discrimination possible between the two luminosity classes. The color index Z , formed by the comparison of the intensity in the $\lambda 7190$ zone with that in a $70 \text{ \AA}$ zone centered at $\lambda 8300$, plotted against the index X resulted in a separation of the supergiants from the giants (by about 0.2 mag. in X and Z). The effect of differential interstellar reddening on the Z index would amount to no more than half the Z separation between the giants and supergiants.

Strength of the $Li\text{ I}$ Line in the Spectra of Main-Sequence F- and G-Type Stars. ROBERT P. KRAFT AND OLIN C. WILSON, *Mount Wilson and Palomar Observatories*.—The strength of the $Li\text{ I}$ feature at $\lambda 6708$ has been estimated against $\lambda 6703$ of $Fe\text{ I}$ and $\lambda 6718$ of $Ca\text{ I}$ in the spectra of about 30 main-sequence F- and G-type stars. The stars were selected from Strömgen and Perry's photometric catalog on the $b-y$, c_1 , m_1 system in the interval $0.33 < b-y < 0.42$, without regard to c_1 or m_1 , or $Ca\text{ II}$ emission strength. From the limited material at hand, we conclude the following: (1) All stars showing strong $Ca\text{ II}$ emission show strong $Li\text{ I}$ in absorption, but $Li\text{ I}$ absorption occurs in strength in many stars without $Ca\text{ II}$ emission. (2) If, following Strömgen, we interpret the index c_1 as a nuclear age parameter, then there is no correlation between $Li\text{ I}$ strength and nuclear age. (3) There is no correlation between the $Li\text{ I}$ strength and the metal index m_1 .

Width of $H\alpha$ as a Discriminant of Luminosity in the Spectra of Late-Type Stars. ROBERT P. KRAFT, *Mount Wilson and Palomar Observatories*, GEORGE W. PRESTON, *Lick Observatory*, AND SIDNEY CARNE WOLFF, *Berkeley Astronomy Department*.—It is shown that the width H_0 of the core of $H\alpha$ in absorption in the spectra of late-type stars increases with increasing luminosity. Among G- and K-type stars a correlation, independent of spectral types, exists between $\log H_0$ and the absolute ultraviolet magnitude M_U . Among M-type stars, giants cannot be distinguished from supergiants, but dwarfs can be easily differentiated from giants. The relationship fails for class IV stars of all spectral types because of the influence of damping wings. Emission probably distorts the absorption profiles of $H\alpha$ in many supergiants later than K2.

It is suggested that the core of $H\alpha$ is Doppler in origin and arises in the chromosphere; the correlation is seen as an analogue of the Wilson-Bappu effect in the K2 component of $Ca\text{ II}$. Some astrophysical consequences of this identification are explored using a simple slab model.

The $\log H_0$ vs M_U correlation can be more readily applied than the K-line method in galactic structure studies but is somewhat less accurate in practice. Several comparisons are made between K2 and $H\alpha$ as indicators of luminosity in late-type stars.

Eclipsing Binary U Geminorum. W. KRZEMINSKI, *Institute of Astronomy, Polish Academy of Sciences*.—The dwarf nova U Geminorum has been observed over a few complete cycles of nova activity since 4 December 1961, when it was found to be an eclipsing binary ($P=0.17690592$ days). The light curve, which repeats well from cycle to cycle, shows the following features: (1) Primary eclipse is total with a long flat bottom, short decrease, and steeper increase; it remains total but gets shallower when the system brightens. At maximum, eclipses are not detectable. Judging from the depths of minima we find that the eclipsed star does not undergo a greater than fivefold rise of brightness during the 5 mag. range of outburst. (2) No secondary eclipse has been detected. (3) The width of the eclipse changes regularly during the whole cycle of nova activity; it increases to the value $0.11 P$ on the rise to maximum and then exponentially diminishes to about $0.05 P$ before start of the next outburst. (4) There is a gradual shift of times of eclipse to the phase $0.980 P$ on the rise to maximum; when the system is fading the eclipses return to the phase $0.00 P$. (5) The light curve is dominated by a shoulder similar to that of VV Pup; the intensity of the light contributing to the shoulder probably remains constant during the outburst. (6) Color changes resemble those characteristic of the UX UMa-class subdwarf binaries. The observations made on 9 March 1962, just at the start of an outburst, show the reddening of the system similar to that observed later by Mumford (Mumford, G. S., *Astrophys. J.* **139**, 476, 1964). (7) No polarization in excess of 0.012 mag. was found on the rising branch and at maximum. (8) An ultraviolet deficiency has been observed on the rise to maximum when wide hydrogen absorption lines were present.

The simplest explanation of the observed changes of the light curve during the outburst involves a model in which the cool, underluminous component is actually the seat of the nova phenomenon in this system. The effective radius of the red, eclipsing star increases rapidly on the rise to maximum; this increase is directional, being larger along the direction of its orbital motion.

Eclipsing Binary V382 Cygni. ARLO U. LANDOLT, *Louisiana State University*.—Photoelectric observations on the UBV system are presented for the massive, O-type, double-line eclipsing binary V382