

Opportunity Title: Remote Sensing of Planetary Atmospheres in the Solar System and Beyond

Opportunity Reference Code: 0173-NPP-NOV23-GSFC-PlanetSci

Organization National Aeronautics and Space Administration (NASA)

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

Description The advent of sensitive high-resolution spectrometers and modern analytical spectroscopic tools is opening new windows in the exploration of planetary atmospheres. High-resolution infrared spectrometers with broad spectral coverage and arrays of radio telescopes with state of the art receivers now permit the exploration of the kinematics, composition and thermal structure of a broad range of planetary sources with unprecedented precision. These, combined with the advent of comprehensive spectroscopic databases containing billions of lines, robust radiative transfer models, and unprecedented available computational power, are transforming the way we investigate planetary atmospheres.

Using these modern tools several projects are available: 1) Investigation of the water and organics reservoirs on Mars with the ExoMars/Trace-Gas-Orbiter, 2) Probing of primitive icy bodies (comets, asteroids, TNOs) employing the James-Webb-Space-Telescope (JWST) in concert with ground-based observatories, 3) Modeling of non-thermal emission in Exoplanets, 4) Development of analytical tools (radiative transfer models, spectroscopic databases, etc.) for the interpretation of high-resolution planetary spectra, 5) Ground-based observations of planetary atmospheres via high-resolution spectroscopy in search for trace species and cosmogonic indicators (D/H, ortho-para ratios, etc.).

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 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/oiiir/export-control>.

Eligibility is currently open to:

- U.S. Citizens;
- U.S. Lawful Permanent Residents (LPR);



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- 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.