | S.VPT. = $84.53.34$ = <u>9.9982723.</u> | | S.VPT. = $30.10.38$ = 9.7012877. | |
| | 4) Pro longitudine V. | | 4) Pro longitudine V. | |
| §. XXX. | VPT. = $95.6.26.$ | | VPT. = $30.10.38.$ | |
| | TPL. = $67.21.15.$ | | TPL. = $80.58.15.$ | |
| | VPL. = $162.27.41.$ | | VPL. = $111.8.53.$ | |
| | LPF. = $20.30.0.$ | | LPF. = $20.30.0.$ | |
| | | 141.57.41. | | 90.38.53. |
| | | 218.2.19. | | 269.21.7. |
| | Longitudo V. | | Longitudo V. | |
| | 5) Pro angulo PVT. | | 5) Pro angulo PVT. | |
| | S.PV. = $46.22.2$ = 9.8596049: | | S.PV. = $23.25.2$ = 9.5992538: | |
| | S.PTV. = $46.53.32$ = 9.8633642= | | S.PTV. = $14.42.29$ = 9.4046522= | |
| §. IV. III. b. | S.TP. = $71.29.13$ = <u>9.9769234:</u> | | S.TP. = $71.29.13$ = <u>9.9769234:</u> | |
| | | 19.8402876. | | 19.3815756. |
| | S.PVT. = $73.2.14$ = 9.9806827. | | S.PVT. = $37.17.9$ = 9.7823218. | |

Pro

Pro statione sexta.

1) Pro latitudine 6.

Radius:

$$\begin{aligned} \text{§. XXXIX. Cos. PTV.} &= 80^\circ 15'.50'' = 9.9936994 = \\ \text{§. XXII. Tang. TV.} &= 56. 3. 6 = 10.1718576 : \\ \text{Tang. X.} &= 55.39.56 = 10.1655570. \\ \text{TP.} &= 71.29.13. \\ \text{TP-X.} &= 15.49.17. \\ \text{Compl.} &= 74.10.43. \end{aligned}$$

2.

$$\begin{aligned} \text{Cos. X.} &= 34.20.4 = 9.7512965 : \\ \text{§. XXII. Cos. TV.} &= 33.56.54 = 9.7469804 = \\ \text{C. TP-X.} &= 74.10.43 = 9.9832275 : \\ &\quad 19.7302079. \\ \text{Cos. PV.} &= 72.17.19 = 9.9789114. \\ \text{PV.} &= 17.42.41. \text{ vide } \text{§. XXI.} \end{aligned}$$

3) Pro angulo VPT.

$$\begin{aligned} \text{S. PV.} &= 17.42.41 = 9.4831912 : \\ \text{§. XXXIX. S. PTV.} &= 9.44.10 = 9.2281707 = \\ \text{§. XXII. S. TV.} &= 56. 3. 6 = 9.9188381 : \\ &\quad 19.1470088. \\ \text{S. VPT.} &= 27.27.35 = 9.6638176. \end{aligned}$$

4) Pro longitudine V.

$$\begin{aligned} \text{VPT.} &= 27.27.35. \\ \text{§. XXX. TPL.} &= 89.51.30. \\ \text{VPL.} &= 62.23.55. \\ \text{LPf.} &= 20.30.0. \\ &\quad 41.53.55. \\ &\quad 318. 6. 5. \\ &\quad \text{Longitudo V.} \end{aligned}$$

5) Pro angulo PVT.

$$\begin{aligned} \text{S. PV.} &= 17.42.41 = 9.4831912 : \\ \text{S. PTV.} &= 9.44.10 = 9.2281707 = \\ \text{§. IV. III. b. S. TP.} &= 71.29.13 = 9.9769234 : \\ &\quad 19.2050941. \\ \text{S. PVT.} &= 31.48.38 = 9.7219029. \end{aligned}$$

Pro statione septima.

1) Pro latitudine 7.

Radius:

$$\begin{aligned} \text{Cos. PTV.} &= 61^\circ 55'.12'' = 9.9456120 = \\ \text{Tang. TV.} &= 80. 54. 41 = 10.7959611 : \\ \text{Tang. X.} &= 79.43.23 = 10.7415791. \\ \text{TP.} &= 71.29.13. \\ \text{X-TP.} &= 8.14.10. \\ \text{Compl.} &= 81.45.50. \end{aligned}$$

2.

$$\begin{aligned} \text{Cos. X.} &= 10.16.37 = 9.2514101 : \\ \text{Cos. TV.} &= 9. 5. 19 = 9.1985519 : \\ \text{C. X-TP.} &= 81.45.50 = 9.9954975 : \\ &\quad 19.1940494. \\ \text{Cos. PV.} &= 61. 11. 45 = 9.9426393. \\ \text{PV.} &= 28.48.15. \end{aligned}$$

3) Pro angulo VPT.

$$\begin{aligned} \text{S. PV.} &= 28.48.15 = 9.6828824 : \\ \text{S. PTV.} &= 28. 4. 48 = 9.6727478 = \\ \text{S. TV.} &= 80. 54. 41 = 9.9945130 : \\ &\quad 19.6672608. \\ \text{S. VPT.} &= 74.43.28 = 9.9843784. \end{aligned}$$

4) Pro longitudine V.

$$\begin{aligned} \text{VPT.} &= 105. 16. 32. \\ \text{TPL.} &= 98. 20. 15. \\ \text{VPL.} &= 6. 56. 17. \\ \text{LPf.} &= 20. 30. 0. \\ &\quad 27. 26. 17. \\ &\quad \text{Longitudo V.} \end{aligned}$$

5) Pro angulo PVT.

$$\begin{aligned} \text{S. PV.} &= 28.48.15 = 9.6828824 : \\ \text{S. PTV.} &= 28. 4. 48 = 9.6727478 = \\ \text{S. TP.} &= 71.29.13 = 9.9769234 : \\ &\quad 19.6496712. \\ \text{S. PVT.} &= 67. 52. 38 = 9.9667888. \end{aligned}$$

§. LII.

§. LII.

PTs = PTV.

Pro statione primā.

1) Pro latitudine s.

| | | |
|-----------|-----------------------|----------------------|
| Radius: | $71^{\circ} 29' 13''$ | = 9.9769234 = |
| Cos. PF. | $71^{\circ} 29' 13''$ | = 9.9769234 = |
| Cos. PTs. | $41. 17. 32$ | <u>= 9.8194779 :</u> |
| Cos. Ps. | $38. 44. 14$ | <u>= 9.7964013.</u> |
| Ps. | $51. 15. 46.$ | |

2.

Radius:
 Cos. PF. $\approx 71^{\circ} 29' 13''$ $\approx 9.9769234 =$
 Cos. PTs. $\approx 41. 17. 32$ $\approx 9.8194779 :$
 Cos. Ps. $\approx 38. 44. 14$ $\approx 9.7964013.$
 Ps. $\approx 51. 15. 46.$

3) Pro angulo sPT.

| | | |
|--------|----------------|-----------------------------------------|
| S.Ps. | $51. 15. 46$ | $\approx 9.8921080 :$ |
| Radium | | |
| S.PTs. | $48. 42. 28$ | <u>$\approx 9.8758445 :$</u> |
| S.FPs. | $74. 25. 3$ | $\approx 9.9837365.$ |
| S.sPT. | $105. 34. 57.$ | |

4) Pro longitudine s.

| | | |
|------|----------------|--|
| SPT. | $105. 34. 57.$ | |
| TPL. | $66. 18. 45.$ | |
| sPL. | $171. 53. 42.$ | |
| LPf. | $20. 30. 0.$ | |
| | $151. 23. 42.$ | |
| | $208. 36. 18.$ | |
| | Longitudo s. | |

Ne detur vacuum

| | |
|--------------------|----------------------------------|
| 5) Pro angulo PsT. | |
| S.Ps. | $51. 15. 46$ |
| S.PTs. | $48. 42. 28$ |
| S.TP. | $71. 29. 13$ |
| S.PsT. | $19.8527679.$ |
| S.PsT. | $65. 58. 45$ |
| | <u>$= 9.9606599.$</u> |

Pro statione secunda.

1) Pro latitudine s.

Radius:

Cos. PTs. $\approx 43^{\circ} 6'. 28''$ $\approx 9.8346578 =$ §. XXXIX.

Tang. Ts. $\approx 77. 8. 0$ $\approx 10.6412690 :$ §. XXIII.

Tang.X. $\approx 71. 31. 4$ $\approx 10.4759268.$

TP. $\approx 71. 29. 13.$

X-TP. $\approx 0. 1. 51.$

Compl. $\approx 89. 58. 9.$

Pro Triangu-
lo PTs.

2.

Cos. X. $\approx 18. 28. 56$ $\approx 9.5010735014 :$

Cos. Ts. $\approx 12. 52. 0$ $\approx 9.3476870346 =$ §. XXIII.

C.X-TP. $\approx 89. 58. 9$ $\approx 9.9999999371 :$

$19.3476869717.$

Cos.Ps. $\approx 44. 37. 25$ $\approx 9.8466134703.$

Ps. $\approx 45. 22. 35.$

3) Pro angulo sPT.

S.Ps. $\approx 45. 22. 35$ $\approx 9.8523193 :$

S.PTs. $\approx 46. 53. 32$ $\approx 9.8633642 =$ §. XXIII.

S.Ts. $\approx 77. 8. 0$ $\approx 9.889560 :$

$19.8523202.$

S.sPT. $\approx 90. 0. 0$ $\approx 10.0000009.$

4) Pro longitudine s.

sPT. $\approx 90. 0. 0.$

TPL. $\approx 67. 21. 15.$

sPL. $\approx 157. 21. 15.$

LPf. $\approx 20. 30. 0.$

$136. 51. 15.$

$223. 8. 45.$

Longitudo s.

PsT adjicere placet.

5) Pro angulo PsT.

S.Ps. $\approx 45. 22. 35$ $\approx 9.8523193 :$

S.PTs. $\approx 46. 53. 32$ $\approx 9.8633642 =$

S.TP. $\approx 71. 29. 13$ $\approx 9.9769234 :$ §. IV. III. b.

S.PsT. $\approx 76. 34. 30$ $\approx 9.9879683.$

Pro

Pro statione tertia.

1) Pro latitudines.

| | |
|---------------------|-------------------------------------|
| Radius: | |
| §. XXXIX. Cos. PTs. | $= 75^{\circ} 17' 31'' = 9.9855307$ |
| §. XXIII. Tang. Ts. | $= 50. 44. 27 = 10.0876179$ |
| Tang. X. | $= 49. 48. 9 = 10.0731486$ |
| TP. | $= 71. 29. 13$ |
| TP-X. | $= 21. 41. 4$ |
| Compl. | $= 68. 18. 56$ |

2.

| | |
|--------------------|-----------------------------------------------|
| Cos. X. | $= 40. 11. 51 = 9.8098454$ |
| §. XXIII. Cos. Ts. | $= 39. 15. 33 = 9.8012805$ |
| C. TP-X. | $= 68. 18. 56 = \frac{9.9681246}{19.7694111}$ |
| Cos. Ps. | $= 65. 39. 28 = 9.9595657$ |
| Ps. | $= 24. 20. 32$ |

3) Pro angulo sPT.

| | |
|-------------------|-----------------------------------------------|
| S. Ps. | $= 24. 20. 32 = 9.6150930$ |
| §. XXXIX. S. PTs. | $= 14. 42. 29 = 9.4046522$ |
| §. XXIII. S. Ts. | $= 50. 44. 27 = \frac{9.8889038}{19.2935560}$ |
| S. sPT. | $= 28. 29. 9 = 9.6784630$ |

4) Pro longitudine s.

| | |
|--------------|-----------------|
| sPT. | $= 28. 29. 9$ |
| §. XXX. TPL. | $= 80. 58. 15$ |
| sPL. | $= 109. 27. 24$ |
| LPl. | $= 20. 30. 0$ |
| | $88. 57. 24$ |
| | $271. 2. 36$ |
| | Longitudo s. |

5) Pro angulo PsT.

| | |
|-----------------------|-----------------------------------------------|
| S. Ps. | $= 24. 20. 32 = 9.6150930$ |
| S. PTs. | $= 14. 42. 29 = 9.4046522$ |
| §. IV. III. b. S. TP. | $= 71. 29. 13 = \frac{9.9769234}{19.3815756}$ |
| S. PsT. | $= 35. 44. 20 = 9.7664826$ |

Pro statione quarta.

1) Pro latitudine s.

| | |
|-----------|-----------------------------------------|
| Radius: | |
| Cos. PTs | $= 80^{\circ} 35' 38'' = 9.9941212$ |
| Tang. Ts. | $= 50. 26. 43 = \underline{10.0830506}$ |
| Tang. X. | $= 50. 3. 50 = \underline{10.0771718}$ |
| TP. | $= 71. 29. 13$ |
| TP-X. | $= 21. 25. 23$ |
| Compl. | $= 68. 34. 37$ |

2.

| | |
|----------|----------------------------------------|
| Cos. X. | $= 39. 56. 10 = 9.8074897$ |
| Cos. Ts. | $= 39. 33. 17 = 9.8040132$ |
| C. TP-X. | $= 68. 34. 37 = \underline{9.9689072}$ |
| Cos. Ps. | $= 67. 26. 29 = \underline{9.9654307}$ |
| Ps. | $= 22. 33. 31$ |

3) Pro angulo sPT.

| | |
|---------|----------------------------------------|
| S. Ps. | $= 22. 33. 31 = 9.5839106$ |
| S. PTs. | $= 9. 24. 22 = 9.2133347$ |
| S. Ts. | $= 50. 26. 43 = \underline{9.8870630}$ |
| S. sPT. | $= 19. 10. 32 = \underline{9.5164871}$ |

4) Pro longitudine s.

| | |
|------|-----------------------------------|
| sPT. | $= 19. 10. 32$ |
| TPL. | $= 82. 50. 45. pag. 61. linea 1.$ |
| sPL. | $= 102. 1. 17$ |
| LPl. | $= 20. 30. 0$ |
| | $81. 31. 17$ |
| | $278. 28. 43$ |
| | Longitudo s. |

5) Pro angulo PsT.

| | |
|---------|----------------------------------------|
| S. Ps. | $= 22. 33. 31 = 9.5839106$ |
| S. PTs. | $= 9. 24. 22 = 9.2133347$ |
| S. TP. | $= 71. 29. 13 = \underline{9.9769234}$ |
| S. PsT. | $= 23. 49. 35 = \underline{9.6063475}$ |

PRO

i) *Pro latitudine s.*

| Radius: | Radius: |
|---------------------------------------------|---------------------------|
| g. XXXIX. Cos. PTs. = $61^{\circ} 55' 12''$ | $= 9.9456120 =$ |
| g. XXIII. Tang. Ts. = $77. 8.$ | $\text{O} = 10.6412690 :$ |
| Tang. X. = $75. 29.$ | $7 = 10.5868810.$ |
| TP. = <u>$71. 29. 13.$</u> | |
| X-TP. = $3. 59. 54.$ | |
| Compl. = $86. \text{O}. 6.$ | |

| | | | | |
|-------------------|---|------------|---|-------------|
| Cos. X. | = | 14. 30. 53 | = | 9.3990308 |
| § XXIII. Cos. Ts. | = | 12. 52. 0 | = | 9.3476870 |
| C. X-TP. | = | 86. 0. 6 | = | 9.9989417 |
| | | | | 19.3466287. |
| Cos. Ps. | = | 62. 24. 59 | = | 9.9475979. |
| Ps. | = | 27. 35. I. | | |

3) *Pro angulo sP T.*

| | | | | |
|------------------|---|-----------|-----|-------------|
| S. Ps. | = | 27. 35. | I = | 9.6656208: |
| §.XXXIX. S. PTs. | = | 28. 4. 48 | = | 9.6727478= |
| §.XXIII. S. Ts. | = | 77. 8. | O = | 9.9889560: |
| | | | | 19.6617038. |
| S. sPT. | = | 82. 19. | O = | 9.9960830. |

| | | |
|--------|------|------------------------------|
| | | 4) <i>Pro longitudine s.</i> |
| §.XXX. | SPT. | = 97. 41. 0. |
| | TPL. | = 98. 20. 15. |
| | SPL. | = 0. 39. 15. |
| | LPI. | = 20. 30. 0. |
| | | 19. 50. 45. |
| | | Longitudo s. |

5) *Pro angulo Ps T.*

$$\begin{array}{rcl}
 S.Ps. & = 27.35. & I = 9.6656208; \\
 S.PTs. & = 28.4.48 = 9.6727478= \\
 \$IV, III, b. & S.TP. & = 71.29.13 = \underline{9.9769234}: \\
 & & 19.6496712. \\
 S.PsT. & = 74.34.0 = 9.9840504.
 \end{array}$$

Pro statione octava.

1) Pro latitudine s.

3) *Pro angulo sP T.*

$$\begin{aligned}
 S.Ps. &= 34.42.26 = 9.7554046 : \\
 \text{Radium} &\equiv \\
 S.PTs. &= 29.53.44 = 19.6975959 : \\
 S.FPs. &= 61.5.20 = 9.9421913. \\
 sPT. &= 118.54.40.
 \end{aligned}$$

4) Pro longitudine s.

| | |
|------|----------------|
| sPT. | = 118. 54. 40. |
| TPL. | = 99. 22. 45. |
| sPL. | = 19. 31. 55. |
| LPf. | = 20. 30. 0. |

5) *Pro angulo Ps T.*

$$\begin{array}{l}
 \text{S. Ps.} = 34.42.26 = 9.7554046 : \\
 \text{S. PTs.} = 29.53.44 = 9.6975959 = \\
 \text{S. TP.} = 71.29.13 = \underline{9.9769234} : \\
 \qquad\qquad\qquad 19.6745193. \\
 \text{S. PsT.} = 56.621 = 9.9191147
 \end{array}$$

§. LIII.

PTn = PTV. Pro statione diuina.

Pro statione secunda.

1) Pro latitudine n.

Radius: 80. 15. 50 = 9.9769234:

Cos. PTn. = 75. 17. 31 = 9.9855307: §. XXXIX.

Tang. Tn. = 53. 4. 22 = 10.1240338: §. XXIV.

Tang. X. = 52. 9. 7 = 10.1095045.

TP. = 71. 29. 13.

TP-X. = 19. 20. 6.

Compl. = 70. 39. 54.

2.

Radius : 80. 15. 50 = 9.9769234:

Cos. PF. = 71. 29. 13 = 9.9769234:

Cos. PTn. = 43. 6. 28 = 9.8346578:

Cos. Pn. = 40. 23. 30 = 9.8115812.

Pn. = 49. 36. 30.

3) Pro angulo nPT.

S. Pn. = 49. 36. 30 = 9.8817455:

Radium =

S. PTn. = 46. 53. 32 = 9.8633642:

S. FPn. = 73. 26. 51 = 9.9816187.

S. nPT. = 106. 33. 9.

4) Pro longitudine n.

nP. = 106. 33. 9.

TPL. = 67. 21. 15.

nPL. = 173. 54. 24.

LPf. = 20. 30. 0.

153. 24. 24.

206. 35. 36.

Longitudo n.

5) Pro angulo PnT.

S. Pn. = 49. 36. 30 = 9.8817455:

S. PTn. = 46. 53. 32 = 9.8633642:

S. TP. = 71. 29. 13 = 9.9769234:

19. 8402876.

S. PnT. = 65. 21. 41 = 9.9585421.

Pro statione tertia.

Pro Triangu-
lo PTn.

1) Pro latitudine n.

Radius: 80. 15. 50 = 9.9769234:

Cos. PTn. = 75. 17. 31 = 9.9855307: §. XXXIX.

Tang. Tn. = 53. 4. 22 = 10.1240338: §. XXIV.

Tang. X. = 52. 9. 7 = 10.1095045.

TP. = 71. 29. 13.

TP-X. = 19. 20. 6.

Compl. = 70. 39. 54.

Cos. X. = 37. 50. 53 = 9.7878638:

Cos. Tn. = 36. 55. 38 = 9.7787300: §. XXIV.

C. TP-X. = 70. 39. 54 = 9.9747874:

19.7535174.

Cos. Pn. = 67. 30. 44 = 9.9656536.

Pn. = 22. 29. 16.

3) Pro angulo nPT.

S. Pn. = 22. 29. 16 = 9.5826159:

S. PTn. = 14. 42. 29 = 9.4046522: §. XXXIX.

S. Tn. = 53. 4. 22 = 9.9027639: §. XXIV.

19.3074161.

S. nPT. = 32. 2. 55 = 9.7248002.

4) Pro longitudine n.

nP. = 32. 2. 55.

TPL. = 80. 58. 15.

nPL. = 113. 1. 10.

LPf. = 20. 30. 0.

92. 31. 10.

267. 28. 50.

Longitudo n.

5) Pro angulo PnT.

S. Pn. = 22. 29. 16 = 9.5826159:

S. PTn. = 14. 42. 29 = 9.4046522:

S. TP. = 71. 29. 13 = 9.9769234: §. IV. III.

19.3815756.

S. PnT. = 39. 0. 34 = 9.7989597.

Pro

Pro statione quarta.

1) Pro latitudine n.

Radius:

$$\S\text{ XXXIX. } \cos.PTn. = 80^\circ 35' 38'' = 9.9941212:$$

$$\S\text{ XXIV. } \tan.Tn. = 52^\circ 45. 42 = 10.1191313:$$

$$\tan.X. = 52. 23. 14 = 10.1132525.$$

$$TP. = 71. 29. 13:$$

$$TP-X. = 19. 5. 59.$$

$$Compl. = 70. 54. 1.$$

2.

$$\cos.X. = 37. 36. 46 = 9.7855589:$$

$$\S\text{ XXIV. } \cos.Tn. = 37. 14. 18 = 9.7818501:$$

$$\S\text{ C. } TP-X. = 70. 54. 1 = 9.9754090:$$

$$\S\text{ D. } TP. = 71. 29. 13 = 10.1143156:$$

$$\cos.Pn. = 69. 32. 23 = 9.9717002.$$

$$Pn. = 20. 27. 37:$$

3) Pro angulo nPT.

$$S.Pn. = 20. 27. 37 = 9.5435191:$$

$$\S\text{ XXXII. } S.PTn. = 9. 24. 22 = 9.2133347:$$

$$\S\text{ XXIV. } S.Tn. = 52. 45. 42 = 9.9009809:$$

$$\S\text{ V. } nPT. = 21. 51. 9 = 10.1143156.$$

$$S.nPT. = 21. 51. 9 = 9.5707965.$$

4) Pro longitudine n.

$$nPT. = 21. 51. 9:$$

$$\S\text{ XXX. } TPL. = 82. 50. 45. pag. 61. linea 1.$$

$$\S\text{ XXX. } nPL. = 104. 41. 54:$$

$$LPf. = 20. 30. 0:$$

$$84. 11. 54:$$

$$275. 48. 6:$$

$$\text{Longitudo n.}$$

5) Pro angulo PnT.

$$S.Pn. = 20. 27. 37 = 9.5435191:$$

$$S.PTn. = 9. 24. 22 = 9.2133347:$$

$$\S\text{ IV. III. b. } S.TP. = 71. 29. 13 = 9.9769234:$$

$$\S\text{ V. } PnT. = 26. 19. 3 = 10.1902581.$$

$$PnT. = 26. 19. 3 = 9.6467390.$$

Pro statione quinta.

1) Pro latitudine n.

$$\S\text{ XXXIX. } \cos.PTn. = 80^\circ 35' 38'' = 9.9941212:$$

$$\S\text{ XXIV. } \tan.Tn. = 52^\circ 45. 42 = 10.1191313:$$

$$\tan.X. = 52. 23. 14 = 10.1132525.$$

$$TP. = 71. 29. 13:$$

$$TP-X. = 19. 5. 59.$$

$$Compl. = 70. 54. 1.$$

2.

$$Tn. = 53^\circ 46' 53'':$$

$$\S\text{ IV. III. b. } TP. = 71. 29. 13:$$

$$Pn. = 17. 42. 20:$$

$$Compl. = 72. 17. 40:$$

3) Pro angulo nPT.

$$S.Pn. = 20. 27. 37 = 9.5435191:$$

$$\S\text{ XXXII. } S.PTn. = 9. 24. 22 = 9.2133347:$$

$$\S\text{ XXIV. } S.Tn. = 52. 45. 42 = 9.9009809:$$

$$\S\text{ V. } nPT. = 21. 51. 9 = 10.1143156.$$

4) Pro longitudine n.

$$nPT. = 21. 51. 9:$$

$$\S\text{ XXX. } TPL. = 86. 11. 30:$$

$$\S\text{ XXX. } nPL. = 104. 41. 54:$$

$$LPf. = 20. 30. 0:$$

$$65. 41. 30:$$

$$294. 18. 30:$$

$$\text{Longitudo n. ut } \S\text{ LI. pro statione 5ta.}$$

5) Pro angulo PnT.

$$S.Pn. = 20. 27. 37 = 9.5435191:$$

$$S.PTn. = 9. 24. 22 = 9.2133347:$$

$$\S\text{ IV. III. b. } S.TP. = 71. 29. 13 = 9.9769234:$$

$$\S\text{ V. } PnT. = 26. 19. 3 = 10.1902581.$$

$$PnT. = 26. 19. 3 = 9.6467390.$$

Pro

Pro statione sexta.

1) Pro latitudine n.

Radius:

$\text{Cos. PTn.} = 80^\circ 15' .50'' = 9.9936994 =$

$\text{Tang. Tn.} = 57. 20. 58 = 10.1932976 :$

$\text{Tang. X.} = 56. 58. 15 = 10.1869970 :$

$\text{TP.} = 71. 29. 13 :$

$\text{TP-X.} = 14. 30. 58 :$

$\text{Compl.} = 75. 29. 12 :$

2.

$\text{Cos. X.} = 33. 1. 45 = 9.7364490 :$

$\text{Cos. Tn.} = 32. 39. 2 = 9.7320027 =$

$\text{C. TP-X.} = 75. 29. 12 = 9.9859100 :$

$= 19.7179127.$

$\text{Cos. Pn.} = 73. 22. 44 = 9.9814637.$

$\text{Pn.} = 16. 37. 16.$

3) Pro angulo nPT.

$S.Pn. = 16. 37. 16 = 9.4564289 :$

$S.PTn. = 9. 44. 10 = 9.2281707 =$

$S.Tn. = 57. 20. 58 = 9.9252997 :$

$= 19.1534704.$

$S.nPT. = 29. 51. 13 = 9.6970415.$

4) Pro longitudine n.

$nPT. = 29. 51. 13.$

$TPL. = 89. 51. 30.$

$nPL. = 60. 0. 17.$

$LPf. = 20. 30. 0.$

$= 39. 30. 17.$

$= 320. 29. 43.$

Longitudo n.

