

We use OPTICAM and SAINT-EX for transit follow-up observations

The Observatorio Astronómico Nacional en la Sierra de San Pedro Mártir (OAN-SPM) in Baja California, México, hosts OPTICAM, a three-camera system equipped with sCMOS detectors and three filters from the SDSS set (g' , r' , i') to be used with the 2.1m Telescope [1]. We use PROFE, a custom pipeline to reduce OPTICAM data and obtain high-precision (<1 ppt/10min) transit light curves, enabling multiband photometry of transiting exoplanets [2]. OAN-SPM also hosts SAINT-EX, a 1-m robotic telescope equipped with a CCD camera and a filter wheel with broadband filters [3].

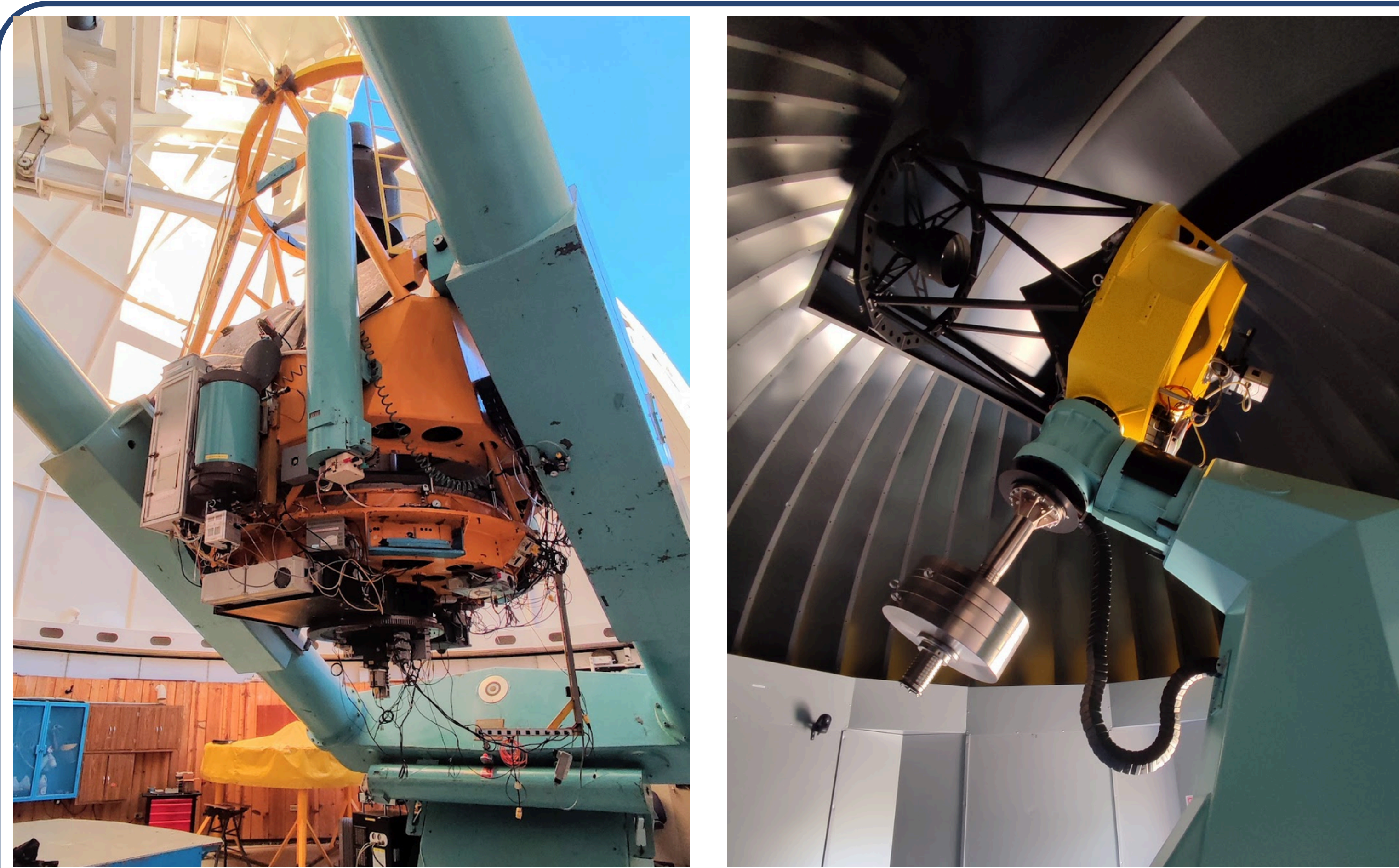


Fig. 1. Left: 2.1m Telescope+OPTICAM. Right: SAINT-EX telescope.

Acquired transit follow-up data



~250 h with OPTICAM since 2023 and **~500 h with SAINT-EX** since 2019 of follow-up observations of TESS planet candidates per filter.

