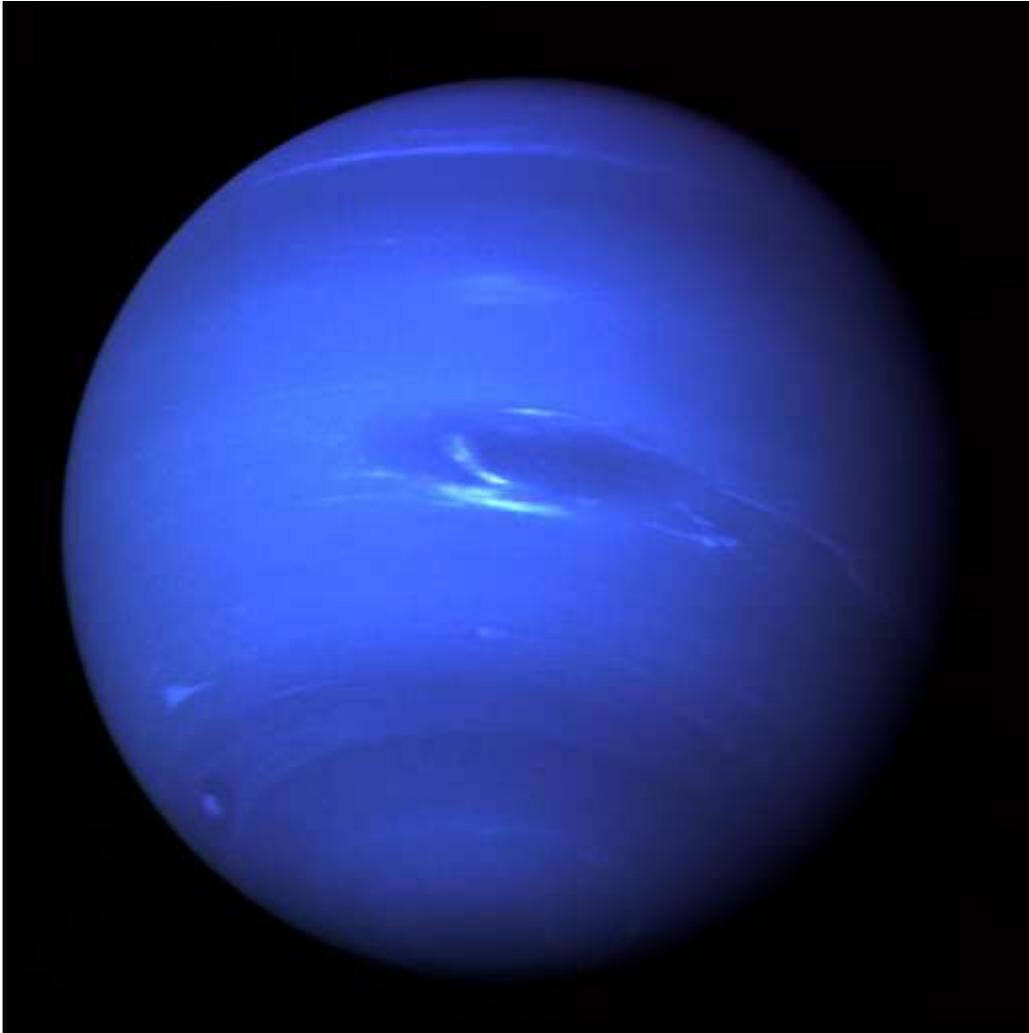


# Neptune

## So cold it's blue



For the time being, Neptune has the honour of being the last full-sized planet at the outer edge of our solar system. I say “for the time being” because there is still a great deal of controversy about Pluto’s being demoted to a dwarf planet. I’ll save that for the chapter on Pluto, which should contain a number of exciting new images once the New Horizons Mission arrives there in mid-July. We’ll have new information then on what has traditionally been the farthest planet out from the Sun. Now, let’s get back to Neptune.

