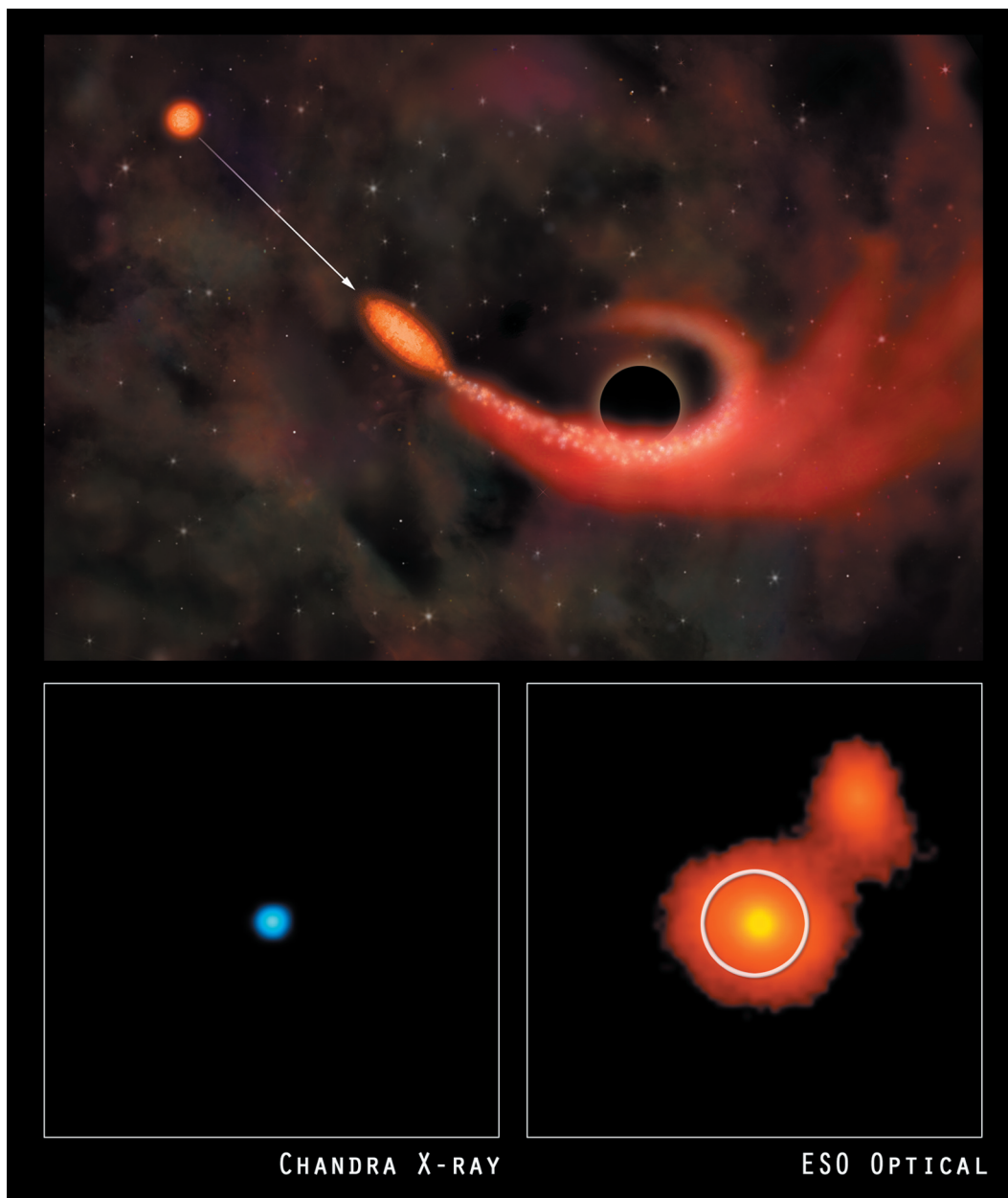




Chandra X-Ray
Observatory Center

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RX J1242-11: A galaxy about 700 million light years from Earth.

Credit: Illustration: NASA/CXC/M.Weiss; X-ray: NASA/CXC/MPE/S.Komossa et al.; Optical: ESO/MPE/S.Komossa

Observations with Chandra (lower left image) and other X-ray observatories confirmed that a powerful X-ray outburst had occurred in the center of RX J1242-11, which appears normal in a ground-based optical image (lower right, with the white circle defining the location of the Chandra image). This X-ray outburst, one of the most powerful ever detected in a galaxy, is evidence for the catastrophic destruction of a star that wandered too close to a supermassive black hole. The illustration (top) shows how, after a close encounter with another star, the doomed star (orange circle) takes a path toward the giant black hole where the black hole's enormous gravity stretches the star until it is torn apart. Only a few percent of the disrupted star's mass (indicated by the white stream) is swallowed by the black hole, while the rest is flung away into the surrounding galaxy.

Scale: Bottom panels are 25 arcsec per side.

Chandra X-ray Observatory ACIS Image

CXC operated for NASA by the Smithsonian Astrophysical Observatory