

Opportunity Title: The Exploration of Pluto

Opportunity Reference Code: 0111-NPP-NOV23-JPL-PlanetSci

Organization National Aeronautics and Space Administration (NASA)

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

Description The New Horizons Spacecraft will encounter Pluto in July 2015. The goal of the mission is to understand the surface composition, morphology, and evolution of this dwarf planet. Perhaps the most important question is whether Pluto is currently geologically active. The intensive period of study will begin in early 2015, with images trickling in and leading up to a fast flyby during which features as small as a few hundred meters will be resolved. This research opportunity is to work with a member of the Science Team to analyze images and spectra as they are received, and to compare these results with an ongoing ground-based program to monitor seasonal volatile transport on Pluto. We will fit both disk resolved and disk-integrated measurements of Pluto's surface and atmosphere to radiative transfer and photometric models. The results from these models will determine the energy balance on Pluto, as well as its surface texture, roughness, and composition.

Buratti, B. J., J. K. Hillier, A. Heinze, M. Hicks, K. Tryka, J. Mosher, M. Garske, J. Atienza-Rosel, J. Young. 2003. Photometry of Pluto in the last decade and before: Evidence for volatile transport? *Icarus* 162, 171-182.

Buratti, B. et al. 2005. Cassini Visual and Infrared Mapping Spectrometer Observations of Iapetus: Detection of CO₂. *Ap. J.* 622, L149-L152.

Buratti, B. J. J. Bauer, M. D. Hicks, J. K. Hillier, A. Verbiscer, H. Hammel, B. Schmidt, B. Cobb, B. Herbert, M. Garske, J. Ward, J. Foust 2011. Photometry of Triton 1992-2004: Surface volatile transport and discovery of a remarkable opposition surge. *Icarus* 212, 835-846.

Location:

Jet Propulsion Laboratory
Pasadena, California

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/ojir/export-control>.

Eligibility is currently open to:



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- 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.