

Fe VII: A Problem Ion For Solar Physics

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Abstract. Fe VII is formed at temperatures of around 300,000 K in the solar atmosphere, and gives rise to a large number of emission lines in the range 150-300 angstroms, mainly from 3p-3d transitions. As the lines are rather weak, Fe VII was somewhat neglected in the past but high resolution EUV solar spectra from Hinode coupled with recent, comprehensive atomic data have enabled the solar Fe VII spectrum to be studied in detail for the first time. However the comparison between theory and observation is rather poor with many discrepancies of a factor 2 or more. In addition, some of the key transitions appear to have been misidentified by J.O. Ekberg in his laboratory reference work of 1981. A summary of the current state of Fe VII modeling is presented, and a recommendation is made for new laboratory studies and collision calculations.