Opportunity Title: Remote Sensing of Atmospheric Composition Ground-Based Spectroscopy
Opportunity Reference Code: 0012-NPP-NOV23-JPL-EarthSci

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0012-NPP-NOV23-JPL-EarthSci

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

Description Remote sensing spectroscopy is a powerful technique for the measurement of atmospheric species and aerosols that affect air quality and ozone chemistry in Earth's atmosphere. At JPL's Table Mountain Facility, we operate state-of-the-art spectrometers for passive atmospheric composition measurements by measuring direct and scattered light from the Sun and Moon. Techniques such as high-resolution spectroscopy and spectropolarimetry enable the measurement of important trace molecules that affect air quality such as O3, OH, NO2, NO3, BrO, IO, SO2, HCHO as well as species that affect climate change such as water vapor, CO2, CH4 and aerosols. The data are analyzed in collaboration with atmospheric modeling groups to improve our understanding of changes in atmospheric chemistry and transport, and to validate the measurements of satellite remote sensing instruments.
References:

Yang, Z., Wennberg, P. O., Cageao, R. P., Pongetti, T. J., Toon, G. C. and Sander, S. P., "Ground-based photon path measurements from solar absorption spectra of the O2 A-band", J. Quant. Spectrosc. Radiat. Trans., 2005, 90, 309-321.

Li, K-F, Cageao, R. P., Karpilovsky, E. M., Mills, F. P., Yung, Y. L., Margolis, J. S. and Sander, S. P., "OH column abundance over Table Mountain Facility, California: AM-PM diurnal asymmetry", Geophys. Res. Lett., 2005, doi:10.1029/2005GL022521.

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;

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- 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.