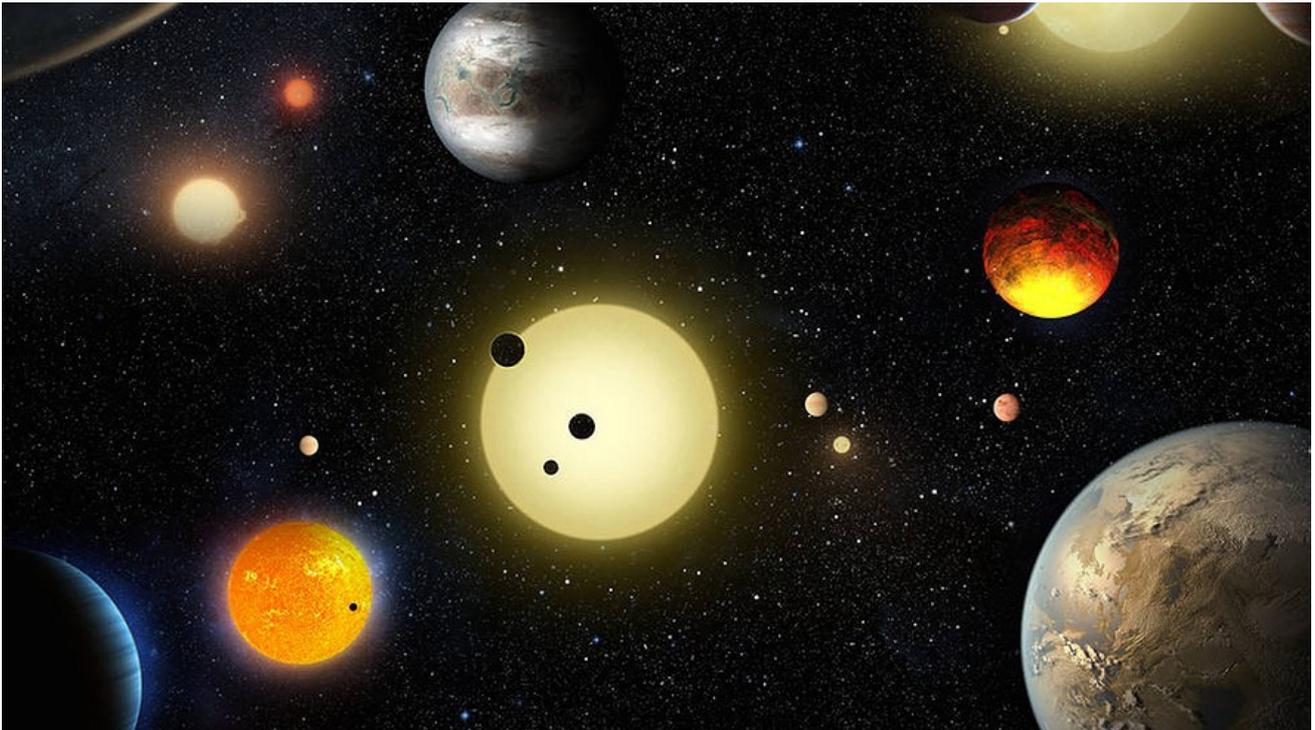


Out of this world: NASA telescope finds a record 1,284 new planets

By Washington Post, adapted by Newsela staff on 05.15.16

Word Count **643**



This artist's concept depicts select planetary discoveries made to date by NASA's Kepler Space Telescope. Photo: W. Stenzel, NASA.

NASA scientists held a press conference Tuesday to announce the discovery of 1,284 new planets.

All the new discoveries are exoplanets, meaning they orbit distant stars outside our solar system. They were found by the Kepler Space Telescope, which was launched into space in 2009.

The latest crop of planet discoveries is the largest in history. It more than doubles the number of planets uncovered by Kepler so far.

Stars Dim As Planets Go Passing By

On Monday, earthlings watched as the planet Mercury passed between Earth and the sun. The sun is the host star for both Earth and Mercury, as both planets orbit around it. For a time on Monday, all three bodies were lined up in just the right way for Mercury to appear as a small black dot creeping over the sun. The phenomenon of one planet passing in front of its star — from the viewpoint of another planet — is known as a "transit." It is how Kepler finds new, alien worlds.

