COMMISSION 27 OF THE I.A.U.

INFORMATION BULLETIN ON VARIABLE STARS

Nos. 0101-0200

1965 July - 1967 May

EDITOR: L. Detre
KONKOLY OBSERVATORY
1525 BUDAPEST, Box 67, HUNGARY

CONTENTS

0114 MINIMA OF ECLIPSING VARIABLES
L.J. Robinson
11 November 1965

0115 BRIGHT SOUTHERN BV-STARS
W. Strohmeier, R. Knigge, H. Ott
10 November 1965

0116 OBSERVATIONS OF AL Cam
W. Quester, W. Braune
22 November 1965

0117 FAINT SOUTHERN BV-STARS
R. Knigge
27 December 1965

0118 PHOTOMETRIC LIGHT-CURVES OF SOUTHERN BV-STARS
E. Schoffel
27 December 1965

0119 MINIMA OF ECLIPSING VARIABLES
L.J. Robinson
27 December 1965

0120 BRIGHT SOUTHERN BV-STARS
W. Strohmeier, H. Fischer, H. Ott
14 February 1966

0121 BV 394 = BD +42d 3471 8.m9
H. Ott
14 February 1966

0122 ON THE VARIABILITY OF HD 234677
P.F. Chugainov
27 February 1966

0123 NOUVELLES ETOILES VARIABLES
R. Weber
7 March 1966

0124 VELOCITY CURVE OF BV 312 TAURI
R. Margoni, A. Mammano
15 March 1966

0125 RZ VULPECULAE
L. Meinunger
16 March 1966

0126 NEW FLARE STAR S9537 Per
C. Hoffmeister
17 March 1966

0127 NEW BRIGHT VARIABLE STAR
M.S. Snowden
18 March 1966

0128 NOTE ON THE AMPLITUDE OF THE CEPHEID RU Cam
W. Wamsteker
22 March 1966

0129 MINIMA OF ECLIPSING VARIABLES
L.J. Robinson
28 March 1966

0130 EMISSION LINES IN THE FLARE STAR YZ CMi
G. Chincarini, A. Mammano
5 April 1966

0131 NEW ELEMENTS FOR THE BINARY BV 267 FROM PHOTOELECTRIC AND SPECTROSCOPIC OBSERVATIONS
R. Margoni, A. Mammano, R. Biolchini, C. Bartolini
19 April 1966

0132 NOTE ON THE CLASSIFICATION OF BC Eri
W.S. Fitch
22 April 1966

0133 RT Ceti
L.J. Robinson
9 May 1966

0134 SPECTRUM OF THE EARLY-TYPE FLARE STAR BD +13d 1048
A. Mammano
5 May 1966

0135 NOTE ON THE AMPLITUDE OF RU Cam
J. Smak
16 May 1966

0136 A NEW BRIGHT SOUTHERN VARIABLE STAR
R. Deurinck, R. Briers
21 May 1966

0137 TWO NEW SHORT PERIOD VARIABLES
R.L. Millis
31 May 1966

0138 PHOTOELECTRIC OBSERVATIONS OF THE NEW DELTA SCUTI VARIABLE HD 107904
A.A. Wachmann
9 June 1966

0139 PHOTOELECTRIC OBSERVATIONS OF NOVA Her 1963
G. Chincarini, V.S. Howard
14 June 1966

0140 BRIGHT SOUTHERN BV-STARS
W. Strohmeier, H. Fischer, H. Ott
27 June 1966

0141 LONG PERIOD VARIABLE STARS WITH LARGE INTRINSIC POLARIZATION
K. Serkowski
30 June 1966

0142 PHOTOELECTRIC OBSERVATION OF HD 116994
Kwan-Yu Chen
6 July 1966

0143 LIGHT VARIABILITY OF 20 CANUM VENATICORUM
W.H. Wehlau, S.C.N. Chen, G. Symonds
7 July 1966

0144 HD +54d 2193 (5.m8)
H. Schneller
HD 156545 = BV 418
W. Strohmeier
BV 345 = V796 Cyg
H. Busch, K. Haussler
44 i BOOTIS
H. Schneller
9 July 1966

0145 NOTE ON V796 Cyg = S4782 = BV 345
W. Strohmeier
Y CYGNI
H. Schneller
NOUVELLE ETOILE VARIABLE
E. Schweitzer
22 July 1966

0146 THE SECONDARY PERIOD OF THE RRab STAR Z CANUM VENATICORUM
S. Kanyo
22 July 1966

0147 THE ECLIPSE OF AZ Cas
P. Tempesti
25 July 1966

0148 PHOTOELECTRIC MINIMA OF ECLIPSING VARIABLES
C. Popovici
5 August 1966

0149 MIRA PRIOR TO FABRICIUS
P. Brosche
6 August 1966

0150 OBSERVATIONS OF VARIABLE F-TYPE STARS WITH SHORT PERIODS
I.J. Danziger, R.J. Dickens
8 August 1966

0151 DS CYGNI
A. Koeckelenbergh
22 August 1966

0152 NOTE ON THE VARIABLE RU Cam
N.S. Nikolov
CYCLIC AMPLITUDE VARIATIONS OF RU Cam
L. Detre
26 August 1966

0153 IMPROVED ELEMENTS FOR SEVEN RR LYRAE STARS
L.J. Robinson
1 September 1966

0154 MINIMA OF ECLIPSING VARIABLES
L.J. Robinson
1 September 1966

0155 NOUVELLES ETOILES VARIABLES
R. Weber
22 September 1966

0156 POSSIBLE FLARE ACTIVITY IN A G-TYPE STAR
A.D. Andrews
23 September 1966

0157 FURTHER FLARE ACTIVITY IN BUTLER'S STAR IN THE SMC
A.D. Andrews, C.J. Butler, J.P. Eksteen
26 September 1966

0158 NEW SOUTHERN VARIABLES
W. Strohmeier
27 September 1966

0159 THE CEPHEID BV 428 = 26 Cir
W. Strohmeier
29 September 1966

0160 Ton S 120: A NEW VERY SHORT-PERIOD ECLIPSING BINARY
W. Krzeminski
6 October 1966

0161 BV 677 AND BV 714, TWO CEPHEIDS
W. Strohmeier
7 October 1966

0162 DETERMINATION OF THE MASS AND THE MODEL OF THE VARIABLES: RT AURIGAE, ETA AQUILAE, X CYGNI, MIRA CETI AND BM CASSIOPEIAE OF POP.I, AND RR LYRAE AND TWO TYPICAL VARIABLES OF POP. II
A. Masani, A. Martini, M. Nelli, E. Albino
DS CYGNI
Ch. Bertaud
DS CYGNI
R. Weber
10 October 1966

0163 APSIDAL MOTION IN AG PERSEI
J. Morley
14 October 1966

0164 BV 449 AND BV 600, TWO BRIGHT EB-STARS
W. Strohmeier
29 October 1966

0165 3C 446
J.H. Hunter Jr., A.J. Wesselink
10 November 1966

0166 ELEMENTS FOR TWO SONNEBERG EA-VARIABLES
W. Strohmeier
21 November 1966

0167 REPARTITION DANS LE PLAN GALACTIQUE DES ETOILES DU TYPE U GEMINORUM
M. Petit
24 November 1966

0168 ELEMENTS FOR SONNEBERG EA-VARIABLES (II)
W. Strohmeier
26 November 1966

0169 T PYXIDIS
A. Jones
10 December 1966

0170 EU TAURI
E.F. Guinan
15 December 1966

0171 ON 12 RR LYRAE STARS IN M3
E.S. Kheylo
27 December 1966

0172 NEW MICROVARIABLE HD 117555
P.F. Chugainov
29 December 1966

0173 REMARK CONCERNING THE AMPLITUDE OF RU Cam DURING 1965
H. Huth, W. Wenzel
29 December 1966

0174 CSV 4769
H. Busch, K. Haussler
30 December 1966

0175 NEW VARIABLE STAR IN EQUULEUS
S. Catalano, M. Rodono
3 January 1967

0176 IMPROVED AND CURRENT ELEMENTS FOR 50 CEPHEIDS
G.S. Tsarevsky
4 January 1967

0177 VZ TELESCOPII
A. van Hoof, E. Mertens
18 January 1967

0178 BRIGHT SOUTHERN BV-STARS
W. Strohmeier
20 January 1967

0179 REPARTITION GALACTIQUE DES CEPHEIDS TYPIQUES DE GRANDE PERIODE
M. Petit
24 January 1967

0180 MINIMA OF ECLIPSING VARIABLES
L.J. Robinson
25 January 1967

0181 ELEMENTS FOR SONNEBERG VARIABLES (III)
W. Strohmeier
1 February 1967

0182 18-MIN. LIGHT-VARIATIONS OF HZ 29
J. Smak
6 February 1967

0183 NOUVELLES ETOILES VARIABLES
R. Weber
7 February 1967

0184 ELEMENTS FOR SONNEBERG VARIABLES (IV)
W. Strohmeier
15 February 1967

0185 NEW VARIABLE STARS
G. Romano
PHOTOELECTRIC OBSERVATIONS OF TX UMa
E. Pohl
20 February 1967

0186 V439 OPHIUCHI, A CEPHEID WITH SECONDARY PERIOD
E.B. Gusev
23 February 1967

0187 MINIMA OF ECLIPSING VARIABLES
I. Todoran, I. Popa
27 February 1967

0188 ELEMENTS FOR BV 646 AND BV 752
W. Strohmeier
2 March 1967

0189 LES MAXIMA FAIBLES DES ETOILES DU TYPE U GEMINORUM
M. Petit
15 March 1967

0190 THE PERIOD OF AB ANDROMEDAE
W. Quester
28 March 1967

0191 ELEMENTS OF THREE BAMBERG VARIABLES
W. Strohmeier
28 March 1967

0192 A HISTORICAL RECORD POSSIBLE RELATED TO THE RADIO SOURCE Cas A
P. Brosche
30 March 1967

0193 A NEW ECLIPSING VARIABLE STAR IN LEO (CORRECTION IN No. 198)
R. de Carlo, G. Sabatini
1 April 1967

0194 WR 131
H. Busch
PHOTOELECTRIC MINIMA OF AB And
E. Pohl
12 April 1967

0195 BRIGHT SOUTHERN BV-STARS
W. Strohmeier
12 April 1967

0196 RECENT OBSERVATIONS OF THE SUPERNOVA IN NGC 1058
F. Bertola
18 April 1967

0197 REVISED EPHEMERIS FOR NOVA T AURIGAE
G.S. Mumford
24 April 1967

0198 PHOTOELECTRIC MINIMA FOR SW Lac
E. Pohl
24 April 1967

COMMISSION 27 OF THE I.A.U.

