FM Aquilae suggest a powerful method for further investigation of this material.

6. The remaining 6 stars: SV Vulpeculae, T Monocerotis, W Virginis, RU Camelopardalis, RT Aurigae, and SW Tauri, form a separate period-color range relation differing appreciably from that of the combined η - and δ -groups. Furthermore, an extension of the period-color range relation for these five stars to shorter periods also satisfies the observed color range of such stars as RR Lyrae and RZ Cephei. These stars may be identified with stellar population of the second type but the presence of RT Aurigae and T Monocerotis in this group is surprising. Also, as was true of ζ Geminorum, the brightest stars of this group satisfy the same period-maximum color relation as the combined δ - and η -groups and the difference in the range of color again appears to be due to "abnormal" color at minimum light. The relation between the period and light-range for these stars is also appreciably different from that for the δ - and η -groups.

7. The fact that, although the stars here considered seem to fall into three groups when total range of color is considered, they all satisfy one period-color relation at maximum, would suggest that the Cepheids as a group are more nearly homogeneous at maximum light and therefore that maximum brightness would appear to be the best choice in the construction of period-luminosity curves.

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Gaposchkin, Sergei. A new eclipsing variable of heavy mass.

Through the kindness of Dr. Petrie and Miss J. McDonald I have learned that the star HD 193611 = +37°3890 = HV 11091 is a spectroscopic binary with large amplitudes in the radial velocities of both components, suggesting the possibility of an eclipse. From the spectroscopic and photometric elements it appears that the system consists of two spherical, or very nearly spherical, components which are identical in their physical characteristics. Our essential results are given below.

Elements and dimensions of the eclipsing variable

$$\text{HD 193611} = +37^\circ 3890$$

$$\text{Min: JD } 2418552^d 648 + 2^d 880921 \text{E}$$

$$\text{Max}_1 = \text{Max}_2: 8.97 \text{ mag.}$$

$$m_1: 9.38, m_2: 9.40, D: 0^s 18$$

Eclipses are partial

Relative radii: 0.27 and 0.27

Relative luminosities: 0.50 and 0.50

Inclination: $82^\circ 2$

Distance between the centers: $36 \times 10^6 \text{ km}$
= 52.76 $\odot$

Radii: 14.25 $\odot$ and 14.25 $\odot$

Masses: 14.2 $\odot$ and 14.2 $\odot$

Spectra: B 0.5 and B 0.5

Type: Algol

Thus in its definiteness the system enjoys an almost unique position among the eclipsing variables of earlier spectral class, comparable to, if not surpassing, that of Y Cygni.

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Gaposchkin, Sergei. The variable AE Aquarii.

Several hundred observations were obtained on the patrol plates of the Harvard collection. The variability has a short period: at some time within two or three hours the decrease or increase of brightness amounts to as much as a half magnitude. It happened that about 15 nights were covered by several plates, thus enabling a study of variation within few hours to be made. The change of brightness in all cases amounts to not more than one or two tenths of a magnitude. For the most part the brightness of the star is nearly 11.3 mag. The observed maximum brightness was 10.8 mag. and the minimum was 12.0 mag. An impression is entertained that there are two variations which are superposed upon each other. But several trial periods held good only for a short interval of time. One period of about three-quarters of a day seems to appear again and again, which is nearly that of Joy, 0^d70, who has derived it from the radial velocities of the absorption spectrum. Certainly the period of 371 days is inconsistent with many of our observations. Although the star is already assigned to the U Geminorum class and the spectrum shows many features of that class like bright hydrogen lines, photometrically (and I think spectroscopically, so far as I remember the spectra by Dr. Joy) the variable is very different. We may have here another specific variety of intrinsic variable.

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Cambridge, Mass.*

Hertz, Hans G. The general perturbations of (659) Nestor.

A theory of the asteroids of the Trojan group outlined by Brown and Shook in their book