



**Chandra X-ray
Observatory Center**

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GB 1428+4217: A quasar at a distance of about 12.4 billion light years from Earth.
(Credit: X-ray: NASA/CXC/NRC/C.Cheung et al; Optical: NASA/STScI; Radio: NSF/NRAO/VLA)

Caption: This composite image shows GB 1428+4217, a quasar that contains the most distant X-ray jet ever observed. This view contains X-rays from Chandra (blue), radio data from the Very Large Array (purple), and optical data from Hubble (yellow). The jet, whose shape is very similar in the X-ray and radio data, was produced by a giant black hole, at the center of a galaxy, pulling in matter at a rapid rate. The energy released as particles fall toward the black hole generates intense radiation and powerful beams of high-energy particles that blast away from the black hole at nearly the speed of light. GB 1428+4217 is located about 12.4 billion light years from Earth, surpassing the distance of previously discovered X-ray jets.

Scale: Image is 41 arcsec across. (about 900,000 light years)

Chandra X-ray Observatory ACIS Image

CXC operated for NASA by the Smithsonian Astrophysical Observatory
