

FABRICATION AND CHARACTERISTICS OF FREE STANDING SHAPED PUPIL MASKS FOR TPF-CORONAGRAPH

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ABSTRACT

Direct imaging and characterization of exo-solar terrestrial planets require coronagraphic instruments capable of suppressing star light to 10^{-10} . Pupil shaping masks have been proposed and designed(1) at Princeton University to accomplish such a goal. Based on Princeton designs, free standing (without a substrate) silicon masks have been fabricated with lithographic and deep etching techniques. In this paper, we discuss the fabrication of such masks and present their physical and optical characteristics in relevance to their performance over the visible to near IR bandwidth.

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