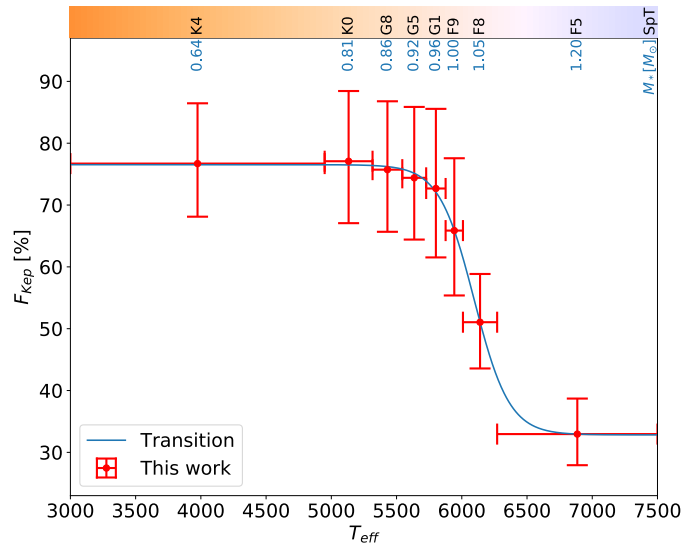




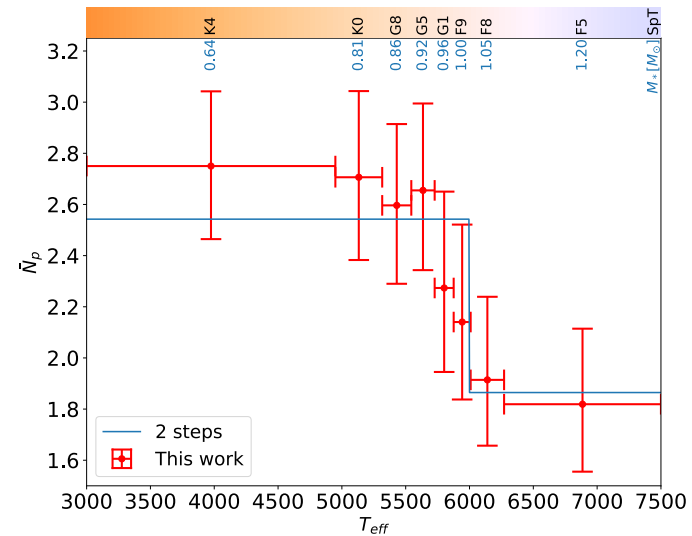
Occurrence and Architecture of *Kepler* Planetary Systems as Functions of Stellar Mass and Effective Temperature

Jia-Yi Yang^{1,2} , Ji-Wei Xie^{1,2} , and Ji-Lin Zhou^{1,2}
 杨佳祎 谢基伟 周济林

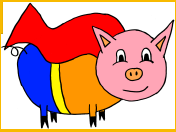
f_{Kep} : Fraction of stars with planets



\bar{N}_p : Average number of planets per system



f_{Kep}, \bar{N}_p decrease as T_{eff} increases,
 f_{Kep} from 75% to 35%, \bar{N}_p from 2.8 to 1.8



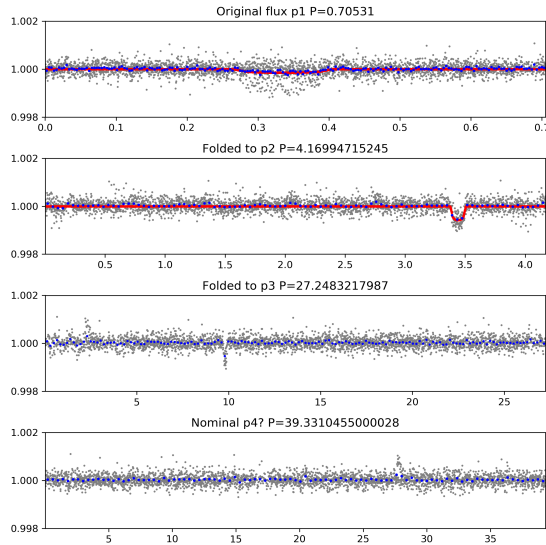
Ultra-short-period Planets Commonly Have Neighbors



