

"The Violent Universe: New Frontiers"  
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Probing Stellar Violence with Beams of Unstable Nuclei  
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When stars explode, they release enormous amounts of energy while synthesizing the elements that make up our bodies and the world around us: we are literally composed of the ashes of these cataclysmic stellar events. Sophisticated computer simulations of exploding stars are carried out to better understand our origins, and these require information that can only be obtained in earth-based laboratories using beams of unstable nuclei. The first generation of radioactive nuclear beam facilities are already changing our understanding of the stars, and plans for a next-generation, billion-dollar facility in the US are currently being drafted. I will describe why science with radioactive beams represents the new frontier for studies of the violent cosmos.

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