Yoss, Kenneth M. Objective-prism equivalent widths of early-type stars.

Equivalent widths of $H\gamma$ and $H\delta$ for early-type stars have been determined photographically, from measurements of widened objective-prism spectra. The photographic plates were obtained in 1953 with the Curtis Schmidt telescope of the University of Michigan, with the 4° prism, giving a dispersion of $263 \text{ \AA/mm}$ at $H\gamma$. The plates were calibrated with tube sensitometer spots. Microphotometer tracings were made, using a slit corresponding to $29.5 \text{ \AA}$ at $H\gamma$ and $24.0 \text{ \AA}$ at $H\delta$. Intensity ratios of line center to continuum were converted to equivalent widths with the following simplified formula:

$$W = d\lambda (1 - I/I_0),$$

where $d\lambda$ is the slit width for the particular line, I is the intensity at line center, and I_0 the mean of two points in the continuum on either side of the line.

Forty-three stars in the spectral range B0 to F8 for which accurate luminosity and spectral type classifications were available have been measured. The luminosity classes range from Ia to V.

Direct comparison of the equivalent widths of eight stars with photoelectric values determined by Stock (1956) gives the following relationship for $H\gamma$:

$$W_{\text{mich}} = 0.66 + 0.69 W_{\text{stock}}.$$

The $H\delta$ lines exhibit a similar relationship. The standard error of estimate of the photographic values is 1.3. The mean error of Stock's measurements is 0.4; the mean error for the photographic equivalent widths is therefore 1.2.

For the spectral range B0 to A7 a correlation exists between equivalent width and absolute magnitude. The standard error of estimate for a predicted absolute magnitude is 1.1 mag between absolute photographic magnitudes -7 and $+1$. The F-type stars show no correlation of absolute magnitude with equivalent width.

The equivalent widths of stars can be measured photographically with the above mentioned

equipment to a limiting photographic magnitude of 13 without appreciable loss of accuracy.

Stock, J. 1956, *Ap. J.* 123, 253.

Louisiana State University,
Baton Rouge, La.

Zirin, Harold. Comprehensive graded-height spectra of solar prominences.

A program on prominence spectra is being carried out at the Climax station of High Altitude Observatory by David Dodgen, Richard Hansen and Keith Watson. Spectra are being obtained showing the following lines: Hydrogen $H\alpha$, $H\beta$, $H\gamma$, $H\delta$, $H\epsilon$; He 6678, 5876, 4713, 4686, 4471, 4026; Ca II H and K; and Mg triplet at $5180 \text{ \AA}$; as well as occasional other lines. At each wave length intensities with absolute standardization at a series of heights at intervals of 5800 km are obtained. In some cases the spectra extend up to 200,000 km.

A number of spectra have already been obtained, of both quiescent and active prominences. The temperature of these has been obtained by several different methods, viz.: Doppler profiles, the Balmer decrement, the 6678/D3 ratio, and the 4686/6678 ratio.

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TITLES OF ADDITIONAL PAPERS PRESENTED AT THE MEETING IN BERKELEY, CALIF.

- Bidelman, William P. and McKellar, Andrew. Double lines in the spectrum of ρ Cassiopeiae.
- Leonard, Frederick C. The Amber, Oklahoma, aerolite (CN = 0979.351).
- McMath, R. R., Mohler, O. C. and Pierce, A. K. Description of an isophotometer of the Babcock type.
- O'Keefe, John A. and Batchlor, C. D. Some perturbations of a close satellite by the earth's ellipticity.
- Preston, George W. and Bidelman, William P. A late-type star of very large radial velocity.
- Rabe, Eugene K. On the origin of Pluto and the masses of the protoplanets.
- Wright, Kenneth O. and McKellar, Andrew. The chromospheric spectrum of VV Cephei in April and May, 1956.