

SIM Internal Metrology Beam Launcher Development

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To accomplish micro-arcsecond astrometric measurement, stellar interferometers such as SIM require the measurement of internal optical path length difference with an accuracy of better than 0.1nm. A novel common-path laser heterodyne interferometer suitable for this application was proposed and demonstrated at JPL. In this paper, we present some of the experimental results from a laboratory demonstration unit and design considerations for SIM's internal metrology beam launcher.