Abstract Submitted
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Constraints on Galactic Cosmic-Ray Origins from Elemental Composition Measurements[1] W.R. BINNS, Department of Physics, Washington University, St. Louis, MO 63130, E.R. CHRISTIAN, NASA/GSFC, Greenbelt, MD 20771, A.C. CUMMINGS, Caltech, Pasadena, CA 91125, G.A. DE NOLFO, NASA/GSFC, Greenbelt, MD 20771, M.H. ISRAEL, K.A. LAVE, Department of Physics, Washington University, St. Louis, MO 63130, R.A. LESKE, R.A. MEWALDT, E.C. STONE, Caltech, Pasadena, CA 91125, T.T. VON ROSENVINGE, NASA/GSFC, Greenbelt, MD 20771, M.E. WIEDENBECK, Jet Propulsion Laboratory, Caltech, Pasadena, CA 91109 — We present measurements of the elemental abundances of ultra-heavy (Z>29) cosmic rays made by the Cosmic Ray Isotope Spectrometer (CRIS) on NASA's Advanced Composition Explorer (ACE) satellite. The data correspond to more than 5000 days of data collection beginning December 4, 1997. The resolution in charge that we obtain is excellent, exhibiting essentially complete separation of adjacent charges in the Z>28 range. We detected 166 events over the charge range of 30<Z<41, slightly more than the corresponding number of events from the combination of two earlier balloon flights of the TIGER instrument. Our data agree well with the TIGER results. They show that the ordering of refractory and volatile elements with atomic mass is greatly improved when compared to a mix of massive star outflow and SN ejecta with normal ISM, rather than pure ISM, that the refractory and volatile elements have similar slopes, and that refractory elements are preferentially accelerated by a factor of ∼4. We conclude that these data are consistent with an OB association origin of GCRs.

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Walter Binns
Department of Physics, Washington University, St. Louis, MO 63130

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