Diffuse Gas and X-ray Binary Populations in Elliptical Galaxies

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[Invited Review Talk, 30 min.]

Abstract

The impact of recent *Chandra* observations on our understanding of the X-ray emission from normal elliptical galaxies will be reviewed. *Chandra*'s high angular resolution can resolve emission from stellar X-ray binaries out of the diffuse X-ray emission from gaseous atmospheres within ellipticals. Resolving out the spectrally hard binary component from the softer gaseous component allows more accurate spectral analysis of each component. *Chandra* spectroscopy indicates that gaseous elemental abundances are subsolar, i.e. lower than those of the central stars. This is not well understood but is in agreement with prior *ASCA* and *ROSAT* results. Improved spectral and luminosity constraints on global populations of X-ray binaries will also be described. Variations in the X-ray binary populations (per unit galaxian optical luminosity) are correlated with variations in the specific frequency of globular clusters in ellipticals. This indicates that X-ray binaries are largely formed in globular clusters, rather than being a primordial field population.

CATEGORY: NORMAL GALAXIES