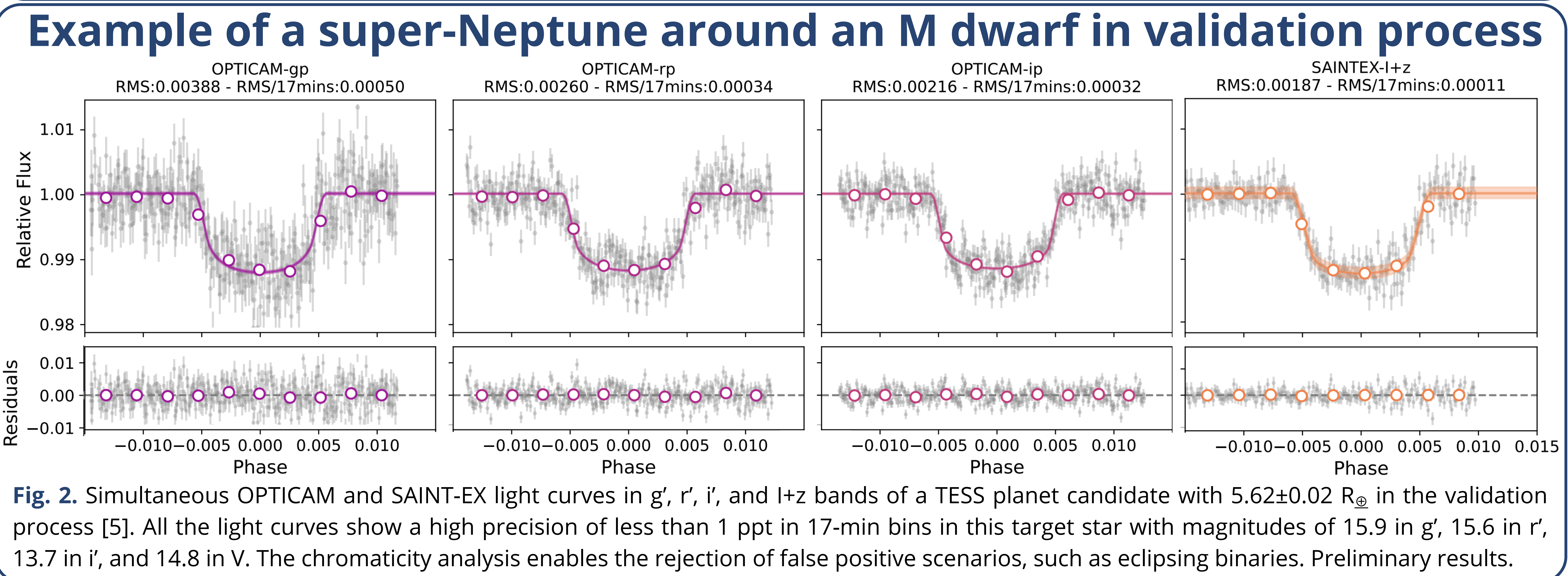


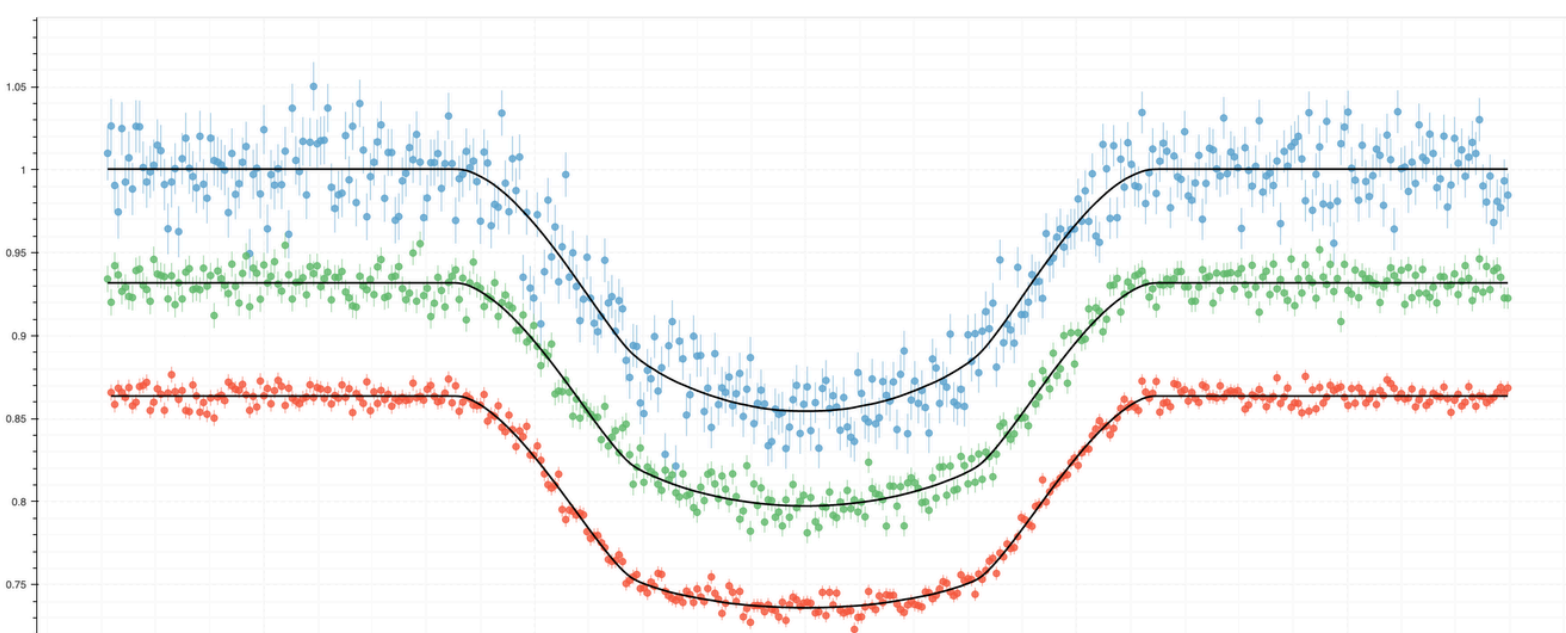
~35 M and FGK target stars



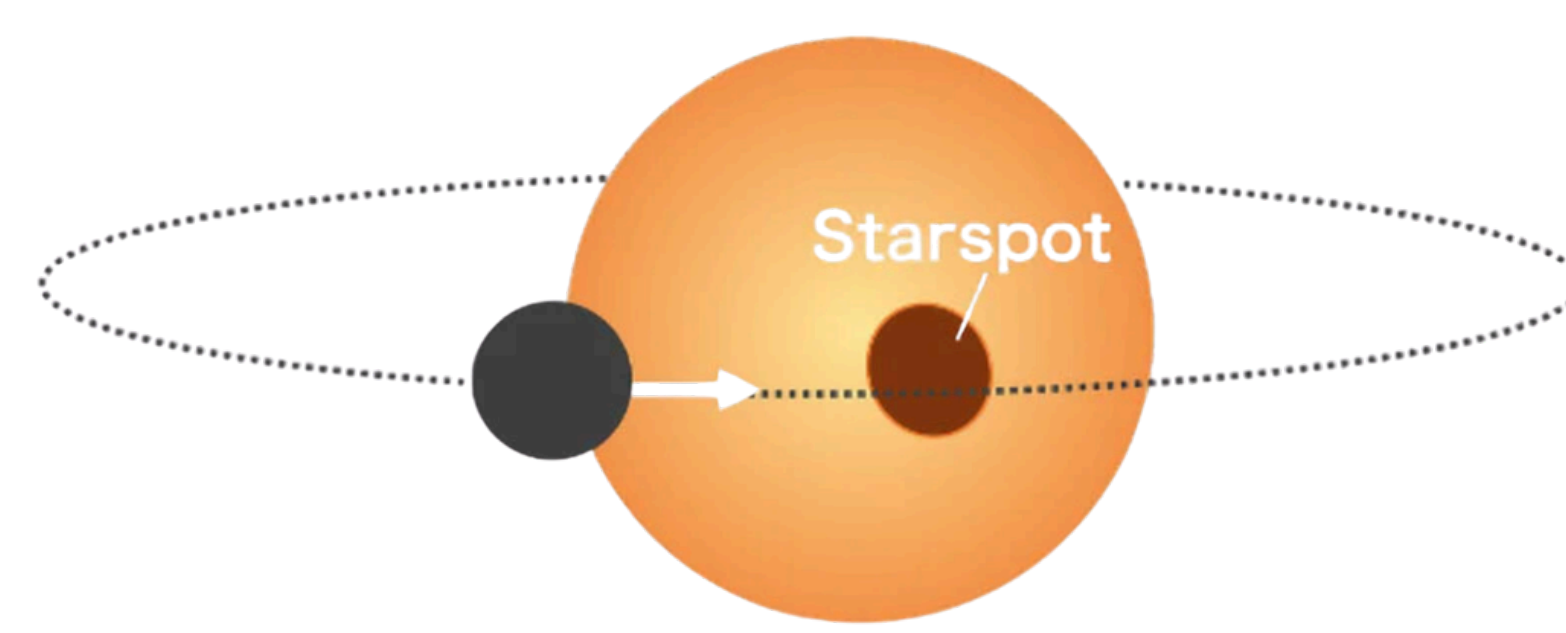
V magnitudes from **~10** to **~16**

With these observations, we are actively contributing to validation or confirmation of new transiting exoplanets through the Exoplanet Follow-up Observing Program TESS (ExoFOP-TESS) as part of the Seeing-limited Working Group (SG1) [4].





Using our multiband data, we can achieve a 4-5x more precise TESS+follow-up fit for R_p/R_* , a/R_* , and inclination angle than with TESS data alone.



Our multiband capacity and precision enable us to study the effects of stellar activity during transits, including spot crossing events [6].



We could follow up on Roman Space Telescope planet candidates detected around M dwarfs, given an expected yield of 33 ± 9 planets in a 30-day survey [7].