



**Chandra X-ray  
Observatory Center**

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**Abell 1033:** A galaxy cluster located about 1.6 billion light years from Earth.  
(Credit: X-ray: NASA/CXC/Leiden Univ./F. de Gasperin et al; Optical: SDSS; Radio: LOFAR/ASTRON, NCRA/TIFR/GMRT)

**Caption:** A look-alike of the Star Trek "Enterprise" can be seen in a new composite image of the galaxy cluster Abell 1033 that includes X-rays from Chandra (purple), radio emission from LOFAR (blue), and optical emission from the Sloan Digital Sky Survey. Scientists have determined that Abell 1033 is actually two galaxy clusters in the process of colliding. This extraordinarily energetic event, happening from the top to the bottom in the image, has produced turbulence and shock waves.

**Scale:** About 7.4 arcmin across (about 3.3 million light years across)

*Chandra X-ray Observatory ACIS Image*

*CXC operated for NASA by the Smithsonian Astrophysical Observatory*

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