ABSTRACTS

indices (C_2 and CN) are derived from measurements through five intermediate-band filters between 35500-8150. The resultant indices are compared with MK spectral classifications.

The polarization of the net flux from stars is derived for a variety of possible geometries for the extended and expanding atmospheres of hot stars. The single scattering method of McLean (1979, MRAAS, 186, 265) for determining the polarization from a plume of outflowing materialized is further developed. The effects of a finite stellar radius and limb darkening are accounted for. The wavelength dependence is derived by computing attenuation in a plume caused by continuum opacity in the outflowing material, using the Sobolev approximation. A statistical approach for the treatment of polarization from randomly distributed clumps in winds is developed. The results are compared with observations of polarization of OB supergiants that show polarimetric fluctuations at the 0.2 to 0.4 percent level in a way that implies that the position angle is time dependent as expected in a clumpy wind.

Recent results have shed new light on the status of the calibration of absolute stellar fluxes between 912 and 1200 Å. Observations of hot white dwarfs, subdwarfs and planetary nebulae nuclei with the Voyager ultraviolet spectrometers provide evidence that the current calibration agrees very well with extrapolations of IUE energy distributions shortwards of 1200 Å. For DA white dwarfs, these extrapolations employ high gravity, pure hydrogen model atmospheres. In the case of subdwarfs and planetary nebulae nuclei, extrapolations are based on simple power law spectra. At the shortest wavelengths (<1000 Å) the current calibration is also in agreement with recent independent observations of an EUV photometer on board the STP 73-2 satellite (Opal and Weller, 1983, Ap. J. in press). We conclude that there is no current observational motivation for any revision of the 912 to 1200 Å calibration described by Holberg et al. (1982, Ap. J., 257, 656).

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We have calculated theoretical hydrogen line profiles for the stratified models calculated by D. Muhuro (Ap. J., 259, 749, 1982). In these models, a hydrogen layer floats on a helium subsurface layer. The calculations were carried out for the atmosphere of a white dwarf with mixed compositions should be layered.

In general, we find that when the hydrogen layer is relatively thin, the lines are much narrower than those found in homogeneous, hydrogen-dominated atmospheres. If the composition discontinuity occurs at relatively large optical depths, the Balmer line profiles are quite similar to the homogeneous case. The implications of these results for the interpretation of various objects in which both H and He features appear in the spectra will be discussed.

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An IUE spectrum of the metal-rich DB white dwarf star GD 40 in the range of the SWP camera (1200-2000 Å) does not indicate any spectral features in this region. H, C, C II, and Si II all have resonance lines in this wavelength region. Resonance lines of Ca II, Mg II, and Fe II have been detected at longer wavelengths (see, e.g., Shipman and Greenstein, Ap. J. 366, 761, 1983). I will present upper limits to the abundances of C and Si, as well as H, and discuss them in connection with the hypothesis that the heavy elements in white dwarf stars come from accretion from the interstellar medium and subsequent dilution by diffusion processes. This hypothesis has been widely invoked in the past to explain the abundances of metals in white dwarf stars.

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Using pure H model atmospheres of log g=8, we have calculated equivalent widths and line profiles as functions of temperature and abundance for C II 11335, C III 11757 and 1176, C IV 14549, N II 11085, N V 12340, Mg II 2798, Si II 11263, and S IV 1397, lines which are accessible, or will be so, with IUE or FUSE. Our calculations were carried out over a temperature range of 13000K to 100000K and a range of K/He=2-7, where X is the abundance of the relevant element. In addition, we have used our results to analyze recent IUE observations of several of these lines Feige 24 by Dupree and Raymond (1982, Ap. J., 263, 163) and W1346 by Bruhweiler and Kondo (1983, Ap. J., 266, 657) in order to derive abundance and rotational velocity information for these two DA's. This research was supported by NSF grant AST 81-15095 and NSERC Canada.

23.15 Instabilities in Line-Driven Stellar Winds. G. B. RYBICKI and S. P. OWOCKI, EPA. We have improved our treatment of the instabilities in the winds of hot