

## Space-Based Optical Projects

By

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### Abstract

The Space Interferometry Mission has as its leading scientific goal the detection of "rocky" planets of a few Earth masses in an orbit that can potentially support life. Numerically the goal is to achieve narrow angle astrometry with a precision of  $\sim 1\mu\text{as}$  in a 1 hour observation so that with 25~40 such measurements over a ~5 year period, one could deduce the presence of an Earth mass planet 3 AU from a solar like star at 10 parsec. The talk describes the design of SIM and its metrology system that would make such precise measurements possible.