

Contributed Talk

Splinter Exoplanets

DETECTING THE VARIATION OF MEASURED SPIN-ORBIT ANGLES OF
EXOPLANET DUE TO THE STELLAR ACTIVITY

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The occultation of stellar active regions by the transiting exoplanet can generate anomalies in the high-precision photometric transit light-curves, and lead to an inaccurate estimate of the planetary parameters. Since the physics and geometry behind the transit light-curve and the Rossiter-McLaughlin (RM) effect are the same, the RM observations are expected to be affected by the occultation of a stellar active region in a similar way. Recently, Oshagh et al. 2016 demonstrated, by using simulations, that the inaccurate estimation on the spin-orbit angle owing to stellar activity can be significant (up to 40 degrees). In this talk I will present the preliminary result obtained from our simultaneous high-precision RM measurements (performed by HARPS) and photometric transit light-curve (through TRAPPIST telescope) during several consecutive transits of several transiting planets which they transit very active stars. Our results reveal, for the first time, the detection of variation in the measured value of spin-orbit angle due to variation in the stellar spots configuration between different transits.