

Opportunity Title: Astrophysics: Particle Astrophysics

Opportunity Reference Code: 0061-NPP-NOV23-GSFC-Astrophys

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0061-NPP-NOV23-GSFC-Astrophys

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

Description Particle astrophysics is a broad field of study that attempts to understand the role played by relativistic particles in astrophysical objects. In particular, the energetic nuclei and electrons, which make up the galactic cosmic rays are used to study the processes that lead to the nucleosynthesis and acceleration of the particles and their interactions with the magnetic fields and matter in the galaxy. Experimental measurements of these particles are made from balloons and on near-Earth satellites.

Our current balloon projects involve measurements of antiprotons in the 100 MeV to several GeV range and the abundances of heavy nuclei in the cosmic radiation. Typical instrumentation includes magnetic spectrometers, Cherenkov counters, time-of-flight detectors, and drift chambers. Opportunities exist to participate in the various phases of those projects from the identification and definition of the specific scientific objectives through the development, test, and operational phases of an experiment and finally, to carry out the data analysis and presentation of results. An active program of theoretical investigation into the origin, acceleration, and interstellar propagation of galactic cosmic-ray particles is also part of our program.

Location:

Goddard Space Flight Center
Greenbelt, Maryland

Field of Science: Astrophysics

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:

- 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



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application with 1) a valid EAD card and 2) I-485 or I-589 forms in pending status

Eligibility Requirements

- **Degree:** Doctoral Degree.