



**Chandra X-ray
Observatory Center**

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NGC 4178: A black hole located in the middle of the spiral galaxy NGC 4178
(Credit: X-ray: NASA/CXC/George Mason Univ/N.Secretst et al; Optical: SDSS)

Caption: One of the lowest mass supermassive black holes ever observed in the middle of a galaxy has been identified, thanks to NASA's Chandra X-ray Observatory and several other observatories. The black hole is located in the middle of the spiral galaxy NGC 4178, shown in this image from the Sloan Digital Sky Survey. The inset shows an X-ray source at the position of the black hole, in the center of a Chandra image. An analysis of the Chandra data, along with infrared data from NASA's Spitzer Space Telescope and radio data from the NSF's Very Large Array suggests that the black hole has a mass less than about 200,000 times that of the sun, near the extreme low-mass end of the supermassive black hole range. The host galaxy is of a type not expected to harbor supermassive black holes, suggesting that this black hole, while related to its supermassive cousins, may have a different origin.

Scale: Main image: 10 arcmin across (about 160,000 light years)

Chandra X-ray Observatory ACIS Image

CXC operated for NASA by the Smithsonian Astrophysical Observatory