Opportunity Title: Astrophysics: High Angular Resolution in the Far-Infrared: Interferometry at Long Wavelengths
Opportunity Reference Code: 0026-NPP-JUL24-GSFC-Astrophys

Organization	National Aeronautics and Space Administration (NASA)
Reference Code	0026-NPP-JUL24-GSFC-Astrophys
Application Deadline	7/1/2024 6:00:59 PM Eastern Time Zone
Description	Far-infrared interferometers will enable us to learn how planetary systems form and how the conditions for habitability develop; to characterize the family of extrasolar planetary systems by imaging the structure in debris disks; and to understand the formation, merger history, and star formation history of galaxies. To pave the way for future space-based interferometers, we developed the Wide-field Imaging Interferometry Testbed (WIIT), a sub-scale model of a space-based far-IR interferometer. WIIT will remain dormant for two years while waiting for a Roman Space Telescope test program to complete, but it has already yielded valuable data. We are using WIIT to develop, demonstrate, and learn the practical limitations of wide-field spatial-spectral interferometry, a key technique for future space-based interferometers such as the Space Infrared Interferometric Telescope (SPIRIT) and the Submillimeter Probe of the Evolution of Cosmic Structure (SPECS). The technologies and techniques developed under this program will also have application to future exoplanet missions as well as NASA Earth and Planetary science missions. The successful candidate will have experience with aperture synthesis algorithms and interferometric instrumentation. Basic familiarity with far-infrared astrophysics will be helpful but is not essential. We are currently seeking candidates with experience modeling and analyzing data from Michelson interferometers. Specific topics of interest are: (1) development and validation of algorithms for spatial-spectral image synthesis and related analysis of WIIT data; and (2) development of analytical instrument performance models.

Location:
Goddard Space Flight Center
Greenbelt, Maryland

Field of Science: Astrophysics

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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.