

Title:

AGN in Clusters of Galaxies: Cooling Flows, Feedback, and High-z Systems

Abstract:

Observations over the last ten years with Chandra and XMM-Newton have shed much light on cooling flows in the centers of clusters of galaxies and the role of AGN heating. Cooling of the hot intracluster medium in cluster centers can feed the supermassive black holes found in the cores of the dominant cluster galaxies leading to AGN outbursts which can reheat the gas, stopping cooling and large amounts of star formation. AGN heating can come in the form of shocks, buoyantly rising bubbles that have been inflated by radio lobes, and the propagation of sound waves. I will present recent results of two systems displaying AGN feedback, Abell 262 and Abell 2052. In addition, I will discuss the use of radio sources as beacons for clusters of galaxies at high redshifts, where the radio emission is easier to detect than the optical or X-ray cluster emission.