5) Pro angulo PnT.

$S.Pn. = 16. 37. 16 = 9.4564289 :$

$S.PTn. = 9. 44. 10 = 9.2281707 =$

$S.TP. = 71. 29. 13 = 9.9769234 :$

$= 19.2050941.$

$S.PnT. = 34. 5. 54 = 9.748652,$

Pro statione septima.

1) Pro latitudine n.

§. XXXIX.

§. XXIV.

§. IV. III. b.

§. IV. III. a.

§. IV. III. c.

§. IV. III. d.

§. IV. III. e.

§. IV. III. f.

§. IV. III. g.

§. IV. III. h.

§. IV. III. i.

§. IV. III. j.

§. IV. III. k.

§. IV. III. l.

§. IV. III. m.

§. IV. III. n.

§. IV. III. o.

§. IV. III. p.

§. IV. III. q.

§. IV. III. r.

§. IV. III. s.

§. IV. III. t.

§. IV. III. u.

§. IV. III. v.

§. IV. III. w.

§. IV. III. x.

§. IV. III. y.

§. IV. III. z.

§. IV. III. aa.

§. IV. III. bb.

§. IV. III. cc.

§. IV. III. dd.

§. IV. III. ee.

§. IV. III. ff.

§. IV. III. gg.

§. IV. III. hh.

§. IV. III. ii.

§. IV. III. jj.

§. IV. III. kk.

§. IV. III. ll.

§. IV. III. mm.

§. IV. III. nn.

§. IV. III. oo.

§. IV. III. pp.

§. IV. III. qq.

§. IV. III. rr.

§. IV. III. ss.

§. IV. III. tt.

§. IV. III. uu.

§. IV. III. vv.

§. IV. III. ww.

§. IV. III. xx.

§. IV. III. yy.

§. IV. III. zz.

§. IV. III. aa.

§. IV. III. bb.

§. IV. III. cc.

§. IV. III. dd.

§. IV. III. ee.

§. IV. III. ff.

§. IV. III. gg.

§. IV. III. hh.

§. IV. III. ii.

§. IV. III. jj.

§. IV. III. kk.

§. IV. III. ll.

§. IV. III. mm.

§. IV. III. nn.

§. IV. III. oo.

§. IV. III. pp.

§. IV. III. qq.

§. IV. III. rr.

§. IV. III. ss.

§. IV. III. tt.

§. IV. III. uu.

§. IV. III. vv.

§. IV. III. ww.

§. IV. III. xx.

§. IV. III. yy.

§. IV. III. zz.

§. IV. III. aa.

§. IV. III. bb.

§. IV. III. cc.

§. IV. III. dd.

§. IV. III. ee.

§. IV. III. ff.

§. IV. III. gg.

§. IV. III. hh.

§. IV. III. ii.

§. IV. III. jj.

§. IV. III. kk.

§. IV. III. ll.

§. IV. III. mm.

§. IV. III. nn.

§. IV. III. oo.

§. IV. III. pp.

§. IV. III. qq.

§. IV. III. rr.

§. IV. III. ss.

§. IV. III. tt.

§. IV. III. uu.

§. IV. III. vv.

§. IV. III. ww.

§. IV. III. xx.

§. IV. III. yy.

§. IV. III. zz.

§. IV. III. aa.

§. IV. III. bb.

§. IV. III. cc.

§. IV. III. dd.

§. IV. III. ee.

§. IV. III. ff.

§. IV. III. gg.

§. IV. III. hh.

§. IV. III. ii.

§. IV. III. jj.

§. IV. III. kk.

§. IV. III. ll.

§. IV. III. mm.

§. IV. III. nn.

§. IV. III. oo.

§. IV. III. pp.

§. IV. III. qq.

§. IV. III. rr.

§. IV. III. ss.

§. IV. III. tt.

§. IV. III. uu.

§. IV. III. vv.

§. IV. III. ww.

§. IV. III. xx.

§. IV. III. yy.

§. IV. III. zz.

§. IV. III. aa.

§. IV. III. bb.

§. IV. III. cc.

§. IV. III. dd.

§. IV. III. ee.

§. IV. III. ff.

§. IV. III. gg.

§. IV. III. hh.

§. IV. III. ii.

§. IV. III. jj.

§. IV. III. kk.

§. IV. III. ll.

§. IV. III. mm.

§. IV. III. nn.

§. IV. III. oo.

§. IV. III. pp.

§. IV. III. qq.

§. IV. III. rr.

§. IV. III. ss.

§. IV. III. tt.

§. IV. III. uu.

§. IV. III. vv.

§. IV. III. ww.

§. IV. III. xx.

§. IV. III. yy.

§. IV. III. zz.

§. IV. III. aa.

§. IV. III. bb.

§. IV. III. cc.

§. IV. III. dd.

§. IV. III. ee.

§. IV. III. ff.

§. IV. III. gg.

§. IV. III. hh.

§. IV. III. ii.

§. IV. III. jj.

§. IV. III. kk.

§. IV. III. ll.

§. IV. III. mm.

§. IV. III. nn.

§. IV. III. oo.

§. IV. III. pp.

§. IV. III. qq.

§. IV. III. rr.

§. IV. III. ss.

§. IV. III. tt.

§. IV. III. uu.

§. IV. III. vv.

§. IV. III. ww.

§. IV. III. xx.

§. IV. III. yy.

§. IV. III. zz.

§. IV. III. aa.

§. IV. III. bb.

§. IV. III. cc.

§. IV. III. dd.

§. IV. III. ee.

§. IV. III. ff.

§. IV. III. gg.

§. IV. III. hh.

§. IV. III. ii.

§. IV. III. jj.

§. IV. III. kk.

§. IV. III. ll.

§. IV. III. mm.

§. IV. III. nn.

§. IV. III. oo.

§. IV. III. pp.

§. IV. III. qq.

§. IV. III. rr.

§. IV. III. ss.

§. IV. III. tt.

§. IV. III. uu.

§. IV. III. vv.

§. IV. III. ww.

§. IV. III. xx.

§. IV. III. yy.

§. IV. III. zz.

§. IV. III. aa.

§. IV. III. bb.

§. IV. III. cc.

§. IV. III. dd.

§. IV. III. ee.

§. IV. III. ff.

§. IV. III. gg.

§. IV. III. hh.

§. IV. III. ii.

§. IV. III. jj.

§. IV. III. kk.

§. IV. III. ll.

§. IV. III. mm.

§. IV. III. nn.

§. IV. III. oo.

§. IV. III. pp.

§. IV. III. qq.

§. IV. III. rr.

§. IV. III. ss.

§. IV. III. tt.

§. IV. III. uu.

§. IV. III. vv.

§. IV. III. ww.

§. IV. III. xx.

§. IV. III. yy.

§. IV. III. zz.

§. IV. III. aa.

§. IV. III. bb.

§. IV. III. cc.

§. IV. III. dd.

§. IV. III. ee.

§. IV. III. ff.

§. IV. III. gg.

§. IV. III. hh.

§. IV. III. ii.

§. IV. III. jj.

§. IV. III. kk.

§. IV. III. ll.

§. IV. III. mm.

§. IV. III. nn.

§. IV. III. oo.

§. IV. III. pp.

§. IV. III. qq.

§. IV. III. rr.

§. IV. III. ss.

§. IV. III. tt.

§. IV. III. uu.

§. IV. III. vv.

§. IV. III. ww.

§. IV. III. xx.

§. IV. III. yy.

§. IV. III. zz.

§. IV. III. aa.

§. IV. III. bb.

§. IV. III. cc.

§. IV. III. dd.

§. IV. III. ee.

§. IV. III. ff.

§. IV. III. gg.

§. IV. III. hh.

§. IV. III. ii.

§. IV. III. jj.

§. IV. III. kk.

§. IV. III. ll.

§

§. LIV.

Pro Triangu-
lo PTo.

Pro statione secunda.

1) Pro latitudine o.

Radius:

$$\S. XLII. \cos.PTo. = 43^{\circ} 41' 10'' = 9.8392939 =$$

$$\S. XLVIII. \tan. To. = 78. 28. 40 = 10.6906761 :$$

$$\tan. X. = 73. 33. 23 = 10.5299700.$$

$$TP. = 71. 29. 13.$$

$$X-TP. = 2. 4. 10.$$

$$Compl. = 87. 55. 50.$$

2.

$$\cos.X. = 16. 26. 37 = 9.4518962 :$$

$$\S. XLVIII. \cos. To. = 11. 31. 20 = 9.3004823 =$$

$$C.X-TP. = 87. 55. 50 = 9.9997166 :$$

$$Cos. Po. = 44. 50. 40 = 9.8483027.$$

$$Po. = 45. 9. 20.$$

3) Pro angulo oPT.

$$S. Po. = 45. 9. 20 = 9.8506609 :$$

$$\S. XLII. S. PTo. = 46. 18. 50 = 9.8592192 =$$

$$\S. XLVIII. S. To. = 78. 28. 40 = 9.9911582 :$$

$$S. oPT. = 87. 55. 49 = 9.8593774.$$

$$S. oPT. = 87. 55. 49 = 9.9997165.$$

4) Pro longitudine o.

$$\S. XXX. oPT. = 92. 1. 4. 11. 9 =$$

$$TPL. = 67. 21. 1. 15. 8 =$$

$$oPL. = 159. 25. 26. 8 =$$

$$LPf. = 20. 30. 1. 0. 4 =$$

$$138. 55. 26.$$

$$221. 1. 4. 34.$$

$$Longitudo o.$$

5) Pro angulo PoT.

$$S. Po. = 45. 9. 20 = 9.8506609 :$$

$$S. PTo. = 46. 18. 50 = 9.8592192 =$$

$$\S. IV. III. b. S. TP. = 71. 29. 13 = 9.9769234 :$$

$$S. PoT. = 75. 16. 3 = 9.9854817.$$

Pro statione tertia.

1) Pro latitudine o.

$$Radius: 00. 0 = 00. 0 = 9.873005 =$$

$$\cos. PTo. = 76^{\circ} 12' 41'' = 9.9873005 =$$

$$\tan. To. = 51. 47. 36 = 10.1039641 :$$

$$\tan. X. = 50. 58. 35 = 10.0912646 :$$

$$TP. = 71. 29. 13 = X-TP.$$

$$TP-X. = 20. 30. 38 = Compl.$$

$$Compl. = 69. 29. 22.$$

3) Pro angulo oPT.

$$S. Po. = 23. 4. 7 = 9.5931012 :$$

$$S. PTo. = 13. 47. 19 = 9.3771977 =$$

$$S. To. = 51. 47. 36 = 9.8953044 :$$

$$S. oPT. = 28. 33. 11 = 19.2725021.$$

$$S. oPT. = 28. 33. 11 = 9.6794009.$$

4) Pro longitudine o.

$$oPT. = 28. 33. 11. =$$

$$TPL. = 80. 58. 15. =$$

$$oPL. = 109. 31. 26. =$$

$$LPf. = 20. 30. 0. =$$

$$89. 1. 26. =$$

$$270. 58. 34. =$$

$$Longitudo o.$$

5) Pro angulo PoT.

$$S. Po. = 23. 4. 7 = 9.5931012 :$$

$$S. PTo. = 13. 47. 19 = 9.3771977 =$$

$$S. TP. = 71. 29. 13 = 9.9769234 :$$

$$S. PoT. = 35. 13. 31 = 19.3541246.$$

$$S. PoT. = 35. 13. 31 = 9.7610199.$$

Pro

Pro statione quarta.

1) Pro latitudine o.

Radius:

$\text{Cos. PTO.} = 81^{\circ} 30' 43'' = 9.9952168$

$\text{Tang. TO.} = 51. 35. 25 = 10.1007999$

$\text{Tang. X.} = 51. 16. 58 = 10.0960167$

$\text{TP.} = 71. 29. 13$

$\text{TP-X.} = 20. 12. 15$

$\text{Compl.} = 69. 47. 45$

2.

$\text{Cos. X.} = 38. 43. 2 = 9.7962115$

$\text{Cos. To.} = 38. 24. 35 = 9.7932879$

$\text{C. TP-X.} = 69. 47. 45 = 9.9724194$

19.7657073

$\text{Cos. Po.} = 68. 46. 33 = 9.9694958$

$\text{Po.} = 21. 13. 27$

3) Pro angulo oPT.

$\text{S. Po.} = 21. 13. 27 = 9.5587299$

$\text{S. PTO.} = 8. 29. 17 = 9.1690957$

$\text{S. To.} = 51. 35. 25 = 9.8940885$

19.0631842

$\text{S. oPT.} = 18. 37. 55 = 9.5044543$

4) Pro longitudine o.

$\text{oPT.} = 18. 37. 55$

$= 82. 50. 45 \text{ pag. 61 linea 1}$

$\text{oPL.} = 101. 28. 40$

$\text{LPf.} = 20. 30. 0$

$80. 58. 40$

$279. 1. 20$

Longitudo o.

5) Pro angulo PoT.

$\text{S. Po.} = 21. 13. 27 = 9.5587299$

$\text{S. PTO.} = 8. 29. 17 = 9.1690957$

$\text{S. TP.} = 71. 29. 13 = 9.9769234$

19.1460191

$\text{S. PoT.} = 22. 44. 40 = 9.5872892$

Pro statione quinta.

1) Pro latitudine o.

Radius:

$\text{Cos. PTO.} = 89^{\circ} 6'. 43'' = 9.9999478 = \$.\text{XLII.}$

$\text{Tang. TO.} = 52. 46. 44 = 10.11194024 : \$.\text{XLVIII.}$

$\text{Tang. X.} = 52. 46. 32 = 10.11193502$

$\text{TP.} = 71. 29. 13$

$\text{TP-X.} = 18. 42. 41$

$\text{Compl.} = 71. 17. 19$

2.

$\text{Cos. X.} = 37. 13. 28 = 9.7817115$

$\text{Cos. To.} = 37. 13. 16 = 9.7816782$

$\text{C. TP-X.} = 71. 17. 19 = 9.9764172$

19.7580954

$\text{Cos. Po.} = 71. 16. 32 = 9.9763839$

$\text{Po.} = 18. 43. 28$

3) Pro angulo oPT.

$\text{S. Po.} = 18. 43. 28 = 9.5065281$

$\text{S. PTO.} = 0. 53. 17 = 8.1902847 = \$.\text{XLII.}$

$\text{S. To.} = 52. 46. 44 = 9.9010803 : \$.\text{XLVIII.}$

18.0913650

$\text{S. oPT.} = 2. 12. 12 = 8.5848369$

4) Pro longitudine o.

$\text{oPT.} = 2. 12. 12$

$= 86. 11. 30 =$

$\text{oPL.} = 83. 59. 18 =$

$\text{LPf.} = 20. 30. 0 =$

$63. 29. 18 =$

$296. 30. 42 =$

Longitudo o.

5) Pro angulo PoT.

$\text{S. Po.} = 18. 43. 28 = 9.5065281$

$\text{S. PTO.} = 0. 53. 17 = 8.1902847$

$\text{S. TP.} = 71. 29. 13 = 9.9769234 : \$.\text{IV. III. b.}$

18.1672081

$\text{S. PoT.} = 2. 37. 26 = 8.6606800$

Pro statione diuina

§. LV.

Pro statione secunda.

1) Pro latitudine w.

$$\begin{aligned} \text{Radius:} \\ \text{Cos. PTW.} &= 42^{\circ} 31' 48'' = 9.8299314 \\ \text{Tang. Tw.} &= 84. 20. 32 = 11.0940624 : \\ \text{Tang. X.} &= 81. 39. 44 = 10.8339938. \\ \text{TP.} &= 71. 29. 13. \\ \text{X-TP.} &= 10. 31. \\ \text{Compl.} &= 79. 49. 29. \end{aligned}$$

2.

$$\begin{aligned} \text{Cos. X.} &= 8. 20. 16 = 9.1613936 : \\ \text{Cos. Tw.} &= 5. 39. 28 = 8.9938167 : \\ \text{C.X-TP.} &= 79. 49. 29 = 9.9931151 : \\ &\quad 18.9869318. \\ \text{Cos. Pw.} &= 42. 0. 12 = 9.8255382. \\ \text{Pw.} &= 47. 59. 48. \end{aligned}$$

3) Pro angulo wPT.

$$\begin{aligned} \text{S.Pw.} &= 47. 59. 48 = 9.8710507 : \\ \text{S.PTw.} &= 47. 28. 12 = 9.8674224 : \\ \text{S.Tw.} &= 84. 20. 32 = 9.9978792 : \\ &\quad 19.8053016. \\ \text{S.wPT.} &= 80. 41. 52. \quad 9.9942509. \end{aligned}$$

4) Pro longitudine w.

$$\begin{aligned} \text{wPT.} &= 99. 18. 8. \\ \text{TPL.} &= 67. 21. 15. \\ \text{wPL.} &= 166. 39. 23. \\ \text{LPf.} &= 20. 30. 0. \\ &\quad 146. 9. 23. \\ &\quad 213. 50. 37. \\ \text{Longitudo w.} & \end{aligned}$$

5) Pro angulo PwT.

$$\begin{aligned} \text{S.Pw.} &= 47. 59. 48 = 9.8710507 : \\ \text{S.PTw.} &= 47. 28. 12 = 9.8674224 : \\ \text{S.TP.} &= 71. 29. 13 = 9.9769234 : \\ &\quad 19.8443458. \\ \text{S.PwT.} &= 70. 6. 45 = 9.9732951. \end{aligned}$$

Pro statione diuina

2) Pro latitudine w.

$$\begin{aligned} \text{Radius:} &= 9. 9836808 = \text{§. XLIII.} \\ \text{Cos. PTW.} &= 74^{\circ} 23' 28'' = 9.9836808 = \text{§. XLIII.} \\ \text{Tang. Tw.} &= 52. 0. 31 = 10.1073247 = \text{§. XLIX.} \\ \text{Tang. X.} &= 50. 57. 35 = 10.0910055. \\ \text{TP.} &= 71. 29. 13. \\ \text{TP-X.} &= 20. 31. 38. \\ \text{Compl.} &= 69. 28. 22. \end{aligned}$$

2.

$$\begin{aligned} \text{Cos. X.} &= 39. 2. 25 = 9.7992485 : \\ \text{Cos. Tw.} &= 37. 59. 29 = 9.7892584 = \text{§. XLIX.} \\ \text{C.TP-X.} &= 69. 28. 22 = 9.9715104 : \\ &\quad 19.7607588. \\ \text{Cos.Pw.} &= 66. 14. 8 = 9.9615203. \\ \text{Pw.} &= 23. 45. 52. \end{aligned}$$

3) Pro angulo wPT.

$$\begin{aligned} \text{S.Pw.} &= 23. 45. 52 = 9.6052809 : \\ \text{S.PTw.} &= 15. 36. 32 = 9.4298640 = \text{§. XLIII.} \\ \text{S.Tw.} &= 52. 0. 31 = 9.8965827 = \text{§. XLIX.} \\ \text{S.wPT.} &= 31. 45. 1 = 9.7211658. \end{aligned}$$

4) Pro longitudine w.

$$\begin{aligned} \text{wPT.} &= 31. 45. 1. \\ \text{TPL.} &= 80. 58. 15. \\ \text{wPL.} &= 112. 43. 16. \\ \text{LPf.} &= 20. 30. 0. \\ &\quad 192. 13. 16. \\ &\quad 267. 46. 44. \\ \text{Longitudo w.} & \end{aligned}$$

5) Pro angulo PwT.

$$\begin{aligned} \text{S.Pw.} &= 23. 45. 52 = 9.6052809 : \\ \text{S.PTw.} &= 15. 36. 32 = 9.4298640 = \text{§. XLIII.} \\ \text{S.TP.} &= 71. 29. 13 = 9.9769234 = \text{§. IV. III. b.} \\ &\quad 19.4067874. \\ \text{S.PwT.} &= 39. 16. 58 = 9.8015065. \end{aligned}$$

Pro

O 3

Pro

Pro statione quarta.

1) Pro latitudine w.

Radius:

$$\text{§. XLIII. Cos. PTw.} = 79^{\circ} 40' .33 = 9.9929110 =$$

$$\text{§. XLIX. Tang. Tw.} = 51^{\circ} 35.25 = 10.1007999 :$$

$$\text{Tang. X.} = 51^{\circ} 8.3 = 10.0937109.$$

$$\text{TP.} = 71^{\circ} 29.13. =$$

$$\text{TP-X.} = 20.21.10. =$$

$$\text{Compl.} = 69.38.50. =$$

2.

$$\text{Cos. X.} = 38.51.57 = 9.9796130 :$$

$$\text{§. XLIX. Cos. Tw.} = 38.24.35 = 9.7932879 =$$

$$\text{C. TP-X.} = 69.38.50 = 9.9729032 :$$

$$19.7652911.$$

$$\text{Cos. Pw.} = 68.10.0 = 9.9676781.$$

$$\text{Pw.} = 21.50.0.$$

3) Pro angulo wPT.

$$\text{S. Pw.} = 21.50.0 = 9.5704355 :$$

$$\text{§. XLIII. S. PTw.} = 10.19.27 = 9.2533795 :$$

$$\text{§. XLIX. S. Tw.} = 51.35.25 = 9.8940885 :$$

$$19.1474680.$$

$$\text{S. wPT.} = 22.11.7 = 9.5770325.$$

4) Pro longitudine w.

$$\text{wPT.} = 22.11.7.$$

$$\text{§. XXX. TPL.} = 82.50.45.\text{pag. 61 linea 1.}$$

$$\text{wPL.} = 105.1.52.$$

$$\text{LPf.} = 20.30.0.$$

$$84.31.52.$$

$$275.28.8.$$

$$\text{Longitudo w.}$$

5) Pro angulo PwT.

$$\text{S. Pw.} = 21.50.0 = 9.5704355 :$$

$$\text{S. PTw.} = 10.19.27 = 9.2533795 :$$

$$\text{§. IV. III. b. S. TP.} = 71.29.13 = 9.9769234 :$$

$$19.2303029.$$

$$\text{S. PwT.} = 27.11.25 = 9.6598674.$$

Pro statione quinta.

1) Pro latitudine w.

Radius:

$$\text{Cos. PTw.} = 89^{\circ} 6'.4'' = 9.9999467 =$$

$$\text{Tang. Tw.} = 52.23.31 = 10.1133245 :$$

$$\text{Tang. X.} = 52.23.19 = 10.1132712.$$

$$\text{TP.} = 71.29.13. =$$

$$\text{TP-X.} = 19.5.54. =$$

$$\text{Compl.} = 70.54.6. =$$

2.

$$\text{Cos. X.} = 37.36.41 = 9.7855453 :$$

$$\text{Cos. Tw.} = 37.36.29 = 9.7855125 :$$

$$\text{C. TP-X.} = 70.54.6 = 9.9754127 :$$

$$19.7609252.$$

$$\text{Cos. Pw.} = 70.53.21 = 9.9753799.$$

$$\text{Pw.} = 19.6.39.$$

3) Pro angulo wPT.

$$\text{S. Pw.} = 19.6.39 = 9.5150741 :$$

$$\text{S. PTw.} = 0.53.56 = 8.1955609 :$$

$$\text{S. Tw.} = 52.23.31 = 9.8988376 :$$

$$18.0943985.$$

$$\text{S. wPT.} = 2.10.32 = 8.5793244.$$

4) Pro longitudine w.

$$\text{wPT.} = 2.10.32. =$$

$$\text{TPL.} = 86.11.30. =$$

$$\text{wPL.} = 88.22.2. =$$

$$\text{LPf.} = 20.30.0. =$$

$$67.52.2. =$$

$$292.7.58. =$$

$$\text{Longitudo w.}$$

5) Pro angulo PwT.

$$\text{S. Pw.} = 19.6.39 = 9.5150741 :$$

$$\text{S. PTw.} = 0.53.56 = 8.1955609 :$$

$$\text{S. TP.} = 71.29.13 = 9.9769234 :$$

$$18.1724843.$$

$$\text{S. PwT.} = 2.36.26 = 8.6574102.$$

Pro

Pro statione sexta.

1) Pro latitudine w.

Radius: $18^{\circ} 51' 17'' = 9.9947251$
 Cos. PTW. $= 81^{\circ} 51' 17'' = 9.9947251$
 Tang. Tw. $= 55.37.12 = 10.1648158$
 Tang. X. $= 55.17.42 = 10.1595409$
 TP. $= 71.29.13$
 TP-X. $= 16.11.31$
 Compl. $= 73.48.29$

Cos. X. $= 34.42.18 = 9.7553803$
 Cos. Tw. $= 34.22.48 = 9.7518016$
 C. TP-X. $= 73.48.29 = 9.9824218$
 Pw. $= 17.21.538 = 9.7342234$
 Cos. Pw. $= 72.15.38 = 9.9788431$
 Pw. $= 17.44.22$

2) Pro angulo wPT.

S.Pw. $= 17.44.22 = 9.4838565$
 S.PTw. $= 8.54.43 = 9.1900971$
 S.Tw. $= 55.37.12 = 9.9166171$
 $\quad \quad \quad = 19.1067142$
 S.wPT. $= 24.48.39 = 9.6228577$

3) Pro longitudine w.

wPT. $= 24.48.39$
 TPL. $= 89.51.30$
 wPL. $= 65.2.51$
 LPT. $= 20.30.0$
 $\quad \quad \quad = 44.32.51$
 $\quad \quad \quad = 315.27.9$
 Longitudo w.

4) Pro angulo PwT.

S.Pw. $= 17.44.22 = 9.4838565$
 S.PTw. $= 8.54.43 = 9.1900971$
 S.TP. $= 71.29.13 = 9.9769234$
 $\quad \quad \quad = 19.1670205$
 S.PwT. $= 28.49.29 = 9.6831640$

Pro statione septima.

1) Pro latitudine w.

Radius: $18^{\circ} 29' 54'' = 9.9479223$
 Cos. PTW. $= 62^{\circ} 29' 54'' = 9.9479223 = \$.\text{XLIII}$
 Tang. Tw. $= 78.28.40 = 10.6906761 = \$.\text{XLIX}$
 Tang. X. $= 77.3.24 = 10.6385984$
 TP. $= 71.29.13$

X-TP. $= 5.34.11$
 Compl. $= 84.25.49$

2) Pro angulo wPT.

Cos. X. $= 12.56.36 = 9.3502233$
 Cos. Tw. $= 11.31.20 = 9.3004823 = \$.\text{XLIX}$
 C. X. TP. $= 84.25.49 = 9.9979447$
 $\quad \quad \quad = 19.2984270$
 Cos. Pw. $= 62.34.11 = 9.9482037$
 Pw. $= 27.25.49$

3) Pro angulo PwT.

