

Planetary Motion + Universal Gravitation

$$F_g = \frac{GM_1 m_2}{r^2} \quad K = \frac{r^3}{T^2}$$

$$F_c = \frac{mv^2}{r} = \frac{4\pi^2 m r}{T^2} \quad \left(v = \frac{2\pi r}{T} \right)$$

← orbiting mass

Newton's Hypothesis: $F_g = F_c$

Geosynchronous / Geostationary Satellites $\Rightarrow T = 1 \text{ day}$