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COMMUNICATIONS FROM THE OBSERVATORY AT LEIDEN.

The star C. P. D. — 29°5846, a new eclipsing variable with a remarkable excentricity,
by *J. G. Ferwerda*.

The variability of this star was discovered by Dr. H. VAN GENT with the Groningen blinkmicroscope on plates taken with the Franklin-Adams instrument at Johannesburg. It is one of the stars of the survey of some 150 new variables that I am carrying out in the region about τ Sagittarii. Particulars of the treatment of the plate material may be found in the publication of the first series ¹⁾.

The variable has been estimated on 306 plates of this region. Positions of the variable and of the comparison stars are

star	C.P.D.	α (1875)	δ (1875)	corrected C.P.D. mag.
		h m s	° ' "	
V	— 29 5846	18 55 0.9	— 29 19.1	
a	— 29 5859	18 57 28.3	— 29 23.6	9.3
b	— 29 5840	18 53 35.4	— 29 17.9	9.7
c	— 28 6755	18 55 22.9	— 28 53.8	10.1

As these stars are bright on the plates and not together visible in the field of view of the magnifying glass, the estimates could be made more accurately with the naked eye. The mean error of a single estimate was found to be ± 0.074 . Mean differences in steps between the comparison stars are

$$b - a \quad 3.23 \quad , \quad c - b \quad 2.11.$$

Two plates taken with a grating in front of the objective have been measured in the Schilt microphotometer. Taking into account the mean differences in steps the resulting magnitude differences between the comparison stars are

$$b - a \quad 0.81 \quad , \quad c - b \quad 0.53.$$

From this I found, taking the mean magnitude equal to the mean corrected C.P.D. magnitude

$$a \quad 8.99, \quad b \quad 9.80, \quad c \quad 10.33.$$

¹⁾ B.A.N. VI, 231, p. 201, 1932.

The Henry Draper Catalogue gives the following information about spectra

V	HD 176754	A5
a	HD 177342	F2
c	HD 176836	G

Comparison star *b* is not in the catalogue.

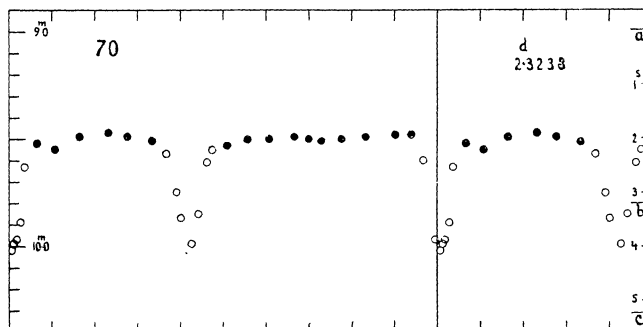
The period of light variation was derived from 18 plates of primary minimum. A least squares solution gives

$$P = 2.323802 \pm 0.00037 \text{ (m.e.)}$$

In table I the J.D. of the minimum plates used are listed together with the counting of epochs and the quantities $O - C$.

Phases have been computed with the formula
phase = (J.D. Hel. Gr. A.M.T. — 2420000) \times 0.430329

FIGURE I.



Black dots represent means of 15 estimates.
Open circles are means of 4 or 5 estimates.

The lightcurve (fig. 1) shows two minima of nearly equal depth. The reality of the difference is somewhat doubtful. The primary minimum of $m.52$ occurs at phase 0.011 ± 0.002 (m.e.) and the secondary minimum of $m.49$ occurs at phase 0.425 ± 0.005 (m.e.).

The asymmetry of the lightcurve indicates an excentricity of at least 0.14. Thus one is added to