



Contribution ID : 1121

Type : Oral

Persistent Energetic ^3He in the Inner Heliosphere

Wednesday, 4 July 2007 11:42 (0:12)

Abstract content

Numerous discrete, small, impulsive solar energetic particle (ISEP) events with measurable intensities of ^3He at energies above 5 MeV/nucleon are observed around the solar maximum of the 11-year solar cycle. In addition, at times when there are no clearly distinguishable ISEP events it is common to observe a low, quasi-steady intensity of ^3He at these energies. Recent measurements under solar minimum conditions show the continued presence of this low-level ^3He flux, the origin of which is not well established. Possible sources for this ^3He include the superposition of numerous ^3He -rich ISEP events that individually are too small to detect with present instrumentation or secondary ^3He from galactic cosmic rays (GCRs) that have undergone adiabatic deceleration in penetrating to the inner heliosphere. These two sources of ^3He should be distinguishable because they have distinctly different energy spectra and solar cycle dependences. Using data from the Solar Isotope Spectrometer (SIS) on the Advanced Composition Explorer (ACE) mission we investigate the characteristics of the persistent, low-level ^3He and compare with observations of ^3He in ISEP events and in GCRs in order to constrain the origin of these particles.

This work was supported by NASA at Caltech (under grant NAG5-12929), JPL, Washington University, and GSFC.

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

Summary

Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olive, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 1 (SH), pages 91-94

Primary author(s) : Dr. WIEDENBECK, Mark (Jet Propulsion Laboratory, California Institute of Technology)

Co-author(s) : CUMMINGS, A. C. (California Institute of Technology); DE NOLFO, G. A. (NASA / Goddard Space Flight Center); LESKE, R. A. (California Institute of Technology); MEWALDT, R. A. (California Institute of Technology); STONE, E. C. (California Institute of Technology); VON ROSENINGE, T. T. (NASA / Goddard Space Flight Center); COHEN, C. M. S. (California Institute of Technology)

Presenter(s) : Dr. WIEDENBECK, Mark (Jet Propulsion Laboratory, California Institute of Technology)

Session Classification : SH 1.3, SH 1.4

Track Classification : SH.1.4