

Opportunity Title: High Contrast Astronomical Imaging and Interferometry

Opportunity Reference Code: 0027-NPP-MAR26-JPL-Astrophys

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0027-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 \(oua.org\)](#).

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:

The number of known planets around nearby stars continues to increase. The primary goal of this research is the direct detection of the faint emission from such exoplanets and from exozodiacal/debris disks. New high-contrast near-neighbor detection techniques are emerging regularly, and we are working to test and use these approaches at the Palomar Observatory. We now have two facilities available on the Hale 200-inch telescope. The first is an off-axis subaperture on the Hale telescope that is corrected to extreme adaptive optics levels, which allows for testing and observation with a variety of coronagraphs. The second facility is a rotating multi-aperture nuller on the Hale telescope that seeks to demonstrate the complete companion detection strategy envisioned for a rotating space-based nulling interferometer. Interestingly, this interferometer, with an inner working angle as small as 30 milli-arcseconds, may provide a small-angle detection capability superior to that of any coronagraph. Technical work in either or both of these areas is envisioned, as is the observational search for faint companions such as brown dwarfs and hot young planets around nearby stars. Eventually the work should lead to deployment on larger telescopes and in space.

References:

Haguenauer, P. & Serabyn, E. "Deep Nulling of Laser Light with a Single-



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Mode Fiber Beam Combiner," 2006, Appl. Opt., 45, 2749

Serabyn, E., Wallace, J. K., Troy, M., Mennesson, B., Haguenaer, P., Gappinger, R. O. & Bloemhof, E. E. "Extreme Adaptive Optics using an Off-Axis Subaperture on a Ground-Based Telescope," 2006, Proc. SPIE 6272, 62722W

Location:

Jet Propulsion Laboratory
Pasadena, California

Field of Science:Astrophysics

Advisors:

Gene Serabyn
eugene.serabyn@jpl.nasa.gov
818-393-5243

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/oiiir/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.