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Opportunity Title: Groundbreaking Lightning and Atmospheric Electricity Research
Opportunity Reference Code: 0008-NPP-MAR26-MSFC-EarthSci

Organization National Aeronautics and Space Administration (NASA)

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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:

Marshall Space Flight Center (MSFC) is a world leader in atmospheric electricity research, with a multi-decade history of developing and deploying a variety of ground-based, airborne, and spaceborne atmospheric electricity instruments, such as the Lightning Imaging Sensor (LIS). MSFC also has performed groundbreaking research on many topics, including but not limited to thunderstorm electrification and lightning within severe weather, lightning's impact on atmospheric composition, variability of the global electric circuit, the production of transient luminous events (TLEs) in the upper atmosphere, physical relationships between optical and radio-frequency (RF) emissions by lightning, and calibration/validation of the Geostationary Lightning Mapper (GLM).

Available NPP opportunities within the MSFC lightning group include:

- Analysis of field campaign data to study the physical characteristics of thunderstorms and lightning that are associated with gamma-ray glows and gamma-ray flashes.
- Development of next-generation lightning detection techniques and instruments aimed at fundamental improvements in global and/or regional mapping of lightning
- Using ground- and space-based TLE and lightning detection systems to study the physical coupling of tropospheric thunderstorms to

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electrodynamic phenomena in the upper atmosphere
- Using microwave remote sensing, lightning observations, and/or numerical modeling to study the evolution and climatology of severe thunderstorms, as well as relationships to the rapid intensification and diurnal cycle of tropical cyclones
- Development and evaluation of cutting-edge parameterizations of thunderstorm electrification and lightning within cloud-resolving numerical models, including forward modeling of subsequent light scattering within the cloud and cloud-top optical output
- Improving understanding of the production of nitrogen oxides (NO_x) by lightning, and thereby probing the importance of lightning in assessing climate, air quality, and weather - especially in relation to the National Climate Assessment (NCA).

The prospective applicant should contact Dr. Timothy Lang (timothy.j.lang@nasa.gov) well in advance of developing the proposal to ensure alignment of the idea with opportunity objectives. Please include a Curriculum Vitae (CV) and a brief statement of interest that identifies the primary topic of interest from those listed above. Other related topics will also be considered. The candidate will then be put in touch with the appropriate research mentor who will coordinate with the candidate on the proposal concept.

Location:
Marshall Space Flight Center
Huntsville, Alabama

Field of Science: Earth Science

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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

Point of Contact Mikeala

Eligibility Requirements

- **Degree:** Doctoral Degree.