We present detailed models for the chromospheres and upper photospheres of the stars 8 Aur (G5 III*), β Gem (K0 III), and α Tau (K5 III). These models result from matching partial redistribution (PRD) calculations with absolute flux Ca II H and K line profiles obtained with an SEC Vidicon system on the McMath telescope at KPNO and Mg II h and k Copernicus observations of McClintock et al. (1975, Ap. J. 202, 165) and B0US observations of Kondo et al. (1976, Ap. J. 202, 167). A similar matching of the Ca II line wings results in models for the upper photosphere and temperature minimum regions. The Ca II observations are calibrated by 1 Å absolute spectrophotometry using the KPNO coude feed. The models employ a three-level plus continuum representation for Mg II and Ca II, explicitly computing the k, k, and 3854 Å lines, and use a version of LINEAR (Auer et al., 1972, KPNO Cont. No. 555) modified to include the PRD formulation of Milkey et al. (1975, Ap. J. 202, 250). The plane-parallel hydrostatic equilibrium atmospheric models are generated using a three-level plus continuum representation for hydrogen and parameterized by $n_0$, the mass column density in the chromosphere where hydrogen rapidly ionizes. The $A_{ij}$ weights for the PRD computations are generated by a code written by R. Shine. This work is supported by NASA grants to the University of Colorado and to The Johns Hopkins University.

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11.08.07 A Catalogue of $4430\AA$ Diffuse Band Strengths
D. S. HAYES and D. B. MCELROY, Arizona State Univ. - We are compiling a catalogue of all measurements published since 1950 of the central depth or equivalent width of the $4430\AA$ diffuse band. Using the techniques of linear correlation described by Deeming (1965: Vistas in Astron. 10, 125.) we will transform these measurements into a common system, and evaluate the statistical error of each observer's measurements. Once the catalogue has been completed, we will carry through a correlation analysis of the $4430\AA$ strength and such parameters as reddening, galactic longitude and interstellar linear polarization. The particular value of this catalogue, however, will be for planning new investigations, such as our own study of the Very Broadband Structure (VBS) in the interstellar reddening curve. We will choose to observe stars with well-measured $4430\AA$, in order to be able to analyse the correlation of the VBS-strength and the diffuse band strength.

11.09.05 Absolute Energy Distribution of Alpha Lyrae and 109 Virginis from 3200 A to 9000 A. H. YOG, Ruhr-Univers. Bochum, N. M. WHITE and G. W. LOCKWOOD, Lowell Observatory. - A new absolute calibration of both Alpha Lyr and 109 Vir has been completed using as primary standards blackbody sources operating at the melting points of copper and platinum. Sixty-nine individual points were calibrated with either of both of the sources. In addition to the value of confirming previous calibrations, several improvements of technique have encouraged us to undertake these observations. These improvements are as follows:
(1) Both blackbody sources are used in the horizontal position; therefore there are no intervening optics between source and telescope.
(2) The use of the platinum blackbody allows a direct calibration in the ultraviolet down to 3200 Å.
(3) An improved value for the melting point of platinum has recently become available.
(4) The availability of a computer-controlled photoelectric spectrum scanner allows observations at many wavelengths in a short time.

Since the reductions are not complete, we present only the results for the platinum calibration of Alpha Lyr. At 5556 Å the photon flux outside the earth's atmosphere is 972 (first order with red-sensitive photomultiplier) and 978 (second order with blue-sensitive photomultiplier) photons/sec/cm² compared to Hayes and Latham's value of 943 (1975 Ap.J. 197, 593). This is a linear interpolation between our measured points at 5539 Å and 5589 Å. At 23 interpolated wavelengths in common with Hayes and Latham, we note differences ranging from -1.1% to 5.3%, with a mean of +2.2% ±1.7%. A detailed description of this work and its results will be submitted to Astronomy and Astrophysics.

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