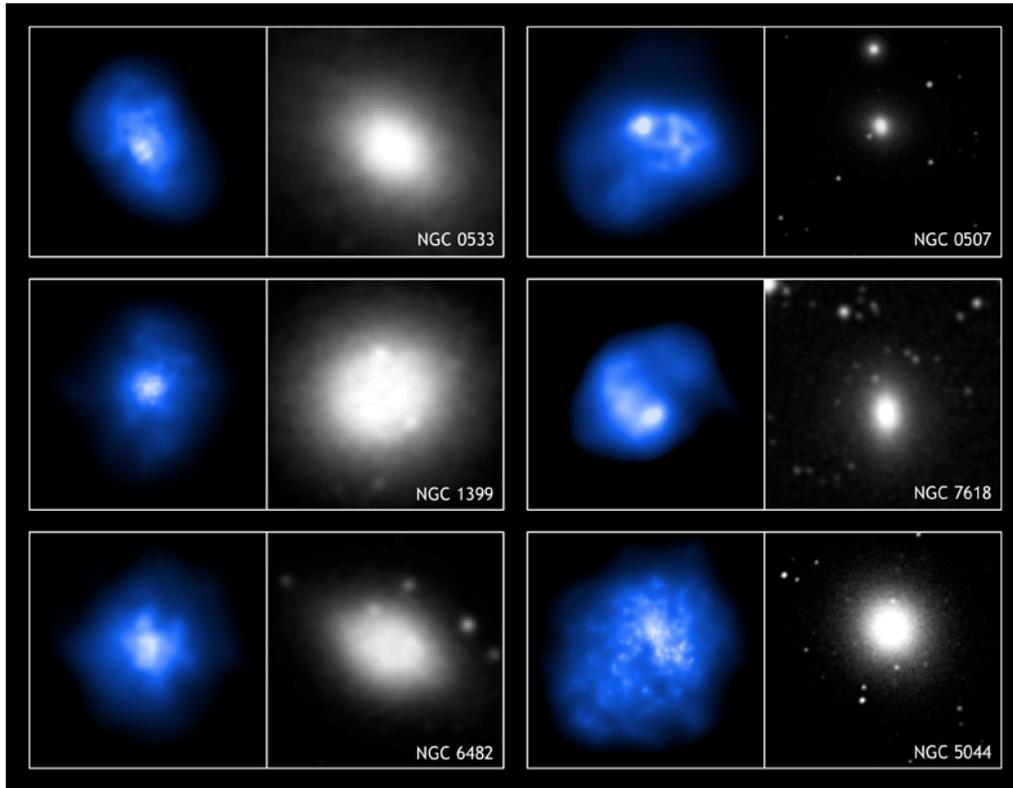




Chandra Science Highlight

Elliptical Galaxy Gallery: X-ray/Optical Gallery of Elliptical Galaxies

Chandra X-ray Observatory ACIS image.



- A detailed analysis shows that the ellipticity of the hot gas is completely uncorrelated with the optical ellipticity.
- This is evidence that the hot gas is far from hydrostatic equilibrium.
- A powerful source of energy – probably associated with infall of gas into a central supermassive black hole – must be pushing the hot gas around and stirring it up every hundred million years or so.
- The evidence for repetitive outbursts from the galactic nuclei is a surprise, because the supermassive black holes in isolated elliptical galaxies were thought to be in quiescent state.
- These new observations add to an emerging picture that shows the impact of supermassive black holes on their environment is far more pervasive than previously thought.

Reference: T. Statler and S. Diehl, 2006, 207th Meeting of Am.Astron.Soc.

Credit: X-ray: NASA/CXC/U.Ohio/T.Statler & S.Diehl;
Optical: DSS.

As this sample gallery of X-ray (blue & White) and optical (gray & white) images shows, the shapes of the massive clouds of hot gas that produce X-ray light in these galaxies differ markedly from the distribution of stars that produce the optical light.