



**Chandra X-ray  
Observatory Center**

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**Abell 1033:** A collision of two galaxy clusters located about 1.6 billion light years from Earth.  
(Credit: X-ray: NASA/CXC/Univ of Hamburg/F. de Gasperin et al; Optical: SDSS; Radio: NRAO/VLA)

**Caption:** Astronomers have found evidence for a "radio phoenix" in the collision of two galaxy clusters, where vast clouds of high-energy particles have been regenerated. This composite image of Abell 1033 combines X-ray data from Chandra (pink) along with radio data (green) and optical data that reveals the density of the galaxies (blue). By tracing the history of mergers like the one found in Abell 1033, astronomers can better understand how galaxy clusters - the largest structures in the Universe held together by gravity - evolve over time.

**Scale:** Image is 17 arcmin across (about 7.5 million light years)

*Chandra X-ray Observatory ACIS Image*

*CXC operated for NASA by the Smithsonian Astrophysical Observatory*

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