

Project Details

ROSES ID: NNH10ZDA001N

Selection Year: 2011

Program Element: Focused Science Topic

Topic: Jets in the Solar Atmosphere and their Effects in the Heliosphere

Project Title:

Modeling Reconnection-Driven Jets and their Coronal/Heliospheric Consequences

PI Name: Judy Karpen

PI Email: atn@g.ucla.edu

Affiliation: Naval Research Laboratory

Project Member(s):

- Antiochos, Spiro K.; Co-I; NASA, Goddard SFC
- DeVore, C Richard; Co-I; NASA Goddard Space Flight Center
- Pariat, Etienne Jacques Marie; Collaborator; Observatoire de Paris

Summary:

We propose to model reconnection-driven solar jets and their impact on the corona and heliosphere. A combination of analytic theory and 3D numerical modeling, guided by recent observations from Hinode, STEREO, and SDO, will be used to determine the energetic and dynamic consequences of reconnection in an embedded-bipole magnetic configuration. We will test the hypothesis that reconnection-driven jets can contribute significant mass and wave flux to the corona and solar wind, as well as heat coronal loops. We will work closely with the team to determine the most appropriate range of bipole scales, initial null heights, and combination of topologies (open-closed vs closed-closed) for our simulations, and to define observable signatures that can serve as definite tests of our models.

Publication References:

no references