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- A new composite image from NASA's Great Observatories presents a stunning display of the Antennae galaxies.
- X-ray data from Chandra (blue), optical data from Hubble (gold and brown), and infrared data from Spitzer (red) are featured.
- Supernova explosions are enriching the intergalactic gas with elements like oxygen, iron, and silicon that will be incorporated into new generations of stars and planets

A beautiful new image of two colliding galaxies has been released by NASA's Great Observatories. The Antennae galaxies, located about 62 million light years from Earth, are shown in this composite image from the Chandra X-ray Observatory (blue), the Hubble Space Telescope (gold and brown), and the Spitzer Space Telescope (red). The Antennae galaxies take their name from the long antenna-like "arms," seen in [wide-angle views](#) of the system. These features were produced by [tidal forces](#) generated in the collision.



[Wide-field Optical Image](#)

The collision, which began more than 100 million years ago and is still occurring, has triggered the formation of millions of stars in clouds of dusts and gas in the galaxies. The most massive of these young stars have already sped through their evolution in a few million years and exploded as [supernovas](#).

The X-ray image from Chandra shows huge clouds of hot, interstellar gas that have been injected with rich deposits of [elements](#) from supernova explosions. This enriched gas, which includes elements such as oxygen, iron, magnesium and silicon, will be incorporated into new generations of stars and planets. The bright, point-like sources in the image are produced by material falling onto [black holes](#) and [neutron stars](#) that are remnants of the massive stars. Some of these black holes may have masses that are almost one hundred times that of the Sun.

The Spitzer data show infrared light from warm dust clouds that have been heated by newborn stars, with the brightest clouds lying in the overlap region between the two galaxies. The Hubble data reveal old stars and star-forming regions in gold and white while filaments of dust appear in brown. Many of the fainter objects in the optical image are clusters containing thousands of stars.

Fast Facts for Antennae:

Credit



X-ray: NASA/CXC/SAO/J.DePasquale; IR: NASA/JPL-Caltech; Optical: NASA/STScI

Release Date

August 05, 2010

Scale

Image is 3.4 arcmin across, (about 61,000 light years).

Category	Normal Galaxies & Starburst Galaxies
Coordinates (J2000)	RA 12h 01m 53.70s Dec -18° 52' 35.5"
Constellation	Corvus
Observation Date	Dec 1, 1999; Dec 29, 2001; Nov 22, May 31, Apr 18, Jul 10 & Jul 13, 2002
Observation Time	117 hours (4 days 21 hours)
Obs. ID	315, 3040-44, 3718
Instrument	ACIS
Also Known As	NGC 4038, NGC 4039
Color Code	Optical (Yellow), X-ray (Blue), Infrared (Red)
	
Distance Estimate	About 60 million light years
	

Visitor Comments (32)



Thank you for all you do.

Posted by yasmina dellaa on Wednesday, 05.14.14 @ 17:30pm

It is very interesting. Thank you.

Posted by ashebertesfaye@gmail.com on Friday, 08.10.12 @ 04:52am

Can one establish an age by determining the age of the stars at various physical points along the merger making use of the shock induced star formation in the regions along merger?

Posted by Naveen on Monday, 04.23.12 @ 22:17pm

It is really a mystically profound experience for me to view this presentation on the collision of galaxies. It took less than a million years for human intelligence to evolve to such a level to be able to comprehend the universe in which he is an astronomically insignificant entity, yet the glorious development of man's knowledge to be able to reach this level awareness is more than a miracle. Thanks to USA NASA for its contribution to this human development.

Posted by Wilfredo Severo Reyes on Wednesday, 10.27.10 @ 14:30pm

Hi David,
I would suggest that you do a search in your favorite search engine and type in merging galaxies or galaxy collisions etc. I have found many great photos of galaxy mergers this way.
Marvin L.S.

Posted by Marvin on Wednesday, 10.27.10 @ 13:53pm

Is there an image of a galaxy merger in a more advanced state? I would love to see that.

Posted by David on Friday, 09.17.10 @ 05:25am

Too great. Thank you all team members. I have seen colliding galaxies for the first time. It is difficult to compare such time spans with our life spans.

Posted by C. Rajani Kumar on Thursday, 09.2.10 @ 07:34am

Thanks for your comment. We agree that the image does resemble an embryo, which is apt in the sense that the merger will slowly develop into a new galaxy.
P,Edmonds, CXC

Posted by P. Edmonds on Tuesday, 08.31.10 @ 09:01am

Looks like an embryo.

Posted by srdgrn on Sunday, 08.22.10 @ 04:25am

Dear Jim Devore,
The collision did start a long time ago, but it won't have an impact on our galaxy, if that's what you mean.