



**Chandra X-ray  
Observatory Center**

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

**NGC 4151:** A galaxy about 43 million light years from Earth with an actively growing black hole at its center.

(Credit: X-ray: NASA/CXC/CfA/J.Wang et al.; Optical: Isaac Newton Group of Telescopes, La Palma/Jacobus Kapteyn Telescope, Radio: NSF/NRAO/VLA)

**Caption:** This composite image features the central region of the spiral galaxy NGC 4151. In the pupil of the "eye," X-rays (blue) from Chandra are combined with optical data (yellow) showing positively charged hydrogen. The red around the pupil reveals neutral hydrogen detected by radio observations. A study has shown that the X-ray emission was likely caused by an outburst powered by the supermassive black hole located in the white region in the center of the galaxy. Evidence for this idea comes from the elongation of the X-rays running from the top left to the bottom right and details of the X-ray spectrum.

**Scale:** Image is 3 arcmin across (about 37,540 light years across)

*Chandra X-ray Observatory ACIS Image*

*CXC operated for NASA by the Smithsonian Astrophysical Observatory*