

Ask an Astronomer

Question: "Why isn't Pluto a planet any more?"

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When we ask the question of what is and isn't a planet, we're really just talking about how we define the word "planet."

In ancient times, we didn't really need a definition. Astronomers noticed five star-like objects -- Mercury, Venus, Mars, Jupiter, and Saturn -- that didn't move around with the other stars, but seemed to wander through the sky. The word "planet" comes from an ancient Greek word that meant "wanderer."

Eventually, we figured out that the Earth is a planet too, orbiting around the Sun just like the others. And that was pretty much it for the solar system until the age of telescopes.

The next planet to be discovered was Uranus, in 1781, followed by Neptune in 1846. These planets are huge, but just too far away for ancient astronomers to see.

But did you know that in 1801, astronomer Giuseppe Piazzi discovered another planet? Or so he thought!

Piazzi found a spherical body, about 600 miles across, orbiting between Mars and Jupiter. The "planet," which is smaller than our Moon, was called Ceres. In this case, it wasn't too distant to see, but too small.

The problem, however, was that Ceres had buddies -- lots of them!

The very next year, a smaller object named Pallas was discovered, and two years after that, another named Juno. We now know about thousands of similar bodies.

Instead of adding thousands of new planets to the solar system, astronomers decided that it made more sense to group these objects together. They named a new class of objects: asteroids. And, Ceres got demoted.

Something similar has just happened to Pluto. Astronomer Clyde Tombaugh stumbled across Pluto in 1930. But since then, its status as a planet has been called into question, too.

First of all, Pluto's orbit is strange -- wildly offset from the other planets, and even intersecting the orbit of Neptune.

Also, it turns out that Pluto isn't bigger than the Earth as Tombaugh initially thought. Instead, it's got a huge moon nearby -- in fact some people called it a "binary planet" or a "double planet."

And, just like with Ceres, astronomers discovered that Pluto isn't alone. Beginning in the early 1990s, they started finding other objects similar to Pluto. Some, like Quaoar and Sedna, were almost as big. Then, in 2005, astronomers announced that they'd found an object, named Eris, even bigger than Pluto!

So, are these all planets? Astronomers wondered the same thing.

And, in August 2006, astronomers from all over the world met and finally decided on a formal definition of a planet. Pluto and its buddies didn't make the cut, and they're now known as "dwarf planets."

But don't be upset that Pluto isn't a full-fledged planet any more. Instead, think how exciting it is that there's still so much to learn about the solar system, and that science can continue to set the record straight, even when our initial ideas turn out to be wrong.

For "Ask an Astronomer," I'm Dr. Robert Hurt at the Spitzer Science Center.