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Opportunity Title: Magnetic Fields and Cosmic Rays in the Milky Way Interstellar Medium
Opportunity Reference Code: 0214-NPP-MAR26-GSFC-Astrophys

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0214-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 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 is an opportunity to conduct a research program that would combine the modeling of the Galactic magnetic field (GMF), cosmic rays (CRs), and synchrotron emission. The publicly available IMAGINE infrastructure is designed to explore the likelihood space of magnetic field models while including constraints from all existing tracers such as radio synchrotron emission, polarized microwave dust emission, Faraday rotation measures, etc. The IMAGINE White Paper (Boulanger et al., JCAP, 049, 2018) describes the infrastructure and the various constraints and the relevant astrophysics topics. An applicant may propose a research plan that fits into this framework in any of a variety of ways. For example, a needed first step would be to compare the different GMF models in the literature with a self-consistent Bayesian framework. This analysis can then be expanded to include the likelihood space of the cosmic ray injection and propagation models simultaneously, since the GMF modeling depends on the synchrotron spectrum, which in turn depends on the CR spectrum. This will not only improve our understanding of the magnetized interstellar medium but also of the Galactic foregrounds and the dynamics of a variety of astrophysical processes.

Location:

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Goddard Space Flight Center
Greenbelt, Maryland

Field of Science: Astrophysics

Advisors:
Tess Jaffe
tess.jaffe@nasa.gov
301-286-8904

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.