S.Pw. $= 27.25.49 = 9.6633889$
 S.PTw. $= 27.30.6 = 9.6644299 = \$.\text{XLIII}$
 S.Tw. $= 78.28.40 = 9.9911582 = \$.\text{XLIX}$
 $\quad \quad \quad = 19.6555881$
 S.wPT. $= 79.10.22 = 9.9921992$

4) Pro longitudine w.

wPT. $= 100.49.38$
 TPL. $= 98.20.15$
 wPL. $= 2.29.23$
 LPT. $= 20.30.0$
 $\quad \quad \quad = 22.59.23$

Longitudo w.

5) Pro angulo PwT.

S.Pw. $= 27.25.49 = 9.6633889$
 S.PTw. $= 27.30.6 = 9.6644299$
 S.TP. $= 71.29.13 = 9.9769234 = \$.\text{IV.III.b}$
 $\quad \quad \quad = 19.6413533$
 S.PwT. $= 71.54.7 = 9.9779644$

§. LVI.

Ex mappis DE L'ISLE.

Via centri. Numerantibus igitur Parisis, $4^{\circ} 27'. 19''$. (§. XVIII. 2.) centrum umbræ in mari pacifico, vel del Sud prima omnium vice discum terræ ingreditur. Totam deinceps percurrit plagam Americae vel marium septentrionalium, totaliter fere adhuc ignoratum, donec $5^{\circ}. 23'. 53''$ a nova Dania Americae arctice finistrorum accurate hæreat in circulo arctico. Pergit ascendendo appropinquare polo, ac $5^{\circ}. 31'. 23''$. magis adhuc polo accessit, $5^{\circ}. 44'. 46''$. transit prope caput S. Joris. Tandem $5^{\circ}. 59'. 26''$ in litorebus insulae de Cumberland borealioribus vicinissimum fit polo. Descendit per fretum Davis, Greenlandiam novam, Ylandiam, mare percurrit septentrionale, intrat Norwegiam, per prefactura Drottheimenis partes australiores, ac Bergensis borealiores appropinquat Gudal Norwegia, perambulat Wermelandiam Suecia, lacum Wæner austrum versus inquit, per Orebro Nericiæ, ac Sudermanniam itinere facto, prope Nyköping 15 circiter leucus ab Holmia S. w. versus mare Balticum intrat, insulam Gothlandiam itidem austrum versus lictorum videtur, vel ejus partes tangit borealiores, continuata via per mare Balticum, apud Windaw ad ostia fluvii Weta visitat Curlandiam, ac per ejus urbem Goldingen prosequitur iter Samogitiam Poloniarum ingressurum, ac ab urbe Doblem S. o. versus quam proxime apud villam Szawles terram deserit numerantibus Parisis, $6^{\circ}. 35'. 27''$. Prout igitur nobis iam maxima celeritate Sueciam DE L'ISLE considerantibus videtur, præter memoratas regiones qua boream Dalekarlia, Helsingia, Medelpadia, Finlandia meridionaliores regiones, Nylandia, Carelia, tota Livonia, Esthonia tota, Ingria, spro Petroburgum, ac quædam regiones Russiæ ulteriores: qua austrum vero, forsitan tota Iutia, Fonia, Seelandia, Scandia, Gothia regiones, Prussia utraque, dubito an & tota Pomerania solem ad occasione totaliter spectaturi sunt obscuratum. Quod si tamen alicubi in hac macula umbrosa determinanda erravimus, hic nos ob summam typographi festinationem, aliaque prementia quædam negotia, præ ceteris excusari expetimus.



§. LVII.

§. LVII.

** H abes jam quæ nobis proposueramus. Liceat nunc methodos
ssorum I, & VII. usque ad XXI. inclusive, brevissime contractas re-
petere. In his autem ssis, & figura prima universaliter V dicamus VII. usque ad
jamjam, quæ ibidem I, II, III &c. appellabantur, cujusmodi tamen V
nullibi expressimus in schemate, cum valeat de omni, ac ne forsan
cum numero V confundaris, per O vero quodvis intelligi volumus
a, m, c, in A, vel C.

Methodi
ss I.
&
XXI.

Primo igitur pro semita primaria, quæ nobis est semita contactus,
datur VO, OT, TM. Hinc in Δ o MVT, ex VO + OT = VT,
TM, & angulo recto M, habetur MVT, MTV, quorum dat uno,
datur & alter. Jam in Δ o GVO \approx Δ o MVT, ex VO, GVO=MVT,
& G, prodit GO.

Ex VO - GO magnitudo eclipsis in loco O, primo in P. D., quæ re-
vocatur uti alias in digitos horumque scrupulos.

Ex VO, GO acquiritur VG = $\sqrt{VO^2 - GO^2}$.

Ex TM \pm GO = MB, BT.

Ex TO, BT, nancisceris OB = MG = $\sqrt{TO^2 - BT^2}$.

Hinc tandem, & ex VG, eruitur MG + VG, MG - VG, & tempus
per MG + VG, & MG - VG.

Datur supra MTV, qui in semita contactus = MTO, hicque angu-
lus \pm PTM principio statim acquifito manifestat PTO. Hinc in Δ o
sphærico PTO, ex PT, TO = 90° , & PTO adipisceris complemen-
tum PO = latitudini O, & angulum ad polum OPT, datur vero &
TPL i.e. tempus in obſervatorio, inde OPT \pm TPL = OPL, cum
quo procedendum uti §. VIII. monuimus, ut longitudo O detegatur.

Secundo in iisdem ssis pro secundaria & quavis alia semita datur MV,
TM, M, hinc habetur MVT, MTV, VT.

Inde ex tribus lateribus VT, VO, TO, in Δ o TVO habebis TVO.

TVO - MVT montrat MVO.

In Δ o GVO ex VO, GVO = MVO, & G, venaris aliud GO.

VO - GO = magnitudini eclipseos in O.

VO, GO ducunt ad aliud VG = $\sqrt{VO^2 - GO^2}$.

Per TM \pm GO = MB, affequeris BT.

Per TO, BT, venis ad OB = MG = $\sqrt{TO^2 - BT^2}$.

Iterum palam est datis VG & MG non latere posse MG \pm VG, nec
tempora quæ consumit centrum donec per hæc ſpatia MV perveniat.
Vides quoque eſſe in potestate TO, BT, B, inveniri hinc omnes
MTO, ex quibus \pm PTM ſtabiliſſimi omnes PTO, cum quibus abſo-

Iuste agendum ut supra, stare & in aprico PTV = MTV \pm PTM.
Scimus vero pro hujus solutione PT, VT, PTV, a quibus pend. nt
complementa PV, ab his VPT, & ab hoc longitudines V.

*** * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
Tertio in unico §o XV. datur magnitudo eclipses, hincque GO.
VO, GO pandunt VG = $\sqrt{VO^2 - GO^2}$.

TM \pm GO = MB, exhibet BT.

A TO, BT pervenis ad OB = MG = $\sqrt{TO^2 - BT^2}$.

Nunc MG \pm VG & tempora per MG \pm VG non diutius possunt
esse incognita.

In Δo MTO iterum dantur TO, BT, B, inde MTO, hic \pm PTM
omnia qua superior, determinat, determinat ergo & latitudines &
longitudines O.

In Δo MTV, ex MV, TM, M, habetur VT, MTV, MTV \pm
PTM, ergo & latitudines & longitudines singulorum V.

Tandem si nihil detur præter tempus in observatorio, ac investigari
debeat qua semita eo ipso momento ingrediar vel exeat, unica il-
latione contaris MV, cumque TM, & M semper detur & ubique,
dantur inde omnia, e. g. VT, TVO, MVO, GO, magnitudo ecl-
ipses in O, VG, BT, OB = MG, MG \pm VG, latitudines quo-
que & longitudines O, & ipsorum V, si jam attigere discum. Vides
hinc MV semper esse MG \pm VG, vel VG - MG.

Est enim pro a in A = MG \pm VG.

pro m in A = MG. punctis V, G coincidentibus.

pro c in A = MG - VG.

pro a in C = MG - VG.

pro m in C = MG. punctis V, G coincidentibus.

pro c in C = MG + VG. Sed satis de his.

Quæ §. XXI. de latitudine centri maxima diximus, valent omnino &
de maxima cuiusvis semitæ latitudine, & quæ §§is LI, LII, LIII, LIV,
LV, pro variis punctis s, n, o, w, umbræ docuimus, facile & ad
penumbra, si quidem & ejus, s, n, o, w existunt, possunt applicari.
Finiamus de penumbra.



§. LVIII.

§. LVIII.

Dantur in figura quarta duo Ts, duo Tn, quatuor TV. Dan-
tur vero & Vs = Vn. Inde omnes dantur TV, Ts, Tn in P. D. metris & fe-
dantur ergo & in P. C. M. Dantur ergo & per subtractionem Vs, zone umbro-
Vn in P. C. M. Vs & Vn in P. D. omnes sunt aequales, comprehenduntur.
vero sub aequalibus rectis Vs = Vn, inaequales arcus cognomines &
rectis subjacentes, sic demonstro. Discus umbrosus non pro suppositione
nostra cylindricus secetur per planum quoddam. Sin igitur sec-
tio fit per planum parallelum basi, & ob id $\delta\varphi\theta\gamma\pi\omega\delta$ ad axem, sectio
erit omnino = basi, ideoque circularis, ac inde Vs = Vn etiam in
planum secante, uti sunt radii circulorum. (*) Si sectio non fit per
planum parallelum basi, sed ad eandem indeque ad axem obliquum,
sectio quoque fieri obliqua, sed ellipsis vera, & ob axem per totum
cylindrum aequaliter transeuntem erit adhuc Vs = Vn in ellipsi, sed
idem Vs in planum secante erit $>$ Vs in disco, idemque Vn in piano
secante $>$ Vn in disco seu basi cylindrica. (**) Secate tandem cylin- Fig. V.
drum non per planum, sed per sphæram vel superficiem sphæricam,
tunc per Eucl. III. 28. & 29. (†) Vn erit $>$ Vs. Quod erat unum.

Inveniuntur §o XXIX. omnes MV, hinc omnes Mo, omnesque Fig. IV.
Mw, habentur ergo per subtractionem Vo, Vw. Cumque iterum
superficie sphærica fecerit cylinder umbrosus cuius diameter ow,
patet, nec eius semidiametros Vo, Vw sint licet aequalium linearum
rectarum, superesse aequalibus arcibus Vo, Vw. In majorem nem-
pe arcum projicientur modo Vo, modo Vw per Eucl. c. i. e. Vo Δ Vw.
Quod erat alterum. Vel in primo & secundo considerentur Vs, Vn,
Vo, Vw ut sinus arcuum Vs, Vn, Vo, Vw tunc patet veritas ex tri-
gonometria, vel nuda inspectione canonis sinuum.

Sit vero licet Vn $>$ Vs, & Vo \geq Vw, non tamen inde sequitur sn totam
esse = ow toti. sn enim est circulus maximus, ow non idem. Plus ergo
eadem recta ow comprehendet spatii in circulo minore cuius radius
MU (Fig. 1) quam eadem recta ow comprehendere valebit in circu-
lo majore, immo maximo, cuius radius TH Fig. IV. igitur hoc ow
reducunt ad P. C. M. minus erit sn similiter reducto, i. e. sn erit $>$
ow. Quod erat tertium.

Cum tamen Vo videatur ex T sub angulo oTV, Vw vero
ex eodem Tapparet sub angulo wTV, patet vel Vo i. e. $>$
oTV, vel Vw i. e. $>$ wTV visum iri $>$ altero. Propinquius
nempe oculo in T supposito, videri debet sub majore angulo.

P 2

Quod

(*) PHILIPPUS DE LA HIRE. in sectionibus conicis ac harum appendice de secti-
onibus cylindricis, Prop. I. pag. 205. Parisiis, 1685, fol.

(**) Id. ibid. prop. III. pag. 205.

(†) EUCLIDES temper ex editione DAVIDIS GREGORII. Oxoniæ, 1703, fol.

Quod erat quartum, quodque satis belle exhibent §§i. nostri XLIV. & XLV.

Dico vero tandem in statione quarta vel ad M, Vs, a Vn minimum differre quantum potest. Tota siquidem Vn in hoc casu adhuc in majorem projicitur arcum, quam tota Vs projici potest, fit tamen id obliquitate minima qua possibilis, quippe qua accedendo ab M ad 2 & 7 continue augetur. Vo autem & Vw æqualiter ab M elongati, æquales & projiciuntur in arcus. Erunt ergo & æquales, & videbuntur sub æqualibus $>>$ oTV = oTw. Confer §§os allegatos. Quod erat quintum. Vide tamen & ubique qua nota m moniti citavimus. Nihil jam superest, nisi ut omnia qua tanto detexitinus labore, in tabulas conjiciamus, quo sub unico oculi iictu pateant qua habemus, quarum tamen explicationem non addemus, cum ex præcedentibus omnia intelligantur.



Tabula

amen §§is citatis.

| V | MG=OB= | MG + VG= | MG - VG= | |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------|----------------------|----|
| IT [B.] | AB = CB. | MG + IG= MG + VIG. | MG - IIIG= MG - IVG. | |
| 93' 3" 73" | 52'. 29" = 31 49" | 80'. 27" = 48 27" | 24'. 31" = 14 71" | DM |
| T | mora ab <i>a</i> in A, ad <i>c</i> in A= | mora ab <i>c</i> in A, | * | |
| MC | mora ab <i>a</i> in C, ad <i>c</i> in C. | ad <i>a</i> in C. | * | |
| 2 ^b . | 1 ^b . 34'. 26" | 1 ^b . 22'. 48" | * | |
| do | Nomina <i>τῶν</i> O. | * | * | |
| <i>a</i> i ⁴ . | in mari pacifico ab L. de las Vaguinas S.v. | * | * | |
| <i>c</i> i ⁴ . | in mari pacifico ab inf. solitaria N.O.v. | * | * | |
| <i>a</i> ii ¹ . | in I. Sicilia p. urbem Enna in Valle di Noto N.y. | * | * | |
| <i>c</i> ii ¹ . | in oceano Atlantico p. Villa Nova de Milfontes in Alen- tejo Portug.W.v. | * | * | |
| V | Longitudo V= | Nomina <i>τῶν</i> | | |
| III L. | III, IV. | V. | | |
| * | * | * | * | |
| 53' 4" 15". | 241°. 15'. 15". | supraCaliforniam in America septentri- onali. | * | |
| 53. 46 ⁴ . | 342. 54. 36. | in Grænlandia nova. | * | |
| * | * | * | * | |

T A B U L A

TABULA PRIMA

109 a

Pro semita contactus. §§is VI. VII. VIII. IX. Literas ex §o. LVII. intellige collatis tamen §§is citaris.

| VT= | MVT= | MTV= | GO= | mensura | Eadem | VG= | BT= | MG+OB= | MG → VG= | MG - VG= |
|-------------------------|------------------------|----------------------------------|-----------------------------------|-------------------------------------------------------|------------------|-------------------|---------------------|-------------------------------------------------------------------------------------|------------------------------------------------|------------------|
| IT=VIT. | MIT=MVIT. | MTI=MTVI. | GA=GC. | Eclipticas in P.D. | in digitis. | IG = VIG. | TM - MB. | AB = CB. | MG → IG= | MG - IIIG= |
| 93°.36' = 5616° | 30°.44' | 29°.59°.15'. | 31°.16'.38' = 998°.15'.54' = 954° | 6°. 0'. | 27°.58' = 1678°. | 31°.13' = 1873°. | .52'.29' = 3149°. | .80'.27' = 4827°. | MG → VIIG= | MG - IVG. |
| 29°. 15'. 50'' | 0°. 41'. 24'' | 3°. 15'. 33'' | 4°. 49'. 59'' | 6°. 12'. 47'' | 7°. 47'. 13'' | 1°. 4°. 31'. 40'' | 2°. 57'. 14'' | 1°. 34'. 26'' | 1°. 22'. 48'' | 1°. 51' = 1471'' |
| Tempus per | Tempus per | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | mora ab a in A, | mora ab a in A, | mora ab c in A, | mora ab c in A, | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ |
| MG → VG. | MG - VG. | a in A. | c in A. | a in C. | c in C. | ad c in C. | mora ab c in A, | mora ab c in C, | ad a in C. | ⊗ ⊗ ⊗ |
| 2°. 15'. 50'' | 0°. 41'. 24'' | 3°. 15'. 33'' | 4°. 49'. 59'' | 6°. 12'. 47'' | 7°. 47'. 13'' | 1°. 4°. 31'. 40'' | 2°. 57'. 14'' | 1°. 34'. 26'' | 1°. 22'. 48'' | ⊗ ⊗ ⊗ |
| TPL. | PTO. | Compl. Po, seu latitudo O. | OPT. | Tempus in O. | OPL. | Longitudo O. | Nomina τῶν O. | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ |
| a in A. | 48°. 53'. 15' | 68°. 39'. 53' | 20°. 10'. 54' | 97°. 4'. 11'' | 5°.31'.43".a.m. | 145°. 57'. 26" | 234°. 32'. 34" | in mari pacifico ab I. de las Vaginas S.v. | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ |
| c in A. | 72. 29. 45. | 68. 39. 53. | 20. 10. 54. | 97. 4. 11. | 5. 31. 43. a.m. | 169. 33. 56. | 210. 56. 4. | in mari pacifico ab inf. foliaria N.O.v. | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ |
| a in C. | 93. 11. 45. | 49. 51. 9. | 37. 41. 25. | 104. 59. 36. | 6. 59. 58.p.m. | 11. 47. 51. | 32. 17. 51. | in I. Sicilia p. urbem Enna in Valle di Noto N.v. | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ |
| c in C. | 116. 48. 15. | 49. 51. 9. | 37. 41. 25. | 104. 59. 36. | 6. 59. 58.p.m. | 11. 48. 39. | 8. 41. 21. | in oceanio Atlantico p. Villa Nova de Milfontes in ALEN- tejo Portug. W.v. | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ |
| VT= | VT= | MTV= | PTV= | CompLPV, seu latitudo V= latitudini III, IV. | VPT= | Tempus in V= | VPL= | Longitudo V= | Nomina τῶν V. | |
| IIIIT=IVT. in P.C.M. | IIIIT=IVT in P.C.M. | MTIII=MTIV. | PTIII, PTIV. | IIIPT, IVPT. | IIIPT, IVPT. | III, IV. | IIIPL, IVPL. | III, IV. | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ |
| 53°.46' = 3226°. | 61°. 41'. 9°. | 27°. 7'. 53°. | 30°. 32'. 15°. | 55°. 13'. 7°. | 66°. 45'. 0°. | 7°. 33'. 0°.a.m. | 139°. 14'. 45°. | 241°. 15'. 15°. | Supra California in America septentrionali. | ⊗ ⊗ ⊗ |
| 53.46' = 3226. | 61. 41. 9. | 27. 7. 53. | 17. 43. 31. | 71. 2. 44. | 55. 36. 21. | 3. 42. 25.p.m. | 37. 35. 24. | 342. 54. 36. | in Groelandia nova. | ⊗ ⊗ ⊗ |
| ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ |

Q

TABULA



T A B U L A S E C U N D A
Pro semita secundaria. §§is IX. X. XI. XIV. Literas ex §o. LVII. intellige collatis tamen §§is citatis.

| VT= | MVT= | MTV= | TVQ= | MVO= | GO= | menfura E- | Eadem | VG= | BT= | MG=OB= | ⊗ | ⊗ | ⊗ |
|--------------------------------------|-------------------------|---------------------------|----------------------------------|-------------------------------|-----------------------------|-------------------------|------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------------------|-----------------|-----------------|---|---|
| IIIIT=IVT. | MIIT=MIVT | MTIII=MTIV | TIIC= TIVI | MIIC=MIVI | GC=GL | clifp. in P. D. | indigitis. | IIIG=VG | TM → MB | GB=GB | ⊗ | ⊗ | ⊗ |
| 53°.46°=3226. | 62°. 52°. 7°. | 27°. 7°. 53°. | 86°. 24°. 9°. | 23°. 32°. 2°. | 12°.59°=779°.19°.33°=1173°. | 7°. 23°. | 29°.50°=1790°.60°.50°=3650°. | 5°.20°=320°. | 5°.20°=320°. | ⊗ | ⊗ | ⊗ | ⊗ |
| MG → VG= | VG-MG= | Tempus per | Tempus per | | | | | mora ab a in | mora ab a in A, | mora ab a in A, | mora ab a in | | |
| MG → IIIG= | IIIG-MG= | MG → VG. | VG-MG. | a in A. | a in C. | c in A. | c in C. | ad c in C. | mora ab a in C, | mora ab a in A, | mora ab a in C, | | |
| MG → VG. | VG-MG. | | | | | | | | ad c in C. | ad c in C. | ad c in C. | | |
| 35°.10°=2110°. | 24°.30°=1470°. | 0°. 59°. 23°. | 0°. 41°. 24°. | 4°. 32°. 0°. | 4°. 49°. 59°. | 6°. 12°. 47°. | 6°. 30°. 46°. | 1°. 58°. 45°. | 1°. 40°. 47°. | 0°. 17°. 59°. | 1°. 22°. 48°. | | |
| | TPL. | PTO. | Compl. PO. feu latitudo O. | OPT. | Tempus in O. | OPL. | Longitudo O. | Nomina rōv O. | ⊗ | ⊗ | ⊗ | ⊗ | ⊗ |
| a in A. | 68°. 0°. 0°. | 14°. 24°. 59°. | 66°. 41°. 32°. | 141°. 0°. 24°. | 26°. 35°. 58°. a.m. | 209°. 0°. 24°. | 171°. 29°. 36°. | in ignota Insula oceani septentrionalis, vide Schreibenberg mappam. | ⊗ | ⊗ | ⊗ | ⊗ | ⊗ |
| a in C. | 72. 29. 45. | 4. 23. 45. | 70. 59. 24. | 166. 23. 26. | 0. 54. 26. a.m. | 238. 53. 11. | 141. 36. 46. | in mari de Len, vel eius littoribus. | ⊗ | ⊗ | ⊗ | ⊗ | ⊗ |
| c in A. | 93. 11. 45. | 14. 24. 59. | 66. 41. 32. | 141. 0. 24. | 2. 35. 58. a.m. | 234. 12. 9. | 146. 17. 51. | apud Jakutskos Siberia, vel in mari de Len. | ⊗ | ⊗ | ⊗ | ⊗ | ⊗ |
| c in C. | 97. 41. 30. | 4. 23. 45. | 70. 59. 24. | 166. 23. 26. | 0. 54. 26. a.m. | 264. 4. 56. | 116. 25. 4. | in Pisticida Samoye- darium p. fl. Chō- tanga. | ⊗ | ⊗ | ⊗ | ⊗ | ⊗ |
| VT= | VT= | MTV= | PTV= | Compl.PV, feu latitudo V= | VPT= | Tempus in V= | VPL= | Longitudo V= | Nomina rōv V. | ⊗ | ⊗ | ⊗ | ⊗ |
| III, IIIIT, IVT, VT. in P.C.M. | IIIT, IIIIT, IVT, VT | MTII, MTIII, MTIV, MTV | PTII, PTIII, PTIV, PTV | latitudini II, III, IV, V, | IIIT, IIIPT, IVPT, VPT | IPL, IIPL, IVPL, VPL | II, III, IV, V. | II, III, IV, V. | | | | | |
| 59°.23°=3563°. | 76°. 29°. 52°. | 36°. 18°. 59°. | 45°. 43°. 21°. | 45°. 52°. 38°. | 89°. 34°. 7°. | 6°. 1°. 44°. a.m. | 157°. 34°. 7°. | 222°. 55°. 53°. | in oceano septen- trionali, vel terra Dom Jean de Gama. | ⊗ | ⊗ | ⊗ | ⊗ |
| 53°.46°=3226. | 61. 41. 9. | 27. 7. 53. | 36. 32. 15. | 55. 13. 7. | 66. 45. 0. | 7. 33. 0. a.m. | 139. 14. 45. | 241. 15. 15. | supra Californiae in America septen- trionali. | ⊗ | ⊗ | ⊗ | ⊗ |
| 53°.46°=3226. | 61. 41. 9. | 27. 7. 53. | 17. 43. 31. | 71. 2. 44. | 55. 36. 21. | 3. 42. 25. p.m. | 37. 35. 24. | 342. 54. 36. | in Greenlandia, nova. | ⊗ | ⊗ | ⊗ | ⊗ |
| 59°.23°=3563°. | 76. 29. 52. | 36. 18. 59. | 26. 54. 37. | 63. 40. 50. | 83. 0. 57. | 5. 32. 4. p.m. | 14. 40. 33. | 5. 49. 27. | in oceano septen- trionali, inter Yalan- diem, & ins. de Ferro. | ⊗ | ⊗ | ⊗ | ⊗ |

TABULA

ge collatis tamen §§is citatis.

| ndem | VG= | BT= | MG=OB= | *** |
|---------|------------------------------|---------------|--------|-----|
| igitur. | II§=V§. | TM + M§ | II§=C§ | *** |
| 23'. | 29'.50"=1790".60'.50"=3650". | 5'.20"= 320". | | *** |

| | | | | |
|---------------|-----------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-----------------------------------|
| | mora ab <i>a</i> in <i>A</i> , | mora ab <i>a</i> in <i>A</i> , ad <i>c</i> in <i>A</i> = | mora ab <i>a</i> in <i>A</i> , ad <i>a</i> in <i>C</i> = | mora ab <i>a</i> in <i>C</i> , |
| in <i>C</i> . | ad <i>c</i> in <i>C</i> . | mora ab <i>a</i> in <i>C</i> , ad <i>c</i> in <i>C</i> . | mora ab <i>c</i> in <i>A</i> , ad <i>c</i> in <i>C</i> . | ad <i>c</i> in <i>A</i> . |
| 30". 46". | 1°. 58'. 46". | 1°. 40'. 47". | 0°. 17'. 59". | 1°. 22'. 48". |

| igitudo O. | Nomina τῶν O. | *** | *** | *** |
|---------------|----------------------------------------------------------------------------|-----|-----|-----|
| 29'. 36". | in ignota Insula oceani septentrionalis, vide strahlen- berg mappam. | *** | *** | *** |
| 36. 46. | in mari de Len, vel ejus littoribus. | *** | *** | *** |
| 17. 51. | apud Jakutskos Siberia, vel in mari de Len. | *** | *** | *** |
| 25. 4. | in Piafida Somoye- darum p. fl. Cho- tanga. | *** | *** | *** |

| PL= | Longitudo V= | Nomina τῶν V. | *** | *** |
|--------------------|-----------------|--------------------------------------------------------------------------|-----|-----|
| , IIIPL, , VPL. | II, III, IV, V. | | | |
| 34'. 7". | 222°. 55'. 53". | in oceano septen- trionali, vel terra Dom Jean de Gama. | *** | *** |
| 514. 45. | 241. 15. 15. | supra Californiam in America septen- trionali. | *** | *** |
| 535. 24. | 342. 54. 36. | in Greenlandia. nova. | *** | *** |
| 540. 33. | 5. 49. 27. | in oceano septen- trionali, inter Yslan- diam, & Inf. de Ferro. | *** | *** |

