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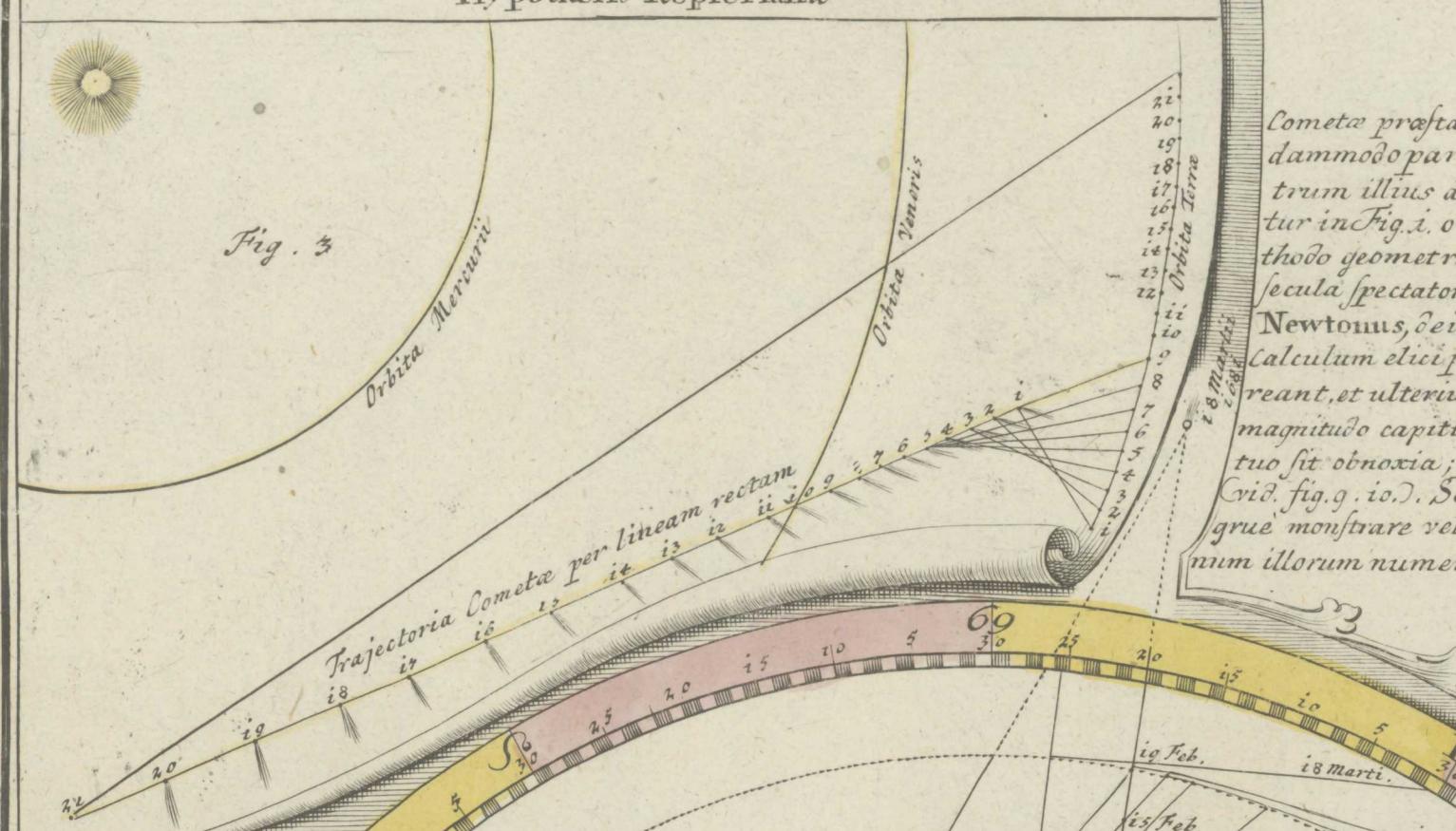
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THEORIA COMETARVM

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in qua præcipua eorum Phænomena ex recentiorum Astronomorum Observationibus secundum ill. Newtoni et cel. Whistoni Hypothesin geometricæ deductæ cum aliis exhibentur à IOH. GABR. DÖPPELMAIERO, Acad. Cas. Leopoldina Carol. Nat. Cur. Regiarum Societatum Britanicæ et Boruss. Sodali, et Math. Prof. Publ. Sumptibus Heredum Homannianorum, Noribergæ.

