Exoplanets in Unlikely Places

Daniel Fabrycky

Department of Astronomy and Astrophysics

The University of Chicago

Friday, February 21, 2025, 3:30pm

Planetary Hall 120, George Mason University

Abstract: Planet formation has proven to be a robust side-effect of star formation, via the high occurrence rate of exoplanets. To learn more about this process, it is instructive to find and study planets in dynamical settings that are naively surprising. I detail research on two such settings — (a) period resonance among multiple planets in the same system and (b) planets orbiting exterior to binary stars. In both cases, the emerging properties of the population help us understand how planets interact with, and migrate within, the disks in which they form.

Bio: Prof. Fabrycky studies the dynamics of extrasolar planets. Over the past 2 decades, discoveries of planets orbiting other stars have poured in from a variety of different detection techniques, and the resulting menagerie of planetary types and system architectures poses many theoretical issues. Prof. Fabrycky studies how the observations constrain the configurations of these exoplanetary systems, as well as how gravitational interactions, tidal effects, and energy dissipation shape them.