Detection and Dynamics of Exoplanets (DDE): Interplay between theory and observations



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Detecting Circumbinary Planets via Apsidal Precession

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Of the thousands of known exoplanets, only fifteen are circumbinary, oribiting two stars instead of one. All of these systems have been detected via transit photometry, which requires a low mutual inclination for all three objects to eclipse. However, over a long time baseline a wide planetary-mass companion to a binary system will induce orbital precession, modulating the relative eclipse timing of the host stars. We are conducting a search for planetary systems by identifying systems which have detectable apsidal precession over decades between observations with WASP, KELT, TESS, and others. I will present an overview of our survey, the first candidates, and future plans to confirm and characterise these potential planets.

Presenter: MONTET, Benjamin (University of New South Wales) **Session Classification:** Planets in binary systems