



**Chandra X-Ray  
Observatory Center**

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**NGC 4697:** An elliptical galaxy located about 40 million light years from Earth.

**Credit:** NASA/CXC/UVa/C.Sarazin et al.

The Chandra image of this galaxy reveals diffuse hot gas dotted with many point-like sources that have been identified as black holes and neutron stars in binary star systems. X-radiation is emitted when material is pulled from a normal star and heated to extreme temperatures as it falls toward its black hole or neutron star companion. An unusually large number of the binary star X-ray sources in NGC 4697 are in "globular star clusters." This suggests that the extraordinarily dense environment of globular clusters may be a good place for black holes or neutron stars to capture a companion star.

**Scale:** Image is 4 arcmin on a side.

*Chandra X-ray Observatory ACIS Image*

*CXC operated for NASA by the Smithsonian Astrophysical Observatory*