

Opportunity Title: Heliophysics Science: Experimental and Interdisciplinary

Space Plasma Physics

Opportunity Reference Code: 0152-NPP-NOV23-GSFC-HelioSci

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0152-NPP-NOV23-GSFC-HelioSci

Application Deadline 11/1/2023 6:00:59 PM Eastern Time Zone

Description Recent work focuses on three major thrusts and an Associateship application in one or more areas is of great interest. The first is ongoing work to develop satellite-based plasma mass spectrometer instrumentation. Recent work has focused on technological innovations to measure positive and negative species with the same subsystem, and the use of carbon foils and solid state detectors to discriminate species by mass. Low resource optimization is a goal as well as adaption for planetary or high radiation space environments. The second thrust is on analysis of recent measurements from such instrumentation. Recent work has focused on the effect of wave-particle interactions on the radiation belt populations, and the importance of ionospheric outflow and oxygen in particular to the storm-time dynamics of the inner magnetosphere. Also of interest is the role of magnetic field mapping in connecting in situ processes in the magnetosphere and ionosphere. Ongoing research with the HOPE instruments on the Van Allen Probes would be especially welcome and could be focused on evolving scientific or instrument response understanding. Lastly, a recent topic of much interdisciplinary interest is the Aurorasaurus platform. Aurorasaurus.org is a citizen science website and mobile application we are developing to improve space weather forecasting in this, the first solar maximum with social media. Citizen science reports and ad hoc tweets about the visibility of the Northern Lights represent an important, new real-time network of ground truth observations. Ongoing work to improve the capability to now-cast visibility of aurora for the public using this tool is of great interest to the space science and human-computer interactions fields.

Location:

Goddard Space Flight Center
Greenbelt, Maryland

Field of Science:Heliophysics Science

Advisors:

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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:



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- 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

**Eligibility
Requirements**

- **Degree:** Doctoral Degree.