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X-RAY MEASUREMENTS USING A MICROCALORIMETER ON AN ELECTRON BEAM ION TRAP

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The X-ray telescopes and spectrometers flown on Chandra and XMM-Newton are returning exciting new data from a wide variety of cosmic sources such as stellar coronae, supernova remnants, galaxies, clusters of galaxies, active galactic nuclei and X-ray binaries. To achieve the best scientific interpretation of the data from these and future spectroscopic missions and related ground-based observations, theoretical calculations and plasma models must be verified or modified by the results obtained from measurements in the laboratory. Such measurements are the focus of several laboratory astrophysics programs that use an electron beam ion trap (EBIT) to simulate astrophysical plasma conditions. Here we describe our recent spectroscopic measurements using a microcalorimeter on the EBIT at the National Institute of Standards (NIST).