



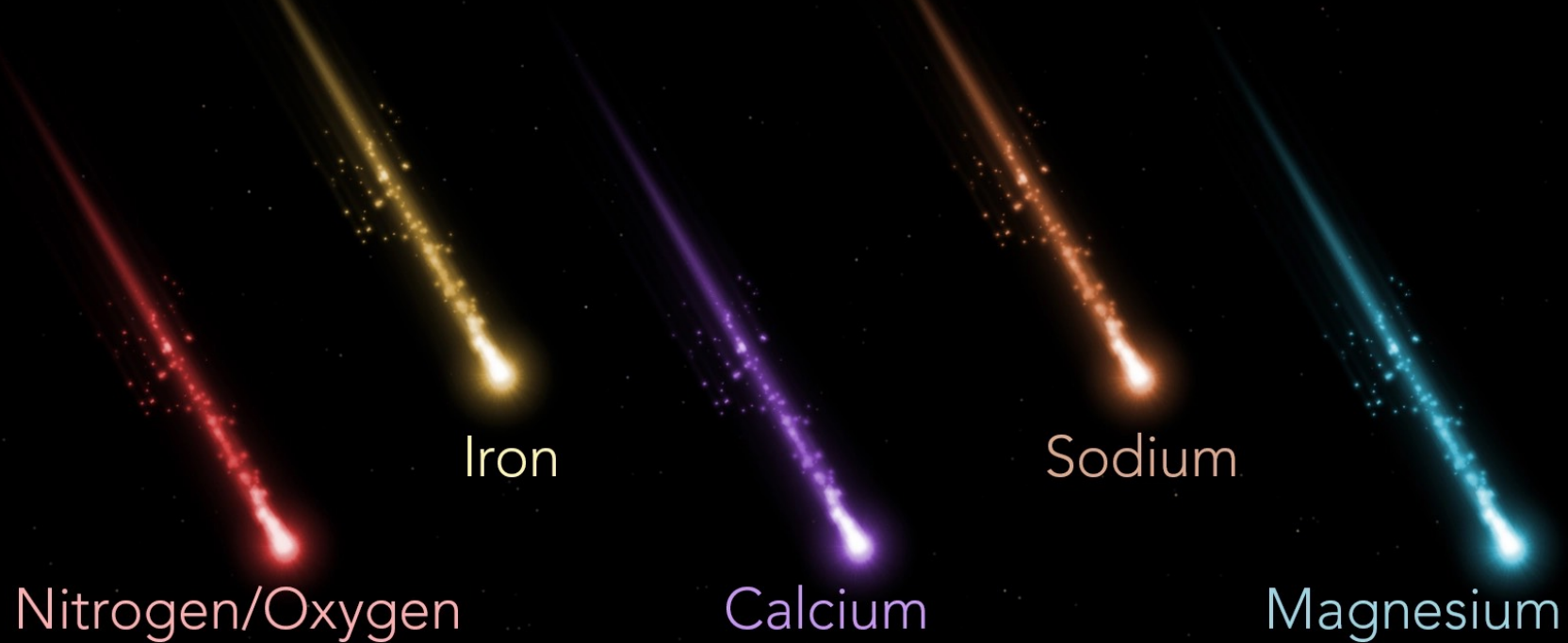
The term meteor comes from the Greek meteoron, meaning phenomenon in the sky. It is used to describe the streak of light produced as matter in the Solar System falls into Earth's atmosphere creating temporary incandescence resulting from atmospheric friction.

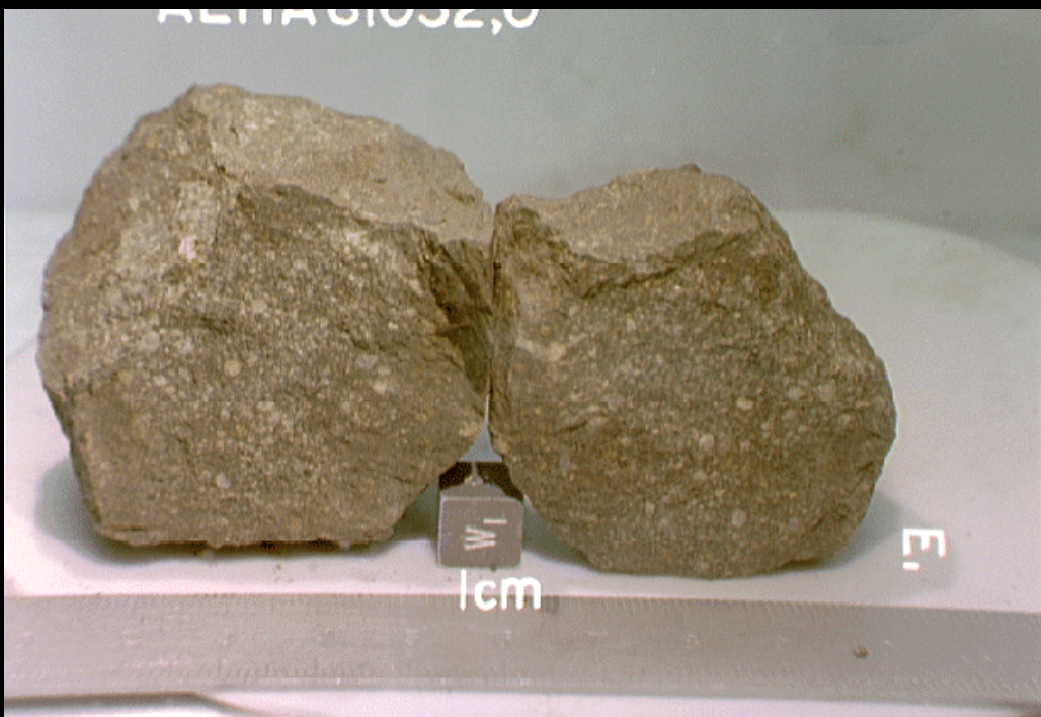
A meteoroid is matter revolving around the sun or any object in interplanetary space that is too small to be called an asteroid or a comet. Even smaller particles are called micrometeoroids or cosmic dust grains, which includes any interstellar material that should happen to enter our solar system. A meteorite is a meteoroid that reaches the surface of the Earth without being completely vaporized.





