

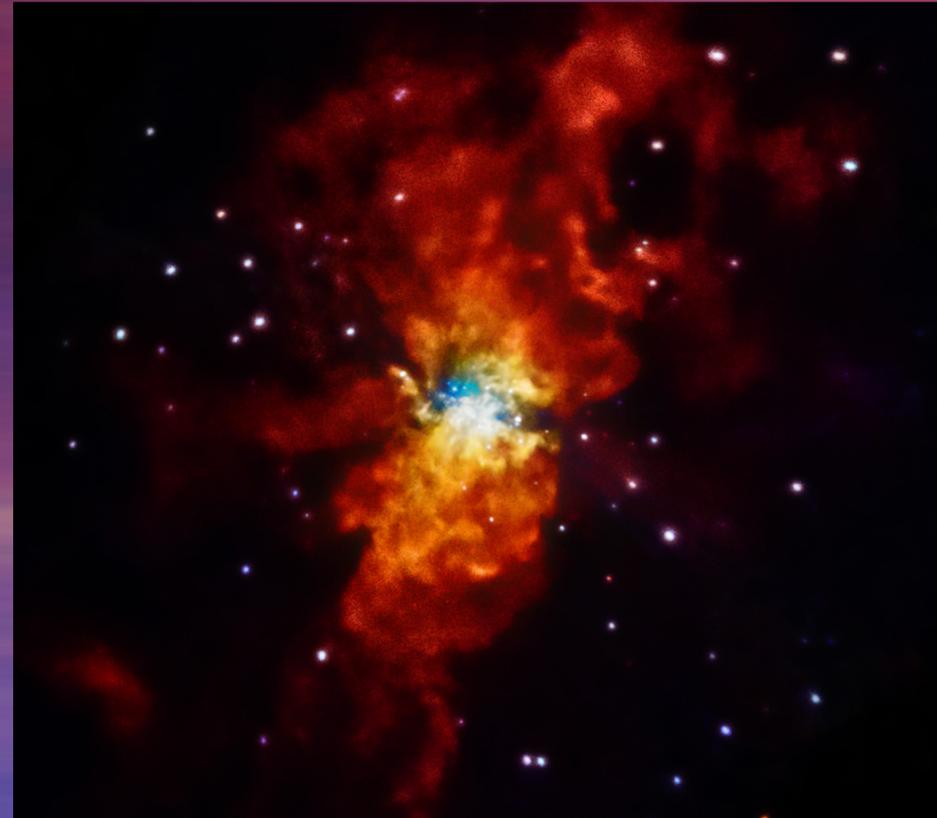
# GALAXIES

A galaxy is a gravitationally-bound system of stars, gas, dust and dark matter. There are billions of galaxies throughout the Universe and they come in different shapes and sizes. Within these galaxies are black holes, neutron stars, and bubbles of hot gas that reveal themselves in X-rays. Astronomers use Chandra to study galactic behavior and phenomena.



While we cannot get a full picture of the Milky Way since we reside within it, observations with Chandra and other telescopes have told us a great deal about our home galaxy. This includes in-depth studies at the center of the Milky Way where a supermassive black hole resides.

X-ray: NASA/CXC/UMass/D. Wang et al.; Optical: NASA/ESA/STScI/D. Wang et al.; IR: NASA/JPL-Caltech/SSC/S. Stolovy



The galaxy Messier 82 has a huge amount of stars forming within it, leading astronomers to classify it as a “starburst galaxy.” Chandra reveals hundreds of point-like X-ray sources, which likely contain black holes, as well as bubbles of hot gas that extend for millions of light years.

NASA/CXC/SAO/R. Margutti et al



Like the Milky Way, the Whirlpool Galaxy (officially named Messier 51) is classified as a spiral galaxy. This means that majestic arms of stars, dust, and gas emanate outward from the galaxy’s center. With its face-on orientation to Earth, astronomers can study the full view of this spiral galaxy.

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