

Opportunity Title: Surface geology of Titan's organic landscape

Opportunity Reference Code: 0228-NPP-JUL24-JPL-PlanetSci

Organization National Aeronautics and Space Administration (NASA)

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Application Deadline 7/1/2024 6:00:59 PM Eastern Time Zone

Description Saturn's moon Titan is an organic sedimentary world where cryogenic winds and liquid hydrocarbon rains dissect and dissolve a landscape of organic materials covering the icy surface. Like Earth, eolian, fluvial, lacustrine, and even karstic processes shape the landscape. Our research focuses on investigating the different landscape evolution process on Titan using Cassini data and geological mapping, laboratory research, and field research of terrestrial analogs to understand these different processes.

Much of our work examines the role that dissolution could have played in landscape evolution, particularly the development of the highly dissected karst-like labyrinth terrains.

Experience in planetary mapping, landscape evolution modelling, sedimentology, karst geology, and organic chemistry is desired.

References:

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Malaska, M.J., Lopes, R.M.C., Williams, D.A., Neish, C.D., Solominidou, A., Soderblom, J.M., Schoenfeld, A.M., Birch, S.P.D., Hayes, A.G., Le Gall, A., Janssen, M.A., Farr, T.G., Lorenz, R.D., Radebaugh, J., Turtle, E.P.,



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2016. Geomorphological map of the Afekan Crater region, Titan: Terrain relationships in the equatorial and mid-latitude regions. *Icarus* 270, 130-161. doi: [10.1016/j.icarus.2016.02.021](https://doi.org/10.1016/j.icarus.2016.02.021).

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/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.