

CIPS Planetary Lunch (Joint with Theory Lunch)
Wednesday, Apr. 2, 544 Campbell Hall, Noon - 1:00pm

***"Two Problems in Planet Formation:
The Kuiper Belt and Hot Jupiters"***

Ruth Murray-Clay
UCB Astronomy

The past 15 years have produced a plethora of observations that address the question of how planetary systems form. I will discuss clues to planet formation in two settings:

(1) Nearly a quarter of the ~500 Kuiper belt objects with securely determined orbits are in mean-motion resonance with Neptune. The planet likely captured these KBOs as it scattered planetesimals and migrated outward. Does the "noise" inherent in migration driven by discrete scattering events interfere with a planet's ability to capture bodies into resonance?

(2) About 1 in 5 of the ~200 extrasolar planets discovered to date are "hot Jupiters," which likely migrated from their birthplaces to distances less than 0.05 AU from their host stars. Photoionization heating from UV radiation incident on the atmospheres of hot Jupiters drives planetary mass loss in the form of hydrodynamic winds. What are the properties of these winds, and how much mass will a hot Jupiter lose over its lifetime?