THE COLOR OF A METEOR DEPENDS ON ITS CHEMICAL COMPOSITION



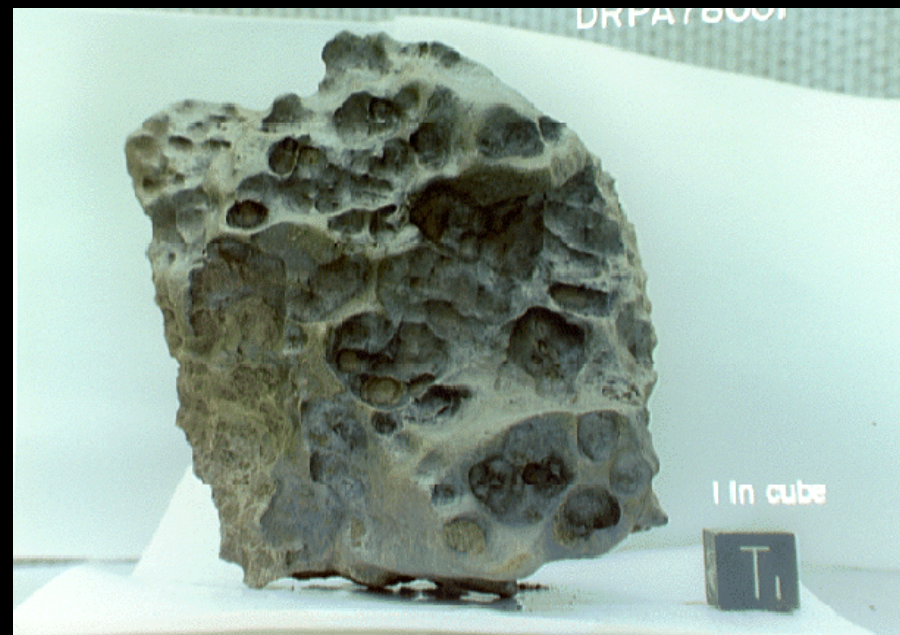


Chondrites

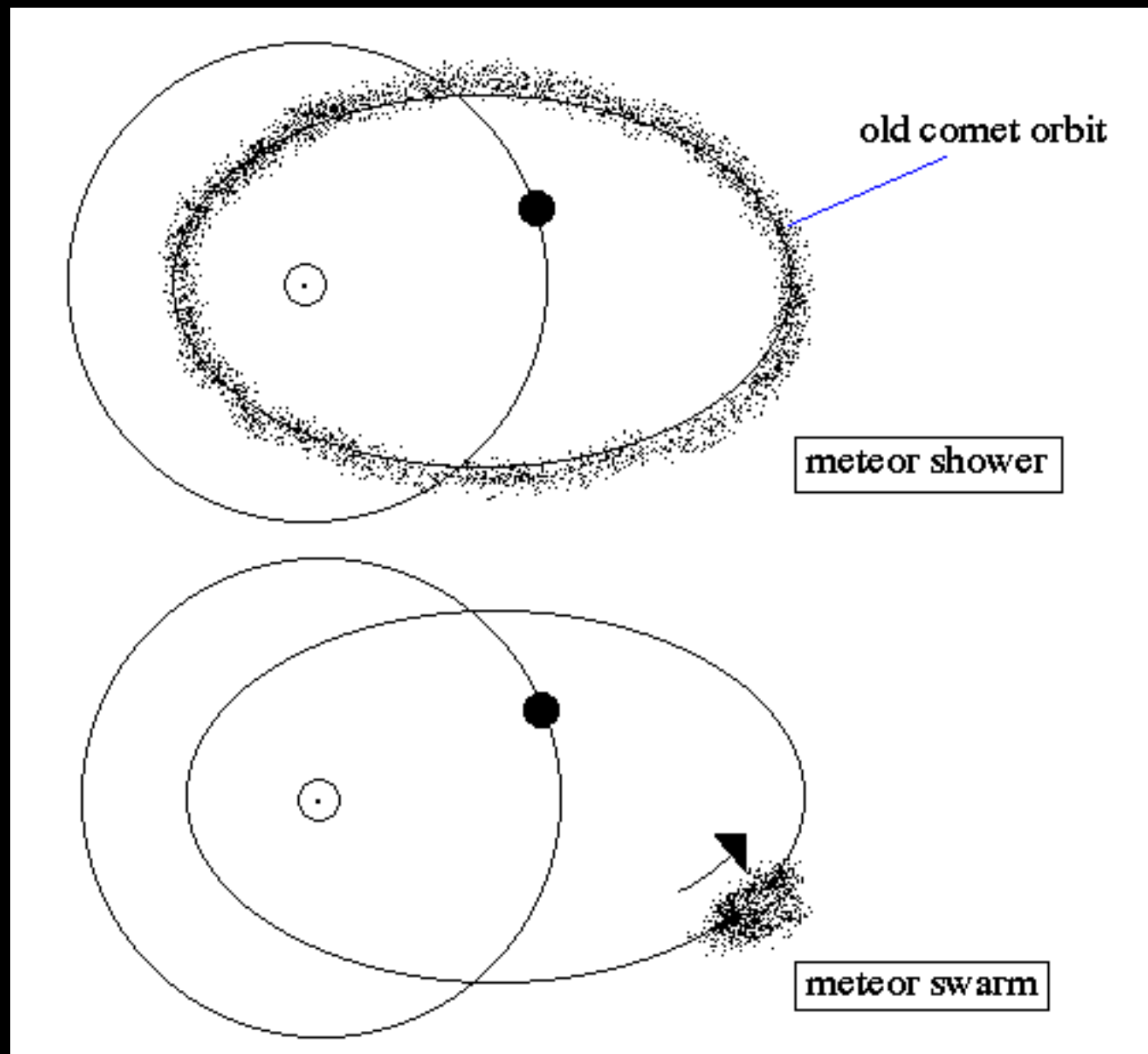
Irons

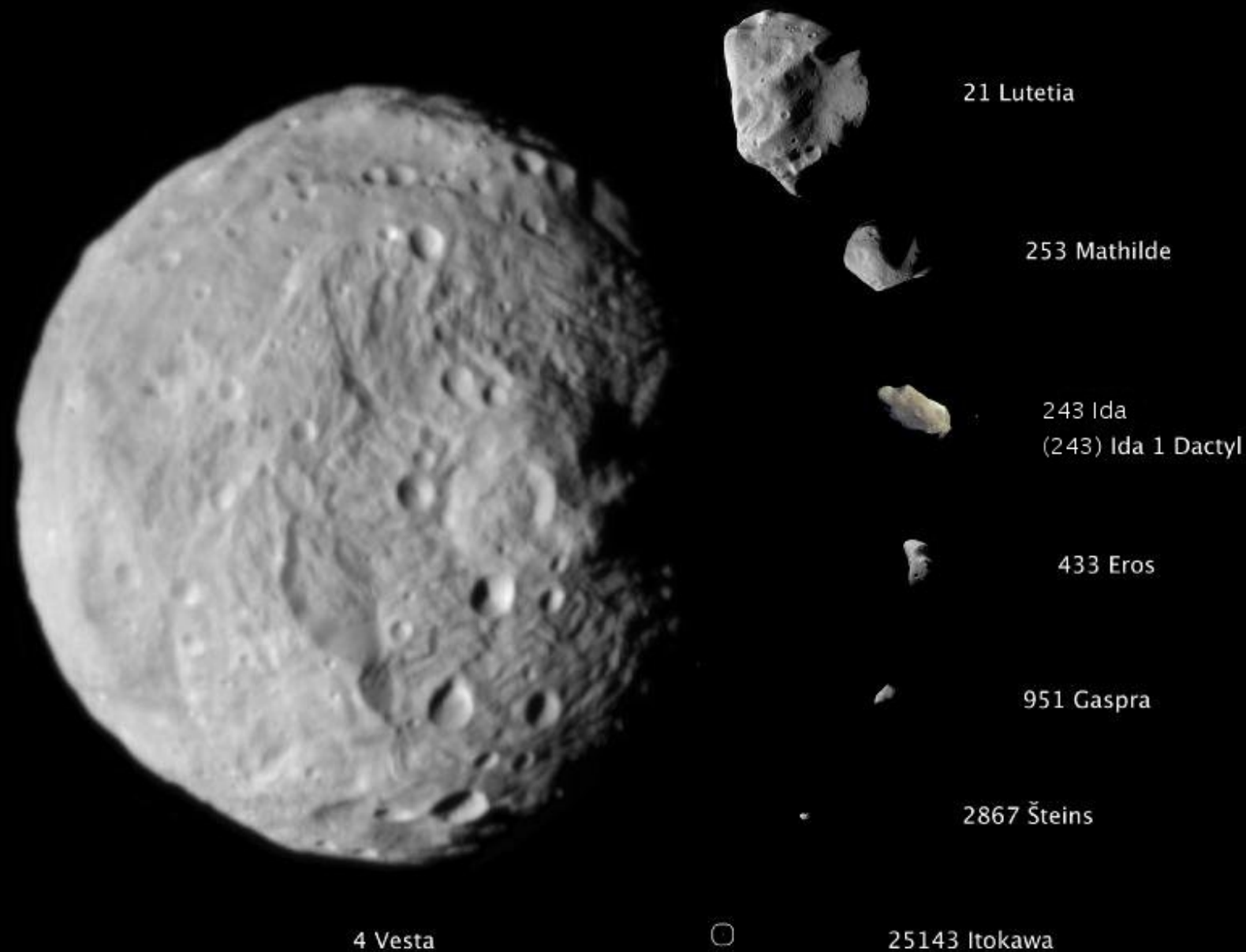


Pallasites



The most common meteorites are chondrites, which are stony meteorites. Iron meteorites are classified into thirteen major groups and consist primarily of iron-nickel alloys with minor amounts of carbon, sulfur, and phosphorus. Pallasites are stony iron meteorites composed of olivine enclosed in metal.





Asteroids are minor planets, especially those of the inner Solar System. The larger ones have also been called planetoids. These terms have historically been applied to any astronomical object orbiting the Sun that did not show the disc of a planet and was not observed to have the characteristics of an active comet.

