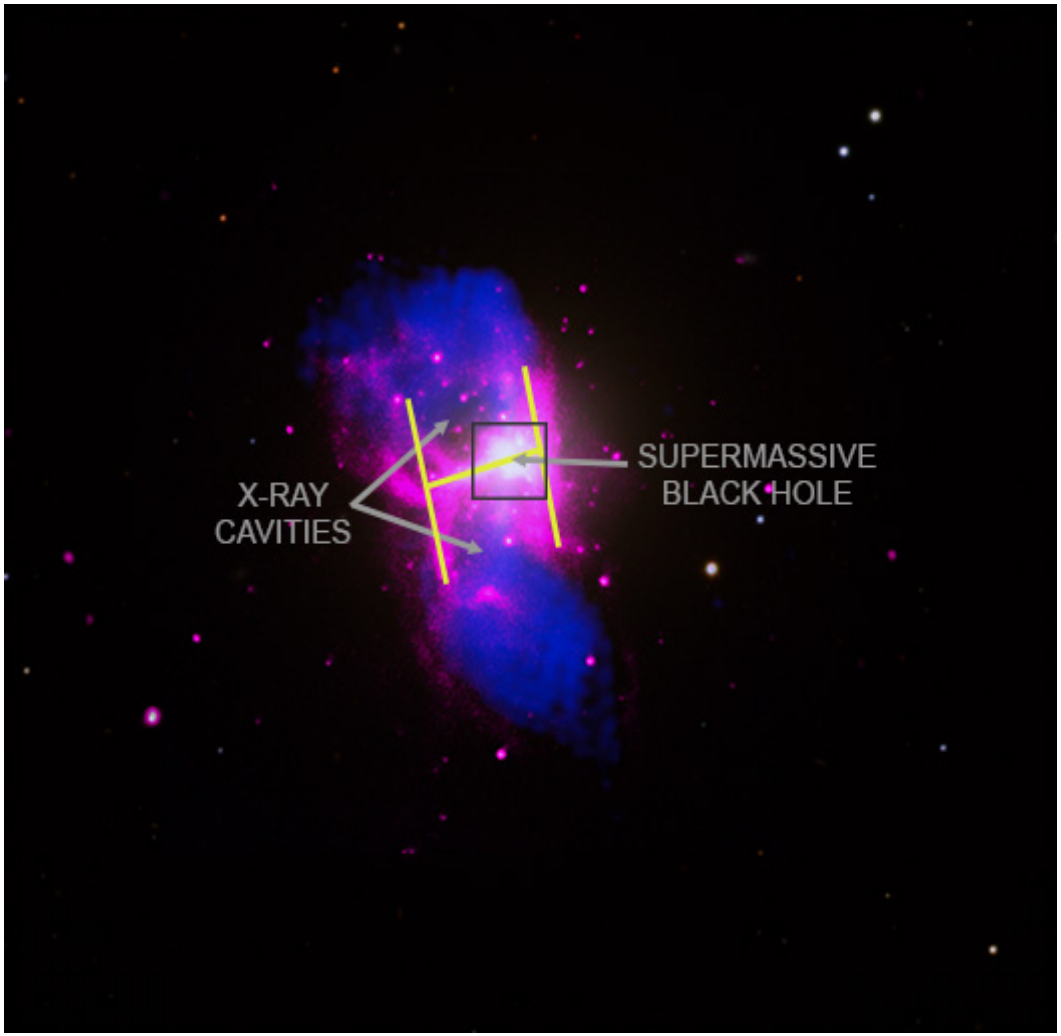
Chandra Science Highlight

'H' is for Hot and Huge in Chandra Image



- A new image reveals an "H"-shaped structure outlined in the hot gas in the galaxy Messier 84 (M84).
- Jets from the supermassive black hole at the center of the galaxy have created cavities in the hot gas in opposite directions to form the H-shaped structure.
- X-ray data from NASA's Chandra X-ray Observatory have been combined with radio data from the VLA and optical data from the SDSS to create this image.
- The Chandra data shows that matter is not falling towards the black hole at the same rates from different directions.
- This result contributes to the understanding of how black holes pull in and ingest material and the role that jets play in this process

Distance estimate: About 55 million light-years.

Credits: : NASA/CXC/Princeton Univ/C. Bambic et al.; Optical: SDSS; Radio: NSF/NRAO/VLA/ESO; Image processing: NASA/CXC/SAO/N.Wolk
Instrument: ACIS
Reference: **Bambic, C. et al. 2023, MNRAS, 522, 4374;** **arXiv:2301.11937.**
(The photo album is at**:** **https://chandra.si.edu/photo/2023/m84/**

Caption: *Astronomers have mapped the hot gas in the M84 galaxy – using X-ray data from Chandra (pink) – reaching to within only about 100 light-years from the black hole in the center of the galaxy. A radio image from the VLA (blue) reveals jets streaking away from the black hole, while optical data from the SDSS (white) show M84 and neighboring galaxies. The jets from the black hole have pushed out holes, or cavities, in the hot gas surrounding the black hole creating an "H"-shaped structure.*

The CXC is operated for NASA by the Smithsonian Astrophysical Observatory

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