

Kepler's three laws

1. The orbit of any smaller body (Satellite) about a larger body (Earth) is always an ellipse, with the center of mass of the larger body as one of the two foci.
2. The orbit of the smaller body sweeps out equal areas in equal time (see Figure 2.5).
3. The square of the period of revolution of the smaller body about the larger body equals a constant multiplied by the third power of the semimajor axis of the orbital ellipse. That is, $T^2 = (4\pi^2 / \mu) a^3$