(1) Ceres



100 km

(4) Vesta



(2) Pallas



(10) Hygiea



(704) Interamnia



(52) Europa



(511) Davida



(87) Sylvia



(15) Eunomia



(31) Euphrosyne



(3) Juno



(324) Bamberga



(16) Psyche



(88) Thisbe



(48) Doris



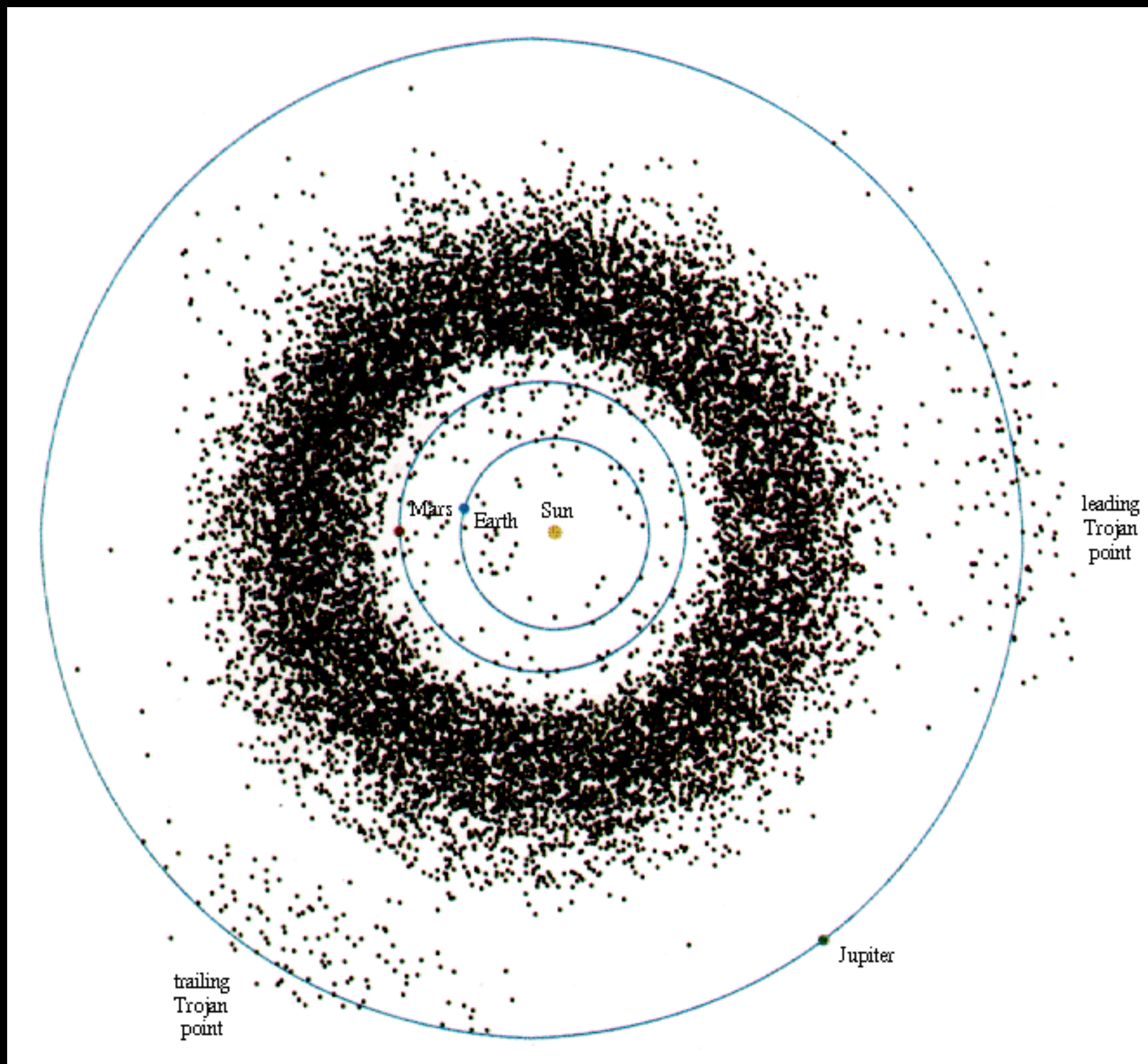
(19) Fortuna

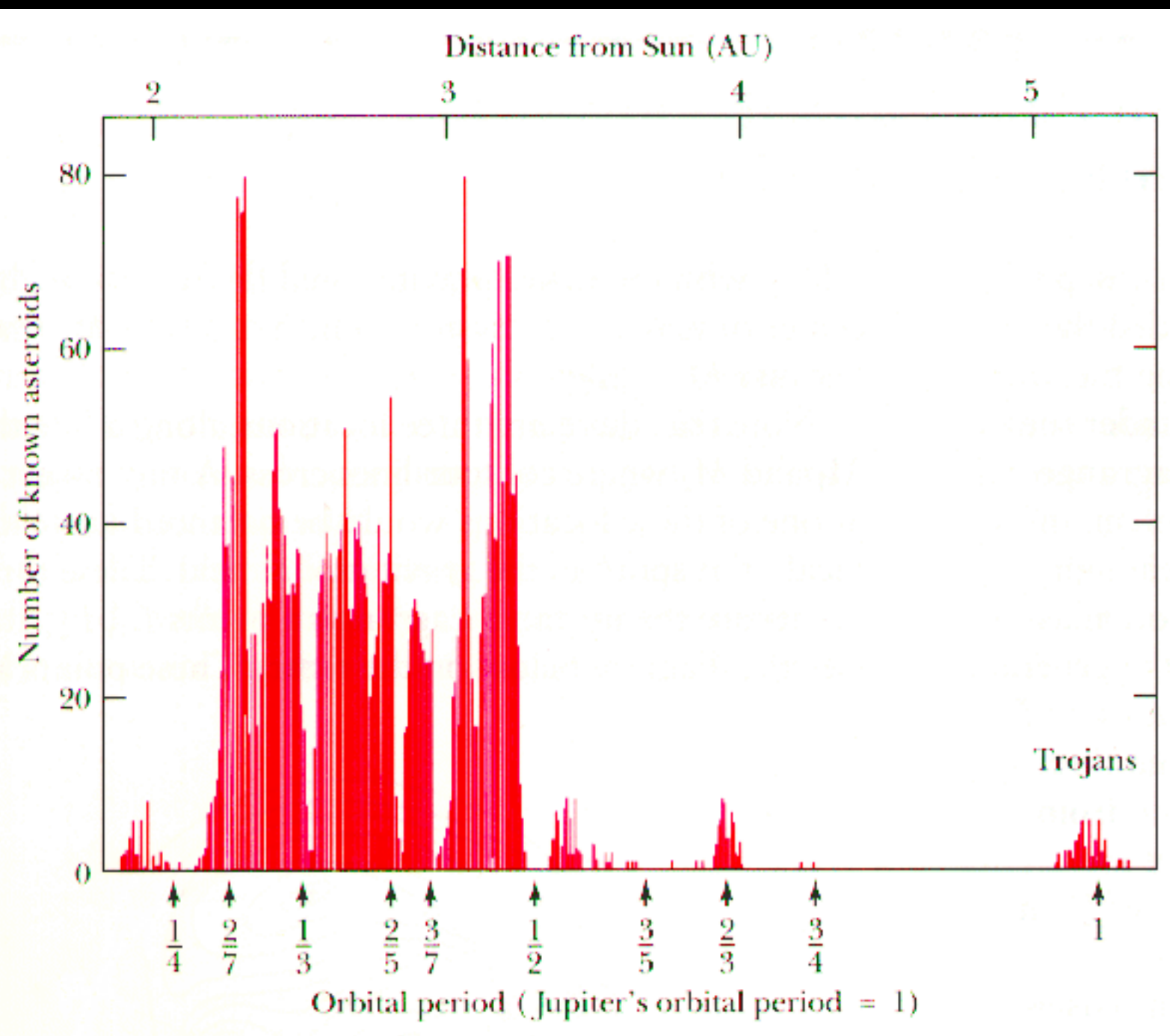


(24) Themis

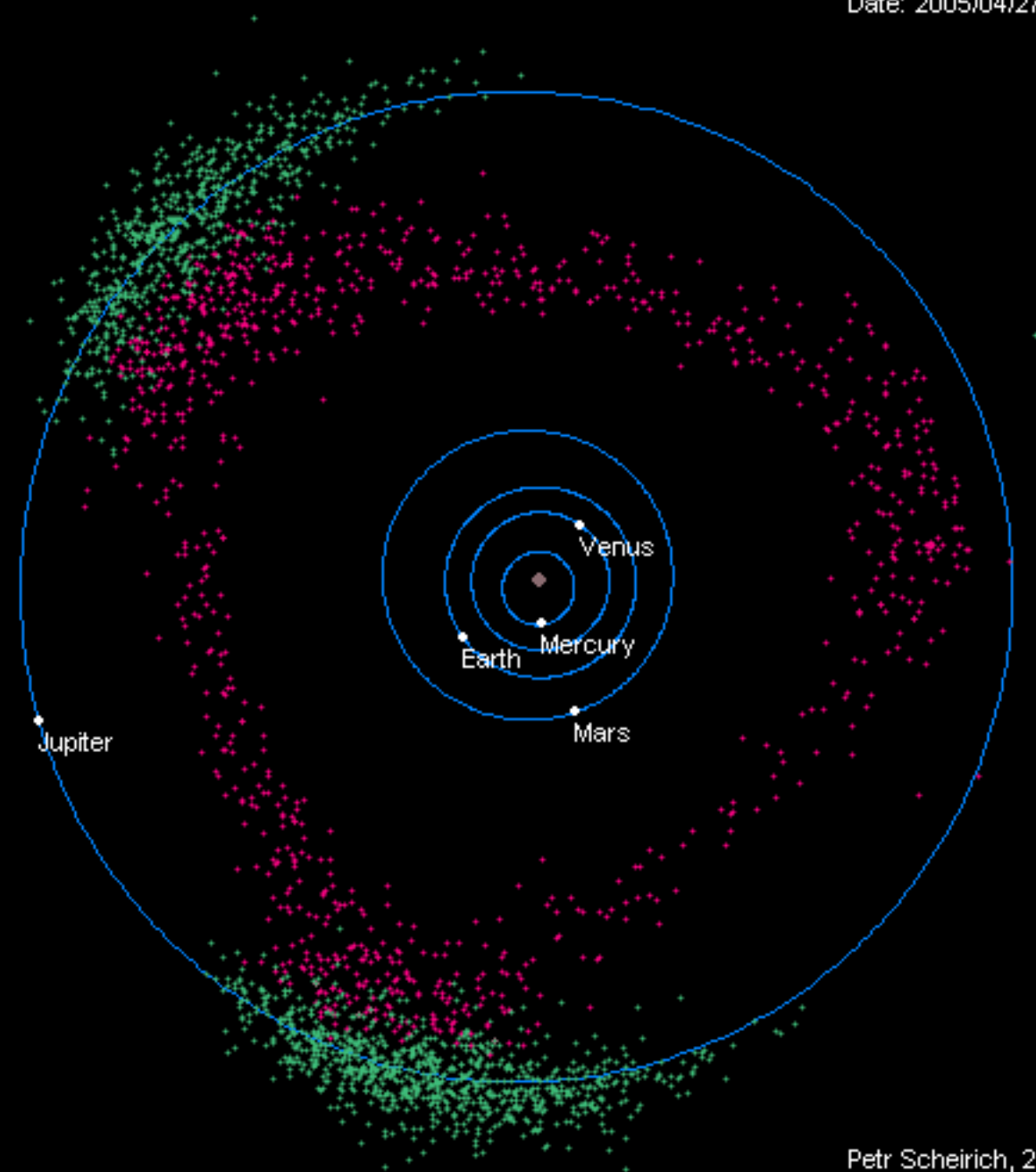




