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国台学术报告 NAOC COLLOQUIUM

2015 年 第 02 次 / Number02 2015

Time: Wednesday 2:30PM, Jan. 14 Location: A601 NAOC

Architecture and Timing of Planetary Systems

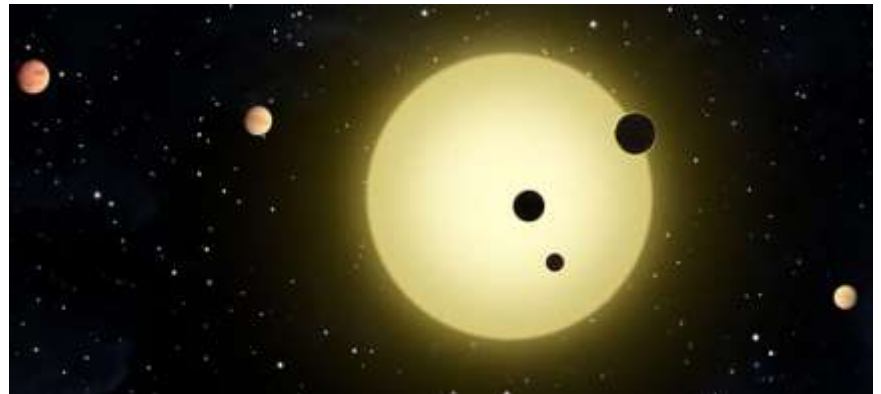
Dr. Daniel Fabrycky (University of Chicago)



Prof. Fabrycky studies how the observations constrain the configurations of exoplanetary systems, as well as how gravitational interactions, tidal effects, and energy dissipation shape them. He received his PhD in 2007 from Princeton University, and was a Michelson and Hubble Fellow prior to taking his current position in 2012 as an Assistant Professor at the University of Chicago.

Abstract

The Kepler mission represents a breakthrough in the dynamics of exoplanetary systems. Over 500 systems with multiple transiting planets have been found. By comparing transit durations of



planets in the same system, we can see that inclinations of planets relative to each other are on the order of 2 degrees, just like in the Solar System. The number of systems with detectably perturbed orbits is now over 100. Models of the systems with high signal-to-noise transit timing variations (TTVs) can uniquely determine the mass and orbital parameters of the perturbing planet. With continued monitoring, the TTVs in these systems will result in mass-radius measurements for cool exoplanets and inferences on the formation and evolution of exoplanetary systems.

All are welcome! Tea, coffee, biscuits will be served at 2:15 P.M.