

Project Details

ROSES ID: NNH05ZDA001N

Selection Year: 2006

Program Element: Focused Science Topic

Topic: Determine the mechanisms that heat and accelerate the solar wind

Project Title:

Solar wind origin and acceleration over the solar cycle

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Summary:

The knowledge of the source region, acceleration mechanism(s) and evolution over the solar cycle are of fundamental importance to NASA's efforts to understand the Sun and its effects on Earth and on human exploration. Here we propose a three-year investigation on the origin and acceleration of the solar wind, and of their evolution over the solar cycle. We will study the physical properties of the solar coronal plasma from the limb out to 4 solar radii making use of spectra from UVCS and SUMER, and images from EIT, Yohkoh and LASCO C1. The observations were taken from 1996 to 2005 and cover nearly an entire solar cycle. The data allow a comprehensive physical description of streamers and coronal holes, where the solar wind originates, and tests of ion-cyclotron wave damping as a mechanism for solar wind heating and acceleration.

Publication References:

Summary: no summary

Reference: Spadaro, D.; Susino, R.; Ventura, R.; Vourlidas, A.; Landi, E.; (2007), Physical parameters of a mid-latitude streamer during the declining phase of the solar cycle, *Astronomy and Astrophysics*, Volume 475, Issue 2, November IV 2007, pp.707-715, doi: 10.1051/0004-6361:20077873