



## BFORE: The B-mode Foreground Experiment

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The B-mode Foreground Experiment (BFORE) is a proposed NASA balloon designed to make optimal use of the sub-orbital platform by concentrating on three dust foreground bands (270, 350, and 600 GHz) that complement ground-based cosmic microwave background (CMB) programs. BFORE will survey  $\sim 1/4$  of the sky with 1.7 - 3.7 arcminute resolution, enabling precise characterization of the galactic dust that now

limits constraints on inflation from CMB B-mode polarization measurements. In addition, BFORE's combination of frequency coverage, large survey area, and angular resolution enables science far beyond the critical goal of measuring foregrounds, including velocity measurements or constraints on thousands of galaxy clusters, a new window on the cosmic infrared background, and probes of magnetic fields in the interstellar medium. We review the science case, timeline, and instrument design, which is based on a compact off-axis telescope coupled to >10,000 superconducting detectors.