Kepler tracks the slight dimming of distant stars. Such dimming can be caused by an orbiting planet that briefly passes in front of Kepler's field of vision, thus making the star appear less bright.

The star-dimming that Kepler records can be caused by other things as well, such as smaller stars or other objects. For that reason, scientists must check very carefully before a new planet can be declared.

New Method Tracks Possible Planets

Scientist Timothy Morton has developed a new way to calculate the likelihood that something really is a planet. He and his team analyzed the Kepler findings.

In addition to the 1,284 confirmed planets, another 1,327 objects spotted by Kepler are almost certainly planets, Morton says. More study will be needed to prove their existence, however. Another 707 possible worlds are likely something else.

Of the newly confirmed planets, nine are thought to be rocky planets like Earth, as opposed to gas giants or tiny worlds made of ice. All fall within the habitable zone, in which life as we know it is possible. They are the right distance from their host stars to potentially host liquid water, a necessary ingredient for life.

"Planet candidates can be thought of like bread crumbs," Morton said. "If you drop a few large crumbs on the floor, you can pick them up one by one. But, if you spill a whole bag of tiny crumbs, you're going to need a broom." His new method is that broom, he said.

More Planets Means Greater Chance Of Life

Scientists will now be able to quickly determine which "planets" are really new worlds. Knowing that will allow them to know where to focus their efforts.

"They say not to count your chickens before they're hatched, but Tim's numbers allow us to do exactly that," said Natalie Batalha, a Kepler mission scientist. "This is going to be very important for Kepler's most valuable planet discoveries, those small planets found orbiting in the habitable zone."

As of today, NASA knows of 21 exoplanets that are likely to be rocky, wet worlds. Our galaxy — the star system known as the Milky Way — probably has many more than that, Batalha said. Based on Kepler's findings, there could be 10 billion potentially habitable planets.

Before Kepler, we had no idea of how common these kinds of Earth-like planets might be. The fact that they seem to be extremely numerous is great news in the search for life: The less special we are, the more likely we are to have company somewhere out there.

To further explore the habitability of these worlds, scientists could measure the way their host stars' light changes as it passes through planetary atmospheres. Certain changes in light could reveal the presence of water and other life-giving substances. We would then be able to see which other worlds are most like Earth.

Quiz

- 1 Select the paragraph from the section "More Planets Means Greater Chance Of Life" that shows how scientists will study these planets in the future.

- 2 Which section highlights the idea that it's difficult to determine which of the objects found by Kepler is an actual planet?
 - (A) introduction [paragraphs 1-3]
 - (B) Stars Dim As Planets Go Passing By
 - (C) New Method Tracks Possible Planets
 - (D) More Planets Means Greater Chance Of Life

- 3 Which of the following answer choices BEST describes two main ideas in the article?
 - (A) The Kepler telescope has found thousands of planet-like objects in outer space; scientists have confirmed 1,284 actual planets by using a new method of calculation.
 - (B) Scientists have found evidence that many rocky planets like Earth exist; the number of rocky planets found will likely increase.
 - (C) The Kepler telescope has traveled far into outer space looking for stars and planets; scientists think the Milky Way has billions of undiscovered planets.
 - (D) Scientists use the dimming of stars to find potential planets; many objects are falsely identified as planets.

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Read the following two paragraphs from the section "More Planets Means Greater Chance Of Life".

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"They say not to count your chickens before they're hatched, but Tim's numbers allow us to do exactly that," said Natalie Batalha, a Kepler mission scientist. "This is going to be very important for Kepler's most valuable planet discoveries, those small planets found orbiting in the habitable zone."

How is the central idea developed in this excerpt?

- (A) It shows how scientists don't want to make predictions about what Kepler will find.
- (B) It describes the process Kepler uses to identify which objects are planets.
- (C) It explains how a scientists' new method helps analyze information from Kepler.
- (D) It provides an example of how Kepler will be used by scientists in the future.