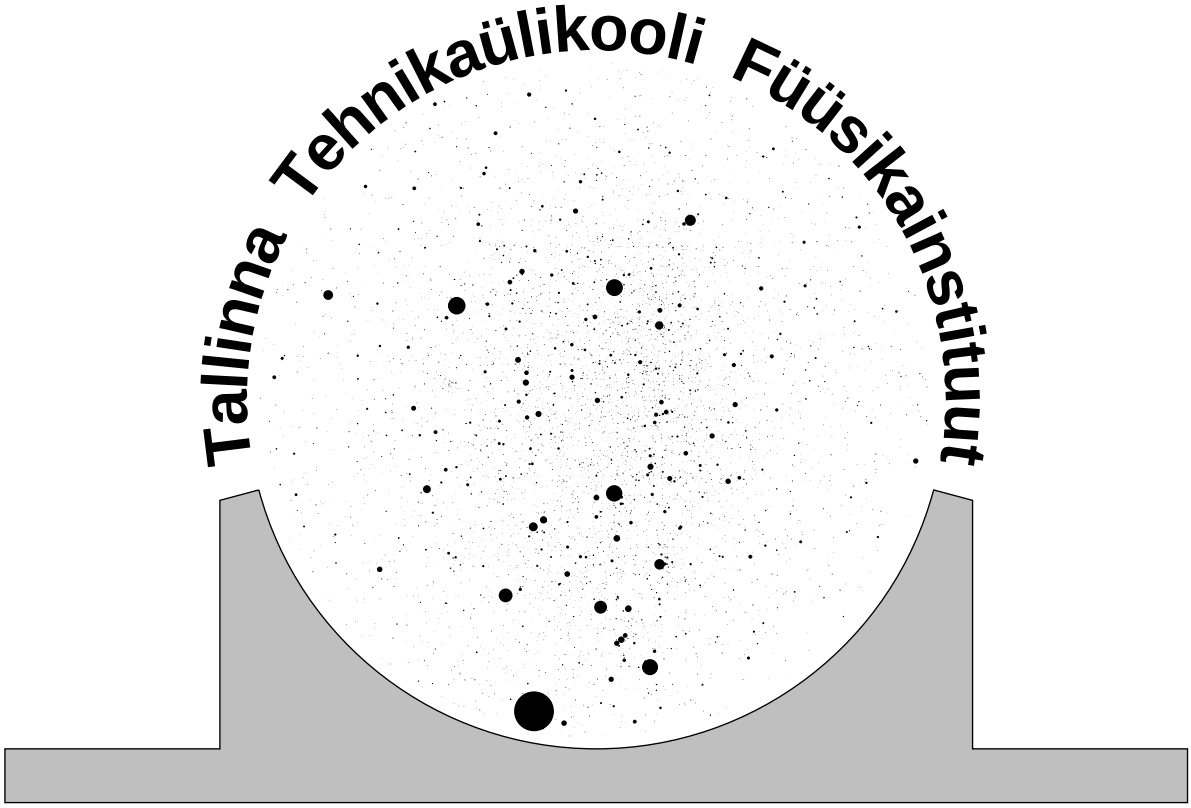

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Observations of RX Cassiopeiae

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Introduction

The variability of RX Cassiopeiae was discovered by Ceraski (1904) but in fact it was Argelander who first suspected the variability in his Bonner Durchmusterung. Blazhko has classified the star to be the type of Algol with the period of $32^{\rm d}.315$. Martynov has specified the type of variability and improved photometric elements having discovered in this way, also the change of a period.

Since the discovering of visual photometry, measurements of RX Cas were made by Blazhko (Martynov, 1950; Wendell, 1913) and Polish observers (Szafraniec, 1959). The most extensive series of observational data have been sampled by Martynov (853 visual observations) and Gaposchkin (1944) who has determined photographic and photovisual luminosity of the system based on 2037 and 31 Harvard plates respectively, comprising the interval of 50 years.

It become clear already from the early observations of Wendell that the light curve of RX Cas is highly asymetrical with the maximum following the primary minimum being brighter by as much as $0^{\rm m}.1$ – $0^{\rm m}.2$ than the neighbouring flat maximum.

Gaposchkin has found that the component star with higher temperature, eclipsed in primary minimum, is a variable star with the period of $517^{\rm d}.6$ and the amplitude of $0^{\rm m}.46$.

The orbital elements have been calculated by Shapley(1915), Struve(1944), Gaposchkin(1944) and with a special thoroughness by Payne–Gaposchkin(1946) and Martynov(1950). The agreement between their results is poor, apparently due to intrinsic variability and the asymmetry of light curve. In addition to problems mentioned before Martynov points to the following complications: the ratio of the surface brightneses is incompatible with the spectroscopic data, ellipticities of the stars, notably that of the secondary component, are abnormally high.

From their first spectroscopic observations Adams and Joi (1919) have established one spectrum to be gG3 which precisely agrees with more careful study by Struve (1944) who has found that the primary star is A2 – A5e with features characteristic for supergigants. The spectrum gG3 dominating at all phases and visible during the secondary minimum is practically normal. The mass function determination ($f(m) = 0.16 M_{\odot}$, $K = 36 km/sec$, $\gamma = -24 km/sec$, $e = 0.0$) is reliable by Struve's judgement (the average based upon 5 absorption lines). At the ultraviolet end of the spectrum dominates A star (even during the primary minimum). However absorption lines persumably belonging to A type star are hardly identifiable and blended with the superimposed emission spectrum to such an extent that the radial velocity curve based on Ca II K lines is incompatible with the curve produced by G type star ($\gamma = -3 km/sec$). The analysis of emission spectrum positively points to the presence of gaseous ring around the A type star ($vr = \pm 150 km/sec$) by all evidence originating due to the flow of material from giant G3.

*P. Kalv passed away on 1 January 2002

Thus it follows from visual, photographic and spectroscopic observations that this object deserves a special attention from the evolutionary point of view (intensive flow of matter from the G type star, A type component is a variable star of unknown type). Dut to facts mentioned before we have been conducting long–term photoelectric observations of RX Cas. In 1975 cooperative observations of RX Cas initiated by professor Martynov(1978) were started.

The first part of the photoelctric observations made at Tallinn Observatory and qualitative model of the system is given in Kalv(1979). Among other photometric studies are: Kříž et al.(1980), Kondo et al.(1981), Taranova(1983), Martynov et al.(1987)and Pustylnik et al.(2007). Microvariability was studid by Todorova and Khruzina(1989,1989a). Spectral observations carried out by Plavec and Koch(1978), Alduseva(1987), Kolka et.al (1988) and Todorova(1993). Light–curve analysis of the RX Cas is implemented by Strupat (1987), Andersen et al.(1988) and Djuršević(1993).

Observations

RX Cas was observed with the Tallinn 50-cm telescope (BV from 1968, $UBVR$ from 1980) up to 1993 in total 883 observations (usually one normal point per night, Fig. 2) have been obtained. BD+67°248 (SAO 12641) was used as the comparison star and BD+68°220 (SAO 12627)as check star; as their standard UBVR indices have not been determined only magnitude differences are given in Table 2.

The instrument and the reduction technique used are described in the paper by Kalv et al.(2007). The root–mean–square errors of the normal points, as calculated from the measurements of comparison and the check stars, are less than $0\overset{\mathrm{m}}{.}01$ for V, $B-V$ and $V-R$. In the ultraviolet, RX Cas was too faint for the Tallinn telescope. Often the sky background was bright from full or nearly full Moon and we have tried to observe also at relatively poor atmospheric conditions. Therefore, in many nights the error in U may reach up to $0\overset{\mathrm{m}}{.}04$ mag.

The observed magnitudes (variable minus comparison star) are given in Table 2.

Period

The times of minimum were determined with the aid of Pogson's tracing paper method in differential mode (Albo 1964), computerized by us. We have used all available times of minima beginning from photographic determinations from the beginning of last century. Time-series spectra given in Fig 10 and 11. All minima determined from observations are given in Table 1 and on Fig. 1. We have used light elements derived by the least-squares method:

$$\begin{array}{ccccc} T_{\min} = 2416251.0654 & + & 32\overset{\mathrm{d}}{.}31095 \times E & + & 0.00001156 \times E^2 \\ & & \pm 0.13 \qquad \pm 0.0005 & & \pm 0.0000004 \end{array}$$

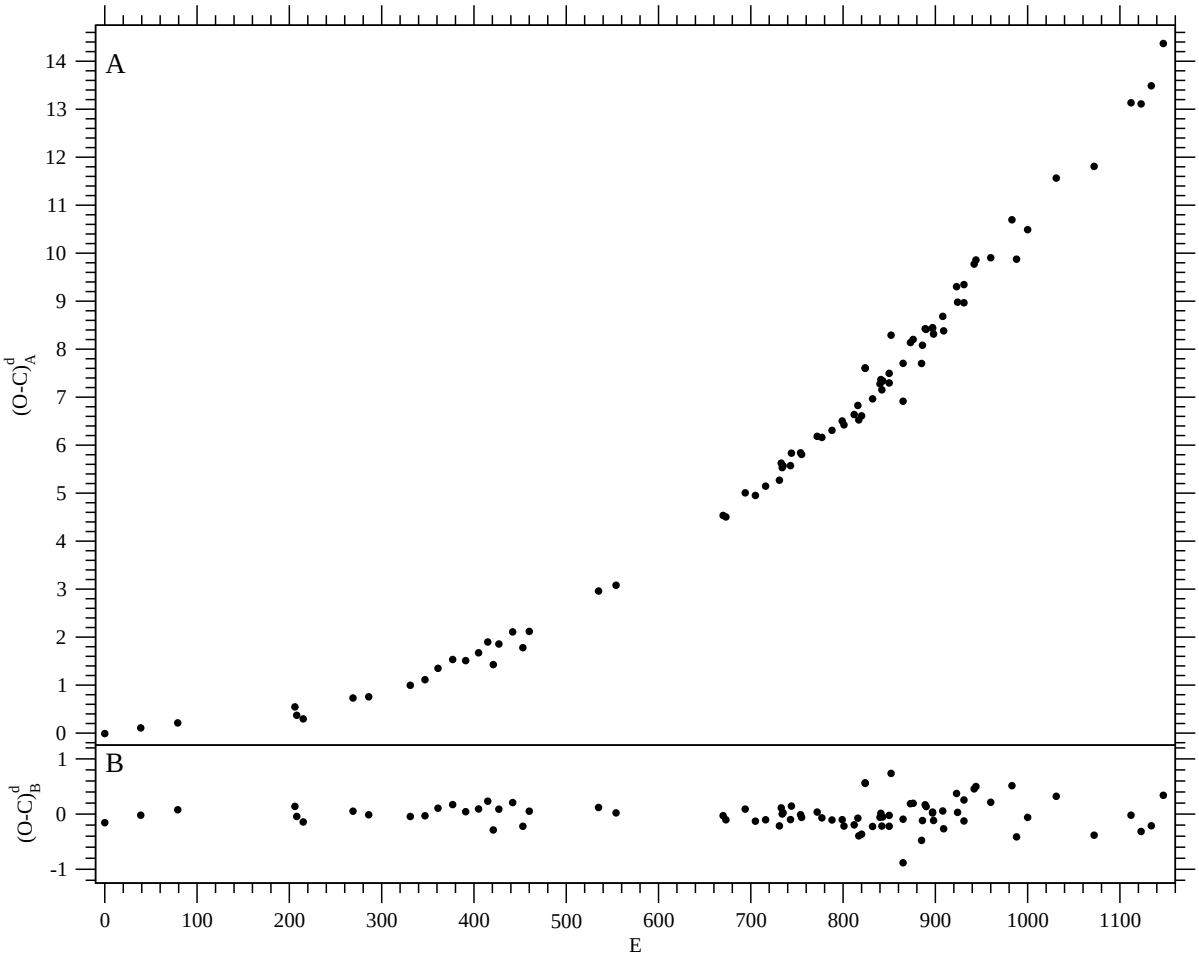

Figure 1: O-C diagram calculated using linear light elements $T_{\min} = 2416251.0654 + 32\overset{\mathrm{d}}{.}31095 \times E$ (A) and with quadratic term light elements $T_{\min} = 2416251.0654 + 32\overset{\mathrm{d}}{.}31095 \times E + 0.00001156 \times E^2$ (B)

Light curves

In Fig. 2...9 and 12...14 light curves are presented. It is obvious from Fig. 3 that the dispersion around a mean curve is considerably higher that the errors of observation. Fig. 5 shows the intrinsic variability of RX Cas (516 days).

It appears that the orbital light-variations are modulated with a wave lasting 516 days. These intrinsic variations are colour–dependent with mean amplitude of about $0\overset{\mathrm{m}}{.}3$ in B and $0\overset{\mathrm{m}}{.}2$ in V. In U the amplitude is probably greater than $0\overset{\mathrm{m}}{.}7$ whereas in R these variations are not perceptible. The same variations were mentioned already by Martynov(1950).

The long–period changes were approximated with polynomial and for further use deviations from the polynomial were taken. We have combined all our observations. The normalized light curves are showing changes of shape and depths of minima.
We hope to publish the results of the investigation in future.

We are thankful to Dr. V. Pustynski for checking the manuskript and the financial support of this investigation by a Grant No. 7691 of the Estonian Science Foundation and BF 44 are acknowledged.

