



**Chandra X-ray
Observatory Center**

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M87: An elliptical galaxy known in the Virgo cluster about 50 million light years away.
(Credit: NASA/CXC/CfA/W.Forman et al.)

Caption: A long Chandra exposure of M87 has revealed a shock wave in high-energy X-rays as well as evidence for a series of outbursts from the central supermassive black hole. The composite image (X-rays in red; optical data in blue) shows a series of loops and bubbles in the hot, X-ray emitting gas. These are relics of small outbursts from close to the black hole. Other remarkable features are seen in M87 for the first time including narrow filaments of X-ray emission, which may be due to hot gas trapped to magnetic fields. One of these filaments is over 100,000 light years long, and extends below and to the right of the center of M87 in almost a straight line.

Scale: Image is 14.4 arcmin per side.

Chandra X-ray Observatory ACIS Image

CXC operated for NASA by the Smithsonian Astrophysical Observatory
