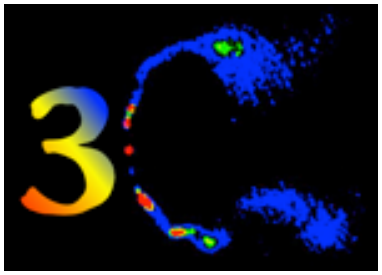

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X-ray Observations of Cygnus A: a Powerful Radio Galaxy in a Dense Environment

Tuesday, 17 September 2019 14:30 (20 minutes)

Cygnus A, the archetype of powerful Fanaroff-Riley class II radio galaxies, is hosted by the central galaxy of a cool core cluster, in a dense, high pressure environment. I will focus on what deep Chandra observations of Cygnus A have revealed about the radio galaxy and interactions with its environment. Measuring properties of its cocoon shocks has revealed that the pressure is relatively uniform within the radio cocoon. It has also provided estimates approaching 10^{46} erg/sec for the average jet power. Simple modeling implies that the jets are light, with negligible kinetic power and momentum carried by rest mass. Diffuse X-ray emission from the lobes is dominated by Compton scattered radio synchrotron emission. I will discuss new results on the properties of the hotspots and a “hole” found in the X-ray emission of the eastern lobe, around the primary hotspot.

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