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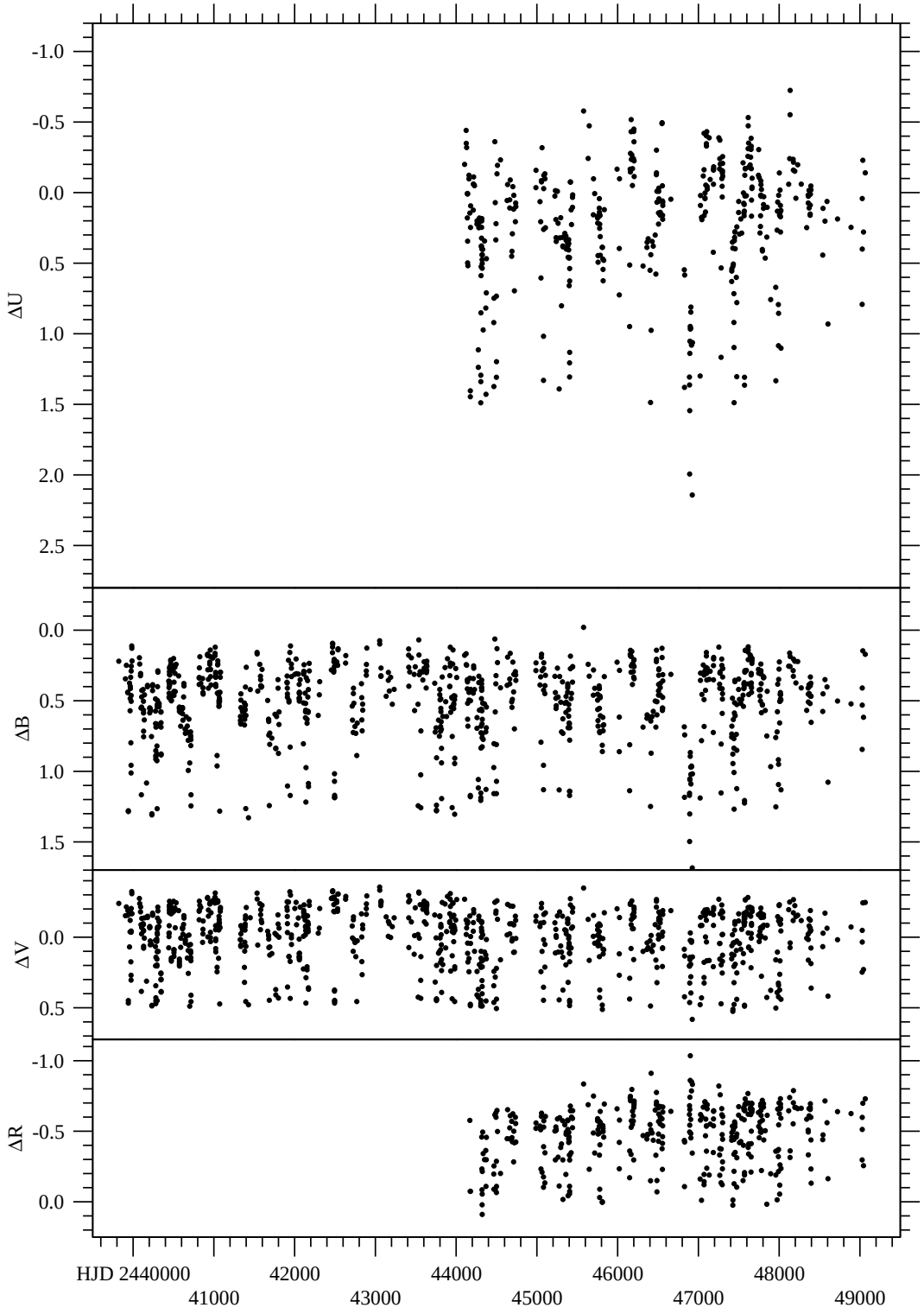

Figure 2: All observations made at Tallinn Observatory (time diagram).

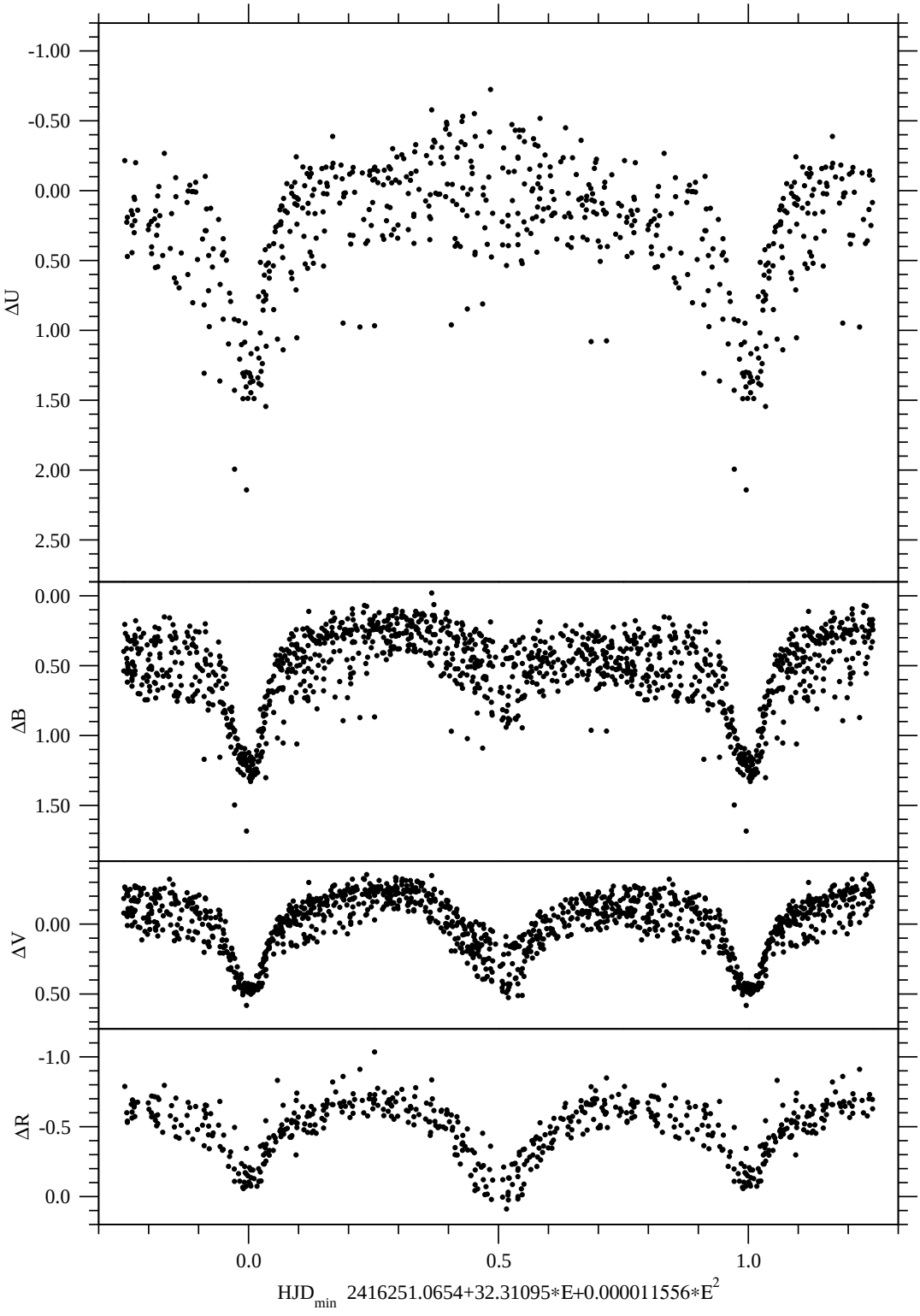

Figure 3: Differential light U,B,V and R phase diagram for RX Cas (orbital).

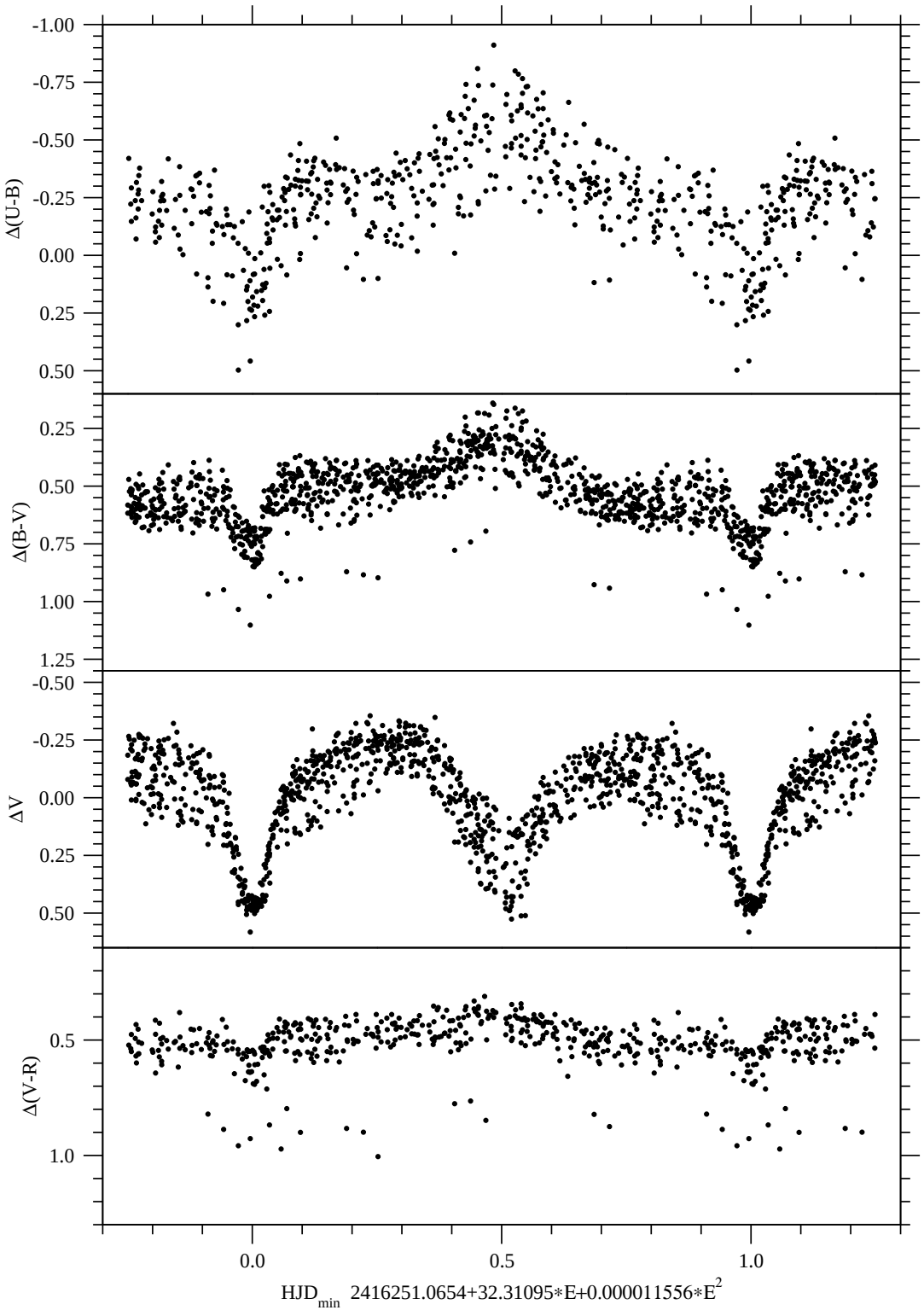

Figure 4: Differential light and color U-B, B-V, V and V-R phase diagram (orbital).

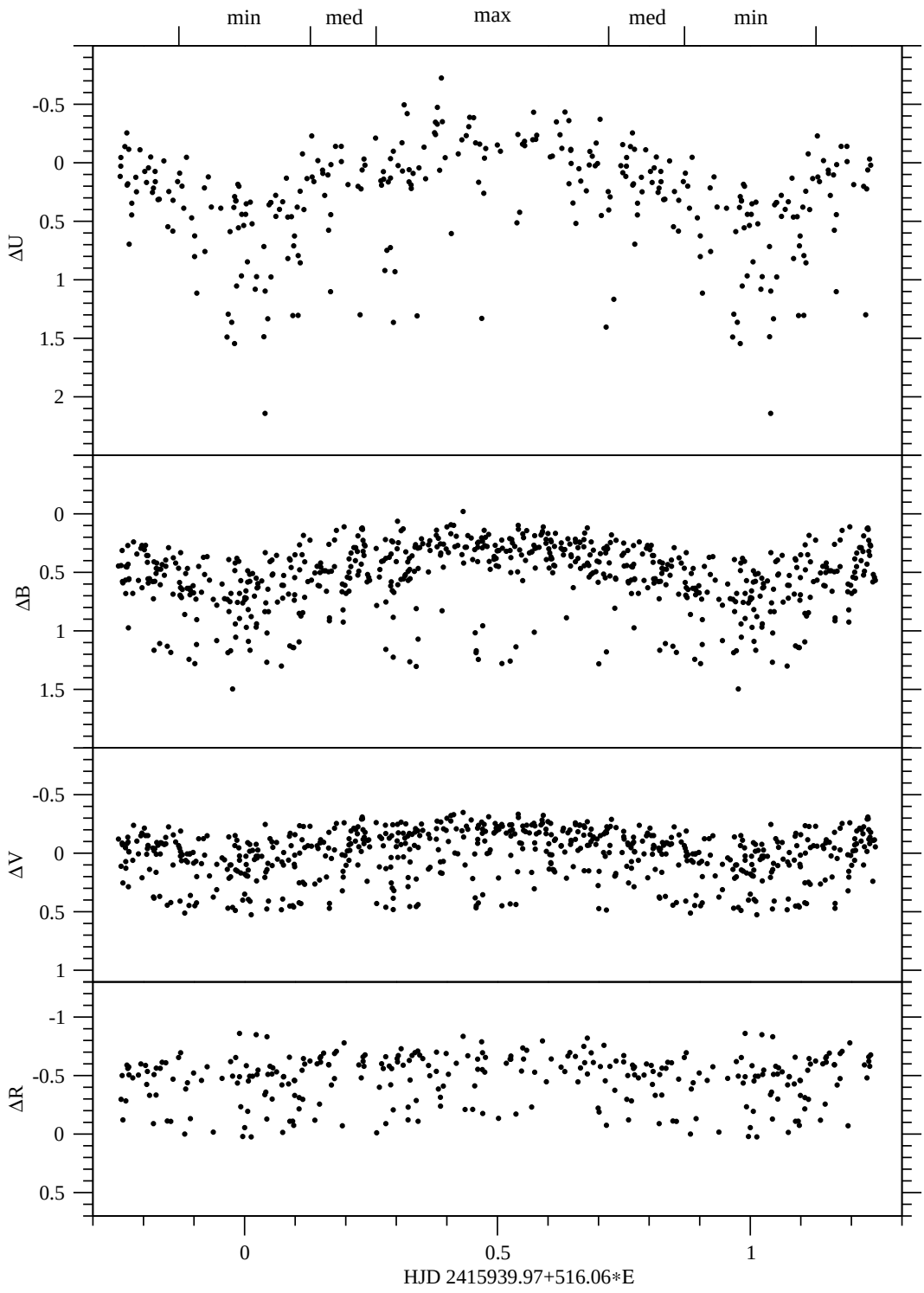

Figure 5: Intrincic variability diagram.

