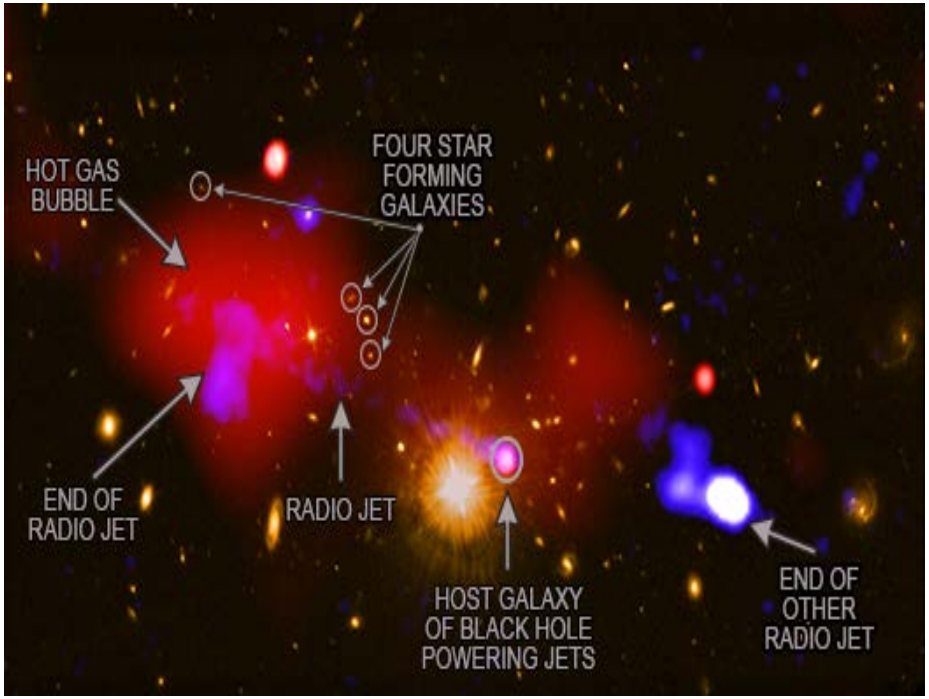
Chandra Science Highlight

Galaxy Overdensity Around a Distant Radio Galaxy: Evidence for Large Scale Black Hole Feedback?



Caption: Multiwavelength image of the field around a distant radio galaxy. X-ray data from Chandra (red) have been combined with radio emission detected by the NSF's Karl Jansky Very Large Array, or VLA, (blue), and an optical image from NASA's Hubble Space Telescope (yellow). The bright yellow object in the center is a foreground star.

Distance estimate: 9.9 billion light years (z=1.7)

Scale: Image is about 2 arcmin (3.4 million light years) across.

- Matter failing into a supermassive black hole (identified in the center of the image) has produced powerful jets of high-energy particles (blue).
- The interaction of these jets with surrounding gas has created multimillion degree clouds of gas on both sides of the supermassive black hole (red).
- The expansion of the hot gas cloud on the left appears to have triggered the formation of stars in several galaxies on the rim of the gas cloud.

Credits: X-ray: **NASA/CXC/INAF/R. Gilli et al.; Radio NRAO/VLA; Optical: NASA/STScI**

Instrument: ACIS

Reference:Gilli, R et al 2019 A & A 632, A26; arXiv:1909.00814

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