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БЮЛЛЕТЕНЬ АБАСТУМАНСКОЙ АСТРОФИЗИЧЕСКОЙ ОБСЕРВАТОРИИ № 3. 1938
BULLETIN OF THE ABASTUMANI ASTROPHYSICAL OBSERVATORY No. 3. 1938

WW ERIDANI
PHOTOGRAPHIC LIGHT-CURVE AND ELEMENTS

V. M. BODOKIA

The variability of WW Eridani was discovered by Hoffmeister[1] on Sonneberg plates. The observations made by W. Zessewitsch confirmed that the star belongs to the variables of W Ursae Majoris type[2]. The elements computed by him are[3]:

$$\text{Min} = 2426586{\cdot}462 + 0^{d}{\cdot}9244 \cdot E$$

During the period from January 21 to March 24, 1936, we obtained with the 13-inch reflector 147 photographic images of the star. The photographs were taken on Fulgur plates (emulsion 60187) with 4 and 5 minute exposures.

The five comparison stars used to determine the brightness of the variable are shown in Fig. 1.

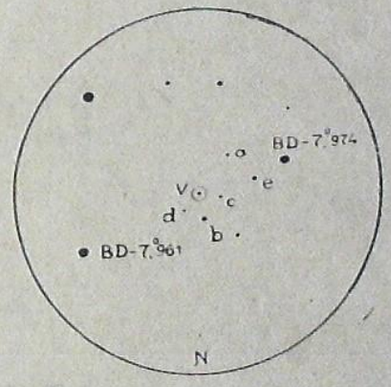

Fig. 1 ნახ.

The values of their brightnesses given in Table I were derived from two plates on which the area of the variable, KSA 26 and again the area of the variable were taken successively. The magnitudes of the stars in KSA 26 are those determined by Parkhurst and Farnsworth.

TABLE I Ცხრილი

a) $10^{m}.78$ $\pm 0^{m}.033$

b) 11.14 ± 0.040

c) 11.54 ± 0.027

d) 11.78 ± 0.027

e) 12.17 ± 0.033

The values of the brightness of the variable determined by means of a photoelectric microphotometer are listed in Table II which contains: the heliocentric Julian moments of observations, the corresponding values of the brightness of the variable and the number of the normal point into which the given observation is entered.

TABLE II Ცხრილი

J. D.⊙	Ph. Mg.	n	J. D.⊙	Ph. Mg.	n	J. D.⊙	Ph. Mg.	n
	m			m			m	
2428189.182	11.40	16	2428191.261	11.34	4	2418193.350	11.44	9
191	11.56	16	263	11.50	4	356	11.62	9
194	11.65	16	268	11.48	4	359	11.43	9
197	11.63	16	271	11.46	4	362	11.45	9
200	11.71	16	285	11.47	4	366	11.49	9
203	11.80	16	288	11.30	5	369	11.46	10
206	11.81	16	291	11.29	5	372	11.40	10
209	11.77	17	295	11.30	5	377	11.51	10
212	11.82	17	298	11.36	5	380	11.53	10
218	11.75	17	301	11.45	5	389	11.45	10
221	11.66	17	305	11.35	5	391	11.61	10
223	11.66	17	308	11.32	5	395	11.60	10
227	11.60	17	316	11.27	6	398	11.63	10
131	11.78	17	320	11.26	6	401	11.64	10
2428190.268	11.77	1	325	11.28	6	404	11.46	10
272	11.66	1	330	11.18	6	407	11.66	10
275	11.53	1	332	11.26	6	2428196.234	11.86	11
278	11.53	1	336	11.40	6	237	11.48	11
285	11.40	1	339	11.28	6	239	11.50	11
289	11.57	1	342	11.36	7	242	11.48	11
292	11.59	1	354	11.42	7	247	11.62	11
297	11.49	2	357	11.32	7	250	11.57	11
2428191.207	11.70	1	362	11.19	7	256	11.62	11
210	11.52	1	364	11.23	7	2428210.204	11.51	13
220	11.53	2	368	11.17	7	212	11.40	13
223	11.32	2	372	11.22	7	216	11.50	13
227	11.42	2	376	11.33	7	218	11.41	13
230	11.40	2	386	11.28	8	222	11.68	13
234	11.47	3	2428193.329	11.65	9	226	11.37	13
237	11.46	3	332	11.52	9	229	11.60	13
243	11.56	3	335	11.38	9	232	11.42	13
246	11.47	3	338	11.37	9	2428215.216	11.88	1
249	11.36	4	341	11.73	9	241	11.94	1
253	11.37	4	344	11.63	9	260	11.95	2
257	11.38	4	347	11.40	9	263	11.92	2

TABLE II Ცხრილი

J. D.⊙	Ph. Mg.	n	J. D.⊙	Ph. Mg.	n	J. D.⊙	Ph. Mg.	n
	m			m			m	
2428215.266	11.78	2	2428223.295	11.28	15	2428251.215	11.40	18
269	11.95	3	298	11.30	15	219	11.42	18
272	11.82	3	2428241.213	11.47	5	222	11.50	18
275	11.70	3	232	11.60	6	225	11.74	18
2428223.229	11.27	14	2428246.234	11.65	12	228	11.76	18
254	11.34	14	237	11.34	12	231	11.55	18
267	11.30	14	240	11.60	12	240	12.00	18
270	11.11	14	243	11.52	13	243	11.79	18
273	11.20	15	246	11.69	13	2428252.227	11.75	1
277	11.20	15	249	11.67	13	233	11.94	2
279	11.11	15	256	11.52	13	242	11.71	2
284	11.21	15	2428251.201	11.71	18	245	12.00	3
287	11.24	15	206	11.50	18	247	11.80	3
290	11.29	15	212	11.54	18	252	12.00	3

Working out our observations we proceeded from Zessewitsch's elements given above and we obtained the following correction of the period:

$$\Delta P = -0^{d}.000035$$

Thus, the corrected elements are:

$$\text{Min} = 2426586.462 + 0^{d}.924365 \cdot E$$

The curve drawn on the base of these elements is shown in Fig. 2 and its normal points are listed in Table III.

