



Chandra X-Ray Observatory Center

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M82: Starburst galaxy with ultraluminous X-ray sources.
Credit: NASA/SAO/G.Fabbiano et al.

This Chandra image is colorized to highlight a population of point-like "ultraluminous" X-ray sources in M82, a starburst galaxy 11 million light years from Earth. Red represents the low energy band, green intermediate, and blue the highest observed energies. The white and yellow sources are those that emit significant amounts of both low- and high-energy X-rays. The red diffuse cloud is caused by hot gas flowing away from the central region of M82. The ultraluminous sources, which emit ten to several hundred times more X-ray power than similar sources in our Galaxy, are thought to be either massive black holes, or black holes that are beaming energy toward Earth. Observations of M82 and other starburst galaxies suggest that the origin of ultraluminous X-ray sources is related to a burst of star formation triggered by a collision with another galaxy. Astronomers suspect that M82 collided with M81, a nearby large galaxy, about 100 million years ago.

Scale: Image is 5 arcmin on a side.
Chandra X-ray Observatory ACIS image

CXC operated for NASA by the Smithsonian Astrophysical Observatory