Opportunity Title: Advancing Impact Monitoring in the Era of LSST, NEO Surveyor, and ADES
Opportunity Reference Code: 0321-NPP-JUL25-JPL-PlanetSci

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0321-NPP-JUL25-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 (orau.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 7/1/2025 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 project will be focused on improving small-body impact monitoring capabilities in support of NASA's planetary defense goals. With the advent of high-volume discovery systems such as the Vera C. Rubin Observatory and the NEO Surveyor mission, the number of newly identified near-Earth objects (NEOs) is expected to increase dramatically. This project addresses the resulting need for more efficient and accurate orbit determination and hazard assessment methods.

Research will center on: (1) developing new observation weighting schemes that exploit the expanded metadata available in the Astrometry Data Exchange Standard (ADES); (2) modernizing short-term impact monitoring through adaptive search algorithms for systematic ranging (Scout); and (3) refining long-term impact prediction via improved error modeling and encounter clustering (Sentry)

Field of Science: Planetary Science

Advisors:

Steven Chesley
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(818) 354-9615

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

Qualifications Applicants should have strong backgrounds in orbital dynamics, statistical methods, and/or observational astronomy. Experience with FORTRAN, perl and python highly desirable.

Point of Contact Mikeala

Eligibility Requirements

- **Degree:** Doctoral Degree.