

## **A Mega-Mysterious Mega-Earth**

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Three years ago, scientists announced the discovery of a planet orbiting around a Sun-like star 550 light-years away. They were able to calculate how big the planet was by looking at how much dimmer the star became when the planet passed in front of it. This planet is 2.5 times the size of Earth (but way too close to its star to be habitable).

No real surprise there. Most of the planets we find outside our solar system are much bigger than Earth. The larger ones are easier to spot! The big surprise came later, after scientists used another method to figure out the planet's mass.

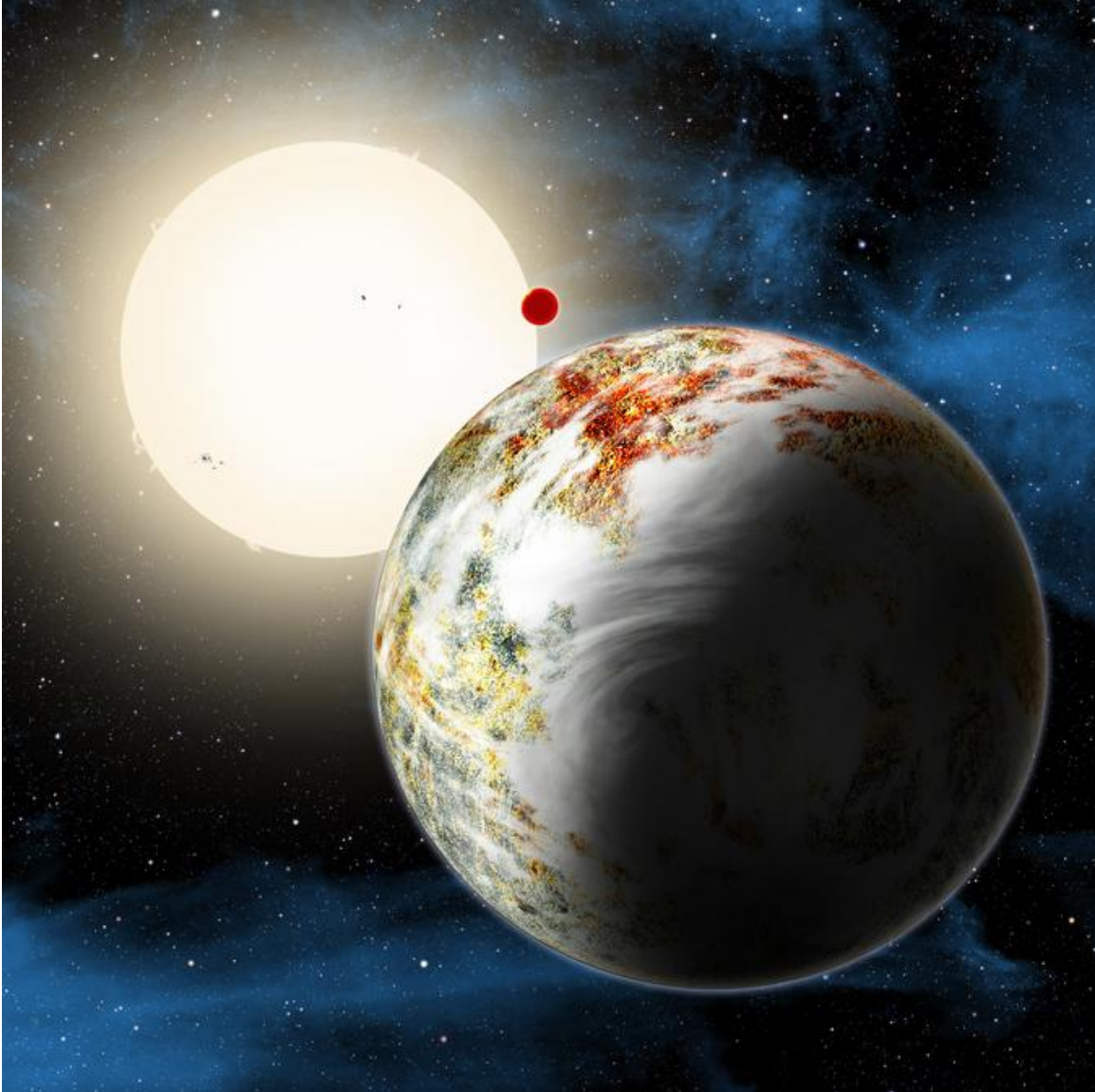
It turns out that this planet, named Kepler-10c, has a mass 17 times greater than Earth. That's just about the mass of the icy giant Neptune! Until now, scientists assumed that any planet with a mass that large must be made up of mostly gas. But a gas planet 2.5 times the size of Earth would have much less mass than this one.

The large mass of this planet confused scientists because it went against how they thought planets form. Typically planets form when a disk of gas and dust surrounds a new star. Bits of dust clump together to form larger and larger objects. Smaller objects became rocky planets. Bigger objects attract even bigger clouds of gas. These clouds eventually form gas giants. At least that's what scientists thought.

So here's the million-dollar question: how could this rocky object get so big without attracting a huge ball of gas around it?

Scientists don't have a clear answer to this question yet. But that's what makes science so great! Even when you think you have figured it all out, there are new and exciting mysteries to explore. After all, science would be pretty boring if we already knew the answer to everything, wouldn't it?

*Want to learn more about the wild world of planets elsewhere in the universe? Check out "What is a planet?" at NASA's Space Place. [http:// http://spaceplace.nasa.gov/planet-what-is](http://spaceplace.nasa.gov/planet-what-is).*



*Artist's conception of Kepler-10c (in front) close to its star and another smaller planet.  
Credit: Harvard-Smithsonian Center for Astrophysics/David Aguilar.*

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