GESTAR II MORGAN STATE UNIVERSITY UNDERGRADUATE FELLOWSHIP

In December 2021, GESTAR II partnered with NASA Goddard Space Flight Center's Earth Science Division to advance Earth science and Goddard's leadership by providing a competitive environment to hire and retain high-quality scientists who are on track to be leaders at NASA, in academia and in industry. GESTAR II exemplifies the power of mentorship, embracing a career development strategy that only a university research center can provide. In GESTAR II, early-career researchers and students can build outstanding resumes, launching them to become the Earth science leaders of tomorrow. GESTAR II has a strong commitment to supporting education, outreach, and fostering collaboration between our scientists and students at Morgan State University.

The Hyper-Angular Rainbow Polarimeter (HARP2) is a unique instrument on NASA's new Plankton Aerosol Cloud ocean Ecosystem (PACE) satellite that can address this need. HARP2 measures the magnitude and polarization of scattered sunlight from the Earth's surface and atmosphere, including clouds. These observations allow us to determine liquid water and ice crystal properties at the tops of clouds in new ways. HARP2 is also a multi-angle instrument. It takes up to 90 separate measurements of the same cloud during an overpass. To properly resolve observations taken at multiple viewing angles to the tops of clouds, the height of the clouds must be well-known, too.

We are seeking an undergraduate research assistant to adapt a simple cloud top height algorithm, developed on aircraft instrument data, to HARP2 cloud data from space (Sinclair et al. 2017; Atmos. Meas. Tech., doi.org/10.5194/amt-10-2361-2017). The student researcher will work alongside scientists at the University of Maryland Baltimore County (UMBC), NASA Goddard Space Flight Center (GSFC), and the Netherlands Institute for Space Research (SRON). The applicant should also have interest in Earth science, satellite instruments, statistics, and demonstrated experience with programming (Python preferred).

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