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The Carafe Galaxy: A Wet Merger Remnant With a Supermassive Binary Black Hole Precursor PRAJVAL SHASTRI, Indian Institute of Astrophysics (retired), M N SUNDAR, Jain University, India, LALITHA SAIRAM, University of Birmingham, UK, P T RAHNA, Shanghai Astronomical Observatory, BRENT GROVES, University of Western Australia, JOHN HUTCHINGS, University of Victoria, Canada, JAYANT MURTHY, Indian Institute of Astrophysics, S7 TEAM[1] — We have been carrying out a multi-wavelength investigation of the footprints of feedback from accreting supermassive black holes in active galaxies at redshifts ˜0, known as the Siding Spring Southern Seyfert Spectroscopic Snap-Shot Survey (S7). Among our sample objects is the Carafe galaxy, which is long known to be a wet merger remnant. The core of the Carafe has two regions with emission-line signatures of active galactic nuclei, as confirmed by our IFU (WiFeS) data cubes from the Siding Spring 2.3m telescope. From ATCA measurements we find that the radio emission from these purported AGN, though unresolved, is synchrotron emission. With Chandra imaging we are able detect compact hard x-ray emission from both these regions, which concurs with the hypothesis that this system has an accreting binary black hole precursor. We have also observed the Carafe with the the Indian multi-frequency satellite ASTROSAT, which gives us an ultraviolet image of the galaxy with unprecedented resolution. Preliminary analysis suggest that the binary precursor is below the detection limit suggestive of heavy extinction in the heart of the Carafe.

[1]The Siding Spring Southern Seyfert Spectroscopic Snap-Shot Survey

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