Abstract Submitted
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New Identifications of Sulfur in the Chandra Spectrum of Procyon[1] JAAN LEPSON, MARIA OBST[2], PETER BEIERSDORFER, Space Sciences Laboratory — We report here on new identifications of sulfur in the extreme ultraviolet spectrum of Procyon, combining laboratory measurements, new theoretical calculations, and new observations with the Chandra Low Energy Transmission Grating Spectrometer. We measured intermediate charge states of sulfur (S V - S XII) in the EUV region, 20 - 75 Å, using the Lawrence Livermore National Laboratory's electron beam ion trap EBIT-II, which has been optimized for laboratory astrophysics studies. This allowed us to measure numerous lines previously unidentified in existing atomic databases [1]. We combined these measurements with new calculations using the Flexible Atomic Code [2] to create a hybrid spectrum using measured line wavelengths combined with line intensities calculated for the density of Procyon's corona. We then used this hybrid spectrum to identify sulfur in a Chandra spectrum of Procyon utilizing new observations that doubled the amount of observing time for this target. We found new identifications of sulfur that accounts for many of the previously unassigned lines in the EUV region.

[1] J. K. Lepson et al. ApJ, 625, 1045 (2005).
[2] M. F. Gu, Can J. Phys, 86, 675 (2008).

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