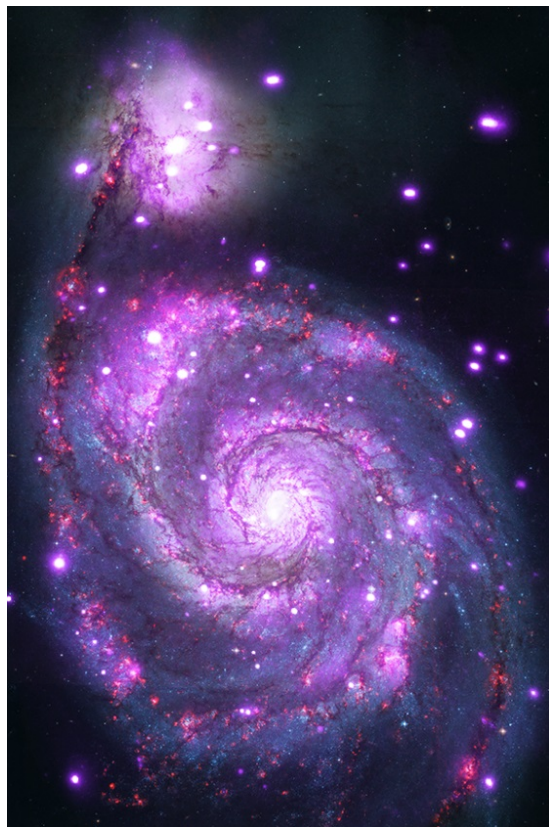




Chandra Science Highlight

M51: A Deep X-ray Survey



Scale:

Image is about 6 x 10
arcmin (about 52,000 x
87,000 light years)

Distance Estimate:

30 million light years

In this composite image of M51, a.k.a. the Whirlpool Galaxy, Chandra data are shown in purple. Optical data from the Hubble Space Telescope are red, green, and blue. The Chandra data were collected in 11 observations totaling 232 hours over the period from March 2000 to October 2012.

Highlights:

- ❑ Hundreds of point-like X-ray sources were detected and monitored.
- ❑ Most of the point sources are X-ray binary systems with a neutron star accreting gas from a Sun-like star.
- ❑ The X-ray brightness of eight of these sources indicates that they are produced by black holes accreting matter from stars much more massive than the Sun.
- ❑ Much of the diffuse X-ray emission comes from interstellar gas that has been heated to millions of degrees by supernovas.

Reference: Kilgard, R. et al, AAS 224, 1-5 June 2014

Credit: X-ray: NASA/CXC/Wesleyan Univ./R.Kilgard, et al; Optical: NASA/STScI

Instrument: Chandra ACIS Observation

**CXC Operated for NASA by the
Smithsonian Astrophysical Observatory**



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