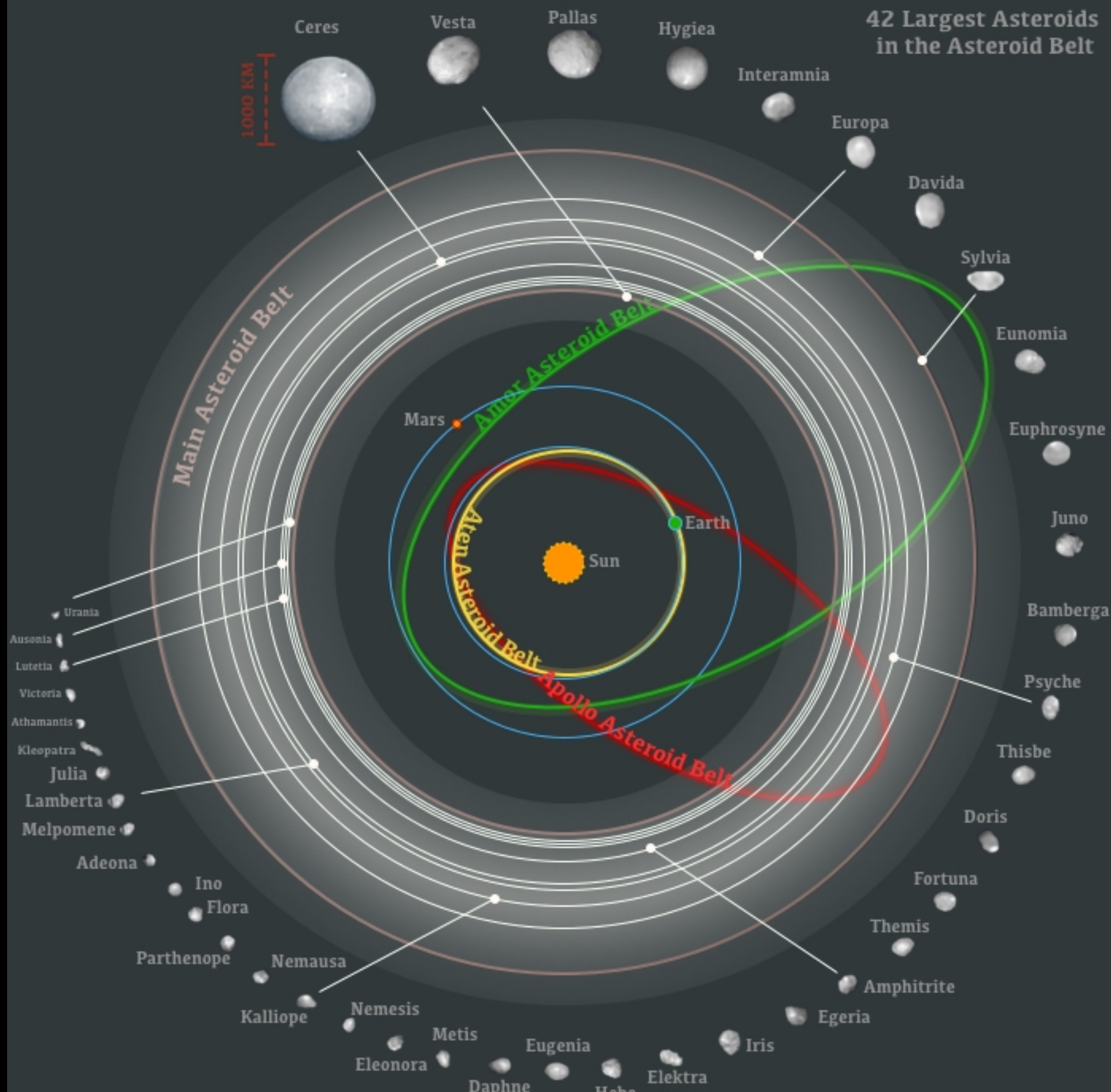




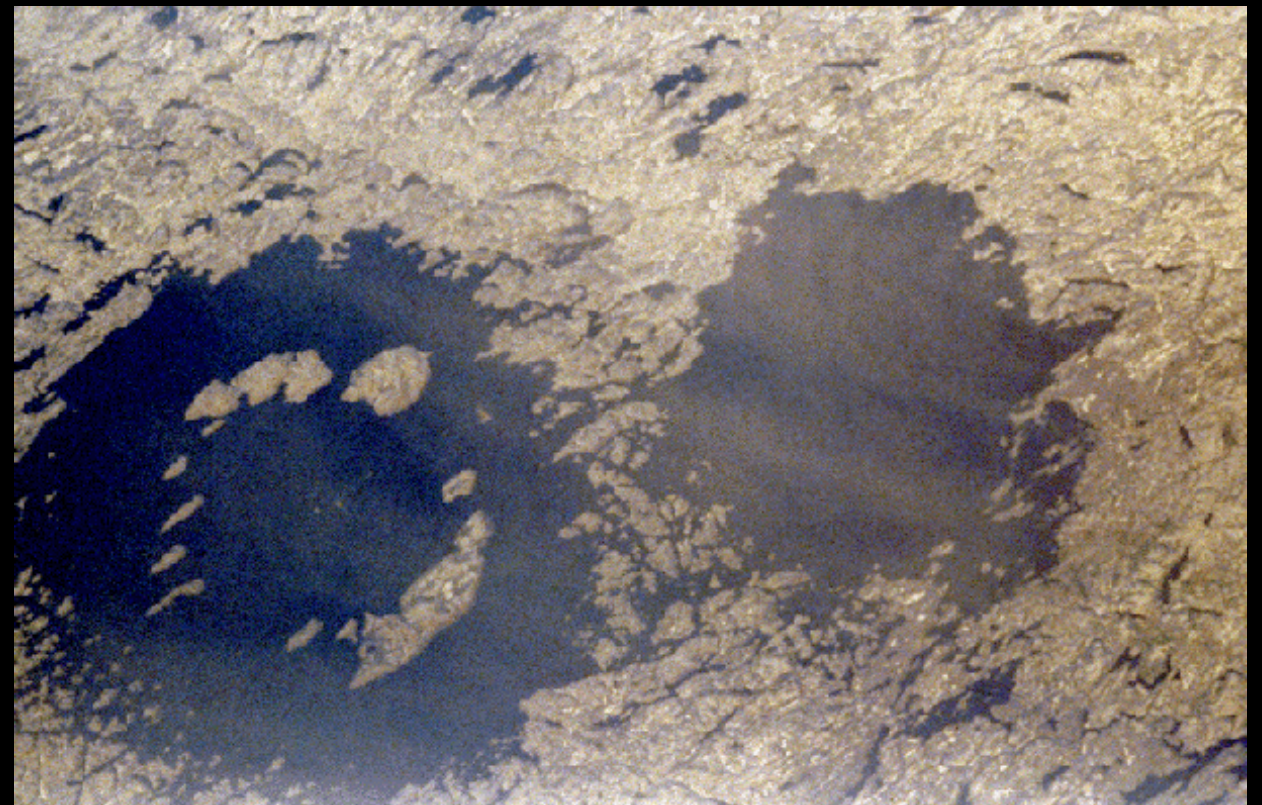
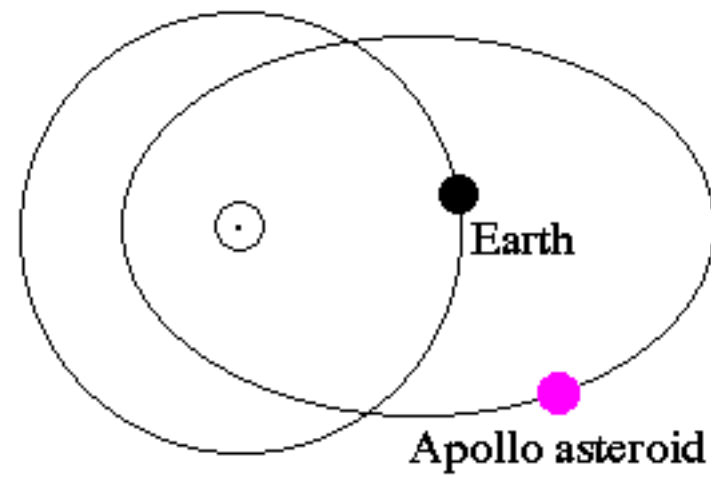
Date: 2005/04/27



Asteroid Belt Asteroids



Near-solar orbit



Asteroids come in three flavors, C-type or carbonaceous, S-type or silicate and M-type or metal.

C-types tend to have a large fraction of carbon in their make-up and, thus due to radiation darkening, are the least reflective of the two groups. About 75 percent of all asteroids are C-types, and the C-types are more common in the outer Asteroid Belt.

S-type asteroids are rich in rocky or silicate materials and are more reflective. S-types are rarer and occupy the inner Belt.

M-type asteroids are rich in metals, mostly nickel and iron, probably remnants of what was going to become the planetary core.