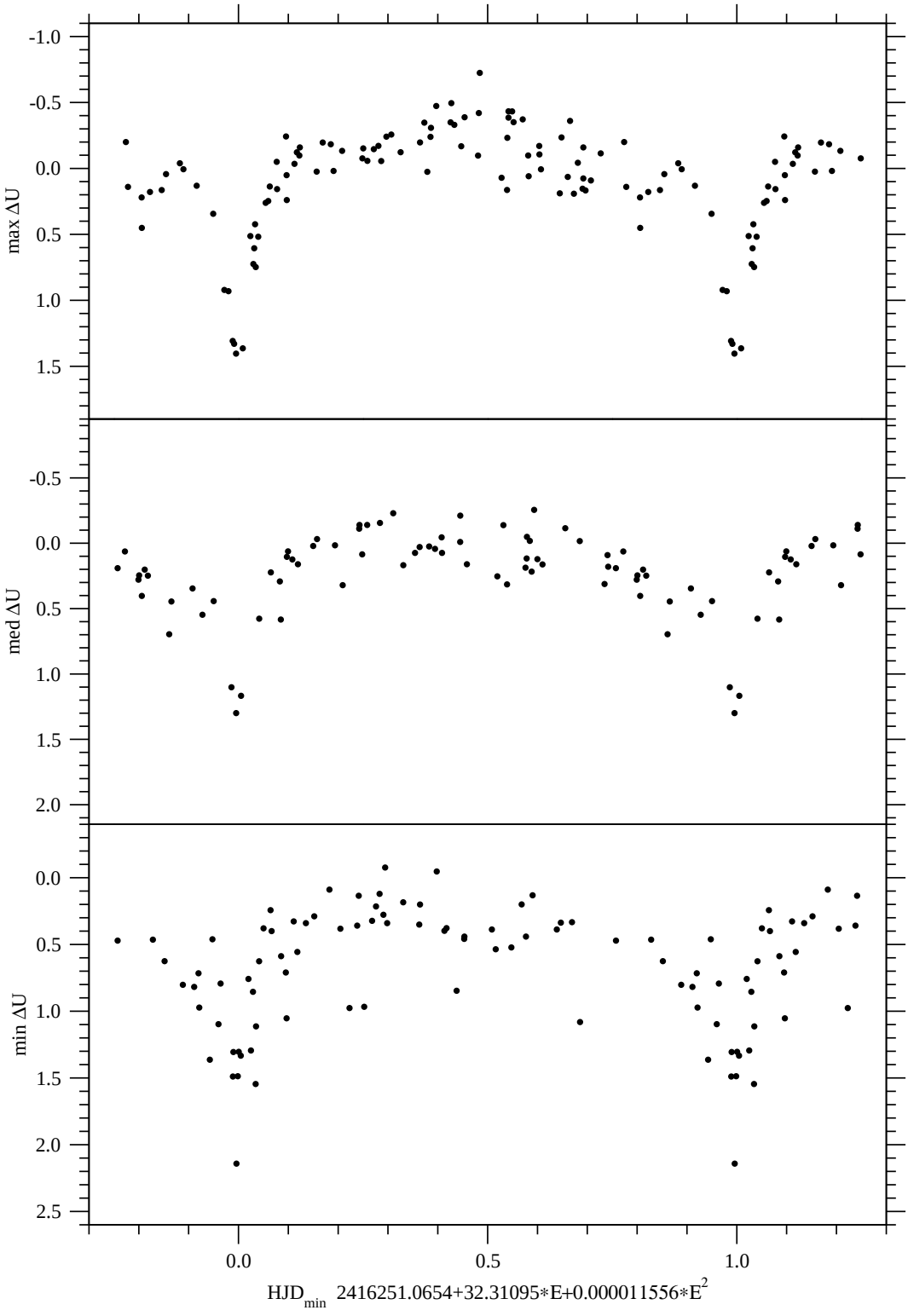

Figure 6: Light curve of RX Cas in the U band obtained at Tallinn Observatory in 1968-1993. Inscriptions max, med, and min denote respectively the maximum, medium and minimum levels of intrinsic variability.

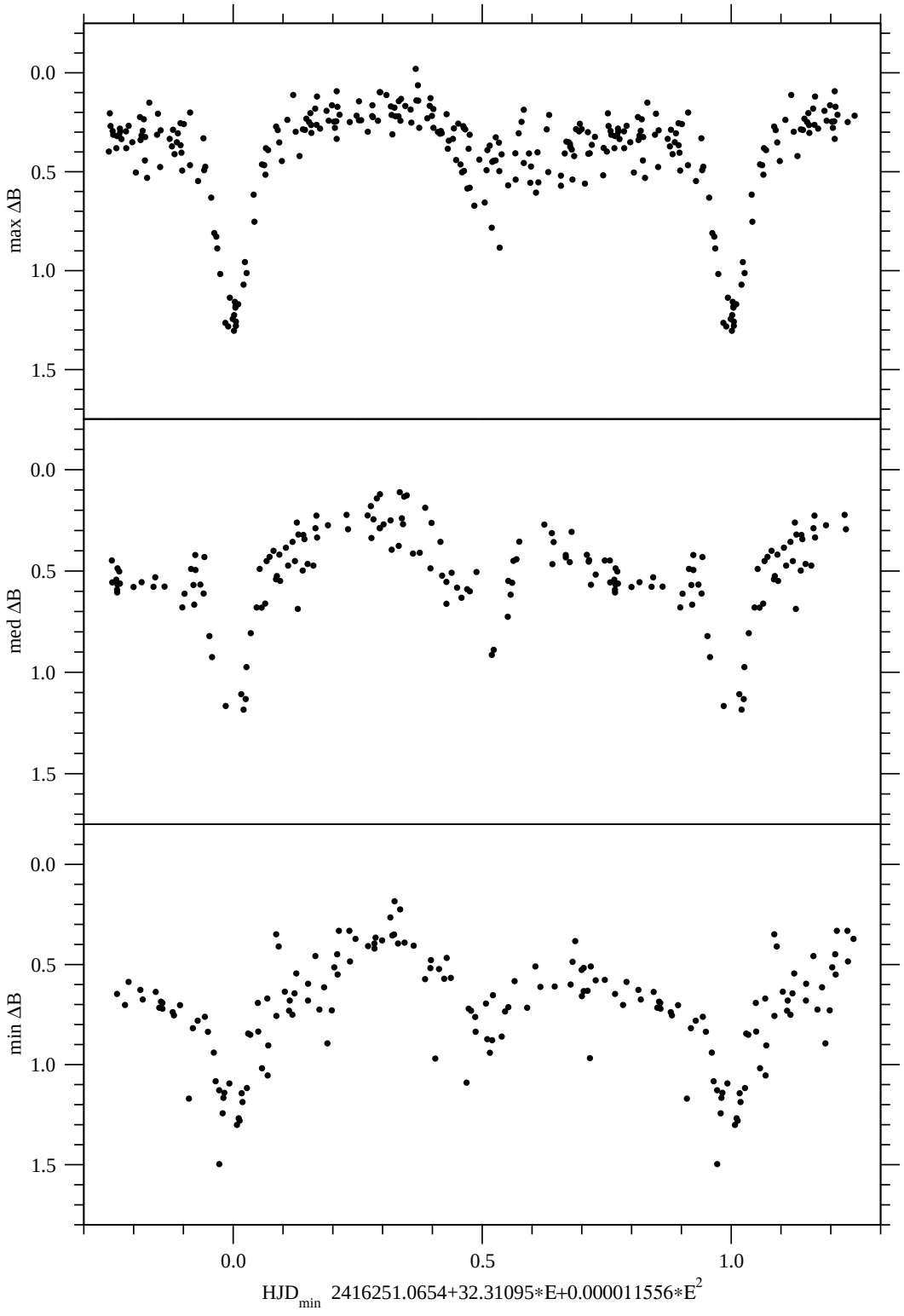

Figure 7: Light curve of RX Cas in the B band obtained at Tallinn Observatory in 1968-1993. Inscriptions max, med, and min denote respectively the maximum, medium and minimum levels of intrinsic variability.

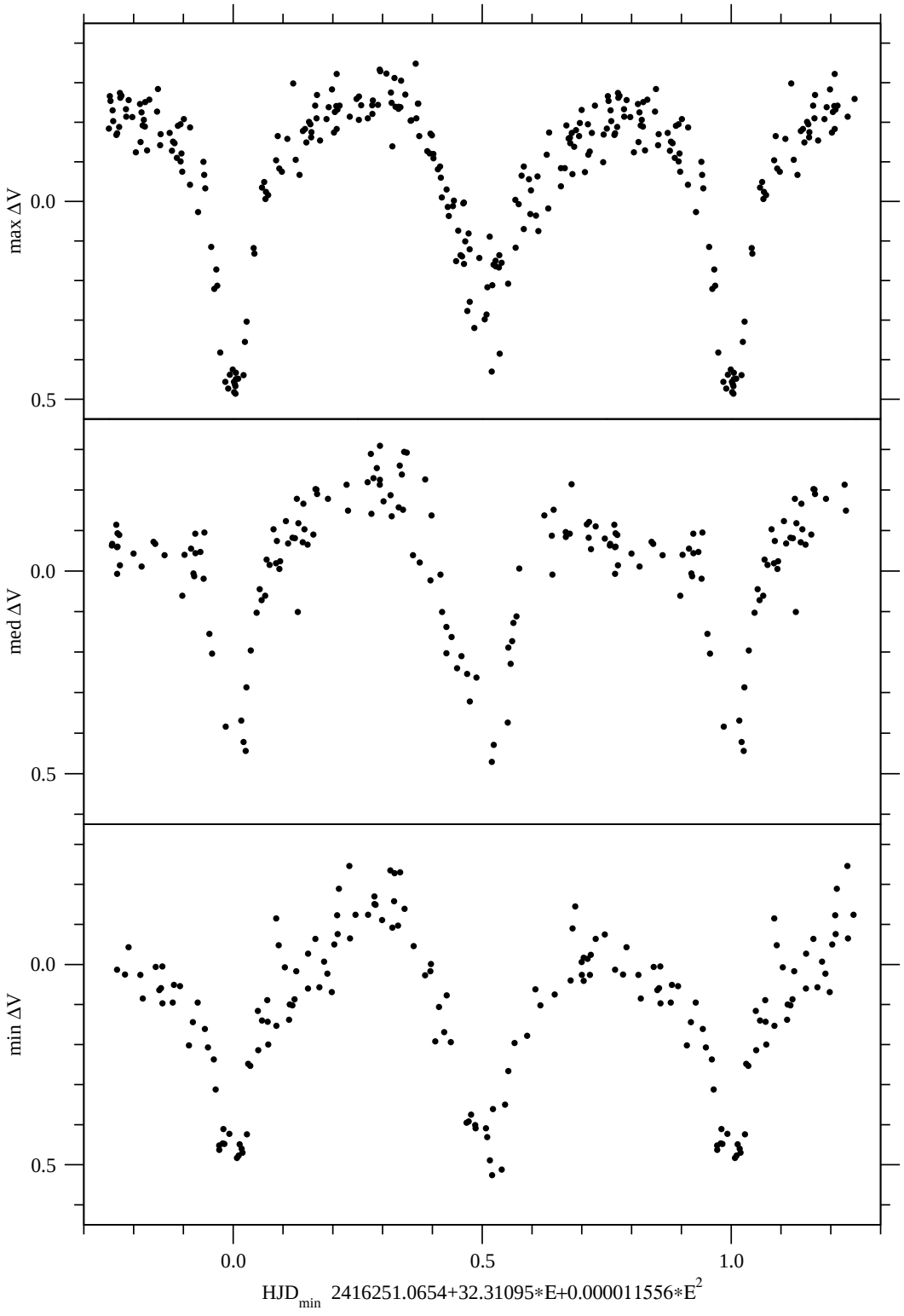

Figure 8: Light curve of RX Cas in the V band obtained at Tallinn Observatory in 1968-1993. Inscriptions max, med, and min denote respectively the maximum, medium and minimum levels of intrinsic variability.

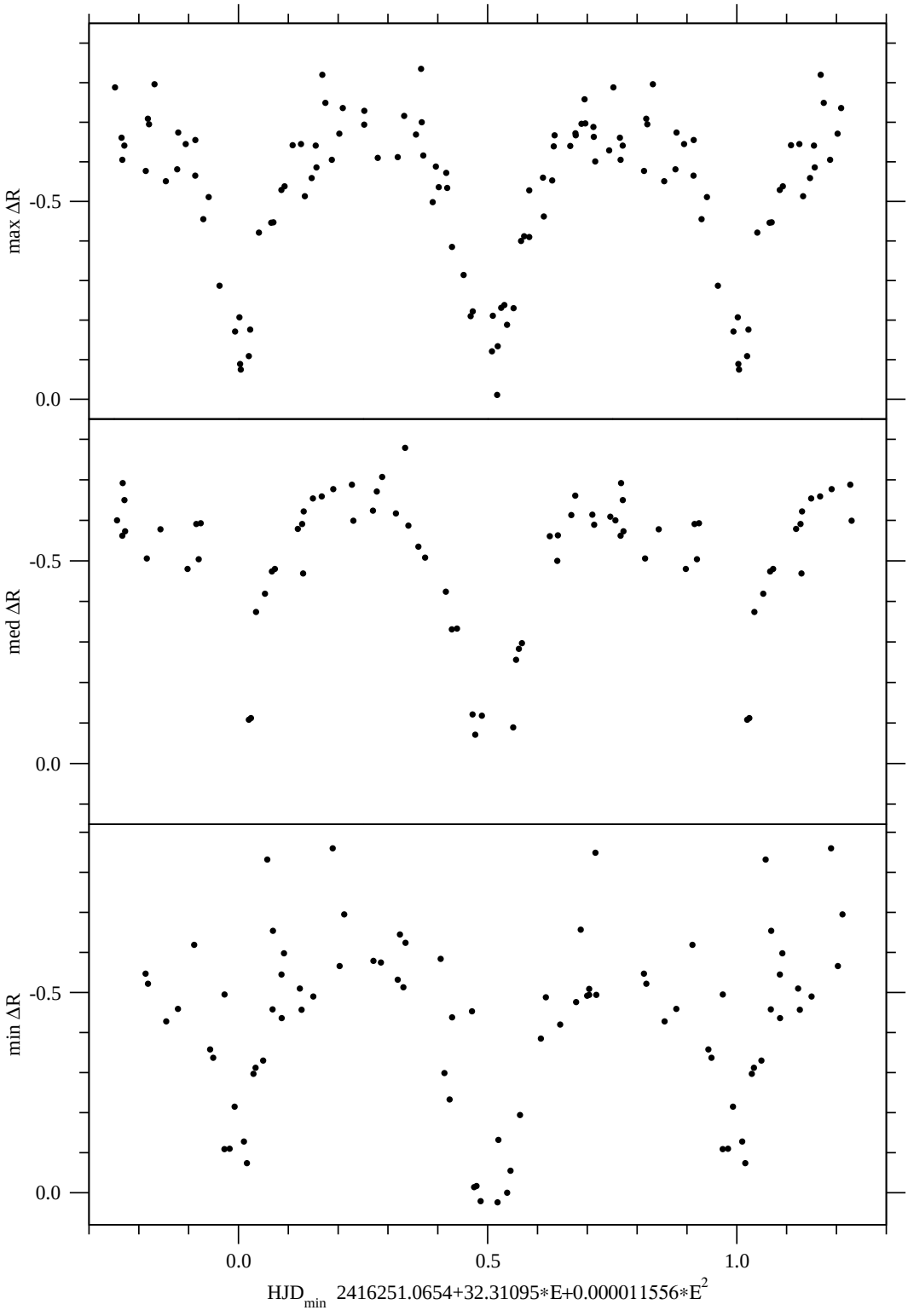

Figure 9: Light curve of RX Cas in the R band obtained at Tallinn Observatory in 1968-1993. Inscriptions max, med, and min denote respectively the maximum, medium and minimum levels of intrinsic variability.

