



**Chandra X-ray  
Observatory Center**

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**Spinning Black Holes Survey:** A sample of nine galaxies each containing supermassive black holes in their centers.

(Credit: NASA/CXC/UFRGS/R.Nemmen et al.; Illustration: NASA/CXC/M.Weiss)

**Caption:** A subset of a sample of nine large galaxies is seen on the left of this graphic. These Chandra images show pairs of bubbles created in the gaseous atmospheres of the galaxies that were created by jets produced by giant central black holes. These data were used to help determine that the supermassive black holes are likely to be spinning very rapidly. The artist's illustration (right) depicts how material very near the black hole falls inward and joins a rapidly spinning disk of matter. Most of this material is swallowed by the black hole, but some of it is swept outward in jets (colored blue) by quickly spinning magnetic fields close to the black hole.

*Chandra X-ray Observatory ACIS Images*

*CXC operated for NASA by the Smithsonian Astrophysical Observatory*