**South Pole Telescope**

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The SPT is a ten meter diameter off axis Gregorian telescope equipped with a 1000 element bolometer receiver operating at 90, 150 and 220 GHz. The telescope was designed for very low noise. It has ground shields and just one warm mirror, the primary. To simplify the optics design, we placed the exit pupil at the secondary mirror which is surrounded by a ~10K absorbing stop. The entire beam from prime focus to the receiver is enclosed by a cold absorbing box. Both the optics design and frequency multiplexed squid readout for 1000 superconducting bolometers will be discussed in this talk.

We have successfully finished our first season of observations from the South Pole. These observations focused on two different fields: One tailored for measurements of fine scale CMB anisotropy and the other for detection of galaxy clusters using the Sunyaev Zel'dovich effect. These observations will be explained along with the data quality and projected scientific impact.