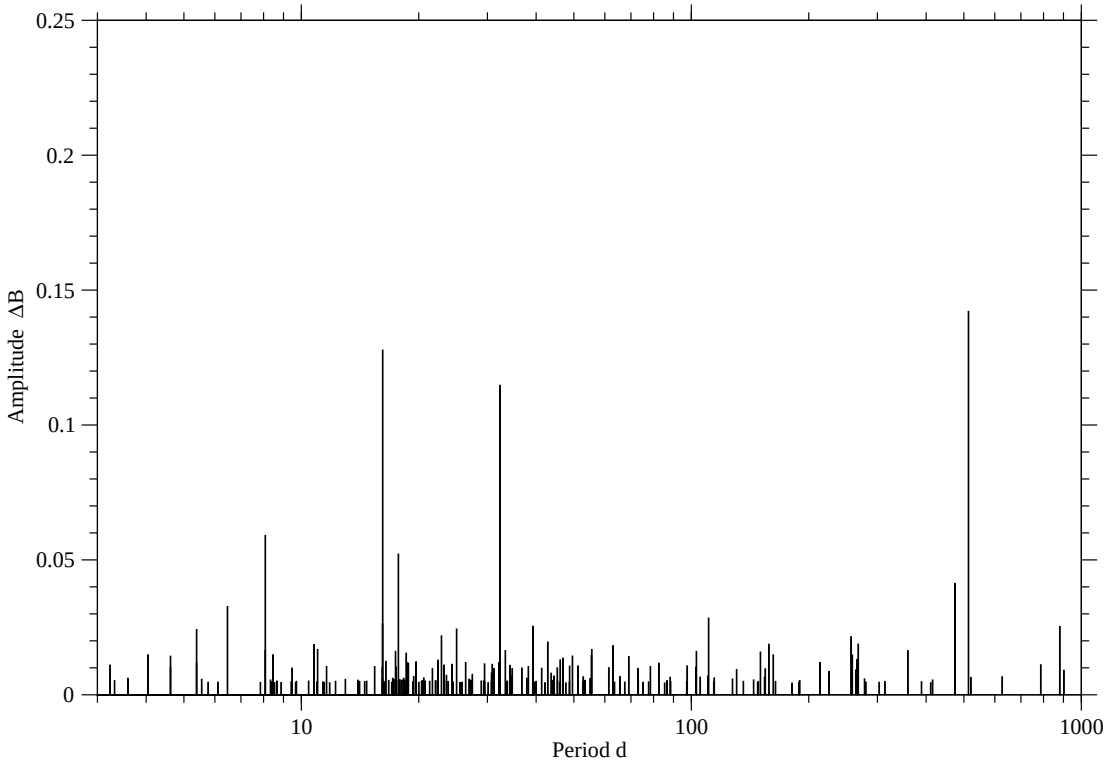

Figure 10: Time-series spectrum of the RX Cas calculated using the *CLEAN* algorithm (Roberts et al., 1987)

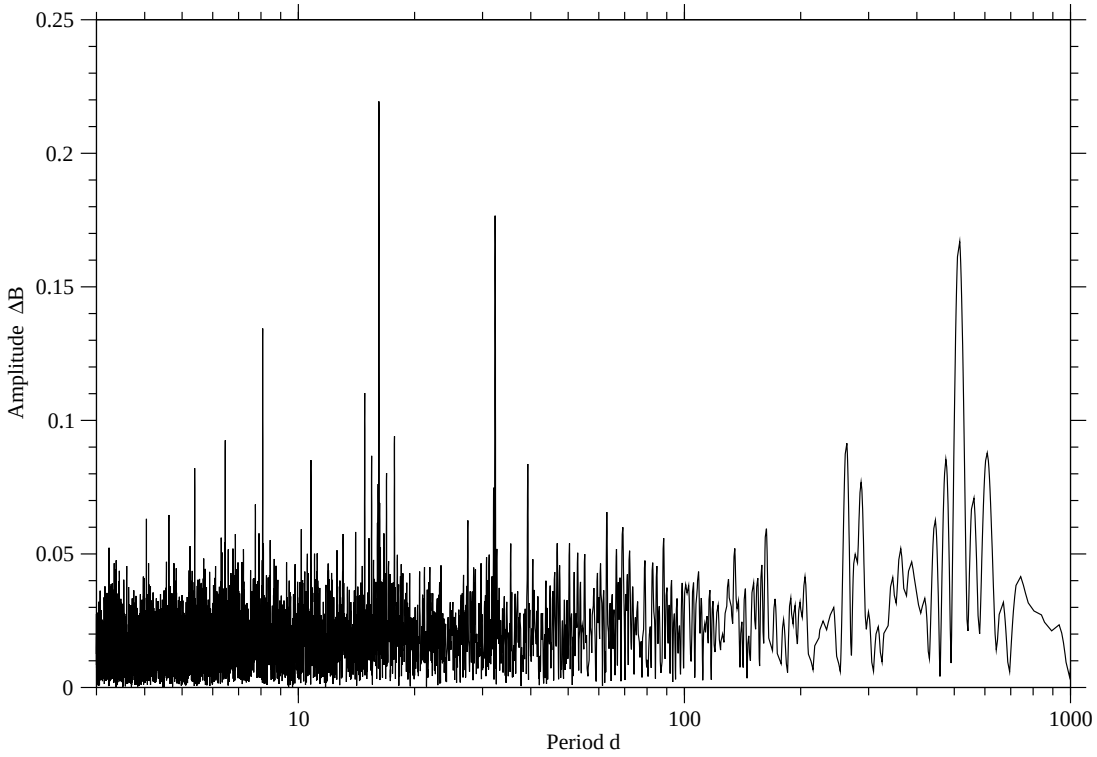

Figure 11: Time-series spectrum of the RX Cas calculated using the *Period04* program.

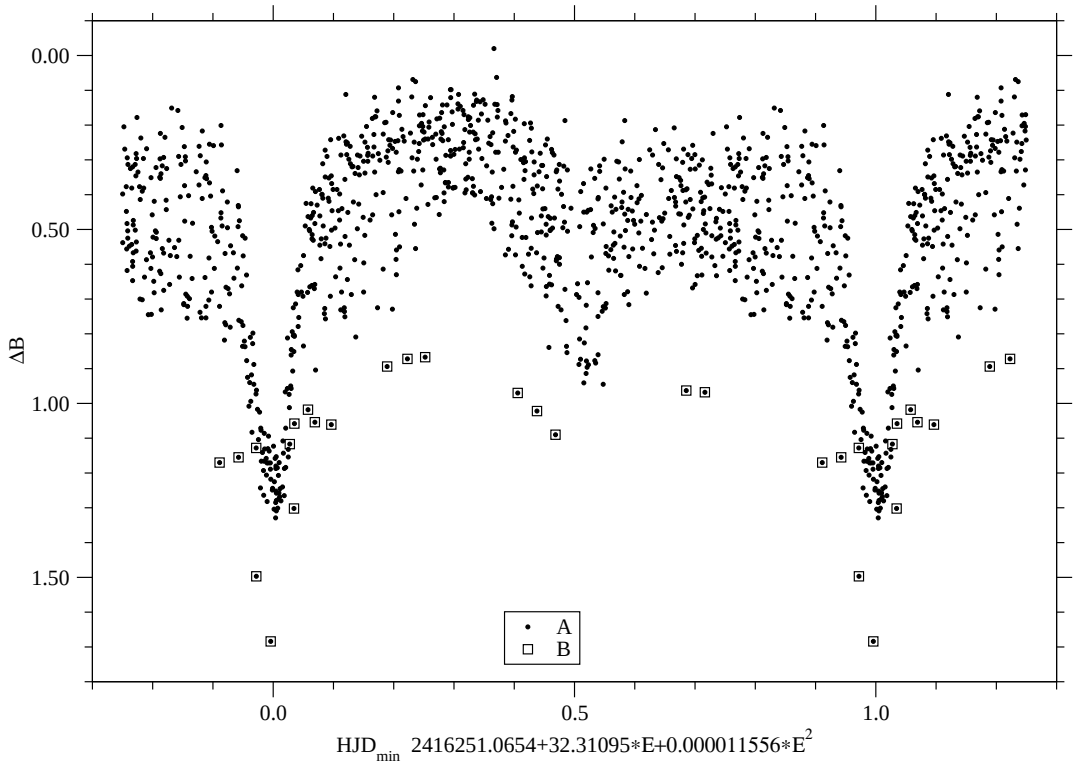

Figure 12: Marked as **B** points what deviate from mean curve significantly (orbital light curve.)

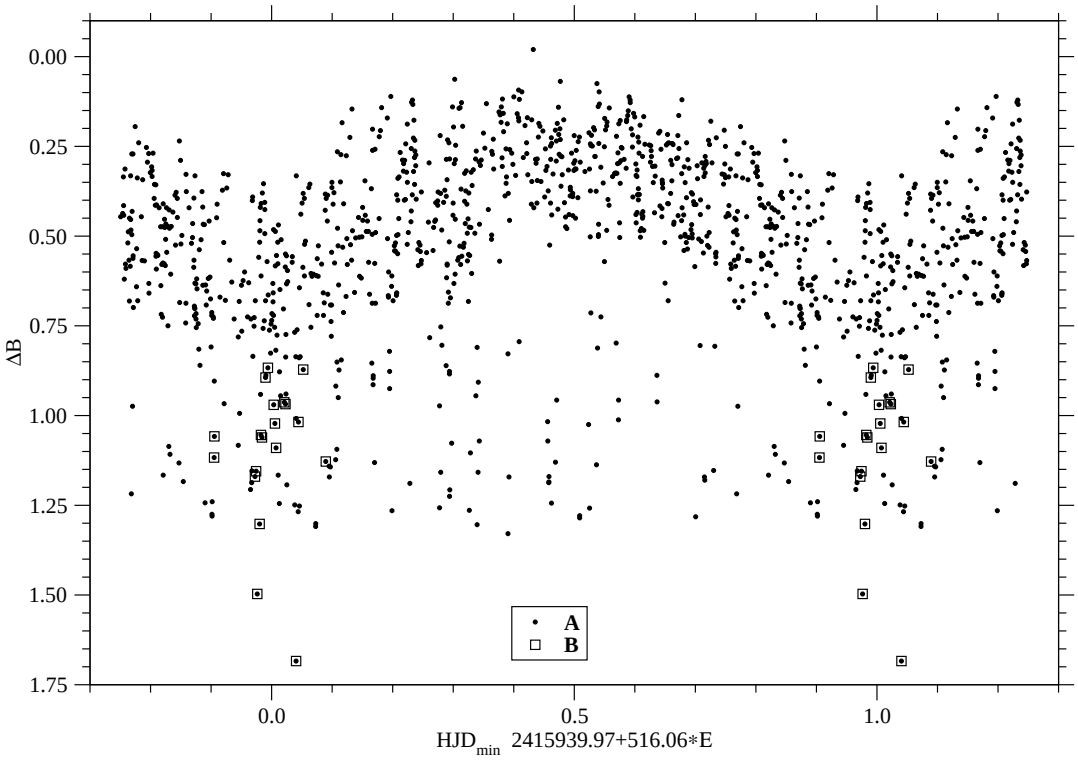

Figure 13: Marked as **B** same points as in figure 12 (intrinsic variability light curve). It seems that in minimum phases of intrinsic brightness the deviation from mean curve is bigger then usually.

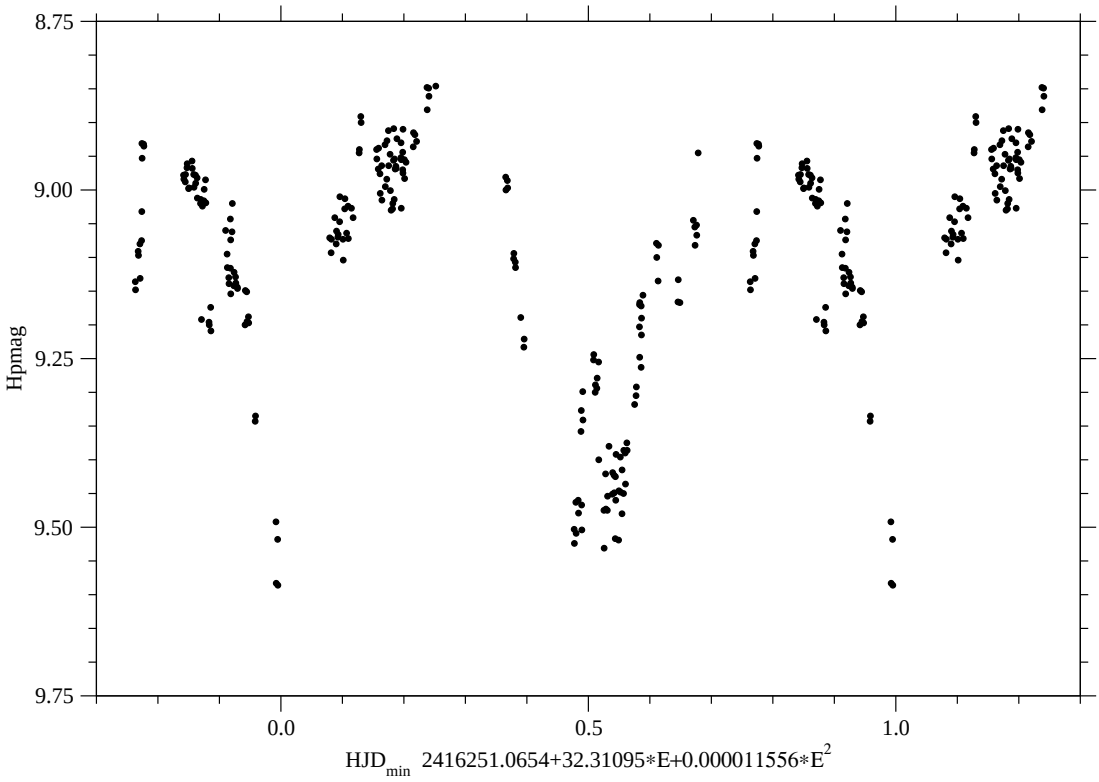

Figure 14: Light curve of HIP 014542, according to *Hipparcos Catalogue Epoch Photometry Data*

