

Project Details

ROSES ID: NNH07ZDA001N

Selection Year: 2008

Program Element: Focused Science Topic

Topic: Focused science topic for Strategic Goal 1 (Solar storms): Exploring the magnetic connection between the photosphere and low corona

Project Title:

Coronal Magnetic Fields from Radio Observations

PI Name: Stephen White

PI Email: wbwhite@ucsd.edu

Affiliation: University of Maryland

Project Member(s):

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Summary:

This is a proposal to participate in the focussed science topic for strategic goal 1 by using radio measurements of coronal magnetic field strengths to test extrapolations of photospheric and chromospheric field measurements. New missions are acquiring extensive data on solar surface magnetic fields and extrapolation methods are being used to estimate coronal fields, but the tests of real data usually involve matching field line configurations available from EUV and soft X-ray images and are in no sense quantitative. Radio observations are capable of measuring coronal magnetic fields directly, and thus provide several complementary test diagnostics: they can be used to compare the magnitude of the magnetic field extrapolated into the corona, determine field-line connectivity, and address the height of the corona. We propose to acquire observations of active regions using the Expanded Very Large Array, which offers a major upgrade over the older VLA data, and to use them to test coronal magnetic field extrapolations in conjunction with other members of the team for strategic goal 1.

The intrinsic merit of the proposed research is a quantitative test of techniques important for future LWS studies. This proposal addresses NASA Strategic goal 3B.

Publication References:

no references