

## Moons

### *Naming Moons*

NARRATOR: If you discovered a new moon, what would you call it? As the person who discovered it, surely you could call it anything you liked, couldn't you? Isn't this how it's happened for hundreds of years? It's like finders, keepers. But you'd be wrong.

The right to name moons, and the features on their surfaces, belongs to a body known as the International Astronomical Union, or IAU, that was founded in 1919. If you discover a new moon, you can suggest a name to the IAU, but they don't have to accept it.

When a moon is first discovered, these days, it's given a provisional name like S/2005 P1. Here, S means satellite, 2005 is the year of discovery, the next letter identifies the primary body - in this case P means it's a moon of Pluto - and 1 indicates that it was the first moon of Pluto discovered that year.

Later, when the discovery has been confirmed, the IAU gives it an official, permanent name. So S/2005 P1 became Hydra, named after the snake-headed monster killed by Hercules. But why Hydra?

Over time, a convention developed. When a new moon is discovered, the name it's given has to fit in with the theme for names that have already been chosen for moons of that planet. So Hydra, as a moon of Pluto, was named after one of the guardians of the underworld, because the moons of Pluto are named after figures with a connection to Hades, the underworld of Greek mythology.

As the discoverer of the first new moons, Galileo had the chance to set the ball rolling. When he discovered the first four moons of Jupiter, there were no rules at that time. He could've named them anything. But he plumped just for Roman numerals. So we had Jupiter I, Jupiter II, and so on.

Until Simon Marius, a rival of Galileo's, suggested something a little more imaginative. Marius proposed a mythological theme. Since the planet was named after the god Jupiter, the Roman equivalent of the Greek god Zeus, why not name the moons after the lovers of Jupiter, or Zeus? So we got Io, Europa, Ganymede, and Callisto, who were all - depending on which story you read -

the willing, or unwilling, lovers of Jupiter, or Zeus.

Zeus transformed Io into a cow to avoid getting caught at it by his wife, Hera. He turned himself into a bull to kidnap Europa from her family. He disguised himself as an eagle to whisk off the young shepherd boy Ganymede, while he tricked Callisto by pretending to be his own daughter, Diana, and then left the now-pregnant nymph to face the music alone.

But even Jupiter and Zeus couldn't keep astronomers supplied with enough names for all the moons that have been discovered recently. So the newer discoveries are named after the god's many daughters.

The next family of moons to be discovered, the moons of Saturn, were also named after a mythological theme... eventually. Saturn's five largest moons were discovered by Christiaan Huygens and Giovanni Domenico Cassini in the 17th century. Initially, Huygens followed Galileo's conventions and gave the moons numbers, rather than names.

When Sir William Herschel discovered two smaller moons of Saturn, over a hundred years later, he also declined to name them. It was left to his son, Sir John Herschel, to settle the matter. Since Saturn was the Greek equivalent of Kronus, the leader of the Titans, Sir John decided to name the planet's largest moon Titan, and several others after individual Titans-- Iapetus, Tethys, Dione, and Rhea. The two innermost moons were named after the Titans' half brothers, two giants from Greek mythology, Mimas and Enceladus.

Again, the pace of recent discoveries has meant that astronomers were running out of suitable Greek and Roman names. So the IAU has reached out to other cultures and has named recent discoveries after Norse, Gallic, or Inuit figures. And so we have the moons Fenrir, named after a giant Norse wolf, Tarvos, named after a huge Gaulish bull, and Tarqeq, an Inuit moon spirit.

After naming the moons of Saturn, Sir John Herschel turned his mind to naming the moons of Uranus, the planet discovered by his father. This time, Sir John took his inspiration from English literature, naming two of the moons, Oberon and Titania, after fairies in Shakespeare's "*A Midsummer Night's Dream*", and the other two, Ariel and Umbriel, after sylphs in Alexander Pope's poem "*The Rape of the Lock*." Perhaps he thought that Uranus, the god of the air, should be surrounded by spirits of the air.

However, as more moons were discovered, they were named after characters from Shakespeare. So we got moons named after Hamlet's Ophelia, King Lear's Cordelia, Othello's Desdemona, and Margaret from *Much Ado about Nothing*.

When it came time to name Neptune's first moon, again the discoverer, William Lassell, had nothing to do with it. Naming duties fell to the prolific French author and astronomer Camille Flammarion, who picked up the baton and carried on with the mythological theme. Neptune's moon was named Triton, after the son of the sea god Poseidon, the Greek equivalent of the Roman god Neptune.

When Neptune's second moon was discovered, it was named Nereid, after the sea-nymphs who served Poseidon. Later moons were also named after water spirits, for example Larissa, Proteus, and Galatea.

When the tiny moons of Mars were discovered, in 1877, they were named Phobos, which means 'fear', and Deimos, meaning 'terror', after the sons of the war god Ares, the Greek equivalent of Mars.

Even the dwarf planets are named after mythological figures. As Pluto was the god of the underworld, in Greek mythology, the moons of Pluto are named after Greek myths with a connection to Hell, or Hades as the Greeks called it. Charon [Kair-on] was the boatman who ferried the dead across the river Styx to Hades. To get there, they had to pass the guardians of the underworld - Kerberos, the many-headed dog, and Hydra the snake-headed monster.

But if only it were that simple. Sometimes the story behind the name can get a bit complicated. When the American James Christy discovered the first of Pluto's moons, in 1978, he wanted to name it Sharon, after his wife Charlene, whose nickname was Shar. The IAU wouldn't allow this, but did agree to Charon [Kair-on], though NASA and most astronomers pronounce it as Sha-ron, in thanks to the man who discovered it.