

# How many planets are in the solar system?

May 28 2013, by Fraser Cain

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The Solar System. Image Credit: NASA

I'm just going to warn you, this is a controversial topic. Some people get pretty grumpy when you ask: how many planets are in the Solar System? Is it eight, ten, or more?

I promise you this, though, we're never going back to nine [planets](#)... ever.

When many of us grew up, there were nine planets in the Solar System. It was like a fixed point in our brains.

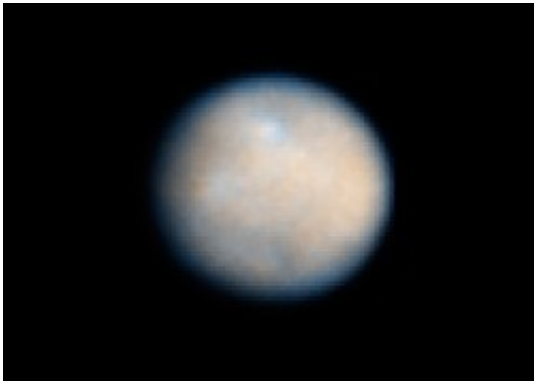
As kids, memorizing this list was an early right of passage of nerd pride: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune and [Pluto](#).

But then in 2005, Mike Brown discovered Eris, an icy object thought to be about the same size as Pluto, out beyond its orbit.

That would bring the total number of planets to ten. Right? There's no turning back, textbooks would need to be changed.

In order to settle the dispute, the [International Astronomical Union](#) met in 2006, and argued for, and against Pluto's planethood. Some astronomers advocated widening the number of planets to twelve, including Pluto, its moon Charon, the Asteroid Ceres, and the newly discovered Eris.

In the end, they changed the definition of what makes a planet, and sadly, Pluto doesn't make the cut:



Makemake. Credit: NASA

Here are the new requirements of planethood status:

1. A planet has to orbit the Sun. Okay fine, Pluto does that.
2. A planet needs enough gravity to pull itself into a sphere. Okay, spherical. Pluto's fine there too.
3. A planet needs to have cleared out its orbit of other objects. Uh oh, Pluto hasn't done that.

For example, planet Earth accounts for a million times the rest of the material in its orbit, while Pluto is just a fraction of the icy objects in its realm.

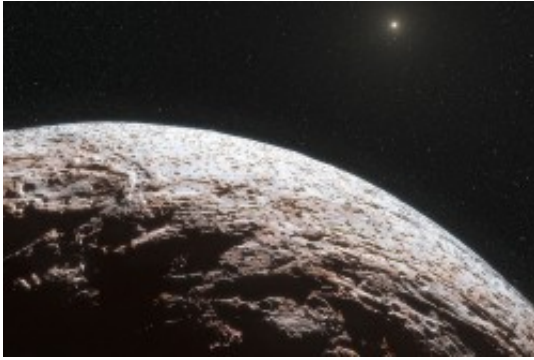
The final decision was to demote Pluto from planet to dwarf planet.

But don't despair, Pluto is in good company.

There's Ceres, the first asteroid ever discovered, and the smallest of the dwarf planets. The surface of Ceres is made of ice and rock, and it might even have a [liquid ocean](#) under its surface. [NASA's Dawn mission](#) is flying there right now to give us close up pictures for the first time.

Haumea, named after the Hawaiian goddess of fertility, is about a third the mass of Pluto, and has just enough gravity to pull itself into an ellipsoid, or egg shape. Even though it's smaller, it's got moons of its own.

Makemake, a much larger Kuiper belt object, has a diameter about two-thirds the size of Pluto. It was discovered in 2005 by Mike Brown and his team. So far, Makemake doesn't seem to have any moons.



Makemake. Credit: NASA

Eris is the most massive known dwarf planet, and the one that helped turn our definition of a planet upside-down. It's 27% more massive than Pluto and the ninth most massive body that orbits the Sun. It even has a moon: Dysnomia.

And of course, Pluto. The founding member of the dwarf family.

Want an easy way to remember the eight planets, in order? Just remember this mnemonic: my very excellent mother just served us noodles.



Pluto. Credit: ESO

For all you currently writing angry tweets to Mike Brown, hold on a sec. Changing Pluto's categorization is an important step that really needed to happen.

The more we discover about our Universe, the more we realize just how strange and wonderful it is. When Pluto was discovered 80 years ago, we never could have expected the variety of objects in the Solar System. Categorizing Pluto as a [dwarf planet](#) helps us better describe our celestial home.

So, our [Solar System](#) now has eight planets, and five dwarf planets.

Source: [Universe Today](#)

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