

## CASSIOPEIA A **JANUARY2008** Cassiopeia A is the youngest (about 300 years old) known supernova Th Fr Su Мо Tu We Sa remnant in the Milky Way. Astronomers have used Chandra's long ob-01 02 03 04 servations of this remnant to make a map of the acceleration of electrons in this supernova remnant. The analysis shows that the electrons

trons in this supernova remnant. The analysis shows that the electrons are being accelerated to almost the maximum theoretical limit in some parts of Cassiopeia A (Cas A) in what can be thought of as a "relativistic pinball machine." Protons and ions, which make up the bulk of cosmic rays, are expected to be accelerated in a similar way to the electrons. The Cas A observations thus provide strong evidence that supernova remnants are key sites for energizing cosmic rays.

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