



Science Fun!

Comets and Our Solar System

Comets are a relatively small solar system body that orbits the Sun. They are composed of ice, dust and small rocky particles from the early formation of the solar system about 4.5 billion years ago. The name comet, comes from the Greek word which means, “hair of the head.” Greek philosopher Aristotle, observed comets as “stars with hair.”

Comets have a small solid part, called a nucleus. When comets are close to the Sun and begin to warm up, they will display a visible fuzzy outline or atmosphere called a “coma” and sometimes a tail. The coma is created as the sun’s heat causes ice, carbon dioxide and other compounds to quickly change from solids to gases. “Vents” on the sun-warmed side may release fountains of dust and gas for thousands of miles. The comet gets bright enough to see from Earth while the coma grows larger.

The pressure of sunlight and the flow of electrically charged particles called solar wind, blow some of the coma materials away from the Sun. This forms the comet’s bright, long tails. The tail of a comet always point away from the Sun. So when a comet approaches the sun, its tail is following it. When it moves away from the sun, its tail is leading the comet.



Most comets travel a safe distance from the Sun. However, some comets, called sun grazers, crash straight into the Sun or get so close they break up and vaporize.

When it moves away from the sun, its tail is leading the comet.



Halley's Comet in 1986

Some famous comets are:

- The Great Comet of 1843
- The Great Comet of 1884
- The Hale-Bopp Comet
- Donati's Comet
- Halley's Comet
- Shoemaker Levy 9 Comet that hit Jupiter in 1994.

Halley's Comet (also called Comet Halley) is perhaps the most famous comet in history. It is about the same age as the sun at 4.5 billion years old. It is a periodic comet (or short term comet) as it takes less than 200 years to orbit the sun. In fact, Halley's Comet orbits around the Sun approximately every 76 earth years. The last time being in 1986 and the next time is estimated at 2061.

Halley's Comet is named after English Astronomer Edmond Halley who first determined its period of orbit. Using Isaac Newton's new Laws of Motion, he made a prediction in 1705 of when it would appear again. He stated that a comet which had appeared in 1531, 1607 and 1682 would reappear in 1758. He never lived to see it happen and it did. The comet was later named in his honor.

Halley's Comet appearance in 1986, allowed researchers to investigate its make up closely using spacecraft. It's nucleus has been estimated to be 9 miles x 4 miles x 4 miles.