1, 1947, HD 199140 was observed to increase its brightness by more than a factor of two in less than 10 seconds. After minimum light, the variable remained at nearly constant brightness for one hour and then, in an interval of 15 minutes attained its normal maximum brightness. It remained, however, only momentarily at this magnitude and then, after a decline of 0.1 mag., the sudden flare-up occurred. The flare-up amounted to at least 0.8 mag., but beyond that the pen of the recording meter was forced off scale by the sudden increase in light. Within less than one minute again the star had returned to normal. A second light curve of this variable shows the beginning of a period of constant brightness at the point where the flare-up occurred on September 1st. The light curve of β Cephei reveals a similar increase in brightness, at the same phase of the variation, but with an amplitude of only 0.04 mag.

*Washburn Observatory,
Madison, Wis.*

Gaposchkin, Cecilia Payne. The Perkins spectrograms of γ Cassiopeiae.

A spectrophotometric analysis has been carried out of a number of spectra of γ Cassiopeiae, taken at the Perkins Observatory, which cover the visual region ($H\beta$ to $H\alpha$) between JD 2428445 and 2429204. Intensities of bright lines of H , He I, Si II and Fe II are measured in ergs per second; the reductions were made with the aid of the observed visual brightness and the measured spectrophotometric gradient for each date.

The observations cover much of the disturbed period of the star, through the maximum and the deep minimum. All the lines show variations that reflect the changes of brightness and temperature. Lines of He I show the least rapid change during the interval, those of Fe II the most rapid. The measures and a discussion will shortly be published.

*Harvard College Observatory,
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Gordon, Katherine C. A photoelectric study of the eclipsing binary RT Andromedae.

The dwarf eclipsing system, RT Andromedae, has been studied photoelectrically for two reasons: (1) the photographic technique was found to be inadequate for resolving the light curve of a system of such short period, 0.6289 days, and (2) it seemed suitable for testing a technique of continuous recording of the light received. Three

primary and one secondary minima were recorded without reference to a comparison star on an Esterline-Angus recorder attached to an amplifier and a 1P21 multiplier phototube on the 36-inch refractor of the Lick Observatory. Observations were also made with a galvanometer by the standard photoelectric technique involving the use of a nearby star as a comparison. Analysis of the observations shows RT Andromedae to be a totally eclipsing system with a ratio of radii equal to more than 0.7. Primary minimum occurred at JD 2432443.7820 and the secondary minimum occurred one-half period later within the limits of accuracy of observation. The secondary minimum was considerably wider than the primary minimum; this difference in width led to a value of orbital eccentricity compatible with that found by S. Gaposchkin spectrographically, but ω appeared to have changed by about 170° in 1700 revolutions.

These tests of the continuous-recording technique showed that the random errors of observation were lower than those produced by standard methods, but the systematic errors were somewhat higher. We may therefore conclude that the continuous-recording technique appears very valuable if a method of determining variations in atmospheric extinction and amplifier sensitivity is incorporated.

A definitive solution of the elements on the basis of what would normally have been sufficient observing was precluded by evidence of intrinsic variability in the light of RT Andromedae. Further observations of this interesting system are planned.

*Lick Observatory,
Mt. Hamilton, Calif.*

Hiltner, W. A. The light curves of two Wolf-Rayet stars in Cepheus.

The light curves of two Wolf-Rayet spectroscopic binaries of short period in Cepheus have been observed with a photoelectric photometer at McDonald Observatory.

The brighter, HD 211419, with a period of 1.64 days, was observed in the ultraviolet and yellow regions of the spectrum. The light curves, of the β Lyrae type, are quite similar in the two spectral regions. The depth of primary minimum, when the WR component is eclipsed, in the ultraviolet and yellow is 0.52 mag. and 0.48 mag. respectively. Secondary minimum is 0.42 mag. for the ultraviolet and 0.40 mag. for the yellow region.