SESSION 6. POSTER PAPERS

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THE SOLAR X-RAY LINE SPECTRUM 5.5 - 12Å

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The SOLEX X-ray spectrometers on the USAF P78-1 satellite have measured solar X-ray spectra in the 5.5-12Å range under a variety of flaring and nonflaring conditions. High sensitivity, obtained by summing data from several successive spectral scans, enabled the detection of 80 lines, 17 of which remain unidentified. The stronger lines were observed with individual scans during the course of flare development. This capability, along with the use of nonflare spectra, facilitated the identification of several lines. The lines of Fe XXII - XXIV, present in hot flare plasmas, are prominent in this wavelength range. For many of these lines, theoretical and observed line strengths will be compared. Diagnostically useful line ratios were evaluated for the helium-like species Mg XI, Al XII, and Si XIII. The density-sensitive R ratio was consistent with theoretical calculations of the low-density limiting value for Mg XI and Si XIII, the only species for which it was evaluated. In all cases the G ratio was below calculated values.

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