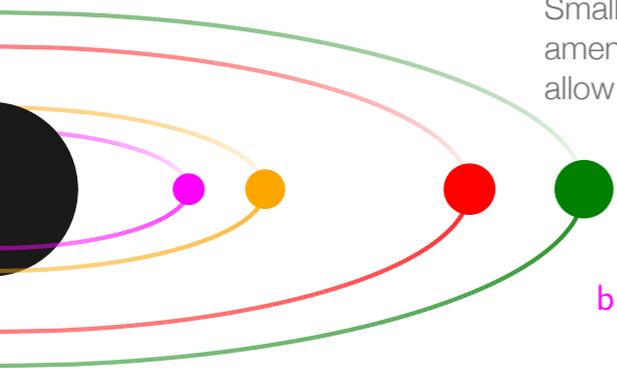


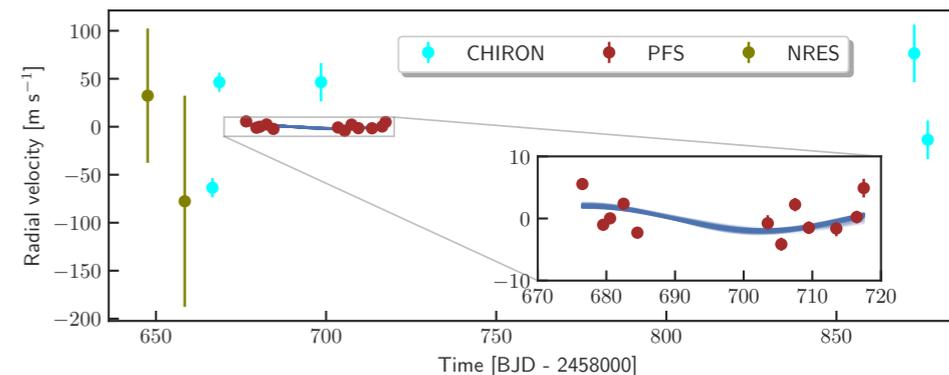
TESS discovery of a super-Earth and three sub-Neptunes hosted by the bright, Sun-like star HD 108236

Tansu Daylan (Kavli Fellow, MIT) et al., <https://arxiv.org/abs/2004.11314>



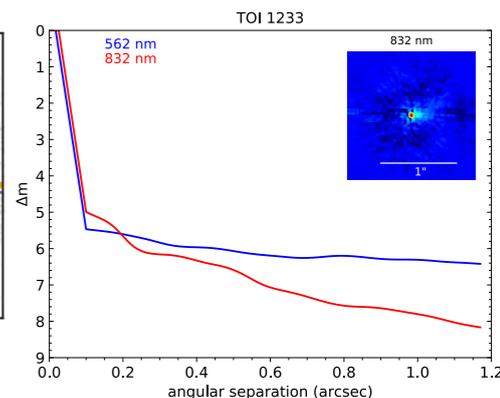
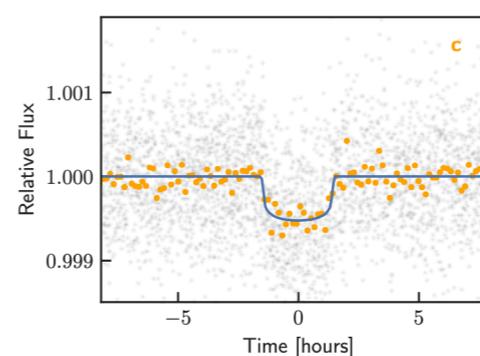
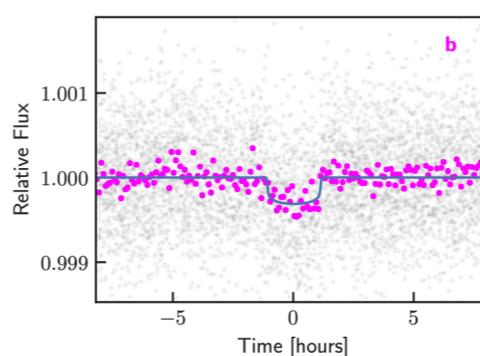
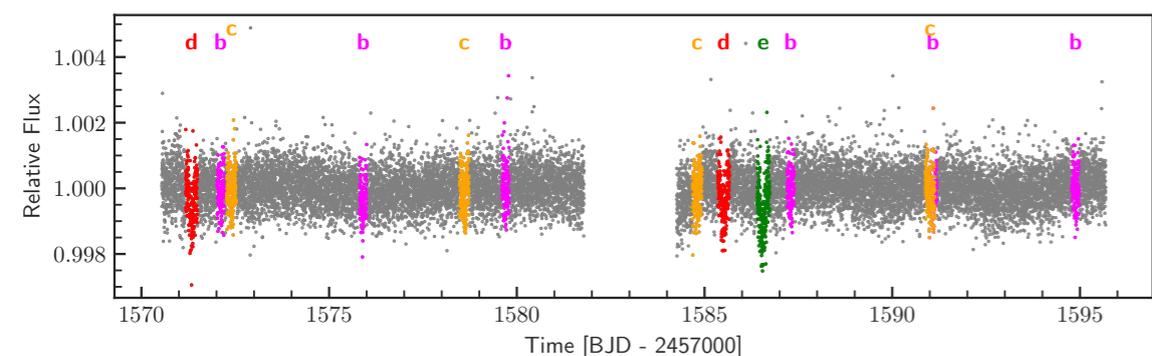
Small exoplanets transiting **bright** stars are **opportune** systems that are amenable to mass measurements and atmospheric characterization and allow us to place our planet Earth in context.

