

**Opportunity Title:** Volcanic processes in the solar system

**Opportunity Reference Code:** 0308-NPP-MAR26-JPL-PlanetSci

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

**Reference Code** 0308-NPP-MAR26-JPL-PlanetSci

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

Please visit the NASA Postdoctoral Program website for application instructions and requirements: [How to Apply | NASA Postdoctoral Program \(oua.org\)](#).

A complete application to the NASA Postdoctoral Program includes:

1. Research proposal
2. Three letters of recommendation
3. Official doctoral transcript documents

**Application Deadline** 4/2/2026 6:00:59 PM Eastern Time Zone

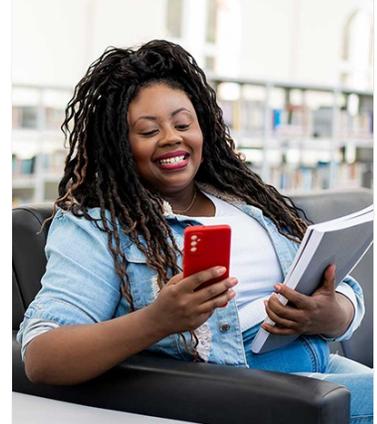
**Description** About the [NASA Postdoctoral Program](#)

The [NASA Postdoctoral Program \(NPP\)](#) offers unique research opportunities to highly-talented scientists to engage in ongoing NASA research projects at a NASA Center, NASA Headquarters, or at a NASA-affiliated research institute. These one- to three-year fellowships are competitive and are designed to advance NASA's missions in space science, Earth science, aeronautics, space operations, exploration systems, and astrobiology.

**Description:**

This opportunity has a focus on Io and Titan, but is also open to studies of volcanism on the Moon, Venus, and other bodies. Io and Titan are exotic moons that show a diversity of geological processes that can help us understand the evolution of the Earth's surface, as well as that of other solid bodies. Io is the most volcanic object in the Solar System and Ionian studies help us understand how planets cool and how volcanism works as a geological process. Titan is considered the most Earthlike of all the solar system bodies seen so far, with both geologic and atmospheric processes taking place. Titan is rich in organics, leading to the exciting possibility that it is a place where the chemistry necessary for the origin of life may be taking place today. Studying Titan tests our understanding of the physics and chemistry of planetary evolution.

Io volcanism: Galileo revealed that Io has volcanism on a much larger scale than previously thought and that magma composition may be similar to that of the primitive Earth. Rosaly Lopes's research on Io focuses on the origin of calderas and lava lakes, which are the most common form of volcanic activity on Io using data from Galileo and Juno. This research involves modeling of eruption processes and comparison with calderas and lava lakes on Earth, Mars, and Venus.



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Titan geologic processes, cryovolcanism: The Cassini spacecraft has revealed Titan's surface in unprecedented detail using the Titan Radar Mapper instrument. The data obtained so far shows that the surface of Titan is remarkably diverse and, in many ways, Earth-like, with features such as alluvial fans, dunes, volcanic constructs, impact craters and ridges of possible tectonic origin. Rosaly Lopes is the Investigation Scientist for the Radar instrument and is investigating the interplay of geologic processes on Titan, with emphasis on cryovolcanic processes. The research involves using data from the Synthetic Aperture Radar and the Visible and Infrared Mapping Spectrometer, modeling of cryovolcanism, and comparisons with other icy moons.

**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 (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

**Questions about this opportunity?** Please email [npp@orau.org](mailto:npp@orau.org)

**Qualifications** Ph.D. in planetary science or related field and publications in peer-reviewed journals. Experience in data analysis and modeling. Prior experience with analysis of relevant data sets desired

**Point of Contact** [Mikeala](#)

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