

VARIABLE STAR
BULLETIN

No. 1

June 1987

PHOTOGRAPHIC OBSERVATIONS OF KR Aur
IN 1985 / 1986

S.Fujino, M.Huruhata, T.Saito and M.Wakuda

Photographic observations of this peculiar star in the last three observational seasons were carried out with almost same instruments (18cm-31cm reflectors) and the same emulsion, Kodak Tri-X, with yellow green filter which gives the brightness very close to visual magnitude. The results are given in Figure 1.

The star was rather calm in the 1983/84 and 1984/85 seasons, with occasional fluctuations less than two magnitudes, but in the 1985/86 season, it had deep and long minimum. This is comparable with that in 1981/82 which was reported by M.H.Liller and M.P.Popova (1984). Our results are in good agreement with the observations in blue region by W.Goetz (1986). This indicates that the B-V values were kept at almost zero through this large variation.

Locations of observers and the instruments are as follows.

S.Fujino, Hamamatsu; 31cm Wright Schmidt camera.

M.Huruhata,Gotenba; 18cm Wright Schmidt camera.

T.Saito, Hamamatsu; 21cm reflector.

M.Wakuda, Ryuyo-cho,Shizuoka; 31cm reflector.

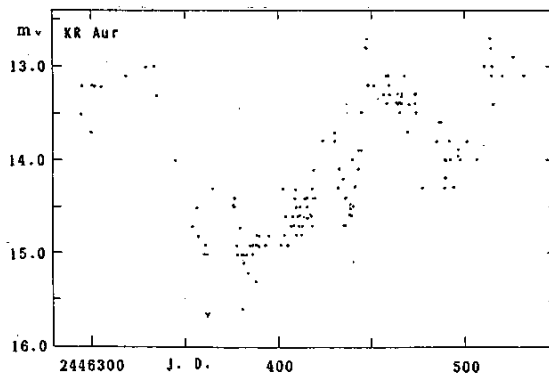


Figure 1. Observations in 1985/86 season.

References:

Liller, M.H. and Popova, M.P., 1984, IBVS No.2463.

Goetz, W., 1986, IBVS No.2896.

PERIOD SHORTNING OF SS CMA

M. Koshiro (Suwa, Nagano)

The period of Cepheid variable, SS CMA is significantly different in previous catalogs. I made the visual observations since 1981 to verify this, having 217 estimations until now, and the mean period during 1981-86 is obtained as $12^d.3569 (+0^d.0005)$. The previous periods are taken from the following publications.

$12^d.3661$: Schneller's Cat. of Variable Stars (1937)
 $12^d.3620$: General Cat. of Variable Stars (1967)
 $12^d.362$: ibid. (2nd Suppl.) (1974)
 $12^d.361$: ibid. (1985)

Using the epochs in these catalogs, the change of the period is roughly shown in Figure 1 together with the present period. This indicates the linear diminishing of the period in more than half a century.

Though the epochs in the past publications are not actual time of maxima in respective years, these and my observations can be expressed by the following elements.

$$M = 2446497.32 + 12.3569 E - 0.0000202 E^2$$

The O-C's with this elements are as follows. The first four are the epochs in the catalogs and the others are my results of observations.

J. D.	E	O-C	J. D.	E	O-C
2424916.21	-1746	+0.20	2445039.24	- 118	+0.06
2433631.39	-1041	-0.21	5051.7	- 117	+0.2
5225.87	- 912	-0.28	5409.8	- 88	-0.1
2441109.19	- 436	-0.14	5706.57	- 64	+0.10
			6114.32	- 31	+0.07
2444631.2	- 151	-0.2	6447.79	- 4	-0.10
4668.6	- 148	+0.1	6460.35	- 3	+0.10
4693.4	- 146	+0.2	6472.6	- 2	0.0
4989.68	- 122	-0.07	6484.81	- 1	-0.15
5014.67	- 120	+0.21	6497.32	0	0.0
2445026.61	- 119	-0.21			

From the mean curve of my observations in 1961-86, the M- μ value is obtained as 0.47P. This is the largest comparing with the value in previous catalogs; 0.39(1937), 0.37(1969), 0.44(1974), 0.45(1985). However, it would be too early to conclude that this change is related with the diminishing of the period.

