Opportunity Title: Weak Gravitational Lensing and Galaxy Clustering as Probes of Dark Matter and Dark Energy
Opportunity Reference Code: 0004-NPP-MAR26-JPL-Astrophys

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0004-NPP-MAR26-JPL-Astrophys

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 4/2/2026 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:

Weak gravitational lensing, where the sizes and shapes of background galaxies are slightly distorted by foreground dark matter, is one of the premier tools of precision cosmology. Measuring the small coherent distortion of distant galaxies provides information about the amount of distribution of dark matter in the Universe. Furthermore, the measurement of the time evolution of dark matter structures is a powerful probe of the dark energy. We have several ongoing research projects in the area of weak lensing using both ground- and space-based data. These projects are precursors to ambitious surveys planned for the 2020s, including NASA's Nancy Grace Roman Space Telescope, the ESA/NASA Euclid mission, the SuperBIT balloon mission, and the ground-based Vera Rubin Observatory's Legacy Survey of Space and Time (LSST).

The measurement of the clustering and velocities of galaxies in 3 dimensional space, which encompasses Baryon Acoustic Oscillations (BAO) and Redshift Space Distortions (RSD) is another powerful probe of dark matter and dark energy. We also seek to exploit this technique for the missions and surveys mentioned above.

Location:

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Jet Propulsion Laboratory
Pasadena, California

Field of Science: Astrophysics

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

Questions about this opportunity? Please email npp@orau.org

Point of Contact Mikeala

Eligibility Requirements

- **Degree:** Doctoral Degree.