აბასთუმნის ასტროფიზიკური ობსერვატორიის ბიულეტენი № 2. 1938
БЮЛЛЕТЕНЬ АБАСТУМАНСКОЙ АСТРОФИЗИЧЕСКОЙ ОБСЕРВАТОРИИ № 2. 1938
BULLETIN OF THE ABASTUMANI ASTROPHYSICAL OBSERVATORY No. 2. 1938

RZ COMAE BERENICES
PHOTOGRAPHIC LIGHT-CURVE AND ELEMENTS

V. M. BODOKIA

The variability of the star RZ Comae Berenices [BD+24°2475; $9^m.5$] was discovered on Babelsberg plates by P. Guthnick and R. Prager[1], who believed it to be a short-period eclipsing β Lyrae type star.

Later on, on the ground of 75 photographic observations, Prager showed that RZ Comae Berenices belongs to the group of the short-period eclipsing W Ursae Majoris type stars[2].

In 1934 P. P. Dobronravin obtained with 13-inch reflector of Abastumani Observatory 94 photographic images of this star. On the ground of those observations the light-curve was drawn and the elements of brightness determined[3].

From April 18 to June 11, 1936 the author obtained in the Newtonian focus of the 13-inch reflector 222 images of RZ Comae Berenices. The photographs were taken on Fulgur plates (emulsion 60187) with 3 or 4 minute exposures.

The photographic magnitudes of comparison stars were derived from the comparison of the area of RZ Comae Berenices with KSA26[4]. Two plates served for this comparison. The comparison stars are given in Table I.

TABLE I ცხრილი 1

Star	Mg	P. E.
a) BD+23°2476 ($8^m.3$)	$8^m.44$	$\pm 0^m.027$
b) BD+24°2476 ($9^m.5$)	10.34	±0.040
c) BD+24°2474 ($9^m.4$)	10.08	±0.040
d) Anonyma $\alpha_{1855} = 12^h\,27^m\,37^s$, $\delta_{1855} = +24°33'$	10.90	±0.060
e) Anonyma $\alpha_{1855} = 12^h\,28^m\,05^s$, $\delta_{1855} = +24°06'$	11.70	±0.013

The dates of individual observations and the corresponding photographic magnitudes of the variable are given in Table II.

TABLE II ცხრილი II

J. D.⊙	Ph. Mg.	J. D.⊙	Ph. Mg.	J. D.⊙	Ph. Mg.
	m		m		m
2428277.257	9.75	2428301.266	10.05	2428311.272	9.90
260	10.35	268	10.05	276	10.07
263	9.90	270	10.06	278	10.07
265	10.02	272	10.04	281	9.80
272	10.18	280	10.01	283	10.15
274	10.02	297	9.87	285	9.93
277	10.21	321	9.85	287	10.00
280	10.02	324	9.95	289	10.12
338	10.38	326	9.95	291	10.04
2428280.515	10.12	328	9.96	293	10.18
519	10.24	330	9.94	295	9.88
521	10.04	332	9.94	304	9.80
523	9.90	334	10.10	328	10.29
525	10.21	337	10.05	341	10.11
527	10.43	339	10.16	363	10.52
529	10.34	341	10.14	373	10.70
531	10.08	343	10.14	375	10.58
2428300.298	10.07	345	10.21	378	10.68
302	9.86	365	10.38	380	10.72
304	9.94	370	10.56	382	10.59
306	10.03	372	10.78	385	10.55
308	9.90	375	10.68	388	10.66
311	10.06	377	10.74	390	10.58
313	10.02	380	10.68	392	10.36
315	10.10	382	10.58	395	10.36
317	10.00	384	10.64	397	10.30
319	10.19	386	10.70	400	10.18
321	10.08	388	10.74	407	10.19
323	10.04	391	10.72	409	10.13
326	9.94	404	10.35	411	10.10
328	10.18	406	10.42	413	10.18
336	10.29	408	10.43	415	10.23
338	10.28	410	10.30	417	10.26
340	10.30	412	10.38	420	10.15
343	10.30	415	10.36	422	10.12
345	10.30	417	10.40	424	10.16
347	10.44	420	10.19	427	10.04
349	10.44	422	10.22	429	10.11
351	10.55	424	10.26	431	10.06
356	10.49	426	10.08	445	9.94
358	10.78	428	9.98	447	9.90
360	10.60	438	9.85	449	10.07
363	10.91	440	10.19	451	9.96
365	10.85	443	10.05	453	9.99
370	10.87	445	10.03	455	9.89
417	10.21	447	9.97	457	10.01
426	10.30	449	10.09	460	10.10
428	10.15	452	10.16	462	10.20
431	10.19	463	10.15	464	10.13
2428301.248	10.11	473	9.90	468	10.17
250	10.30	475	10.11	2428312.276	10.15
252	10.14	477	9.91	279	10.09
254	10.22	479	10.00	281	10.16
256	10.14	486	10.17	285	10.16
259	9.97	488	9.96	288	10.17
261	10.31	493	10.02	291	10.19
263	10.10	495	10.28	303	9.90

