



**Chandra X-ray
Observatory Center**

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

M83: A spiral galaxy located about 15 million light years from Earth.
(Credit: Left image - Optical: ESO/VLT; Close-up - X-ray: NASA/CXC/Curtin University/R.Soria et al.,
Optical: NASA/STScI/Middlebury College/F.Winkler et al.)

Caption: An extraordinary outburst from a black hole – where its X-ray output increased at least 3,000 times -- has been seen with NASA's Chandra X-ray Observatory in the galaxy M83. Chandra observed what is called a ULX, or ultraluminous X-ray source. The panel on the left features an optical view of the full M83 galaxy, while the right panel shows a close up of the region where the ULX was found with data from Chandra (pink) and Hubble (blue and yellow). The remarkable behavior of this ULX in M83 provides direct evidence for a population of older, volatile, stellar-mass black holes.

Scale: Left image: 17.6 arcmin on a side (~77,000 light years); Close-up: 0.6 x 1.2 arcmin (~2600 x ~5200 light years)

Chandra X-ray Observatory ACIS Image

CXC operated for NASA by the Smithsonian Astrophysical Observatory