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Recent progress from the SPT-3G experiment

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The South Pole Telescope is a millimeter-wavelength telescope dedicated to observations of the Cosmic Microwave Background (CMB). In late 2016, the telescope was upgraded with new receiver known as SPT-3G. The SPT-3G receiver contains a focal plane of approximately 16,000 polarization-sensitive superconducting detectors distributed between three frequency bands. SPT-3G will survey the sky for four years, resulting in extremely deep, high-resolution maps of the polarization of the CMB. With these data, SPT-3G has the potential to constrain inflationary gravitational waves as well as the effect of massive neutrinos on large-scale structure formation. I will describe some of the technological advances enabling the large-format SPT-3G focal plane as well as the current instrument status and cosmological forecasts.

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