

**Opportunity Title:** N-IR Descent Imaging of Venus for Composition, Topography, and Morphology

**Opportunity Reference Code:** 0262-NPP-NOV23-GSFC-PlanetSci

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

**Reference Code** 0262-NPP-NOV23-GSFC-PlanetSci

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

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

**Description Description:**

The DAVINCI mission to Venus will conduct multi-scale descent imaging of landscapes on Venus at scales not previously accessible in studies about Venus and its highlands (tesserae). Specifically, mission goals embrace the scientific interpretation of multiple spatial scales of band-ratio imaging in 3D context, together with digital topography at scales from < 100m to 5-10m (horizontally), and very fine scale geomorphological imaging at scales < 1.5 m per pixel of local areas in the complex ridged terrains of Venus. These science goals and imaging capabilities are multi-disciplinary in that they connect rock unit composition to landscape geomorphology for the unique tesserae “mountains” of Venus at sampling scales more typical of high-resolution satellite imaging of the Earth, Mars, or the Moon.

The selected applicant will evaluate how quantitative geomorphological investigations of local area landscape systems (including sedimentary materials and associated depositional processes) on Earth can inform Venus investigations and will develop approaches for building models that can be used to test hypotheses for Venus-relevant regions here on Earth and/or Mars. This will be done by working with analogue DEM (define) datasets from multiple regions on Earth, and the descent imaging data from Mars Curiosity and Mars Perseverance Rovers. Specific challenges to note are isotropic illumination, Rayleigh scattering-induced pixel blurring, and limited areal fields of view (FOV).

The ideal candidate will have experience in on or more of the following: remote sensing, generating digital elevation models (DEMs), image analysis, quantitative geomorphology, and mapping.

**Field of Science:** Planetary Science

**Advisors:**

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**Applications with citizens from Designated Countries will not be**



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**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.