Furthermore, **multiple small** exoplanets hosted by the same **bright** star provide cosmic laboratories to perform controlled tests of models of planet formation, atmospheric evolution, and orbital dynamics.

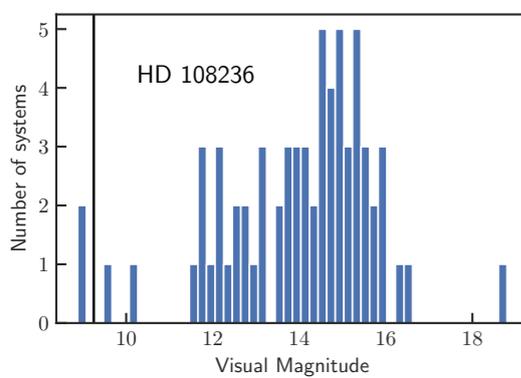
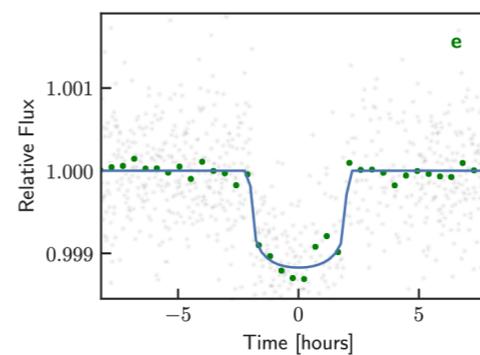
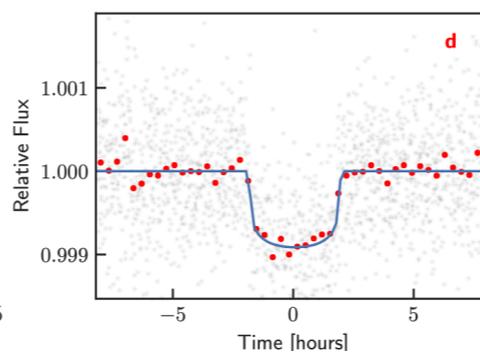
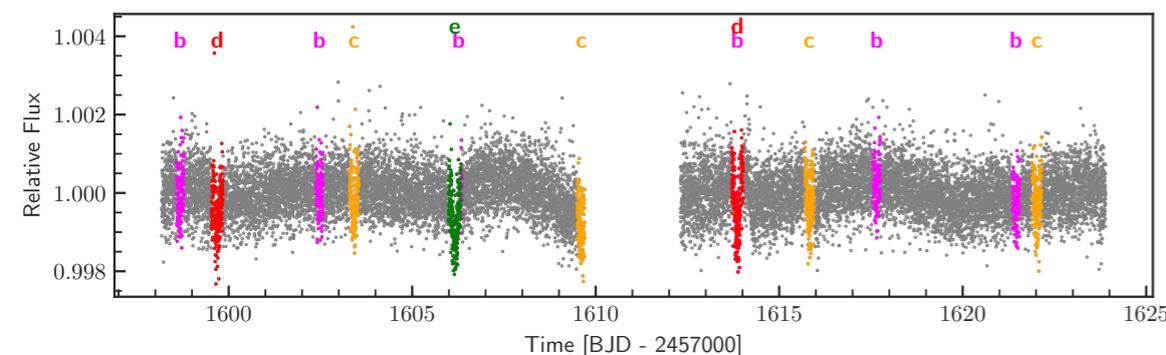


Radial velocity follow-up ruled out eclipsing binaries with similar brightness.

A recent highlight from the TESS mission is the discovery of the exoplanet quartet transiting HD 108236.

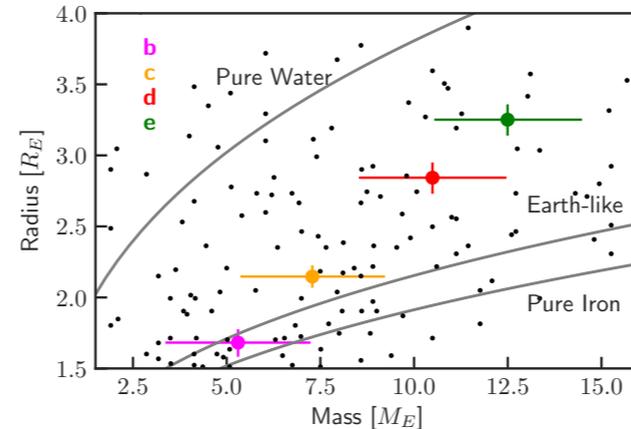


High resolution imaging ruled out wide binaries.



HD 108236 is the third brightest star hosting at least four transiting exoplanets, behind Kepler 444 and HIP 41378.

It is also the brightest Sun-like star hosting at least four transiting exoplanets.



Conclusion

- No TTVs have been observed in the TESS data.
- The system has been shown to be dynamically stable.
- Mass measurements of TOI 1233 b, c, d, and e are underway. It is likely that b is a rocky super-Earth and the outer planets are sub-Neptunes.
- The exoplanets span a wide range of bulk compositions and insulations.