



**Chandra X-ray  
Observatory Center**

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**Cassiopeia A:** A supernova remnant believed to be the remains of a massive star that exploded over 300 years ago.  
(Credit: NASA/CXC/UMass Amherst/M.D.Stage et al.)

**Caption:** New analysis of an extraordinarily deep Chandra image of Cassiopeia A shows that this supernova remnant accelerates electrons to enormous energies. The blue, wispy arcs reveal the acceleration is taking place in an expanding shock wave generated by the explosion that destroyed the progenitor star. This acceleration is close to the theoretical limit and provides strong evidence that supernova remnants are key sites for generating cosmic rays, mysterious high-energy particles that bombard the Earth.

**Scale:** Image is 7.3 x 6.4 arcmin.

*Chandra X-ray Observatory ACIS Image*

*CXC operated for NASA by the Smithsonian Astrophysical Observatory*