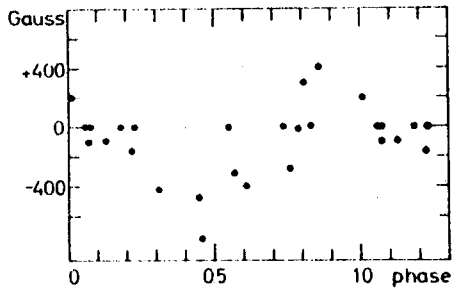
INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 101

Konkoly Observatory
Budapest
14 July 1965

THE PERIOD OF THE MAGNETIC VARIABLE HD 8441

HD 8441 ($\alpha = 1^h21^m23^s$, $\delta = +42^\circ53'$) is a magnetic variable star of spectral type A2p. Measurements of magnetic field intensity are given in Babcock's catalogue of magnetic stars (Ap.J. Suppl. 3, 1958, star no. 3). From these measurements a period of 2.9652^d for the magnetic variations has been found.



It should be noted that this finding again confirms the suggestion mentioned in a recent paper (Steinitz, B.A.N., 17, 404; 1964) that perhaps all magnetic stars are periodic.

R. STEINITZ

Department of Theoretical Physics
The Hebrew University of Jerusalem
Jerusalem, ISRAEL.

COMMISSION 27 OF THE I.A.U.

INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 102

Konkoly Observatory
Budapest
22 July 1965

RU MONOCEROTIS

Photoelectric observations of RU Mon made by Prof. Bok and myself in Nov. 1964 - Jan. 1965 at Mount Stromlo and Siding Spring Observatories revealed very significant deviations of the times of minima from the existing ephemerides, amounting to eight hours. The motion of the line of apsides is faster than it was previously supposed, i.e. 45° per period of revolution. U/P = 29000.

The proposed formulae for minima are as follows:

Primary min. = hel. JD $2429641.567 + 3^{d}.5846391\ (E-3554) - 0^{d}.429 \cos\alpha + 0^{d}.060 \sin 2\alpha + 0^{d}.010 \cos 3\alpha + 0^{d}.003 \sin 4\alpha$

Secondary min. = hel. JD $2429639.775 + 3^{d}.5846391\ (E-3554) + 0^{d}.429 \cos\alpha + 0^{d}.060 \sin 2\alpha - 0^{d}.010 \cos 3\alpha + 0^{d}.003 \sin 4\alpha$

where $\alpha = 0^{\circ}.01245\ (E-406.)$

For the next two years we can use the approximate formulae:

Primary Min. = hel. JD $2438732.098 + 3^{d}.5847111\ (E-6090)$

Secondary min. = hel. JD $2438730.606 + 3^{d}.5845259\ (E-6090)$

The durations of minima are respectively $D_1 = 4^{h}.9$, $D_2 = 10^{h}.1$(!), their depths: $A_1 = 0^{m}.73$, $A_2 = 0^{m}.59$.

The next 5-7 years will be critical for exact determination of the motion of the line of apsides and of the suspected variations of the orbital eccentricity (between 0.36 and 0.39).

Photometric, especially photoelectric observations are strongly needed. The star "e" (AN 235, 226, 1929) should be avoided as a comparison star.

1 July 1965

D. Ya. MARTYNOV
Sternberg Institute,
Moscow

KFKI 2204

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 103

Konkoly Observatory
Budapest
24 July 1965

ROSINO'S OBJECT

On November 17, 1961 Rosino (1) discovered a variable star of 14th magnitude at maximum near the galaxy NGC 4501(M 88). A second outburst of the star was observed by Zwicky (2) on March 26-27, 1965 at Palomar. Moreover, the writer (3) was able to find an old maximum on April 26, 1892 inspecting the Isaac Roberts Plates. In the following Table the Asiago observations during the recent outburst are given. All the plates were obtained with the 50-40 cm Schmidt telescope, except that of May 2, taken with the 122 cm reflector . The comparison stars are given in (3).The magnitudes between brackets are derived from panchromatic emulsions and are only indicative. A 103a-O plate + UG2 filter taken on April 29 shows that the variable has a strong ultraviolet emission.

Plate No.	Date	UT	m_{pg}
5402	March 27, 1965	$21^h\ 25^m$	(12.9)
5449	April 3	22 31	(13.6)
5469	22	21 26	15.5
5480	29	23 15	17.3
7022	May 2	23 41	18.9
5502	3	23 21	18.6:
5507	June 17	21 46	[17
5540	25	22 18	[17

These data show that the variable has fallen down of six magnitudes in about one month. The rate of this decline is comparable with that of the 1961 outburst (3) . The 1965 observations so far published do not show what has been the main peculiarity of the light

curve in 1961; namely the deep minimum on December 8. With this regard it should be noted that the star has not been observed at Asiago on December 5-6, 1961, contrarily to what is reported in (4) . The observation at the Crimean Observatory on December 5-6, giving m_{pg} = 15.8 allows then to establish that the decline of this secondary minimum was less rapid than the rising, which took place in less than one day.

Concerning the membership of the present variable star to the class of recurrent novae or U Geminorum, it is very difficult to give a definitive answer at the present time. However the 1961 observations at Asiago, i.e. continuous spectrum without emission lines on November 22 and December 12, color B-V = 0.0 on December 16, indicate that the star might be assigned to the U Geminorum class. In any case the object is a very peculiar one and should be constantly followed in the future.

(1) IAU Circular No. 1782,1961
(2) IAU Circular No. 1902,1965
(3) Ann. d'Ap. 27,298, 1964
(4) Astron. Cir. USSR No. 327,1965

Asiago Astrophysical Observatory, July 1965

F. BERTOLA

Készült a KFKI Kiadói Csoportjában

COMMISSION 27 OF THE I.A.U.

INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 104

Konkoly Observatory
Budapest
11 September 1965

RR LYRAE VARIABLES IN M 92

New observation of M 92 were made at the Main Astronomical Observatory of the Academy of Sciences of the Ukrainian SSR during 1964 - 1965. The procedure of determining magnitudes was described in (1). On the basis of the examination of all the 311 plates available the elements of variables No. 1, 2, 3, 4, 5 and 8 were revised and those for No. 7, 9, 10 and 11 were deduced. Data for variables in M 92 are given in the following table where

$$\xi = \frac{Tmax - Tmin}{P} \quad \text{and} \quad \eta = m_{1/2P} - 1/2\,(M+m)$$

Var	Max JD hel 243....	Period	M	m	ξ	η	Remarks
1	7403.659	$0^d.7027144$	$14^m.40$	$15^m.86$	0.185	$0^m.42$	1
	8170.329	.7028410					
2	7427.366	.6438833	.48	.76	.155	.44	2
3	.120	.6374495	.33	.80	.165	.65	
4	.210	.6289248	.34	.62	.140	.48	
5	.664	.6197346	.40	.77	.150	.63	3
	871.394	.6196854					
7	.517	.5149114	.45	.70	.200	.07	4
8	427.185	.6732563	.54	.70	.110	.46	5
9	871.181	.6083514	.53	.77	.100	.46	
10	427.191	.3772912	.76	.64	.370	.06	6
11	.096	.3084614	15.08	.63	.350	.05	7

Remarks

1. A change of the period occurred at about J.D. 2438170.

2,5,7. Blashko effect. M is the mean of maximum and minimum amplitudes.

3. A change of the period occurred at about J.D. 2437871.

4. The brightness values $M=14^{m}.01$ and $m=14^{m}.52$ were observed. This star seems to be an ordinary cluster variable blended by a star of 14.88 mag.

6. Two small changes of the period were found at about J.D. 2438170 and 2438230.

Reference

(1) Inf. Bull. Var. Stars
Comm.27 I.A.U.
43, 1964

Kiev, 27 August 1965

E.S. KHEYLO
Main Astronomical Observatory
of the Academy of Sciences of the
Ukrainian SSR

Készült a KFKI Kiadói Csoportjában

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 105

Konkoly Observatory
Budapest
13 September 1965

V 828 CYGNI

On the request of Mr. Meinunger the star was observed photoelectrically on several nights (without filters; multiplier 1 P 21). Following the observations the star is not a semiregular variable with a period of $30^d \pm$ (as listed in the GCVS Supp.I), but a β Lyraestar with the elements

$$\text{Min}_{\odot} = 243\ 8937.476 + 2^d.10454\ E.$$

Both minima are of equal depth; the range of variation is $0^m.42$. The spectral type according to Herbig is B8.

