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TITLE: Polarimetry and Biosignatures

ABSTRACT BODY:

Abstract Body: Polarised light detections from exoplanetary systems are becoming a viable approach to planet characterisation with recent (Lucas 2009; Berdyugina 2008 & 2011) possible detections of polarised light from exoplanets and new, highly sensitive polarimeters being built (Bailey 2015). Polarised light observations are advantageous to photometry owing to the improved contrast between the star's light and that of the planet. The information garnered through polarimetric measurements can currently provide information on the habitability of planets by helping us to characterise their atmospheres and orbits. We provide an analysis of the current capabilities of the highest precision polarimeters in the world and the data they can provide, with new results from recent observations of exoplanetary systems. We also assess the near future possibilities for detection of liquid water via polarimetry and the possibilities of other biosignature detections.

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