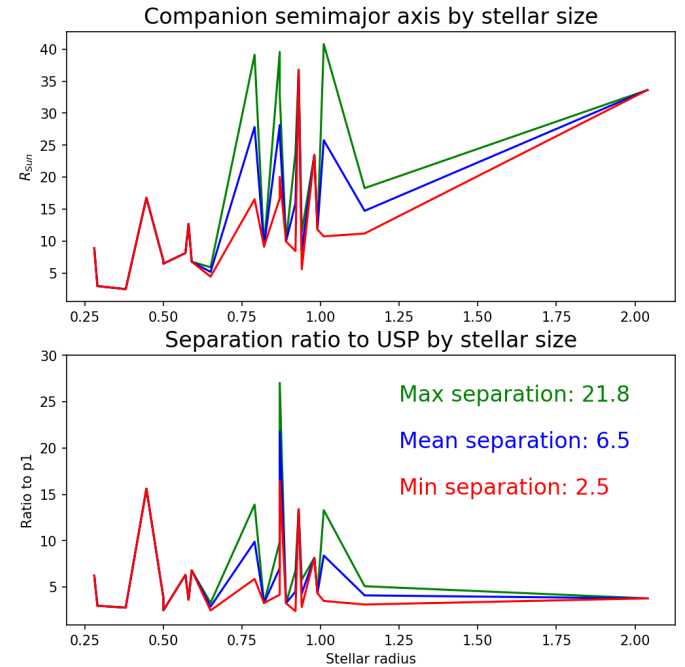
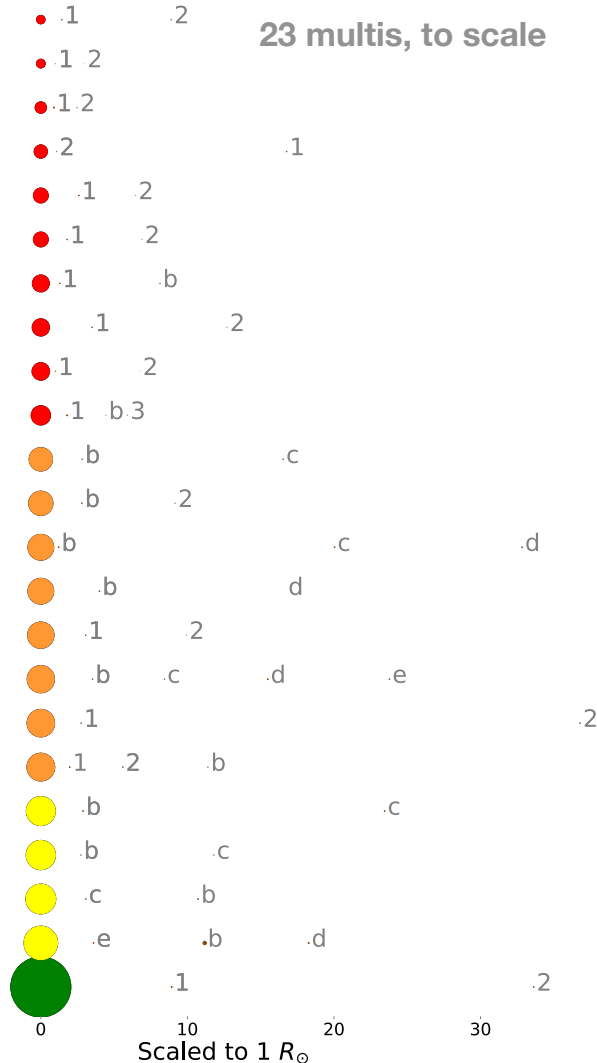
Elisabeth Adams