The star is recommended for observation being its brightness $9^m.7$ in maximum.

W.WENZEL
German Academy of Sciences
Sonneberg Observatory

Készült a KPKI Kiadói Csoportjában

KPKI 2260

COMMISSION 27 OF THE I.A.U.

INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 106

Konkoly Observatory
Budapest
30 September 1965

NEW VARIABLE STARS

On plates taken with the Schmidt telescope /40/50/100/ of the Asiago Astrophysical Observatory I have found the following 8 new variable stars in the field of ρ Cygni.

var	RA 1900	D	Max	min	type
			^{mp}		
GR 112	$21^h19^m56^s$	$+46^\circ26'$	16.3	17.5	I
GR 113	20 47	44 33	15.7	17.5	I
GR 114	21 57	45 08	14.2	<17.0	M
GR 115	23 06	45 35	15.7	17.2	SR
GR 116	26 13	47 48	16.5	17.5	E
GR 117	32 30	42 59	16.5	<17.3	I
GR 118	33 43	43 58	16.5	17.5	RR?
GR 119	34 45	42 56	15.7	17.5	SR

G.ROMANO
Padua Observatory
Italy

Készült a KFKI Kiadói Csoportjában

KFKI 2280

COMMISSION 27 OF THE I.A.U.

INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 107

Konkoly Observatory
Budapest
7 October 1965

BRIGHT SOUTHERN BV-STARS

On sky patrol plates of Bamberg Southern-Station 73 further stars were found whose variability seems to be real as can be seen from the material available till now.

BV 637 = CoD $-48^{\circ}338$ ($8^{m}.8$) = HD 8 093 (A2) $A_{pg} = 0^{m}.3$

BV 638 = BD $-17^{\circ}366$ (8.7) = HD 12 293 (A) $A_{pg} = 0^{m}.3$
= K3π 186

BV 639 = BD $-16^{\circ}696$ $8^{m}.5$ = HD 23 517 (Fo) $A_{pg} = 0^{m}.5$

BV 640 = CoD $-41^{\circ}1120$ ($8^{m}.5$) = HD 23 519 (Fo) $A_{pg} = 0^{m}.3$

BV 641 = CoD $-45^{\circ}1704$ ($9^{m}.6$)
= K3π 450 = S 4841

BV 642 = CoD $-25^{\circ}2539$ ($7^{m}.5$) = HD 37 212 (Na) $A_{pg} = 0^{m}.3$

BV 643 = CoD $-23^{\circ}2977$ ($9^{m}.7$) $A_{pg} = 0^{m}.3$

BV 644 = BD $-22^{\circ}1215$ ($9^{m}.0$) = HD 38 427 (F5) $A_{pg} = 0^{m}.3$

BV 645 = CoD $-61^{\circ}1313$ ($9^{m}.5$) = HD 43 769 (Go) $A_{pg} = 0^{m}.3$

Max = 243 8407.750 + $18^{d}.75$. E

Cep Light-curve Fig. 1

BV 646 = CoD $-54^{\circ}1411$ ($9^{m}.6$) = HD 44 863 (A2) $A_{pg} = 0^{m}.4$

BV 647 = CoD $-41^{\circ}2466$ ($9^{m}.1$) $A_{pg} = 0^{m}.3$

BV 648 = CoD $-66^{\circ}407$ ($7^{m}.8$) = HD 46 975 (Mb) $A_{pg} = 0^{m}.2$

BV 649 = CoD $-45^{\circ}2632$ ($9^{m}.8$) $A_{pg} = 0^{m}.3$

BV 650 = CoD $-52^{\circ}1638$ ($9^{m}.1$) = HD 48 505 (Mc) $A_{pg} = 0^{m}.3$

BV 651 = BD $-11^{\circ}1684$ ($8^{m}.7$) = HD 50 875 (Fo) $A_{pg} = 0^{m}.3$

BV 652 = CoD $-24^{\circ}4567$ ($3^{m}.9$) = HD 50 877 (K2p) $A_{pg} = 0^{m}.$
= K3π 100781 ($4^{m}.1$)

BV 653 = BD $-10^{\circ}1758$ ($8^{m}.3$) = HD 51 082 (Ao) $A_{pg} = 0^{m}.3$

BV 654 = CoD $-46^{\circ}2777$ ($9^{m}.5$) = HD 51 797 (G5) $A_{pg} = 0^{m}.4$

BV 655 = BD $-11^{\circ}1747$ ($7^{m}.2$) = HD 52 721 (B3) $A_{pg} = 0^{m}.2$

BV 656 = BD $-11^{\circ}1755$ ($8^{m}.7$) = HD 52 942 (B5) $A_{pg} = 0^{m}.3$

BV 657 = CoD -27°3652 (10m) A_{pg} = 0m.2
BV 658 = BD -19°1717 (9m.3) A_{pg} = 0m.2
BV 659 = CoD -59°1542 (9m.6) = HD 56 785 (Go) A_{pg} = 0m.5
BV 660 = 1900: $7^h14^m37^s$ -56°11'.6 Ident.Chart No.1 A_{pg} = 0m.2
BV 661 = CoD -34°3517 (8m.0) = HD 57 301 (B9) A_{pg} = 0m.4
BV 662 = CoD -51°2485 (8m.3) = HD 58 872 (F8) A_{pg} = 0m.3
BV 663 = CoD -45°3332 (10.0) A_{pg} = 0m.4
= K3π 1104 = S +886
BV 664 = CoD -48°3091 (6m.0) = HD 61 715 (F5p) A_{pg} = 0m.3
BV 665 = CoD -36°3785 (8m.0) = HD 61 829 (B8) A_{pg} = 0m.2
BV 666 = BD -20°2137 (9m.8) A_{pg} = 0m.3
BV 667 = 1900: $7^h39^m30^s$ -53°13'.5 Ident.Chart No.2 A_{pg} = 0m.3
BV 668 = BD - 4°2087 (9m.5) = HD 63 141 (Ao) A_{pg} = 0m.3
BV 669 = CoD -48°3193 (9m.4) = HD 63 562 (Ao) A_{pg} = 0m.7
Min = 243 8354.540 + $3^d.667\ 71$. E
EA Light-curve Fig.2
BV 670 = CoD -30°5153 (9m.2) A_{pg} = 0m.3
BV 671 = 1900: $7^h48^m0^s$ -17°8'.0 Ident.Chart No.3 A_{pg} = 0m.3
= K3π 1165 = S 4083
BV 672 = CoD -32°4556 (9m.7) A_{pg} = 0m.6
BV 673 = CoD -28°5231 (9m.4) A_{pg} = 0m.7
Max = 243 8376.500 + $14^d.135$. E
Cep . Light-curve Fig.3
BV 674 = CoD -61°1805 (7m.5) = HD 66 260 (Fo) A_{pg} = 0m.2
BV 675 = CoD -30°5470 (7m.8) = HD 66 381 (A2) A_{pg} = 0m.2
BV 676 = BD -17°2298 (9m.1) = HD 66 475 (A2) A_{pg} = 0m.3
BV 677 = BD -16°2312 (9m.5) A_{pg} = 0m.3
BV 678 = CoD -30°5709 (9m.3) = HD 67 839 (Ao) A_{pg} = 0m.2
BV 679 = CoD -48°3505 (9m.5) = HD 68 011 (Mb) A_{pg} = 0m.2
BV 680 = CoD -35°4284 (9m.3) = HD 68 296 (B9) A_{pg} = 0m.2
BV 681 = 1900: $8^h9^m17^s.0$ -18°45'.3 Ident.Chart No.4 A_{pg} = 0m.2
BV 682 = CoD -26°5815 (9m.1) = HD 69 797 (A5) A_{pg} = 0m.4
BV 683 = BD -22°2231 (8m.0) = HD 70 258 (Ao) A_{pg} = 0m.2
BV 684 = 1900: $8^h16^m59^s.1$ -35°24'.0 Ident.Chart No.5 A_{pg} = 0m.2
BV 685 = K3π -56°2201 (7m.7) = HD 70 605 (B9) A_{pg} = 0m.2
BV 686 = CoD -54°2269 (8m.1) = HD 73 169 (B9) A_{pg} = 0m.5
BV 687 = Cap -64°938 (9m.6) A_{pg} = 0m.3
BV 688 = Cap -57°1705 (10m.1) A_{pg} = 0m.3
BV 689 = 1900: $8^h49^m53^s$ -65°56'.6 Ident.Chart No.6 A_{pg} = 0m.2
BV 690 = BD -22°2440 (7m.2) = HD 76 296 (Go) A_{pg} = 0m.3
BV 691 = CoD -46°4882 (7m.3) = HD 78 005 (B3) A_{pg} = 0m.2
BV 692 = CoD -56°2636 (10m.5) A_{pg} = 0m.2

