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Atomic Physics Measurements in Support of X-ray Astronomy PETER BEIERSDORFER, UC Berkelev/LLNL, G.V. BROWN, LLNL, R.E. KEL-LEY, C.A. KILBOURNE, M. LEUTENEGGER, F.S. PORTER, GSFC, M. OBST, J.K. LEPSON, P. DESAI, M.F. GU, UC Berkeley — X-ray astronomy has been a voracious consumer of atomic data, especially after the launch of the Chandra and XMM-Newton X-ray Observatories, which have produced very high-resolution grating spectra of point sources. One of the important issues has been to understand the physics underlying the Fe L-shell spectra, and the Fe XVII spectrum in particular. A lot of progress has been made, including measurements of the electron-impact and resonance excitation cross sections, which now provides a rather clear picture of the production mechanism of the Fe XVII spectrum. Recent measurements of the radiative rates provide additional information on the deexcitation channels, while investigations of dielectronic satellite transitions provide a measure of the electron temperature. Many questions, however, still remain. Work at LLNL was performed under the auspices of DOE under contract DE-AC53-07NA27344 and supported by NASA's APRA program under contracts NNH07AF811 and NNG06WF081. Part of this work was supported by Chandra Cycle 10 Award AR9-0002X.

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