



Multi-spacecraft observations of the January 17, 2010 solar energetic particle event

Nina Dresing (1), Raúl Gómez-Herrero (1), Andreas Klassen (1), Bernd Heber (1), Yulia Kartavykh (2,3), and Wolfgang Dröge (2)

(1) IEAP, University of Kiel, Germany, (2) Institut für Theoretische Physik und Astrophysik, University of Würzburg, Germany, (3) Ioffe Physical-Technical Institute, St. Petersburg, Russia

During the rising phase of solar cycle 24 several solar energetic particle (SEP) events have been observed by three well separated viewpoints provided by the STEREO and SOHO spacecraft. The longitudinal separation of > 130 degrees of the two STEREO spacecraft in Jan 2010 offers a unique possibility to investigate the angular distribution of SEPs at 1 AU.

In this work we present multi-spacecraft observations of the Jan 17, 2010 SEP event, whose associated flare and EIT wave were only seen at the southern East limb by STEREO B and remained behind the limb for STEREO A and SOHO. Energetic electron increases were measured by the Solar Electron Proton Telescopes (SEPT) onboard both STEREO spacecraft and the Electron Proton Helium Instrument (EPHIN) on SOHO. The longitudinal separation between the active region and the nominal magnetic footprint of the spacecraft varies between 108 degrees for STEREO B and 170 degrees for SOHO. The associated radio type III burst was observed at 3:56 UT on day 17, 2010. The electron onset time at all three spacecraft was delayed by more than one hour. Although the electrons started to rise 20 minutes later at STEREO A than at STEREO B, the intensity was a factor of about 7 higher at STEREO A. We tentatively suggest that an EIT wave observed by STEREO B, which was heading towards the magnetic footprint of STEREO B, plays a crucial role for the electron release.