30th International Cosmic Ray Conference



Contribution ID : 1117

Type : Oral

Primary and Secondary Contributions to Arriving Abundances of Cosmic Ray Nuclides

Wednesday, 4 July 2007 13:05 (0:12)

Abstract content

The arriving abundances of a variety of cosmic-ray nuclides consist of comparable amounts of primary material produced by stellar nucleosynthesis and secondary matter resulting from fragmentation of heavier nuclei by collisions during interstellar propagation. In order to utilize such species in studies of cosmic-ray source composition it is necessary to determine the secondary fraction present in the arriving material and to assess the uncertainty in this determination. We have extracted the primary and secondary contributions to the arriving abundances for isotopes of elements between B and Ni by using 1) measurements of cosmic-ray elemental and isotopic composition obtained from the Cosmic Ray Isotope Spectrometer (CRIS) instrument on the Advanced Composition Explorer (ACE) spacecraft, 2) a data base of measured and calculated fragmentation cross sections, and 3) a leaky box model of interstellar propagation. We present derived decompositions and discuss their implications for studies of the composition of cosmic-ray source material.

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'Olivo, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 2 (OG part 1), pages 149-152

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

Co-author(s): BINNS, W. R. (Washington University); CUMMINGS, A. C. (California Institute of Technology); DE NOLFO, G. A. (NASA / Goddard Space Flight Center); ISRAEL, M. H. (Washington University); LESKE, R. A. (California Institute of Technology); MEWALDT, R. A. (California Institute of Technology); OGLIORE, R. C. (California Institute of Technology); STONE, E. C. (California Institute of Technology); VON ROSENVINGE, T. T. (NASA / Goddard Space Flight Center)

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

Session Classification : OG 1.2

Track Classification : OG.1.2