imately 6°x in analyses that assume an L.T.E. source function for this line (if a minimum temperature of ~4200K is used). The ionization equilibrium of Mg I, however, deviates materially from L.T.E. (cf. Athay and Canfield, 1969).

A preliminary conclusion based on a comparison of the computed and observed profiles is that the solar photosphere and low chromosphere have the same global plane-parallel model is that of R. W. Lites (thesis, University of Colorado, 1973), which provides a significantly better agreement than the models of O. Gingerich et al. (Solar Phys. 46, 347, 1971) or J. E. Vennesa, E. H. Avrett and R. Loeser (Ap. J. 184, 605, 1975).

08.07.03 Partial Redistribution Effects in the Solar Magnesium II Resonance Lines. R. W. MILKERT, Kitt Peak Nat'l Obs. & D. I. HINTON, National Center for Atmospheric Research -- We have calculated line profiles for the Mg II h- and k-lines (2803 Å and 2795 Å) using a partial redistribution formalism essentially identical to that applied to Lyman-α (1973 Astrophys. J. 185, 709), and the Harvard-Smithsonian Reference Atmosphere (1971 Gingerich et al. Solar Phys. 18, 347). In this preliminary report of results we compare partial redistribution calculations to complete redistribution calculations and offer physical explanations for the differences between the two. This comparison concentrates on the intensities of the k1, k2, and k3 features and the position of the feature k4.

08.08.05 The Solar Chromospheric Abundance as a Case Study in Stellar Abundance Determination Reliability. G. J. Garwood & J. C. Evans, Kansas State U. -- The solar chromosphere has been derived as a case study in the sensitivity and dependences in stellar abundance determination procedures. Using 116 Cr lines from Miller and Mutschlechner (1964 Astrophys. J. Suppl. 9, 1) at 1mm positions of v = 1.0, 0.5, 0.3, the solar chromosphere was obtained from LTE curves of growth. In view of the investigations of zero point, excitation-dependency and possibly wavelength-dependency of errors in the Corliss and Bosman (1962 MRS Monog., No. 53.) Fei g-f-values, we used the CB Cr g-f-values in order to test the ability to find and correct for such errors. The study (1963 Astrophys. J. 184, 653) of the solar Cr abundance provides a basis for study of g-f-value problems. A zero point correction of 0.7 dex from the CSE study was made as well as the removal of the erroneous CB normalization function. There is reasonable indication of a linear excitation-dependency in the CB values from this investigation.

The theoretical curves of growth were calculated for three different homogeneous thermal models and five different microturbulence models. The derived mean Cr abundance is not strongly dependent on either the thermal or microturbulence model. After removal of the excitation-dependency error in the g-f-values at v = 1.0, the Cr abundance was obtained for the remaining g-f-values. The mean abundance from this study is log(N(Cr))/5.75 ± 0.15 which confirms the 5.80 value of CSE. No significant center-to-limb variation in the abundance was found which might be indicative of a departure from LTE.

09.02.01 Heterodyne Spectroscopy of CO on Mars.* D. W. Peterson, M. A. Johnson, UC Berkeley -- An eight-channel heterodyne receiver operating near 11mm was used to measure line profiles of C13O6 in the Martian atmosphere. The receiver used copper-dotted germanium as the photomultiplier and a carbon dioxide laser for local oscillator. Each channel was 10 MHz wide, giving a resolving power of 1.5 x 10^4 at 100 km. Profiles were determined for the P(16), P(22), and P(26) lines of the CO2+10^-6 vibration-rotation band of C13O6. The equivalent widths of each of these lines was approximately 45 MHz (10091 cm^-2). The amount of radiation detected at line center was 60% of that detected in the continuum. Simple atmospheric models were calculated for Mars and the above measured values are consistent with a terrestrial C13O6 abundance and the temperature structure of Mars' atmosphere measured by Messenger. A measurement of the P(26) line of C2H2 in 10.6mm showed no observable line shape. This allows us to place a lower limit of 300 MHz (160 cm^-2) on the equivalent width of this line.

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09.03.05 Preliminary Results of a Stellar Search for the Unidentified Molecular Absorber Line Near 3.48 mm. L. Z. SNYDER, Joint Institute for Laboratory Astrophysics and University of Virginia, N. KATFU, NRAO and D. DUIH, NRAO. Recently Snyder and Buhl (1974 submitted to Astrophys. J.) reported the detection of a group of strong unidentified molecular emission lines (86.645 MHz (3.68 mm) in the direction of the Orion Nebula molecular cloud. These lines were not detected in any of the other usual galactic molecular sources including Sgr B2, W3(OH), W3(OH), and TMC + 10216. Here we report the initial results of a search of late type stars where either N2H or OH or both have been observed previously (Schwartz and Barrett 1970, Astrophys. J. 159, L173; Wilson, Barrett and Moram 1970, Astrophys. J. 160, 545). We have detected the unidentified molecular species in the direction of several H2O/OH stars including V Y CMa, W Hya, U Ori and K Car. Comparison with H2O spectra allows us to calculate a fairly precise rest frequency which will aid in the identification of the molecular carrier of the line. Partial financial support for this work came from NSF Grant GP-4200 to the University of Virginia.

09.04.07 The V1057 Cygni OH sources: Accurate Position and Polarization Properties. T. K. Lo & E. F. Rochlis, Dept. of Physics & Research Laboratory of Electronics, M.I.T. -- The Owens Valley 2-element interferometer was used to measure the position of the anomalous 1700 MHz OH emission source associated with the peculiar star V1057 Cyg. The OH source position is α(1950)=20°57'06"37 and δ(1950)=44°03'45"26". In agreement with the source position with ±1" experimental error. This strongly implies a definite

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