

Kepler's Laws Revisited

Kepler's First Law

1. For two objects orbiting around each other and one focus is at center of mass.
2. When mass of the first object is much greater than mass of second object, then the mass of greater object is very close to both foci

Kepler's Second Law

1. As the object moves in its orbit, when it is closer to the sun, it has more kinetic energy and less potential energy, and when the object is far from star, it has more potential energy and less kinetic energy.

Kepler's Third Law

1. $p^2 = a^3$ for objects orbiting our sun.
2. More general formula is $(M_1 + M_2) * p^2 = a^3$
3. In the case where the masses of the two objects are near each other, do not leave out the sum of masses.