



Image: NASA, ESA, G. Bacon (STScI)

PLUTO FACT FILE

Six billion km away at the back of the Solar System lies the tiny icy world of **Pluto**, named by an Oxford girl after the Roman god of the underworld.

Smaller than the planet Mercury, our own Moon and six other moons of our Solar System, **Pluto** is a small but mysterious world in our Solar System.

Until telescope technology improved enough to know any better, little **Pluto** was assumed to be the ninth planet. But like the tale of the Ugly Duckling, too small **Pluto** has **never had much in common with the planets**. Its oval orbit is kicked up at an angle to the rest of the planets and cuts across Neptune's path, whereas all of the planets orbit in regular and separate orbits.

Pluto has three moons, including a very large moon astronomers call Charon, the ferryman of the Roman underworld. Charon is around ten percent of **Pluto's** own mass, making it the heaviest moon in the Solar System compared to its parent. The other two moons are Nix, the Roman mother of Charon, and Hydra,

who guarded the Roman underworld.

Pluto is made up mostly of water ice, because it is highly reflective and orbits in the coldest areas of the Solar System. Powerful telescopes can see light and dark areas on the surface of **Pluto**, perhaps made by different rocks and chemicals. Hopes are that these might include the **building blocks of life** often carried on comets that come from this area of the Solar System.

Did you know that...?

Now over **70,000 more icy worlds have been found out beyond Neptune**. Most are only a few hundred km across, but some are larger than **Pluto**. The Kuiper Belt is the band of 800 of these icy worlds where **Pluto** orbits.

Based on these facts, in 2006 an international group of scientists voted that **Pluto is really a Kuiper Belt object, and is not a planet**.

The story of **Pluto** is a modern example of how scientific 'fact' changes as new data are learned. For example, people once believed the Sun went around the

PLUTO STATISTICS

Distance of Pluto from the Sun:	5,869,660,000 km (average)
Distance from the Sun compared to Earth:	39 X
Length of Year:	248 years
Length of Day:	6 days
Diameter:	2288 km
Diameter compared to Earth:	0.18
Moons:	3

Earth, but new data put the Earth in its place as well.

Mysteries left to solve:

Like a comet, Pluto's unusual orbit brings it closer to the Sun than Neptune at times. Frozen gasses on its surface then evaporate and form a thin atmosphere around it, possibly causing **strong winds and weather**.

Also, **global warming** appears to have recently occurred on **Pluto**. Some scientists wonder if volcanic activity on **Pluto** might have warmed it, perhaps as a result of tugging by its three large moons.

The moons of **Pluto** do not appear to be made of the same materials, and so their origin is not yet clear.

Maybe **Pluto's** moons were neighbouring Kuiper Belt objects that got too close to **Pluto**, similar to how Mars captured its two moons from the nearby asteroid belt.

However, **Pluto orbits upside-down**, and perhaps this is evidence that it was once struck very hard by another object. This collision may have broken **Pluto** into different bits that formed its moons. Clearly, there is much we don't know about this tiny and distant outpost of the Solar System. **NASA's New Horizons spacecraft** reaches the **Pluto** system in 2015 and scientists know it will solve many of the mysteries about this small icy world.