Measuring the Cosmic Particle Radiation from electrons to actinides - HNX/TIGERISS  

JOHN MITCHELL, NASA Goddard Space Flight Center — The Heavy Nuclei eXplorer (HNX) mission will measure the abundances of nuclei from Carbon (Z=6) to Curium (Z=96) in the cosmic radiation with the resolution to identify the atomic number of each detected nucleus. HNX will measure a significant number of actinides. HNX utilizes two high-precision instruments, the Extremely-heavy Cosmic-ray Composition Observer (ECCO) and the Cosmic-Ray Trans-Iron Galactic Element Recorder (CosmicTIGER), located in a SpaceX DragonLab capsule orbiting the Earth. This talk will discuss the motivating science, the HNX mission, the design and performance of the HNX instruments, and another new instrument, TIGERISS (Trans-Iron Galactic Element Recorder on the ISS), that will be proposed as an intermediate between SuperTIGER and HNX.