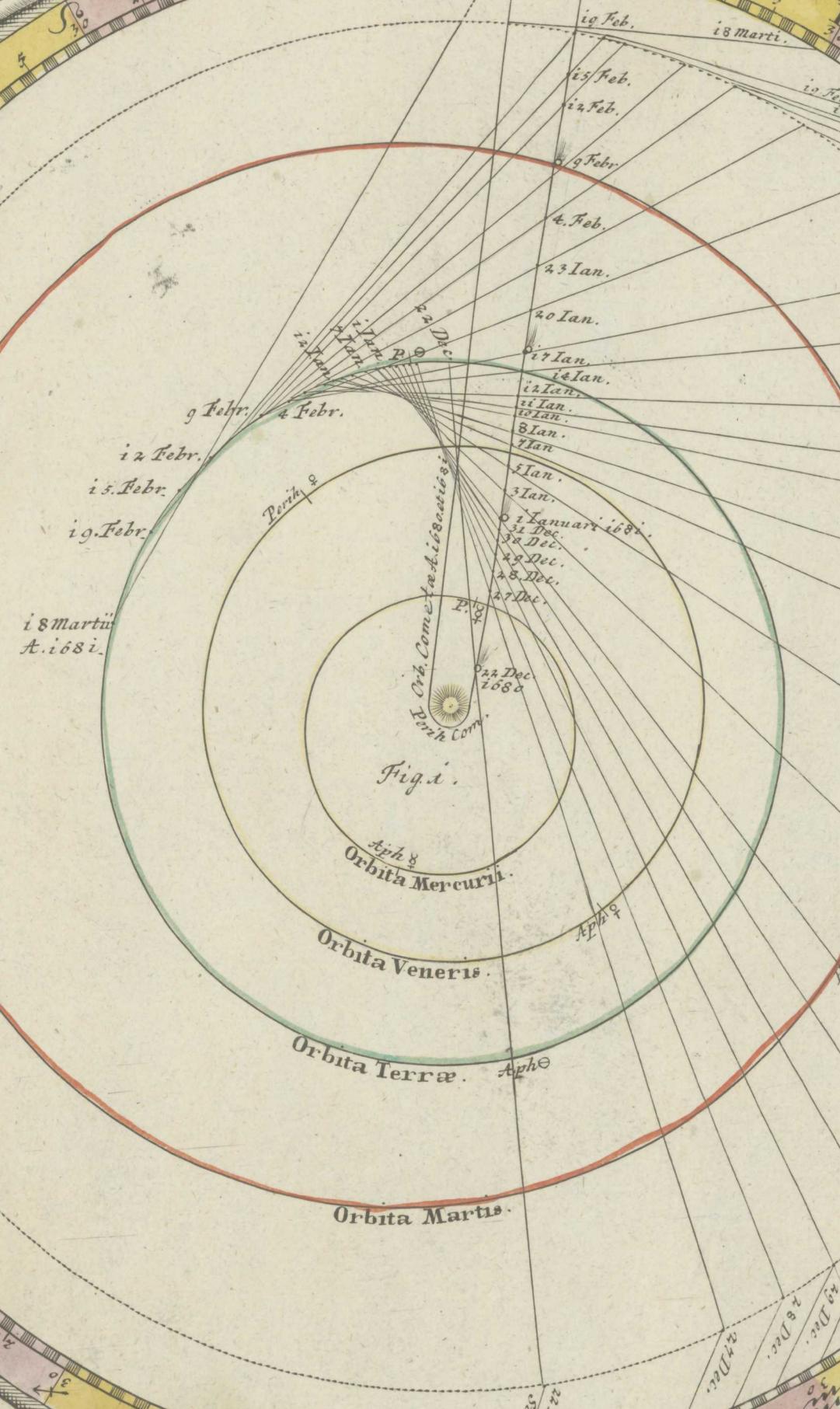
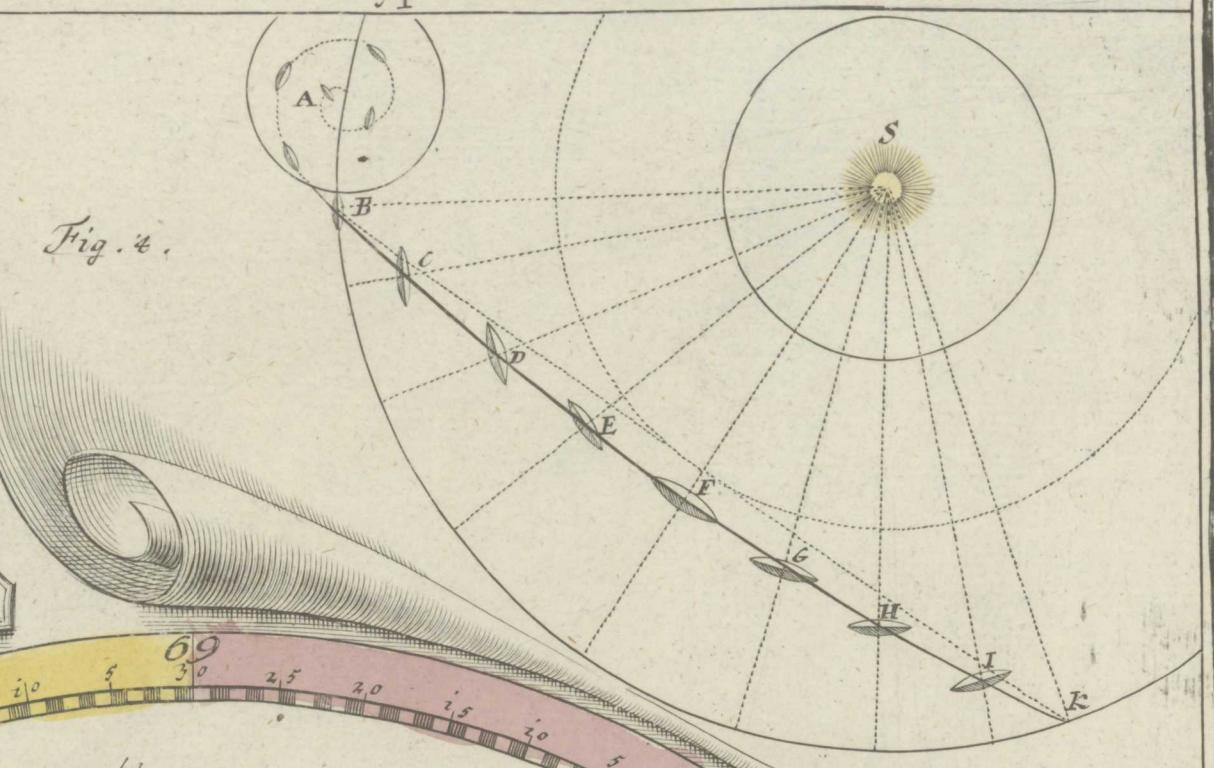
Hypothesis Kepleriana



