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SuperTIGER Abundances of Galactic Cosmic Rays for the Atomic Number (Z) Interval 30 to 56¹ NATHAN WALSH, Washington University, St. Louis, SUPERTIGER COLLABORATION — We report preliminary elemental abundance results from the 55-day long-duration-balloon flight of SuperTIGER (Super Trans-Iron Galactic Element Recorder) during the 2012-2013 austral summer. SuperTIGER measured the relative abundances of Galactic cosmic-ray (GCR) nuclei with high statistical precision and well resolved individual element peaks from $_{10}\text{Ne}$ to $_{40}\text{Zr}$. SuperTIGER also made exploratory measurements of the relative abundances up to $_{56}\text{Ba}$. Although the statistics are low for elements heavier than $_{40}\text{Zr}$, we present preliminary relative abundance measurements of charges $Z = 41 - 56$ with individual element resolution. GCR measurements up to $_{40}\text{Zr}$ support a source acceleration model where supernovae in OB associations preferentially accelerate refractory elements that are more readily embedded in interstellar dust grains than volatiles. In addition, injection into the GCR for both refractory and volatile elements appears to follow a charge dependence consistent with their grain sputtering cross sections. Our preliminary measurements of the $Z = 41 - 56$ range suggest the existence of an alternative GCR source or acceleration model for $Z > 40$ elements.

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