

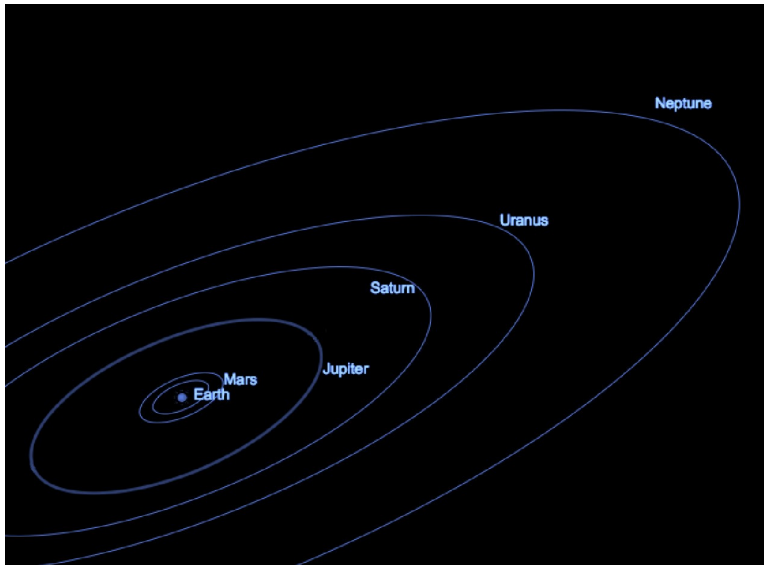
Exoplanets on Wide Orbits

Radek Poleski

Ohio State University

2/1/2017

Solar System

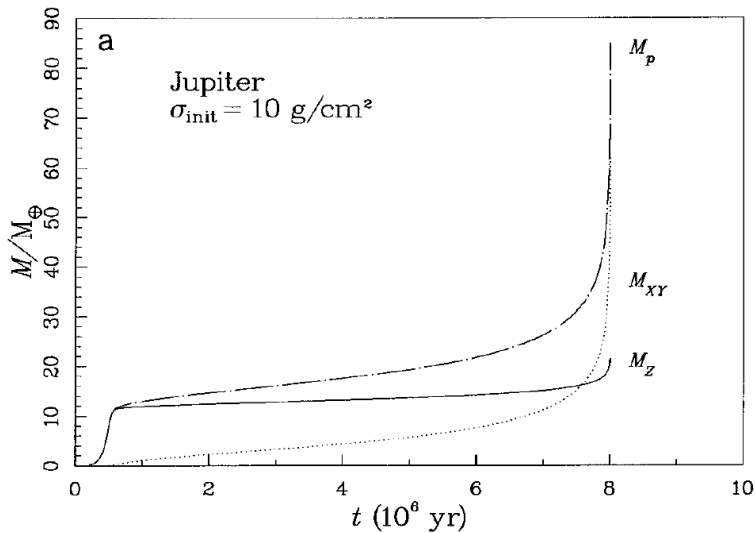


Why ice giants are hard to study?

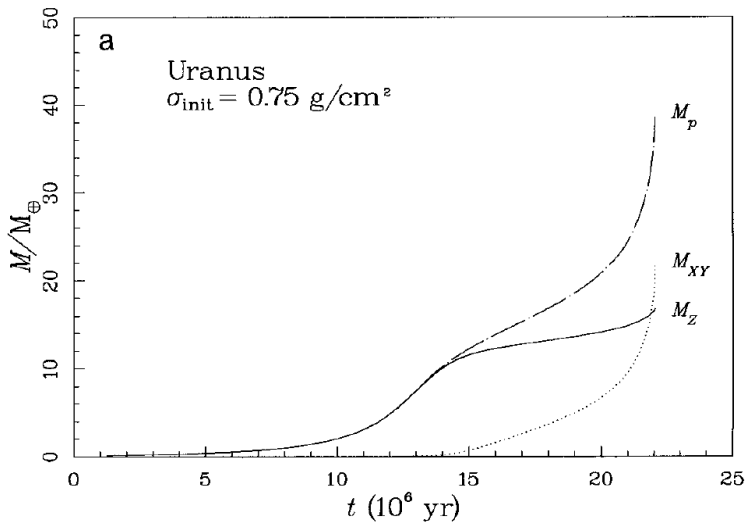
Why ice giants are hard to study?