J. D.⊙	Ph. Mg.	J. D.⊙	Ph. Mg.	J. D.⊙	Ph. Mg.
	m		m		m
2428312.306	10.00	2428312.397	10.42	2428312.466	10.08
308	10.20	400	10.62	469	10.14
315	10.15	403	10.50	472	10.02
318	10.15	406	10.40	475	9.93
320	10.01	409	10.20	478	9.90
357	10.37	413	10.42	2428331.318	10.59
363	10.35	418	10.33	321	10.50
366	10.49	421	10.24	324	10.59
369	10.60	424	10.08	326	10.78
372	10.50	427	10.33	329	10.68
375	10.46	447	9.95	332	10.87
377	10.63	449	10.09	335	10.88
380	10.62	452	9.85	338	10.82
383	10.64	455	10.09	341	10.67
386	10.68	458	9.86	344	10.74
389	10.76	461	10.05	347	10.77
395	10.69	463	10.05	350	10.70

In calculating we made use of the elements given by Prager:

$$\text{Min} = 2425005.524 + 0^d.338504 \cdot E$$

and obtained the correction for the period

$$\Delta P = 0^d.000017.$$

Thus the corrected elements are:

$$\text{Min} = 2425005.524 + 0^d.3385057 \cdot E.$$

On the basis of the latter the photographic light-curve was drawn (Fig. 1).

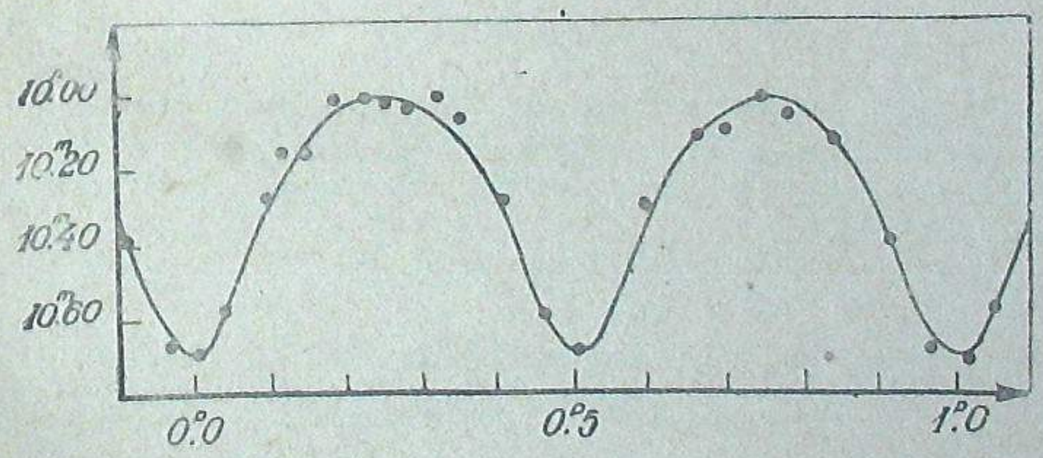

Fig. 1 ნახ.