Table 1: Times and mean errors of normal minima of RX Cassiopeiae

HJD 2400000+	*m.e.*	E	$(O-C)_L$	$(O-C)_Q$	Method	Observer
16250.9		0	-0.155	-0.155	vis	Blazhko S
17511.19		39	0.005	-0.013	vis	Blazhko S
18803.78		79	0.155	0.083	vis	Wendell O C
22907.75		206	0.625	0.138	pg	Gaposchkin S
22972.2		208	0.453	-0.044	vis	Haas J
23198.31		215	0.386	-0.145	vis	Martynov D
24943.6		269	0.881	0.050	vis	Gadomski J
25492.93		286	0.924	-0.016	vis	Martynov D
26947.213		331	1.211	-0.047	vis	Martynov D
27464.325		347	1.347	-0.036	vis	Martynov D
27916.931		361	1.598	0.102	vis	Martynov D
28434.108		377	1.799	0.167	vis	Martynov D
28886.456		391	1.793	0.037	vis	Martynov D
29338.987		405	1.970	0.086	vis	Martynov D
29662.334		415	2.206	0.229	vis	Martynov D
29855.735		421	1.741	-0.294	pg	Gaposchkin S
30050.037		427	2.177	0.083	vis	Martynov D
30534.971		442	2.446	0.202	vis	Martynov D
30890.075		453	2.129	-0.228	vis	Martynov D
31116.600		460	2.477	0.047	vis	Struve O
33540.85		535	3.400	0.113	vis	Domke K
34154.9		554	3.541	0.016	vis	Pohl E
37904.56		670	5.123	-0.032	pg	Busch H
38001.465		673	5.095	-0.106	pg	Busch H
38680.521		694	5.619	0.089	pg	Busch H
39035.9		705	5.577	-0.130	pg	Busch H
39391.526		716	5.782	-0.105	pg	Busch H
39876.331		731	5.921	-0.215	pg	Busch H
39941.312		733	6.280	0.111	pg	Busch H
39973.53	0.06	734	6.187	0.001	pe	Kalv P
40005.879		735	6.225	0.022	pg	Busch H
40070.665	0.15	737	6.389	0.152	pe	Kalv P*
40264.38	0.06	743	6.238	-0.101	pe	Kalv P
40296.953		744	6.500	0.144	pg	Busch H
40426.078	0.18	748	6.381	-0.044	pe	Kalv P*
40620.08		754	6.517	-0.011	pg	Busch H
40652.36	0.06	755	6.486	-0.060	pe	Kalv P
40684.916	0.13	756	6.731	0.168	pe	Kalv P*
41202.042		772	6.881	0.037	pg	Busch H
41363.58	0.06	777	6.864	-0.069	pe	Kalv P
41719.162		788	7.024	-0.106	pg	Busch H
42042.703	0.17	798	7.455	0.143	pe	Kalv P*
42074.79	0.07	799	7.231	-0.100	pe	Kalv P
42139.333		801	7.152	-0.215	pg	Busch H
42494.98	0.07	812	7.378	-0.193	pe	Kalv P
42495.135	0.07	812	7.533	-0.038	pe	Kalv P*
42624.42		816	7.574	-0.072	pe	Kriz S
42656.43		817	7.273	-0.392	vis	Martynov D
42753.45		820	7.360	-0.361	pg	Busch H

Table 1: Times and mean errors of normal minima of RX Cassiopeiae (*cont.*)

HJD 2400000+	*m.e.*	E	$(O-C)_L$	$(O-C)_Q$	Method	Observer
42883.69		824	8.356	0.559		Rhombs C G
42883.7		824	8.366	0.569	vis	Mallama Anthony
43141.55		832	7.728	-0.221	vis	Martynov D
43400.359		840	8.048	-0.054	vis	Dietrich M
43432.761		841	8.139	0.018	vis	Dietrich M
43464.86	0.15	842	7.927	-0.214	pe	Kalv P
43497.357		843	8.113	-0.047	vis	Dietrich M
43594.164	0.35	846	7.987	-0.231	pe	Kalv P*
43723.5		850	8.079	-0.217	vis	Martynov D
43723.698		850	8.277	-0.019	vis	Enskonatus P
43789.119		852	9.076	0.741	pg	Dietrich M
43885.410	0.08	855	8.434	0.040	pe	Kalv P*
44207.8		865	7.714	-0.878	vis	Brelstaff T
44208.59		865	8.504	-0.088	vis	Enskonatus P
44273.218	0.09	867	8.510	-0.122	pe	Kalv P*
44467.52		873	8.946	0.194	pg	Busch H
44564.52		876	9.013	0.201	vis	Enskonatus P
44596.677	0.12	877	8.859	0.027	pe	Kalv P*
44854.83		885	8.524	-0.470	vis	Enskonatus P
44887.52		886	8.903	-0.111	vis	Martynov D
44984.8		889	9.250	0.174	vis	Brelstaff T
45017.1		890	9.239	0.143	vis	Brelstaff T
45243.305		897	9.266	0.027	V	Fernandes Mario
45243.321		897	9.282	0.043	B	Fernandes Mario
45275.5		898	9.150	-0.110	vis	Martynov D
45437.323	0.06	903	9.418	0.055	pe	Kalv P*
45598.99		908	9.530	0.063	vis	Enskonatus P
45631.0		909	9.229	-0.259	vis	Martynov D
46084.29		923	10.165	0.382	pg	Busch H
46116.28		924	9.844	0.040	pg	Busch H
46342.45		931	9.837	-0.116	vis	Martynov D
46342.83		931	10.217	0.264	vis	Enskonatus P
46698.69		942	10.656	0.466	vis	Enskonatus P
46763.4		944	10.744	0.511	pg	Busch H
46892.173	0.05	948	10.272	-0.047	pe	Kalv P*
47150.664	0.55	956	10.275	-0.219	pe	Kalv P*
47280.44		960	10.807	0.225	vis	Enskonatus P
47506.385	0.16	967	10.575	-0.162	pe	Kalv P*
48024.41		983	11.624	0.528	vis	Kriebel W
48185.15		988	10.809	-0.400	Vis	Enskonatus P
48573.51		1000	11.436	-0.046		Enskonatus P
49576.26		1031	12.545	0.339	vis	Enskonatus P
50901.3		1072	12.833	-0.363	vis	Meyer Ralf
52195.11		1112	14.202	0.003	vis	Meyer Ralf
52550.52		1123	14.191	-0.290	vis	Meyer Ralf
52906.33		1134	14.580	-0.187	vis	Meyer Ralf
53327.268		1147	15.475	0.368	vis	Meyer Ralf

Observed minima times and authors from Paschke, A., Brat, L., 2006, except Kalv P* - This Paper

Table 1: Differential magnitudes of RX Cassiopeiae

Pos.	HJD2400000+	ΔU	ΔB	ΔV	ΔR
1	39822.4302	−−	0.220	−0.239	−−
2	39905.2666	−−	0.345	−0.152	−−
3	39916.4338	−−	0.249	−0.214	−−
4	39932.3053	−−	0.440	−0.155	−−
5	39935.4671	−−	0.443	−0.189	−−
6	39941.3357	−−	1.285	0.467	−−
7	39941.3703	−−	1.279	0.449	−−
8	39955.3722	−−	0.375	0.069	−−
9	39962.4794	−−	0.571	−0.038	−−
10	39964.3849	−−	0.484	−0.119	−−
11	39965.4567	−−	0.398	−0.184	−−
12	39966.3984	−−	0.414	−0.171	−−
13	39969.4020	−−	0.334	−0.173	−−
14	39972.4407	−−	0.798	0.175	−−
15	39974.3960	−−	1.012	0.304	−−
16	39974.4921	−−	0.957	0.270	−−
17	39975.3978	−−	0.463	−0.035	−−
18	39975.4851	−−	0.504	−0.043	−−
19	39976.4163	−−	0.290	−0.165	−−
20	39977.4549	−−	0.255	−0.203	−−
21	39983.4772	−−	0.112	−0.323	−−
22	39984.4506	−−	0.128	−0.308	−−
23	39986.4345	−−	0.218	−0.167	−−
24	40078.4691	−−	0.195	−0.274	−−
25	40081.4648	−−	0.240	−0.238	−−
26	40091.4048	−−	0.323	−0.179	−−
27	40092.4801	−−	0.307	−0.214	−−
28	40097.5466	−−	0.552	−0.088	−−
29	40102.3537	−−	1.166	0.384	−−
30	40105.3410	−−	0.545	−0.023	−−
31	40106.4037	−−	0.473	−0.068	−−
32	40107.4269	−−	0.427	−0.133	−−
33	40124.4310	−−	0.421	−0.096	−−
34	40127.3673	−−	0.504	−0.089	−−
35	40128.3727	−−	0.587	−0.043	−−
36	40128.5829	−−	0.567	−0.048	−−
37	40130.3709	−−	0.716	0.064	−−
38	40130.5524	−−	0.755	0.078	−−
39	40138.5167	−−	0.636	0.007	−−
40	40141.5255	−−	0.458	−0.137	−−
41	40166.3573	−−	1.083	0.312	−−
42	40178.3118	−−	0.401	−0.148	−−
43	40178.6217	−−	0.391	−0.139	−−
44	40206.4152	−−	0.586	−0.066	−−
45	40206.6013	−−	0.550	−0.076	−−
46	40207.4601	−−	0.555	−0.070	−−
47	40212.2834	−−	0.573	0.027	−−
48	40212.4538	−−	0.557	0.054	−−
49	40228.3035	−−	0.754	0.051	−−
50	40232.3195	−−	1.309	0.487	−−

Table 1: Differential magnitudes of RX Cassiopeiae (*cont.*)

Pos.	HJD2400000+	ΔU	ΔB	ΔV	ΔR
51	40232.3947	−−	1.301	0.483	−−
52	40240.4509	−−	0.428	−0.160	−−
53	40241.3126	−−	0.395	−0.170	−−
54	40242.5111	−−	0.386	−0.155	−−
55	40277.2918	−−	0.487	0.023	−−
56	40277.4821	−−	0.573	0.067	−−
57	40278.3232	−−	0.662	0.203	−−
58	40280.2439	−−	0.854	0.344	−−
59	40281.2686	−−	0.914	0.471	−−
60	40281.3263	−−	0.896	0.451	−−
61	40281.3947	−−	0.889	0.429	−−
62	40283.3180	−−	0.687	0.142	−−
63	40294.2769	−−	0.666	0.013	−−
64	40294.3896	−−	0.670	0.030	−−
65	40295.2629	−−	0.821	0.155	−−
66	40295.3859	−−	0.877	0.197	−−
67	40295.4335	−−	0.925	0.204	−−
68	40297.4004	−−	1.265	0.450	−−
69	40298.3245	−−	0.680	0.103	−−
70	40299.3874	−−	0.527	−0.030	−−
71	40299.5842	−−	0.541	−0.019	−−
72	40300.4217	−−	0.542	−0.058	−−
73	40301.3200	−−	0.498	−0.071	−−
74	40302.3279	−−	0.400	−0.135	−−
75	40306.3188	−−	0.288	−0.213	−−
76	40307.3304	−−	0.298	−0.186	−−
77	40310.3695	−−	0.523	0.101	−−
78	40319.4134	−−	0.538	−0.075	−−
79	40320.3398	−−	0.518	−0.110	−−
80	40321.3396	−−	0.525	−0.111	−−
81	40321.5465	−−	0.543	−0.114	−−
82	40344.3897	−−	0.578	0.259	−−
83	40344.4952	−−	0.581	0.254	−−
84	40345.4122	−−	0.687	0.302	−−
85	40345.4695	−−	0.656	0.298	−−
86	40346.3942	−−	0.877	0.389	−−
87	40346.4384	−−	0.884	0.385	−−
88	40441.4879	−−	0.361	0.075	−−
89	40444.4409	−−	0.407	−0.004	−−
90	40445.3894	−−	0.447	−0.029	−−
91	40445.4559	−−	0.474	−0.028	−−
92	40446.4700	−−	0.479	−0.081	−−
93	40449.4014	−−	0.364	−0.173	−−
94	40449.4941	−−	0.371	−0.191	−−
95	40450.4872	−−	0.269	−0.254	−−
96	40451.4264	−−	0.390	−0.205	−−
97	40451.5047	−−	0.381	−0.214	−−
98	40452.3834	−−	0.297	−0.219	−−
99	40452.4972	−−	0.317	−0.225	−−
100	40453.3790	−−	0.290	−0.223	−−

Table 1: Differential magnitudes of RX Cassiopeiae (*cont.*)

Pos.	HJD2400000+	ΔU	ΔB	ΔV	ΔR
101	40453.5054	−−	0.313	−0.227	−−
102	40454.4740	−−	0.261	−0.225	−−
103	40465.3499	−−	0.212	−0.242	−−
104	40466.5166	−−	0.243	−0.238	−−
105	40467.4675	−−	0.219	−0.243	−−
106	40470.3912	−−	0.278	−0.177	−−
107	40470.5294	−−	0.278	−0.165	−−
108	40473.3258	−−	0.501	0.170	−−
109	40473.4363	−−	0.496	0.158	−−
110	40473.5439	−−	0.467	0.148	−−
111	40495.2984	−−	0.286	−0.178	−−
112	40501.3690	−−	0.201	−0.254	−−
113	40502.3488	−−	0.252	−0.205	−−
114	40505.3602	−−	0.440	0.089	−−
115	40505.5365	−−	0.463	0.136	−−
116	40506.3578	−−	0.434	0.109	−−
117	40507.4306	−−	0.368	0.089	−−
118	40518.3400	−−	0.262	−0.207	−−
119	40519.5158	−−	0.306	−0.191	−−
120	40521.2404	−−	0.435	−0.067	−−
121	40532.4972	−−	0.242	−0.244	−−
122	40564.3988	−−	0.324	−0.188	−−
123	40573.2997	−−	0.549	0.189	−−
124	40573.4274	−−	0.576	0.204	−−
125	40573.5489	−−	0.558	0.173	−−
126	40573.6825	−−	0.545	0.155	−−
127	40589.6051	−−	0.681	0.072	−−
128	40590.3290	−−	0.584	0.007	−−
129	40612.2366	−−	0.556	−0.067	−−
130	40612.3763	−−	0.548	−0.066	−−
131	40612.5504	−−	0.592	−0.059	−−
132	40616.4357	−−	0.638	−0.021	−−
133	40625.2885	−−	0.473	−0.090	−−
134	40629.4876	−−	0.378	−0.152	−−
135	40630.3832	−−	0.395	−0.135	−−
136	40645.2773	−−	0.700	0.020	−−
137	40645.3989	−−	0.702	0.025	−−
138	40646.4129	−−	0.731	0.043	−−
139	40658.3146	−−	0.614	−0.007	−−
140	40671.4348	−−	0.679	0.148	−−
141	40682.4430	−−	0.781	0.095	−−
142	40683.5486	−−	0.994	0.257	−−
143	40690.3427	−−	0.725	0.057	−−
144	40691.3555	−−	0.630	−0.015	−−
145	40701.4165	−−	0.941	0.489	−−
146	40710.3804	−−	0.745	0.052	−−
147	40712.4833	−−	0.721	0.097	−−
148	40713.4702	−−	0.754	0.112	−−
149	40714.4604	−−	0.818	0.144	−−
150	40715.4537	−−	0.776	0.167	−−

Table 1: Differential magnitudes of RX Cassiopeiae (*cont.*)

