Opportunity Title: Artificial Intelligence for Planetary Science Discovery in Legacy Data

Opportunity Reference Code: 0213-NPP-MAR24-JPL-PlanetSci

Organization	National Aeronautics and Space Administration (NASA)
Reference Code	0213-NPP-MAR24-JPL-PlanetSci
Application Deadline	3/1/2024 6:00:59 PM Eastern Time Zone

Description

Planetary missions have returned enormous amounts of surface imagery during the past decades of space exploration, most of which remains unused by planetary scientists due to the inability to manually, exhaustively search for even a single scientifically relevant target feature. This has significant, negative impact on planetary science understanding, surface characterization, and models of active surface processes. Artificial Intelligence (AI) has the potential to collaboratively focus researchers on candidate regions of interest that otherwise would be obscured by sheer dataset scale, significantly improving extracted science yield and accelerating science discovery in a manner broadly applicable to many planetary bodies.

This project seeks to combine traditional planetary science and recent advances in computer science to maximize the science return of past space exploration missions.

The candidate will explore cutting edge AI/ML methods to automate science discovery and focus of attention in planetary image datasets. The science targets selected for discovery should be motivated by current, relevant questions that advance our understanding of planet surface dynamics and evolution.

Candidates that are facile with computationally efficient, rigorous machine learning for image region identification, demonstrate an understanding of both planetary and scalable computer science, and have publication experience in the planetary science literature will be more suitable for this research opportunity. Additional benefit would be provided by past experience with planetary image datasets, data science tools, Geographic Information Software, as well as an established network of expert contacts within planetary and computer science.

Location:
Jet Propulsion Laboratory
Pasadena, California

Field of Science: Planetary Science

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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,
- 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.