



 Chandra X-Ray
Observatory Center

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XTE J1550-564: A binary star system consisting of a black hole and a normal star located in the Milky Way Galaxy about 17,000 light years from Earth.

Credits: Left: X-ray (NASA/CXC); Right: Illustration (CXC/M.Weiss)

A series of images from Chandra has revealed the evolution of large-scale X-ray jets traveling at near the speed of light. Following an outburst of X-rays from the black hole, observations with Chandra and radio telescopes detected first one jet (left), then another opposing jet (right) of high-energy particles moving away from the black hole at about half the speed of light. Four years after the outburst, the jets had moved more than 3 light years apart with the left jet slowing down and disappearing. The schematic shows gaseous matter being pulled from a normal star to form a disk around the black hole. When the gas is heated to temperatures of millions of degrees it gives off X-rays and intense electromagnetic forces in the disk can expel jets of high-energy particles.

Scale: Images are 1.64 x 0.82 arcmin.

Chandra X-ray Observatory ACIS Image

CXC operated for NASA by the Smithsonian Astrophysical Observatory