



Cosmology with the Next Generation of Cosmic Microwave Background Experiments

JOHANNA NAGY

WASHINGTON UNIVERSITY

Measurements of the polarization of the Cosmic Microwave Background (CMB) are a powerful probe of the composition and evolution of the Universe. From searching for evidence of inflation shortly after the Big Bang to measuring the optical depth to reionization and constraining new fundamental particles, precision CMB measurements provide a unique window into many aspects of cosmology. Upcoming balloon- and ground-based experiments will build on technologies demonstrated by current instruments to overcome the challenges presented by increasing sensitivity, mitigating systematic errors, and separating Galactic foregrounds. I will briefly review some current results and then focus on two upcoming instruments. Taurus is a balloon-borne telescope optimized to measure the optical depth to reionization by mapping CMB polarization on the largest angular scales over roughly 70% of the sky. CMB-S4 is a ground-based experiment consisting of dedicated telescopes operating from multiple sites that will conduct both wide and deep surveys of the microwave sky. Together and in combination with other measurements, these datasets will reveal new insights about the history and contents of our Universe.

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