

SPT-3G Computing

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SPT-3G, the third generation camera on the South Pole Telescope (SPT), was deployed in the 2016-2017 Austral summer season. The SPT is a 10-meter telescope located at the geographic South Pole and designed for observations in the millimeter-wave and submillimeter-wave regions of the electromagnetic spectrum. The SPT is primarily used to study the Cosmic Microwave Background (CMB). The upgraded camera produces an order of magnitude more data than the previous generations of SPT cameras. The telescope is expected to collect a petabyte (PB) of data over course of five years, which is a significantly larger data volume than any other CMB telescope in operation. The increase in data rate required radical changes to the SPT computing model both at the South Pole and University of Chicago. This paper will describe the overall integration of distributed storage and compute resources into a common interface, deployment of on-site data reduction and storage infrastructure, and the usage of the Open Science Grid (OSG) by the South Pole Telescope collaboration.

Primary author: RIEDEL, Benedikt (University of Chicago)

Co-authors: CARLSTROM, John (The University of Chicago); STEPHEN, Judith Lorraine (University of Chicago (US)); BRYANT, Lincoln (University of Chicago (US)); WHITEHORN, Nathan (University of California, Los Angeles); HARRINGTON, Nicholas (University of California, Berkeley); HUANG, Nicholas (University of California, Berkeley); GARDNER JR, Robert William (University of Chicago (US)); RAHLIN, Sasha (Fermi National Accelerator Laboratory); CRAWFORD, Thomas (University of Chicago)

Presenter: RIEDEL, Benedikt (University of Chicago)

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