Opportunity Title: Imaging Spectroscopy Data Analysis for the EMIT Mission
Opportunity Reference Code: 0176-NPP-NOV23-JPL-EarthSci

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0176-NPP-NOV23-JPL-EarthSci

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

Description NASA's EMIT mission (anticipated launch 2022) will use imaging spectroscopy, also known as hyperspectral imaging, to measure the composition of the Earth's mineral dust source regions. It will measure Earth's solar-reflected energy in the UV through Shortwave Infrared at approximately 7 nm spectral resolution, similar to precursor instruments like Hyperion and AVIRIS.

We seek a researcher who will collaborate with our science team to develop and refine our science data analyses. These analyses could potentially include but are not limited to probabilistic and Bayesian retrieval methods for modeling surface, atmosphere, and instrument, and high-fidelity instrument radiometric and spectral calibration. The ideal candidate will have strong mathematics and computer science expertise, with an interest in Earth surface science, remote sensing, physics, and imaging spectroscopy.

JPL's imaging spectroscopy group includes a wide range of expertise ranging from Earth science to instrument design, optical layout, software and electronics, mechanical design, deployment, and science data analysis. Spectroscopy is a diverse, interdisciplinary field with an intellectually stimulating and fun stock of challenges to engage and overcome!

References:

Carmon, N., Thompson, D. R., Bohn, N., Susiluoto, J., Turmon, M., Brodrick, P. G., ... & Gunson, M. (2020). Uncertainty quantification for a global imaging spectroscopy surface composition investigation. Remote Sensing of Environment, 251, 112038.

Li, L., Mahowald, N. M., Miller, R. L., Pérez García-Pando, C., Klose, M., Hamilton, D. S., ... & Kalashnikova, O. (2020). Quantifying the range of the dust direct radiative effect due to source mineralogy uncertainty. Atmospheric Chemistry and Physics Discussions, 1-58.

Thompson, D. R., Braverman, A., Brodrick, P. G., Candela, A., Carmon, N., Clark, R. N., ... & Mahowald, N. (2020). Quantifying uncertainty for remote spectroscopy of surface composition. Remote Sensing of Environment, 247, 111898.

Location:
Jet Propulsion Laboratory
Pasadena, California

Field of Science: Earth Science

Opportunity Title: Imaging Spectroscopy Data Analysis for the EMIT Mission
Opportunity Reference Code: 0176-NPP-NOV23-JPL-EarthSci

Advisors:
David R Thompson
david.r.thompson@jpl.nasa.gov
412-983-4024

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,
- 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.