Satellite Encyclopedia Article

Satellite

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In **astronomy**, a satellite refers to any object that is orbiting another larger, more massive object under the influence of their mutual gravitational force.

Thus, any planetary **moon** (e.g., the Moon revolving about Earth) is properly described as a satellite of that planet. Because the word is used to describe a single object, it is not used to designate rings of material orbiting a planet, even though such rings might be described as being made up of millions of satellites. In those rare instances where the mass of the satellite approaches that of the object around which it orbits, the system is sometimes referred to as a binary system. This is the reason that some people refer to Pluto and its moon Charon as a binary planet. This description is even more appropriate for some recently discovered **asteroids** which are composed of two similar sized objects orbiting each other.

In this century, scientific probes and commercial devices have been launched into Earth orbit or into orbits about the **Sun** or another planet. A tradition has developed to refer to these objects as man-made satellites to distinguish them from naturally occurring satellites. Surveillance satellites orbiting Earth have been used to measure everything from aspects of the planet's **weather** to movements of ships. Communications satellites revolve about Earth in geostationary orbits 25,000 mi (40,225 km) above the surface and a recent generation of navigation satellites and global positioning satellites (**GPS**) enables receiving stations on the surface of Earth to be determined with errors measured within a few meters.

Surveillance satellites have been placed in orbit about the Moon, Mars, and Venus to provide detailed maps of their surfaces and measure properties of their surrounding environment. A number of probes have at least temporarily entered the orbits of Jupiter, Saturn, or moons of these Jovian worlds.

Spacecraft missions to other planets in the **solar system** have revealed the existence of numerous previously unknown natural satellites and data from the **Hubble Space telescope** continue to reveal satellite objects that explain discrepancies in orbital paths and **rotation** rates of celestial bodies.

See Also

History of Manned Space Exploration; Terra Satellite and Earth Observing Systems (Eos); Weather Forecasting Methods