TABULA

tamen §§is citatis.

| VG = | BT = | MG = OB = | * | * | * |
|-------------------|---------------------|-------------------|---|---|---|
| IIg = Vg. | TM - Mb. | a b = c b. | * | * | * |
| 21'. 18" = 1278". | 23'. 15½" = 1395½". | 56'. 28" = 3388". | * | * | * |

| | | | |
|----------------------------|---------------------------------------------|---------------------------------------------|----------------------------|
| mora ab <i>a</i> in A, | mora ab <i>a</i> in A, ad <i>a</i> in C= | mora ab <i>a</i> in A, ad <i>c</i> in A= | mora ab <i>c</i> in A, |
| ad <i>c</i> in C. | mora ab <i>c</i> in A, ad <i>c</i> in C. | mora ab <i>a</i> in C, ad <i>c</i> in C. | ad <i>a</i> in C. |
| 4 ^b . 22'. 38". | 3 ^b . 10'. 42". | 1 ^b . 11'. 56". | 1 ^b . 58'. 46". |

| Nomina <i>τῶν</i> O. | * | * | * | * | * |
|----------------------------------------------------------------------------|---|---|---|---|---|
| n mari pacifico, in èmita Olivier du Nord 1600, & Dam- pier 1686. | * | * | * | * | * |
| n eadem circiter semita Dampier. | * | * | * | * | * |
| n Barbaria, p. re- gnum Tecort, in de- erto de Tegorarin. | * | * | * | * | * |
| n oceano Atlantico a Sta Crux W.v. | * | * | * | * | * |

| Longitudo V= | Nomina <i>τῶν</i> V. | * | * | * |
|------------------|--------------------------------------------------------------------------|---|---|---|
| II, V. | * | * | * | * |
| * | * | * | * | * |
| 222°. 55' . 53". | in oceano septen- trionali, vel terra Dom Jean de Gama. | * | * | * |
| 5. 49. 27. | in oceano septen- trionali, inter Ys- landiam, & Ins. de Ferro. | * | * | * |
| * | * | * | * | * |

rminatu. In longitudinibus, vel potius
per N boream,

ERRATA

TABULA TERTIA

Pro semita tertia §§is XI. XII. XIII. XIV. Literas ex §o. LVII. intellige collatistamen §§is citatis.

| VT= | MVT= | MTV= | PTO= | MVO= | GO= | mensura E- | Eadem | VG= | BT= | MG=OB= | ⊗ ⊗ ⊗ |
|-----------------|----------------------|---------------|---------------------------------|------------------------------|-------------------|------------------|-----------------|-----------------------------------------------------------------------------|-------------------------------------------------------------------------|------------------|--------------|
| IIT = VT. | MIIT=MVT. | MTH=MTV. | TIIa = TVc. | MIIa=MVC. | ga=gc. | clipf.in P.D. | indigit. | IIG = Vg. | TM - Mb. | a b = cb. | ⊗ ⊗ ⊗ |
| 59°.23' = 3563' | 53°. 41'. 1°. | 36°. 18'. 59" | 77°. 12'. 47" | 23°. 31'. 46" | 24°. 35' = 1475½' | 7°. 56' = 476½' | 3°. 0°. | 21°. 18' = 1278' | 23°. 15' = 1395½' | 56°. 28' = 3388' | ⊗ ⊗ ⊗ |
| MG + VG= | MG - VG= | Tempus per | Tempus per | | | | | mora ab a in A, | mora ab a in A, | mora ab a in A, | |
| Mg + 2g= | Mg - 2g= | MG + VG. | MG - VG. | a in A. | c in A. | a in C. | c in C. | ad c in C. | mora ab c in A, | mora ab c in C, | ad a in C. |
| Mg + 5g. | Mg - 5g. | | | | | | | | ad c in C. | ad c in C. | |
| 77°.46' = 4666' | 35°.10' = 2110' | 2°. 11'. 19" | 0°. 59'. 23" | 3°. 20'. 4" | 4°. 32'. 0" | 6°. 30'. 46" | 7°. 42'. 42" | 4°. 22'. 38" | 3°. 10'. 42" | 1°. 11'. 56" | 1°. 58'. 46" |
| | TPL. | PTO. | Compl.PO, feu latitudo O. | OPT. | Tempus in O. | OPL. | Longitudo O. | Nomina τῶν O | | | |
| a in A. | 50°. 1°. 0°. | 77°. 0'. 48" | 12°. 18'. 14" | 94°. 11'. 16" | 5°. 43'. 15" a.m. | 144°. 12'. 16" | 236°. 17'. 44" | in mari pacifico, in semita Oliver du Nord 1600, & Dam- pier 1686. | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ |
| c in A. | 68. 0. 0. | 77. 0. 48. | 12. 18. 14. | 94. 11. 16. | 5. 43. 15. a.m. | 162. 11. 16. | 218. 18. 44. | in eaden circa semita Dampier. | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ |
| a in C. | 97. 41. 30. | 58. 12. 4. | 29. 58. 42. | 101. 8. 12. | 6. 44. 33. p.m. | 3. 26. 42. | 23. 56. 42. | in Barbaria, p. regnū Teocortin de- serto de Tegorarin. | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ |
| c in C. | 115. 40. 30. | 58. 12. 4. | 29. 58. 42. | 101. 8. 12. | 6. 44. 33. p.m. | 14. 32. 18. | 5. 57. 42. | in oceano Atlantico a Sta Crux W.v. | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ |
| VT= | VT= | MTV= | PTV= | Compl.PV, feu latitudi V= | VPT= | Tempus in V= | VPL= | Longitudo V= | Nomina τῶν V. | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ |
| IIT=VT, | IIT=VT, in P.C.M. | MTH=MTV. | PTH, PTV. | latitudini H,V. | IIPt, VPT. | II,V. | IIPt, VPL. | II, V. | | | |
| ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ |
| 59°.23' = 3563' | 76°. 29'. 52" | 36°. 18'. 59" | 45°. 43'. 21" | 45°. 52'. 38" | 89°. 34'. 7" | 6°. 1'. 44" a.m. | 157°. 34'. 7" | 222°. 55'. 53" | in oceano septen- trionali, vel terra Dom Jean de Gama. | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ |
| 59. 23 = 3563 | 76. 29. 52. | 36. 18. 59. | 26. 54. 37. | 63. 40. 50. | 83. 0. 57. | 5. 32. 4. p.m. | 14. 40. 33. | 5. 49. 27. | in oceano septen- trionali, inter Ys- landiam & Inf. de Ferro. | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ |
| ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ | ⊗ ⊗ ⊗ |

Per *** vel ⊗ linæ, angulos, & loca indicamus, ubi V adhuc extra tellurem, quæque ideo inutilia determinatu. In longitudinibus, vel potius nominibus locorum per p. prope, per Oortum, per W occulum, per S aufrum, per N boream,
ac per v. verius e.g. O.v. ortum verius &c. significamus.



| | | TPL, pro <i>a</i> in A. | TPL, pro <i>m</i> in A. |
|------------------|---------|-------------------------------|-------------------------------|
| opus | | | |
| VG. | | | |
| Liu | o. 3 | | |
| Digitus | 50. 3 | | |
| Digiti | o. 3 | | |
| Digiti | 21. 3 | | |
| Digiti | 48. 3 | | |
| Digiti | 53. 3 | | |
| Digiti | 27. 3 | | |
| Digiti | 15. 3 | | |
| Digiti | 9. 3 | | |
| Digiti | 12. 3 | | |
| Digiti | 11. 3 | | |
| Digiti | 4. 3 | | |
| Digiti | 43. 3 | | |
| Digiti | 32. 3 | | |
| Digiti | 26. 3 | | |
| UAI | | | |
| opus | | | |
| r | | | |
| MG. | | | |
| Dig | 31". | | |
| Dig | 1. | | |
| Dig | 5. | | |
| Dig | 59. | | |
| Lin | | | |
| bor | 12. | | |
| Limes austrinus. | | 57°. 53'. 30". | 57°. 53'. 3 ¹ |
| Digitus | 1. | 52. 46. 30. | 58. 12. 3 ⁸ |
| Digiti | 2. | 51. 4. 0. | 58. 34. 4 ¹ |
| Digiti | 3. | 50. 0. 45. | 59. 0. 4 ² |
| Digiti | 4. | 49. 21. 15. | 59. 30. 1 ³ |
| Digiti | 5. | 49. 0. 15. | 60. 3. 4 ⁶ |
| Digiti | 6. | 48. 53. 15. | 60. 41. 1 ¹ |
| Digiti | 7. | 48. 59. 30. | 61. 23. 3 ⁵ |
| Digiti | 8. | 49. 18. 30. | 62. 11. 4 ⁹ |
| Digiti | 9. | 49. 49. 45. | 63. 3. 4 ⁷ |
| Digiti | 10. | 50. 33. 30. | 64. 3. 1 ⁶ |
| Digiti | 11. | 51. 31. 0. | 65. 10. 1 ² |
| Digiti | 12. | 52. 42. 45. | 66. 26. 1 ⁰ |
| Digiti | 12. | 53. 30. 30. | 67. 14. 1 ¹ |
| Digiti | 11. | 55. 10. 30. | 68. 49. 4 ³ |
| Digiti | 10. | 57. 14. 15. | 70. 43. 4 ⁹ |
| Digiti | 9. | 59. 53. 0. | 73. 7. 4 ⁸ |
| Digiti | 8. | 63. 37. 0. | 76. 29. 3 ⁶ |
| Digiti | 7. 30'. | 66. 47. 30. | 79. 26. 4 ⁰ |
| Limes boreus. | | 70. 17. 45. | 82. 50. 4 ³ |

TABULA QUARTA.

Pro unico so XV.

| | menitura Eclipteos in P. D. | GO= | VG= | BT= | MG = OB = MG + VG | MG - VG | Tempus per MG - VG | Tempus per MG = OB = MG - VG | a in A. | m in A. | cin A. | a in C. | m in C. | c in C. | mora ad a in A. ad c in C. | mora ad a in A. ad c in C. | mora ad a in A. ad c in C. | mora ad a in A. ad m in C. | mora ad a in A. ad c in C. | mora ad a in A. ad m in C. | mora ad a in A. ad c in C. | | |
|-------------|--------------------------------------|----------------|----------------|----------------|-------------------|---------------|--------------------------|------------------------------------|------------|-------------|-------------|-------------|-------------|--------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-------------|--|
| Limesauftr. | o'. o' = o'. | 32'.32'=1952' | o'. o' = o'. | 15'.19'=919' | 59'. 7'=3547' | o'. o' = o'. | o'. o'. o'. | 18'.39'.49' | o'. o'. | 36'.51'.34' | 36'.51'.34' | 78'.11'.12' | 78'.11'.12' | 78'.11'.12' | 36'.19'.38' | o'. o'. o'. | o'. o'. o'. | 36'.19'.38' | o'. o'. o'. | 36'.19'.38' | o'. o'. o'. | 36'.19'.38' | |
| Digitii 1. | 2. 39 = 159. | 29. 53 = 1793. | 12. 52 = 772. | 17. 58 = 1078. | 58. 22 = 3502. | 71.14 = 4274. | 45.30 = 2730. | 2. . 17. | 1. 38. 33. | 1. 16. 50. | 3. 31. 6. | 3. 52. 50. | 4. 14. 33. | 6. 48. 13. | 7. 9. 56. | 7. 31. 40. | 4. . 30. | 3. 17. 7. | 0. 43. 27. | 2. 21. 44. | 2. 33. 40. | | |
| Digitii 2. | 5. 18 = 318. | 27. 14 = 1634. | 17. 48 = 1068. | 20. 37 = 1237. | 57. 29 = 3449. | 75.17 = 4517. | 39. 41 = 2381. | 2. . 7. | 1. . 37. | 4. 1. | 0. 3. | 24. 16. | 3. 54. 19. | 4. 24. 23. | 6. 38. 23. | 7. 8. 27. | 7. 38. 30. | 4. 14. 14. | 3. 14. 7. | 0. 30. | 3. 2. 14. | 0. | |
| Digitii 3. | 7. 57 = 477. | 24. 35 = 1475. | 21. 19 = 1279. | 23. 16 = 1396. | 56. 28 = 3388. | 77.47 = 4667. | 35. 9 = 2109. | 2. 11. 20. | 1. . 35. | 20. | 0. 59. 21. | 3. 20. 3. | 3. 56. 3. | 4. 32. | 2. 6. 30. 44. | 7. 6. 43. | 7. 42. 43. | 3. 10. 41. | 1. 11. 59. | 0. 36. 0. | 1. 58. 42. | | |
| Digitii 4. | 10. 30 = 656. | 21. 56 = 1316. | 24. 2 = 1442. | 25. 55 = 1555. | 55. 18 = 3318. | 79.20 = 4760. | 31. 16 = 1870. | 2. 13. 51. | 1. 33. 22. | 2. 52. 48. | 3. 17. 25. | 3. 58. 1. | 4. 38. 35. | 6. 24. 11. | 7. 4. 45. | 7. 45. 21. | 3. 27. 56. | 3. 6. 46. | 1. 21. 10. | 40. 36. | 1. 45. 36. | | |
| Digitii 5. | 13. 15 = 795. | 19. 17 = 1157. | 26. 12 = 1572. | 28. 34 = 1714. | 53. 58 = 3238. | 80.10 = 4810. | 27. 46 = 1666. | 2. 15. 22. | 1. 31. 8. | 0. 46. 53. | 3. 16. 1. | 4. 0. 15. | 4. 44. 30. | 6. 18. 10. | 7. 2. 31. | 7. 40. 45. | 4. 30. 44. | 3. 2. 15. | 1. 28. 29. | 0. 44. 14. | 1. 33. 46. | | |
| Digitii 6. | 15. 53 = 953. | 16. 39 = 999. | 27. 57 = 1677. | 31. 12 = 1872. | 52. 30 = 3150. | 80.27 = 4827. | 24. 33 = 1473. | 2. 15. 50. | 1. 28. 38. | 0. 41. 27. | 3. 15. 33. | 4. 2. 45. | 4. 49. 56. | 6. 12. 50. | 7. 0. 1. | 7. 47. 15. | 4. 31. 40. | 2. 57. 17. | 1. 34. 23. | 0. 47. 10. | 1. 22. 54. | | |
| Digitii 7. | 18. 32 = 1112. | 14. 0 = 840. | 29. 22 = 1762. | 33. 51 = 2031. | 50. 50 = 3050. | 80.12 = 4812. | 21. 28 = 1288. | 2. 15. 25. | 1. 25. 49. | 0. 36. 15. | 3. 15. 58. | 4. 5. 34. | 4. 55. | 8. 6. 7. 38. | 5. 57. 12. | 7. 46. 48. | 2. 51. 40. | 1. 39. 30. | 0. 40. 30. | 1. 10. 30. | | | |
| Digitii 8. | 21. 12 = 1272. | 11. 20 = 680. | 30. 30 = 1830. | 16. 31 = 191. | 48. 57 = 2937. | 79.27 = 4707. | 18. 27 = 1107. | 2. 14. 9. | 1. 22. 39. | 0. 31. 9. | 3. 17. 14. | 4. 8. 44. | 5. 0. 14. | 6. 2. 32. | 6. 54. 2. | 7. 45. 32. | 4. 28. 18. | 2. 45. 18. | 1. 43. | 0. 51. 30. | 1. 2. 18. | | |
| Digitii 9. | 23. 50 = 1430. | 8. 42 = 522. | 31. 21 = 1881. | 39. 9 = 349. | 46. 52 = 2812. | 78.13 = 4693. | 15. 31 = 931. | 2. 12. 4. | 1. 19. 8. | 0. 26. 12. | 3. 19. 19. | 4. 12. 15. | 5. 5. 11. | 5. 57. 35. | 6. 50. 31. | 7. 43. 27. | 4. 24. 8. | 2. 33. 10. | 1. 45. 52. | 0. 52. 56. | 0. 52. 24. | | |
| Digitii 10. | 26. 29 = 1589. | 0. 3 = 303. | 31. 58 = 1818. | 41. 48 = 2508. | 44. 31 = 2071. | 76.29 = 4589. | 12. 33 = 753. | 2. 9. | 1. 15. | 10. | 2. 21. 11. | 3. 22. 14. | 4. 16. 13. | 5. 10. 12. | 5. 52. 34. | 6. 40. 33. | 7. 40. 32. | 4. 18. 18. | 2. 30. 20. | 1. 47. 58. | 0. 53. 59. | 0. 42. 22. | |
| Digitii 11. | 29. 8 = 1748. | 3. 24 = 204. | 32. 21 = 1941. | 44. 27 = 2667. | 41. 52 = 2512. | 74.13 = 4453. | 9. 31 = 571. | 2. 5. 19. | 1. 10. | 42. | 0. 16. 4. | 3. 26. 4. | 4. 20. 41. | 5. 15. 19. | 5. 47. 27. | 6. 42. | 5. 36. 42. | 4. 10. 38. | 2. 21. 23. | 1. 49. 15. | 0. 32. 8. | | |
| Digitii 12. | 31. 47 = 1907. | 0. 45 = 45. | 32. 31 = 1951. | 47. 6 = 2826. | 38. 52 = 2332. | 71.23 = 4283. | 6. 21 = 381. | 2. . 32. | 1. . 38. | 0. 10. 33. | 3. 30. 51. | 4. 25. 45. | 5. 20. 40. | 5. 42. | 6. 37. | 1. | 7. 31. 55. | 4. 1. 4. | 2. 11. 15. | 1. 49. 49. | 0. 54. 54. | 0. 21. 26. | |
| Digitii 13. | 31. 47 = 1907. | 0. 45 = 45. | 32. 31 = 1951. | 48. 36 = 2916. | 36. 59 = 2219. | 69.30 = 4170. | 4. 28 = 268. | 1. 57. 21. | 1. 2. 20. | 7. 32. | 5. 34. 2. | 4. 28. 57. | 5. 23. 51. | 5. 38. 55. | 6. 33. 49. | 7. 28. 44. | 3. 54. 42. | 2. 4. 43. | 1. 49. 49. | 0. 54. 55. | 0. 15. 4. | | |
| Digitii 11. | 29. 8 = 1748. | 3. 24 = 204. | 32. 21 = 1941. | 51. 15 = 3075. | 33. 12 = 1992. | 65.33 = 3933. | 0. 51 = 51. | 1. 50. 41. | 0. 56. 4. | 0. 16. | 3. 20. 42. | 4. 35. 19. | 5. 29. 57. | 5. 32. 49. | 6. 27. 27. | 7. 22. | 4. 31. 22. | 1. 52. | 7. | 1. 49. 15. | 0. 54. 37. | 0. 2. 52. | |

RESIDUUM TABULÆ QUARTÆ.

| | menitura Eclipteos in P. D. | GO= | VG= | BT= | MG = OB = MG + VG | MG - VG | Tempus per MG - VG | Tempus per MG = OB = MG - VG | a in A. | m in A. | a in C. | c in A. | m in C. | c in C. | mora ad a in A. ad c in C. | mora ad a in A. ad c in C. | mora ad a in A. ad c in C. | mora ad a in A. ad m in C. | mora ad a in A. ad c in C. | mora ad a in A. ad c in C. | mora ad a in A. ad c in C. | | |
|---------------|--------------------------------------|---------------|----------------|-----------------|-------------------|----------------|--------------------------|------------------------------------|------------|------------|---------------|------------|------------|------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|------------|--|
| Digitii 10. | 26.29 = 1589'' | 6'. 3 = 363'' | 31'.58 = 1918' | 53'.54 = 3234'' | 28'.42 = 1722' | 60'.40 = 3640' | 3'.10' = 196' | 1'.42'.20' | 0'.48'.28' | 0'.51'. | 3'.48'.57' | 4'.42'.55' | 5'.25'.52' | 5'.36'.54' | 6'.19'.51' | 7'.13'.49' | 3'.24'.52' | 1'.36'.55' | 1'.47'.57' | 0'.53'.58' | 0'.11'.2' | | |
| Digitii 9. | 23.50 = 1430. | 8.42 = 522. | 31.21 = 1881. | 56.33 = 3393. | 23'.3 = 1383. | 54.24 = 3264. | 8.18 = 498. | 1. 31. 51. | 0. 38. 55. | 0. 14. | 1. 3. 59. 32. | 4. 52. 28. | 5. 17. 22. | 5. 45. 24. | 6. 10. 18. | 7. 3. 14. | 3. 3. 42. | 1. 17. 50. | 1. 45. 52. | 0. 52. 56. | 0. 28. 2. | | |
| Digitii 8. | 31.12 = 1272. | 11.20 = 680. | 30.30 = 1830. | 59.11 = 3551. | 15.3 = 903. | 45.33 = 2733. | 15.27 = 927. | 1. 16. 55. | 0. 25. 25. | 0. 26. | 5. 4. 14. 28. | 5. 5. 18. | 5. 5. 58. | 5. 56. 48. | 5. 57. 28. | 6. 48. 18. | 2. 33. 50. | 0. 50. 50. | 1. 43. | 0. | 51. 30. | 0. 52. 10. | |
| Digitii 7-30. | 19.51 = 1191. | 12.41 = 761. | 29.58 = 1798. | 60.32 = 3632. | 8. 4 = 484. | 38.2 = 2282. | 21.54 = 1314. | 1. 4. 13. | 0. 13. 30. | 0. 36. 59. | 4. 27. 10. | 4. 54. 24. | 5. 17. 47. | 5. 44. 59. | 6. 8. 22. | 6. 35. 36. | 2. 8. 26. | 2. 27. 14. | 1. 41. 12. | 0. 50. 37. | 1. 13. 58. | | |
| Limes boreus | 7.18 = 1150. | 13.13 = 793. | 29.44 = 1784. | 29.44 = 1784. | 0. 0 = 0. | 29.44 = 1784. | 29.44 = 1784. | 0. 50. 12. | 0. 0. | 0. 0. | 0. 50. 12. | 4. 41. 11. | 4. 41. 11. | 5. 31. 23. | 5. 31. 23. | 6. 21. 35. | 6. 21. 35. | 6. 40. 24. | 0. 0. | 0. 1. 40. 24. | 0. 50. 12. | 1. 40. 24. | |

