

Image Formation in High Contrast Optical Systems: The role of polarization

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ABSTRACT

To find evidence of life in the Universe outside our solar system is one of the most compelling and visionary adventures of the 21st century. The technologies to create the telescopes and instruments that will enable this discovery are now within the grasp of mankind. Direct imaging of a planet around a neighboring star requires high contrast optical imaging systems. This paper shows that the quality of image formation in high contrast imaging systems, and thus the probability of detecting planets, depends on the role of polarization and partial coherence in the image formation process. A typical configuration is analyzed, and technical risk mitigation concepts are discussed.

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Note:

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