Abstract Submitted
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The Super-TIGER Instrument to Probe Galactic Cosmic-Ray Origins[1] J.E. WARD, W.R. BINNS, M.H. ISRAEL, R.P. MURPHY, B.F. RAUCH, Washington University in Saint Louis, T.J. BRANDT, E.R. CHRISTIAN, G.A. DE NOLFO, T. HAMS, J.T. LINK, J.W. MITCHELL, M. SASAKI, K. SAKAI, NASA/Goddard Space Flight Center, A.W. LABRADOR, R.A. MEWALDT, E.C. STONE, California Institute of Technology, C.J. WADDINGTON, University of Minnesota, M.E. WIEDENBECK, Jet Propulsion Laboratory, California Institute of Technology — Super-TIGER is a large area (5.4 m^2) balloon-borne instrument designed to measure ultra-heavy cosmic-ray nuclei (Z = 30 and above) with individual-element resolution and high statistical precision. These measurements will provide sensitive tests of the emerging model of cosmic-ray origins in OB associations and models of the mechanism for selection of nuclei for acceleration. Furthermore, Super-TIGER will measure the energy spectra of the more abundant elements in the interval $10 \leq Z \leq 28$ at energies $0.8 < E < 10$ GeV/nucleon to test the hypothesis that microquasars or other sources could superpose spectral features. Super-TIGER, which builds on the heritage of the smaller TIGER, is expected to launch from Antarctica in December 2012. The particle charge and energy will be measured with a combination of plastic scintillators, acrylic and silica-aerogel Cherenkov detectors, and a scintillating fiber hodoscope. The design, expected performance and current status of the instrument along with the scientific implications of the Super-TIGER measurements will be presented.

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M. H. Israel
Washington University in Saint Louis

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