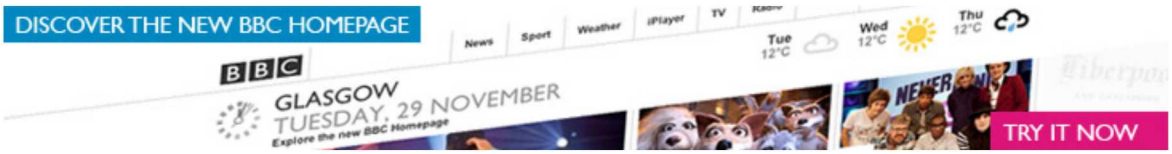

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# Two Planets With Twin Stars Found

## The Star Wars' fictional planet Tatooine is not so fictional or unique after all.

By Irene Klotz
Wed Jan 11, 2012 01:00 PM ET
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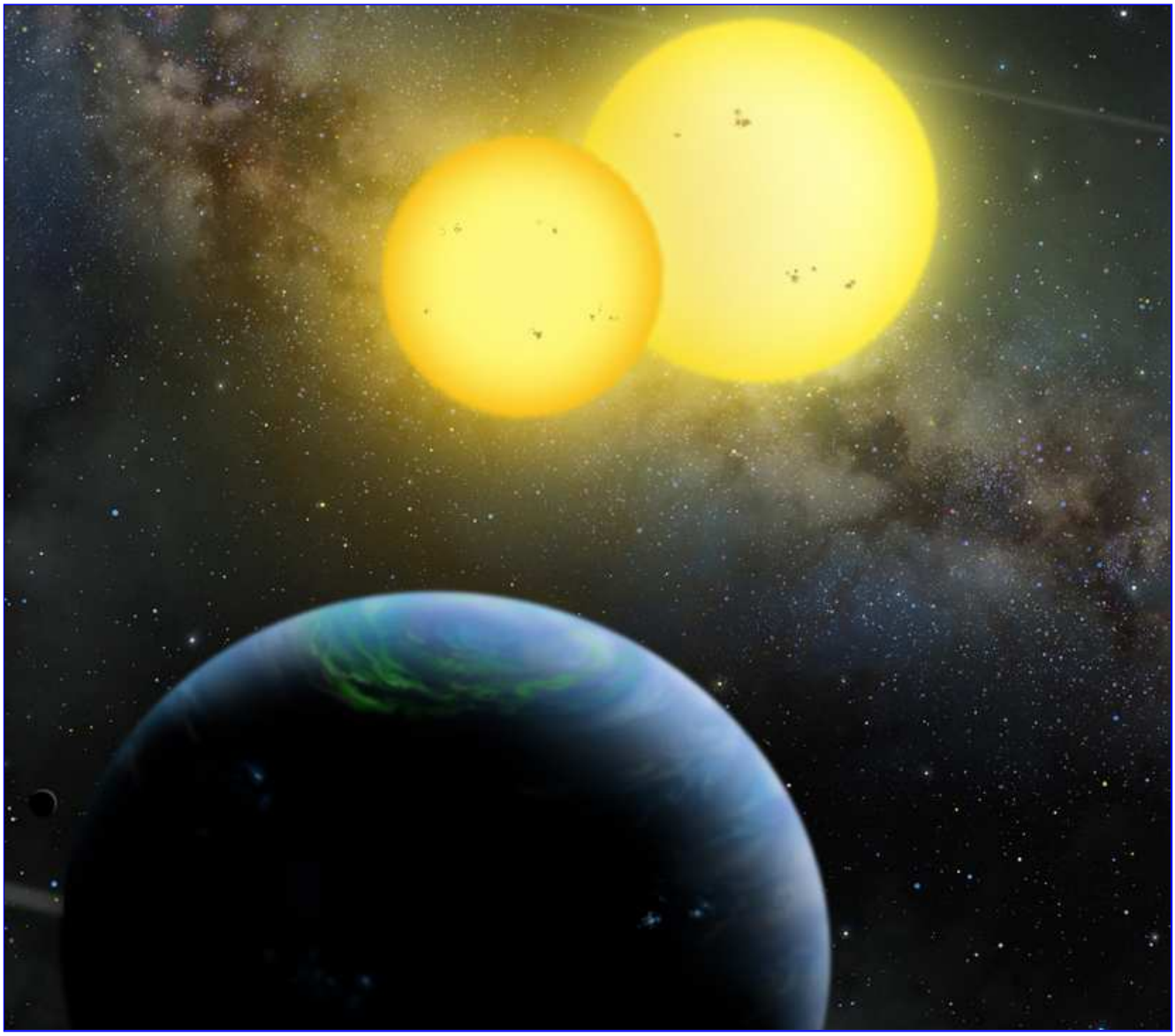
THE GIST