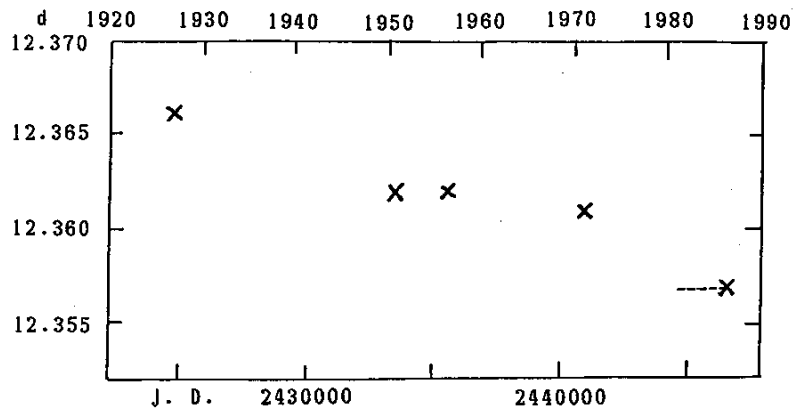


Fig. 1. Change of period in 60 years.

VISUAL OBSERVATIONS OF PW Vul

M. Watanabe (Toyama)

Visual observations of Nova Vul (No.1) 1984, between August, 1984 and September, 1986, made by ten main observers, were summarized. The mean light curve is shown in Figure 1. Several characteristics of this nova can be pointed as follows.

- 1) The type of this nova would be Nb, having rather slow fading.
- 2) The final rise seems to be 3.0 mag. and the principal maximum was 6.5m on August 5, and after that two outbursts of more than one magnitude were observed. In the stage of early decline, some small outbursts were observed with the period of 13-20 days as shown in Table I.
- 3) It took about 100 days to fade three magnitudes from the maximum. After that the decrease was gradual and rather smooth. The daily diminishing rate was 0.011m, until August 1985, and 0.004m after that until August 1986.

The observers contributed in this report are as follows.

M. Iida, T. Kato, S. Sakuma, T. Tokoro, H. Tomohiro, H. Narumi,
N. Makiguchi, H. Mizukami, M. Yamada, M. Watanabe.

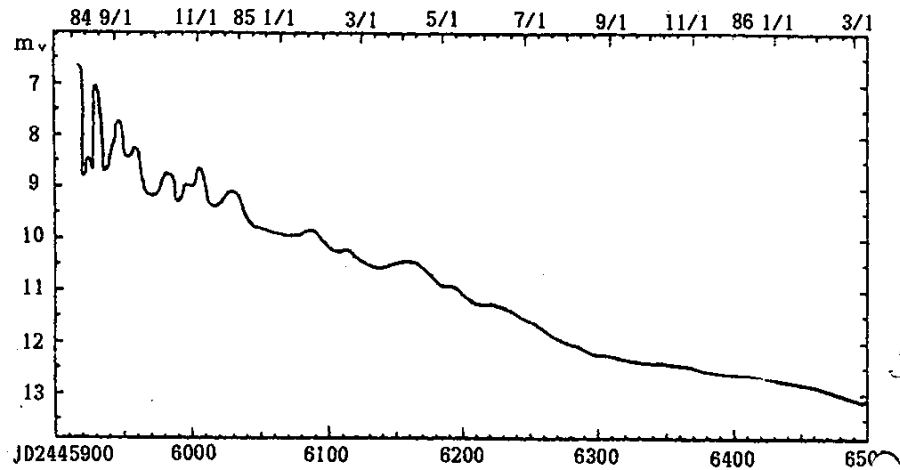


Fig. 1. Visual light curve of PW Vul.

Table 1. Observed minor outbursts.

J. D.	Date	Δ Mag.	Interval
2440000+	1984		days
5917	Aug. 5	3.0	
5931	18	1.4	14
5944	31	1.0	13
5962:	Sep. 18	0.4	19
5981	Oct. 7	0.5	19
5996	22	0.4	15
6010	Nov. 5	0.5	14
6031	27	0.6	21

VARIABLE STAR OBSERVERS LEAGUE
IN JAPAN

NATIONAL SCIENCE MUSEUM
Ueno Park, Taito-ku, Tokyo 110. JAPAN

Editorial advisor Masaaki Huruhata
 Editor Keiichi Saijo
 Associate editor Sei-ichi Sakuma
 Local coordinator Satoshi Akita, Kikuichi Arai, Sukehiro Fujino
 Kazuaki Gomi, Kenji Hirose, Hisashi Kanazawa
 Masami Koshiro, Masashiro Moriya, Makoto Watanabe
