



**Chandra X-Ray
Observatory Center**

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PKS 1127-145: A quasar about 10 billion light years from Earth located in the constellation Crater.
Credit: NASA/A.Siemiginowska (CfA)/J.Bechtold (U. Arizona)

Chandra's image of this highly luminous quasar shows an enormous X-ray jet that extends at least a million light years. The jet is likely due to the collision of a beam of high-energy electrons with microwave photons. The high-energy beam is thought to have been produced by explosive activity related to gas swirling around a supermassive black hole. The length of the jet and the observed bright knots of X-ray emission suggest that the explosive activity is long-lived but intermittent. The X-ray light from PKS 1127-145 passes through a galaxy 4 billion light years away, on its way to Earth. This allowed astronomers to estimate that the gas in the intervening galaxy contained a much lower concentration of oxygen relative to hydrogen gas than does our galaxy - about 5 times lower.

Scale: Image is 60 arcsec on a side.
Chandra X-ray Observatory ACIS Image

CXC operated for NASA by the Smithsonian Astrophysical Observatory