



**Chandra X-Ray
Observatory Center**

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NGC 4151: A distant galaxy with an active nucleus.

Credit: NASA/MIT/P.Ogle et al.

Chandra's image of the central region of the galaxy NGC 4151 shows a massive cloud of hot gas that is 3000 light years across. The gas is heated by X rays from gas very near a giant black hole in the center of the image. A spectrum made with the high energy spectrometer aboard Chandra revealed that the gas contains a variety of heavy elements such as nitrogen, oxygen, neon, magnesium, aluminum, silicon, and iron. The elongated shape of the cloud confirms that X-rays from the black hole are collimated into a beam that illuminates only portions of the gas in the galaxy.

Scale: Image is 45 arcsec on a side.

Chandra X-Ray Observatory ACIS/HETG Image

CXC operated for NASA by the Smithsonian Astrophysical Observatory