

## EUV SPECTROSCOPY OF SOLAR TRANSITION ZONE PLASMAS

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High resolution solar spectra were recorded by the NRL normal incidence slit spectrograph on Skylab in the wavelength range from 1100 Å to 2000 Å. The spectral resolution is 0.06 Å and the spatial resolution at the Sun is 2" x 60". Several temperature and density-sensitive spectral lines occur in this wavelength region produced by ions formed in the transition zone at temperatures between  $\sim 2 \times 10^4$  to  $\sim 2 \times 10^5$  K. These lines are used to infer the electron density and plasma volumes in different solar regions, e.g., flares, surges, active regions, the quiet Sun and coronal holes. The densities in regions of activity are frequently found to be quite high ( $> 10^{11} \text{ cm}^{-3}$ ), implying a filamentary structure for the emitting plasma. In addition, from spectral line widths, regions of activity are frequently found to be highly turbulent. An attempt will be made to correlate non-thermal line widths with electron density enhancements.