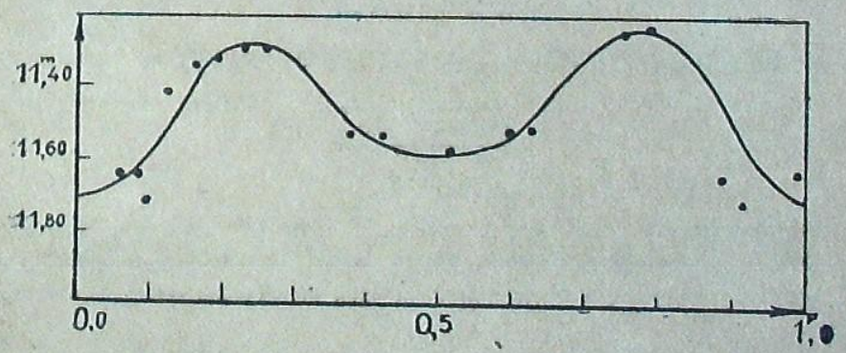

Fig. 2 ნახ.

TABLE III ცხრილი

Phase	Ph. Mg.	n	Phase	Ph. Mg.	n	Phase	Ph. Mg.	n
	m			m			m	
0.060	11.65	12	0.231	11.28	8	0.623	11.52	12
084	11.65	10	257	11.28	1	733	11.26	4
098	11.72	10	378	11.53	12	765	11.23	8
124	11.42	8	424	11.54	11	888	11.65	7
161	11.34	8	512	11.59	7	914	11.72	7
192	11.32	8	594	11.53	3	987	11.63	11

From the light-curve obtained the following maxima and minima of the star brightness are derived:

$$\text{Max} = 11^{m}.25; \qquad \text{Min}_{I} = 11^{m}.70; \qquad \text{Min}_{II} = 11^{m}.60.$$

The photographic works were made with the assistance of K. G. Zakharin and M. J. Zarandia. The latter measured also the most part of the plates on the photoelectric microphotometer.

April, 1936.

Literature: ლიტერატურა:

1. A. N. 242, p. 129, 1931.
2. W. Zessewitsch, per scriptum.
3. I. C. A. R. 1, p. 7, 1933.

The additional observations carried out by the late V. M. Bodokia during the period from November 19, 1936, to January 7, 1937, showed a certain dispersion and they are not satisfied by the elements given above. It is, therefore, desirable to secure more observations with a view to make the problem clear.

The Editor.

WW ERIDANI

ფოტოგრაფიული სიკაშკაშის მრუდი და ელემენტები

ვ. ბოდოკია

(რეზიუმე)

დამუშავებულია WW Eridani-ს 147 ფოტოგრაფიული გამონასახი. ცხრ. II ცვალებადის ფოტოგრაფიული სიკაშკაშის მნიშვნელობებს შეიცავს. ნახ. 2-ზე მოყვანილი მრუდი ვარსკვლავის სიკაშკაშის ცვალებადობას გამოხატავს.

მოცემულია შესწორებული ელემენტები.

$$\text{Min} = 2426586.462 + 0^{d}.924365 \cdot E$$

აპრილი, 1936.

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БЮЛЛЕТЕНЬ АБАСТУМАНСКОЙ АСТРОФИЗИЧЕСКОЙ ОБСЕРВАТОРИИ № 3. 1938
BULLETIN OF THE ABASTUMANI ASTROPHYSICAL OBSERVATORY No. 3. 1938

AH VIRGINIS
PHOTOGRAPHIC LIGHT-CURVE AND ELEMENTS

V. M. BODOKIA

P. Guthnick and R. Prager discovered the variability of AH Virginis when examining the Babelsberg plates. They also established that the star is an eclipsing variable of β Lyrae type[1].

To determine the photographic light-curve of the variable we secured 210 star images at the Newtonian focus of the 13-inch reflector. The photographs were taken on Ilford Monarch plates (emulsion 6428 A) with 4—6 minute exposures.

The star was being observed from February 16 to May 27, 1936.

We used four comparison stars, photographic magnitudes of which were determined from three plates with two photographs of the area of the variable and one photograph of KSA 26 each taken with 6 minute exposures.

To determine the brightness of the comparison stars we made use of the photographic magnitudes of the stars in KSA 26 taken from Parkhurst and Farnsworth.

We give in Table I the obtained magnitudes of the comparison stars and their probable errors.

TABLE I ცხრილი

Star	Mg	P. E.
a) BD+12°2436	$9^{m}.19$	$\pm 0^{m}.03$
b) BD+12°2434	10.38	±0.04
c) Anonyma $\alpha_{1855} = 12^{h}05^{m}35^{s}.2$, $\delta_{1855} = +12°26'.7$	11.51	±0.05
d) BD+13°2512	10.61	—