



**Chandra X-ray
Observatory Center**

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Elliptical Galaxies: Four elliptical galaxies with very low levels of star formation. (Credit: X-ray: NASA/CXC/Stanford Univ/N.Werner et al; Optical: DSS)

Caption: This four-panel of images represents a sample of giant elliptical galaxies observed by Chandra and the Herschel Space Observatory in a study to investigate why these objects have such low levels of star formation. In six galaxies, Herschel detected surprisingly large amounts of cold gas – the fuel for star formation. Chandra revealed that the hot gas in the center of these galaxies appears to be much more disturbed than in the cold gas-free systems. This is a sign that material has been ejected from regions close to the central black hole. The energy from these outbursts helps to prevent the cold gas from cooling sufficiently to form stars. In two other galaxies, jets pushing against the hot gas are creating enormous cavities that are observed in the Chandra images. These jets may be heating the hot, X-ray emitting gas, preventing it from cooling and forming cold gas and stars.

Chandra X-ray Observatory ACIS Image

CXC operated for NASA by the Smithsonian Astrophysical Observatory