



Contribution ID : 1312

Type : Oral

New Views of Solar Energetic Particles and Coronal Mass Ejections from STEREO

Thursday, 5 July 2007 17:25 (0:30)

Abstract content

Approximately 20 years ago it was discovered that the largest solar energetic particle (SEP) events are closely associated with Coronal Mass Ejections (CMEs) in which the Sun suddenly ejects a billion tons of material at speeds that can exceed 2500 km/sec. The past solar maximum provided the opportunity to study the connection between CMEs and SEPs using SOHO images and SEP data from near-Earth spacecraft like ACE and Wind. In October of 2006 a new era in CME/SEP studies was initiated with the launch of NASA's STEREO mission. As STEREO's twin spacecraft begin to separate they are providing stereo imaging of the structure as CMEs moving from < 1 to > 100 solar radii above the Sun. These stereo images are complemented by stereo radio imaging of coronal and interplanetary shocks, and by multipoint in situ measurements of the solar wind, interplanetary magnetic field, CME ejecta, and accelerated particle populations. This talk will review the connection between CMEs and SEPs, show examples of the first data from STEREO, and illustrate the kinds of questions that these new data are beginning to address.

If this papers is presented for a collaboration, please specify the collaboration

STEREO Team

Summary

Reference

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Session Classification : Plenaries 2

Track Classification : Special