Once again, Kepler is reshaping our understanding of planets

September 19 2011

This has been a good year for Kepler, NASA's planet-hunting satellite telescope.

Last week, a team of astronomers announced they had discovered a planet that orbits two stars – a discovery that already has the field rethinking how planets are formed. And earlier this year, it was announced there are hundreds of possible planets in a small region of the Milky Way Galaxy, including 20 that have already been confirmed. Planets are also being found in a diversity of solar systems. All of this possible because of Kepler.

Three prominent researchers – Jack J. Lissauer, NASA's Ames Research Center; UC Berkeley's Geoffrey W. Marcy; and MIT's Sara Seager – recently discussed how Kepler's discoveries are reshaping thinking about exoplanets. Among the topics: whether scientists need to revisit what they regard as the "habitable zone" in a planetary system – the distance from a star where liquid water on a planet can exist and possibly life.

"The diversity of exoplanets has really forced us to reconsider what the habitable zone really is," said Seager, professor of Physics and the Ellen Swallow Richards Professor of Planetary Science at the Massachusetts Institute of Technology and faculty member at the MIT Kavli Institute for Astrophysics and Space Research. "For example, some super-Earths are massive enough that they could retain a different atmosphere than we have on Earth. These super-Earths may hold on to the light gases, hydrogen or hydrogen and helium. In this case, if they have a massive

atmosphere they could have a massive greenhouse effect. This could actually increase the range of the habitable zone in a planetary system."

Marcy agreed. "We have very Earth-centric views of what conditions are necessary for life…. **ut we now know there are many other types of planets, maybe even moons around planets, where there could be the conditions necessary for life," said Marcy, professor of astronomy at the University of California, Director of U.C. Berkeley's Center for Integrative Planetary Science, and a co-investigator on the Kepler space telescope mission. "So we're beginning to broaden our perspective about what types of planets and environments might be suitable for life."**

More information: The complete dialogue is available at: www.kavlifoundation.org/scienc … exoplanets-milky-way

Provided by The Kavli Foundation

Citation: Once again, Kepler is reshaping our understanding of planets (2011, September 19) retrieved 20 April 2024 from https://phys.org/news/2011-09-kepler-reshaping-planets.html