Abstract Submitted
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Elemental Abundances in the Cosmic Rays 26≤Z≤34 – Evidence For Cosmic-Ray Origin in OB Associations[1] M.H. ISRAEL, Washington U., St. Louis, B.F. RAUCH, K. LODDERS, W.R. BINNS, WU, E.R. CHRISTIAN, NASA/GSFC, G.A. DE NOLFO, GSFC, S. GEIER, Calif. Inst. of Technology, J.T. LINK, GSFC, R.A. MEWALDT, Caltech, L.M. SCOTT, WU, R.E. STREITMATTER, GSFC, E.C. STONE, Caltech, C.J. WADDINGTON, U. of Minnesota, M.E. WIEDENBECK, Jet Propulsion Lab — The TIGER instrument flew on high-altitude balloons over Antarctica for 50 days. The observed elemental abundances with 26≤Z≤34, when corrected for fragmentation during propagation in the Galaxy and in the atmosphere, show cosmic-ray source abundances that differ from the standard Solar System (SS) abundances. Preferential acceleration of refractory elements does not fully explain these differences. They can be accounted for by a source mixture of ∼80% SS and ∼20% representative of the ejecta from massive stars, which mixture is then affected by elemental volatility in the acceleration process. This 80/20 mixture has also been shown to account for the isotopic composition of lighter cosmic rays and can be understood as the result of cosmic-ray acceleration in OB associations.

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