BV 693 = CoD -81°301 ($8^m.9$) = HD 81 243 (Ao) $A_{pg} = 0^m.3$

BV 694 = CoD -55°2785 ($9^m.5$) $A_{pg} = 1^m.0$

= K3π 1469 = S 4915

Min = 243 8442.420 + $2^d.4471$. E

EA Light-curve Fig.4

BV 695 = 1900: $9^h40^m45^s$ -62°9'.6 Ident.chart No.7 $A_{pg} = 0^m.5$

BV 696 = CoD -43°5607 (10^m) $A_{pg} = 0^m.6$

BV 697 = CoD -66°789 ($9^m.5$) $A_{pg} = 0^m.3$

BV 698 = BD -19°2867 ($9^m.1$) $A_{pg} = 0^m.3$

= 101089

BV 699 = CoD -57°2916 ($7^m.7$) = HD 86 441 (B9) $A_{pg} = 0^m.3$

BV 700 = CoD -45°5845 (10^m) $A_{pg} = 0^m.3$

BV 701 = BD -18°2927 ($8^m.0$) = HD 90 242 (F5) $A_{pg} = 0^m.5$

Min = 243 8471.530 + $3^d.665$. E

EA Light-curve Fig.5

BV 702 = CoD -57°3226 ($10\ 3/4^m$) $A_{pg} = 0^m.4$

BV 703 = Cap -41°5243 ($10^m.5$) $A_{pg} = 0^m.2$

BV 704 = CoD -77°494 ($9^m.8$) $A_{pg} = 0^m.4$

= K3π 1754 = S 4949

BV 705 = CoD -72°730 ($9^m.8$) = HD 101 916 (A2) $A_{pg} = 0^m.3$

BV 706 = CoD -45°7307 ($8^m.8$) = HD 102 682 (F8) $A_{pg} = 0^m.3$

BV 707 = CoD -46°7908 ($8^m.4$) = HD 108 015 (F8) $A_{pg} = 0^m.3$

BV 708 = CoD -59°4353 ($9^m.4$) $A_{pg} = 0^m.2$

BV 709 = BD -10°3625 ($9^m.0$) = HD 114 543 (F5) $A_{pg} = 0^m.2$

Bamberg, Remeis Observatory
25 September 1965

W. STROHMEIER

R. KNIGGE H. OTT

BV 345 = CoD -61°1313 (9.m5) = HD 43 769 (Go) (Fig. 1)

Max = JD 243 8407.750 + 18.d75 . E, Cepheid, Ampl. 0.m34

Comparison-stars:

Cap -61°0619 9.m60 estimated

Cap -61°0612 10.00 estimated

Individual maxima (brighter than 9.m65)

Maxima	E	O - C
243 8406.413	0	-1.337
8407.413	0	-0.335
8408.370	0	+0.619
8707.572	16	-0.178
8708.528	16	+0.778
.574	16	+0.824
8709.528	16	-1.778
8726.495	17	-0.005
8785.337	20	+2.587
8820.267	22	+0.017
8822.266	22	+2.016

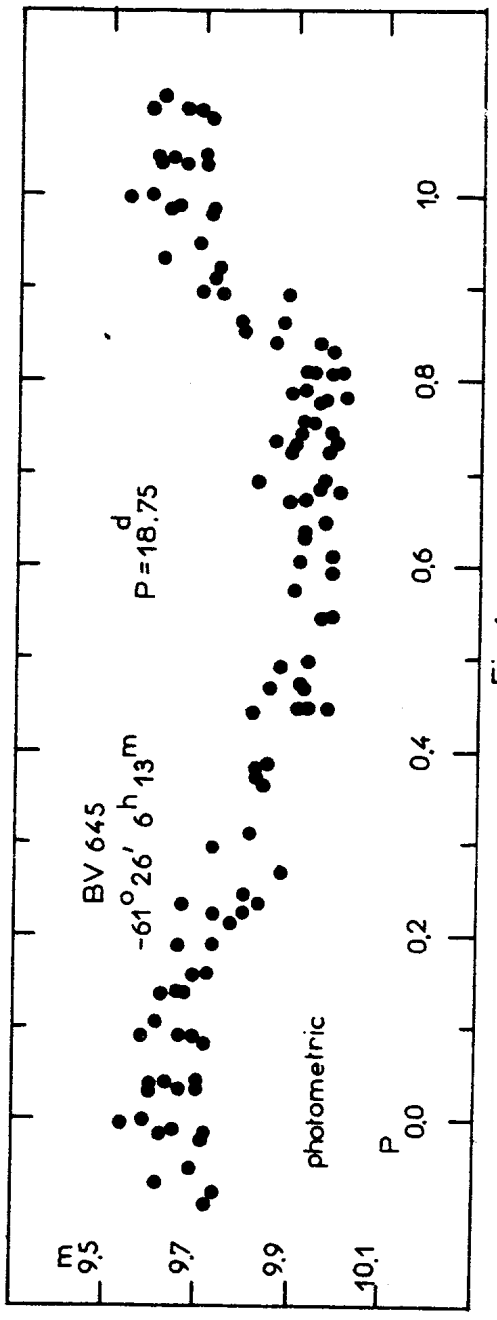

m
9.5
9.7
9.9
10.1
P
0.0
0.2
0.4
0.6
0.8
1.0
photometric
BV 645
-61°26' 6h13m
P=18.75d

Fig.1

BV 669 = CoD -48°3193 (9.m1) = HD 83 562 (Ao) (Fig.2)

Min = JD 2+3 8354 + 3.d0697 71 . E, EA, Ampl. 0.m68

Comparison-stars:

Cap -48°1311 9.m30
Cap -48°1288 10.10

Magnitudes of comparison-stars have been derived by photometric connexion to stars from the Harvard catalogue.

Individual minima (fainter than 9.m70)

	Minima	E	O - C
243	8354.574	0	+0.034
	8435.359	22	+0.128
	8430.227	37	+0.018
	8739.551	105	-0.099
	8798.367	121	+0.034
	8820.312	127	-0.026
	8842.253	133	-0.092

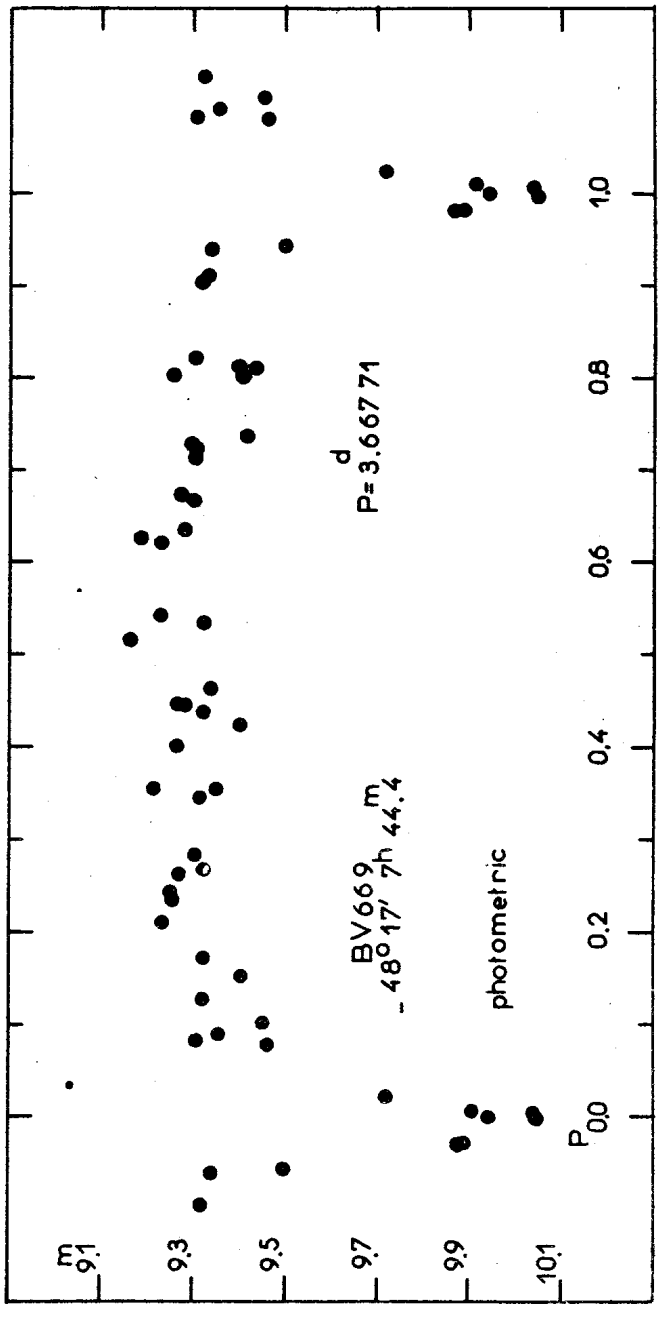

m
9.1
9.3
9.5
9.7
9.9
10.1
P
0.0
0.2
0.4
0.6
0.8
1.0
BV669
-48°17'
7h 44.4 m
P= 3.66771 d
photometric

Fig.2

BV Cet = CoD -28°2231 (9.4) = Cap -28°2652 (9.7); (Fig. 3)

Max = JD 243 8376.500 + 14^{d}.135 . E, Cepheid, Ampl. 0^{m}.68

Comparison-stars:

Cap -29°2213 9^{m}.20
Cap -28°2660 9.70 (Values from Cape catalogue)

Individual maxima (brighter than 9^{m}.45)

Maxima	E	O - C
243 8461.296	6	-0.016
8475.242	7	-0.203
8489.231	8	-0.349
8490.227	8	+0.647
8772.458	28	+0.178
8786.409	29	-0.006
8814.314	31	-0.371
8815.315	31	+0.630

Reduction of light-curve by Rev. Fr. T. Vives SJ, guest astronomer (Cartuja Observatory, Spain).

