

Abstract Submitted
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The Heavy Nuclei eXplorer (HNX) JOHN W MITCHELL, NASA Goddard Space Flight Center, HNX COLLABORATION — The Heavy Nuclei eXplorer (HNX) will investigate the nature of the reservoirs of nuclei at the cosmic-ray sources, the mechanisms by which nuclei are removed from the reservoirs and injected into cosmic accelerators, and the acceleration mechanism. Current spacecraft accommodations and funding have required HNX to be reconfigured from its earlier conceptions. HNX will use two large high-precision instruments, the Extremely-heavy Cosmic-Ray Composition Observer (ECCO) and the Cosmic-Ray Trans-Iron Galactic Element Recorder (CosmicTIGER), now flying on separate platforms, to measure, for the first time, the abundance of every individual element in the periodic table from carbon through the actinides, providing the first measurement of many of these elements. HNX will measure several thousand Ultra-Heavy Galactic Cosmic Ray (UHGCR) nuclei $Z \geq 30$, including about 50 actinides, and will: determine whether GCR are accelerated from new or old material, and find their age; measure the mix of nucleosynthesis processes responsible for the UHGCRs; determine how UHGCR elements are selected for acceleration, and measure the mean integrated pathlength traversed by UHGCRs before observation. The scientific motivation and instrument complement of HNX will be discussed.

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