

Abstract Submitted  
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**The Simons Observatory: Precision Cosmology with the Cosmic Microwave Background**<sup>1</sup> SARA SIMON, Univ of Michigan - Ann Arbor, SIMONS OBSERVATORY COLLABORATION — Measurements of the cosmic microwave background (CMB) can constrain the sum of the neutrino masses and the number of relativistic species, expand our understanding of dark energy and dark matter, and set new constraints on cosmological models describing the first moments of the universe. Simons Observatory (SO) will measure the CMB in both temperature and polarization over a wide range of angular scales and frequencies from 27-280 GHz with unprecedented sensitivity. SO will field a set of three small-aperture telescopes that will observe at degree-angular scales and a 6-m large-aperture telescope with arcminute resolution. With over 60,000 detectors, SO's sensitivity represents a leap in performance over current experiments that will advance our understanding of the fundamental physics of the universe. I will give an overview of SO's projected performance and instrument design.

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