Exoplanet Diversity in the Era of Space-Based Direct Imaging Missions

What is the science question? What is the diversity in the kind of exoplanets detected by direct imaging missions?

What were your findings?

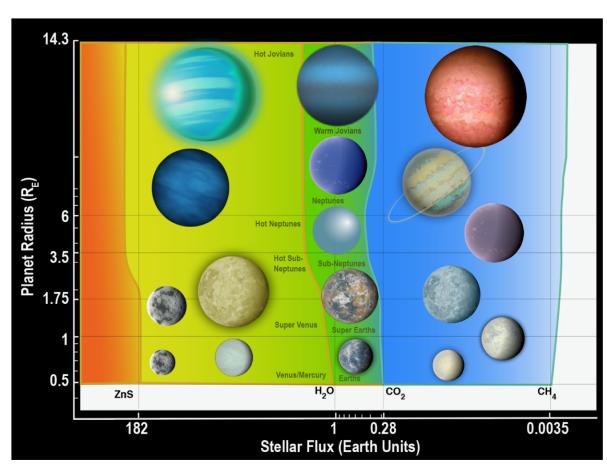
We propose a classification scheme that separates exoplanets into different categories based on their size and incident stellar flux.

What was the impact?

This classification scheme can be used to calculate the expected number of exoplanets that will be observed with different direct imaging missions.

Why does it matter to nonscientists?

This study puts in perspective how different our solar system planets are when compared to those in other planetary systems.



Diversity of planets detectable with a direct imaging telescope. The chemical species listed at the bottom indicate the kinds of clouds found in planetary atmospheres.

Ravi kumar Kopparapu, Eric Hebrard, Rus Belikov, Natalie M. Batalha, Gijs D. Mulders, Chris Stark, Dillon Teal, Shawn Domagal-Goldman, Avi Mandell, 2018, "Exoplanet Classification and Yield Estimates for Direct Imaging Missions", Astrophysical Journal, in press: arXiv:1802.09602