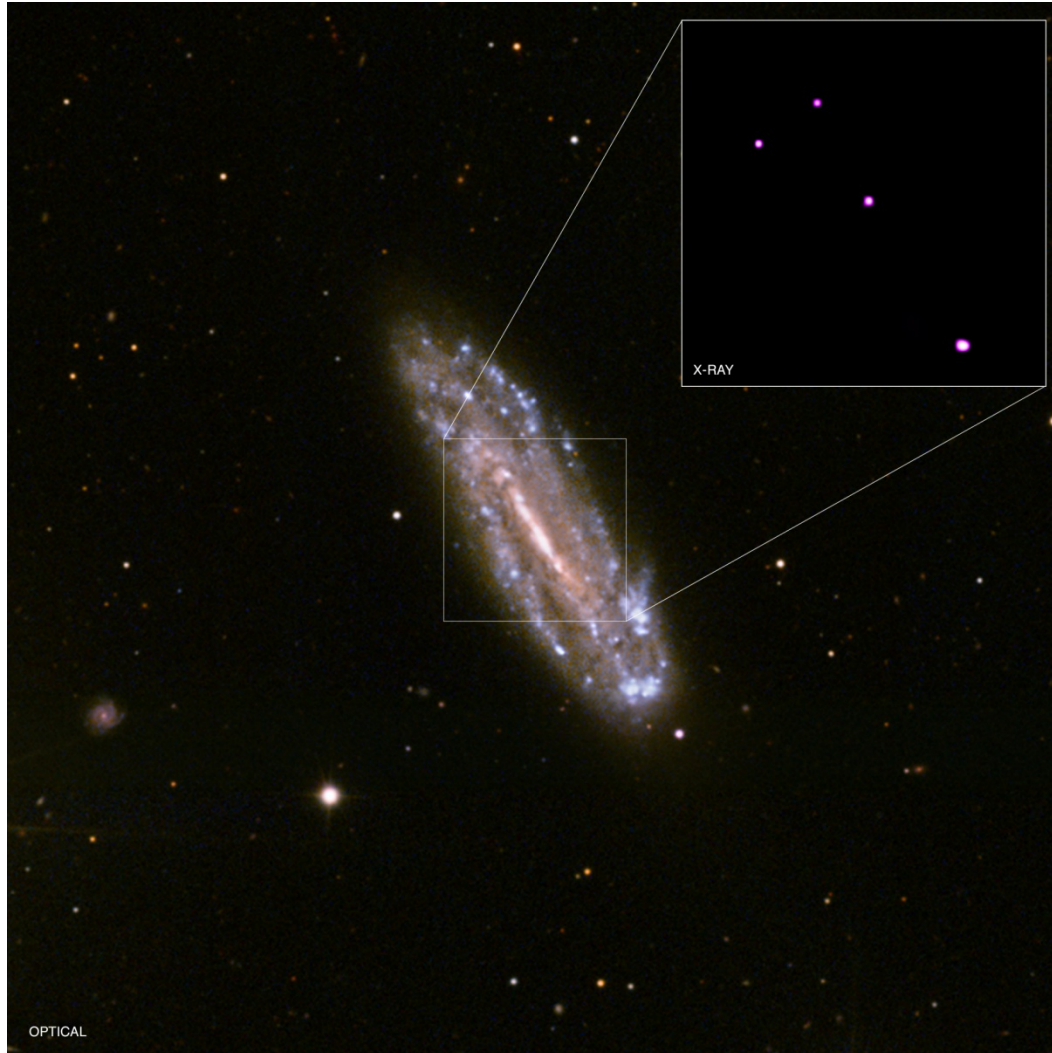




# Chandra Science Highlight

## NGC 4178: Revealing a Mini-Supermassive Black Hole



The inset in this optical image of the spiral galaxy NGC 4178 shows the Chandra X-ray image of the central region of the galaxy. The X-ray source in the middle of the image is produced by a black hole that is accreting gas.

- Infrared observations suggest that the nucleus of the galaxy contains a highly absorbed source due to an accreting supermassive black hole.
- Correlations between X-ray and radio data for supermassive black holes suggest that the mass of the black hole is about 200,000 solar masses, near the extreme low-mass end of the supermassive black hole range for galaxies.
- NGC 4178 is a disk galaxy without a bright central bulge of stars. The existence of a supermassive black hole in such a galaxy may indicate that a mechanism other than galactic mergers is at work in forming supermassive black holes.

Reference: Secret, N et al, 2012 ApJ 753:38;  
arXiv: 1205.0230

Credit: X-ray: NASA/CXC/George Mason U./N.  
Secret et al; Optical: SDSS

Instruments: ACIS

Distance Estimate: About 55 million years

CXC operated for NASA by the Smithsonian Astrophysical Observatory

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