

Poster

Splinter Plasma

ELECTROMAGNETIC STAR-PLANET-INTERACTION AT TRAPPIST-1

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We investigate the TRAPPIST-1 system with its seven close-in terrestrial planets for possible electromagnetic star-planet-interactions. Our results show that the innermost planets, especially TRAPPIST-1b and c, are subject to sub-Alfvénic interaction. Both planets are therefore expected to generate Alfvén wings, that can couple to the star. Our model describes the stellar wind in a semi-analytic approach as a thermal wind, according to the Parker-model. Therefore we can estimate the Alfvén Mach number at each planet for different sets of parameters. That allows for conclusions about the type of electromagnetic interaction.