R

RESIDUUM



DFG

Universitäts- und Landesbibliothek Sachsen-Anhalt

urn:nbn:de:gbv:3:1-462738-p0138-9

RESIDUUM TABULÆ QUARTÆ

| | TPL, pro a in A. | TPL, pro m in A. | TPL, pro c in A. | TPL, pro a in C. | TPL, pro m in C. | PTO, pro a m c in A. | PTO, pro a m c in C. | Compl.PO, seu latitudo a m c in A. | Compl.PO, seu latitudo a m c in C. | OPT= $aPT=1$ $mPT=2$ $cPT=3$ in A. | Tempus in O= Tempori a m c in A. | OPT= $aPT=1$ $mPT=2$ $cPT=3$ in C. | Tempus in O= Tempori a m c in C. | |
|------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|----------------------------------------|----------------------------------------|------------------------------------------------------|------------------------------------------------------|---------------------------------------------|----------------------------------------------------|---------------------------------------------|----------------------------------------------------|-----------------|
| Limes austrinus. | 57° 53' 30" | 57° 53' 30" | 57° 53' 30" | 107° 48' 0" | 107° 48' 0" | 84° 52' 49" | 66° 4' 5" | 4° 51' 15" | 22° 37' 21" | 91° 37' 37" | 5° 53' 30" a.m. | 98° 1' 17" | 6° 32' 5" p.m. | |
| Digitus 1. | 52. 46. 30. | 58. 12. 30. | 63. 38. 15. | 102. 3. 15. | 107. 29. 0. | 112. 55. 0. | 82. 17. 44. | 63. 29. 0. | 7. 18. 13. | 25. 2. 48. | 92. 27. 34. | 5. 50. 10. a.m. | 99. 0. 7. | 6. 36. 0. p.m. |
| Digiti 2. | 51. 4. 0. | 58. 34. 45. | 66. 5. 45. | 99. 35. 45. | 107. 6. 45. | 114. 37. 30. | 79. 40. 29. | 60. 51. 45. | 9. 47. 8. | 27. 29. 51. | 93. 18. 39. | 5. 46. 45. a.m. | 100. 2. 15. | 6. 40. 9. p.m. |
| Digiti 3. | 50. 0. 45. | 59. 0. 45. | 68. 0. 30. | 97. 41. 0. | 106. 40. 45. | 115. 40. 45. | 77. 0. 37. | 58. 11. 53. | 12. 18. 24. | 29. 58. 52. | 94. 11. 20. | 5. 43. 15. a.m. | 101. 8. 17. | 6. 44. 33. p.m. |
| Digiti 4. | 49. 21. 15. | 59. 30. 15. | 69. 38. 45. | 96. 2. 45. | 106. 11. 15. | 116. 20. 15. | 74. 16. 36. | 55. 28. 52. | 14. 52. 28. | 32. 30. 13. | 95. 6. 10. | 5. 39. 35. a.m. | 102. 19. 8. | 6. 49. 17. p.m. |
| Digiti 5. | 49. 0. 15. | 60. 3. 45. | 71. 7. 30. | 94. 34. 0. | 105. 37. 45. | 116. 41. 15. | 71. 30. 54. | 52. 42. 10. | 17. 29. 48. | 35. 4. 16. | 96. 3. 32. | 5. 35. 46. a.m. | 103. 35. 47. | 6. 54. 23. p.m. |
| Digiti 6. | 48. 53. 15. | 60. 41. 15. | 72. 29. 0. | 93. 12. 30. | 105. 0. 15. | 116. 48. 15. | 68. 40. 52. | 49. 52. 8. | 20. 9. 58. | 37. 40. 31. | 97. 3. 51. | 5. 31. 45. a.m. | 104. 59. 6. | 6. 59. 56. p.m. |
| Digiti 7. | 48. 59. 30. | 61. 23. 30. | 73. 47. 0. | 91. 54. 30. | 104. 18. 0. | 116. 42. 0. | 65. 44. 34. | 46. 55. 50. | 22. 55. 41. | 40. 21. 25. | 98. 8. 33. | 5. 27. 26. a.m. | 106. 31. 52. | 7. 6. 7. p.m. |
| Digiti 8. | 49. 18. 30. | 62. 11. 0. | 75. 3. 30. | 90. 38. 0. | 103. 30. 30. | 116. 23. 0. | 62. 40. 51. | 43. 52. 7. | 25. 47. 52. | 43. 7. 39. | 99. 18. 53. | 5. 22. 44. a.m. | 108. 16. 44. | 7. 15. 7. p.m. |
| Digiti 9. | 49. 49. 45. | 63. 3. 45. | 76. 17. 45. | 89. 23. 45. | 102. 37. 45. | 115. 51. 45. | 59. 31. 55. | 40. 43. 11. | 28. 44. 20. | 45. 56. 47. | 100. 34. 50. | 5. 17. 41. a.m. | 110. 14. 55. | 7. 21. 0. p.m. |
| Digiti 10. | 50. 33. 30. | 64. 3. 15. | 77. 33. 0. | 88. 8. 30. | 101. 38. 15. | 115. 8. 0. | 56. 12. 36. | 37. 23. 52. | 51. 49. 41. | 48. 52. 46. | 101. 59. 44. | 5. 12. 1. a.m. | 112. 33. 17. | 7. 30. 13. p.m. |
| Digiti 11. | 51. 31. 0. | 65. 10. 15. | 78. 49. 45. | 86. 51. 45. | 100. 31. 15. | 114. 10. 30. | 52. 41. 46. | 33. 53. 2. | 35. 4. 38. | 51. 55. 32. | 103. 35. 59. | 5. 36. a.m. | 115. 18. 17. | 7. 41. 13. p.m. |
| Digiti 12. | 52. 42. 45. | 66. 26. 15. | 80. 10. 0. | 85. 31. 30. | 99. 15. 15. | 112. 58. 45. | 48. 56. 11. | 30. 7. 27. | 38. 31. 42. | 55. 6. 10. | 105. 27. 49. | 4. 58. 9. a.m. | 118. 41. 19. | 7. 54. 45. p.m. |
| Digiti 13. | 53. 30. 30. | 67. 14. 15. | 80. 57. 45. | 84. 43. 45. | 98. 27. 15. | 112. 11. 0. | 46. 40. 13. | 27. 51. 29. | 40. 35. 36. | 56. 58. 1. | 106. 40. 28. | 4. 53. 18. a.m. | 120. 59. 44. | 8. 3. 59. p.m. |
| Digiti 14. | 55. 10. 30. | 68. 49. 45. | 82. 29. 15. | 83. 12. 15. | 96. 51. 45. | 110. 31. 0. | 42. 20. 44. | 23. 32. 0. | 44. 29. 43. | 60. 23. 13. | 109. 12. 27. | 4. 43. 10. a.m. | 126. 5. 44. | 8. 24. 23. p.m. |
| Digiti 15. | 57. 14. 15. | 70. 43. 45. | 84. 13. 30. | 81. 28. 0. | 94. 57. 45. | 108. 27. 15. | 37. 26. 36. | 18. 37. 52. | 48. 50. 22. | 63. 58. 9. | 112. 31. 17. | 4. 29. 55. a.m. | 133. 17. 0. | 8. 53. 8. p.m. |
| Digiti 16. | 59. 53. 0. | 73. 7. 0. | 86. 21. 0. | 79. 20. 30. | 92. 34. 30. | 105. 48. 30. | 31. 34. 51. | 12. 46. 7. | 53. 53. 0. | 67. 38. 18. | 117. 18. 59. | 4. 10. 44. a.m. | 144. 29. 4. | 9. 37. 56. p.m. |
| Digiti 17. | 63. 37. 0. | 76. 29. 30. | 89. 22. 0. | 76. 19. 30. | 89. 12. 0. | 102. 4. 30. | 23. 40. 22. | 4. 51. 38. | 60. 16. 48. | 70. 52. 52. | 125. 54. 53. | 3. 30. 20. a.m. | 165. 0. 26. | 11. 0. 2. p.m. |
| Digiti 18. | 66. 47. 30. | 79. 26. 45. | 92. 5. 30. | 73. 36. 0. | 86. 14. 45. | 98. 54. 0. | 16. 59. 3. | 1. 49. 41. | 65. 4. 46. | 71. 24. 0. | 136. 6. 44. | 2. 55. 33. a.m. | 174. 15. 36. | 11. 37. 2. p.m. |
| Limes boreus. | 70. 17. 45. | 82. 50. 45. | 95. 23. 45. | 70. 17. 45. | 82. 50. 45. | 95. 23. 45. | 9. 24. 22. | 9. 24. 22. | 69. 18. 34. | 152. 26. 52. | 1. 50. 13. a.m. | 152. 26. 52. | 10. 0. 47. p.m. | |

RESIDUUM



| | OPT = a PT = m PT = c PT = } in A. | Tempus in O = Tempori a } m } in A. c } | OPT = a PT = m PT = c PT = } in C. | Tempus in O = Tempori a } m } in C. c } |
|----|------------------------------------------------|--------------------------------------------------------|------------------------------------------------|--------------------------------------------------------|
| " | 91°. 37'. 37". | 5°. 53'. 30". a.m. | 98°. 1°. 17". | 6°. 32'. 5". p.m. |
| . | 92. 27. 34. | 5. 50. 10. a.m. | 99. 0. 7. | 6. 36. 0. p.m. |
| . | 93. 18. 39. | 5. 46. 45. a.m. | 100. 2. 15. | 6. 40. 9. p.m. |
| . | 94. 11. 20. | 5. 43. 15. a.m. | 101. 8. 17. | 6. 44. 33. p.m. |
| . | 95. 6. 10. | 5. 39. 35. a.m. | 102. 19. 8. | 6. 49. 17. p.m. |
| . | 96. 3. 32. | 5. 35. 46. a.m. | 103. 35. 47. | 6. 54. 23. p.m. |
| . | 97. 3. 51. | 5. 31. 45. a.m. | 104. 59. 6. | 6. 59. 56. p.m. |
| . | 98. 8. 33. | 5. 27. 26. a.m. | 106. 31. 52. | 7. 6. 7. p.m. |
| . | 99. 18. 53. | 5. 22. 44. a.m. | 108. 16. 44. | 7. 13. 7. p.m. |
| . | 100. 34. 50. | 5. 17. 41. a.m. | 110. 14. 55. | 7. 21. 0. p.m. |
| . | 101. 59. 44. | 5. 12. 1. a.m. | 112. 33. 17. | 7. 30. 13. p.m. |
| . | 103. 35. 59. | 5. 5. 36. a.m. | 115. 18. 17. | 7. 41. 13. p.m. |
| . | 105. 27. 49. | 4. 58. 9. a.m. | 118. 41. 19. | 7. 54. 45. p.m. |
| . | 106. 40. 28. | 4. 53. 18. a.m. | 120. 59. 44. | 8. 3. 59. p.m. |
| . | 109. 12. 27. | 4. 43. 10. a.m. | 126. 5. 44. | 8. 24. 23. p.m. |
| . | 112. 31. 17. | 4. 29. 55. a.m. | 133. 17. 0. | 8. 53. 8. p.m. |
| . | 117. 18. 59. | 4. 10. 44. a.m. | 144. 29. 4. | 9. 37. 56. p.m. |
| . | 125. 54. 53. | 3. 36. 20. a.m. | 165. 0. 26. | 11. 0. 2. p.m. |
| . | 136. 6. 44. | 2. 55. 33. a.m. | 174. 15. 36. | 11. 37. 2. p.m. |
| 1. | 152. 26. 52. | 1. 50. 13. a.m. | 152. 26. 52. | 10. 9. 47. p.m. |

RESIDUUM

| OPL= | mPL in C. | cPL a | Nomina m in C. | c |
|---------------|--------------|------------------------------------------------------------------|-------------------------------------------------------|------------------------------------------------------------|
| " 9°.46'.43". | | 9°.46' c Tagazel æ N.v. | ab urbe Tagazel Sara N.v. | ab urbe Tagazel Sarae N.v. |
| 8. 28. 53. | 13. 54. | inter Zor- sque Ara- uin quem vius Taf- . De L'Iste. | magis W. v. apud Burbus Arabes. | ad huc magis W. v. in regione des Ludayes. |
| 7. 4. 30. | 14. 35. | me Tonet fauath. | magis W. v. ab urbe Tinzulin Provinc. Dras O.v. | in litoribus Afri- cas, ab I. Fortaven- tura S.O. v. |
| 5. 32. 28. | 14. 32. | Ticorte, Tecort. W.v. | ab urbe Tafiler N.v. a Benigumi W.v. | in oceano Atlanti- co a Ste Croix W.v. |
| 3. 52. 7. | 14. | Ira Bilidul- l. W. v. | in finibus Marocco Alvier & Tafiler | in oceano Atlanti- |

| | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 53. | 36. | 38. | 39. | 38. | 39. | 38. | 38. | 38. | 38. |
| 51. | 45. | 45. | 50. | 50. | 50. | 50. | 50. | 50. | 50. |
| 51. | 45. | 45. | 50. | 50. | 50. | 50. | 50. | 50. | 50. |
| 51. | 45. | 45. | 50. | 50. | 50. | 50. | 50. | 50. | 50. |
| 51. | 45. | 45. | 50. | 50. | 50. | 50. | 50. | 50. | 50. |

8

T A B U L A Q U I N T A

Pro §§is XX usque ad XLIX.

| TV in | | Ts in | | Tn in | | Vs in | | Vn in | | Vs → Vn = sn in | | MV | Tempus per | Centrum | MV in | | | |
|-------------------------------|----------------|----------------------|-------------------------|-----------------|----------------|--------------|---------------------------|-----------------|--------------------------|--------------------------|---------------------------|--------------------|-------------------------------------|-------------------------|---------------------|-------------|---------|--|
| P. D. | P. C. M. | P. D. | P. C. M. | P. D. | P. C. M. | P. C. M. | Leuds & Tois: § XXV. | P. C. M. | Leuds & Tois: § XXVI. | P. C. M. | Leucs & Tois: § XXVII. | in P. D. § XXX. | MV. § XXX. | in V. § XXX. | P. C. M. § XXXI. | | | |
| 1. 61. 50° = 3710. | * * * | 61. 4° = 3564. | 90. ° o. ° | 62. 30° = 3756. | * * * * | 75L. 16caT. | 9°. 5°. 19°. | 181L. 2203T. | 12°. 52°. 0°. | 39°. 10° = 350°. | 1. 6. 8. | 46. 25. 15. | * * * | SStri on sec meri | | | | |
| 2. 66. 18 = 3618. | 80°. 54°. 41° | 59. 32 = 3573. | 77. 8. o. 61. 4 = 3664. | 90°. ° o. ° | 3°. 45°. 4°. | 1. 10. 52. | 23. 1775. | 1. 10. 52. | 30. 42 = 2202. | 1. 1. 58. | 4. 29. 25. | 75. 16. 17. | | | | | | |
| 3. 48. 3 = 2883. | 51. 53. 30. | 47. 17 = 2837. | 50. 44. 27. | 48. 49 = 2929. | 53. 4. 22. | 1. 9. 3. | 23. 48. | 2. 10. 55. | 4. 26 = 206. | o. 7. 30. | 5. 23. 53. | 6. 42. 31. | | | | | | |
| 4. 47. 51 = 3871. | 51. 84. 51. | 47. 5 = 3825. | 50. 26. 43. | 48. 37 = 2917. | 52. 45. 42. | 1. 8. 8. | 22. 2029. | 1. 10. 51. | 22. 1760. | 2. 18. 59. | 46. 936. | o. o. o. | o. 31. 23. | o. o. o. | | | | |
| 5. 48. 30 = 2010. | 52. 34. 30. | 47. 44 = 2864. | 51. 24. 45. | 49. 16 = 2956. | 53. 46. 53. | 1. 9. 9. | 23. 809. | 1. 12. 17. | 24. 270. | 2. 22. 8. | 47. 1079. | 7. 53. 5% = 475% | o. 13. 23. | 5. 44. 40. | 12. 31. 15. | | | |
| 6. 53. 39 = 3039. | 50. 3. 0. | 49. 53 = 2993. | 54. 46. 21. | 51. 25 = 3085. | 57. 20. 58. | 1. 16. 6. | 25. 1665. | 1. 17. 52. | 25. 2727. | 2. 34. 37. | 51. 1539. | 16. 30. 6% = 996% | o. 28. 3. | 5. 59. 20. | 25. 57. 29. | | | |
| 7. 60. 18 = 3618. | 80°. 54°. 41° | 59. 32 = 3572. | 77. 8. o. 61. 4 = 3664. | 90°. ° o. ° | 3. 46. 4. | 75. 1602. | 9°. 5°. 19°. | 181L. 2203T. | 12. 52°. 0°. | 36. 42 = 2202. | 1. 1. 58. | 6. 33. 21. | 75. 16. 17. | | | | | |
| 8. 61. 50 = 3710. | * * * | 61. 4 = 3564. | 90. ° o. ° | 62. 30 = 3756. | * * * | 75. 1602. | * * * | 12. 52°. 0°. | 39. 10 = 350. | 1. 6. 8. | 6. 37. 31. | * * * | | | | | | |
| Mo in | | Mw in | | Vo in | | Vw in | | Vo → Vw = ow in | | MIV. | MVI. | PTV= | PT=PTN= | | | | | |
| P. D. | p. c. m. | P. D. | p. c. m. | p. c. m. | p. c. m. | P. C. M. | Leuds & Tois: § XXXIV. | p. c. m. | P. C. M. | Leuds & Tois: § XXXV. | p. c. m. | P. C. M. | Leucs & Tois: § XXXVI. & XXXVII. | MIV. | MVI. | PT=PTN= | | |
| 1. 38°. 24° = 2304. | * * * | 39°. 56° = 2396. | * * * | 3°. 59°. 37°. | 2°. 58°. 52°. | 49°. | 1778. | 5°. 39°. 35°. | 3°. 31°. 0°. | 70L. 95°. | 9°. 39°. 12°. | 5°. 59°. 53°. | 119L. 2757. | 39. 18°. 6°. | 50. 41°. 54°. | 48. 42. 28. | | |
| 2. 35. 56 = 2156. | 71°. 16°. 40° | 37. 28 = 2248. | 80°. 55°. 52°. | 3. 59. 37°. | 0. 43. 21. | 14. | 1281. | 1. 10. 8. | 0. 43. 34. | 14. 1498. | 2. 19. 54. | 1. 26. 55. | 28. 2779. | 37. 29. 10. | 32. 30. 50. | 46. 53. 32. | | |
| 3. 3. 40 = 220. | 5. 32. 45. | 5. 12 = 312. | 7. 52. 39. | 1. 9. 46. | | | | | | | | | | 5. 18. 7. | 84. 41. 53. | 14. 42. 29. | | |
| 4. o. 46 = 46. | 1. 9. 28. | o. 46 = 46. | 1. 9. 28. | 1. 9. 28. | 1. 10. 11. | 1. 10. 11. | 1108. | 1. 9. 28. | o. 43. 10. | 14. 1164. | 2. 18. 56. | 1. 26. 20. | 28. 2208. | o. o. o. | 90. 9. 22. | 84. 22. 22. | | |
| 5. 8. 41. 5 = 521. 5. | 13. 6. 26. | 7. 9. 5% = 429. 5. | 10. 52. 21. | 1. 11. 11. | o. 44. 14. | 14. 2118. | 1. 10. 54. | o. 44. 13. | 14. 1031. | 2. 22. 5. | 1. 28. 17. | 29. 2121. | 9. 24. 22. | 80. 35. 38. | o. o. o. | | | |
| 6. 17. 29. 5 = 1042. 5. | 27. 15. 7. | 15. 50. 5% = 95. 5%. | 24. 40. 35. | 1. 17. 38. | o. 48. 14. | 16. 224. | o. 47. 47. | 15. 2045. | 2. 34. 35. | 1. 36. 1. | 32. 14. | 19. 8. 32. | 70. 51. 28. | 9. 44. 17. | | | | |
| 7. 37. 29 = 2248. | 80°. 55°. 52°. | 35. 56 = 2156. | 71. 16. 40. | 5. 39. 35°. | 3. 31. 0°. | 70. 95°. | 3. 59. 37°. | 2. 28. 52°. | 49. 1776. | 9. 39. 12°. | 5. 59. 53°. | 119L. 2727. | 37. 29. 10. | 52. 30. 50. | 28. 4. 48. | | | |
| 8. 39. 56 = 356. | * * * | 38. 24 = 2304. | * * * | * * * | * * * | 70. 95°. | * * * | * * * | * * * | * * * | 39. 18. | 6. 50. 41. | 54. 29. 53. | 44. | | | | |
| Comp. PTV, PTs, PTn, | MTo. | MoT. | PTo. | Compl. PTo. | MTw. | MwT. | PTw. | Compl. PTw. | PTw. | oTV. | wTV= | oTV. | oTV. | To in | Tw in | PT=PTN= | | |
| | § XL. | § XL. | § XLII. | § XLII. | § XL. | § XLII. | § XLIII. | § XLIV. | § XLV. | § XLV. | § XLVII. | § XLVIII. | P. D. | P. C. M. | P. D. | P. C. M. | PT=PTN= | |
| 1. 41°. 17°. 32°. | 38°. 45°. 4°. | 51°. 14°. 59°. | 48°. 0°. 23°. | 41°. 50°. 27°. | 39°. 50°. 50°. | 50°. 9°. 1°. | 49°. 15°. 21°. | 40°. 44°. 39°. | o. 33°. 5°. | o. 33°. 5°. | 1. 5°. 58°. | 61. 21° = 3081. | * * * | 62. 19°. 3739. | * * * | | | |
| 2. 43. 6. 28. | 36. 54. 58. | 53. 5. 32. | 40. 18. 50. | 43. 41. 10. | 38. 3. 50. | 51. 10. 10. | 47. 28. 10. | 42. 31. 48. | o. 34. 42. | o. 34. 40. | 1. 9. 22. | 59. 50 = 3590. | 78°. 28°. 40°. | 60. 49. 3040. | 84. 20°. 32°. | | | |
| 3. 75. 17. 31. | 4. 22. 57. | 85. 37. 5. | 13. 47. 19. | 76. 12. 41. | 6. 12. 10. | 83. 47. 50. | 15. 36. 32. | 74. 23. 28. | o. 55. 10. | o. 54. 9. | 1. 49. 13. | 47. 59 = 3879. | 51. 47. 30. | 48. 8. 2888. | 92. o. 31. | | | |
| 4. 80°. 35°. 28°. | o. 55. 5. | 89. 4. 55. | 8. 29. 17. | 84. 30. 43. | o. 55. 5. | 89. 4. 55. | 10. 19. 27. | 79. 40. 33. | o. 55. 5. | o. 55. 5. | 1. 50. 10. | 47. 51 = 3871. | 51. 35. 25. | 47. 51 = 2271. | 51. 35. 25. | | | |
| 5. 0. 0. o. o. | 10. 17. 39. | 79. 42. 21. | o. 53. 17. | 80. 4. 43. | 8. 30. 20. | 81. 29. 34. | o. 53. 56. | 89. 6. 4. | o. 53. 17. | o. 53. 56. | 1. 47. 13. | 48. 38 = 3918. | 52. 46. 44. | 48. 23 = 2003. | 52. 23. 31. | | | |
| 6. 80. 15. 52. | 19. 57. 25. | 76. 2. 35. | 10. 33. 5. | 79. 56. 57. | 18. 19. 5. | 71. 40. 55. | 8. 54. 43. | 81. 5. 17. | o. 48. 53. | o. 49. 27. | 1. 38. 20. | 50. 54 = 3594. | 56. 27. 52. | 50. 24. 3204. | 55. 37. 12. | | | |
| 7. 61. 55. 12. | 38. 3. 50. | 51. 56. 10. | 28. 39. 28. | 61. 20. 32. | 36. 54. 28. | 53. 5. 32. | 27. 30. 6. | 62. 29. 54. | o. 34. 42. | o. 34. 42. | 1. 9. 22. | 60. 40 = 3040. | 84. 20. 32. | 59. 50 = 3590. | 78. 28. 40. | | | |
| 8. 60. 0. 16. | 19. 50. 39. | 50. 9. 1. | 1. 30. 26. 37. | 59. 33. 23. | 58. 45. 1. | 51. 14. 59. | 29. 20. 39. | 60. 39. 51. | o. 33. 5. | o. 33. 5. | 1. 5. 58. | 62. 19 = 3739. | * * * | 51. 21. 3681. | * * * | | | |

| Ligatus | | MO | Nominis | | Ligatus | |
|---------|--------------------------------------------|--------|---------|-------|---------|-------|
| w | m | Mo | Mo | Mo | w | m |
| in A. | in A. | in A. | in A. | in A. | in A. | in A. |
| 823. | 4. 26 | = 266. | | | | |
| 936. | o. o = o. | | | | | |
| 1079. | 7. 55 ⁴⁵ = 475 ⁴⁵ . | | | | | |
| 539. | 16. 36 ⁴⁵ = 996 ⁴⁵ . | | | | | |
| 952. | 36. 42 = 2202. | | | | | |
| * | 39. 10 = 2350. | | | | | |

| x Tois: VIII. | MV | Tempus per MV. §. XXX. | Centrum | MV in | 8 Statios onece nr ri. |
|------------------|--------------------------------------------|------------------------------|----------------------|---------------|---------------------------|
| | in P. D. §. XXIX. | in V. §. XXX. | p. c. m. §. XXXI. | | |
| * | 39'. 10" = 2350". | 1b. 6'. 8". | 4b. 25'. 15". | * * * | |
| 952T. | 36. 42 = 2202. | 1. 1. 58. | 4. 29. 25. | 75° 16'. 17". | |
| 823. | 4. 26 = 266. | 0. 7. 30. | 5. 23. 53. | 6. 42. 31. | |
| 936. | o. o = o. | o. o. o. | 5. 31. 23. | o. o. o. | |
| 1079. | 7. 55 ⁴⁵ = 475 ⁴⁵ . | 0. 13. 23. | 5. 44. 46. | 12. 3. 15. | |
| 539. | 16. 36 ⁴⁵ = 996 ⁴⁵ . | 0. 28. 3. | 5. 59. 26. | 25. 57. 29. | |
| 952. | 36. 42 = 2202. | 1. 1. 58. | 6. 33. 21. | 75. 16. 17. | |
| * | 39. 10 = 2350. | 1. 6. 8. | 6. 37. 31. | * * * | |

| = ow in | | MTV. | MVT. | PTV= | 8 Statios onece nr ri. |
|--------------------------------|--------------|---------------|----------------|----------------|---------------------------|
| M. Leucis & Tois: & XXXVII. | | §. XXXVIII. | §. XXXVIII. | §. XXXIX. | PTs= PTn= |
| * | * | 39°. 18'. 6". | 50°. 41'. 54". | 48°. 42'. 28". | |
| 9'. 52". | 119L. 2727T. | 37. 29. 10. | 52. 30. 50. | 46. 53. 32. | |
| 55. | 28. 2779. | 5. 18. 7. | 84. 41. 53. | 14. 42. 29. | |
| 20. | 28. 2208. | o. o. o. | 90. o. o. | 9. 24. 22. | |
| 17. | 29. 1216. | 9. 24. 22. | 80. 35. 38. | o. o. o. | |
| 1. | 32. 14. | 19. 8. 32. | 70. 51. 28. | 9. 44. 10. | |
| 52. | 119. 2727. | 37. 29. 10. | 52. 30. 50. | 28. 4. 48. | |
| * | * | 139. 18. 6. | 150. 41. 54. | 29. 53. 44. | |

| wTV= | To in | Tw in | 8 Statios onece nr ri. |
|----------|-------------------|----------------|-------------------------------|
| w. | P. D. | P. C. M. | P. C. M. |
| XLVII. | §. | XLVIII. | §. XLIX. |
| 5'. 58". | 61'. 21" = 3681". | * * * | 62'. 19" = 3739". * * * |
| o. 22. | 59. 50 = 3590. | 78°. 28'. 40". | 60. 46 = 3646. 84°. 20'. 32". |
| o. 13. | 47. 59 = 2879. | 51. 47. 36. | 48. 8 = 2888. 52. 0. 31. |
| o. 10. | 47. 51 = 2871. | 51. 35. 25. | 47. 51 = 2871. 51. 35. 25. |
| 7. 13. | 48. 38 = 2918. | 52. 46. 44. | 48. 23 = 2903. 52. 23. 31. |
| 8. 20. | 50. 54 = 3054. | 56. 27. 52. | 50. 24 = 3024. 55. 37. 12. |

| 6. | 80. 15 33. | 3. | 79. 20. |

58

T A B U L A S E X T A
Pro locis V. §o LI.

