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Galactic Cosmic-Ray Composition and Spectra for Ne through Ni from 0.8 to 10 GeV/nuc with the SuperTIGER Instrument

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SuperTIGER (Trans-Iron Galactic Element Recorder) is a large-area balloon-borne instrument built to measure the galactic cosmic-ray abundances of elements from $Z=10$ (Ne) through $Z=56$ (Ba) at energies from 0.8 to ~ 10 GeV/nuc. SuperTIGER successfully flew around Antarctica for a record-breaking 55 days, from December 8, 2012 to February 1, 2013. In this paper, we present results of an analysis of the data taken during the flight for elements from $Z=10$ (Ne) to $Z=28$ (Ni). We report excellent charge separation throughout this range, with an Fe charge resolution of 0.16. We will compare our galactic element abundance measurements, secondary to primary ratios (e.g. $(\text{Si}+\text{Ti}+\text{V})/\text{Fe}$), and energy spectra with those from other instruments operating at different energy ranges.

Collaboration

– not specified –

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Primary author: LABRADOR, Allan (California Institute of Technology)

Co-authors: RAUCH, Brian (Washington University); STONE, Edward (California Institute of Technology); WADDINGTON, Jake (University of Minnesota); LINK, Jason (NASA/GSFC); WARD, John E (Washington University); MITCHELL, John (NASA/GSFC); SAKAI, Kenichi (NASA/GSFC); SASAKI, Makoto (NASA/GSFC); WIEDENBECK, Mark (Jet Propulsion Laboratory); ISRAEL, Martin (Washington University in St Louis); MEWALDT, Richard (California Institute of Technology); MURPHY, Ryan (Washington University); BRANDT, T. J. (NASA/GSFC); HAMS, Thomas (NASA/GSFC); Prof. BINNS, Walter (Washington University)

Presenter: LABRADOR, Allan (California Institute of Technology)

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