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SPIDER: First-Flight Data Analysis Update JEFFREY FILIPPINI, University of Illinois at Urbana-Champaign, SPIDER COLLABORATION — SPIDER is a balloon-borne polarimeter aiming to measure the polarization of the Cosmic Microwave Background with unprecedented sensitivity over about 10southern sky. The payload took off on its maiden flight from McMurdo Station, Antarctica on 1 January 2015, mapping the sky at 95 and 150 GHz. A second flight scheduled for the 2020–2021 austral summer will gather additional data at these frequencies and provide novel measurements at 280 GHz. This latter capability will allow for improved characterization of the polarized emission from interstellar dust, and thereby a more robust constraint on the presence of a primordial divergence-free ("B-mode") polarization pattern in the microwave sky. In this talk, we will provide a progress report on the analysis of the data from SPIDER's first flight. In particular, we will present our understanding of the systematic and Galactic foreground contamination levels in the data, with an emphasis on the uncertainty inherent to the foreground removal processes.

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