



Chandra X-ray
Observatory Center

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1E 0657-56: An extremely hot galaxy cluster about 3.8 billion light years from Earth.
(Credit: NASA/SAO/CXC/M. Markevitch et al.)

Caption: A bow-shaped shock wave located near the right side of the cluster was revealed in Chandra's image of 1E 0657-56. The shock wave is thought to be the result of the merger of a smaller group or sub-cluster of galaxies with 1E 0657-56. As the cooler, 70 million degree, gas in the sub-cluster plows through 100 million degree gas in the main cluster at speeds of 6 million miles per hour two effects can be measured - a wind created by the motion of the sub-cluster strips away some of the cooler gas, and the leading edge of the shock wave heats the nearby region to 180 million degrees. Astronomers hope to use this and future observations to determine if the high temperature of the cluster gas may be due to shocks waves produced by the merger of many sub-clusters.

Scale: Image is 9 arcmin on a side.

Chandra X-ray Observatory ACIS Image

CXC operated for NASA by the Smithsonian Astrophysical Observatory
