

Quest for extraterrestrial life not over, experts say

April 18 2014, by Mariette Le Roux



This artist's concept released April 17, 2014 by NASA/JPL-CALTECH depicts Kepler-186f, the first validated Earth-size planet to orbit a distant star in the habitable zone

The discovery of an [Earth-sized planet in the "habitable" zone of a distant star](#), though exciting, is still a long way from pointing to the existence of extraterrestrial life, experts said Friday.

The planet, dubbed Kepler-186f, is the first of this size found orbiting its star at a distance that would allow it to have liquid water—a prerequisite for the development of [life](#), whether primitive or complex.

But whether it has any, we may never know.

"Unfortunately, the system is too far away and too faint to know more," Heike Rauer of the German Aerospace Centre's Institute for Planetary Research told AFP.

"We don't know for sure whether it is rocky, we don't know for sure that it has an [atmosphere](#), what this atmosphere is made of, or that it has water," she said.

"We know how we want to measure it: by taking a spectrum of the atmosphere, but with current and next foreseen technology, we cannot take this spectrum."

Sean Raymond, an astrophysicist at France's CNRS national research centre who was a member of the team that discovered the planet, agreed we won't know how hospitable Kepler-186f is for quite some time. If ever.

"We are not even close to having the means with which to take these measurements," he said. "We will have to wait for the next generation of space telescopes, in 10 or 20 years."

Are we alone?

The exoplanet, some 500 lightyears from Earth, shows that potentially habitable worlds can exist.

Other exoplanets found within their stars' [habitable zones](#) have been gas giants—this one's size may mean it is a rocky planet, another condition for life to take root.

Science has invested much time and resources into finding so-called

exoplanets, which revolve around stars other than our Sun.

The quest is targeted mainly at answering the question: "Are we alone?", but also to find clues as to how and why life on Earth began.

Rauer, who will head the European Space Agency's (ESA) PLATO planet-hunting mission, due for launch in 2024, said the first dedicated searches started in the mid-1990's, with telescopes on the ground measuring the mass of distance planets.

This was followed in the next decade by satellites determining their radius.

NASA's Kepler space observatory, which spotted the new planet, was dedicated exclusively to the task of finding exoplanets—it has found 3,600 planet candidates of which 961 have been confirmed so far.

Future missions like PLATO will seek to detect Earth-like [planets](#) orbiting stars that are brighter than Kepler-186f and closer to our own planet—which should make it easier to detect life, if there is any.

"In the next decades, we will be able to get answers, but in other systems" than Kepler-186f, said Rauer.

Fabio Favata, coordinator of ESA's science and robotics exploration programme, said that while Kepler-186f is the only planet of its size found in a habitable zone to date, that may soon change.

"We are in a golden era of exoplanet discoveries. So far it is unique, but will it stay so? I am ready to bet you money that it won't."

The search for a planet capable of hosting life remains an academic pursuit—there is no solar system close enough for mankind to ever reach

it, unless we develop time travel.

Kepler-186f is so far from Earth that "if you could build a perfect spaceship that can travel close to the speed of light, to go there and back would still take more than 1,000 years," said Favata.

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