

Opportunity Title: Solar System Exploration: Solar System Astrophysics at Infrared Wavelengths

Opportunity Reference Code: 0070-NPP-NOV23-GSFC-PlanetSci

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0070-NPP-NOV23-GSFC-PlanetSci

Application Deadline 11/1/2023 6:00:59 PM Eastern Time Zone

Description Atomic and molecular constituents are studied in remote sources using techniques of high-resolution spectroscopy at infrared (IR) wavelengths. Fully resolved spectral line profiles are measured with heterodyne, grating, and Fourier-transform spectrometers, and their intensities and shapes are used to determine abundances, kinetic and excitation temperatures, pressures, velocity shifts, and turbulence. Current research objectives include topics in planetary atmospheres, including the atmospheres of extrasolar planets, comets, and other astrophysical objects, including planetary systems at all stages of formation and evolution. Extensive development of instrumentation is pursued, particularly on IR heterodyne spectrometers and advanced techniques for fully exploiting grating and Fourier-transform spectrometers. Grating-tuned and optically pumped gas lasers are used as IR local oscillators. Current field instrumentation used at Kitt Peak and Mauna Kea includes heterodyne spectrometers and cryogenic (1-28 micron) grating spectrometers, an IR solar vector magnetograph, and submillimeter heterodyne receivers. Observations are also made from observatories, including the Keck Observatory using facility or other instruments. Components suitable for space flight use are being developed.

Location:

Goddard Space Flight Center
Greenbelt, Maryland

Field of Science: Planetary Science

Advisors:

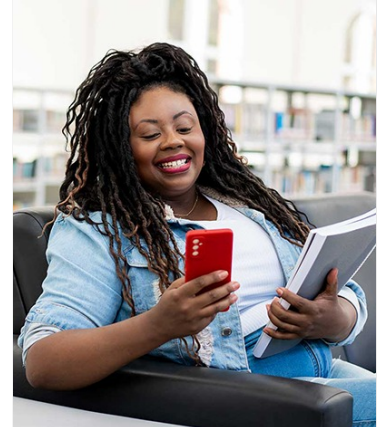
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Applications with citizens from Designated Countries will not be



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accepted at this time, unless they are Legal Permanent Residents of the United States. A complete list of Designated Countries can be found at: <https://www.nasa.gov/oair/export-control>.

Eligibility is currently open to:

- U.S. Citizens;
- U.S. Lawful Permanent Residents (LPR);
- Foreign Nationals eligible for an Exchange Visitor J-1 visa status; and,
- Applicants for LPR, asylees, or refugees in the U.S. at the time of application with 1) a valid EAD card and 2) I-485 or I-589 forms in pending status

**Eligibility
Requirements**

- **Degree:** Doctoral Degree.