

Opportunity Title: High Resolution Molecular Spectroscopy

Opportunity Reference Code: 0045-NPP-NOV23-JPL-EarthSci

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0045-NPP-NOV23-JPL-EarthSci

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

Description Our research focuses recording and analyzing high resolution molecular spectra and employing this knowledge to support remote sensing and new mission concept design. Laboratory studies concentrate on rotationally resolved molecular spectra obtained in the microwave, infrared and near infrared using a variety of state-of-the-art spectrometers at JPL as well as national user facilities like the McMath-Pierce Fourier transform spectrometer at the Kitt Peak National Solar Observatory. We provide reference standard spectral parameters for important species (eg CO₂, O₂, H₂O) and search for new atmospherically relevant molecules (eg HOONO, OBrO, OIO). We leverage this information to understand better the Earth system, planetary atmospheres, and the likely signatures of extra-solar terrestrial and/or habitable planets. We also work closely with sub-orbital and space-based remote sensing experts to design new missions and instruments. Measurements from the JPL Molecular Spectroscopy group are currently used by the Orbiting Carbon Observatory (OCO), the Tropospheric Emission Spectrometer (TES), the Microwave Limb Sounder (MLS), the Atmospheric Infrared Sounder (AIRS) projects, as well as the HITRAN molecular spectroscopy database.

Location:

Jet Propulsion Laboratory
Pasadena, California

Field of Science: Earth Science

Advisors:

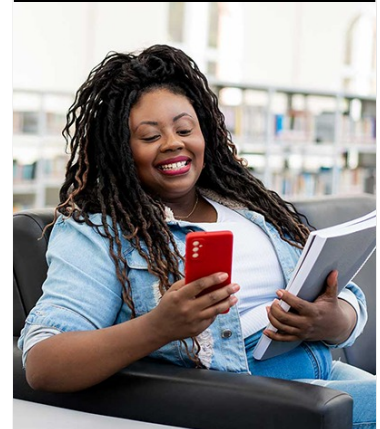
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Applications with citizens from Designated Countries will not be accepted at this time, unless they are Legal Permanent Residents of the United States. A complete list of Designated Countries can be found at: <https://www.nasa.gov/oiir/export-control>.

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,



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- 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

This opportunity may require the following: 1- Mandatory drug testing; 2-Random drug testing; 3- Testing prior to initiation of fellowship appointment.

Eligibility Requirements

- **Degree:** Doctoral Degree.