Opportunity Title: Astrophysics: Time-Domain Astronomy
Opportunity Reference Code: 0150-NPP-MAR26-GSFC-Astrophys

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0150-NPP-MAR26-GSFC-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 3/1/2026 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:

With convergence of both science (i.e., community interests) and technology (the advent of new facilities enabled by Moore's Law), time-domain exploration of the sky promises to be a frontier pursuit in the coming decade. Across the electromagnetic spectrum, recent efforts to characterize variability with increasing sensitivity and on ever-shorter time scales have revealed new and often unforeseen astrophysical phenomena (e.g., relativistic tidal disruption flares). And yet despite the remarkable success of projects such as the Swift Gamma-Ray Burst Explorer and the Palomar Transient Factory (PTF), these discoveries represent only the tip of the proverbial iceberg. Advanced LIGO (aLIGO), Virgo, and IceCube have brought the promise of multi-messenger astrophysics to fruition. Just a few years from now, the Large Synoptic Survey Telescope (LSST) will routinely survey the entire visible sky every few nights, discovering transient sources at a rate that will dwarf the integrated output of the entire history of modern astronomical observations.

Here we propose to use the unique time-domain capabilities of the Swift satellite, in conjunction with multi-wavelength facilities from the ground (in particular the Zwicky Transient Facility) to study the dynamic sky. Possible areas of research include, but are not limited to: 1) Utilizing tidal disruption flares as probes of accretion physics, to identify candidate intermediate mass black holes, and as a means to extend the M-sigma relation beyond

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the reach of current kinematical studies; 2) Uncovering the origin of the various types of super-luminous supernovae, and using them as probes of star formation out into the distant universe; 3) Searching for electromagnetic counterparts to gravitational wave events uncovered by LIGO and Virgo; 4) Identifying the nature of fast radio bursts, and, if confirmed as extragalactic, using them as probes of the IGM.

Location:
Goddard Space Flight Center
Greenbelt, Maryland

Field of Science: Astrophysics

Advisors:
Brad Cenko
brad.cenko@nasa.gov
301-286-4678

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.