



**Chandra X-ray
Observatory Center**

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Perseus: A galaxy cluster located about 240 million light years from Earth.
(Credit: NASA/CXC/Univ. of Cambridge/C. Reynolds et al.)

Caption: Astronomers used Chandra to look for extraordinarily low-mass "axion-like" particles in the Perseus galaxy cluster (main panel where X-rays are red, green and blue). A Chandra observation lasting over five days of the central supermassive black hole in the center of the cluster (inset) showed no evidence for certain axion-like particles, which some theorists think can explain dark matter. The lack of a detection in these Chandra observations helps rule out some versions of string theory, a set of models intended to tie together all known forces, interactions, and particles.

Scale: Main image is about 8 arcmin (550,000 light years) across; Inset image is about 11 arcsec (30 light years) across.

Chandra X-ray Observatory ACIS Image

CXC operated for NASA by the Smithsonian Astrophysical Observatory