



**Chandra X-ray
Observatory Center**

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

4C+29.30: A galaxy located about 850 million light years from Earth.
(Credit: X-ray: NASA/CXC/SAO/A.Siemiginowska et al, Optical: NASA/STScI; Radio: NSF/NRAO/VLA)

Caption: The intense gravity of a supermassive black hole can be tapped to produce immense power in the form of jets moving at millions of miles per hour. A composite image shows this happening in the galaxy known as 4C+29.30 where X-rays from Chandra (blue) have been combined with optical (gold) and radio (pink) data. The X-rays trace the location of superheated gas around the black hole, which is estimated to weigh 100 million times the mass of our Sun. Some of this material may eventually be consumed by the black hole, and the magnetized, whirlpool of gas near the black hole could in turn, trigger more output to the radio jet. The optical light image shows the stars in this galaxy. A torus of gas and dust surrounds the black hole and blocks most of the optical light coming from there. Because of this, astronomers refer to this type of source as a hidden or buried black hole.

Scale: Image is 45 arcsec on a side (180,000 light years)

Chandra X-ray Observatory ACIS Image

CXC operated for NASA by the Smithsonian Astrophysical Observatory