De Cometæ genere.

Cometa profantissimarum Observationum testimoniis in orbitis moventur ellipticis, oblongis, vel quo, dammodo parabolicis, valde eccentricis, in que foco est sol, et describunt areas, cum linea ad centrum illius ducentur, infra planetarum temporis proportionales. In hujus demonstratione exhibetur in Fig. i. orbita cometæ, que circa finem anni 1681. et ad sequentis anni i 682. initium apparuit, methodo geometricæ, ex observationibus definita; in qua aliquam plurima cometarum per aliquot secula spectatorum orbitæ ex celest. Whistoni designatae edidit. Hanc hypothœ in principiæ excusat ill. Newtonus, scilicet vero cel. Hallejus præcepta de locis cometarum in parabolica orbita per calculum elici possint. Hicce suppositis facile persimilus, quod cometæ per breve tantum tempus apparet, et ulterius in remotas orbitalium partes decedit, longissimum temporis spatium lateat; quod magnitudine capit, et cauda, que plerunque, cädem seculo a sole aversa, cometæ instructi, variatione perpetuo sit obnoxia; porro quoque cauda, respectu nostri, summis distâcias videtur magnitudine, et tandem evanescat. (Cf. fig. i. i.) Sed hic etiam leges opticae in subiectum vocanda erunt, si variationem prædictorum congrue monstrare velimus. Quod denique ad numerum cum corporum cometarum attinet, Keplerus magnum illorum numerum statuit, sed Hallejus omnes, quæ varia temporum periodos circumvoluti, reduces se iterum, tanquam corpora perenni, ostendit, præstant, atque reducit; ex quibus in generis patre cometas cum planetis multam inter unitatem habent.

Hypothesis Heveliana



De hypothesibus Ioh. Nepleri, Ioh. Hevelii, P. Petiti, et I.D. Caffini.

