



**Chandra X-ray
Observatory Center**

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Abell 2146: A collision of galaxy clusters located about 2.8 billion light years from Earth
(Credit: X-ray: NASA/CXC/Univ. of Nottingham/H. Russell et al.; Optical: NAOJ/Subaru)

Caption: In this composite image of two merging galaxy clusters known as Abell 2146, X-rays from Chandra (purple) show hot gas while optical data from the Subaru telescope in Hawaii reveal individual galaxies (red and white). One cluster is moving towards the bottom left and plowing through the other cluster. The hot gas in the former is pushing out a shock wave, like a sonic boom generated by a supersonic jet, as it collides with the hot gas in the other cluster. A study shows a deep connection between this galaxy cluster collision — which is among the largest, most energetic events in the Universe — and much smaller, weaker ones powered by our own Sun.

Scale: The image is about 7.2 arcmin (5.3 million light years) across.

Chandra X-ray Observatory ACIS Image

CXC operated for NASA by the Smithsonian Astrophysical Observatory