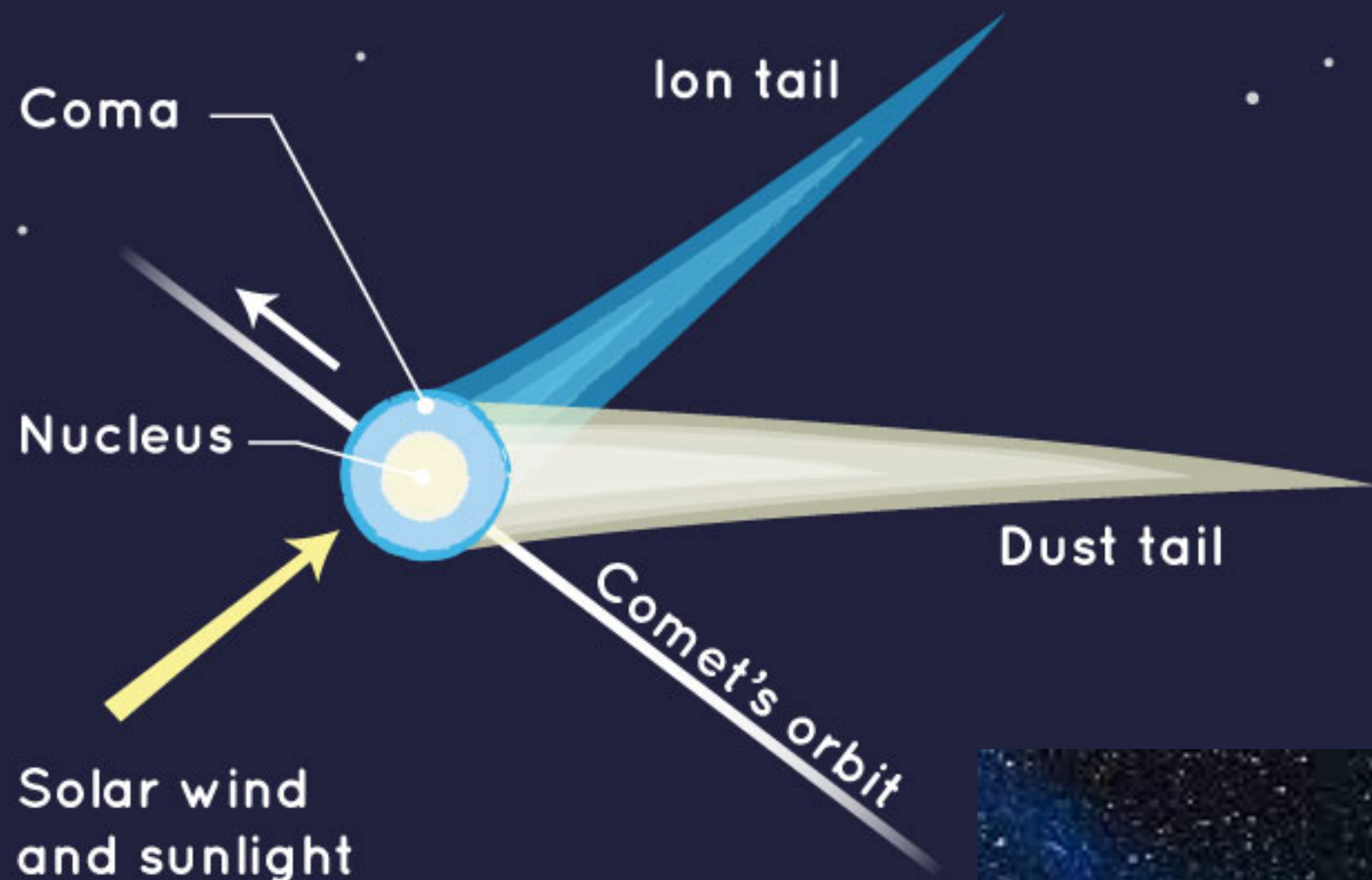


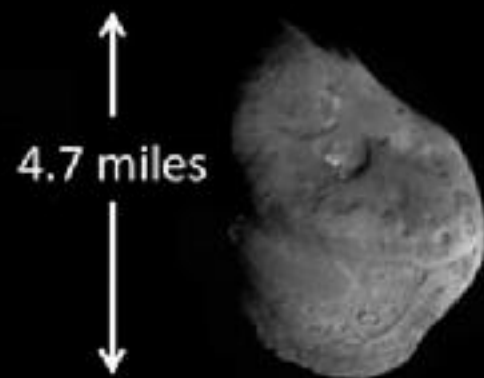


Ceres is the largest object in the asteroid belt that lies between the orbits of Mars and Jupiter. Its diameter is approximately 945 kilometers (587 miles), making it the largest of the minor planets within the orbit of Neptune. Composed of rock and ice, Ceres is estimated to compose approximately one third of the mass of the entire asteroid belt. Ceres is the only object in the asteroid belt known to be rounded by its own gravity.



Comets are small, fragile, irregularly shaped bodies composed of a mixture of non-volatile grains and frozen gases. They have highly elliptical orbits that bring them very close to the Sun and swing them deeply into space, often beyond the orbit of Pluto. When passing close to the Sun, a comet, warms and begins to release gases, a process called outgassing. This produces a visible atmosphere or coma, and sometimes also a tail.