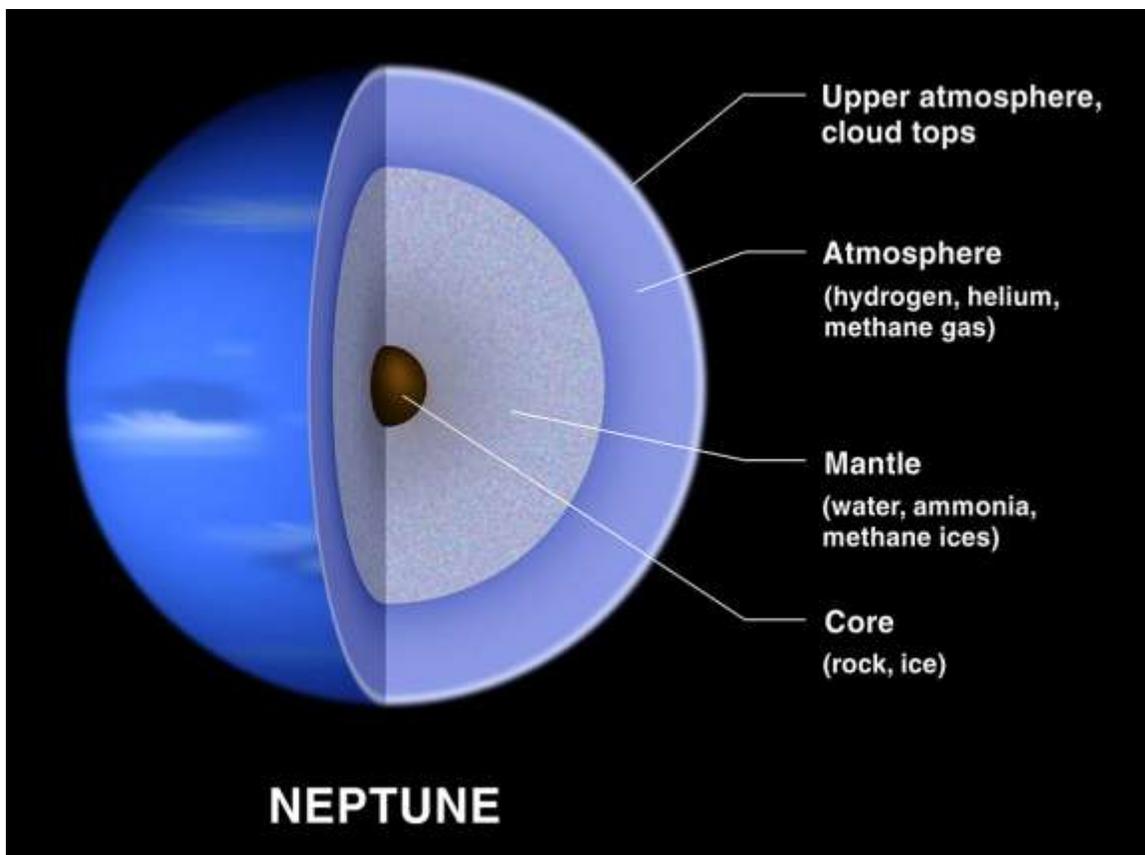
### Quick Smarts

**Average Temperature – Minus 201°C**  
**Diameter – 48,682 km**  
**Size VS Earth – 3.9 times larger**  
**Orbital period – 164.8 Earth years**  
**Length of day – 19h 3min**  
**Moons – 14**  
**Rings – 5**  
**Distance from Sun – 4.5 billion km**  
**Year of discovery – 1864**

Neptune is the 8<sup>th</sup> planet out from the Sun. It takes its name from the Roman god of the sea. The Romans simply copied their ancient Greek predecessors and transferred the Greek god, Poseidon, into their culture and gave him their name – Neptune.

Like Uranus, Neptune is now classified as an ice giant. That's because both planets have a deep covering of ice just beneath their cloud layers. Speaking of cloud covers; both planets contain methane in their atmospheres which gives them a bluish tint when seen through a telescope. Uranus is more green-blue while Neptune is more skewed towards a more recognizable blue colour.

Despite the fact that neither has been visited, other than a flyby of Voyager II many years ago, astronomers think that the two share even more in common. As the cutaway below shows Neptune has a top layer of clouds, a thicker layer of atmosphere, followed by a deep layer of ice called the mantle and ultimately a rocky core region. Nearly the same diagram exists for Uranus.



Astronomers assume that even the gas giants, Jupiter and Saturn have rocky cores because something of significant mass had to first exist in order to attract the surrounding gasses and materials. The pressure of the collected gas and materials could also have squeezed the internal structures into a more solid mass.

Of Neptune's 13 moons, Triton is the most notable. It is aptly named because a triton is the name of the three-pointed spear carried by Neptune. Triton is also the name of Neptune's son. The moon also holds the honour of being the only moon in the solar system to orbit its host planet in the opposite direction of the planet's rotation. Known as

retrograde motion, this peculiarity is one of the reasons astronomers think that it is a member of the Kuiper Belt which was gravitationally captured by Neptune.

Like Earth's Moon, Triton is tidally locked to Neptune. What that means is that the gravitational pull of Neptune has gradually slowed Triton's rotation down to the point that only one side of the moon now faces the planet.

Yet another oddity of Triton is that it is just one of three currently known volcanic spots in our solar system. The other two being Earth and Jupiter's Moon Io.

As we probe more deeply into our solar system we will learn more about our distant cousins. Meanwhile we must continue to explore our next door neighbours – our Moon, Mars and Jupiter's four Galilean moons due to their accessibility.



*Neptune's ability to cause the seas to rage made him a formidable deity during the ruling days of Rome.*