The Distance of the Large Magellanic Cloud
Global Astrometry with the Space Interferometry Mission (SIM)

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Abstract

In this paper we will discuss the prospects for global astrometric measurements with the Space Interferometry Mission (SIM). SIM will perform four microarcsecond astrometric measurements onpoint-like objects as dim as 20th magnitude using optical interferometric techniques with a 10 m baseline. SIM performs both narrow-angle astrometry, and global astrometry by means of an astrometric grid. We will report on sensitivities of SIM global astrometric performance and grid accuracy vs. instrumental parameters and sky coverage schemes. The problems in finding suitable astrometric grid objects to support microarcsecond astrometry, and ground-based observing programs that address these issues will be discussed.