

THE ABUNDANCES OF ACTINIDE NUCLEI IN THE COSMIC RADIATION AS CLUES TO COSMIC RAY ORIGIN

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The solid-state nuclear-track detector (SSNTD) array of the DIAS-ESTEC Ultra Heavy Cosmic Ray Experiment (UHCRE) on the Long Duration Exposure Facility (LDEF) collected approximately 3000 cosmic-ray nuclei with $Z > 65$ in the $E > 1.5$ GeV/nucleon energy region during an exposure of approximately $150 \text{ m}^2 \text{ sr yr}$ in Earth orbit. Following further analysis and extensive experimental work to improve charge resolution, the upgraded charge spectrum for $Z > 70$ is presented. In particular, the current best value for the cosmic-ray actinide relative abundance, $(Z > 88)/(74 \leq Z \leq 87)$, will be derived and considered in the context of current theories of cosmic ray origin.