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The South Pole Telescope: Overview, Recent Results, and Status
BRADFORD BENSON, Fermilab, University of Chicago, SOUTH POLE TELESCOPE (SPT) COLLABORATION — I will give an overview of the South Pole Telescope (SPT) surveys and experiment. The SPT is a 10-meter diameter telescope at the South Pole designed to measure the cosmic microwave background (CMB). The SPT-3G instrument, first deployed in the 2016-17 Austral summer, is a major upgrade in capabilities over previous generations of SPT cameras, with over 16,000 detectors configured for polarization-sensitive observations in three frequency bands (95, 150, 220 GHz). The SPT-3G maps of the temperature, polarization, and lensing potential of the CMB will have an unprecedented combination of depth (2 μK-arcmin in temperature at 150 GHz), resolution (1 arcmin), and sky coverage (1500 deg^2). This unique data set will enable broad and impactful science, including: sensitive constraints on primordial gravitational waves from a joint analysis with the BICEP/Keck experiment, probe the nature of current tensions on cosmological parameter constraints, improve constraints on the sum of the neutrino masses and additional light relativistic particles, and produce unique catalogs of high-redshift galaxy clusters and early star-forming galaxies.

Bradford Benson
Fermilab, University of Chicago

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