



**Chandra X-ray
Observatory Center**

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GSN 069: A galaxy with a central supermassive black hole about 250 million light years from Earth.
(Credit: X-ray: NASA/CXO/CSIC-INTA/G.Miniutti et al.; Illustration: NASA/CXC/M. Weiss;)

Caption: Data from Chandra and XMM-Newton indicate that a star survived a close call with a black hole. As a red giant star approached a supermassive black hole in the galaxy GSN 069, it was caught in the black hole's gravity. Once captured, the red giant's outer layers were stripped off, leaving the core of the star — known as a white dwarf — behind. The white dwarf then enters an elliptical, 9-hour-long orbit around the black hole, as depicted in this artist's illustration. At closest approach, the black hole pulls matter from the white dwarf onto a surrounding disk. The inset shows a Chandra observation of the burst of X-rays caused by the transfer of this material every 9 hours.

Scale: X-ray image is about 11 arcsec (13,000 light years) across.

Chandra X-ray Observatory ACIS Image

CXC operated for NASA by the Smithsonian Astrophysical Observatory
