



**Chandra X-ray
Observatory Center**

Harvard-Smithsonian Center for Astrophysics
60 Garden St. Cambridge, MA 02138 USA
<http://chandra.harvard.edu>

47 Tucanae: X9: A binary system in 47 Tucanae, a globular cluster located about 14,800 light years from Earth.

(Credit: X-ray: NASA/CXC/University of Alberta/A.Bahramian et al.; Illustration: NASA/CXC/M.Weiss)

Caption: This artist's impression depicts a white dwarf star found in the closest known orbit around a black hole. As the circle around each other, the black hole's gravitational pull drags material from the white dwarf's outer layers toward it. Astronomers found that the white dwarf in X9 completes one orbit around the black hole in less than a half an hour. They estimate the white dwarf and black hole are separated by about 2.5 times the distance between the Earth and Moon – an extraordinarily small span in cosmic terms. This discovery was made using data from Chandra (inset, colored red, green, and blue), plus the NuSTAR and ATCA telescopes.

Scale: Inset image is 1.5 arcmin across (about 6.5 light years)

Chandra X-ray Observatory ACIS /HRC Image

CXC operated for NASA by the Smithsonian Astrophysical Observatory