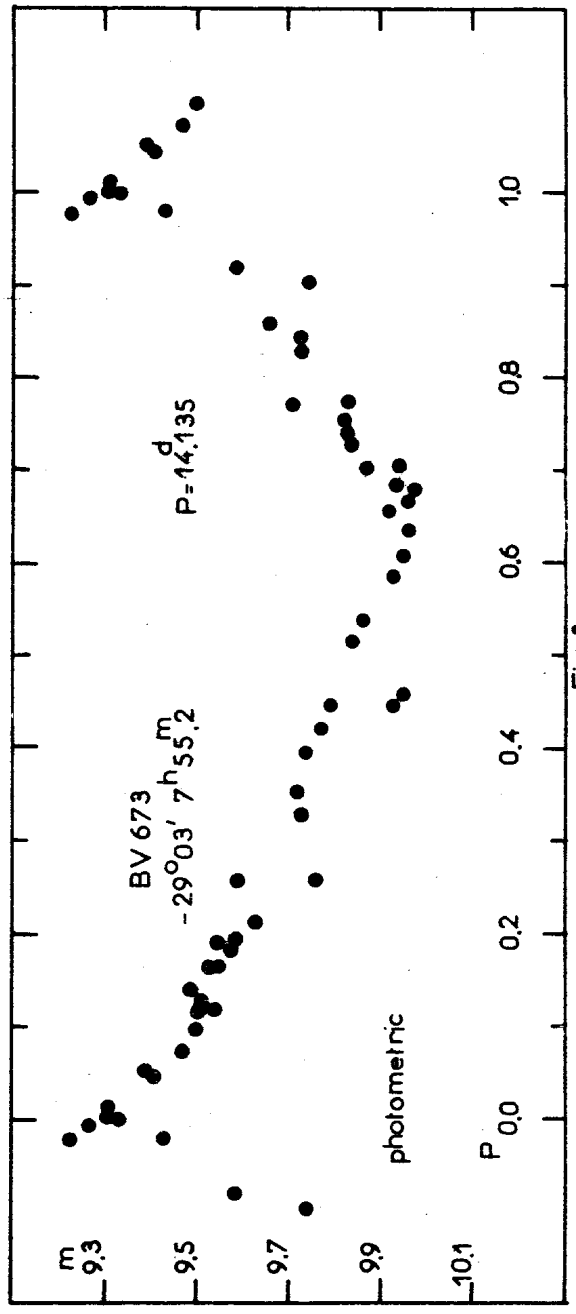

m
9.3
9.5
9.7
9.9
10.1
P
0.0
0.2
0.4
0.6
0.8
1.0
photometric
BV 673
-29°03' 7h55.2m
P=14.135d

Fig. 3

BV 894 = CoD -55°2785 ($9^m.5$) = S 4915 = K3 1469 (10^m-11^m);
(Pig. 4)

Min = JD 243 8442.420 + $2^d.4471$. E, EA, Ampl. $0^m.96$

Comparison-stars:

Cap -55°2269	8.90	(Values from Cape catalogue)
Cap -55°2305	9.80	

Individual minima (fainter than $10^m.00$)

Minima	E	O - C
243 8442.397	0	-0.023
.442	0	+0.022
8518.213	31	+0.067
8760.510	130	-0.033
.556	130	+0.013
8814.358	152	-0.021
.402	152	+0.023
8841.292	163	-0.005

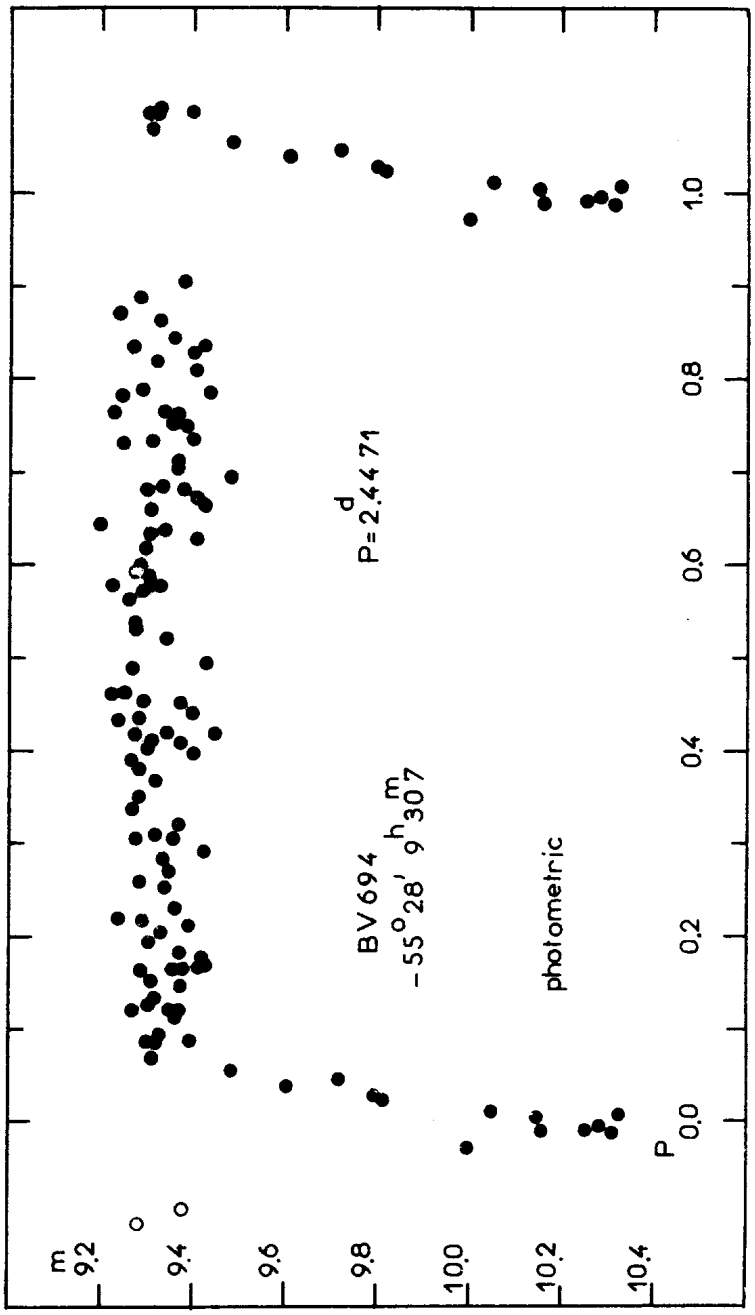

m
9.2
9.4
9.6
9.8
10.0
10.2
10.4
P
0.0
0.2
0.4
0.6
0.8
1.0
BV 694
-55°28'
9h3m07
P=2.d4471
photometric

Fig.4

BV 701 = BD -18°3927 ($8^m.0$) = HD 90 242 (F_5;) (Fig. 5)

Min = JD 243 8471.530 + $3^d.665$. E, EA, Ampl. $0^m.5$

Comparison stars:

HD	90 364	(Ao)	$7^m.07$
HD	90 323	(G_5)	8.9
HD	89 981	(K_2)	9.6

(Data from Harvard Catalogue)

Individual minima (fainter than $8^m.90$)

Minima	E	O - C
243 8471.360	0	-0.170
8475.331	1	+0.136
8519.209	13	+0.034
8530.204	16	+0.034
8823.392	96	+0.022

Light-curve only estimated, - for a photometric derivation the star is very near to the plate edge.

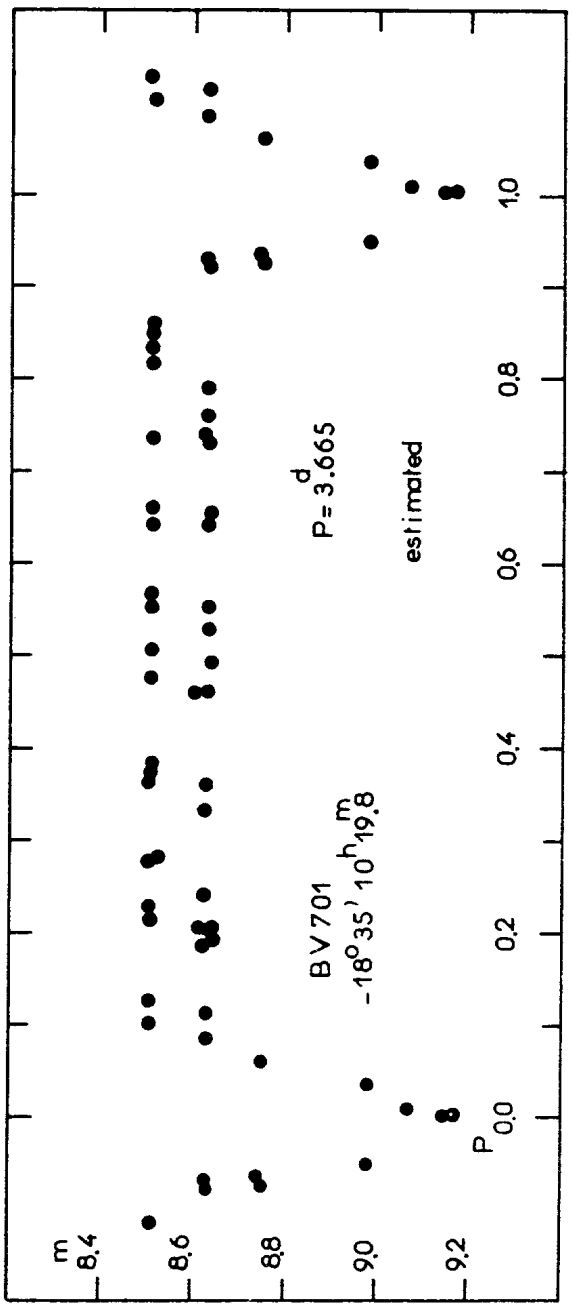
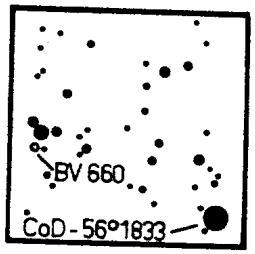
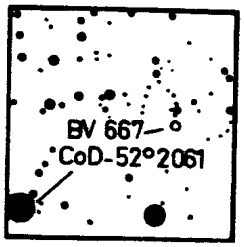

m
8.4
8.6
8.8
9.0
9.2
P
0.0
0.2
0.4
0.6
0.8
1.0
BV 701
-18°35' 10h19.8m
P= 3.665 d
estimated

