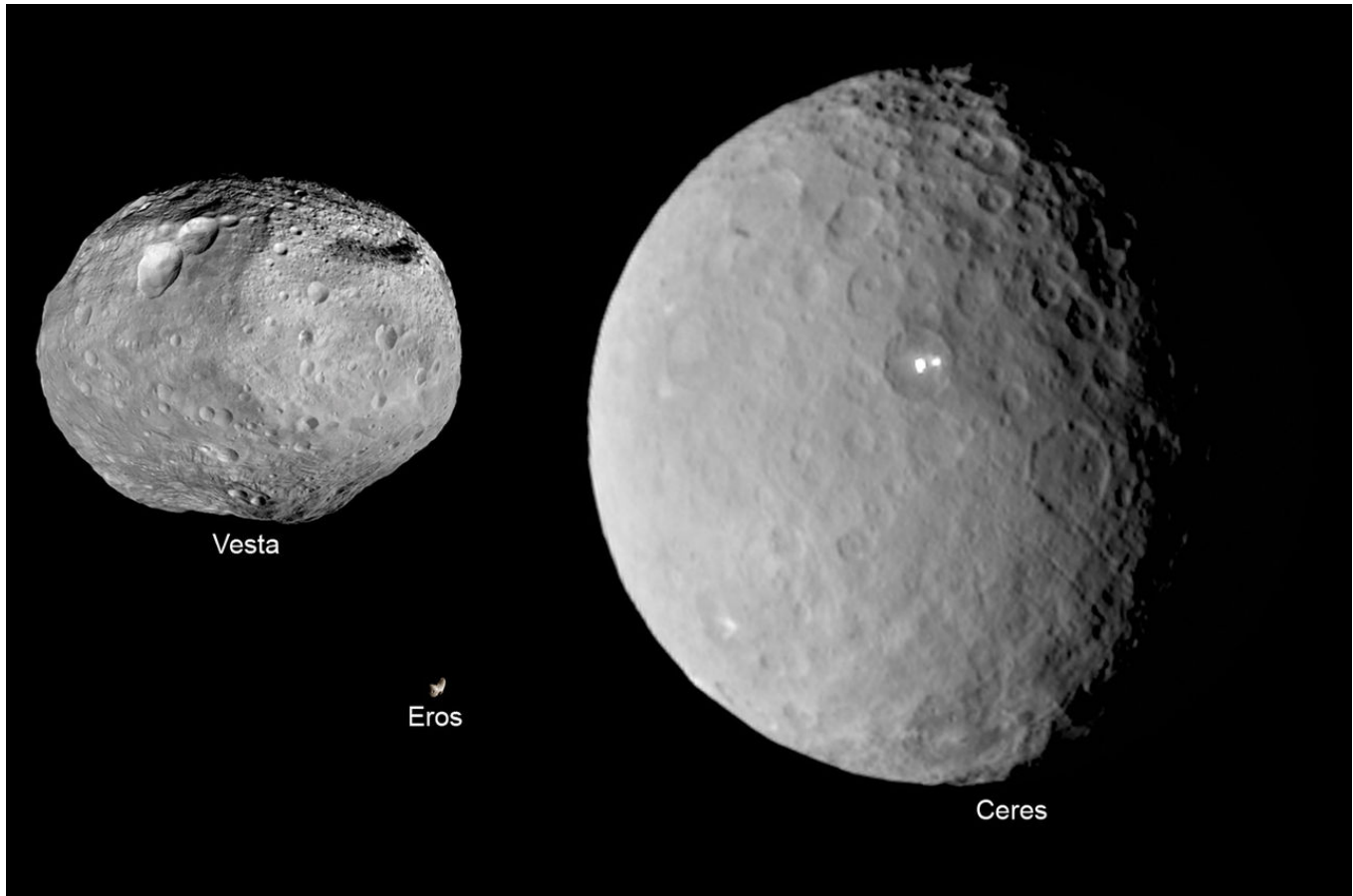


9.6: Asteroids

The **asteroids** are a group of the solar system's minor bodies that are much like the Rocky Planets in composition: carbon-rich, silicate materials (rock), and/or metal. The word Aster-oid means star-like. Asteroids are also called **minor planets** (not to be confused with dwarf planets). The larger asteroids are called **planetoids**. Italian astronomer Giuseppe Piazzi discovered the first asteroid, Ceres, in 1801. Ceres, which orbits between Mars and Jupiter, was first thought to be a planet. Later that same year, Pallas was discovered in basically the same orbit as Ceres. And by 1807 two additional asteroids had been discovered: Pallas and Vesta. At this time, some 625,000 asteroids have been identified, and astronomers are finding new asteroids all of the time. Most of the asteroids orbit between Mars and Jupiter, an area called the **asteroid belt**.



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Ceres is the largest asteroid found to date, and was reclassified as a Dwarf Planet in 2006. Ceres appears to be fairly spherical in shape, which is unusual for asteroids in general. Ceres is 950 kilometers or 590 miles in diameter, and makes up a third of the mass of the asteroid belt.

There are a number of interesting **asteroid characteristics**. Asteroids are most-likely leftover material from the formation of the solar system. Most asteroids are quite irregular in shape, with sizes ranging from around 0.6 mile to 590 miles (Ceres). Asteroids can have satellites. Ida, with its moon Dactyl, was the first discovered pair. Currently more than 150 asteroids are known to have a small companion satellite; some have two moons.

The asteroids are the parent body sources for most meteorite impacts on Earth and on other solar system bodies. Ninety-five percent of the original asteroids are no longer around; most were impactors. An **impactor** is an object that strikes, or impacts, another object. Asteroid impacts cause **catastrophism**: the sudden shaping of a planet's or satellite's surface due to an asteroid impact.

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