115 a

| TPL. | Compl. PV, feu latitudo V. | VPT. | Tempus in V. | VPL. | Longitudo V. | Nomina τῶν V. | PVT. |
|-------------------|-------------------------------------|---------------|--------------------|-----------------|-----------------|----------------------------------------------------------------------------------------------------|---------------|
| 1. 66°. 18'. 45". | * * * | * * * | * * * | * * * | * * * | * * * | * * * |
| 2. 67. 21. 15. | 43°. 37'. 58". | 95°. 6'. 26". | 5°. 39'. 34". a.m. | 162°. 27'. 41". | 218°. 2'. 19". | in mari pacifico, sub litore Dom Je- an de Gama. M. v. | 73°. 2'. 14". |
| 3. 80. 58. 15. | 66. 34. 58. | 30. 10. 38. | 9. 59. 17. a.m. | 111. 8. 53. | 269. 21. 7. | in Nova Dania a- merica arctica. | 37. 17. 9. |
| 4. 82. 50. 45. | 68. 28. 33. | 20. 25. 35. | 10. 38. 18. a.m. | 103. 16. 20. | 277. 13. 40. | a Ne ultra America N. W. v. | 24. 59. v. |
| 5. 86. 11. 30. | 71. 5. 23. | o. o. o. | o. o. o. m. | 86. 11. 30. | 294. 18. 30. | dans la Baye de Baffins, ou la mer Christiane vers la gauche, proche le Cap St. Joris. | o. o. o. |
| 6. 89. 51. 30. | 72. 17. 19. | 27. 27. 35. | 1. 49. 50. p.m. | 62. 23. 55. | 318. 6. 5. | in I. de Cumber- land, vis-a-vis des Womans Isles | 31. 48. 38. |
| 7. 98. 20. 15. | 61. 11. 45. | 105. 16. 32. | 7. 1. 6. p.m. | 6. 56. 17. | 27. 26. 17. | dans le Gouverne- ment d'Aggerhus en Norvegia dans le Gusdal. | 67. 52. 38. |
| 8. 99. 22. 45. | * * * | * * * | * * * | * * * | * * * | * * * | * * * |

T A B U L A S E P T I M A.
Pro locis s. §. LII.

| TPL. | Compl. Ps, feu latitudo s. | sPT. | Tempus in s. | sPL. | Longitudo. s. | Nomina τῶν s. | PsT. |
|-------------------|-------------------------------------|-----------------|--------------------|-----------------|------------------|--------------------------------------------------------------------------------------------------------------------------|----------------|
| 1. 66°. 18'. 45". | 38°. 44'. 14". | 105°. 34'. 57". | 4°. 57'. 40". a.m. | 171°. 53'. 42". | 208°. 36'. 18". | in mari pacifico. | 05°. 58'. 45". |
| 2. 67. 21. 15. | 44. 37. 25. | 90. o. o. | 6. o. o. a.m. | 157. 21. 15. | 223. 8. 45. | in mari pacifico. | 70. 34. 30. |
| 3. 80. 58. 15. | 65. 39. 28. | 28. 29. 9. | 10. 6. 3. a.m. | 109. 27. 24. | 271. 2. 36. | in nova Dania, a Ne ultra W. v. | 35. 44. 20. |
| 4. 82. 50. 45. | 67. 26. 29. | 19. 10. 32. | 10. 43. 18. a.m. | 102. 1. 17. | 278. 28. 43. | a Ne ultra N. W. v. | 23. 49. 35. |
| 5. 86. 11. 30. | 69. 55. 32. | o. o. o. | o. o. o. m. | 86. 11. 30. | 294. 18. 30. | ad caput S. Joris. | o. o. o. |
| 6. 89. 51. 30. | 71. 11. 26. | 25. 22. 9. | 1. 41. 29. p.m. | 64. 29. 21. | 316. 0. 39. | in I. de Cumber- land. | 29. 49. 31. |
| 7. 98. 20. 15. | 62. 24. 59. | 97. 41. o. | 6. 31. 44. p.m. | o. 39. 15. | 19. 50. 45. | in oceano septen- trionali, inter Ins. de Ferro & I. de Hessen Norwegia dans le Gouverne- ment de Bergen. | 74. 34. o. |
| 8. 99. 22. 45. | 55. 17. 34. | 118. 54. 40. | 7. 55. 59. p.m. | 19. 31. 55. | 40. 1. 55. | ab urbe Tylfa Samlandia N. w. | 56. 6. 21. |

T

T A B U L A

T A B U L A O C T A V A

Pro locis n. §.LIII.

| TPL. | Compl Pn, feu latitudo n. | nPT. | Tempus in n. | nPL. | Longitudo n. | Nomina $\tau\omega\gamma$ n. | PnT. |
|-----------------|------------------------------------|--------------|------------------|--------------|-----------------|-----------------------------------------------------------|-------------|
| 1. 66°.18'.45". | * * * | * * * | * * * | * * * | * * * | * * * | * * * |
| 2. 67. 21. 15. | 40°.23'.30" | 106°.23'. 9" | 4°.53'.47".a.m. | 173°.54'.24" | 206°.35'.36" | in mari pacifi- co. | 65°.21'.41" |
| 3. 80. 58. 15. | 67. 30. 44. | 32. 2. 55. | 9. 51. 48. a.m. | 113. 1. 10. | 267. 28. 50. | in nova Dania a Ne ultra W.v. | 39. 0. 34. |
| 4. 82. 50. 45. | 69. 32. 23. | 21. 51. 9. | 10. 32. 35. a.m. | 104. 41. 54. | 275. 48. 6. | a Ne ultra N. W. v. | 26. 19. 2. |
| 5. 86. 11. 30. | 72. 17. 40. | 0. 0. 0. | 0. 0. 0. m. | 86. 11. 30. | 294. 18. 30. | dans la Baye de Baffins, ou la mer Christia- ne. | 0. 0. 0. |
| 6. 89. 51. 30. | 73. 22. 44. | 29. 51. 13. | 1. 59. 25. p.m. | 60. 0. 17. | 320. 29. 43. | dans la mer Christiane, de Horne Sound S. w. | 34. 5. 54. |
| 7. 98. 20. 15. | 56. 47. 10. | 120. 45. 37. | 8. 3. 2. p.m. | 22. 25. 22. | 42. 55. 52. | in Livonia ab urbe Riga O. v. a Selburg N. v. | 54. 34. 20. |
| 8. 99. 22. 45. | * * * | * * * | * * * | * * * | * * * | * * * | * * * |

T A B U L A

T A B U L A N O N A
pro locis o. §.LIV.

116

| TPL. | Compl. Po ſeu latitudo o. | oPT. | Tempus in o. | oPL. | Longitudo o. | Nomina <i>τῶν</i> o. | PoT. |
|-------------------|------------------------------------|---------------|--------------------|----------------|-----------------|-----------------------------------------------------------|---------------|
| 1. 66°. 18'. 45". | * * * | * * * | * * * | * * * | * * * | * * * | * * |
| 2. 67. 21. 15. | 44. 50'. 40". | 92°. 4'. 11". | 5°. 51'. 43". a.m. | 159°. 25'. 26" | 221°. 4'. 34" | in mari vel ter- ra feptentri- nali. | 75°. 16'. 3". |
| 3. 80. 58. 15. | 66. 55. 53. | 28. 33. II. | 10. 5. 47. a.m. | 109. 31. 26. | 270. 58. 34. | in America fe- ptentri- nali. | 35. 13. 31. |
| 4. 82. 50. 45. | 68. 46. 33. | 18. 37. 55. | 10. 45. 28. a.m. | 101. 28. 40. | 279. 1. 20. | in terris arcti- cis. | 22. 44. 40. |
| 5. 86. 11. 30. | 71. 16. 32. | 2. 12. 12. | 0. 8. 49. p.m. | 83. 59. 18. | 296. 30. 42. | dans la mer Christiane, a capo S. Jovis N. O. v. | 2. 37. 26. |
| 6. 89. 51. 30. | 72. 15. 44. | 30. 3. 53. | 2. 0. 16. p.m. | 59. 47. 37. | 320. 42. 23. | dans le De- troit de Davis. | 34. 44. 41. |
| 7. 98. 20. 15. | 59. 14. 32. | 111. 3. 46. | 7. 24. 15. p.m. | 13. 43. 31. | 34. 13. 31. | 12. Leucis ab Holmia S.W.v. | 62. 46. 35. |
| 8. 99. 22. 45. | * * * | * * * | * * * | * * * | * * * | * * * | * * * |

T 3

TABULA

TABULA DECIMAP

Pro locis w. §o LV.

| | TPL. | Compl.Pw, feu latitudo w. | wPT. | Tempus in w. | wPL. | Longitudo w. | Nomina $\tau\omega\nu$ w. | PwT. |
|----|-------------|------------------------------------|--------------|------------------------------|---------------|-----------------|--------------------------------------------------------------------------------------------------------|-------------|
| 1. | 66°.18'.45" | * * * | * * * | * * * | * * * | * * * | * * * | * * * |
| 2. | 67. 21. 15. | 42°. 0'.12". | 99°.18'. 8". | 5 ^b .22'.47".a.m. | 166°.39'.23". | 213°.50'.37". | in mari pacifi- co. | 70°. 6'.45" |
| 3. | 80. 58. 15. | 66. 14. 8. | 31. 45. 1. | 9. 53. o. a.m. | 112. 43. 16. | 267. 46. 44. | in America fe- ptentriionali. | 39. 16. 58. |
| 4. | 82. 50. 45. | 68. 10. 0. | 22. II. 7. | 10. 31. 16. a.m. | 105. 1. 52. | 275. 28. 8. | in terris arcti- cis. | 27. II. 25. |
| 5. | 86. 11. 30. | 70. 53. 21. | 2. IO. 32. | 11. 51. 18. a.m. | 88. 22. 2. | 292. 7. 58. | dans la mer Christiane a capo S.Jovis. N. W. v. | 2. 36. 26. |
| 6. | 89. 51. 30. | 72. 15. 38. | 24. 48. 39. | 1. 39. 15. p.m. | 65. 2. 51. | 315. 27. 9. | dans l' Isle de Cumberland a capo Bedford N. W. v. | 28. 49. 29. |
| 7. | 98. 20. 15. | 62. 34. 11. | 100. 49. 38. | 6. 43. 19. p.m. | 2. 29. 23. | 22. 59. 23. | aux cotes de Norvegia vis- a-vis des Isle de Romsdal. Gouverne- ment de Dront- heim. | 71. 54. 7. |
| 8. | 99. 22. 45. | * * * | * * * | * * * | * * * | * * * | * * * | * * * |

Pars superat cæpti, pars est exhausta laboris.

ALIUS AT

Hic teneat nostras anchora jaæta rates. ()*

(*) OVID. Art.I.771.

SECTIO II.



S E C T I O II.
DE
E C L I P S I
AD MERIDIANVM LIPSIENSEM.

§. I.

Cum iam momenta præcipua pro meridiano Lipsiensi determinari debeant, quibus hæc eclipsis observanda erit, noto tantum, sequentibus in omnibus ex præceptis DE LA HIRE (præcepto XII. p. 24.) labores nos continuasse, unde sine ulteriore mora (aliis præcipue jam-jam necessitatibus pressi, sine remissione urgentibus) fiant, quæ desiderantur. Sed subsequentes ob calculos, elementa in principio statim acquisita, ac jam summe necessaria in unam conjicimus tabellam.

Quid acturi simus.

U

§. II.

§. II.

Elementa
eßsis III. IV.

Sect. I.
vide
Fig VI.

| | | f ° ' " |
|------------------------------------------------------|-----------|--------------------------|
| 1733. ♏. d. 13. mensis Maji. | | |
| Novilunium verum, in observatorio. | Parisiis. | 5 ^b . 23. 53. |
| Differentia meridianorum (*) | = | + 44. 0. |
| Novilunium verum. | Lipſiam. | 6. 7. 53. |
| In partibus æquatoris = CPL. | = | 91. 58. 15. |
| Locus solis, & luna verus ad eclipticam reductus. | §. III. | 1. 22. 49. 42. |
| Argumentum latitudinis. | = §. III. | 5. 20. 49. 5. |
| Parallaxis lunæ horiz. correcta = §. IV. 1. a. 3664' | | 61. 4. |
| Semidiæmeter penumbræ = §. IV. 1. b. 1952 | | 32. 32. |
| Horarius lunæ a sole ver. = IG = §. IV. 1. c. 2132 | | 35. 32. |
| Latitudo lunæ = CG = §. IV. 1. a. 2883 | | 48. 3. |
| Inclinatio orbitæ vera = CGE = §. IV. 1. a. β. | | 84. 41. 53. |
| Ang. ecl. & merid. compl. = PCG = | §. VIII. | 75. 17. 31. |
| Declinatio solis borealis = Pn = §. IV. 1. a. b. | | 14. 42. 29. |
| in P.D. | = | 18. 30. 47. |
| Distantia solis a polo = PC = §. IV. 1. a. b. | | 3. 10. |
| in P.D. | = | 71. 29. 13. |
| Latitudo loci L = Compl. PL = | | 57. 54. |
| Minima a polo distantia = PL = | | 51. 19. 15. |
| | | 38. 40. 45. |

(*) Liceat hic e novissimis autoribus differentiam meridianorum Lipsiensis, Parisenis, & primi per Insulam Fer in unam conjicere Tabellam. Ponit igitur ab observatorio

Lipſiam Insulam Fer

DE LA HIRE ipse, Tab. IV. pag. 4 v. notam

m moniti.

JOH. ALBERT KLIMM, in tabulis DE LA

HIRE germanicis Tab. XLVI. pag. 28. & 37.

pag. 35.

pag. 106.

Norimberge. 1725. 4.

Mr. LIEUTAUD, dans la connoissance

des temps pour les années 1721-1728. pag. 88 & 87.

1729. pag. 89.

& Mr. GODIN, depuis 1730, jusqu'à 1733.

pag. 133. Paris. 12.

Le R. pere LOUIS FEUILLE'E, dans son Journal

des obſeruations, Tom. 2. pag. 700. & 699. A Paris.

1714. Tomes II. 4.

Le R. pere ETIENNE SOUCIET, dans ses obſer-

vations Mathématiques, Astronomiques, Geographi-

ques, Chronologiques & Physiques &c. pag. 273. &

270. cum des PLACES.

cum HARRIS.

Prodit hujus libri summe utilis & curiosi Tomus I.

Parisiis. 1729. II. & III. 1731. 4.

JOH. GABRIEL DOPPELMAYER in mappa ge-

ographica cui titulus: Basis Geographiae recentio-

ris astronomica.

38. 58.

22. 30.

§. III.

§. III.
Momento Novilunii.

DE LA HIRE
Regula pri-
ma.
pag. 34, & 47.

1) Pro Parallaxi CL.

| | | | | | | |
|--------------|---|-----|-----|-----|---|--------------|
| Radius: | = | 1. | 58. | 15" | = | 8. 5364387: |
| Cos.CPL | = | 38. | 40. | 45 | = | 9. 9033908: |
| Tang.PL | = | 1. | 34. | 38 | = | 18. 4398295: |
| Tang.PK | = | 71. | 29. | 13 | | |
| PC | = | 73. | 3. | 51. | | |
| PK + PC = CK | = | 16. | 56. | 9. | | |
| Compl. CK | = | 2. | | | | |

| | | | | | | |
|--------|---|-----|-----|----|---|--------------|
| Cos.PK | = | 88. | 25. | 22 | = | 9. 9998354: |
| Cos.CK | = | 16. | 56. | 9 | = | 9. 4643412: |
| Cos.PL | = | 51. | 19. | 15 | = | 9. 8924607: |
| | | | | | | 19. 3568019. |
| Cos.CL | = | 13. | 8. | 58 | = | 9. 3569665: |
| CL | = | 76. | 51. | 2. | | |

3) Pro Parallaxi CL in P.D.

| | | | | | | | |
|-----------------|---|------|-----|---|-------|---|-------------|
| Radius: | = | 61. | 4" | = | 3664" | = | 3. 5639555: |
| Semidiam. D. Cn | = | 76°. | 51. | 2 | | = | 9. 9884609: |
| CL in P.C.M. | = | 59. | 28. | = | 3568 | = | 3. 5524164. |

4) Pro angulo parallactico PCL.

| | | | | | | |
|-------|---|------|-----|----|---|-------------|
| S.CL | = | 76°. | 51. | 2" | = | 9. 9884609: |
| S.CPL | = | 88. | 1. | 45 | = | 9. 9997430: |
| S.PL | = | 38. | 40. | 45 | = | 9. 7958514: |
| S.PCL | = | 39. | 53. | 48 | = | 9. 8071335: |

Hora una post Novilunium.

5) Pro Parallaxi CH.

| | | | | | | |
|--------------|---|------|------|-----|---|--------------|
| Radius: | = | 16°. | 58'. | 15" | = | 9. 4652115: |
| Cos.CPH | = | 38. | 40. | 45 | = | 9. 9033908: |
| Tang.PH | = | 13. | 9. | 8 | = | 19. 3680023: |
| Tang.PK | = | 71. | 29. | 13 | | |
| PC | = | 84. | 38. | 21 | | |
| PK + PC = CK | = | 5. | 21. | 39. | | |
| Compl. CK | = | U | 2 | | | |

6.

| | | | | |
|--------|---|---------------|---|--------------|
| Cos.PK | = | 76°. 50'. 52" | = | 9. 9884560 : |
| Cos.CK | = | 5. 21. 39 | = | 8. 9704754 = |
| Cos.PH | = | 51. 19. 15 | = | 9. 8924607 : |
| Cos.CH | = | 4. 17. 44 | = | 18. 8629361. |
| CH | = | 85. 42. 16 | = | 8. 8744801. |

7) *Pro parallaxi CH, in P.D.*

Radius:

$$\begin{aligned} \text{Semidiam. D. Cn} &= 61'. 4'' = 3664'' = 3.5629555 = \\ \text{CH in P.C.M.} &= 85^\circ. 42. 16 = 9. 9987783 : \\ \text{CH in P.D.} &= 60. 54 = 3654 = 3. 5627338. \end{aligned}$$

8) *Pro angulo parallactico PCH.*

| | | | | |
|-------|---|---------------|---|---------------|
| S.CH | = | 85°. 42'. 16" | = | 9. 9987783 : |
| S.CPH | = | 73. 1. 45 | = | 9. 9806639 = |
| S.PH | = | 38. 40. 45 | = | 9. 7958514 : |
| S.PCH | = | 36. 49. 44 | = | 19. 7765153 - |

§. IV.

1) *Pro angulis CLG, & CGL.*

| | | | |
|------------------|---|--------------|--|
| PCL (§. III. 4.) | = | 39°. 53' 48" | |
| PCG (§. H.) | = | 14. 42. 29 | |
| PCL + PCG = GCL | = | 54. 36. 17 | |
| CLG + CGL | = | 125. 23. 43 | |
| Semisumma | = | 62. 41. 51½ | |
| Semidifferentia | = | 11. 37. 27 | |
| + = CGL | = | 74. 19. 18½ | |
| - = CLG | = | 51. 4. 24½ | |

$$\text{Summa laterum} = 107'. 31'' = 6451'' = 3. 8096270 :$$

$$\text{Diff. eorundem} = 11. 25 = 685 = 2. 8356906 =$$

$$\text{Tang. SS. ang. incogn.} = 62°. 41. 51½ = 10. 2871897 :$$

$$\text{Tang. SD. eorundem} = 11. 37. 27 = 9. 3132533$$

2) *Pro*

2) Pro latere LG.

$$\begin{array}{lcl}
 S.CGL & = & 74^\circ 19' 18\frac{1}{2}'' \equiv 9. 9835328 : \\
 CL & = & 59. 28 = 3568'' \equiv 3. 5524164 : \\
 S.GCL & = & 54. 36. 17 \equiv 9. 9112511 : \\
 \\
 LG & = & 50. 21 = 3021 \equiv 3. 4801347 : \\
 \end{array}$$

$$\begin{array}{lcl}
 S.CLG & = & 51^\circ 4' 24\frac{1}{2}'' \equiv 9. 8909529 : \\
 CG & = & 48. 3 = 2883'' \equiv 3. 4598446 : \\
 S.GCL & = & 54. 36. 17 \equiv 9. 9112511 : \\
 \\
 LG & = & 50. 21 = 3021 \equiv 3. 4801428 : \\
 \end{array}$$

3) Pro angulis GCI & GIC.

$$\begin{array}{lcl}
 CGI = CGE (\S. II.) & = & 84^\circ 41' 53'' \\
 GCI + GIC & = & 95. 18. 7. \\
 \text{Semisumma} & = & 47. 39. 3\frac{1}{2}. \\
 \text{Semidifferentia} & = & 9. 19. 47. \\
 + = GIC & = & 56. 58. 50\frac{1}{2}. \\
 - = GCI & = & 38. 19. 16\frac{1}{2}. \\
 \end{array}
 \quad
 \begin{array}{lcl}
 CG. (\S. II.) & = & 48'. 3'' = 2883''. \\
 IG. (\S. II.) & = & 35. 32 = 2132. \\
 + & = & 83. 35 = 5015. \\
 - & = & 12. 31 = 751. \\
 \end{array}$$

$$\begin{array}{lcl}
 \text{Summa laterum} & = & 83'. 35'' = 5015'' \equiv 3. 7002709 : \\
 \text{Diff. eorundem} & = & 12. 31 = 751 \equiv 2. 8756399 : \\
 \text{Tang. SS. ang. incogn.} & = & 47^\circ 39'. 3\frac{1}{2}'' \equiv 10. 0402455 : \\
 \text{Tang. SD. eorundem} & = & 9. 19. 47 \equiv 12. 9158854. \\
 \end{array}$$

4) Pro latere CI.

$$\begin{array}{lcl}
 S.GIC & = & 56^\circ 58' 50\frac{1}{2}'' \equiv 9. 9234943 : \\
 CG & = & 48. 3 = 2883'' \equiv 3. 4598446 : \\
 S.CGI & = & 84^\circ 41' 53'' \equiv 9. 9981379 : \\
 \\
 CI & = & 57. 4 = 3424 \equiv 3. 5344882 : \\
 \end{array}$$

$$\begin{array}{lcl}
 S.GCI & = & (84^\circ 19' 16\frac{1}{2}'') \equiv 9. 7924407 : \\
 IG & = & (35. 32 = 2132) \equiv 3. 3287872 : \\
 S.CGI & = & 84. 41. 53 \equiv 9. 9981379 : \\
 \\
 CI & = & 57. 4 = 3424 \equiv 3. 5344844 : \\
 \end{array}$$

U 3 e 4) Pro

5) Pro angulis CHI & CIH.

| | | | |
|------------------|---|---------------|--|
| PCG (§. II.) | = | 14°. 42'. 29" | |
| GCI (§. IV. 3.) | = | 38°. 19. 16½ | |
| GCI-PCG=PCI | = | 23. 36. 47½ | |
| PCH (§. III. 8.) | = | 36. 49. 44. | |
| PCH - PCI=ICH | = | 13. 12. 56½ | |
| CHI + CIH | = | 166. 47. 3½ | |
| Semisumma | = | 83. 23. 31½ | |
| Semidifferentia | = | 15. 40. 9½ | |
| + = CIH | = | 99. 3. 41½ | |
| - = CHI | = | 67. 43. 22. | |

| | | | |
|------------------------|---|-------------------|----------------|
| Summa laterum | = | 117'. 58" = 7078" | = 3. 8499106: |
| Diff. corundem | = | 3. 50 = 230 | = 2. 3617278= |
| Tang. SS. ang. incogn. | = | 83°. 23. 31½ | = 10. 9361815: |
| Tang. SD. corundem. | = | 15. 40. 9½ | = 13. 2978593: |

6) Pro latere HI.

| | | | |
|-------|---|-----------------------------|---------------|
| S.CIH | = | 80°. 56'. 18½" | = 9. 9945456: |
| CH | = | 60°. 54 = 3654" | = 3. 5627338= |
| S.ICH | = | 13. 12. 56½ | = 9. 3591095: |
| HI | = | 14. 6 = 846 | = 2. 9272977. |
| S.CHI | = | 67°. 43'. 22" = 9. 9663110: | |
| CI | = | 57. 4 = 3424" = 3. 5344882= | |
| S.ICH | = | 13. 12. 56½ | = 9. 3591095: |
| HI | = | 14. 6 = 846 | = 2. 9272867. |

7) Pro angulis GLR, & LGR, & LRG.

| | | | |
|---------------------|---|---------------|--|
| PCL (§. III. 4.) | = | 39°. 53'. 48" | |
| PCH (§. III. 8.) | = | 36. 49. 44. | |
| PCL-PCH=LCH=SLC= | = | 3. 4. 4. | |
| CLG (§. IV. 1.) | = | 51. 4. 24½. | |
| CLG+SLC=SLG. | = | 54. 8. 28½ | |
| SLR=CHI (§. IV. 5.) | = | 67. 43. 22. | |
| SLR-SLG=GLR | = | 13. 34. 53½ | |
| LGR-LRG | = | 166. 25. 6½ | |
| Semisumma | = | 83. 12. 33½ | |
| Semidifferentia | = | 78. 2. 40½ | |
| + = LRG | = | 161. 15. 19½ | |
| - = LGR | = | 5. 9. 47. | |

Summa

$$\begin{array}{l}
 \text{Summa laterum} = 1064'. 27'' = 3867'' = 3. 5873742: \\
 \text{Diff. eorundem} = 36. 15 = 2175 = 3. 3374593: \\
 \text{Tang. SS. ang. incogn.} = 83^\circ. 12. 33\frac{1}{4} = 10. 9241641: \\
 \text{Tang. SD. eorundem} = 78^\circ. 2. 46\frac{1}{4} = 14. 2616234: \\
 \text{Tang. SD. eorundem} = 78^\circ. 2. 46\frac{1}{4} = 10. 6742492: \\
 \hline
 \end{array}$$

$$\begin{array}{l}
 8) \text{ Prolatere GR.} \quad T=10 \\
 \text{S.LRG}=18^\circ. 44'. 40\frac{1}{2}'' = 9. 5069782: \quad \text{S.LGR}=5^\circ. 9'. 47'' = 8. 9541959: \\
 \text{LG} = 50. 21 = 3021'' = 3. 4801347: \quad \text{LR} = 14. 6. = 846'' = 2. 9272977: \\
 \text{S.GLR}=13. 34. 53\frac{1}{2}'' = 9. 3707512: \quad \text{S.GLR}=13. 34. 53\frac{1}{2}'' = 9. 3707512: \\
 \text{GR} = 36. 47 = 2207 = 3. 3438530. \quad \text{GR} = 36. 47 = 2207 = 3. 3438530. \\
 \hline
 \end{array}$$

Fig. VII.

9) Prolatere LT.

Radius:

$$\begin{array}{l}
 \text{LG } (\S. IV. 2.) = 50'. 21'' = 3021'' = 3. 4801347: \\
 \text{S.LGR} = \text{LGT } (\S. IV. 7.) = 5^\circ. 9'. 47'' = 8. 9541959: \\
 \text{LT} = 4. 32 = 272 = 2. 4343306. \\
 \hline
 \end{array}$$

10) Prolatere GT.

Radius:

$$\begin{array}{l}
 \text{LG } (\S. IV. 2.) = 50'. 21'' = 3021'' = 3. 4801347: \\
 \text{S.GLT} = \text{compl. LGT} = 84^\circ. 50'. 13'' = 9. 9982343: \\
 \text{GT} = 50'. 9'' = 3009 = 3. 4783690: \\
 \text{GR } (\S. IV. 8.) = 36. 47 = 2207. \\
 \text{GT} - \text{GR} = \text{RT} = 13. 22 = 802. \\
 \hline
 \end{array}$$

§. V.

1) Pro medio eclipses in T.

DE LA HIRE
Regula tertia.
pag. 38, & 42.

$$\begin{array}{l}
 \text{Hor. luna a sole correctus} = \text{GR } (\S. IV. 8.) = 36'. 47'' = 2207'' = 3. 3438851: \\
 1''. o. o = 3600 = 3. 5563025: \\
 \text{GT } (\S. IV. 10.) = 50'. 9'' = 3009 = 3. 4783690: \\
 7. 0346715. \\
 \hline
 \end{array}$$

Tempus a mom. novil. ad med. ecl. in T. = 1. 21. 47 = 4907 = 3. 6907864.

Momentum novil. Lipsia $(\S. II.) = 6. 7. 53.$

Ergo medium eclipses in T. = 7. 29. 40. Manfredius. 7^h. 32'.

