



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

Ejusdem Doctoris *WALLESI*

Non-nulla,

De Centro Gravitatis Hyperbolæ,
Prægressæ Epistolæ subnexa.

Tandem vero, ne nihil habeas præter Confutatum Hobbium, (qua fortè non tanti res est, ut de ea multum sis sollicitus;) libet hic annexere, De Centro Gravitatis Hyperbolæ nonnihil; (præterito Anno conscriptum;) Miscellaneis illis, si placet. subjungendum, quæ habemus ad Prop. I. Cap. XV. De Motu. Nempè, pag. 753. l. 26. ibidem.

Post §. 10. Hæc addantur.

11. Etiam hoc addo. Spatii Hyperbolici, sive interioris sive exterioris, non quidem ipsum Gravitatis Centrum, sed Rectam in quâ est, seu Axem Æquilibrii exhiberi posse, etiam si ignoretur Plani Magnitudo.

Vid. Tab.
II Fig. 4.

Est enim exposita Hyperbolæ HhV , Centrum A , axis AX , vertex V , latus rectum L , axis transversus $T=2S$, axes intercepti $VD=D$, $Vd=d$, ordinatim-applicata $HD=H$, $hd=h$, axis conjugatus $A\Delta$, ad quem ordinatim-applicata $H\Delta=K$, $h\delta=k$, asymptotarum alteri $A\sigma$ parallela $HS=B$ ad alteram $AS=A$ ordinatim-applicetur, & VO ad $AO=E$, & hs ad As ; atque intelligatur $S A\sigma$ angulus rectus; sitque $OS (=A-E)=O$.

Sunt (propter $h = \sqrt{dL + \frac{L}{T}d^2}$;) ordinarum ad axem semi-quadrata, seu momenta respectu AD , $\frac{1}{2}Ld + \frac{L}{2T}d^2$; & (propter $Omn. d, = \frac{1}{2}D^2$, & $Omn. d^2, = \frac{1}{3}D^3$;) simul omnia, seu Momentum totius HVD respectu AX , $\frac{1}{4}LD^2 + \frac{L}{\sigma T}D^3$.

Idem (propter $k = \sqrt{S^2 + \frac{T}{L}h^2}$;) ordinarum ad axem conjugatum semi-quadrata, seu momenta respectu $A\Delta$, $\frac{1}{2}S^2 + \frac{T}{2L}h^2$; & (propter $Omn. h^2, = \frac{1}{3}H^3$;) simul omnia, seu totius $AVH\Delta$, momentum respectu $A\Delta$, $\frac{1}{2}S^2H + \frac{T}{\sigma L}H^3$. Quod ex (totius $ADH\Delta$ momento) $\frac{1}{2}K^2H = \frac{1}{2}S^2H + \frac{T}{\sigma L}H^3$ subductum, relinquit residui HVD , respectu $A\Delta$, momentum $\frac{T}{\sigma L}H^3$.

Ergo (propter distantias momentis proportionales,) in DH , sumpta DG , quæ sit ad AD , ut $\frac{1}{4}LD^2 + \frac{T}{\sigma}D^3$ ad $\frac{T}{\sigma L}H^3$; hoc est, $3TL^2D^2 + 2L^2D^3$ ad $4T^2H^3$; erit in (junctâ) AG , ipsius HVD centrum Gravitatis; utpote cujus puncta singula in eâ ratione distant ab AD , $A\Delta$.

Idem obtinebitur ope momenti ipsius HVD respectu Asymptotæ $A\sigma$.

Est (per § D Prop. 31. Cap. 5.) ipsius $OVHS$, respectu $A\sigma$, momentum ABO . Est autem Trianguli $ASX (= \frac{1}{2}A^2)$, respectu ejusdem $A\sigma$, momentum $\frac{1}{3}A^3$; & Trianguli AOV momentum $\frac{1}{3}E^3$; positisque $HX (= A-B) = X$, & DB (parallelâ AS) $= Y$, adeoque $HDX = \frac{1}{2}XY$, hujusque ab $A\sigma$ distantia centri Gravitatis $A - \frac{1}{3}Y$, erit Trianguli HDX , respectu $A\sigma$, momentum $\frac{1}{6}AXY - \frac{1}{6}XY^2$. Ergo (propter $HVD = ASX - AOV - OVHS - HDX$) ipsius HVD , respectu $A\sigma$, momentum $\frac{1}{3}A^3 - \frac{1}{3}E^3 - ABO - \frac{1}{6}AXY + \frac{1}{6}XY^2$.

Ergo

Ergo (propter distantias momentis proportionales) in DH sumpta DQ , quae sit ad AS , ut $\frac{1}{4}LD^2 + \frac{L}{6T}D^3$ ad $\frac{1}{3}A^3 - \frac{1}{3}E^3 - ABO - \frac{1}{2}AXY + \frac{1}{6}XY^2$; ducta-
que QK parallelâ AX occurrente SX in K ; erit in (juncta) AK , (utpote
cujus singula puncta in ea ratione distant ab AD , $A\sigma$,) Centrum gravitatis
 HVD . Quae quidem AK est eadem positione recta cum AG ; quoniam utraq;
tum per A transit, tum per Centrum Gravitatis HVD .

