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High-resolution Time-resolved Extreme Ultraviolet Spectroscopy on NSTX J.K. LEPSON, SSL, P. BEIERSDORFER, J. CLEMENTSON, LLNL, M. BITTER, K. HILL, R. KAITA, L. ROQUEMORE, C.H. SKINNER, G. ZIMMER, PPPL — We report on high-resolution, time-resolved spectroscopy in the extreme ultraviolet spectral region (10-200 Å) on the NSTX tokamak. This work utilizes two flat-field spectrometers on loan from LLNL's electron beam ion trap facility. XEUS, installed in 2004, has a 2400 line/mm flat-field grating with field of view of ∼50 Å that can be positioned to survey 5 - 135 Å with an instrumental resolution of ∼0.1 Å and $\lambda/\Delta\lambda$ ∼100 at 10Å to ∼1000 at 100 Å. LoWEUS, installed in 2008, utilizes a 1200 line/mm grating with field of view of ∼180Å, is typically positioned to survey 60-280 Å with an instrumental resolution of ∼0.3 Å and $\lambda/\Delta\lambda$ ∼300 at 100Åto ∼600 at 200Å. New cameras have achieved a time resolution of 12-13 ms for both instruments. We can now examine time dependence and evolution of both intrinsic and extrinsic impurities on NSTX in the EUV band. Of particular interest is monitoring the entry of molybdenum into the plasma after installation of Mo tiles for the 2011 run.

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Jaan Lepson
Space Sciences Laboratory

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