

**Opportunity Title:** Physicochemical State of the Martian Surface

**Opportunity Reference Code:** 0004-NPP-NOV23-JSC-PlanetSci

**Organization** National Aeronautics and Space Administration (NASA)

**Reference Code** 0004-NPP-NOV23-JSC-PlanetSci

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

**Description** The general objective of this continuing research program is to understand the mineralogical and elemental composition of surficial material on Mars and to determine the weathering processes that evolved the surface to its current state. Specific tasks include studies of geologic samples that have been weathered in terrestrial environments considered to be analogous in some important respects to those on Mars and theoretical and experimental studies of the optical properties of pure and substituted iron-bearing compounds, including nanophase materials. Emphasis is placed on multidisciplinary analyses of samples to maximize comparison with the data base available for Mars from the Viking, Phobos-2, Mars Pathfinder, and Mars Global Surveyor missions and telescopic observations. Experimental and analytical facilities include ferromagnetic resonance spectroscopy, vibrating sample magnetometer, Mossbauer spectroscopy, ultraviolet-visible-infrared spectroscopy, and x-ray diffraction.

**Location:**

Johnson Space Center  
Houston, Texas

**Field of Science:** Planetary Science

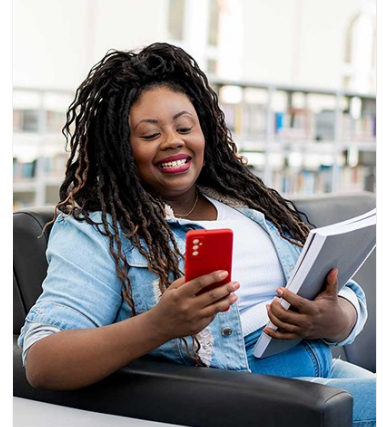
**Advisors:**

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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.



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