

Opportunity Title: Solar and Heliospheric Observations and Models

Opportunity Reference Code: 0058-NPP-NOV23-JPL-HelioSci

Organization

National Aeronautics and Space Administration (NASA)

Reference Code

0058-NPP-NOV23-JPL-HelioSci

Application Deadline

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

Description

Research opportunities are available for analysis of solar and heliospheric observations with emphasis on connecting solar observations to their signatures in the in situ data. Various techniques are available to make this connection, including the use of both empirical and 3D magnetohydrodynamic models. Of particular interest is interpretation of imaging and in situ data from the STEREO mission. The two-spacecraft STEREO mission, launched in October 2006, is providing unique observations of the Sun and the heliosphere. One spacecraft is in an Earth-leading orbit and one is in an Earth-trailing orbit and each carries both remote sensing and in situ packages. JPL has developed a set of unique tools for stereoscopic analysis of observations from the extreme ultraviolet (EUVI) and white light telescopes. Early in the mission, when the separation angle is relatively small, stereoscopic analysis of the EUV images using can be used for 3D reconstruction of coronal structures. Beginning in late 2007, the separation became large enough to use stereoscopic analysis on the coronagraph images to determine the three-dimensional trajectory of coronal mass ejections. Later, one STEREO spacecraft can image a CME as it passes over, and is sample by, the other.

References Y. Li, B. J. Lynch, G. Stenborg, J. G. Luhmann, K. E. J. Huttunen, B. T. Welsch, **P. C. Liewer**, and A. Vourlidas, "The Solar Magnetic Field and Coronal Dynamics of the Eruption on 2007 May 19," (Ap. J, to be published 2008)

Y. C.-M. Liu, M. Opher, O. Cohen, **P. C. Liewer**, , and T. I. Gombosi, "A Simulation of a CME Propagation and Shock Evolution in the Lower Solar Corona," Ap. J. **680** (2008) p. 757, DOI: 10.1086/58767

Location:

Jet Propulsion Laboratory

Pasadena, California

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/oair/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.

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NPP

NASA Postdoctoral Program

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