Similiter (ob eandem causam,) in ΔH sumpta ΔL , quae sit ad AS , ut
 $\frac{T}{3L}H^3$ ad $\frac{1}{3}A^3 - \frac{1}{3}E^3 - ABO - \frac{1}{2}AXY + \frac{1}{6}XY^2$; ductaque LK parallelâ AD ,
occurrente SX in K ; erit in (juncta) AK (cujus utriusque singula puncta in ea
ratione distant ab $A\Delta$, $A\sigma$,) centrum gravitatis HVD . Erit autem hoc
 K idem quod prius, ob causam modo insinuatam.

12. Simili processu utendum in spatio exteriori $OVHS$.

Est enim (ut jam ostensum) hujus respectu $A\sigma$, momentum ABO .

Item, respectu AX , Trianguli $ASX = \frac{1}{2}A^2$ est (propter centri ab AX
distantiam $\frac{1}{3}A\sqrt{\frac{1}{2}}$) momentum $\frac{1}{6}A^3\sqrt{\frac{1}{2}}$; & similiter, Trianguli AOV , mo-
mentum $\frac{1}{6}E^3\sqrt{\frac{1}{2}}$; Trianguli que $HDX = \frac{1}{2}XY$ (propter distantiam $\frac{1}{3}H$) mo-
mentum $\frac{1}{6}XYH$; ipsiusque HVD (ut modo) $\frac{1}{4}LD^2 + \frac{L}{6T}D^3$. Ergo (propter
 $OVHS = ASX - AOV - HDX - HVD$,) ipsius $OVHS$, respectu AX , mo-
mentum $\frac{1}{6}A^3\sqrt{\frac{1}{2}} - \frac{1}{6}E^3\sqrt{\frac{1}{2}} - \frac{1}{6}XYH - \frac{1}{4}LD^2 - \frac{L}{6T}D^3$.

Ergo (propter distantias momentis proportionales,) in DH , sumpta DI , quae
sit, ad AS , ut $\frac{1}{6}A^3\sqrt{\frac{1}{2}} - \frac{1}{6}E^3\sqrt{\frac{1}{2}} - \frac{1}{6}XYH - \frac{1}{4}LD^2 - \frac{L}{6T}D^3$ ad ABO ; ducta-
que IF parallelâ AX , occurrente SX in F ; erit in (juncta) AF (cujus
puncta singula in ea ratione distant ab AX , $A\sigma$,) centrum gravitatis $OVHS$.

Idem obtinebitur comparando ejusdem $OVHS$ momenta respectu $A\sigma$, & $A\Delta$;
vel AX , & $A\Delta$; eandem autem AF prodire necesse erit, ut quae transire de-
beat tum per A , tum per ipsius $OVHS$ centrum gravitatis.

13. Simili item processu utendum est in spatio exteriori $AVH\Delta$.

Est enim (ut modo) hujus respectu $A\Delta$ momentum $\frac{1}{2}S^2H + \frac{T}{6L}H^3$.

Idem, respectu AX ; rectanguli $ADH\Delta$ momentum $\frac{1}{2}KH^2$; unde sub-
ducto ipsius HVD momento $\frac{1}{4}LD^2 + \frac{L}{6T}D^3$; habebitur ipsius $AVH\Delta$ respectu
 AX momentum $\frac{1}{2}KH^2 - \frac{1}{4}LD^2 - \frac{L}{6T}D^3$.

Ergo, in ΔH , sumpta ΔM , quae sit ad DH , ut $\frac{1}{2}S^2H + \frac{T}{6L}H^3$ ad
 $\frac{1}{2}KH^2 - \frac{1}{4}LD^2 - \frac{L}{6T}D^3$; erit in (juncta) AM (cujus singula puncta in ea
ratione distant ab $A\Delta$, AX ,) centrum gravitatis $AVH\Delta$.

Idemque obtinebitur comparatis ejusdem momentis respectu $A\Delta$, & $A\sigma$;
vel respectu AX , & $A\sigma$: eandem autem AM prodire necesse erit, ob causam
ante insinuatam: Ut non sit spes inde, ob duas ejusmodi rectas, se mutuo
decussantes, ipsum centrum obtinendi, absque Plani magnitudine.

Si verò in his omnibus vel non sit $S A\sigma$ ang. rectus; vel Hyperbola, vel Sca-
lena (sumpta Diametro quavis aliâ loco Axis AX ;) similis adhibenda erit ac-
commodatio cum ea, quam de Scalenis insinnavimus ad § K prop. 31. c. 5.
Dab. Oxon. Aug. 31. 1672.