Pos.	HJD2400000+	ΔU	ΔB	ΔV	ΔR
151	40716.4391	−−	1.166	0.411	−−
152	40717.4497	−−	1.245	0.457	−−
153	40817.4812	−−	0.385	−0.123	−−
154	40818.4531	−−	0.339	−0.183	−−
155	40819.5031	−−	0.335	−0.190	−−
156	40820.4651	−−	0.267	−0.255	−−
157	40826.5321	−−	0.188	−0.226	−−
158	40838.5078	−−	0.377	−0.211	−−
159	40860.3910	−−	0.343	0.037	−−
160	40865.4354	−−	0.442	−0.023	−−
161	40865.5898	−−	0.408	−0.056	−−
162	40867.3964	−−	0.453	−0.114	−−
163	40921.2888	−−	0.170	−0.275	−−
164	40921.6018	−−	0.179	−0.281	−−
165	40925.3782	−−	0.281	−0.002	−−
166	40932.2660	−−	0.411	−0.149	−−
167	40932.6822	−−	0.348	−0.192	−−
168	40949.2756	−−	0.226	−0.235	−−
169	40949.5711	−−	0.242	−0.238	−−
170	40954.3865	−−	0.186	−0.237	−−
171	40955.3944	−−	0.141	−0.247	−−
172	40957.2575	−−	0.277	−0.034	−−
173	40958.3571	−−	0.279	0.003	−−
174	40958.5955	−−	0.329	0.031	−−
175	40965.3578	−−	0.388	−0.173	−−
176	40985.3261	−−	0.198	−0.259	−−
177	41013.3511	−−	0.181	−0.242	−−
178	41013.5338	−−	0.176	−0.275	−−
179	41014.4441	−−	0.164	−0.283	−−
180	41016.4757	−−	0.121	−0.313	−−
181	41021.3245	−−	0.299	−0.081	−−
182	41021.5496	−−	0.331	−0.053	−−
183	41022.3023	−−	0.334	0.012	−−
184	41022.4416	−−	0.316	0.025	−−
185	41023.3146	−−	0.384	0.081	−−
186	41023.5074	−−	0.399	0.104	−−
187	41039.3230	−−	0.888	0.213	−−
188	41039.4652	−−	0.962	0.245	−−
189	41043.5177	−−	0.446	−0.075	−−
190	41047.3894	−−	0.246	−0.247	−−
191	41048.3668	−−	0.217	−0.259	−−
192	41049.3561	−−	0.240	−0.252	−−
193	41057.3950	−−	0.443	0.150	−−
194	41060.3832	−−	0.457	−0.051	−−
195	41062.3848	−−	0.540	−0.069	−−
196	41063.4401	−−	0.500	−0.148	−−
197	41064.3787	−−	0.518	−0.099	−−
198	41065.3520	−−	0.536	−0.099	−−
199	41066.3735	−−	0.504	−0.124	−−
200	41068.3676	−−	0.482	−0.101	−−

Table 1: Differential magnitudes of RX Cassiopeiae (*cont.*)

Pos.	HJD2400000+	ΔU	ΔB	ΔV	ΔR
201	41069.3801	−−	0.494	−0.075	−−
202	41069.4130	−−	0.505	−0.072	−−
203	41072.3665	−−	1.282	0.473	−−
204	41076.3757	−−	0.440	−0.067	−−
205	41079.4062	−−	0.334	−0.183	−−
206	41080.4227	−−	0.298	−0.200	−−
207	41081.4265	−−	0.298	−0.210	−−
208	41329.2152	−−	0.640	0.017	−−
209	41329.3986	−−	0.611	0.019	−−
210	41333.2870	−−	0.665	0.066	−−
211	41333.3965	−−	0.661	0.061	−−
212	41333.5515	−−	0.658	0.057	−−
213	41334.3631	−−	0.549	−0.024	−−
214	41334.6383	−−	0.496	−0.080	−−
215	41335.3248	−−	0.451	−0.081	−−
216	41354.3069	−−	0.577	−0.055	−−
217	41354.5501	−−	0.568	−0.054	−−
218	41378.3002	−−	0.516	0.214	−−
219	41379.3080	−−	0.672	0.320	−−
220	41382.2955	−−	0.632	0.099	−−
221	41383.3044	−−	0.606	0.036	−−
222	41385.6215	−−	0.567	−0.050	−−
223	41386.4825	−−	0.560	−0.074	−−
224	41387.4180	−−	0.528	−0.093	−−
225	41390.3866	−−	0.531	−0.129	−−
226	41391.4409	−−	0.403	−0.151	−−
227	41395.4690	−−	1.264	0.456	−−
228	41397.4560	−−	0.604	0.065	−−
229	41401.3826	−−	0.263	−0.210	−−
230	41428.4354	−−	1.329	0.479	−−
231	41450.4432	−−	0.421	−0.138	−−
232	41535.4823	−−	0.158	−0.312	−−
233	41536.4724	−−	0.168	−0.270	−−
234	41543.4263	−−	0.432	0.056	−−
235	41568.4845	−−	0.242	−0.238	−−
236	41576.5070	−−	0.326	−0.053	−−
237	41579.4030	−−	0.351	−0.159	−−
238	41580.5520	−−	0.393	−0.194	−−
239	41586.5941	−−	0.404	−0.121	−−
240	41592.5705	−−	0.399	−0.103	−−
241	41596.5511	−−	0.278	−0.226	−−
242	41666.4634	−−	0.498	−0.042	−−
243	41677.6121	−−	0.631	−0.014	−−
244	41678.3945	−−	0.633	−0.011	−−
245	41679.4020	−−	0.647	0.013	−−
246	41680.4060	−−	0.744	0.073	−−
247	41686.2558	−−	1.243	0.447	−−
248	41691.3690	−−	0.809	0.127	−−
249	41693.3357	−−	0.729	0.069	−−
250	41717.5563	−−	0.765	0.116	−−

Table 1: Differential magnitudes of RX Cassiopeiae (*cont.*)

Pos.	HJD2400000+	ΔU	ΔB	ΔV	ΔR
251	41756.4571	−−	0.596	−0.027	−−
252	41766.3949	−−	0.839	0.371	−−
253	41767.3378	−−	0.836	0.409	−−
254	41777.3660	−−	0.612	−0.014	−−
255	41794.3797	−−	0.350	−0.158	−−
256	41795.3721	−−	0.411	−0.093	−−
257	41800.4182	−−	0.873	0.431	−−
258	41806.4269	−−	0.668	0.000	−−
259	41807.4635	−−	0.579	−0.064	−−
260	41904.4413	−−	0.369	−0.212	−−
261	41907.5299	−−	0.325	−0.251	−−
262	41908.4910	−−	0.374	−0.191	−−
263	41909.4373	−−	0.411	−0.147	−−
264	41910.4448	−−	0.452	−0.096	−−
265	41911.4328	−−	0.475	−0.033	−−
266	41912.4529	−−	1.104	0.353	−−
267	41923.5326	−−	0.213	−0.249	−−
268	41930.4137	−−	0.509	0.139	−−
269	41930.5194	−−	0.497	0.136	−−
270	41940.4630	−−	0.158	−0.322	−−
271	41944.4741	−−	0.828	0.172	−−
272	41945.3122	−−	1.171	0.434	−−
273	41949.4684	−−	0.112	−0.298	−−
274	41960.2852	−−	0.240	−0.016	−−
275	41960.5125	−−	0.270	0.005	−−
276	41961.3618	−−	0.329	0.052	−−
277	42002.4440	−−	0.313	−0.203	−−
278	42018.2552	−−	0.204	−0.247	−−
279	42023.6655	−−	0.308	−0.088	−−
280	42045.2175	−−	0.311	−0.136	−−
281	42056.4918	−−	0.384	0.014	−−
282	42057.2093	−−	0.485	0.117	−−
283	42057.4206	−−	0.503	0.139	−−
284	42058.1946	−−	0.479	0.137	−−
285	42058.5453	−−	0.439	0.143	−−
286	42059.2263	−−	0.450	0.151	−−
287	42059.4660	−−	0.445	0.160	−−
288	42060.2760	−−	0.484	0.113	−−
289	42068.3386	−−	0.351	−0.213	−−
290	42108.2996	−−	0.805	0.225	−−
291	42109.3106	−−	0.515	−0.006	−−
292	42111.3609	−−	0.311	−0.146	−−
293	42112.2947	−−	0.304	−0.175	−−
294	42113.2854	−−	0.292	−0.189	−−
295	42116.3278	−−	0.245	−0.229	−−
296	42118.4216	−−	0.296	−0.166	−−
297	42130.3230	−−	0.446	−0.121	−−
298	42133.4636	−−	0.620	−0.017	−−
299	42134.3777	−−	0.578	−0.072	−−
300	42136.4179	−−	0.519	−0.078	−−

Table 1: Differential magnitudes of RX Cassiopeiae (*cont.*)

Pos.	HJD2400000+	ΔU	ΔB	ΔV	ΔR
301	42137.4177	−−	0.567	−0.047	−−
302	42139.4199	−−	1.218	0.467	−−
303	42140.4061	−−	0.974	0.287	−−
304	42144.4719	−−	0.338	−0.153	−−
305	42154.3760	−−	0.632	0.210	−−
306	42154.4906	−−	0.659	0.231	−−
307	42160.3567	−−	0.357	−0.151	−−
308	42164.3774	−−	0.474	−0.106	−−
309	42165.4082	−−	0.579	−0.043	−−
310	42166.3646	−−	0.575	−0.060	−−
311	42167.4251	−−	0.577	−0.039	−−
312	42168.4365	−−	0.582	−0.088	−−
313	42169.4182	−−	0.421	−0.092	−−
314	42171.4024	−−	1.086	0.359	−−
315	42172.4021	−−	1.108	0.369	−−
316	42180.4174	−−	0.235	−0.253	−−
317	42181.4054	−−	0.289	−0.225	−−
318	42292.5635	−−	0.604	−0.028	−−
319	42306.5311	−−	0.458	−0.064	−−
320	42310.4405	−−	0.365	−0.203	−−
321	42455.4924	−−	0.282	−0.274	−−
322	42468.4151	−−	0.159	−0.279	−−
323	42469.5630	−−	0.093	−0.322	−−
324	42470.2768	−−	0.119	−0.326	−−
325	42472.3995	−−	0.098	−0.329	−−
326	42484.4768	−−	0.297	−0.183	−−
327	42485.4725	−−	0.285	−0.231	−−
328	42486.4495	−−	0.224	−0.272	−−
329	42490.2922	−−	0.207	−0.284	−−
330	42492.3978	−−	0.257	−0.180	−−
331	42494.3343	−−	1.017	0.382	−−
332	42494.5090	−−	1.071	0.375	−−
333	42495.3175	−−	1.187	0.467	−−
334	42495.3982	−−	1.185	0.455	−−
335	42495.4980	−−	1.170	0.448	−−
336	42520.4088	−−	0.237	−0.258	−−
337	42521.4526	−−	0.224	−0.246	−−
338	42531.4088	−−	0.248	−0.183	−−
339	42532.4260	−−	0.249	−0.201	−−
340	42537.4242	−−	0.139	−0.306	−−
341	42538.4128	−−	0.132	−0.305	−−
342	42631.4579	−−	0.233	−0.269	−−
343	42633.4377	−−	0.180	−0.289	−−
344	42713.4159	−−	0.538	−0.079	−−
345	42716.4514	−−	0.637	0.006	−−
346	42725.2985	−−	0.725	0.100	−−
347	42728.2301	−−	0.449	−0.123	−−
348	42728.6067	−−	0.411	−0.144	−−
349	42734.2885	−−	0.518	0.017	−−
350	42747.4289	−−	0.682	0.038	−−

Table 1: Differential magnitudes of RX Cassiopeiae (*cont.*)

Pos.	HJD2400000+	ΔU	ΔB	ΔV	ΔR
351	42757.4394	−−	0.731	0.138	−−
352	42770.2233	−−	0.888	0.456	−−
353	42776.4525	−−	0.658	0.026	−−
354	42828.2372	−−	0.379	−0.165	−−
355	42831.3163	−−	0.478	−0.001	−−
356	42832.2456	−−	0.636	0.173	−−
357	42836.3376	−−	0.713	0.266	−−
358	42842.3564	−−	0.524	−0.087	−−
359	42843.2970	−−	0.567	−0.060	−−
360	42887.4144	−−	0.319	−0.162	−−
361	42888.4736	−−	0.289	−0.202	−−
362	42889.4262	−−	0.243	−0.236	−−
363	42894.4055	−−	0.127	−0.292	−−
364	43052.4187	−−	0.075	−0.355	−−
365	43054.2974	−−	0.098	−0.333	−−
366	43067.4269	−−	0.326	−0.223	−−
367	43068.2669	−−	0.324	−0.242	−−
368	43069.4574	−−	0.325	−0.249	−−
369	43070.3248	−−	0.268	−0.256	−−
370	43133.2277	−−	0.468	−0.144	−−
371	43160.3469	−−	0.355	−0.006	−−
372	43161.4224	−−	0.299	−0.111	−−
373	43172.2342	−−	0.431	−0.095	−−
374	43189.2965	−−	0.334	0.002	−−
375	43209.2655	−−	0.525	−0.074	−−
376	43232.3855	−−	0.419	−0.137	−−
377	43411.5186	−−	0.133	−0.294	−−
378	43412.4442	−−	0.177	−0.250	−−
379	43413.2954	−−	0.263	−0.137	−−
380	43414.4033	−−	0.397	0.073	−−
381	43425.4210	−−	0.296	−0.262	−−
382	43446.2255	−−	0.196	−0.108	−−
383	43480.4307	−−	0.313	0.121	−−
384	43485.4987	−−	0.570	−0.011	−−
385	43494.2051	−−	0.259	−0.208	−−
386	43528.2350	−−	0.525	−0.019	−−
387	43529.7066	−−	1.244	0.425	−−
388	43537.2303	−−	0.069	−0.320	−−
389	43540.2119	−−	0.176	−0.312	−−
390	43544.2005	−−	0.316	0.007	−−
391	43554.2397	−−	0.294	−0.230	−−
392	43561.3396	−−	1.025	0.306	−−
393	43562.2405	−−	1.258	0.433	−−
394	43563.2719	−−	0.714	0.138	−−
395	43587.4398	−−	0.296	−0.233	−−
396	43588.3496	−−	0.353	−0.198	−−
397	43603.4697	−−	0.224	−0.255	−−
398	43604.3997	−−	0.269	−0.217	−−
399	43607.4043	−−	0.278	−0.109	−−
400	43629.3925	−−	0.410	−0.093	−−

Table 1: Differential magnitudes of RX Cassiopeiae (*cont.*)

