X-ray Spectroscopy of Seyfert 2 Galaxies

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[Contributed talk, 15min.]

Abstract

We present our analysis of high-resolution Chandra HETG spectra of four Seyfert 2 galaxies: Markarian 3, NGC 4151, Circinus, and NGC 4507. Despite vast differences in FIR emission, the X-ray spectra of these galaxies are remarkably similar, with all being dominated by recombination after photoionization and deexcitation after photoexcitation. Reprocessed emission from a cone of gas both photoionized and photoexcited by the same power-law continuum from the nucleus (which is highly obscured from our line of sight) is sufficient to explain the bulk (and possibly all) of the observed X-ray emission. We present sensitive measurements of total ionic column densities along the gas cone. These are in accord with similar column density measurements in absorption in X-ray spectra of Seyfert 1 galaxies. Our results, therefore, provide new, quantitative confirmation of the unified model of Active Galactic Nuclei (AGN). Robust upper limits to the spectral contribution from hot, collisionally-driven gas are given as well, providing a sensitive probe of possible circumnuclear starburst emission in addition to the dominant AGN-driven emission.

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