Characterization of Small Transiting Planets

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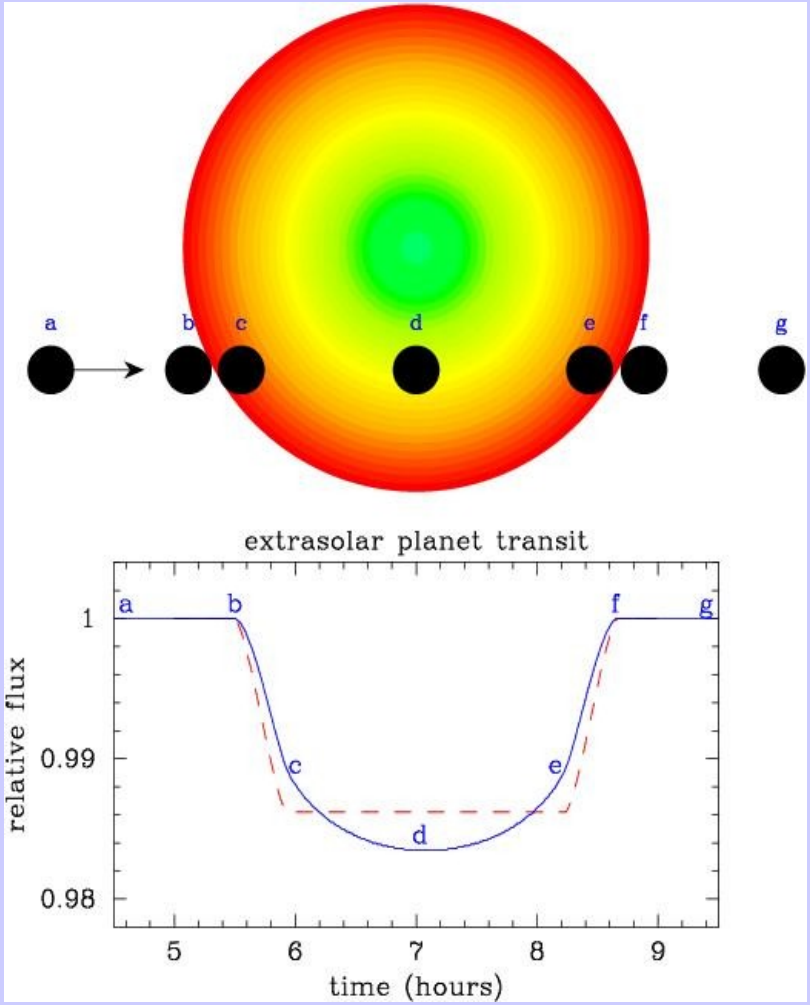
Methods & Goals

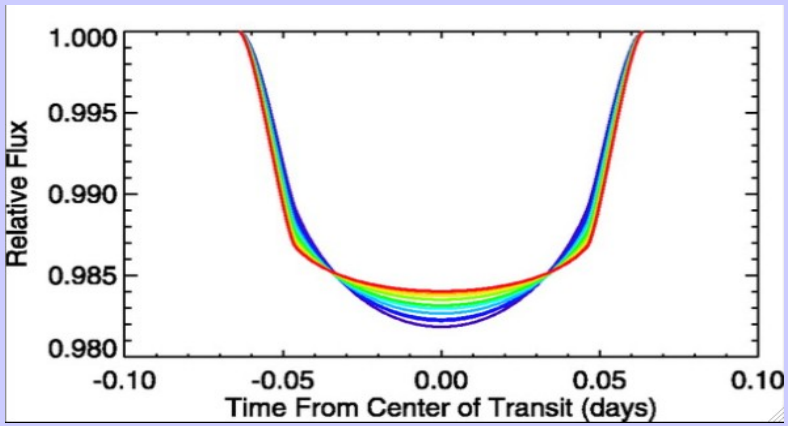
-- Simulate and model limb-darkened transit light curves

-- Constrain transit duration and planet-star radius ratio of planets to be discovered by Kepler and CoRoT

-- Determine best candidates for ground-based follow-up in the near-infrared

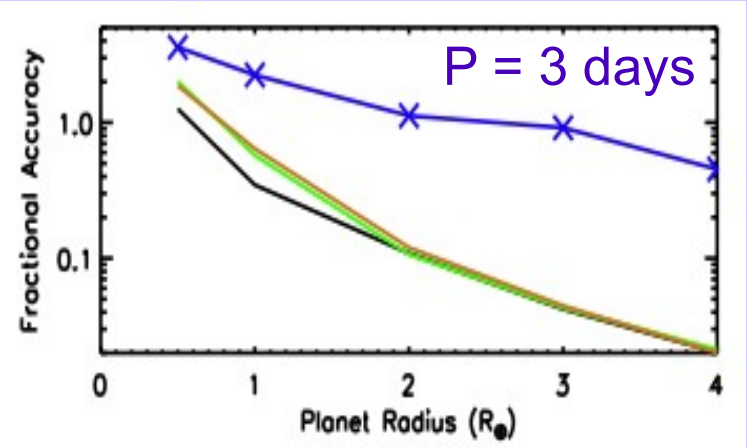


(http://www.transitofvenus.co.nz/)

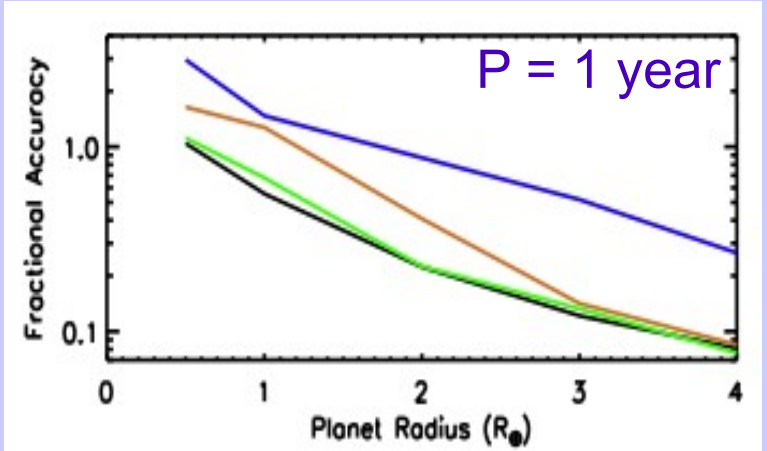


(Knutson et al. 2007)

Results *(based on Colón & Ford 2009, submitted to ApJ)*



Ground Only
Space Only
Space + 1 Ground
Space + Many Ground



-- Small planets ($R_p < 4\ R_\oplus$) benefit most

-- Short-period planets benefit from addition of multiple ground-based LCs

-- Long-period planets benefit from addition of at least one ground-based LC

Other Research

-- Use the 10.4 meter Gran Telescopio Canarias (GTC) to push to higher ground-based precisions for transit observations

-- To date, transits of HAT-P-3 and TrES-2 have been observed