



**Chandra X-ray  
Observatory Center**

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**Cygnus X-1:** A black hole in close orbit around a blue supergiant star about 6,000 light years from Earth.

(Credit: NASA/CXC/SAO)

**Caption:** About a decade after its discovery in 1964, a combination of X-ray and optical observations led to the conclusion that Cygnus X-1 was a black hole – the first such identification. The Cygnus X-1 system consists of a black hole with a mass about 10 times that of the Sun in a close orbit with a blue supergiant star with a mass of about 20 Suns. Because of its brightness and close proximity, Cygnus X-1 continues to attract the interest of scientists seeking to understand the nature of black holes and how they affect their environment.

**Scale:** Image is 4.7 arcmin across.

*Chandra X-ray Observatory ACIS Image*

*CXC operated for NASA by the Smithsonian Astrophysical Observatory*