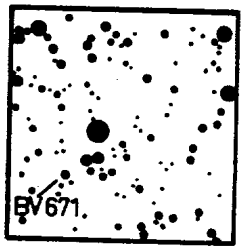
Fig.5



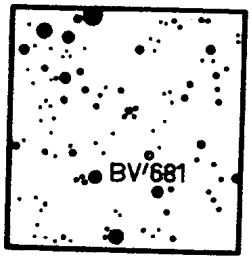
No.1



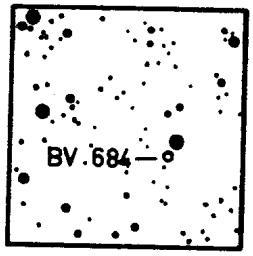
No. 2



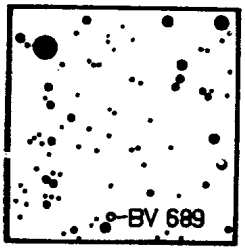
No.3



No.4

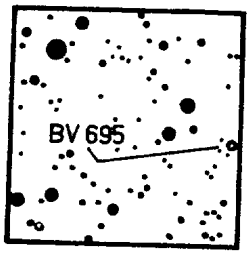


No.5



No.6

south



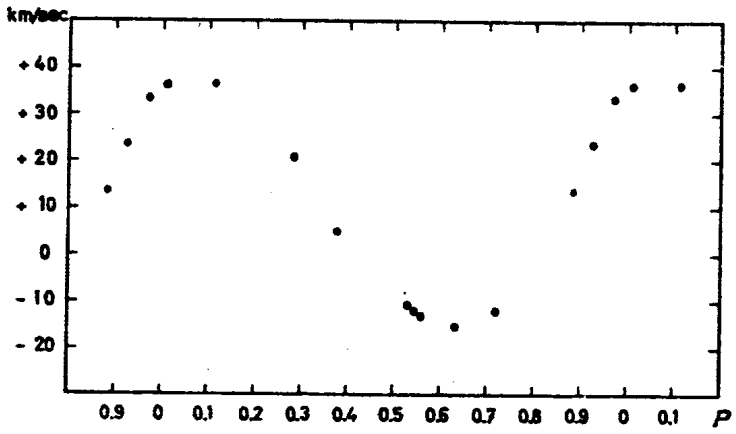
No.7
north

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 108

Konkoly Observatory
Budapest
18 October 1965

THE PERIOD OF THE SPECTROSCOPIC BINARY AND MAGNETIC STAR HD 8441

The period of $2^d.9632$ announced by Steinitz (Information Bulletin on Variable Stars No. 101) for the magnetic variations of HD 8441 ($\alpha_{1950} = 1^h21^m23^s$, $\delta_{1950} = +42°53'$, A2p, No. 3 in Babcock's catalog Ap.J. Suppl. 3, 141, 1958) cannot be considered as definitely established. There are only 13 measured values of $\underline{H}_e$, spread over an interval of about 5y i.e. more than 600 times that period. In fact it is not confirmed by the eye-estimated signs of H_e on the non-measured plates. Moreover it is in disagreement with the period-line-width relation, the lines being ultra-sharp ($\underline{w} = 0.08$ Å).



On the other hand, the measured radial velocities give a period of $106^{d}.27 \pm 0^{d}.03$ for the orbital motion, with $\gamma = +10$ km/sec and $2K = 53$ km/sec. A slight correlation with the phase computed according to this period seems to exist both for the measured values and for the estimated polarities of the magnetic field.

P. RENSON
Institut d'Astrophysique
Université de Liège
Liège, Belgium

Készült: a Központi Fizikai Kutató Intézet Kiadói Csoportjában
KFKI 2517

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 109

Konkoly Observatory
Budapest
20 October 1965

SPECTRAL VARIATIONS OF THE WR STAR HD 50896

Variations in the spectrum of the WN6 star HD 50896 were found by Wilson (1948), Smith (1955) and by one of us (Bertola 1963), while light variations were detected by Ross (1961). Fifty spectra were obtained at Asiago using the Cassegrain spectrograph 40 A/mm at H_γ in order to ascertain the possible binary nature of the star, common to a large number of WR stars. The spectra cover a period of six years, from 1959 to 1965. Many of them were taken in rapid succession during the night. The following emission lines have been measured for radial velocity: He II 4859, 4685, 4541, 4338, 4199, 4100; N IV 4058; N V 4603-19 . For all the lines comparable radial velocity variations with a mean amplitude of 300 km/sec were detected. On the average the velocity range is between -20 km/sec and +280 km/sec. However, no correlation seems to exist between the displacements of the lines. A period-analysis of the radial velocities shown by the N V 4603-19 line, the sharpest feature in the spectrum, leads to a tentative period less than one day. Nevertheless the scatter is high and no certain conclusion can be derived. We are tempted to conclude that on the basis of our present data, the hypothesis of the binary nature of the star has to be ruled out. The fact that the continuum in HD 51896 is not so strong as in other WR binaries, where there is the contribution of the companion, might be another argument supporting the above conclusion.

An additional aspect of the spectral variations of HD 50896 is concerning the line profiles of He II 4100 and N IV 4058. While in the majority of the spectra the contour of the He II 4100 line is rounded, in some cases it exhibits a plateau-like shape. More conspicuous are the variations of N IV 4048. Normally the profile of this line is asymmetric, steeper on the violet edge. However,

sometimes, the band has a superimposed absorption feature, whose position and intensity are variable. When the absorption is present, the red edge is equally steep as the violet.

If future observations will confirm that HD 50896 is not a binary system, then, the above variations are an indication of considerable activity in the envelopes of WR stars.

References:

Bertola F., 1963, Asiago Contr. No. 137.

Ross L.W., 1961, PASP 73, 354.

Smith H.J., 1955, Harvard Thesis.

Wilson O.C., 1948, PASP 60, 383.

Asiago Astrophysical Observatory
October 1965

R. BARBON
F. BERTOLA
F. CIATTI
R. MARGONI

Készült A Központi Fizikai Kutató Intézet Kiadói Csoportjában
KFKI 2321.

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 110

Konkoly Observatory
Budapest
25 October 1965

SUPERNOVA IN ANONYMOUS GALAXY

$2^h20^m.8$	$+30^\circ50'$	1855.0
2 23.4	+31 2	1900.0

The Supernova 16^m, announced in IAU Circ. 1931, is visible on 11 astrograph plates 1965 Sep. 20/21 to Sep. 25/26. No immediately preceding plates are available. On the first 2 days the star is slightly brighter than the nucleus of the galaxy, on Sep. 25/26 equal to the nucleus. The galaxy, according to Palomar Sky Survey, might be a face-on spiral system. The supernova is preceding the nucleus 0'.45, slightly to the south.

C. HOFFMEISTER
Sonneberg Observatory

OBJECT ROSINO-ZWICKY NEAR M88

A mistake in reducing the estimates of this object has led to wrong 1965 mangitude data given in this Bulletin, No. 99.

Including several estimates on Sky patrol plates (Te, taken by H. Huth) the following correct magnitudes can be derived from Sonneberg plates:

Plate		Date (UT)		Magn.	Remarks
GC	142	1961 Dec.	3.1	$14^{m}.6$	
Te_2	2591		15.2	$\odot$[13.5	
Te_2	2596/7		17.1	$\odot$[13	2 plates
GC	153		17.2	15.0	
Te_2	2601		18.2	$\odot$[13	
Te_2	2603		19.2	$\odot$[13	
GC	1337	1965 March	8.1	$\odot$[17	
Te_3	4487		11.1	$\odot$[14	
Te_3	4505/6		29.9	13.35	2 plates
Te_3	4518	Apr.	1.0	13.5:	
Te_3	4525		2.0	13.8	
GC	1352		2.0	13.8	
Te_3	4537/8		3.0	13.7	
GC	1356		3.0	13.8	
Te_3	4547/8		3.9	13.7	2 plates
GC	1362		5.9	13.8	
Te_3	4558/9		6.0	14.05	2 plates
GC	1365		27.9	15.4	
GC	1370	May	20.9	$\odot$[17	

W. WENZEL

Sonneberg Observatory

Készült A Központi Fizikai Kutató Intézet Kiadói Csoportjában
KFKI 2322

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 111

Konkoly Observatory
Budapest
27 October 1965

MINIMA OF ECLIPSING VARIABLES

Given are 78 observed minima for 27 eclipsing variable stars. All are visual timings reduced by the tracing-paper method, except where noted. Elements in the 1958 General Catalogue of Variable Stars were used to compute O - C's unless otherwise specified. The number of estimates used for each minimum is given under n.

