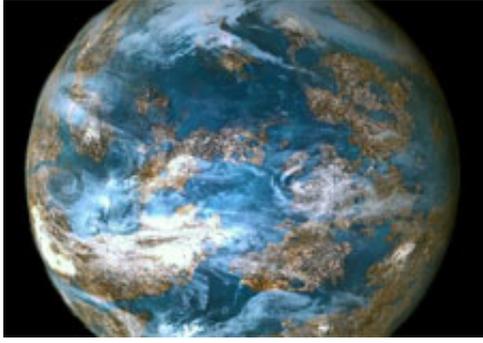


Astronomers Say Milky Way Has Around 2 Billion “Earth Analog” Planets (That’s the Bad News)



What’s the News: Based on early Kepler data, astronomers say that the Milky Way galaxy may house at least two billion Earth-like planets—one for every several dozen sun-like stars. As NASA researcher [Joseph Catanzarite told Space.com](#), “With that large a number, there’s a good chance life and maybe even intelligent life might exist on some of those planets. And that’s just our galaxy alone — there are 50 billion other galaxies.” But while 2 billion sounds like a lot, it’s actually far below many scientists’ expectation; Catanzarite says his teams’ findings actually show that Earth-like planets are “[relatively scarce](#).”

How the Heck:

- Using mathematical models to plot the size and orbital distance for all the potential planets spotted during four months’ worth of Kepler data, astronomers extrapolated the data and calculated that 1.4 to 2.7% of the Milky Way’s sun-like stars may have an Earth analog.
- Two percent of the Milky Way’s roughly one hundred billion sun-like stars means that “you have two billion Earth analog planets in the galaxy,” [Catanzarite told National Geographic](#).

What’s the Context:

- The Kepler team recently announced a [mother lode of 1,200 potential alien worlds](#) (68 of them about Earth size), a tightly scrunched-up [mini solar system](#), and a bizarre “[styrofoam](#)” world; unfortunately, the “[most Earth-like planet](#)” planet it found so far got a major demotion: it’s not actually habitable.

Not So Fast:

- MIT astronomer [Sara Seager says](#) that the team “completely underestimates the frequency of Earths.” The calculations are based on only four months of Kepler data —too early to be making an accurate projection.
- There’s also the fact that Kepler can only detect the size and orbital distance (and occasionally the masses) of planets, which doesn’t tell you whether life as we know it could actually live there; Venus, for example, would roughly like Earth to aliens peering at us from many light-years away, but because of its atmosphere’s runaway greenhouse effect, it’s way too hot to be habitable.

Next Up: The astronomers plan on calculating an even more accurate number once all of

Kepler's data is in.

Reference: Joseph Catanzarite and Michael Shao. "The Occurrence Rate of Earth Analog Planets Orbiting Sunlike Stars." [arXiv:1103.1443v1](#) *Image: Kepler/NASA*

March 30th, 2011 1:35 PM Tags: [astronomy](#), [Earthlike planets](#), [exoplanets](#), [habitable](#), [Kepler](#), [new planets](#)

by [Patrick Morgan](#) in [Space](#) | [4 comments](#) | [RSS feed](#) | [Trackback >](#)