



NASA's GHAPS Project: A Balloon-Borne Telescope for Planetary Science

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GHAPS is NASA's Gondola for High-Altitude Planetary Science. It is intended to be a competed resource shared by the planetary community. The GHAPS platform is expected to carry a 1-m aperture f/14 Ritchey-Chretien telescope. GHAPS will fly at altitudes around 125,000 ft on zero-pressure flights or 110,000 ft on super-pressure flights. At these altitudes, the GHAPS telescope will have relatively clear access to the IR spectrum from 1 - 5 μm and provide diffraction-limited performance at wavelengths of 500 nm and longer. Zero-pressure flights will most likely launch from Ft Sumner, NM and have durations of 8 - 24 hours. Super-pressure flights are expected to launch from New Zealand and have durations of 30 - 100 days, although all of NASA's Balloon Program Office launch sites are candidates. The first engineering flight is slated for fall 2019 from Ft Sumner, with one super-pressure flight per year scheduled for the following five years. Some of the key challenges of the GHAPS platform will be discussed, including thermal control, wavefront error assessment and pointing stability.