

Modelling observability of Star-planet interaction

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Abstract

Exoplanets sufficiently close to their host star can couple electromagnetically to the star. This process is known as electromagnetic star-planet interaction (SPI). So far there is no clear observational evidence for SPI because of the usually bright intrinsic stellar emissions. We apply semi-analytic approaches to model the properties of SPI. The understanding of basic physical phenomena could help to identify signals of SPI in stellar lightcurves. We chose the TRAPPIST-1 system for our studies. Its seven planets make it an intriguing system for the search of SPI. We show that SPI is possible in this system and discuss its observability.