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SPT-3G: An Upgraded Cosmic Microwave Background Receiver for the South Pole Telescope JOSHUA SOBRIN, Univ of Chicago, THE SPT-3G COLLABORATION — The 10-meter South Pole Telescope (SPT) surveys the cosmic microwave background (CMB) with arcminute resolution. In early 2017, the SPT was upgraded with a new receiver, SPT-3G, offering improved sensitivity to the temperature and polarization anisotropies of the CMB. Newly implemented optics, detector, and readout technologies have yielded a low-noise, high-resolution camera with impressive throughput and sensitivity across multiple frequency bands (95, 150, and 220 GHz). SPT-3G is undertaking a 4-year 1500 $\deg^2$ survey designed to measure the CMB with unprecedented sensitivity on arcminute angular scales. These measurements will improve cosmological constraints, including the energy scale of inflation, the sum of neutrino masses, and the dark energy equation of state. I will summarize the design principles of the receiver and report on the on-sky performance of the integrated instrument.

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