J.D.⊙	E	O - C	n	Observer
RT Andromedae				
2438252.584	+22,472	-0.023	18	J. Ashbrook
38931.834	+23,552	-0.020	8	D. Williams
KO Aquilae				
38931.800	+1.761	-0.009	13	D. Williams
OO Aquilae				
38927.687	+9,276.5	-0.017	9	C. Ricker
38928.704	+9,278.5	-0.014	14	D. Williams
38931.745	+9,284.5	-0.013	9	D. Williams
38935.806	+9,292.5	-0.007	11	M. Murphy
38936.813	+9,294.5	-0.013	11	R. Monske
38937.824	+9,296.5	-0.016	12	R. Monske
38938.840	+9,298.5	-0.014	12	R. Monske
38964.674	+9,349.5	-0.026	8	D. Williams
38966.715	+9,353.5	-0.012	8	D. Williams
V342 Aquilae [1]				
38955.750	+ 980	+0.009	33	R. Monske
38972.707	+ 985	+0.011	33	R. Monske
V346 Aquilae				
38967.712	+6,904	-0.018	10	D. Williams

	J.D.⊙	E	O - C	n	Observer
NW Aurigae					
24	38755.618	+ 2,175	+0.011	20	D. Friedman
	38770.759	+ 2,181	-0,001	20	M. Baldwin
	38808.830	+ 2,196	-0.003	11	M. Baldwin
	38813.679	+ 2,198	-0.004	17	M. Baldwin
	38851.567	+ 2,213	+0.009	8	T. Hering
SV Camelopardalis					
	38892.665	+11,137	-0.022	16	M. Murphy
	38927.673	+11,196	-0.005	17	M. Murphy
R Canis Maioris					
	38817.533	+ 2.907	+0.001	16	H. Marraco
	38818.6683 2/	+ 2,908	+0.0006	27pe	J.Ruiz, D.Taboada
RZ Cassiopeiae					
	38770.721	+17,917	-0.031	17	M. Baldwin
	38782.669	+17,927	-0.035	18	M. Baldwin
	38788.645	+17,932	-0.035	16	M. Baldwin
	38794.625	+17,937	-0.032	13	M. Baldwin
	38963.740	+18,081	-0.033	8	D. Williams
U Cephei					
	38727.781	+12,370	+0.729	44	M. Baldwin
XX Cephei					
	38727.708	+ 5,832	-0.076	15	M. Baldwin
U Coronae Borealis					
	38938.738	+ 6,428	+0.006	35	D. Friedman
	38938.742	+ 6,428	+0.010	17	R. Monske
Z Draconis					
	38881.727	+ 4,135	+0.015	20	D. Williams
	38915.658	+ 4,160	+0.010	16	R. Monske
	38938.739	+ 4,177	+0.015	11	R. Monske
	38953.672	+ 4,188	+0.016	12	R. Monske
AI Draconis					
	38902.765	+11,899	+0.012	9	D. Williams
	38938.729	+11,929	+0.012	11	D. Williams
	38938.744	+11.929	+0.027	34	D. Friedman

J.D.⊙	E	O - C	n	Observer
Z Herculis				
2438931.752	+ 1,285	+0.007	16	D. Williams
38967.680	+ 1,294	0.000	13	D. Williams
38971.684	+ 1,295	+0.011	9	D. Williams
SZ Herculis [3]				
38879.885	+ 2,143	+0.010	20	M. Baldwin
38888.883	+ 2,154	+0.009	13	M. Baldwin
38902.795	+ 2,171	+0.014	14	T. Cragg
38902.795	+ 2,171	+0.014	16	D. Williams
38916.702	+ 2,188	+0.013	11	R. Monske
38920.792	+ 2,193	+0.013	15	M. Murphy
38925,699	+ 2,199	+0.011	13	R. Monske
38938.782	+ 2,215	+0.004	16	G. Brown
38938.790	+ 2,215	+0.012	12	R. Monske
38943.702	+ 2,221	+0.016	11	R. Monske
38952.697	+ 2,232	+0.012	10	R. Monske
38956.787	+ 2,237	+0.011	16	R. Swanberg
38961.692	+ 2,243	+0.008	9	W. Hampton
38965.788	+ 2,248	+0.013	16	R. Swanberg
38988.701	+ 2,276	+0.020	15	R. Swanberg
u Herculis				
38937.745	+16,142	+0.037	10	D. Williams
SW Lacertae				
38967.740	+48,625.5	+0.024	10	D. Williams
38979.663	+48,631.5	+0.022	7	D. Williams
SS Librae				
38916.681	+12,980	+0.006	13	R. Monske
38952.638	+13,005	+0.013	13	R. Monske
Delta Librae				
38880.842	+ 1,901	+0.001	23	M. Baldwin
38920.4050 [4]	+ 1,918	-0.0007	33pe	L. Kalish
38943.670	+ 1,928	-0.009	18	R. Monske
FL Lyrae				
38173.640	+ 1,982	+0.004	17	J. Ashbrook
U Ophiuchi				
38919.725	+18,267	+0.005	8	T. Cragg
38966.684	+18,295	-0.002	13	D. Williams
38971.707	+18,298	-0.011	7	D. Williams

J.D.	E	O - C	n	Observer
RV Ophiuchi				
24 38911.787	+ 4,045	-0.017	7	T. Cragg
RT Persei				
38770.603	+ 6,572	-0.012	8	M. Baldwin
U Sagittae				
38938.796	+ 6,451	+0.012	23	R. Monske
38955.696	+ 6,456	+0.009	21	R. Monske
V505 Sagittarii				
38938.760	+ 4,585	-0.035	12	R. Monske
38938.774	+ 4,585	-0.021	8	D. Williams
BV 312 Tauri 5/				
38770.754	+ 6,385	+0.013	20	M. Baldwin
38805.696	+ 6,402	-0.002	22	M. Baldwin

These results continue the lists published in "Sky and Telescope" (27, 58, 1964; 29, 254, 1965) from amateur observations. Expansion of this program has led to sponsorship by the American Association of Variable Star Observers, with David B. Williams as coordinator. The reductions are made by the writer, in collaboration with Joseph Ashbrook, except in a few cases which were only checked.

L.J. ROBINSON

"Sky and Telescope"
49 Bay State Rd.
Cambridge, Mass. 02138
U.S.A.

Notes to Table

1/ O - C's were computed from the elements given in I.B.V.S., No. 92, Min = JD⊙ 2435632.603 + $3^d.3909547$ E.

2/ Reduced by Kwee - van Woerden method. The probable error of the time of minimum is ± $0^d.0014$.

3/ O - C's were computed from the elements given in Sky and Tele., 25, 5, 277

4/ Time of minimum determined from 19 observations on J.D. 38908^+ and 14 observations on 38929^+.

5/ O - C's were computed from the elements given in Sky and Tele., 26, 5, 264.

COMMISSION 27 OF THE I.A.U.

INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 112

Konkoly Observatory
Budapest
1 November 1965

CURRENT ELEMENTS FOR RZ CASSIOPEIAE

Approximately 500 visual and 35 photoelectric timings of minima were used by the writer to examine the period of RZ Cassiopeiae between 1950 and 1965[1]. Residuals indicated that the star's period over this interval averaged about 88×10^{-7} day less than that given by Parenago[2], $1^d.1952519$.

The residuals defined four distinct slopes to the O - C curve. The most recent change began in 1960, after which the period of RZ Cassiopeiae was $1^d.1952472$. To represent recent minima, these elements have been adopted,

$$\text{Min} = \text{JD } 2437143.9886 + 1^d.1952472\ E.$$

Residuals of recent visual normals[1] to Parenago's elements[2] and to the above elements follow.

JD nor.min. + 240000	E_P	O - C P	E_R	O - C R
37171.4786	+16,579	-0.0260	+23	-0.0007
37316.1062	16,700	-0.0238	144	+0.0020
37540.8117	16,888	-0.0257	332	+0.0010
37618.5045	16,953	-0.0243	397	+0.0028
37893.4099	17,183	-0.0268	627	+0.0013
38008.1540	17,279	-0.0269	723	+0.0017
38285.4454	17,511	-0.0339	955	-0.0043
38360.7505	17,574	-0.0297	1,018	+0.0003
38629.6798	17,799	-0.0321	1,243	-0.0011
38732.4696	+17,885	-0.0339	+1,329	-0.0025

1. L.J. Robinson, submitted for publication in Variable Stars.
2. P.P. Parenago, Variable Stars, 9, 2, 125, 1952.

L.J. ROBINSON
"Sky and Telescope"
49 Bay State Rd.
Cambridge, Mass. USA.

KFKI 2339

COMMISSION 27 OF THE I.A.U.

INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 113

Konkoly Observatory
Budapest
8 November 1965

SUPERNOVA $2^h 20.^m 8 + 30°50'$ 1855.0

Two long exposed plates, taken with the Schmidt Camera 1340/2000/4000 mm of Karl-Schwarzschild-Observatory on October 23/24, show the Supernova as a star of $18.^m5$, about $2.^m5$ fainter than on the Sonneberg discovery plates of Sep. 21-25.