July 10, 2011

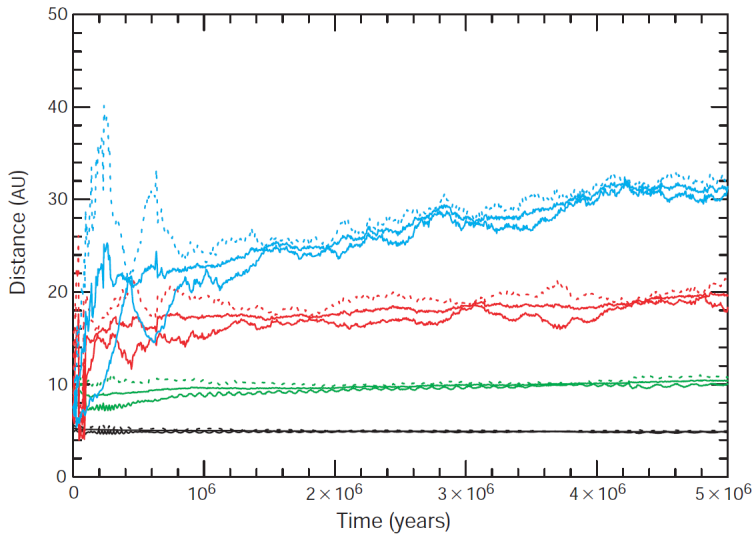
Jupiter formation



Uranus formation



Uranus formation – migration



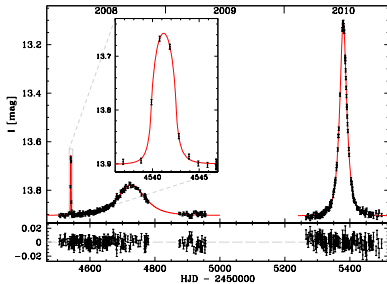
Microlensing discoveries

OGLE-2008-BLG-092

$s = 5.3$

$q = 2.4 \times 10^{-4}$

Poleski et al. 2014

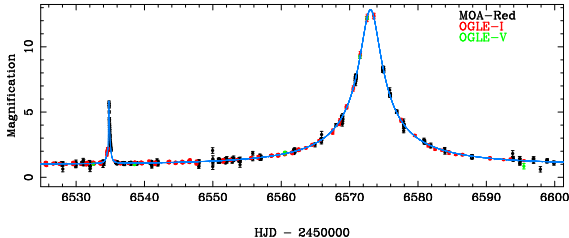


MOA-2013-BLG-605

$s = 2.4$

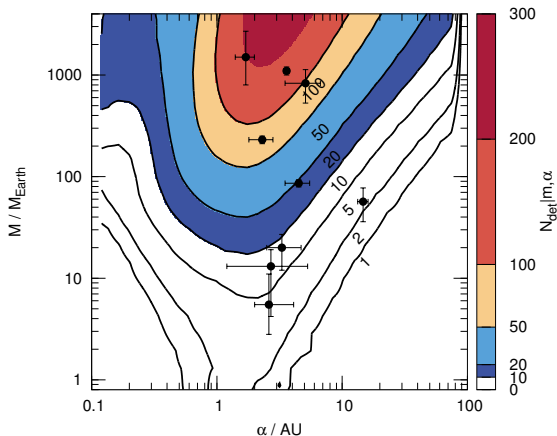
$q = 3.6 \times 10^{-4}$

Sumi et al. 2016



OGLE-2011-BLG-0173, MOA-2012-BLG-006, OGLE-2012-BLG-0838, ...

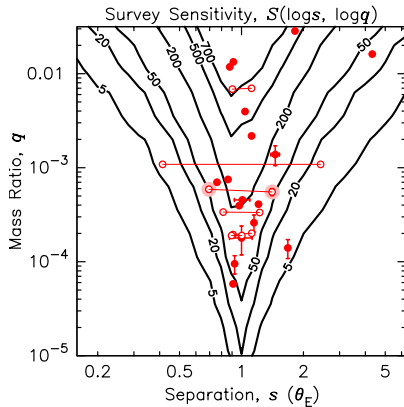
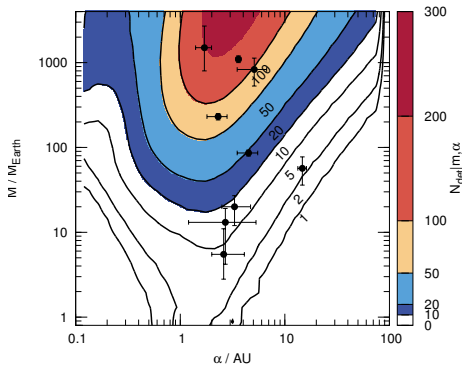
First rough estimate of occurrence rate



Tsapras et al. 2016

Expected number of planet detections for OGLE-III survey.

First rough estimate of occurrence rate



Future

- ⌘ Occurrence rate.
- ⌘ Additional system components.
- ⌘ Mass measurements.
- ⌘ Information for WFIRST and Euclid programs, including concurrent observations.