RX J1532.9+3021: An Extreme Case of Black Hole Feedback

Feedback from centrally located supermassive black holes plays a fundamental role in shaping the properties of massive galaxies, by injecting energy into the surrounding medium in the form of jets of high energy particles.

The intracluster gas in galaxy clusters is dense enough to retain an imprint of the feedback, in the form of regions of reduced X-ray surface brightness (X-ray cavities).

The cavities in the cluster RX J1532.9+3021 are about 100,000 light years across.

The jet power required to form the X-ray cavities is enormous (equivalent to the power generated by 600 billion suns) and is sufficient to prevent the hot gas from cooling to form stars.


Instrument: Chandra ACIS Observation

CXC Operated for NASA by the Smithsonian Astrophysical Observatory