Experiment Design and First Season Observations with the Degree Angular Scale Interferometer
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abstract
We describe the instrumentation, experiment design and data reduction for the first season of observations with the Degree Angular Scale Interferometer (DASI), a compact microwave interferometer designed to measure anisotropy in the Cosmic Microwave Background (CMB) on degree and sub-degree scales ($l = 100–900$). The telescope was deployed at the Amundsen-Scott South Pole research station during the 1999–2000 austral summer and conducted observations of the CMB throughout the following austral winter. In its first season of observations, DASI has mapped CMB fluctuations in 32 fields, each 34 across, with high sensitivity.