

BULLETIN OF THE ASTRONOMICAL INSTITUTES OF THE NETHERLANDS.

1928 June 26

Volume IV.

No. 147.

COMMUNICATIONS FROM THE OBSERVATORY AT LEIDEN.

A semiregular variable star of short period, by *Ejnar Hertzsprung*.

The search for variable stars on plates of the η Car region taken with the Franklin-Adams instrument was merely made by comparison of plates with only a few days interval. Nearly all the variables picked up in this way were of the eclipsing, δ Cephei and RR Lyrae types. A few evident exceptions to this rule have already been published (*B. A. N.* 52, 87, 77, 209 and 210).

The variable star forming the object of the present note has much of the δ Cephei type, but the deviations from regular variation appear to be too serious to allow a safe classification. Its position is $10^h45^m48^s.7$, $-61^\circ52'6$ (1875). The comparison stars used are indicated on Figure 1. Their adopted brightnesses in my scale are

<i>a</i>	s	<i>c</i>	s
	.00		.67
<i>b</i>	.43	<i>d</i>	1.12

For each of 192 nights the mean result is given in Table 1. The total number of plates estimated is

625. The observations between J. D. 2423785 and 3993 indicate a period of about 26 days but the representation is not satisfactory throughout. The rising branch is steeper than the falling one in the way typical for δ Cephei stars of similar period, but there seem to be sensible differences in the range at different epochs and estimates on both earlier and later plates than those just mentioned do not fit in very well. Therefore no mean light curve has been derived. Further observations, preferably on plates taken with a longer focal length, are wanted to reveal the true character of the variation. The case deserves special attention, as variability of so short a period is otherwise as far as known perfectly regular.

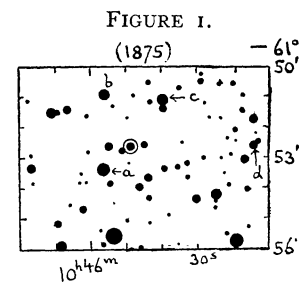


TABLE I.

J. D. hel. M. astr. T. Grw.	brightness in steps	number of plates	J. D. hel. M. astr. T. Grw.	brightness in steps	number of plates	J. D. hel. M. astr. T. Grw.	brightness in steps	number of plates	J. D. hel. M. astr. T. Grw.	brightness in steps	number of plates
d	s		d	s		d	s		d	s	
2420250.30	1.22	1	2423786.53	.97	3	2423820.44	.90	1	2423858.37	.31	4
0327.25	.78	1	87.53	1.02	1	21.38	.67	1	68.24	.67	1
0574.35	.95	1	88.50	1.10	4	28.45	.35	10	71.30	1.03	6
0605.26	.43	1	89.52	1.04	3	29.47	.34	2	72.33	1.04	7
0623.25	1.02	1	90.53	1.06	3	30.52	.36	4	74.29	1.11	4
0963.32	.20	1	91.53	1.11	3	31.54	.44	3	76.35	.95	9
0991.28	.67	1	99.52	.66	3	33.59	.58	2	77.36	.84	9
1010.27	1.12	1	3813.46	.61	12	40.31	.90	1	78.37	.54	9
1035.26	1.07	1	14.48	.57	9	41.33	.98	3	79.34	.33	9
1287.33	1.27	1	15.46	.59	3	42.32	.90	4	80.35	.26	8
1305.31	.84	1	16.42	.74	5	44.33	1.01	3	81.40	.21	6
1401.24	.48	1	17.46	.80	5	45.30	1.04	2	82.27	.43	1
1722.27	.49	1	18.56	.83	3	57.31	.24	4	83.48	.34	2