Doctissimus Keplerus cum Galileo Galileio &c. Cometarium motus in lineis rectis, (Cf. Fig. 1.) que tangent circulos per æquales harum partes, nobis è terra in aquales sibi statuit, sed cel. Hevelius plurimum observationum apparatus instructus postea illas trajectoryas magis parabolicas, quam rectas esse assertit, in quibus cometæ, cum eodem ex causa planetariorum effluviis intra atmospheras oriri et in molam infirmam concreta exiftim, per lineas spirales. Cf. Fig. 4. ad A. sensim elati in altum, porro à vorticibus abrupte ferantur, ut lapis è funda, per lineas B. K. et quidem circa verticem. Parabola à E. motu maximo, in distantia vero à F. remotioribus, exempli gratia R. et B. motu tardiora et tardissimæ, hanc hypothœ in plures amplexi, et precipue in Gallia P. Petiti, sed tandem illam non omnino Phænomenis cometaricis ex voto responderet, hinc cometas mundo coevo esse posse affirmavit, qui in circuitis intra Saturnum et stellas fixas sitis, Cf. Fig. 5. vel Systema nostrum planetarum ambientibus, prout portio circumferentia R. P. G. indicat, vel quodam circumferentia parte ad orbitam Saturni ut in XI. arietibus, moventur, ita ut B. in Perigao constituti, videantur maximi et celerissimi, antevixi expositum illud tempus in X. et C. D. minoris et tardiores, hinc in motu quoque in aquales, ut C. P. T. V. X. C. D. B. sint aquales: tandem vero cometæ in vastissimis circuitis per remotioras partes delati, ut quæ in nostris surriuantur post multorum annorum intervalla, ratione habita ad magnitudines ordinariæ vel breviora, vel longiora, iterum apparebunt. Post haec col. Caffinus novam methodum exhibuit, qua scilicet ratione supposito motu medi cometæ circulo circa Terram, Cf. Fig. 6. valde ex centro exilla et tempora et loca cometarum sint definita; de quibus alibi plura.

Hypothesis I.D. Caffini.

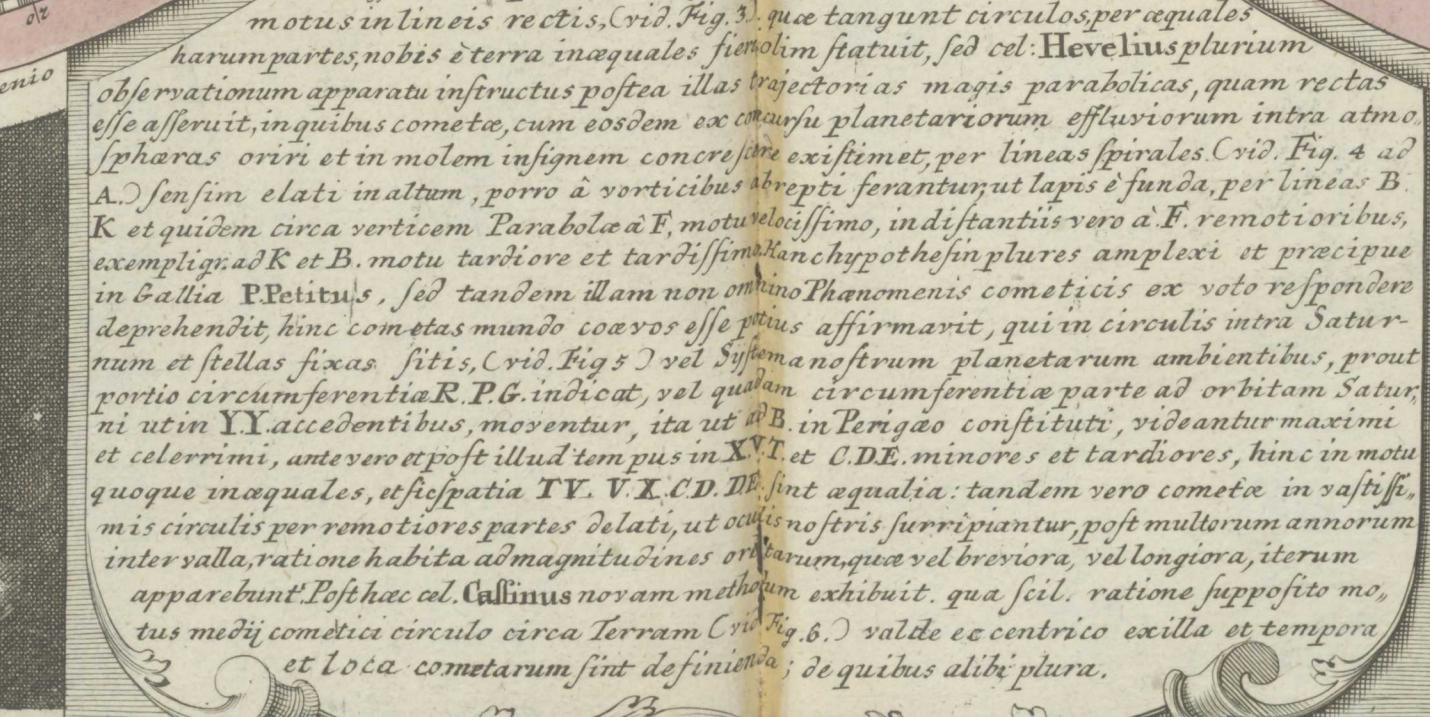


Fig. 8.

Fig. 7.