4.7 miles

9P/Tempel 1



5.4 miles

Borrelly



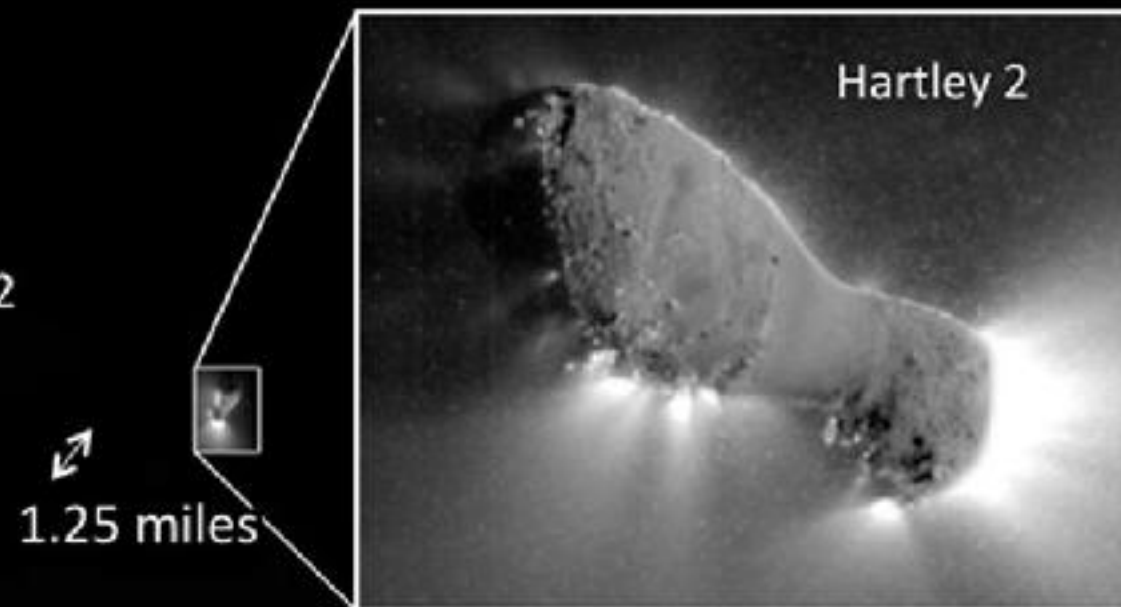
3.4 miles

Wild 2



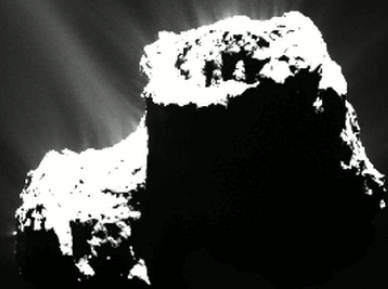
9.3 miles

Halley

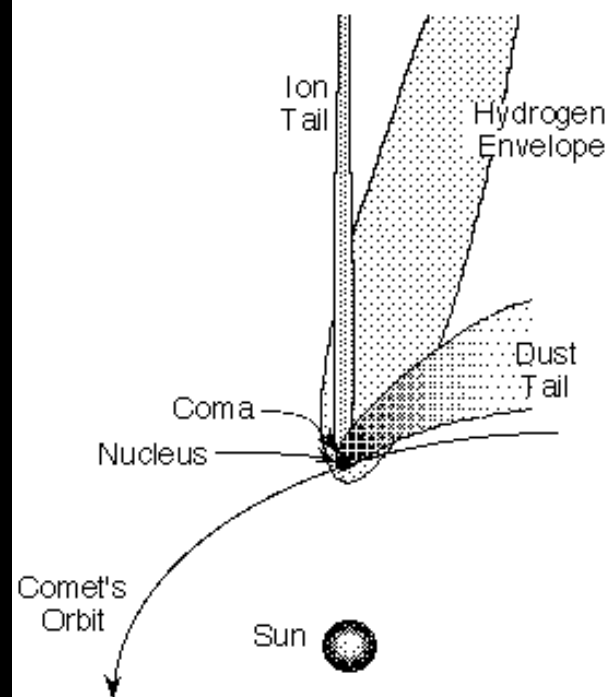


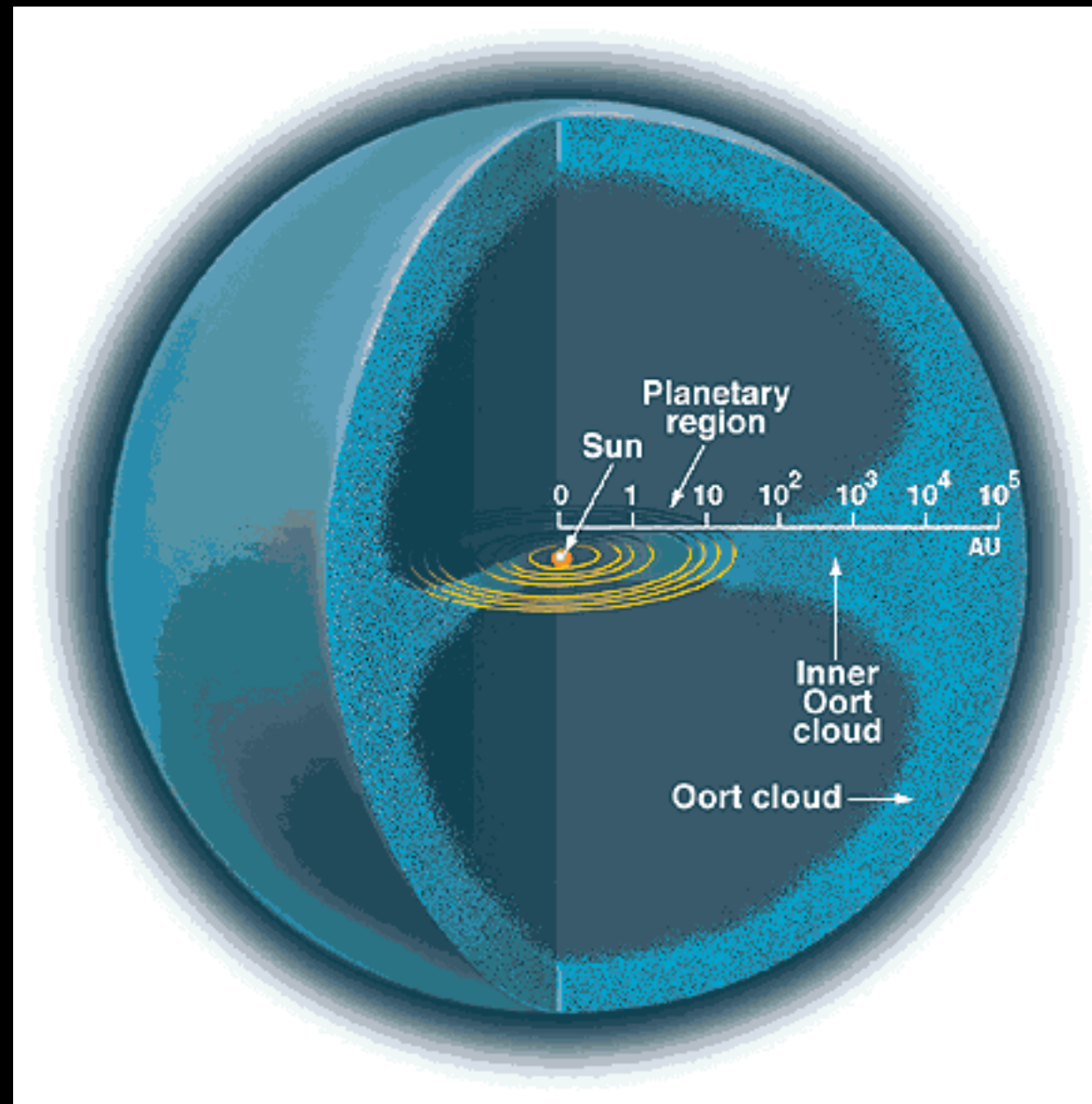
Hartley 2

1.25 miles



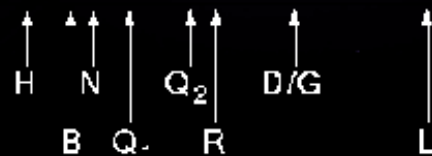
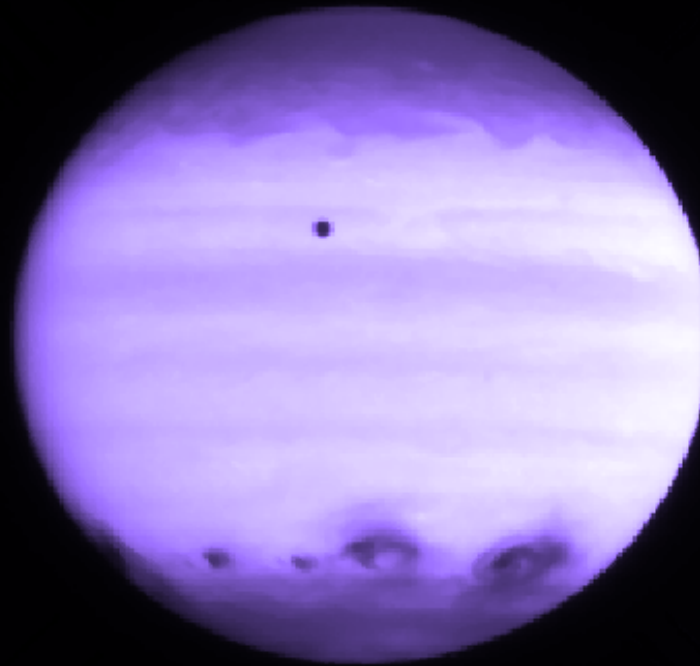
Components Of Comets





Comets have their origin in the giant Oort cloud that exists outside our Solar System. Perturbations from nearby stars cause the comets in the Oort cloud to fall into the Solar system in hyperbolic orbits (i.e. orbits with only a one time encounter with the inner Solar System).

Jupiter in Ultraviolet



Hubble Space Telescope
Wide Field Planetary Camera 2

Fragments of comet P/Shoemaker-Levy 9 collided with Jupiter on July 16-22, 1994. The results were spectacular. At least 20 large fragments impacted the planet at 60 kilometers per second, causing plumes thousands of kilometers high. They left hot bubbles of gas in the atmosphere and great dark scars which lasted for months after the collision. The largest fragments were estimated at 2 kilometers in diameter.