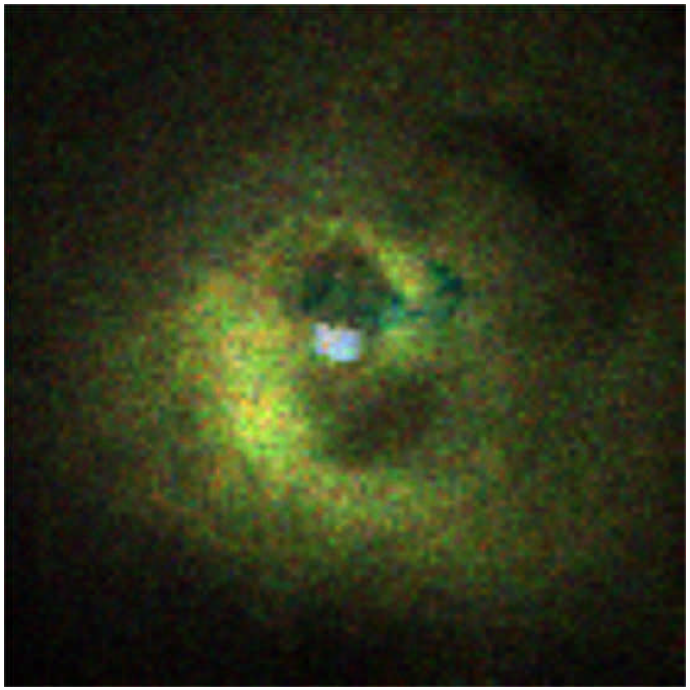
Chandra Science Highlights

X-Ray Image of the Core of the Perseus Cluster



Chandra's X-ray image of the core of the Perseus galaxy cluster shows hot gas in and around the supergiant galaxy, Perseus A. The colors represent low (0.5-1 keV = red): medium (1-2 keV = green); and high (2-7 keV = blue) X-ray energies, corresponding to low, medium and high temperatures. The samll dark patch (located at two o'clock from the center of the image) and the ragged blue patch is thought to be due to the abosrption of x-rays by gas in a galaxy of about 20 billion stars that is falling into the central galaxy.

Credit: NASA/IoA/A. Fabian et al.

Scale: The image is 3.5 arcmin square. (1 arcmin corresponds to 30 kpc)

- The bright blue spot in the center is due to x-radiation from gas around a giant black hole in the nucleus of the galaxy.
- The twin dark cavities are coincident with the radio lobes.
- The material around the rims has a temperature of about 30 million degrees compared to 70 million degrees for the outer part of the cluster. There is no evidence of a shock wave produced by the expansion of the radio lobes into the cool gas.

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