2) Pro

2) $Pro QT=ST$.

$$\begin{aligned} LQ = LS &= \text{Semid. penumbra}(\S. II.) = 32'.32'' = 1952'' \\ LT (\S. IV.9.) &= 4.32 = 272. \\ \rightarrow &= 37. 4 = 2224 = 3.3471348. \\ \rightarrow &= 28. 0 = 1680 = 3.2253093. \\ &\quad 6.5724441. \\ QT = ST & \quad 32. 13 = 1933 = 3.2862220. \end{aligned}$$

3) $Pro tempore per QT=ST$.

$$\begin{aligned} \text{Hor. luna a sole correct.} &= GR(\S. IV.8.) = 136'.47'' = 2207'' = 3.3438851 : \\ &1^h. 0. 0 = 3600 = 3.5563025 = \\ QT = ST (\S. V. 2.) & \quad 32. 13 = 1933 = 3.2862220 : \\ &\quad 6.8425245. \end{aligned}$$

$$\begin{aligned} \text{Tempus per } QT = ST &= 52. 32 = 3152 = 3.4986394. \\ \text{Momentum mediæ eclipsi in T} (\S. V. 1.) &= 7^h.29.40. \\ \text{Ergo initium eclipseos in Q.} &= 6.37. 8. \text{ Manfredius } 6^h. 40'. \\ \text{finis eclipseos in S.} &= 8.22. 12. \\ \text{Duratio eclipseos} &= 1.45. 4. \end{aligned}$$

4) $Pro mensura eclipseos in T$.

$$\begin{aligned} LV = SDiam. pen. &= 32'.32'' = 1952''. \text{ Diam. sol.} = 31'.47'' = 1907'' = 3.2803507 : \\ LT (\S. IV. 9.) &= 4.32 = 272. \quad 12'' 0 = 720'' = 2.8573325 : \\ LV - LT &= 28. 0 = 1680. \quad LV - LT = 28. 0 = 1680 = 3.2253093 : \\ &\quad 6.0826418. \\ \text{mensura eclipseos} &= 10^d.34' = 634' = 2.8022911. \\ \text{Manfredius} & \quad 11. 12. \end{aligned}$$

§. VI.

Pro occatu
foliis.
Fig. VIII.

Vide GREGORII Elementa. Lib. II. Sect. VI. Proposit. XXXIII. pag. 262. nota k moniti. vel

JOH. LEONHARD ROSTII Manuale Astronomicum. Parte II. Probl. 29. & 53. pag. 89 & 118. (*) confer

EJUSD. Sincerum Astronomum. Probl. 1. pag. 1. (**)

$$\begin{aligned} \text{Tang. elevationis æquatoris} &= HO\varnothing = 38^\circ. 40'.45'' = 9.9033908 : \\ \text{Radium} &= \\ \text{Tang. decl. solis borealis} &= SD = 18. 30. 47 = 19.5248486 : \\ \text{S. differ. ascensionalis} &= SO = 24. 43. 32'' = 9.6214578. \\ \text{in partibus æquatoris} &= 1^h.38'54''.8'' \\ \text{quia fol in signo boreali addantur} &= 6. 0. 0. 0. \\ \text{Ergo occasus solis ante finem eclipseos.} &= 7. 38. 54. 8. \text{ Manfr. } 7^h.39'. \\ &\quad \text{Finis} \end{aligned}$$

(*) Norimbergæ, 1718. 4.

(**) Ibid. 1727. 4.

Finis igitur, tanquam nobis invisibilis, non indiget correctione, sed nec initium altera, ac priori in omnibus simillima operatione, investigemus, differentia inter novilunium G, & initium Q vix ad dimidiam horam adscendente. Sed pro correctione penumbræ altitudinem solis tempore Q determinemus. Deberet equidem accuratius altitudo lunæ queri, sed cum hic gradibus contenti esse possumus, non multo aberrabimus, si in coniunctione solis & lunæ, altitudinem vel hujus, vel illius pro penumbræ adhibemus correctione.

§. VII.

Vide KEILLII Introductionem lectione XXX. probl. 15. pag. 512.
nota i. moniti.
ROSTII Manuale. Parte II. Probl. 88. pag. 206. confer
EJUSD. Astronomum. Probl. 9. pag. 28.

Pro altitudine
folis,
Fig. IX.

| | | |
|--------------------------------------------------|---------------|--------------|
| Radius: | | |
| S. SPZ=complem. elong. folis a merid. | = complem. | |
| 99°. 17'. 0" = 9°. 17' 0" = 9. 2076795 = | | |
| Tang. PZ=complem. elevationis poli RP = complem. | | |
| 51. 19. 15 = 38. 40. 45 = 9. 9033908 : | | |
| Tang. PK = 7. 21. 28 = 79. 1110703. | | |
| Compl. PK = 82. 38. 32. | | |
| PS=compl.decl.sol.bor SD 71. 29. 13. | | |
| PS+PK=KS = 78. 50. 41. | | |
| Compl. KS = 11. 9. 19. | | |
| | | |
| Cos. PK = 82. 38. 32 | = 9.9964091 : | |
| Cos. KS = 11. 9. 19 | = 9.2866104 = | |
| Cos. PZ = 51. 19. 15 | = 9.8924607 : | |
| Cos. ZS = altitudini folis, | | 19.1790711. |
| & lunæ prope=SA = 8. 45. 34 | | = 9.1826620. |

§. VIII.

Jam cum altitudine solis 8°. 45'. ex Tabularum DE LA HIRE XXIV, pag. 34, & usu earundem precepto XII. pag. 40 & 48, habetur correctio diametri lunæ = 5", & semidiametri $2\frac{1}{2}$ ", unde semidiameter penumbræ $32'. 34\frac{1}{2}'' \equiv 1954\frac{1}{2}''$. Nunc ideo.

Pro correctione penumbræ, initii, magnitudinis eclipticæ.

Fig. VII.

1) *Pro QT = ST.*

| | |
|-------------------------------------|-------------------------------------------------------|
| $LQ = LS = \text{Semid. penumbrae}$ | $= 32' 34\frac{1}{2}'' = 1954\frac{1}{2}''$ |
| $LT (\S. IV. 9.)$ | $= 4.32 = 272.$ |
| | $+ = 37. 6\frac{1}{2} = 2226\frac{1}{2} = 3.3476227.$ |
| | $- = 28. 2\frac{1}{2} = 1682\frac{1}{2} = 3.2259551.$ |
| $QT = ST$ | $6.5735778.$ |
| supra \S. V. 2. | $= 32. 15 = 1935 = 3.2867889.$ |
| | $= 32. 13 = 1933.$ |

2) *Pro tempore per QT = ST.*

| | |
|----------------------------------------------|------------------------------------------|
| Hor. luna a sole correctus = GR (\S. IV. 8.) | $= 36'.47'' = 2207'' = 3.438851 :$ |
| | $1^b. 0'. 0'' = 3600'' = 3.5563025 =$ |
| $QT = ST$ (modo) | $= 32. 15 = 1935 = 3.2867889 :$ |
| Tempus per QT = ST | $6.8430914.$ |
| Momentum medii eclipsi in T (\S. V. 1.) | $= 52. 36 = 3156 = 3.4992003.$ |
| Ergo initium eclipses in Q (\S. V. 3.) | $= 6. 37. 4. \text{ antea } 6.37'. 8''.$ |
| finis eclipses in S (\S. V. 3.) | $= 8. 22. 16. \text{ antea } 8. 22. 12.$ |
| Duratio eclipses (\S. V. 3.) | $= 1. 45. 12. \text{ antea } 1. 45. 4.$ |

3) *Pro mensura eclipses in T.*

| | |
|----------------------------------|------------------------------------------------------|
| $LV = S. \text{Diamet. penumb.}$ | $= 32'.34\frac{1}{2}'' = 1954\frac{1}{2}''.$ |
| $LT (\S. IV. 9.)$ | $= 4.32 = 272.$ |
| $LV - LT (\S. V. 4.)$ | $= 28. 2\frac{1}{2} = 1682\frac{1}{2}.$ |
| Diameter solis | $= 31'.47'' = 1907'' = 3.2803507 :$ |
| $LV - LT$ | $124'.0'' = 720'' = 2.8573325 =$ |
| | $= 28. 2\frac{1}{2} = 1682\frac{1}{2} = 3.2259551 :$ |
| | $6.0832876.$ |
| mensura eclipses | $= 10''.35' = 635' = 2.8029369.$ |
| antea (\S. V. 4.) | $10.34 = 634.$ |

§. IX.

1) *Pro latere TZ.*

| | | |
|-------------------------------------------|-------------------|---------------------------------------|
| Momentum medii eclipses | $7.29'.40''$ | T (\S. V. 1.) |
| Sol occidit vere | $7.38.54,$ | Z (\S. VI.) |
| Temp. a medio ecl. T, ad occas. Z = 0. | $9. 14.$ | $TZ = 554''$ |
| | | $1^b. 0'. 0'' = 3600'' = 3.5563025 :$ |
| Hor. luna a sole corre. = GR (\S. IV. 8.) | $= 36. 47 = 2207$ | $= 3.438851 :$ |
| Tempus per TZ | $= 9. 14 = 554$ | $= 2.7435098 :$ |
| Portionem viæ lunaris TZ | $= 5. 40 = 340$ | $6.0873949.$ |
| | | $= 2.5310924.$ |

2) *Pro*

2) Pro latere LZ.

a)

$$\begin{array}{rcl} TZ & = & 5'. 40'' = 340'' = 2. 5310924 : \\ LT \text{ (§. IV. 9.)} & = & 4. 32 = 272 = 12. 4343306 = \end{array}$$

$$\begin{array}{l} \text{Radius:} \\ \text{Tang. TZL} = 38^{\circ} 40. 10 = 9. 9032382. \end{array}$$

b)

$$\begin{array}{rcl} S. TZL & = & 38^{\circ} 40'. 10'' = 9. 7957593 : \\ LT \text{ (§. IV. 9.)} & = & 4. 32 = 272 = 12. 4343306 = \end{array}$$

$$\begin{array}{l} \text{Radius:} \\ LZ = 7. 15 = 435 = 2. 6385713. \end{array}$$

3) Pro mensura eclipses, ubi sol in Z occidit vere.

$$LV = S. Diamet. penumb. = 32'. 34\frac{1}{2}'' = 1954\frac{1}{2}.$$

$$LZ = = 7. 15 = 435.$$

$$LV - LZ = 25. 19\frac{1}{2} = 1519\frac{1}{2}.$$

$$\begin{array}{rcl} \text{Diameter solis} & = & 31'. 47'' = 1907'' = 3. 2803507 : \\ & & 12''. 0' = 720' = 2. 8573325 = \end{array}$$

$$LV - LZ = 25. 19\frac{1}{2} = 1519\frac{1}{2} = 3. 1817007 : 6. 0390332.$$

$$\begin{array}{rcl} \text{mensura eclipses in Z} & = & 9.^{\circ} 34' = 574' = 2. 7586825. \\ & & 10. 3. \end{array}$$

MANFREDIUS

§. X.

Lipſia igitur numerantibus $7^{\circ} 38'. 54''. 8'''$. centrum solis occidet vere, obſcurat 9 $^{\circ} 34'$. deſcreſcente obſcuratione. Sed propter refractionem ſol diuitiis ſupra horizontem videtur, quam abſque eadem conſcipiendus foret. Quod fi diuitiis eum ſpectabimus donec & ap- parenter centrum hæreat in horizonte, minore cum phasi omnino occidet apparet, quam vere. Cum vero ob refractionem ſolem altorem videamus, tantum ſub horizonte eundem ſtatuum quantum neceſſe ut centrum accurate in horizonte hæreat. Ex Hypothefi DE LA HIRE Tabula V. pag. 6. refractio horizontalis erit 32'. 0''. Igitur in Δ ZPS datur (*)

X 2

Pro phasi cura
que ſol occi-
dere videtur
propter refra-
ctionem.
Fig. VIII.

Za

(*) GREGORIUS Elem. Lib. II. Seſt. VI. proposit. XXXIV. pag. 263.

KEILLIUS ubi ſupra §. VII.

ROTIUS Manuſ. Parte II. Probl. 80. pag. 182.

ID. Astronomo. Probl. 7. pag. 23. ex hujs pag. 3. tempus occafus apparentis eruitur

7h. 42'. 32''. ab occafu ſi hujs diſferens non niſi 20'' — .

| | | |
|----------------------------------------------------------|---|---------------------------|
| Za → aS | = | 90°. 32'. 0". |
| Compl. decl. solis boreal. SD | = | 71. 29. 13 = PS. |
| Complem.elevationis poli HP | = | 38. 40. 45 = PZ. |
| Summa | = | 200. 41. 58. |
| Semisumma | = | 100. 20. 59. |
| PS | = | 71. 29. 13. |
| SSumma - PS | = | 28. 51. 46. |
| PZ | = | 38. 40. 45. |
| SSumma - PZ | = | 61. 40. 14. |
| | = | Logarith. S. = 9.6836895. |
| Prodit dimidium anguli ZPS | = | 57. 51. 37. |
| Totus angulus ZPS | = | 115. 43. 14. |
| Solis occasus apparet = ZPS in partibus æquatoris | = | 7°. 42. 52. 56". |
| Momentum medii eclipsi. (§. V. 1.) recipe Fig. VII, T | = | 7. 29. 40. |
| Tempus a medio eclipsi. T, ad occa- sum apparentem Y | = | 0. 13. 13. = TY = 793. |

1) Pro latere TY.

| | | |
|---------------------------------------------|---|----------------------------|
| Hor. lunæ a sole correctum = GR (§. IV. 8.) | = | 3600" = 3.5563025 : |
| Tempus per TY | = | 13. 13 = 793 = 3.3438851 : |
| Portionem viæ lunaris TY | = | 6.2431583. |
| | = | 8. 6 = 486 = 2.6868558. |

2) Pro latere LY.

| | | |
|----------------|---|------------------------------|
| TY | = | 8'. 6" = 486" = 2. 6868558 : |
| LT (§. IV. 9.) | = | 4. 32 = 272 = 12. 4343306 : |
| Radius: | | |
| Tang. TYL | = | 29°. 12'. 31" = 9. 7474748. |
| S. TYL | = | b) |
| LT (§. IV. 9.) | = | 29. 12'. 31" = 9. 6884117 : |
| Radius: | | |
| LY | = | 4. 32 = 272" = 12. 4343306 : |
| | = | 9. 17 = 557 = 2. 7459189. |

3)

3) Pro mensura eclipses, ubi sol in Y occidit apparenter.

$$\begin{array}{lcl} LV = \text{S.Diamet. penumb.} & = 32'. 34\frac{1}{2}'' & = 1954\frac{1}{2}'' \\ LY = & = 9. 17 & = 557. \\ LV - LY & = 23. 17\frac{1}{2} & = 1397\frac{1}{2}. \end{array}$$

$$\begin{array}{lcl} \text{Diameter solis} & = 31'. 47'' & = 1907'' = 3.2803507 : \\ & 12''. 0' & = 720' = 2.8573325 = \end{array}$$

$$\begin{array}{lcl} LV - LY & = 23. 17\frac{1}{2} & = 1397\frac{1}{2} = 3.1453518 : \\ & & 6.0026843. \end{array}$$

$$\text{mensura eclipses in Y} = 8''. 48' = 528' = 2.7223330.$$

§. XI.

Pro digito uno.

Pro temporibus singulorum digitorum.

i) Pro QT = ST.

$$\begin{array}{lcl} \text{Diameter solis} & = 31'. 47'' & = 1907. \\ \text{Ergo digitus } i & = 2. 39 & = 159. \\ LV & = 32. 34\frac{1}{2} & = 1954\frac{1}{2}. \\ LV - i & = 29. 55\frac{1}{2} & = 1795\frac{1}{2}. \\ LT (\$IV. 9.) & = 4. 32 & = 272. \\ & \rightarrow & 34. 27\frac{1}{2} = 2067\frac{1}{2} = 3.3154455. \\ & \rightarrow & 25. 23\frac{1}{2} = 1523\frac{1}{2} = 3.1828425. \\ & & 6.4982880. \\ QT = ST & = 29. 35 & = 1775 = 3.2491440. \end{array}$$

2) Pro tempore per QT = ST.

$$\begin{array}{lcl} \text{Horarius lunæ a sole corr.} & = 36'. 47'' & = 2207'' = 3.3438851 : \\ & 1''. 0. 0 & = 3600 = 3.5563025 = \\ QT = ST & = 29. 35 & = 1775 = 3.2491440 : \\ & & 6.8054465. \end{array}$$

$$\text{Tempus per QT} = ST = 48. 14 = 2894 = 3.4615014.$$

$$\text{Mon. med. eclipsi.} = 7''. 29. 40.$$

$$\text{Digitus unus} = 6. 41. 26. \text{crescens.}$$

$$\text{Digitus unus} = 8. 17. 54. \text{decrecens invisibilis.}$$

Pro

Pro digitis duobus.

1) Pro QT=ST.

| | | | | |
|----------------|---|----------|---|---------------------|
| Diameter solis | = | 31'. 47" | = | 1907." |
| Ergo digitii 2 | = | 5. 18 | = | 318. |
| LV | = | 32. 34½ | = | 1954½. |
| LV - 2 | = | 27. 16½ | = | 1636½. |
| LT (§.IV.9.) | = | 4. 32 | = | 272. |
| | + | 31. 48½ | = | 1908½ = 3. 2806922. |
| | - | 22. 44½ | = | 1364½ = 3. 1349735. |
| QT = ST | = | 26. 54 | = | 1614 = 6. 4156657. |
| | | | | 3. 2078328. |

2) Pro tempore per QT = ST.

| | | | | |
|----------------------------|---|-------------|--------------------------|----------------------|
| Horarius lunæ a sole corr. | = | 36'. 47" | = | 2207" = 3. 3438851 : |
| | | 1b. 0. 0 | = | 3600 = 3. 5563025 : |
| QT = ST | = | 26. 54 | = | 1614 = 3. 2078328 : |
| | | | | 6. 7641353. |
| Tempus per QT = ST | = | 43. 52 | = | 2632 = 3. 4202502. |
| Mom. med. eclipsi. | = | 7b. 29. 40. | | |
| Digitii duo | = | 6. 45. 48. | crescentes. | |
| Digitii duo | = | 8. 13. 32. | decrecentes invisibiles. | |

Pro digitis tribus.

1) Pro QT=ST.

| | | | | |
|----------------|---|----------|---|---------------------|
| Diameter solis | = | 31'. 47" | = | 1907" |
| Ergo digitii 3 | = | 7. 57 | = | 477. |
| LV | = | 32. 34½ | = | 1954½. |
| LV - 3 | = | 24. 37½ | = | 1477½. |
| LT (§.IV.9.) | = | 4. 32 | = | 272. |
| | + | 29. 9½ | = | 1749½ = 3. 2429139. |
| | - | 20. 5½ | = | 1205½ = 3. 0809870. |
| QT = ST | = | 24. 12 | = | 1452 = 6. 3239009. |
| | | | | 3. 1619504. |

3) Pro tempore per QT=ST.

| | | | | |
|----------------------------|---|-------------|--------------------------|----------------------|
| Horarius lunæ a sole corr. | = | 36'. 47" | = | 2207" = 3. 3438851 : |
| | | 1b. 0. 0 | = | 3600 = 3. 5563025 : |
| QT = ST | = | 24. 12 | = | 1452 = 3. 1619504 : |
| | | | | 6. 7182529. |
| Tempus per QT = ST | = | 39. 28 | = | 2368 = 3. 3743678. |
| Mom. med. eclipsi. | = | 7b. 29. 40. | | |
| Digitii tres | = | 6. 50. 12. | crescentes. | |
| Digitii tres | = | 8. 9. 8. | decrecentes invisibiles. | |

Pro

Pro digitis quatuor.

1) Pro QT=ST.

| | | | | | |
|----------------|---------|----------|-------|---------------|---------------|
| Diameter solis | = | 31'. 47" | = | 1907". | |
| Ergo digitii 4 | = | 10. 36 | = | 636. | |
| LV | = | 32. 34½ | = | 1954½. | |
| LV - 4 | = | 21. 58½ | = | 1318½. | |
| LT (§. IV. 9.) | = | 4. 32 | = | 272. | |
| + = | 26. 30½ | = | 1590½ | = 3. 2015337. | |
| - = | 17. 26½ | = | 1046½ | = 3. 0197392. | |
| | | | | 6. 2212729. | |
| QT = ST | = | 21. 30 | = | 1290 | = 3. 1106364. |

2) Pro tempore per QT=ST.

| | | | | |
|----------------------------|---|-------------|--------------------------|---------------------|
| Horarius lunæ a sole corr. | = | 36'. 47" | = | 2207" = 3. 3438851: |
| | = | 1b. 0. 0 | = | 3600 = 3. 5563025= |
| QT = ST | = | 21. 30 | = | 1290 = 3. 1106364: |
| | = | 20 | = | 6. 6669389. |
| Tempus per QT = ST | = | 35. 4 | = | 2104 = 3. 3230538. |
| Mom. med. eclipsi. | = | 7b. 29. 40. | | |
| Digitii quatuor | | 6. 54. 36. | crescentes. | |
| Digitii quatuor | | 8. 4. 44. | decrescentes invisibles. | |

Pro digitis quinque.

1) Pro QT=ST.

| | | | | |
|----------------|---------|----------|-------|--------------------|
| Diameter solis | = | 31'. 47" | = | 1907". |
| Ergo digitii 5 | = | 13. 15 | = | 795. |
| LV | = | 32. 34½ | = | 1954½. |
| LV - 5 | = | 19. 19½ | = | 1159½. |
| LT (§. IV. 9.) | = | 4. 32 | = | 272. |
| + = | 23. 51½ | = | 1431½ | = 3. 1557914. |
| - = | 14. 47½ | = | 887½ | = 2. 9481683. |
| | | | | 6. 1039597. |
| QT = ST | = | 18. 47 | = | 1127 = 3. 0519798. |

2) Pro tempore per QT=ST.

| | | | | |
|----------------------------|---|-------------|--------------------------|---------------------|
| Horarius lunæ a sole corr. | = | 36'. 47" | = | 2207" = 3. 3438851: |
| | = | 1b. 0. 0 | = | 3600 = 3. 5563025= |
| QT = ST | = | 18. 47 | = | 1127 = 3. 0519798: |
| | = | 10 | = | 6. 6082823. |
| Tempus per QT = ST | = | 30. 38 | = | 1838 = 3. 2643972. |
| Mom. med. eclipsi. | = | 7b. 29. 40. | | |
| Digitii quinque | | 6. 59. 2. | crescentes. | |
| Digitii quinque | | 8. 0. 18. | decrescentes invisibles. | Pro |

Pro digitis sex.

1) Pro QT = ST.

| | | |
|----------------|------------|----------------------|
| Diameter solis | = 31'. 47" | = 1907°. |
| Ergo digitii 6 | = 15. 53½ | = 953½. |
| LV | = 32. 34½ | = 1954½. |
| LV - 6 | = 16. 41 | = 1001. |
| LT (§. IV. 9.) | = 4. 32 | = 272. |
| | + 21. 13 | = 1273 = 3. 1048284. |
| | - 12. 9 | = 729 = 2. 8627275. |
| QT = ST | = 16. 3 | = 963 = 2. 9837779. |

2) Pro tempore per QT = ST.

| | | |
|----------------------------|--------------|--------------------------|
| Horarius lunæ a sole corr. | = 36'. 47" | = 2207" = 3. 3438851: |
| | = 1b. 0. 0 | = 3600 = 3. 5563025: |
| QT = ST | = 16. 3 | = 963 = 2. 9837779: |
| Tempus per QT = ST | = 26. 11 | = 1571 = 3. 1961953. |
| Mom. med. eclipsi. | = 7. 29. 40. | |
| Digitii sex | = 7. 3. 29. | crescentes. |
| Digitii sex | = 7. 55. 51. | decrecentes invisibilis. |

Pro digitis septem.

1) Pro QT = ST.

| | | |
|----------------|------------|-----------------------|
| Diameter solis | = 31'. 47" | = 1907°. |
| Ergo digitii 7 | = 18. 32 | = 1112. |
| LV | = 32. 34½ | = 1954½. |
| LV - 7 | = 14. 2½ | = 842½. |
| LT (§. IV. 9.) | = 4. 32 | = 272. |
| | + 18. 34½ | = 1114½ = 3. 0470801. |
| | - 9. 30½ | = 570½ = 2. 7562555. |
| QT = ST | = 13. 17 | = 797 = 2. 9016678. |

2) Pro tempore per QT = ST.

| | | |
|----------------------------|--------------|--------------------------|
| Horarius lunæ a sole corr. | = 36'. 47" | = 2207" = 3. 3438851: |
| | = 1b. 0. 0 | = 3600 = 3. 5563025: |
| QT = ST | = 13. 17 | = 797 = 2. 9016678: |
| Tempus per QT = ST | = 21. 40 | = 1300 = 3. 1140852. |
| Mom. med. eclipsi. | = 7. 29. 40. | |
| Digitii septem | = 7. 8. 0. | crescentes. |
| Digitii septem | = 7. 51. 20. | decrecentes invisibilis. |

PRO

Pro digitis octo.

1) Pro $QT=ST$.

| | |
|----------------|--------------------------------------------------------|
| Diameter solis | $= 31. 47'' = 1907''$ |
| Ergo digitii 8 | $= 21. 12 = 1272.$ |
| LV | $= 32. 34\frac{1}{2} = 1954\frac{1}{2}$ |
| LV - 8 | $= 11. 22\frac{1}{2} = 682\frac{1}{2}$ |
| LT (§. IV. 9.) | $= 4. 32 = 272.$ |
| | $+ = 15. 54\frac{1}{2} = 954\frac{1}{2} = 2. 9797759.$ |
| | $- = 6. 50\frac{1}{2} = 410\frac{1}{2} = 2. 6133128.$ |
| | $5. 5930887.$ |
| $QT = ST$ | $= 10. 26 = 626 = 2. 795443.$ |

2) Pro tempore per $QT=ST$.

| | |
|----------------------------|----------------------------------------------|
| Horarius lunæ a sole corr. | $= 36'. 47'' = 2207'' = 3. 3438851:$ |
| | $1^b. \quad 0. \quad 0 = 3600 = 3. 5563025:$ |
| $QT = ST$ | $= 10. 26 = 626 = 2. 795443:$ |
| | $6. 3528468.$ |
| Tempus per $QT = ST$ | $= 17. 1 = 10 = 3. 0089617.$ |
| Mom. med. eclipsi. | $= 7^b. 29. 40.$ |
| Digitii octo | $= 7. 12. 39. crescentes.$ |
| Digitii octo | $= 7. 46. 41. decrescentes invisibilis.$ |

Pro probatione temporis, & phaseos, quando, & cum qua sol occidit
apparenter §. X.1) Pro $QT=ST$.

| | |
|------------------------------|--------------------------------------------------------|
| Diameter solis | $= 31'. 47'' = 1907''$ |
| Ergo digitii 8 $\frac{1}{2}$ | $= 23. 18 = 1398.$ |
| LV | $= 32. 34\frac{1}{2} = 1954\frac{1}{2}.$ |
| LV - 8 $\frac{1}{2}$ | $= 9. 16\frac{1}{2} = 556\frac{1}{2}.$ |
| LT (§. IV. 9.) | $= 4. 32 = 272.$ |
| | $+ = 13. 48\frac{1}{2} = 828\frac{1}{2} = 2. 9182924.$ |
| | $- = 4. 44\frac{1}{2} = 284\frac{1}{2} = 2. 4540816.$ |
| | $5. 3723740.$ |
| $QT = ST$ | $= 8. 6 = 486 = 2. 6861870.$ |

2) Pro tempore per $QT=ST$.

| | |
|----------------------------|----------------------------------------------------------|
| Horarius lunæ a sole corr. | $= 36'. 47'' = 2207'' = 3. 3438851:$ |
| | $1^b. \quad 0. \quad 0 = 3600 = 3. 5563025:$ |
| $QT = ST$ | $= 8. 6 = 486 = 2. 6861870:$ |
| | $6. 2424895.$ |
| Tempus per $QT = ST$ | $= 13. 12 = 792 = 2. 8986044.$ |
| Mom. med. eclipsi. | $= 7^b. 29. 40.$ |
| Digitii octo $\frac{1}{2}$ | $= 7. 16. 28. crescentes.$ |
| Digitii octo $\frac{1}{2}$ | $= 7. 42. 52. decrescentes visibilis.$ |
| supra §. X. | $= 7. 42. 53. in ipso momento occasus solis apparentis.$ |
| | Pro |

Pro digitis novem.

