

**Opportunity Title:** Heliophysics Science: Magnetospheric Substorms

**Opportunity Reference Code:** 0051-NPP-NOV23-GSFC-HelioSci

**Organization** National Aeronautics and Space Administration (NASA)

**Reference Code** 0051-NPP-NOV23-GSFC-HelioSci

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

**Description** Substorms are magnetosphere-wide disturbances, which dissipate  $10^{13}$  to  $10^{15}$  Joules of solar wind-derived energy over a period of about an hour. This energy is observed in the form of hot plasma injected into the inner magnetosphere, field-aligned currents, which transmit momentum and energy down to the ionosphere, plasma sheet heating and bulk flows, and energetic particle acceleration in the magnetotail. A primary objective of NASA's Sun-Earth Connection Theme is to understand and quantitatively model the plasma sources and processes governing the transport and dissipation of energy and momentum within the magnetosphere. Comprehensive particles and fields measurements from critical regions of the magnetosphere involved in the substorm process are now available from the Polar, Geotail, Cluster, and IMAGE missions. Research opportunities exist involving theory, data analysis, and modeling studies of substorms and their influence over space weather within the Geospace.

**Location:**

Goddard Space Flight Center  
Greenbelt, Maryland

**Field of Science:**Heliophysics Science

**Advisors:**

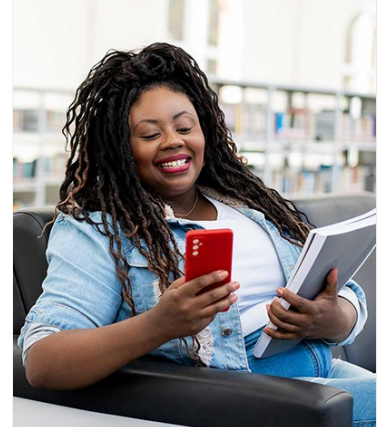
Larry Kepko  
Larry.Kepko@nasa.gov  
301-286-2728

Maria M. Kuznetsova  
Maria.M.Kuznetsova@nasa.gov  
301-286-9751

Marilia Samara  
marilia.samara@nasa.gov  
301-286-2813

Edward Sittler  
Edward.C.Sittler@nasa.gov  
301-286-9215

Hyunju Kim Connor  
Hyunju.k.connor@nasa.gov  
301.286.7417



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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/oijr/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

**Eligibility Requirements** • **Degree:** Doctoral Degree.