

**Opportunity Title:** Mass Spectrometry of Lunar Volatiles

**Opportunity Reference Code:** 0252-NPP-MAR22-GSFC-PlanetSci



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

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**How to Apply** All applications must be submitted in [Zintellect](#)

**Application Deadline** 3/1/2022 6:00:00 PM Eastern Time Zone

**Description:**

This opportunity is for the development of models and data analysis using mass spectrometers on the Moon to improve our understanding of volatiles (e.g., water, nitrogen, noble gases) in the lunar exosphere and lunar soils. The opportunity will consider the origin and provenance of volatiles measured by the Peregrine Ion-Trap Mass Spectrometer (PITMS) on Astrobotic's Peregrine Mission-1 and the Mass Spectrometer observing lunar operations (MSolo) on the VIPER mission. It is expected that these research problems be addressed using a combination of modeling of volatile sources and isotopic signatures, data analysis from these instruments, and collaborating with datasets from other instruments. The incumbent will gain hands-on experience by participating in the flight operation of these instruments to collect, analyze, and archive data. The incumbent will be expected to present results at appropriate conferences and in peer-reviewed publications. Key skill sets include data analysis, statistical analysis, mass spectrometry, and interest in / familiarity with volatile species in the solar system.

**Field of Science:** Planetary 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;
- Foreign nationals who are in the U.S. at the time of application and on a valid J1 visa; and,
- Foreign nationals, asylees or refugees in the U.S. at the time of application with a valid EAD card and pending I-485 or I-589 forms.

These temporary eligibility limitations have been put in place due to inaccessible U.S. consulates and travel restrictions resulting from the COVID-19 pandemic. Foreign nationals have made many substantive contributions to NASA, as well as to the greater scientific community throughout the life of the NPP. Therefore, we look forward to the time when the program will be open, once again, to all qualified scientists and engineers.

**Eligibility Requirements** • **Degree:** Doctoral Degree.