Pos.	HJD2400000+	ΔU	ΔB	ΔV	ΔR
401	43631.3877	−−	0.289	−0.183	−−
402	43632.4513	−−	0.301	−0.201	−−
403	43633.4190	−−	0.245	−0.241	−−
404	43636.4309	−−	0.284	−0.222	−−
405	43637.4671	−−	0.220	−0.234	−−
406	43638.4215	−−	0.256	−0.172	−−
407	43734.4709	−−	0.376	−0.157	−−
408	43741.4348	−−	0.722	0.318	−−
409	43751.4498	−−	0.692	0.005	−−
410	43756.3405	−−	1.275	0.437	−−
411	43756.4677	−−	1.280	0.449	−−
412	43756.5524	−−	1.240	0.443	−−
413	43758.3261	−−	0.904	0.200	−−
414	43781.4793	−−	0.637	0.113	−−
415	43792.2280	−−	0.751	0.102	−−
416	43797.2982	−−	0.457	−0.145	−−
417	43797.5633	−−	0.420	−0.151	−−
418	43801.4224	−−	0.493	0.006	−−
419	43807.4706	−−	0.716	0.178	−−
420	43808.4036	−−	0.683	0.089	−−
421	43810.4173	−−	0.487	−0.090	−−
422	43811.3557	−−	0.554	−0.072	−−
423	43812.5103	−−	0.577	−0.075	−−
424	43814.3090	−−	0.649	−0.017	−−
425	43817.2600	−−	0.703	0.054	−−
426	43819.2062	−−	0.837	0.158	−−
427	43819.4549	−−	0.940	0.237	−−
428	43820.1911	−−	1.193	0.391	−−
429	43828.2510	−−	0.332	−0.246	−−
430	43835.1900	−−	0.611	0.194	−−
431	43863.2523	−−	0.265	−0.235	−−
432	43871.3257	−−	0.507	0.076	−−
433	43882.2163	−−	0.612	−0.040	−−
434	43893.2273	−−	0.202	−0.289	−−
435	43920.3210	−−	0.400	−0.103	−−
436	43921.2733	−−	0.398	−0.110	−−
437	43922.2600	−−	0.322	−0.166	−−
438	43926.2677	−−	0.256	−0.269	−−
439	43927.2391	−−	0.121	−0.309	−−
440	43929.3490	−−	0.233	−0.218	−−
441	43932.2406	−−	0.582	0.240	−−
442	43939.2935	−−	0.546	−0.071	−−
443	43945.2904	−−	0.476	−0.142	−−
444	43950.3437	−−	1.257	0.437	−−
445	43951.4083	−−	0.753	0.132	−−
446	43952.2705	−−	0.483	−0.039	−−
447	43958.3526	−−	0.240	−0.243	−−
448	43961.4112	−−	0.140	−0.240	−−
449	43969.3283	−−	0.556	0.032	−−
450	43970.3415	−−	0.529	−0.032	−−

Table 1: Differential magnitudes of RX Cassiopeiae (*cont.*)

Pos.	HJD2400000+	ΔU	ΔB	ΔV	ΔR
451	43971.3141	−−	0.520	−0.084	−−
452	43972.3088	−−	0.465	−0.155	−−
453	43980.4818	−−	0.492	−0.067	−−
454	43981.3291	−−	0.945	0.225	−−
455	43982.4122	−−	1.304	0.456	−−
456	43983.4134	−−	0.907	0.210	−−
457	43984.3772	−−	0.467	−0.049	−−
458	43995.4213	−−	0.272	−0.121	−−
459	44007.4445	−−	0.335	−0.267	−−
460	44104.3857	−0.200	0.178	−0.269	−−
461	44124.4494	−0.441	0.167	−0.121	−−
462	44125.4551	−0.349	0.244	−0.019	−−
463	44130.4165	−0.319	0.248	−0.065	−−
464	44138.2802	0.179	0.416	−0.097	−−
465	44140.3598	0.007	0.351	−0.110	−−
466	44140.4493	0.006	0.354	−0.110	−−
467	44140.6068	0.010	0.366	−0.101	−−
468	44142.3818	0.344	0.518	0.042	−−
469	44142.5898	0.498	0.631	0.115	−−
470	44145.3055	0.518	0.680	0.176	−−
471	44158.4961	−0.123	0.441	0.151	−−
472	44159.5677	−0.097	0.495	0.245	−−
473	44170.3367	0.145	0.340	−0.150	−0.577
474	44176.1968	1.404	1.171	0.475	−0.074
475	44176.4980	1.446	1.180	0.486	−0.075
476	44178.2838	0.247	0.500	0.044	−−
477	44179.3485	0.094	0.419	−0.005	−−
478	44212.1796	0.124	0.446	−0.042	−−
479	44213.3034	−0.061	0.343	−0.103	−−
480	44216.5261	−0.111	0.253	−0.195	−−
481	44218.4487	−0.058	0.270	−0.172	−−
482	44227.4043	−0.049	0.421	0.100	−−
483	44257.4263	0.223	0.695	0.409	−−
484	44259.3869	0.200	0.619	0.243	−−
485	44274.2350	1.238	1.117	0.424	−−
486	44274.4823	1.114	1.058	0.370	−−
487	44281.2910	0.249	0.372	−0.124	−−
488	44282.2748	0.215	0.326	−0.149	−−
489	44287.4794	0.180	0.567	0.194	−−
490	44305.3143	1.489	1.206	0.487	−−
491	44306.2791	1.339	1.187	0.470	−−
492	44306.4837	1.294	1.154	0.448	−−
493	44307.2994	0.852	0.835	0.214	−−
494	44308.4397	0.588	0.727	0.149	−−
495	44309.3411	0.525	0.680	0.100	−−
496	44312.2853	0.382	0.559	0.001	−−
497	44313.2645	0.378	0.485	−0.065	−−
498	44314.3529	0.323	0.409	−0.107	−−
499	44315.3476	0.246	0.380	−0.111	−−
500	44316.3683	0.184	0.354	−0.103	−−

Table 1: Differential magnitudes of RX Cassiopeiae (*cont.*)

Pos.	HJD2400000+	ΔU	ΔB	ΔV	ΔR
501	44317.3979	0.186	0.406	−0.046	−−
502	44317.4609	0.201	0.426	−0.038	−0.459
503	44319.3794	0.400	0.571	0.169	−0.233
504	44320.3387	0.441	0.664	0.308	−0.085
505	44321.3930	0.475	0.762	0.401	0.021
506	44322.3725	0.536	0.826	0.488	0.089
507	44323.3317	0.502	0.735	0.350	−0.055
508	44324.3307	0.441	0.632	0.210	−0.215
509	44328.4338	0.403	0.517	−0.017	−0.494
510	44335.4618	0.973	0.774	0.161	−0.342
511	44351.3726	0.343	0.523	0.106	−0.299
512	44367.4618	0.818	0.721	0.126	−0.364
513	44369.4258	1.429	1.128	0.452	−0.109
514	44373.4059	0.710	0.692	0.153	−0.298
515	44374.4273	0.468	0.545	0.017	−0.457
516	44466.4108	0.921	0.973	0.344	−0.197
517	44467.4343	1.374	1.158	0.462	−0.089
518	44468.4533	0.748	0.804	0.242	−0.254
519	44479.3250	−0.361	0.063	−0.247	−0.616
520	44484.4069	0.071	0.579	0.283	−0.086
521	44491.3809	0.335	0.380	−0.169	−0.629
522	44493.3802	0.220	0.322	−0.185	−0.599
523	44498.4352	0.734	0.810	0.221	−0.287
524	44499.2868	1.308	1.158	0.506	−0.066
525	44500.3326	1.198	1.071	0.439	−0.109
526	44506.3834	−0.133	0.131	−0.258	−0.647
527	44512.2681	−0.193	0.230	−0.127	−0.498
528	44549.4388	−0.232	0.408	0.160	−0.201
529	44631.2518	0.056	0.391	−0.016	−0.447
530	44637.3585	−0.057	0.191	−0.232	−0.653
531	44663.4413	0.109	0.381	−0.024	−0.446
532	44664.4361	0.051	0.346	−0.094	−0.524
533	44670.3632	−0.090	0.164	−0.221	−0.610
534	44687.3819	0.451	0.508	−0.095	−0.570
535	44691.3654	0.416	0.547	0.027	−0.455
536	44696.3301	0.292	0.490	0.010	−0.425
537	44702.3803	−0.042	0.226	−0.219	−0.624
538	44712.3516	0.117	0.437	0.108	−0.283
539	44714.3348	0.019	0.313	−0.087	−0.500
540	44721.4900	0.696	0.699	0.106	−0.418
541	44733.4408	0.206	0.294	−0.149	−0.599
542	44737.4393	0.074	0.317	−0.119	−0.555
543	44739.4410	0.099	0.356	0.009	−0.424
544	44988.2651	−0.035	0.286	−0.113	−0.520
545	44989.3795	−0.158	0.232	−0.149	−0.559
546	45038.3290	0.064	0.388	−0.075	−0.537
547	45047.3597	0.206	0.331	−0.100	−0.511
548	45050.3169	0.605	0.794	0.244	−0.233
549	45055.3489	−0.085	0.192	−0.208	−0.605
550	45057.3440	−0.076	0.170	−0.239	−0.628

Table 1: Differential magnitudes of RX Cassiopeiae (*cont.*)

Pos.	HJD2400000+	ΔU	ΔB	ΔV	ΔR
551	45064.3645	−0.318	0.286	0.101	−0.210
552	45081.3433	1.330	1.130	0.447	−0.103
553	45082.3844	1.018	0.957	0.355	−0.176
554	45083.3913	0.261	0.425	0.018	−0.391
555	45084.4115	−0.028	0.272	−0.104	−0.529
556	45085.4150	−0.122	0.231	−0.161	−0.574
557	45098.4539	−0.133	0.450	0.212	−0.134
558	45100.4280	−0.098	0.393	0.051	−0.347
559	45106.4223	0.249	0.320	−0.172	−0.605
560	45223.3303	0.025	0.327	−0.102	−0.502
561	45229.3485	−0.014	0.442	0.112	−0.297
562	45235.4438	0.191	0.483	−0.055	−0.531
563	45237.3389	0.319	0.555	−0.011	−0.506
564	45240.3077	0.346	0.535	0.001	−0.511
565	45254.3163	−0.009	0.269	−0.151	−0.587
566	45262.3100	0.217	0.474	0.106	−0.316
567	45276.4264	1.391	1.132	0.444	−0.112
568	45282.3756	0.321	0.328	−0.179	−0.596
569	45295.2368	0.178	0.510	0.062	−0.385
570	45304.3398	0.802	0.721	0.106	−0.410
571	45317.1972	0.317	0.366	−0.149	−0.575
572	45321.4523	0.378	0.628	0.142	−0.297
573	45323.3984	0.384	0.731	0.375	−0.017
574	45345.1918	0.289	0.517	−0.052	−0.546
575	45358.5482	0.307	0.583	0.196	−0.194
576	45361.2014	0.337	0.469	−0.046	−0.478
577	45363.5007	0.400	0.510	−0.024	−0.494
578	45380.3209	0.359	0.439	−0.103	−0.577
579	45381.3721	0.348	0.408	−0.124	−0.579
580	45382.2646	0.340	0.381	−0.130	−0.575
581	45383.3211	0.377	0.395	−0.097	−0.513
582	45387.2617	0.458	0.691	0.320	−0.043
583	45393.4872	0.406	0.610	0.075	−0.420
584	45394.2515	0.333	0.563	0.010	−0.447
585	45395.2358	0.361	0.527	−0.006	−0.492
586	45399.3882	0.464	0.658	0.042	−0.460
587	45400.2565	0.659	0.686	0.059	−0.428
588	45403.2539	0.461	0.662	0.112	−0.332
589	45404.3705	1.206	1.141	0.448	−0.110
590	45404.6111	1.306	1.171	0.485	−0.057
591	45405.4915	1.132	1.143	0.460	−0.074
592	45406.2816	0.626	0.779	0.174	−0.296
593	45406.5420	0.538	0.692	0.116	−0.330
594	45414.4680	−0.076	0.273	−0.273	−0.678
595	45415.4244	−0.074	0.184	−0.228	−0.645
596	45424.3424	0.122	0.485	0.077	−0.348
597	45429.4010	0.226	0.448	−0.063	−0.600
598	45440.4134	0.104	0.368	−0.072	−0.525
599	45441.4051	0.034	0.261	−0.178	−0.591
600	45443.5348	0.016	0.258	−0.208	−0.646

Table 1: Differential magnitudes of RX Cassiopeiae (*cont.*)

Pos.	HJD2400000+	ΔU	ΔB	ΔV	ΔR
601	45578.4542	−0.578	−0.020	−0.348	−0.835
602	45634.3486	−0.242	0.242	−0.126	−0.688
603	45648.3139	−0.473	0.326	0.164	−0.231
604	45698.4340	0.157	0.461	−0.006	−0.488
605	45701.5694	−0.098	0.282	−0.154	−0.749
606	45715.5596	0.007	0.412	0.043	−0.346
607	45751.3451	0.167	0.454	−0.082	−0.589
608	45752.2562	0.180	0.496	−0.053	−0.580
609	45753.2428	0.216	0.562	−0.014	−0.573
610	45756.2459	0.446	0.641	0.032	−0.510
611	45757.2892	0.493	0.680	0.061	−0.480
612	45771.2969	0.168	0.395	−0.094	−0.572
613	45772.2712	0.110	0.414	−0.039	−0.535
614	45773.3518	0.043	0.413	−0.004	−0.487
615	45774.4430	0.139	0.554	0.138	−0.331
616	45777.3948	0.253	0.718	0.428	−0.031
617	45778.4206	0.224	0.726	0.374	−0.089
618	45780.3231	0.162	0.476	0.058	−0.404
619	45781.3210	0.162	0.466	0.009	−0.563
620	45784.3477	0.312	0.478	−0.083	−0.640
621	45785.3894	0.444	0.606	0.007	−0.562
622	45809.3697	0.388	0.815	0.481	0.004
623	45810.3636	0.387	0.860	0.512	0.000
624	45817.4217	0.471	0.618	0.010	−0.540
625	45819.3886	0.544	0.675	0.085	−0.522
626	45820.4633	0.625	0.713	0.119	−0.498
627	45827.4673	0.480	0.670	0.089	−0.458
628	45834.4212	0.121	0.329	−0.173	−0.693
629	45992.3207	−0.166	0.227	−0.201	−0.659
630	46020.2164	0.725	0.861	0.270	−0.234
631	46020.5776	0.396	0.616	0.118	−0.421
632	46023.1998	−0.098	0.285	−0.139	−0.579
633	46148.3628	0.949	1.137	0.438	−0.171
634	46149.3495	0.513	0.812	0.291	−0.360
635	46155.3583	−0.166	0.172	−0.232	−0.736
636	46157.3706	−0.146	0.182	−0.238	−0.747
637	46159.3378	−0.278	0.143	−0.239	−0.716
638	46166.3419	−0.432	0.298	0.080	−0.336
639	46167.4479	−0.517	0.187	−0.088	−0.528
640	46169.5419	−0.235	0.253	−0.125	−0.574
641	46175.4686	−0.267	0.151	−0.257	−0.796
642	46183.3935	−0.050	0.385	−0.060	−0.548
643	46184.4275	−0.170	0.238	−0.158	−0.642
644	46193.3799	−0.239	0.246	−0.139	−0.610
645	46194.4007	−0.240	0.294	−0.060	−0.572
646	46198.4382	−0.433	0.333	0.159	−0.297
647	46201.4258	−0.450	0.213	−0.174	−0.667
648	46202.4337	−0.360	0.208	−0.213	−0.686
649	46203.4241	−0.225	0.258	−0.198	−0.697
650	46204.4170	−0.114	0.344	−0.145	−0.714

Table 1: Differential magnitudes of RX Cassiopeiae (*cont.*)

