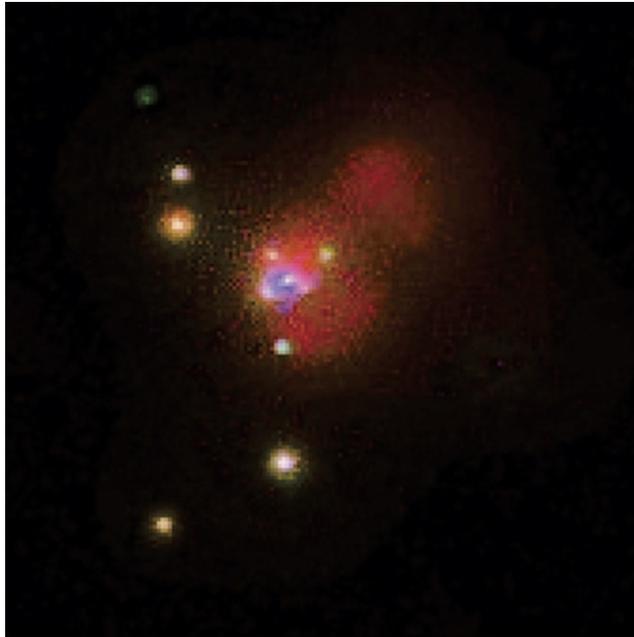




Chandra Science Highlights

Circinus Galaxy: Chandra Examines Black Holes Large and Small in Nearby Galaxy



This Chandra x-ray image shows the inner portion of the Circinus Galaxy, with north at the top of the image and east to the left. In terms of X-ray energies, red represents low energy, green intermediate, and blue the highest observed energies. The emission is resolved into a number of distinct components, many of which are associated with a central black hole. A bright, compact emission source due to the central black hole is present at the center of the image. That source is surrounded by a diffuse X-ray halo of reflected X-rays and a much larger X-ray plume that extends to the northwest, and is due to a wind of hot gas flowing from the nuclear region. The bright source to the upper left shows evidence of periodicity and may be an X-ray binary containing a black hole with a mass greater than 50 solar masses.

Credit: NASA/Penn State/F. Bauer et al.

Chandra X-ray Observatory ACIS/ HETG Image

Scale: Image is 80 arcsec on a side

- Detect nuclear source and scattered X-rays from dust and gas around nucleus.
- Detect X-ray plume extending from 0.6 keV wind extending 600 pc from nucleus.
- Strong off-nuclear point source with luminosity of 3.7×10^{39} erg/sec and evidence for a 7.5 hour period is detected. Its properties are consistent with an eclipsing >50 solar mass black hole binary system.

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