



**Chandra X-Ray
Observatory Center**

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47 Tucanae: A globular cluster located about 15,000 light years from Earth in the constellation of Tucana.
Credit: NASA/CfA/J.Grindlay et al.

These Chandra images provide the first complete census of compact binary stars in the core of the globular cluster known as 47 Tucanae. As the oldest stellar systems in the Milky Way Galaxy, globular clusters are laboratories for stellar and dynamical evolution. Nearly all objects in the Chandra images are “binary systems,” in which a normal, Sun-like star companion orbits a collapsed star, either a white dwarf or neutron star. The data also reveal the presence of “millisecond pulsars” that rotate extremely rapidly, between 100 to nearly 1000 times a second.

Scale: Left: 2 arcmin per side, Right: 0.6 arcmin per side

Chandra X-ray Observatory ACIS Image

CXC operated for NASA by the Smithsonian Astrophysical Observatory