

# Neptune moons essay sample



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Neptune has 13 moons, Triton, Nereid, Naiad, Thalassa, Despina, Larissa, Proteus, and Galatea, plus five smaller, unnamed moons. Triton and Proteus orbit close to Neptune; Nereid is in a distant orbit. Triton is the only moon in our Solar System with a retrograde orbit (orbiting in the opposite direction than its primary, Neptune, is rotating). The moon Triton is the coldest measured object in our Solar System, and Nereid is the Solar System object with the most eccentric orbit. The moons of Neptune in order of distance from Neptune.

The first four moons of Neptune, Naiad, Thalassa, Despina, and Galatea, are so close to Neptune that they orbit within its ring system. Little is known about them. The next one out, Larissa, was actually discovered in 1981, when it blocked a star. This was attributed to the ring arcs, but later was found to be the moon, being re-discovered by Voyager 2 in 1989. Proteus is the second-largest moon in orbit around Neptune. It is so close to the planet that Earth-bound telescopes cannot see it. Triton is next (right), and is one of the strangest moons in the solar system. First, it is one of only three moons in the solar system that has an atmosphere (Jupiter's Io and Saturn's Titan are the other two). It is thicker than Io's, yet much thinner than Titan's. Its pressure is 1/100, 000 of Earth's. Second, Triton has a retrograde orbit, which means that it orbits the opposite way the planet spins. This is a very strong indication that Triton was captured. This in itself is not strange; both of Mars' moons were captured. What is strange is that Triton is two-thirds the size of our moon. When two bodies have a close encounter, one does not automatically capture the other, especially if it is so big.

One theory is that Triton must have actually hit Neptune, bounced off the atmosphere, and gone into orbit because it lost all of its momentum. Another way this could have happened is that Triton collided with one of Neptune's moons, smashed it to bits (possibly creating the rings), and lost so much momentum that it couldn't escape Neptune's gravity. Third, it is only 38 °C (100 °F) above absolute zero (the temperature at which all matter comes to rest). In such frigid a climate scientists did not expect to find active geysers. But, they did. They spew out a gaseous form of nitrogen, which is what creates its atmosphere. The eighth moon, Nereid, has a highly elliptical orbit that causes it to swing around Neptune at various distances. When closest, it is 1, 342, 530 km (834, 210 miles) from the planet. At the farthest distance, it is 9, 667, 120 km (6, 006, 870 miles) from Neptune. The last five moons were discovered in the first few weeks of and throughout 2003. They have not yet been given official names by the International Astronomical Union. Very little is yet known about them.

### Triton

The largest of the 8 moons of Neptune. Unlike all other large planetary moons, Triton has a retrograde orbit (it rotates opposite to Neptune's rotation) and is in synchronous orbit. It also has a highly inclined axis. Triton is the coldest object that has been measured in our Solar System, with a temperature of -235° C (-391° F). This rocky moon has a polar ice cap at its south pole and many other varied geologic features including volcanoes, huge cracks in the surface, and geysers of gaseous nitrogen. It has a very thin, hazy atmosphere (mostly nitrogen) and a windy surface covered with nitrogen ice. Triton is slowly spiraling in towards Neptune. Nereid

Neptune's outermost (and third largest) moon is Nereid, which has an irregular shape. It is the smaller of Neptune's 2 larger moons. It has a VERY elliptical orbit, going as close as 867, 000 miles from Neptune and as far as 6 million miles from it; it may be a captured asteroid. It takes almost one Earth year for Nereid to orbit Neptune in this extreme orbit (360. 1 days). Nereid's has the most eccentric orbit in the solar system. The distance from Nereid to Neptune varies from about 1, 353, 600 kilometers (841, 100 miles) to over seven times as far, 9, 623, 700 kilometers (5, 980, 200 miles).

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