



Contribution ID: 35

Type: **Oral**

## TASSIE: a TASmanian Search for Inclined Exoplanets

*Wednesday 9 July 2025 17:15 (15 minutes)*

The Transiting Exoplanet Survey Satellite (TESS) is a nearly all-sky survey taking precise photometric measurements of millions of stars in our galaxy. It has become a powerful tool in the search for exoplanets, along with contributing to studies of stellar evolution through asteroseismology. By targeting bright stars amenable to radial velocity follow-up, the TESS mission aims to increase our statistical sample of exoplanets with accurate radius and mass measurements. It will also provide excellent targets for future atmospheric characterization through transmission spectroscopy. This will help to address outstanding issues in planet formation and evolution, such as testing classic core accretion and migration scenarios.

At the UTAS Greenhill Observatory, we have commenced a photometric follow-up program for southern transiting planets with the new Harlington 50 cm telescope. We specifically focus on candidates residing in the sub-Jovian desert, a region of the period-radius parameter space where it is rare to find planets. The boundaries of the desert are shaped by evolutionary processes, such as photoevaporation and migration. In this talk, I will present our first results with the observations and analysis of five short-period TESS candidates. We show that three of these targets are false positives from grazing eclipsing binaries or stellar activity. More excitingly, we identify an interesting system with a potential desert planet in a wide binary system. I will also present preliminary modelling of a new two-planet system currently under investigation.

**Author:** PLUNKETT, Thomas (University of Tasmania)

**Presenter:** PLUNKETT, Thomas (University of Tasmania)

**Session Classification:** Planets