- The Kepler telescope found a Saturn-sized gas giant orbiting a pair of stars four months ago.
- The discovery suggests there are several million similar systems in our galaxy.
- The planets are close to their parent stars' so-called "habitable zones" where liquid water could exist on the surface -- if they had a surface.



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An artistic rendition of Kepler-35, where a Saturn-size planet orbits a pair of sun-size stars. Click to enlarge this image.
*Illustration by Lynette Cook*

Fresh on the heels of the discovery of a planet orbiting two parent stars comes the finding that far from being a fluke, such systems are common throughout the galaxy.

Until four months ago, the idea of a planet with two suns in its sky was relegated to the realm of science fiction, such as Tatooine, the home world of Star Wars' hero Luke Skywalker.

Then came a surprising find from a team of scientists using the Kepler telescope of a planet called Kepler-16 b, a Saturn-sized gas giant orbiting a pair of stars about 200 light years from Earth.

**NEWS: Weird Exoplanet Discovered Orbiting Two Stars**

Now, scientists have found two more planets circling twin parent stars, a discovery that indicates such systems are not only possible, but highly probable throughout the galaxy.

Extrapolating from the research, which was presented Wednesday at the American Astronomical Society meeting in Austin, astronomers believe that several million of so-called "circumbinary planets" exist in the Milky Way.

"Kepler-16 b was interesting, but it was just one. We didn't know if it was normal or just a fluke," astronomer John Southworth, with Keele University in the United Kingdom, told Discovery News. "Now we have to start accounting for a large number of these things."

The newly found planets, dubbed Kepler-34 b and Kepler-35 b, are both gas giants, similar to Saturn, circling close to their parent stars' "habitable zones" where liquid water could exist on a planet's surface. Liquid water is believed to be a key ingredient for life.

**WATCH VIDEO: What does it take to find a planet 63 light-years from Earth?**

While neither planet is believed to have the solid body or the proper temperatures to support life, they may have life-friendlier moons.

Kepler-34 b orbits two sun-like stars every 289 days. Cousin planet Kepler-35 b circles a pair of smaller stars every 131 days. Scientists don't yet know if either or both systems sport sibling planets circling farther away from the parent star twins.

**PHOTOS: Top Exoplanets for Alien Life**

Kepler works by pointing at a fixed position in space, gathering light from about 155,000 target stars in the constellations Cygnus and Lyra. Scientists looks for minute and regular dips in the amount of light coming from the target stars which may be caused by planets passing by, relative to Kepler's view.

A planet located the same distance from its parent star -- or stars -- as Earth is to the sun would take roughly 365 days to make one complete orbit. Planets positioned farther than Earth take longer to orbit. Scientists want data from at least three orbits before making a determination about what they are seeing.

"One of the neat things about all three systems (Kepler-16, Kepler-34 and Kepler-35), is that the planets are very close to the limit where if they were only a little bit closer to their stars, the gravitational forces from the stars would be chaotic and mess up the orbits and pretty quickly, the planet would be ejected out into deep space," San Diego State University astronomer William Welsh told Discovery News.

"There's a region where if you're too close to the star, the orbits are unstable and these planets are within 25 percent of that," he added.

"That's kind of a neat question: 'Why are they so close to this area of being unstable?' We don't the answer to that, but the answer is going to tell us something about the way planets form, or the way their orbits evolve in time," Welsh said.

The research is published in this week's *Nature.*

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