

ORBITAL MOTION

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No force is necessary to cause orbital motion. The planets orbit the sun ((roughly the center of the effective mass ($M-m$) of the rest of the universe)) at a special mean orbital radius to conserve total energy.

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THE MECHANICS OF
THE UNIVERSE

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SIR ISAAC NEWTON (1642 - 1727)is best known for his laws of motion and his proposition of a universal gravitation theory, which states that all bodies in space and on the earth are affected by a force called gravity.

However, we now know that orbital motion has nothing to do with a force of gravity. I have found that orbital motion obeys the modified first law of thermodynamics. which states that the total energy of the universe is a constant. The total energy of a planet or moon is a constant, because there is no known way for its energy to be changed except by radiation of energy or contact with another mass.

Orbiting masses have kinetic and potential energies that are nearly equal, because orbital motion occurs at the only orbital radius

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where a positive change of kinetic energy is accompanied by an equal negative change of potential energy, complying with the modified first law of thermodynamics.

All of the planets and moons orbit in a manner that is consistent with the modified first law of thermodynamics.

Any orbiting mass, m , such as the earth, has a kinetic energy $m (2 \pi L)^2 / t^2$ because of its velocity, v , as $m v^2$, and a potential energy $G (M-m) m / L$, because of its orbital radius L and the product of the masses m and the rest of the effective mass of the universe $M-m$, where M is the effective mass of the total universe. In the solar system this mass M would effectively be the sum of the masses of the sun and the rest of the masses of the planets and moons of the solar system.

The sum of kinetic and potential energies would be a constant for any particular planet, or moon, because, no force, as a source of an energy change, is available to the orbiting mass (if it is not in contact with another mass). As a result, it continues to orbit at nearly the same radial distance from the center of the mass of the rest of the effective universe, complying with the modified first law of thermodynamics, as the fundamental equation of the universe.

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