Opportunity Title: Geophysical Investigations of Habitability in Icy Ocean Worlds
Opportunity Reference Code: 0218-NPP-NOV23-JPL-PlanetSci

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0218-NPP-NOV23-JPL-PlanetSci

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

Description Geophysical measurements can reveal the structures and thermal states of icy ocean worlds (Vance et al. 2018). The interior density, temperature, sound speed, and electrical conductivity thus characterize their habitability (Vance et al. 2016). Recent modeling and laboratory measurements of physical properties enable more detailed views into the possible configurations of ocean worlds and predictions for future measurements. Further work is needed to predict the seismic, gravity structure, and magnetic properties of ocean worlds.

Forward modeling results relating geophysics to habitability are essential to NASA‘s objective of understanding the Earth, the Solar System, and the Universe, as they relate to the workings of planetary bodies and the nature of life. Such predictions are needed for planning observations and data synthesis for future missions such as Europa Clipper, which has the express goal of investigating Europa to understand its habitability. Such predictions are also important to the formulation of future missions, where defining testable objectives requires assessing whether key hypothesized features can be measured.

Vance, S. D., K. P. Hand, and R. T. Pappalardo (2016), Geophysical controls of chemical disequilibria in Europa, Geophys. Res. Lett., 43, 4871-4879, doi:10.1002/2016GL068547.

Vance, S. D., Panning, M. P., Stí¤hler, S., Cammarano, F., Bills, B. G., Tobie, G.,“¦Banerdt, B. (2018). Geophysical investigations of habitability in ice-covered ocean worlds. Journal of Geophysical Research: Planets Planets, 123, 180-205. https://doi.org/10.1002/2017JE005341

Location:
Jet Propulsion Laboratory
Pasadena, California

Field of Science: Planetary Science

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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

This opportunity may require the following: 1- Mandatory drug testing; 2-Random drug testing; 3- Testing prior to initiation of fellowship appointment.

Eligibility Requirements

- **Degree:** Doctoral Degree.