Pos.	HJD2400000+	ΔU	ΔB	ΔV	ΔR
651	46314.4344	0.520	0.687	0.101	−0.469
652	46363.2345	0.388	0.624	0.087	−0.445
653	46364.4847	0.352	0.600	0.040	−0.476
654	46378.4904	0.327	0.611	0.074	−0.478
655	46401.2140	0.550	0.627	0.026	−0.547
656	46407.1952	1.487	1.249	0.488	−0.149
657	46411.2198	0.440	0.644	0.087	−0.510
658	46414.4505	0.976	0.872	−0.012	−0.911
659	46427.1903	0.346	0.612	0.102	−0.488
660	46441.1999	0.379	0.575	0.057	−0.436
661	46464.5085	0.301	0.502	−0.089	−0.650
662	46473.2484	0.577	0.687	0.162	−0.330
663	46479.2759	−0.127	0.223	−0.213	−0.688
664	46480.2643	−0.140	0.206	−0.267	−0.775
665	46481.2370	−0.301	0.142	−0.254	−0.707
666	46486.2972	−0.010	0.507	0.214	−0.151
667	46487.2717	0.068	0.600	0.322	−0.071
668	46506.3332	0.223	0.460	0.013	−0.429
669	46506.5964	0.144	0.430	−0.015	−0.480
670	46507.4511	0.062	0.385	−0.069	−0.569
671	46508.4677	−0.009	0.320	−0.118	−0.622
672	46509.3320	−0.032	0.281	−0.135	−0.666
673	46510.3996	0.044	0.274	−0.178	−0.677
674	46526.5646	0.154	0.459	−0.102	−0.552
675	46527.3907	0.160	0.407	−0.126	−0.601
676	46529.4007	0.140	0.377	−0.161	−0.675
677	46549.3849	−0.489	0.128	−0.171	−0.588
678	46550.3845	−0.495	0.194	−0.007	−0.376
679	46554.4235	−0.048	0.569	0.208	−0.230
680	46555.4015	0.059	0.551	0.080	−0.414
681	46556.3886	0.161	0.554	0.075	−0.462
682	46557.4211	0.189	0.476	−0.036	−0.538
683	46558.4345	0.068	0.359	−0.161	−0.672
684	46559.4386	0.091	0.315	−0.188	−0.636
685	46658.4987	0.047	0.313	−0.188	−0.641
686	46825.2246	0.547	0.685	0.086	−0.435
687	46828.2378	1.380	1.184	0.422	−0.108
688	46830.3115	0.584	0.742	0.133	−0.424
689	46889.3561	1.307	1.170	0.202	−0.619
690	46890.3716	1.363	1.155	0.206	−0.681
691	46891.3253	1.994	1.497	0.463	−0.495
692	46893.3453	1.545	1.302	0.325	−0.543
693	46894.4655	1.139	1.054	0.143	−0.654
694	46895.3488	1.053	1.061	0.159	−0.741
695	46898.3525	0.948	0.894	0.023	−0.860
696	46900.3936	0.967	0.867	−0.030	−1.035
697	46905.3569	0.961	0.970	0.192	−0.584
698	46906.3904	0.847	1.022	0.280	−0.484
699	46907.3844	0.811	1.090	0.395	−0.453
700	46914.3974	1.081	0.963	0.036	−0.786

Table 1: Differential magnitudes of RX Cassiopeiae (*cont.*)

Pos.	HJD2400000+	ΔU	ΔB	ΔV	ΔR
701	46915.3962	1.075	0.968	0.026	−0.849
702	46924.4289	2.142	1.684	0.582	−0.345
703	46926.4315	1.063	1.018	0.140	−0.832
704	47021.4121	1.299	1.189	0.478	−0.162
705	47025.4097	0.091	0.356	−0.082	−0.579
706	47026.4094	0.021	0.304	−0.141	−0.618
707	47038.3487	0.176	0.783	0.430	−0.011
708	47043.3269	0.192	0.455	−0.083	−0.601
709	47060.4442	−0.118	0.247	−0.174	−0.671
710	47069.4936	−0.420	0.318	0.178	−0.194
711	47070.3490	−0.162	0.492	0.286	−0.121
712	47071.3257	0.163	0.682	0.325	−0.143
713	47080.3515	0.038	0.293	−0.192	−0.709
714	47081.5265	0.043	0.303	−0.169	−0.705
715	47082.3185	0.003	0.288	−0.151	−0.674
716	47088.2607	0.137	0.426	−0.002	−0.468
717	47091.2853	−0.053	0.264	−0.162	−0.586
718	47098.2924	−0.347	0.158	−0.179	−0.538
719	47099.2290	−0.403	0.183	−0.120	−0.536
720	47100.2366	−0.330	0.306	0.034	−0.359
721	47103.4845	−0.432	0.353	0.167	−0.238
722	47108.2508	−0.043	0.269	−0.187	−0.659
723	47109.2573	−0.024	0.300	−0.195	−0.688
724	47133.2352	−0.388	0.348	0.165	−0.190
725	47146.1829	−0.093	0.291	−0.170	−0.551
726	47184.3025	0.423	0.725	0.209	−0.349
727	47186.2146	−0.059	0.352	−0.083	−0.538
728	47187.2056	−0.159	0.251	−0.159	−0.587
729	47188.2331	−0.168	0.204	−0.195	−0.641
730	47189.2213	−0.183	0.193	−0.210	−0.645
731	47253.3340	−0.388	0.120	−0.269	−0.820
732	47262.3547	−0.168	0.383	0.045	−0.332
733	47265.3261	−0.240	0.412	0.155	−0.188
734	47266.3368	−0.372	0.304	0.044	−0.377
735	47270.3497	−0.202	0.296	−0.165	−0.758
736	47280.3907	1.167	1.153	0.472	−0.135
737	47281.3654	0.534	0.807	0.196	−0.374
738	47289.4153	−0.155	0.205	−0.228	−0.660
739	47290.4512	−0.099	0.250	−0.187	−0.617
740	47293.4146	−0.045	0.415	−0.018	−0.476
741	47295.4219	0.031	0.590	0.254	−0.121
742	47297.4182	−0.138	0.488	0.171	−0.234
743	47298.4240	−0.154	0.450	0.128	−0.283
744	47299.4136	−0.255	0.332	−0.020	−0.443
745	47300.4313	−0.207	0.271	−0.137	−0.561
746	47301.4317	−0.115	0.271	−0.178	−0.605
747	47412.3645	0.630	0.757	0.153	−0.436
748	47413.3800	0.556	0.736	0.121	−0.459
749	47414.4113	0.540	0.680	0.060	−0.490
750	47421.2975	0.351	0.482	−0.017	−0.536

Table 1: Differential magnitudes of RX Cassiopeiae (*cont.*)

Pos.	HJD2400000+	ΔU	ΔB	ΔV	ΔR
751	47426.3714	0.394	0.878	0.526	0.024
752	47427.2726	0.522	0.945	0.511	−0.013
753	47432.3185	0.506	0.633	0.041	−0.509
754	47439.2981	0.716	0.768	0.127	−0.442
755	47440.2515	0.920	0.836	0.207	−0.337
756	47440.5928	1.097	1.008	0.322	−0.216
757	47442.2451	1.488	1.268	0.477	−0.128
758	47446.2636	0.340	0.587	0.039	−0.453
759	47448.4610	0.318	0.514	−0.050	−0.566
760	47451.3051	0.278	0.365	−0.110	−0.554
761	47452.2355	0.279	0.355	−0.092	−0.532
762	47455.2621	0.398	0.606	0.192	−0.350
763	47470.3003	0.601	0.738	0.095	−0.459
764	47474.2452	1.304	1.123	0.440	−0.104
765	47475.3357	0.779	0.851	0.253	−0.312
766	47476.3071	0.243	0.527	0.027	−0.480
767	47497.1923	0.141	0.420	−0.115	−0.614
768	47499.1926	0.063	0.346	−0.165	−0.674
769	47508.2766	0.294	0.490	0.045	−0.419
770	47525.1833	0.187	0.519	0.085	−0.427
771	47536.1526	0.287	0.490	−0.055	−0.591
772	47553.2864	−0.211	0.461	0.180	−0.151
773	47557.2354	0.002	0.540	0.117	−0.400
774	47561.2705	0.076	0.414	−0.104	−0.667
775	47563.6416	0.144	0.381	−0.168	−0.661
776	47566.2443	0.164	0.406	−0.145	−0.651
777	47567.2483	0.084	0.372	−0.128	−0.581
778	47568.5109	0.131	0.389	−0.085	−0.652
779	47571.2872	1.308	1.225	0.482	−0.207
780	47571.5048	1.364	1.207	0.489	−0.190
781	47575.2832	−0.123	0.298	−0.105	−0.645
782	47576.2946	0.024	0.287	−0.135	−0.689
783	47579.4005	−0.168	0.144	−0.265	−0.729
784	47580.3151	−0.171	0.142	−0.264	−0.693
785	47593.4842	0.022	0.285	−0.180	−0.696
786	47613.4828	−0.257	0.154	−0.281	−0.767
787	47615.4563	−0.311	0.140	−0.210	−0.700
788	47616.3965	−0.473	0.118	−0.161	−0.620
789	47617.4195	−0.532	0.209	−0.030	−0.385
790	47621.4158	−0.351	0.381	0.074	−0.339
791	47622.4265	−0.180	0.456	0.070	−0.410
792	47641.3649	−0.196	0.176	−0.212	−0.658
793	47647.4143	−0.251	0.186	−0.204	−0.669
794	47648.3908	−0.308	0.194	−0.148	−0.618
795	47652.4002	−0.306	0.391	0.217	−0.211
796	47653.4149	−0.385	0.317	0.094	−0.318
797	47654.4315	−0.329	0.306	0.007	−0.412
798	47655.4133	−0.170	0.374	−0.026	−0.500
799	47657.4233	0.053	0.408	−0.084	−0.640
800	47658.4121	0.167	0.441	−0.097	−0.699

Table 1: Differential magnitudes of RX Cassiopeiae (*cont.*)

Pos.	HJD2400000+	ΔU	ΔB	ΔV	ΔR
801	47662.4212	−0.029	0.235	−0.206	−0.695
802	47664.4237	−0.039	0.217	−0.181	−0.637
803	47665.4276	−0.102	0.201	−0.187	−0.655
804	47743.4171	−0.123	0.278	−0.159	−0.633
805	47746.4401	−0.305	0.305	−0.010	−0.534
806	47752.4216	−0.106	0.423	0.031	−0.454
807	47762.4203	0.286	0.467	−0.042	−0.565
808	47768.3560	0.240	0.502	0.001	−0.494
809	47769.5272	0.164	0.421	−0.067	−0.513
810	47771.4061	0.019	0.307	−0.173	−0.679
811	47773.3947	−0.083	0.240	−0.206	−0.694
812	47774.4964	−0.056	0.287	−0.148	−0.648
813	47775.5647	0.021	0.311	−0.139	−0.612
814	47777.4876	0.026	0.379	−0.009	−0.493
815	47780.4304	−0.022	0.585	0.277	−0.222
816	47791.2901	0.403	0.526	−0.076	−0.719
817	47792.4968	0.414	0.531	−0.067	−0.578
818	47805.5962	0.085	0.329	−0.160	−0.695
819	47806.5390	0.112	0.337	−0.141	−0.671
820	47809.3224	0.029	0.335	−0.085	−0.438
821	47827.3111	0.464	0.569	0.006	−0.504
822	47847.3271	0.315	0.750	0.427	0.017
823	47851.4906	0.104	0.433	−0.084	−0.613
824	47895.2064	0.758	0.967	0.377	−0.199
825	47957.3871	0.671	0.761	0.161	−0.358
826	47959.3750	1.333	1.252	0.502	−0.190
827	47974.5198	0.266	0.721	0.392	−0.014
828	47978.3181	0.132	0.578	0.106	−0.362
829	47981.4354	0.067	0.383	−0.145	−0.657
830	47990.3992	0.793	0.918	0.326	−0.320
831	47991.3123	1.085	1.094	0.423	−0.215
832	47992.5020	0.855	0.950	0.341	−0.371
833	47994.3531	0.019	0.349	−0.115	−0.545
834	47999.3746	0.135	0.276	−0.224	−0.700
835	48002.4047	−0.139	0.225	−0.230	−0.624
836	48006.3905	0.161	0.657	0.374	−0.055
837	48007.3581	0.162	0.505	0.263	−0.118
838	48010.4666	−0.018	0.503	0.168	−0.262
839	48013.4154	0.138	0.456	−0.092	−0.661
840	48015.5071	0.091	0.442	−0.123	−0.731
841	48016.3877	0.171	0.487	−0.093	−0.692
842	48017.4060	0.279	0.458	−0.127	−0.670
843	48021.4440	0.126	0.495	−0.044	−0.593
844	48023.4382	1.102	1.131	0.440	−0.236
845	48117.4760	−0.059	0.255	−0.195	−0.645
846	48130.5036	−0.241	0.162	−0.249	−0.739
847	48135.5136	−0.552	0.257	0.074	−0.314
848	48136.5566	−0.724	0.187	0.041	−0.361
849	48173.5895	−0.236	0.286	−0.118	−0.553
850	48175.6110	−0.159	0.327	−0.173	−0.702

Table 1: Differential magnitudes of RX Cassiopeiae (*cont.*)

Pos.	HJD2400000+	ΔU	ΔB	ΔV	ΔR
851	48177.5575	−0.215	0.205	−0.266	−0.788
852	48193.6652	−0.152	0.220	−0.223	−0.669
853	48207.4468	0.040	0.374	−0.147	−0.667
854	48229.6820	−0.197	0.222	−0.156	−0.660
855	48273.2862	−0.060	0.409	−0.118	−0.663
856	48341.3554	0.248	0.568	0.007	−0.585
857	48359.3515	0.018	0.410	−0.021	−0.508
858	48360.4466	0.074	0.453	0.017	−0.495
859	48361.4192	0.026	0.509	0.163	−0.333
860	48369.3803	−0.016	0.386	−0.130	−0.660
861	48371.3620	0.109	0.448	−0.080	−0.609
862	48383.4217	0.161	0.520	−0.040	−0.599
863	48384.4028	0.152	0.465	−0.065	−0.654
864	48385.4777	0.089	0.394	−0.120	−0.667
865	48386.4346	0.012	0.332	−0.189	−0.695
866	48392.4356	−0.047	0.376	−0.048	−0.599
867	48393.4339	−0.019	0.467	0.077	−0.438
868	48394.4369	−−	0.468	0.187	−0.233
869	48396.4360	−−	0.653	0.361	−0.132
870	48539.6272	0.443	0.576	0.067	−0.440
871	48543.4006	0.112	0.451	−0.028	−0.474
872	48567.4876	0.202	0.350	−0.170	−0.715
873	48593.3307	0.063	0.402	−0.063	−0.560
874	48605.2532	0.931	1.077	0.418	−0.164
875	48723.3691	0.187	0.502	0.018	−0.639
876	48890.4674	0.246	0.522	−0.072	−0.625
877	49027.2221	0.792	0.845	0.248	−0.297
878	49028.3998	0.400	0.531	0.035	−0.513
879	49029.2038	0.042	0.410	−0.048	−0.598
880	49036.2966	−0.229	0.146	−0.243	−0.698
881	49044.2642	0.279	0.617	0.229	−0.256
882	49066.4440	−0.140	0.171	−0.246	−0.730
883	49069.4036	−0.329	0.111	−0.260	−0.779