

"Long before it's in the papers"

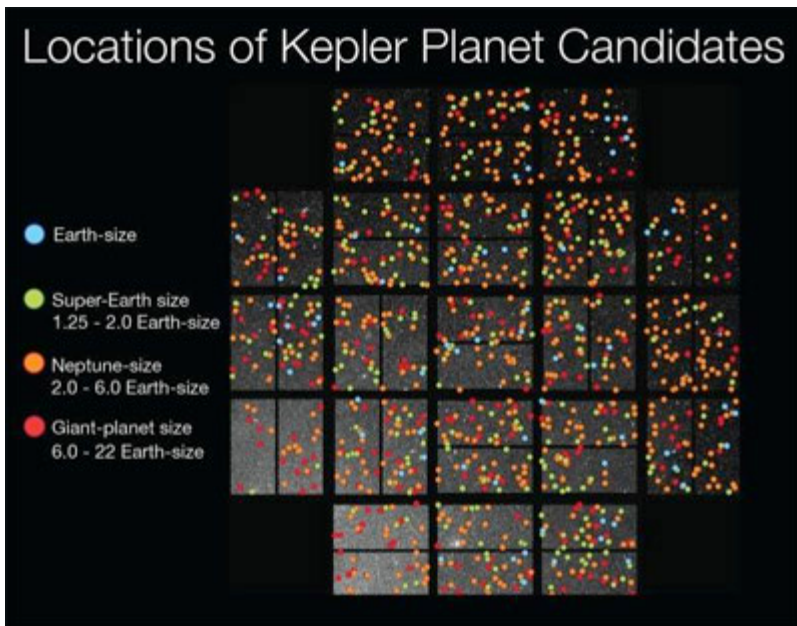
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Possible Earth-sized, habitable planets found

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Courtesy of NASA
and World Science staff

NASA's Kepler space telescope seems to have discovered five planets that are about the size of Earth and could support liquid water, the space agency has announced.

Previously, astronomers had reported only one or two planets fitting similar descriptions, and these were estimated to be somewhat larger than Earth.



A diagram showing the distribution of planetary candidates found so far by the Kepler telescope, color-coded by size. (Image credit: NASA/Wendy Stenzel)

Although further tests are needed to verify the finds, “in one generation we have gone from extraterrestrial planets being a mainstay of science fiction, to the present, where Kepler has helped turn science fiction into today's reality,” NASA Administrator Charles Bolden said this week. They are part of several hundred new planet candidates identified in new Kepler mission data.

A total of 54 new planet candidates found in habitable zones, areas in the orbits around stars where temperatures should allow for liquid water, researchers said.

These bodies are estimated to range from about Earth-size in diameter to larger than Jupiter. The findings are based observations conducted May 12 to Sept. 17, 2009, of more than 156,000 stars in Kepler's field of view, which covers about one 400th of the sky and lies in the constellations Cygnus and Lyra.

“The fact that we've found so many planet candidates in such a tiny fraction of the sky suggests there are countless planets orbiting Sun-like stars in our galaxy,” said William Borucki of NASA's Ames Research Center in Moffett Field, Calif., the mission's science principal investigator. “We went from zero to 68 Earth-sized planet candidates and zero to 54 candidates in the habitable zone, some of which could have moons with liquid water.”

Among the stars with planetary candidates, 170 show evidence of multiple planetary candidates, the scientists added. The star Kepler-11, located about 2,000 light years from Earth, is described as the most tightly packed planetary system yet discovered. The Kepler-11 findings are to appear in the Feb. 3 issue of the journal *Nature*.

The Kepler telescope looks for planets by measuring tiny decreases in the brightness of stars caused by planets crossing in front of them. The Kepler science team uses ground-based telescopes and the Spitzer Space Telescope to review observations on planetary candidates and other objects of interest the spacecraft finds.