SuPerPig Reanalysis of K2 systems for Campaigns 0-8, 10

New 2-planet systems: 10
New 3-planet systems: 2



31% of 74 USPs have detected transiting companions



2+ transits
=
systems are well aligned
=
constrains migration theories

Max separation: 21.8
 Mean separation: 6.5
 Min separation: 2.5

Asteroseismic Characterization of TESS Exoplanet Host Stars

UF G

Bernardo Pereira & M. Cristina Rabello Soares

CNPq

UFMG, Brazil

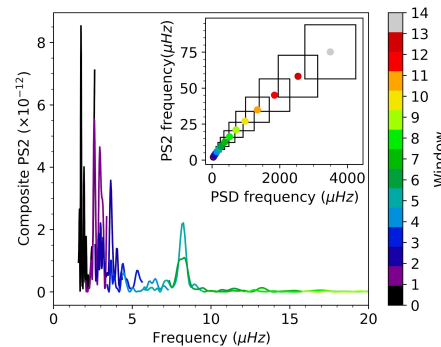
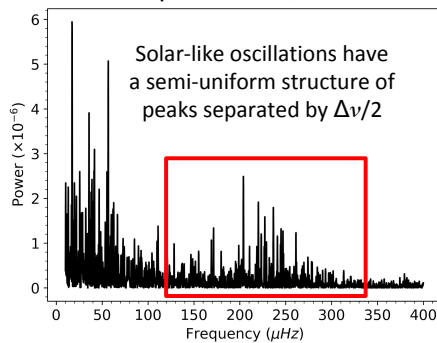
Abstract: We search for solar-like oscillations in known (or candidates) exoplanet hosts observed by TESS. To accurately determine stellar parameters using global asteroseismic properties, we adapt two established methods to work in a wide range of frequencies, to account for the fact that more evolved stars have lower frequency oscillations with smaller large separations.

Example: HD 212771
(TIC 12723961)

$\Delta\nu = 16.32 \pm 0.17 \mu\text{Hz}$
 $\Delta\nu = 16.25 \pm 0.19 \mu\text{Hz}^*$

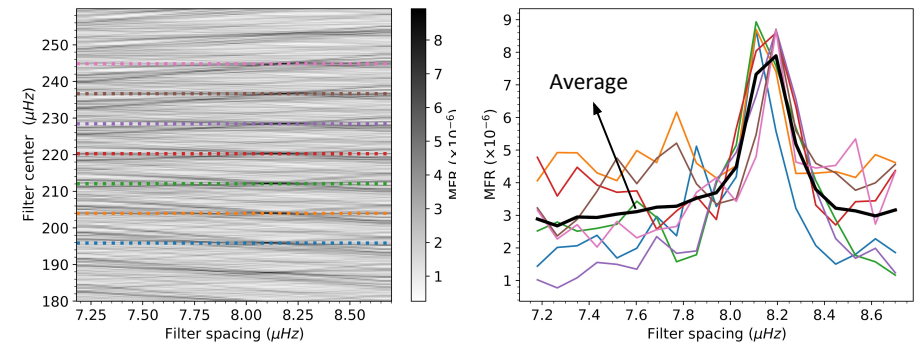
$\nu_{\text{max}} = 230.0 \pm 8.2 \mu\text{Hz}$
 $\nu_{\text{max}} = 226.6 \pm 9.4 \mu\text{Hz}^*$

*Campante et al., 2019



The **Matched Filtered Response (MFR)** is the integral of the power spectrum after a filter of evenly spaced delta functions (Gilliland et al., 2011, Lundkvist et al 2016). Here it was calculated as a 2D function of the filter center and spacing. Local maxima appear where the filter matches the oscillation peaks, that is, when the spacing is $\Delta\nu/2$ and the center is at one of the central peaks.

* By averaging the filter center at the maxima we can also estimate ν_{max} .



Updated mass-radius relation for seven TRAPPIST-1 planets + star

Agol et al., PSJ submitted

- ~400 transit times
- TTVs $\rightarrow M_p/M_\star$
- Light curve $\rightarrow R_p/R_\star, \rho_\star$
- $L_\star \rightarrow M_\star$

Planet quantity:	Fractional precision:
R_p	1-2%
M_p	3-5%
ρ_p	3-8%

- **Consistent with single composition** (low iron? core-free?)

