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Opportunity Title: Instrumentation Opportunity for Antenna-coupled TES arrays
Opportunity Reference Code: 0076-NPP-MAR26-JPL-TechDev

Organization National Aeronautics and Space Administration (NASA)

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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:

Our group's research is mainly instrumentation development for astrophysics and cosmology applications. In particular we are actively developing arrays of anntena coupled TES (transition edge sensors) detectors and instruments for the study of the polarization of cosmic microwave background radiation. CMB measurements provide compelling evidence for a period of exponential inflationary expansion in the early universe. Latest experimental evidences promise exciting opportunity that the polarization signal should be detectable with the next generation of instruments.
Rapid advances of detector technology played a decisive role in this experimental progression, from the discovery of the CMB to the exquisite temperature maps available today. Bolometers developed at JPL are poised to make defining measurements of the CMB for the next decade on the Planck satellite (lanuched in 2008). Morever a new generation of antenna-coupled bolometer arrays, a radical departure from the Planck 'spider-web' design, is now ready to go beyond even the scientific capabilities of Planck, and will probe for the faint polarization signals produced by inflationary gravitational waves.

We are seeking an applicant to play a leading role in the development of the millimeter polarimeter with these JPL made large TES arrays. Experience in cryogenic system, electrical and optical characterization of

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the TES arrays will be highly desirable. The candidate will integrate and optimize the recently built cryostat that was assembled with pulse tube cooling system. The complete receiver will be fielded at the South Pole as one of the multiple receiver systerm for the Keck experiement.

Location:
Jet Propulsion Laboratory
Pasadena, California

Field of Science: Technology Development

Advisors:
Hien Trong Nguyen
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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.