1) Pro QT=ST.

| | | |
|----------------|-----------------------|----------------------------|
| Diameter solis | $= 31' 47''$ | $\approx 1907.$ |
| Ergo digitii 9 | $= 25. 20$ | $\approx 1520.$ |
| LV | $= 32. 34\frac{1}{2}$ | $\approx 1954\frac{1}{2}.$ |
| LV - 9 | $= 8. 14\frac{1}{2}$ | $\approx 524\frac{1}{2}.$ |
| LT (§. IV. 9.) | $= 4. 32$ | $\approx 272.$ |
| QT = ST | $= 7. 28$ | $\approx 448 = 5.3039462.$ |
| | | $\approx 2.6519731.$ |

2) Pro tempore per QT = ST.

| | | | |
|----------------------------|------------------|---------------------------------|----------------------|
| Horarius lunæ a sole corr. | $= 36'. 47''$ | $\approx 2207''$ | $\approx 3.3438851:$ |
| | $1^b. 0. 0$ | $= 3600$ | $\approx 3.5563025:$ |
| QT = ST | $= 7. 28$ | $= 448$ | $\approx 2.6519731:$ |
| | | | $\approx 6.2082756.$ |
| Tempus per QT = ST | $= 12. 12$ | ≈ 732 | $\approx 2.8043905.$ |
| Mom. med. eclipsi. | $= 7^b. 29. 40.$ | | |
| Digitii novem | $= 7. 17. 28.$ | crescentes. | |
| Digitii novem | $= 7. 41. 52.$ | decresc. visibiles apparterent. | |

Pro confirmatione temporis, & phasœos, quando, & cum qua
sol occidit vere. §. VI, & IX.

1) Pro QT=ST.

| | | |
|--------------------------------|------------------------|---------------------------------------|
| Diameter solis | $= 31' 47''$ | $\approx 1907''$ |
| Ergo digitii 9 $\frac{17}{30}$ | $= 25. 20$ | $\approx 1520.$ |
| LV | $= 32. 34\frac{1}{2}$ | $\approx 1954\frac{1}{2}.$ |
| LV - 9 $\frac{17}{30}$ | $= 7. 14\frac{1}{2}$ | $\approx 434\frac{1}{2}.$ |
| LT (§. IV. 9.) | $= 4. 32$ | $\approx 272.$ |
| QT = ST | $= 11. 46\frac{1}{2}$ | $\approx 706\frac{1}{2} = 2.8491120.$ |
| | $- = 2. 42\frac{1}{2}$ | $\approx 162\frac{1}{2} = 2.2108513.$ |
| QT = ST | $= 5. 39$ | $\approx 339 = 5.0599633.$ |
| | | $\approx 2.5299816.$ |

2) Pro tempore per QT=ST.

| | | | |
|-------------------------------|------------------|-----------------------------|----------------------|
| Horarius lunæ a sole corr. | $= 36'. 47''$ | $\approx 2207''$ | $\approx 3.3438851:$ |
| | $1^b. 0. 0$ | $= 3600$ | $\approx 3.5563025:$ |
| QT = ST | $= 5. 39$ | $= 339$ | $\approx 2.5299816:$ |
| | | | $\approx 6.0862841.$ |
| Tempus per QT = ST | $= 9. 13$ | ≈ 553 | $\approx 2.7423990.$ |
| Mom. med. eclipsi. | $= 7^b. 29. 40.$ | | |
| Digitii novem $\frac{17}{30}$ | $= 7. 20. 27.$ | crescentes. | |
| Digitii novem $\frac{47}{30}$ | $= 7. 38. 53.$ | decrescentes visibiles. | |
| | $= 7. 38. 54.$ | in ipso momento occasus so- | |
| | | lis veri. | Pro |

Bene tamen tenendum, quam rarissime, ut recte monet DE LA HIRE pag. 40 GREGORIUS Elem. Tomo II, Lib. IV, Sect VIII, proposit. XLVIII, pag. 557 in fine, medium eclipses cum maxima obscuratione in idem momentum incidere, sed quando, ut in nostro casu, non nisi paucæ dantur phases correspondentes, nullus metuendus qui sit error inde oriri potest, si supponimus, æquales phases, æquaque a medio abesse eclipses. Unicum adhuc adjiciamus paragrapnum, pro sex altitudinibus solaribus, in initio correcto, in phasi 3, 6, 9 digitorum, & medio eclipses.

Sex
altitudines
solis.

Fig. VIII.
&
IX.

| Radius; | | §. XII. | | | |
|--------------|-----|---------|-------------|---|--------------|
| Cos. | SPZ | = | 9°. 16'. 0" | = | 9. 20690594 |
| Tang. | PZ | = | 38. 40. 45 | = | 9. 9033908: |
| Tang. | PK | = | 7. 20. 44 | = | 9. 1102967. |
| Compl. | PK | = | 82. 39. 16 | | |
| | PS | = | 71. 29. 13 | | |
| PS + PK = KS | | = | 78. 49. 57 | | |
| Compl. | KS | = | 11. 10. 3 | | |
| Cos. | PK | = | 82. 39. 16 | = | 9. 9964210: |
| Cos. | KS | = | 11. 10. 3 | = | 9. 2870800= |
| Cos. | PZ | = | 51. 19. 15 | = | 9. 8924607: |
| Cos. | ZS | = | 8. 46. 8 | = | 19. 1795407. |
| | | | | | 9. 1831197. |

Pro altitudine solis in phasi digitorum trium.

| Radius: | | T 3 = T 0 | | | |
|--------------|-----|-----------|--------------|---|--------------|
| Cos. | SPZ | = | 12°. 33'. 0" | = | 9. 3370428= |
| Tang. | PZ | = | 38. 40. 45 | = | 9. 9033908: |
| Tang. | PK | = | 9. 52. 5 | = | 9. 2404336. |
| Compl. | PK | = | 80. 7. 55 | | |
| | PS | = | 71. 29. 13 | | |
| PS + PK = KS | | = | 81. 21. 18 | | |
| Compl. | KS | = | 8. 38. 42 | | |
| Cos. | PK | = | 80. 7. 55 | = | 9. 9935267: |
| Cos. | KS | = | 8. 38. 42 | = | 9. 1769931= |
| Cos. | PZ | = | 51. 19. 15 | = | 9. 8924607: |
| Cos. | ZS | = | 6. 50. 25 | = | 19. 0694538. |
| | | | | | 9. 0759271. |

Pro

Pro altitudine solis in phasē digitorum sex.

Radius:

| | | | | | |
|-----------|-----|---|---------------|---|---------------------|
| Cos. | SPZ | = | 15°. 52'. 15" | = | 9. 4369090= |
| Tang. | PZ | = | 38. 40. 45 | = | <u>9. 9033908:</u> |
| Tang. | PK | = | 12. 20. 56 | = | <u>x9. 3402998.</u> |
| Compl. | PK | = | 77. 39. 4. | | |
| | PS | = | 71. 29. 13. | | |
| PS + PK = | KS | = | 83. 50. 9. | | |
| Compl. | KS | = | 6. 9. 51. | | |
| Cos. | PK | = | 77. 39. 4 | = | 9. 9898338: |
| Cos. | KS | = | 6. 9. 51 | = | 9. 0309134= |
| Cos. | PZ | = | 51. 19. 15 | = | <u>9. 8924607:</u> |
| | | | | | 18. 9233741. |
| Cos. | ZS | = | 4. 55. 22 | = | 8. 9335403. |

Pro altitudine solis in phasē digitorum novem.

Radius:

| | | | | | |
|-----------|-----|---|--------------|---|---------------------|
| Cos. | SPZ | = | 19°. 22'. 0" | = | 9. 5206307= |
| Tang. | PZ | = | 38. 40. 45 | = | <u>9. 9033908:</u> |
| Tang. | PK | = | 14. 52. 3 | = | <u>x9. 4240215.</u> |
| Compl. | PK | = | 75. 7. 57. | | |
| | PS | = | 71. 29. 13. | | |
| PS + PK = | KS | = | 86. 21. 16. | | |
| Compl. | KS | = | 3. 38. 44. | | |
| Cos. | PK | = | 75. 7. 57 | = | 9. 9852116: |
| Cos. | KS | = | 3. 38. 44 | = | 8. 8033471= |
| Cos. | PZ | = | 51. 19. 15 | = | <u>9. 8924607:</u> |
| | | | | | 18. 6958078. |
| Cos. | ZS | = | 2. 56. 38. | = | 8. 7105962. |

Pro altitudine solis in medio eclipsēos.

| | | | | | |
|-----------|-----|---|--------------|---|---------------------|
| Radius: | SPZ | = | 22°. 25'. 0" | = | 9. 5813116= |
| Cos. | PZ | = | 38. 40. 45 | = | <u>9. 9033908:</u> |
| Tang. | PK | = | 16. 58. 36 | = | <u>x9. 4847024.</u> |
| Compl. | PK | = | 73. 1. 24. | | |
| | PS | = | 71. 29. 13. | | |
| PS + PK = | KS | = | 88. 27. 49. | | |
| Compl. | KS | = | 1. 32. 11. | | |
| Cos. | PK | = | 73. 1. 24 | = | 9. 9806503: |
| Cos. | KS | = | 1. 32. 11 | = | 8. 4283227= |
| Cos. | PZ | = | 51. 19. 15 | = | <u>9. 8924607:</u> |
| | | | | | 18. 3207834. |
| Cos. | ZS | = | 1. 15. 14 | = | 8. 3401331. |

Pro depressione solis in phæsi digitorum novem apparenti.

Radius:

| | | | | | |
|-----------|-----|---|--------------|---|--------------|
| Cos. | SPZ | = | 25°. 28'. 0" | = | 9. 6334542= |
| Tang. | PZ | = | 38. 40. 45 | = | 9. 9033908= |
| Tang. | PK | = | 18. 59. 41 | = | 19. 5368450. |
| Compl. | PK | = | 71. 0. 19. | | |
| | PS | = | 71. 29. 13. | | |
| PS + PK = | KS | = | 90. 28. 54. | | |
| Compl. | KS | = | 0. 28. 54. | | |
| Cos. | PK | = | 71. = 0. 19 | = | 9. 9756838: |
| Cos. | KS | = | 0. = 28. 54 | = | 7. 9245950= |
| Cos. | PZ | = | 51. = 19. 15 | = | 9. 8924607: |
| | | | | | 17. 8170557. |
| Cos. | ZS | = | 0. 23. 52 | = | 7. 8413719. |

Repetitio
calculatorum
ad
meridianum
Lipsiæ.

§. XIII.

| | H. ° ' | n " | | | | |
|------------|--------------------|--------|--------------|--|----------------|----------------|
| | Tempus post merid. | | Differentiæ. | | Altitudo vera. | Altitudo vîsa. |
| Initium. | 6. 37. 4. | | 4. 22. | | 8. 46. 8. | 8. 52. 29. |
| Digitus 1. | 6. 41. 26. | | 4. 22. | | | |
| 2. | 6. 45. 48. | | 4. 24. | | | |
| 3. | 6. 50. 12. | | 4. 24. | | 6. 50. 25. | 6. 58. 32. |
| 4. | 6. 54. 36. | | 4. 26. | | | |
| 5. | 6. 59. 2. | | 4. 27. | | | |
| 6. | 7. 3. 29. | | 4. 31. | | 4. 55. 22. | 5. 5. 58. |
| 7. | 7. 8. 0. | | 4. 39. | | | |
| 8. | 7. 12. 39. | | 3. 49. | | | |
| 8. 48'. | 7. 16. 28. | | 1. 0. | | | |
| 9. | 7. 17. 28. | | 2. 59. | | 2. 56. 38. | 3. 12. 33. |
| 9. 34'. | 7. 20. 27. | | 2. 35. | | | |
| 10. | 7. 23. 2. | | 6. 38. | | | |
| * 10. 34'. | 7. 29. 40. | | 6. 38. | | 1. 15. 14. | 1. 40. 15. |
| 10. | 7. 36. 18. | | 2. 35. | | | |
| 9. 34'. | 7. 38. 53. | | 2. 59. | | 0. 0. 0. | 0. 32. 0. |
| 9. | 7. 41. 52. | | 1. 0. | | - 23. 52. | 0. 53. 37. |
| 8. 48'. | 7. 42. 52. | | | | - 32. 0. | 1. 0. 54. |

Hacque Tabula dissertationi nostra finem imponendum censemus.

Theſes

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

11.

12.

13.

14.

15.

16.

17.

18.

19.

20.

21.

22.

23.

24.

25.

26.

27.

28.

29.

30.

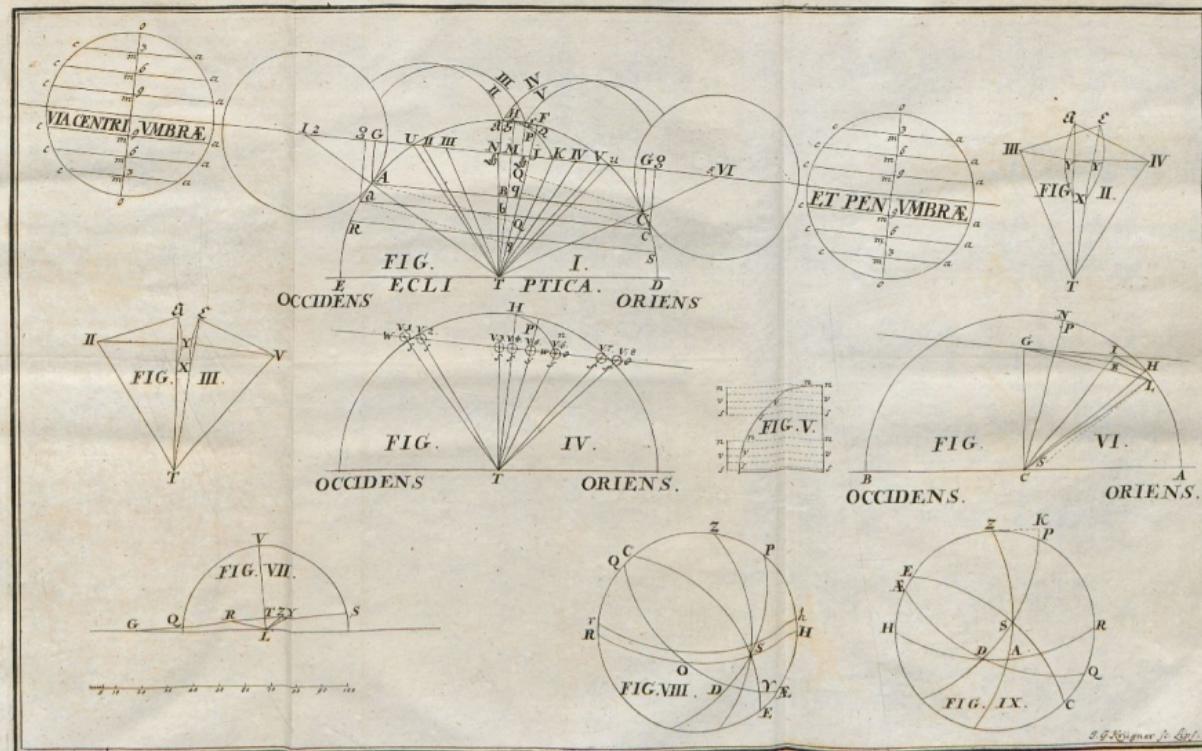
I.

CC



Thebes in gratiam disputantium appositi.

1. Absque principio rationis sufficiens claudicas rotas Philosophia. Almo principium contradictionis non nisi per istud probari potest.
2. Est corpus, ac dari animam plurimi concedunt. Hic omnes nexus quedam corporis, ac animae admittunt. Quia vero ratione connectantur, hoc ignoramus. Tria interim, uti notum, sunt hujus nexus systemata. Influxus nempe phyci, caelarum occasionalium, et harmonia præfabilitate. Sed pace summorum eorum inventorum tententiam nostram exponere licet. Si permittitur nulli afflentum præbemus nostrum, si vero oportet, harmonia ita, ut quam humanissime loquamur, in vix tolerandas incurrit contradictiones. Occasionalia e contra, Deum autorem facit peccati, quam delicate denuo opinionem involvunt suam. Harmonia non spernendis laborat difficultibus. Interim tamen haec extersi tententia palmarum si non præcipere, certe plus quam dubiam reddere videtur. Sed quisque suos patimur manus.
3. Idealiam convincere longe difficultimum credo.
4. Non datur pruritus demonstrandri. Datur vero pruritus non demonstrandi.
5. Qui contra infinitum Mathematicorum nimis severe declamat, Mathematicorum mentem non exactissime capere videntur.
6. Senitus nunquam fallere.



S. G. Kellner. sc. Et. pl.

ERRATA

Quamquam quatuor vel quinque exceptis , cetera omnia nullius sunt
momenti , quaecunque tamen deprehendimus , sic adjicere
nostrarum excusimamus.

Pag. 5. articulo III. b. linea 7 pro 29 lege 29. pag. 7. in margine. linea 4 pro
n^o lege u^o pag. 9. linea 8 adde 8^o. pag. 10. ingrediente e linea 9 delearur.
pag. 10. §. IX. linea 1 delearut iphalma. pag. n. articulo 2) linea 1 delearut
= pag. 11. articulo 3) linea 1 delearut = pag. 11. articulo 4. linea 5
pro P.C. M lega P.C. M. pag. 13. §. X. linea 7 pro eadem lege eadem.
pag. 13. articulo 2) linea 1 pofl 1953. adde = pag. 14. articulo 6) linea 3
pofl 1^o. o^o. adde = pag. 14. articulo 7) linea 3 delearut iphalma. pag.
17. §. XII. adde in margine. Pro femita terria pag. 18. articulo 1) li-
nea 4 pro 955. lege 955 : pag. 27. m^o in A. linea 7 pro 36 lege 36. pag. 29.
m^o in C. linea 5 pro 50. 30 lege 20. 30. pag. 31. linea 2. pro 3 lege 5 pag.
31. e^o in C. linea 7 pro m^o lege e^o pag. 48. articulo 4. linea 2 OM. lege
OM. pag. 50. articulo 1. linea 5 GA. lege OM. pag. 53. e^o. In A. linea 7
pro 187 lege 183 pag. 59. m^o in C. linea 1 delearut iphalma. pag. 59.
e^o in C. linea 7. pro 107. 21. lege 1-7. 20. pag. 68. linea 2 in fine pro:
lege = pag. 74. sn^o lin. 6 & 8 pro. leg: = pag. 75. §. XXX. partitione 2.
tituli linea 3 delearut iphalma. pag. 76. §. XXXII. in p. c. m. sub Mo^o
linea 1 delearut iphalma. pag. 72. V^o in fine adde ** pag. 81. articulo
ow^o linea 22. 23. 40. lege 23. 40. pag. 82. §. XXXVIII. in margine
adde. pro angulis MTV, MVT. pag. 91. pro flatione prima. articulo
3. linea 6 delef S. pag. 95. pro flatione secunda. articulo 3. linea 4 in
fine pro : lege. 6 delef S. pag. 96. pro flatione quarta. articulo 3.
in margine pro XXXII. lege XXXIX. pag. 98. pro flatione secunda
articulo 3. linea 6 pofl 49 adde = pag. 101. pro flatione secunda. articulo
3. linea 6 pofl 52 adde = pag. 104. linea 4 ante finem. Ipcelaturi.
lege ipcelatura pag. 11. linea 5 lufum pro a, m, m, c, lege a, m, m, c
pag. 12. digit 4. column 8. pro 7^o, 16^o, 36^o. lege 17^o, 36^o. pag. 114.
partitione 3. column 1. linea 4. pro 8^o, 35^o, 28^o. lege 38^o. pag. 115 b.
flatione 2. column 3. pro 10^o, 23^o, 9^o. lege 33^o, 9^o. flatione 5. col-
umn 7. dons lega dansi. flatione 7. column 6 pro 42^o, 55^o, 57^o lege
22^o. pag. 16^o a flatione 5. column 7. Jovis lege Joris. flatione 7.
columna 5 & 6 pro 13^o, 34^o. lege 12^o, 53^o. pag. 16^o b flatione 5. col-
umn 7. Jovis lege Joris. flatione 7. column 7. linea 3 pro Isle le-
ge Isles pag. 121. linea ultima pro 4) lege 5) pag. 127. art. 3. linea 2. 1954
lege 1954 pag. 129. art. 2. linea 4 adde = pag. 130. art. ultimo pro 3) lege
2 linea 4 adde = pag. 131. pro digitis 4 art. 2 linea 8 & 9 adde = ead. deces
lege decres. pag. 132 in ambabus linea 7 adde =



ERRATA

*Quamquam quatuor vel quinque exceptis, cætera omnia nullius sunt
momenti, quecumque tamen deprehendimus, hic adjicere
nostrarum existimamus.*

Pag. 5. articulo III. b. linea 7 pro 29 lege 29. pag. 7. in margine. linea 4 pro
n^o lege u. pag. 9. linea 8 adde 8). pag. 10. ingrediente c linea 9 deleatur.
pag. 10. §. IX. linea 1 deleatur sphalma. pag. II. articulo 2) linea 1 deleat-
tur = pag. II. articulo 3) linea 1 deleatur — pag. II. articulo 4. linea 5
pro P. C. M. lego P. C. M. pag. 13. §. X. linea 7 pro eadem lege eadem.
pag. 13. articulo 2) linea 1 post 1952 adde = pag. 14. articulo 6) linea 3
post 12^o. o'. adde = pag. 14. articulo 7) linea 3 deleatur sphalma. pag.
17. §. XII. adde in margine. Pro semita tercia. pag. 18. articulo 1) li-
nea 4 pro 955. lege 955: pag. 27. m³ in A. linea 7 pro 36 lege 36. pag. 29.
m³ in C. linea 5 pro 30. 30 lege 20. 30. pag. 31. linea 2. pro 3 lege 5 pag.
31. c⁴ in C. linea 7 pro m⁴ lege c⁴ pag. 48. articulo 4. linea 2 GM. lege
GM. pag. 50. articulo 1. linea 5 GA. lege GA. pag. 53. c^o. in A. linea 7
pro 187 lege 183. pag. 59. m⁷ in C. linea 1 deleatur sphalma. pag. 59.
c⁷ in C. linea 7. pro 107. 21. lege 107. 20. pag. 68. linea 2 in fine pro:
lege = pag. 74. sn² lin. 6. & 8 pro. lege : pag. 75. §. XXX. partitione 2.
tituli linea 3 deleatur sphalma. pag. 76. §. XXXII. in p. c. m. sub Mo²
linea 1 deleatur sphalma. pag. 77. Vw² in fine adde ** pag. 81. articulo
ow² linea 22. 2840 lege 28404. pag. 82. §. XXXVIII. in margine
adde. pro angulis MTV. MVT. pag. 91. pro statione prima. articulo
3. linea 6 dele S. pag. 95. pro statione secunda. articulo 3. linea 4 in
fine pro = lege : lin. 6 dele S. pag. 96. pro statione quarta. articulo 3.
in margine pro XXXII. lege XXXIX. pag. 98. pro statione secunda
articulo 3. linea 6 post 49 adde = pag. 101. pro statione secunda. arti-
culo 3. linea 6 post 52 adde = pag. 104. linea 4 ante finem. spectaturi.
lege spectatura pag. III. linea 5 fursum pro a, m, m, c, lege a, m, m, c
pag. 112. digiti 4. columna 8. pro 74°. 16°. 36°. lege 17°. 36°. pag. 114.
partitione 3. columna 1. linea 4. pro 80°. 35°. 28°. lege 38°. pag. 115. b.
statione 2. columna 3. pro 106°. 23°. 9°. lege 33°. 9°. statione 5. colu-
mina 7. dons lege dans. statione 7. columna 6 pro 42°. 55°. 52° lege
22°. pag. 116 a statione 5. columna 7. Jovis lege Joris. statione 7.
columna 5 & 6 pro 13°. 34°. lege 12°. 33°. pag. 116 b statione 5. co-
lonna 7. Jovis lege Joris. statione 7. columna 7. linea 3 pro Isle le-
ge Isles pag. 121. linea ultima pro 4) lege 5) pag. 127. art. 3. linea 2. 1954
lege 1954 pag. 129. art. 2. linea 4 adde = pag. 130 art. ultimo pro 3 lege
2 linea 4 adde = pag. 131 pro digitis 4 art. 2 linea 8 & 9 adde = ead. deces
lege decres. pag. 132 in ambobus 2 linea 7 adde =

Pc 2519

4°

ULB Halle

005 464 714

3



Q. D. B. V.

147.128

ECLIPSIN. TERRAE

CIC CI CC XXXIII. g. D. ^{II} MAII

T. C. P. M.

AMPLISSIMAE. FACVLTATIS PHILOSOPHICAE. CONSENSV

H. L. Q. ●

D I S P V T A B I T

M. GEORGE. MATHIAS. BOSE
LIPSIENS. MED. BACC.

R E S P O N D E N T E

GEORG. WILHELM. POEZINGER
SS. T. C. BARVTHO-FRANCO.

LIPSIAE. CIC CI CC XXXIII. D. XVII. APRILIS.

E TYPOGRAPHIA. BREITKOPFFIANA.