The normal points of this curve are listed in Table III.

TABLE III ცხრილი

Phase	Ph. Mg.	n	Phase	Ph. Mg.	n	Phase	Ph. Mg.	n
	m			m			m	
0.007	10.70	10	0.286	10.03	10	0.663	10.11	10
042	10.57	10	328	10.00	10	700	10.10	10
099	10.28	10	357	10.06	10	750	10.00	10
116	10.15	10	408	10.29	10	782	10.06	10
146	10.15	10	461	10.59	10	846	10.12	10
103	10.01	10	503	10.71	10	918	10.39	11
229	10.01	10	592	10.30	10	970	10.68	10
252	10.02	10						

From the light-curve we derive

$$\text{Max} = 10^m.00; \qquad A_I = A_{II} = 0^m.70.$$

The plates were measured by E. Dolidse and G. Oragvelidse.

June, 1936.

Literature: ლიტერატურა:

1. B. Z. 13, 1929.
2. K. V. BB. 6, 1929.
3. V. S. IV, 12, p. 415, 1935.
4. Bull. Abast. Obs. 1, p. 10, 1937.

RZ COMAE BERENICES

ფოტოგრაფიული სიკაშკაშის მრუდი და ელემენტები

ვ. ბოდოკია

(რეზიუმე)

1936 წლის ზაფხულს 13" რეფლექტორის Newton-ის ფოკუსში მიღებული იყო RZ Comae Berenices-ის 222 ფოტოგრაფიული გამონახახი.

Prager-ის მიერ მოცემული ელემენტების საფუძველზე მიღებულ იქნა პერიოდის შესწორება

$$\Delta P = 0^d.0000017$$

და ამის მიხედვით ელემენტების ახალი მნიშვნელობა:

$$\text{Min} = 2425005.524 + 0^d.3385057 \cdot E.$$

ნახ. 1 გამოსახავს ცვალებადის სიკაშკაშის საშუალო მრუდს.

ივნისი, 1936.

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БЮЛЛЕТЕНЬ АБАСТУМАНСКОЙ АСТРОФИЗИЧЕСКОЙ ОБСЕРВАТОРИИ № 2. 1938
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AH AURIGAE
PHOTOGRAPHIC LIGHT-CURVE AND ELEMENTS

V. M. BODOKIA

R. Prager and P. Guthnick found in 1928[1] that the star AH Aurigae ($\alpha_{1855} = 6^h\,16^m\,57^s$; $\delta_{1855} = +28°4'.5$) belongs to the group of the short-period eclipsing W Ursae Majoris type stars. The following elements were given by Prager[2]:

$$\text{Min} = 2425271.366 + 0^d.494157 \cdot E.$$

The photographic light-curve and elements given in this note are derived from the study of 220 photographic images. The observational material was obtained with 13-inch reflector of Abastumani Observatory on Ilford Monarch plates (emulsion 6428 A) from December 10, 1936 to February 18, 1937, the length of exposures being 5 or 6 minutes.

Two plates on which the area of AH Aurigae and KSA 26 were taken served for the determination of the brightness of comparison stars. From the comparison of those areas we obtained the following values of magnitudes for the comparison stars:

TABLE I ცხრილი

Star		Mg
a) BD+28°1112	($9^m.1$)	$9^m.92$
b) BD+28°1118	($9^m.5$)	10.44
c) Anonyma $\alpha_{1855} = 6^h\,14^m\,54^s$, $\delta_{1855} = +28°14'.0$		10.20
d) Anonyma $\alpha_{1855} = 6^h\,15^m.22^s$, $\delta_{1855} = +28°19'.4$		10.80

It must be remarked that it was often impossible to use all those comparison stars because the area was rich in stars and this circumstance hindered us to measure them accurately enough with the microphotometer.

In Table II the individual observations are listed.