



**Chandra X-ray
Observatory Center**

Harvard-Smithsonian Center for Astrophysics
60 Garden St. Cambridge, MA 02138 USA
<http://chandra.harvard.edu>

Abell 3411 and 3412: Abell 3411 and Abell 3412: A pair of colliding galaxy clusters about 2 billion light years away.

(Credit: X-ray: NASA/CXC/SAO/R. van Weeren et al; Optical: NAOJ/Subaru; Radio: NCRA/TIFR/GMRT)

Caption: Astronomers have discovered what happens when the eruption from a supermassive black hole is swept up by the collision and merger of two galaxy clusters. This composite image contains X-rays from Chandra (blue), radio emission from the GMRT (red), and optical data from Subaru (red, green, and blue) of the colliding galaxy clusters called Abell 3411 and Abell 3412. These and other telescopes were used to analyze how the combination of these two powerful phenomena can create an extraordinary cosmic particle accelerator.

Scale: Image is about 17 arcmin (about 10 million light years) across

Chandra X-ray Observatory ACIS Image

CXC operated for NASA by the Smithsonian Astrophysical Observatory