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SPIDER: Exploring the dawn of time from above the clouds

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Our account of cosmic history begins with inflation, a moment of rapid expansion that set the stage for our universe's evolution. This inflationary epoch should have left a very faint imprint upon the sky at millimeter wavelengths: a "B-mode"(odd-parity) pattern of polarization in the cosmic microwave background (CMB). January 1st saw the successful launch of SPIDER, a powerful balloon-borne instrument designed to hunt these echoes of inflation in the presence of contaminating foregrounds. SPIDER's 2400 transition-edge sensor bolometers at 95 and 150 GHz and its vantage point 36 km above the Antarctic ice make it the most instantaneously-sensitive CMB polarimeter yet deployed. I will briefly describe SPIDER, its successful 16-day flight, and our first estimates of its performance. I will close with a preview of SPIDER's second flight, which will employ new receivers designed to peek behind contaminating foregrounds.

Oral or Poster Presentation

Oral

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