

Abstract Submitted  
for the APR16 Meeting of  
The American Physical Society

**Recovery of the SuperTIGER Instrument and Preparations for the Flight of SuperTIGER-2**<sup>1</sup> N.E. WALSH, Washington University in St. Louis, SUPERTIGER COLLABORATION — On December 8, 2012, the SuperTIGER (Trans-Iron Galactic Element Recorder) instrument began its long-duration balloon flight from Williams Field, Antarctica. Flying for a record-breaking 55 days at a mean altitude of 125,000 feet, the instrument successfully measured the relative elemental abundances of Galactic cosmic ray nuclei having charge ( $Z$ ) greater than  $Z=10$ , showing very well resolved individual element peaks up to  $Z=40$ . The instrument measures particle charge and energy through the combined use of two Cherenkov detectors and three scintillation detectors, and determines particle trajectory with a scintillating fiber hodoscope. After shutdown and two years on the ice, SuperTIGER was successfully recovered in January, 2015. Its detectors and hodoscopes are being tested and refurbished, and are expected to be used again for a second flight, SuperTIGER-2. The second flight is aimed at improving SuperTIGER's already excellent charge resolution as well as at accumulating more data to be combined with that of SuperTIGER for improved statistics. In November 2015, a test of the scintillator saturation effect was performed at CERN using a beam of interacted Pb nuclei to help create more accurate charge reconstruction models that will help resolve elements in the range  $Z=41$  to  $Z=60$ .

<sup>1</sup>This research was supported by NASA under grants NNX09AC17G, NNX14AB25G, the Peggy and Steve Fossett Foundation and the McDonnell Center for the Space Sciences at Washington University.

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Date submitted: 08 Jan 2016

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