



RSPP seminars



UNIVERSITY OF
LEICESTER

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“Stellar systems at low radio frequencies: The discovery of radio exoplanets”

For more than thirty years radio astronomers have searched for auroral emission from exoplanets. With LOFAR we have recently detected strong, highly circularly polarised low-frequency (144 MHz) radio emission associated with a M-dwarf - the expected signpost of such radiation. The star itself is quiescent, with a 130-day rotation period and low X-ray luminosity. In this talk, I will detail how the radio properties of the detection imply that such emission is likely generated by the presence of an exoplanet in a short period orbit around the star, and our follow-up radial-velocity (RV) observations with Harps-N to confirm the exoplanet's presence. Our study highlights the powerful new and developing synergy between low-frequency radio astronomy and RV observations, with radio emission providing a strong prior on the presence of a short-period planet. I will conclude the talk detailing how the radio detection of a star-exoplanet interaction provides unique information for exoplanet climate and habitability studies, and the extension of our survey to other stellar systems.

**Wednesday, February 19th at 2 pm in
Physics LTD**