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CAPVT XIII.

De computandis orbibus qui corporibus inscribuntur, & circumscribuntur.



ACTENVS nihil dictum, nisi consentanea quædam signa, & ἐκείνα suscepti Theorematis. Transeamus modo ad ἀποδείξεις orbium Astronomiæ & demonstrationes Geometricas; quæ nisi consentiant, procul dubio omnem præcedentem operam luserimus. Primum omnium videamus, in quanta proportione sint orbis singulis his quinque corporibus regularibus inscripti ad circumscriptos.

Et radij quidem siue semidiametri circumscriptorum æquant semidiagonios corporum. Nam nisi omnes Anguli figuræ tetigerint eandem superficiem, corpus regulare non erit. Bini autem Anguli oppositi mutuò, & centrum figuræ semper sunt in eadem linea siue axis orbis. Excipitur vnum Tetraedron, quod habet singulos angulos singulis facierum centris oppositos.

Iam recta connectens centra figuræ & basis est radius siue semidiameter inscripti per vltimam lib: 15. Campani in Euclidem. Orbis enim inscriptus tangere debet omnia centra figuræ; & figuræ inscriptæ cum circumscriptis omnes possident idem centrum.

Quod cum ita sit, facile est videre, potentiam radij, quo circulus basi circumscribitur, auferendam de potentia radij orbis circumscripti, vt residua sit potentia quæsitæ lineæ seu radij orbis inscripti. In adiuncto schemate $h o m$ est axis circumscripti orbis, cuius vt & figuræ inscriptæ commune centrum in o , $h g l$ planum vnum figuræ, quod hic sit basis, i centrum basis, $h i$ radius circumscripti basi. Et recta ex centro orbis o in i centrum minoris circuli demissa perpendicularis erit circulo & lineæ $h i$. In triangulo igitur $h i o$ angulus ad i rectus. Ergo $h o$ potentia æquat potentias $h i$ & $i o$. Et potentia $h i$ ablata ex $h o$ potentia, relinquit $i o$ potentiam quæsitam, per 47. primi. Hinc

