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Opportunity Title: Habitable Worlds Observatory Instrumentation for High-Contrast Imaging and Characterization of Exoplanets
Opportunity Reference Code: 0122-NPP-MAR26-ARC-TechDev

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0122-NPP-MAR26-ARC-TechDev

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:

This NPP research opportunity is focused on developing innovative exoplanet instrumentation technologies to enable high-contrast imaging and characterization for NASA's Habitable Worlds Observatory flagship mission. To enable the direct imaging of reflected light from exoplanets, diffraction leakage and aberrations must be controlled at small angular separations from the host star through the design and active control of the coronagraph instrument. The principal task is to improve the observational efficiency of the instrument by developing early stage technologies and infusing these techniques through a maturation process to the HWO observatory. This research lies at the interface of exoplanet and astrophysical science, adaptive optics, instrument and mission design, and laboratory validation for both in-air and vacuum environments. Our team has developed Multi-Star Wavefront Control (MSWC) a technique that would enable HWO to observe binary stars, developed high-throughput Phase-Induced Amplitude Apodization (PIAA) coronagraphs, and exploring the usage of photonic integrated circuits (PICs) for photonic nulling.

Field of Science: Technology Development

Advisors:

Ruslan Belikov

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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

Qualifications Doctoral degree in relevant field to astrophysics instrumentation required prior to start of NPP fellowship.

Point of Contact Mikeala

Eligibility Requirements

- **Degree:** Doctoral Degree.