

High Energy Astrophysics - X-Ray Spectroscopy and Atomic Data

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I will present a review of the basic atomic data needs for high resolution X-ray spectroscopy of astrophysical sources, with particular attention to the various line excitation processes that are important in a range of cosmic settings. I will then present a selection of high statistics spectra acquired by the grating instruments on Chandra and XMM-Newton, assessing the adequacy of available atomic and spectroscopic models for interpreting these data. In general, state-of-the-art atomic calculations provide a reasonable description of the observed spectra, however there are a few anomalies that remain unexplained.