structure show that any relation between the corona and prominences is one of extreme complexity. Fine-scale features seem to indicate that mass motions of the coronal material are extremely small. Lyot's observation, that the coronal knots and loops appear and disappear in place, can be plainly noted on the films.

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Ebbighausen, E. G. The multiple systems of λ Tauri and Algol.

The companion to the eclipsing system λ Tauri was discovered by Schlesinger in the course of a spectroscopic investigation of the orbit of the bright B3 star. He found that the velocity of the center of mass was variable with amplitude about 12 km/sec and period 34.6 days, and ascribed the variation to the presence of a third body. Later work by McLaughlin indicated that the period ought to be about 30.0 days.

In order to investigate this discrepancy the authors have recently obtained a large number of spectra of λ Tauri at the Mt. Wilson Observatory. In addition a number of spectra which were taken around 1937 were made available to us through the courtesy of the Dominion Astrophysical Observatory. An analysis of all the data shows that the residuals from each of the spectroscopic orbits may be satisfied by a period of 33.025 days, thereby removing the discrepancy.

The authors discovered that Mg_{II} 4481 was double on a number of the Victoria high-dispersion spectra. An analysis of the velocities of the two components shows clearly that the fainter component originates in the darker star of the eclipsing pair. The computed mass ratio of the B3 star to the darker component is 4 : 1.

The work on Algol was confined to an investigation of the origin of the faint, sharp spectral lines which appear most numerous near the time of mid-eclipse. The material consisted mainly of 2.8 Å/mm spectra taken with the coude spectrograph of the 100-inch telescope at Mt. Wilson. Many of these lines belong to FeI and the measured velocities of these lines indicate that they originate in the third body whose period has been previously reported by McLaughlin to be 1.873 years. The amplitude of the motion is nearly 30

km/sec. The ratio of this value to the amplitude of the motion of the center of mass of Algol AB (8.4 km/sec) gives approximately 3.6 for the mass ratio of AB to C.

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Eggen, Olin J. Population type I, short-period variable stars in the Hertzsprung gap.

An investigation of the color-luminosity array for the nearer bright stars has indicated the existence of a group of short-period, small-amplitude variable stars, of which δ Scuti is the prototype. The following stars, all of which were discovered with the Lick Observatory 12-inch refractor, are probably members of the group:

Star	V_E	$(P-V)_E$	P	b	Sp.	M_V
DQ Cep	7 ^m 3	+0 ^m 20	0 ^d 08	+ 7°	F1 IV-V	—
CC And	8.6	+0.22	0.12	-10	F1 III	—
δ Del	4.5	+0.23	0.13	-18	F2 III	~0
ρ Pup	2.7	+0.32	0.14	+ 5	F5 II	+0.2
δ Sct	4.7	+0.23	0.19	- 5	F3 III-IV	+1.0

The light elements of the newest members of the group are the following:

ρ Pup	Max. = J.D. 2435555.908 + 0 ^d 14089
δ Del	Max. = J.D. 2435614.958 + 0.13503.

The variables are characterized by (1) sharp spectral lines, (2) $b < 20^\circ$, (3) color, $(P-V)_E$, between +0.2 and +0.3 mag., and (4) luminosity between 0 and +1 mag. A color of +0.2 mag. appears to represent a sharp boundary between such non-variable, peculiar stars as γ Equulei and β Coronae Borealis, and the δ Scuti variables; this boundary may be the Population I analogue of the very sharp division between the variable and non-variable Population II stars in globular clusters.

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Elste, G. Computation of individual curves of growth.

It is shown that when theoretical equivalent widths of absorption lines are calculated precisely for a model atmosphere on the mechanism of pure absorption and following the theory of Pecker, the resulting curve of growth depends on the variation of the number of absorbing atoms with depth as well as on the Doppler width and on the wave length.

Calculations performed for the solar spectrum