Chandra Science Highlight

3C438: Galaxy Cluster Takes it to the Extreme

The temperature of the gas in the cluster is about 170 million Kelvins, making it one of the hottest clusters ever detected.

Chandra’s image reveals evidence an arc-like discontinuity in surface brightness extending 2 million light years from the upper left to the lower right of the image.

An enormous amount of energy (~3 x 10^{62} ergs) would be required to produce such a large structure.

One plausible scenario is that two massive clusters collided at high velocity and later merged. This would have created a shock front in the hot gas that could account for the ridge seen in the Chandra data.


CXC operated for NASA by the Smithsonian Astrophysical Observatory

June 2007