

Telescope baffling design that minimizes stray light systematics for ground-based experiments, the Simons Observatory case

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The Simons Observatory (SO) is a next generation Cosmic Microwave Background (CMB) experiment aimed to measure evidence of primordial gravitational waves and put constraints on the sum of the neutrino masses. SO is developing a high angular resolution 6 m class Large Aperture Telescope (LAT) for small angular scale measurements, and three wide field-of-view 0.42 m class Small Aperture Telescopes (SATs) for large angular scale measurements. In this talk, I will review the impact that stray light systematics have on high-sensitivity CMB polarization observations. I will discuss the telescope baffling design concepts utilized for ground-based CMB experiments, and describe the SO SAT baffling design currently under development. The SAT baffling is most effective in reducing systematics due to ground signal contamination that currently plague all ground-based CMB experiments.

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