C. HOFFMEISTER
Sonneberg Observatory

THE SUPERNOVA IN NGC 3631

This supernova in NGC 3631 announced by Paul Wild in IAU Circ. 1930 could be observed on plates taken on 1965 October 23 and 25 with the 400-mm-astrograph (f = 1600 mm) of Sonneberg Observatory. Magnitudes have been obtained by comparison with S.A. 13 (Mt.-Wilson-system):

1965 October 23	J.D. 243 9057.6	$16.^m0$
25	J.D. 243 9059.6	16.2

The position of the supernova is 65" north and 40" west of the nucleus of the Sc-type-galaxy.

K. LÖCHEL
Sonneberg Observatory

Készült a KFKI Kiadói Csoportjában. Munkaszám 2349.

COMMISSION 27 OF THE I.A.U.

INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 114

Konkoly Observatory
Budapest
11 November 1965

MINIMA OF ECLIPSING VARIABLES

This report continues the one in IBVS 111, and contains 63 observed minima of 17 eclipsing variable stars. All are visual timings reduced by the tracing-paper method [1], except where noted. Elements in the 1958 General Catalogue of Variable Stars were used to compute O - C's unless otherwise specified. The number of estimates used for each minimum is given under n.

J.D. ⊙ (+24[illegible]000)	E	O - C	n	Observer
RT Andromedae				
38965.801	+23,606	-0^d.015	13	A. Johnson
38972.717	+23,617	-0.017	8	A. Johnson
38984.650	+23,636	-0.024	11	D. Williams
38989.690	+23,644	-0.026	12	T. Hering
38999.755	+23,660	-0.024	19	R. Swanberg
39004.792	+23,668	-0.018	14	D. Loring
39011.706	+23,679	-0.022	17	R. Swanberg
39016.738	+23,687	-0.022	17	R. Swanberg
39028.687	+23,706	-0.022	14	R. Swanberg
39033.714	+23,714	-0.027	17	R. Swanberg
XZ Andromeda				
39000.870	+4,507	+0.046	21	M. Baldwin
39011.730	+4,515	+0.048	24	R. Swanberg
CX Aquarii				
39006.657	+22,798	+0.037	11	R. Morska

J.D.⊙ (+2400000)	E	O - C	n	Observer
OO Aquilae				
38960.631	+9,341.5	-0.d015	13	R. Monske
38961.637	+9,343.5	-0.022	13	R. Monske
38962.656	+9,345.5	-0.017	14	R. Monske
38963.670	+9,347.5	-0.017	13	R. Monske
38967.720	+9,355.5	-0.021	14	R. Monske
38970.757	+9,361.5	-0.025	13	R. Monske
38972.791	+9,365.5	-0.018	12	R. Monske
38996.614	+9,413.5	-0.014	10	R. Monske
38997.623	+9,414.5	-0.019	12	R. Monske
38999.647	+9,418.5	-0.022	11	R. Monske
39000.660	+9,420.5	-0.023	13	D. Loring
39001.673	+9,422.5	-0.023	13	W. Grady
39001.682	+9,422.5	-0.014	11	M. Baldwin
39002.693	+9,424.5	-0.017	13	R. Monske
39003.704	+9,426.5	-0.020	12	W. Grady
V346 Aquilae				
38987.630	+6,922	-0.014	11	R. Monske
Y Camelopardalis				
38763.816	+4,335	-0.023	16	M. Baldwin
SV Camelopardalis				
38972.738	+11,272	-0.014	10	A. Johnson
38997.652	+11,314	-0.009	11	F. Sanner
RZ Cassiopeiae				
38640.4339 [2]	+17,808	-0.0352	21pe	A. Mak [3]
39027.695	+18,132	-0.036	16	R. Swanberg
39033.673	+18,137	-0.034	19	R. Swanberg
ZZ Cygni				
38987.629	+28,396	-0.024	16	L. Hazel

J.D.⊙ (+2400000)	E	O - C	n	Observer
Z Draconis				
38958.746	+4,191	+0.018	12	R. Monske
38972.675	+4,202	+0.015	13	R. Monske
38987.603	+4,213	+0.011	11	R. Monske
TW Draconis				
38957.678	+1,806	+0.019	24	R. Monske
AI Draconis				
38962.697	+11,949	+0.003	11	R. Monske
38992.679	+11,974	+0.015	13	R. Monske
SZ Herculis [4]				
38929.788	+2,204	+0.009	10	T. Cragg
38938.783	+2.215	+0.005	16	L. Kalish
38961.700	+2,243	+0.016	12	R. Monske
38970.700	+2,254	+0.017	12	R. Monske
38997.693	+2,287	+0.013	12	R. Monske
39002,600	+2.293	+0.011	12	R. Monske
39006.691	+2,298	+0.012	12	R. Monske
SW Lacertae				
38992.760	+48,703.5	0.028	12	R. Monske
38993.711	+48,706.5	+0.017	19	T. Hering
38995.646	+48,712.5	+0.027	18	T. Hering
38996.607	+48,715.5	+0.026	17	T. Hering
39002.697	+48,734.5	+0.023	13	R. Monske
39023,388	+48,799.0	+0.028	12	G. Comello
39023.544	+48,799.5	+0.023	15	G. Comello
UV Leonis				
38797.774	+9,669	-0.008	12	M. Baldwin

J.D.⊙ (+2400000)	E	O - C	n	Observer
FL Lyrae				
38957.769	+2,342	-0^d.003	16	R. Monske
38957.764	+2,342	-0.008	25	L. Hazel
38931.623	+2,330	-0.011	25	L. Hazel
39005.681	+2,364	-0.010	15	R. Monske
V505 Sagittarii				
38957.709	+4,601	-0.012	10	R. Monske
38970.713	+4,612	-0.019	12	R. Monske

This work is sponsored by the American Association of Variable Star Observers, with David B. Williams as program coordinator. The reductions are made by the writer in collaboration with Joseph Ashbrook, except in a few cases which were checked.

1) See AA(c) , 4, 81.

2) Reduced by Kwee-van Woerden method. The probable error of the time of minimum is ± 0^d.0001.

3) Individual observations were published in "Observations of Variable Stars", Report No. 7, Kapteyn Astronomical Laboratory, Groningen, July 1965.

4) O - C's were computed from the elements given in Sky and Tele., 25, 5, 277.

L.J. ROBINSON
"Sky and Telescope"
49 Bay State Rd.
Cambridge, Mass. 02138
USA

Készült a KFKI Kiadói Csoportjában. Munkaszám KFKI 2366

KFKI 2366

COMMISSION 27 OF THE I.A.U.

INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 115

Konkoly Observatory
Budapest
10 November 1965

BRIGHT SOUTHERN BV-STARS

On sky patrol plates of Bamberg Southern-Station 48 further stars were found whose variability seems to be real as can be seen from the material available till now.

BV 710 = 1900: $3^h58^m56^s.0$ $-20°6'.5$ Ident.Chart No.1 $A_{pg} = 0^m.3$

BV 711 = CoD $-59°$ 1531 ($8^m.0$) = HD 56 146 (B8) $A_{pg} = 0^m.2$

BV 712 = CoD $-51°$ 3506 ($9^m.5$) = HD 78 654 (Ao) $A_{pg} = 0^m.2$

BV 713 = CoD $-57°$ 2511 ($8^m.4$) = HD 79 368 (B9) $A_{pg} = 0^m.3$

BV 714 = CoD $-49°$ 4464 (10^m) $A_{pg} = 0^m.3$

BV 715 = BD $-6°$ 2990 ($9^m.8$) $A_{pg} = 0^m.6$

Min = 243 8504.130 + $13^d.07$. E

EB Light-curve Fig.1

BV 716 = CoD $-37°$ 6099 ($8^m.0$) = HD 85 207 (F2) $A_{pg} = 0^m.5$

Min = 243 8441.425 + $8^d.1070$. E

EB Light-curve Fig.2

BV 717 = Cap $-38°$ 3763 ($10^m.3$) $A_{pg} = 0^m.4$

BV 718 = CoD $-32°$ 7222 ($9^m.5$) $A_{pg} = 1^m.1$

= K3T 1596 = S 4931

Min = 243 8442.050 + $7^d.151$. E

EB Light-curve Fig.3

BV 719 = CoD $-70°$ 728 ($9^m.2$) = HD 91 908 (G) $A_{pg} = 0^m.3$

BV 720 = Cap $-60°$2073 ($9^m.4$) $A_{pg} = 0^m.3$

= K3T 1629 = S 4936

BV 721 = CoD $-32°$7790 ($9^m.0$) $A_{pg} = 0^m.3$

BV 722 = CoD $-26°$8342 ($6^m.4$) = HD 96 314 (B8) $A_{pg} = 0^m.3$

Min = 243 7483.375 + $16^d.538$. E

EB Light-curve Fig.4

BV 723 = Cap $-55°$4211 ($10^m.0$) $A_{pg} = 0^m.2$

BV 724 = CoD $-57°$3909 ($8^m.8$) = HD 99 218 (Ao) $A_{pg} = 0^m.2$

BV 725 = CoD $-40°$6738 ($9^m.0$) = HD 99 628 (B9) $A_{pg} = 0^m.8$

Min = 243 8493.450 + $6^d.490$. E

EB Light-curve Fig.5

BV 726 = CoD $-65°$1151 ($10^m.2$) $A_{pg} = 0^m.2$

BV 727 = 1900: $11^h44^m37^s.7$ $-62°30'.5$ Ident.Chart No.2 $A_{pg} = 0^m.3$

BV 728 = 1900: $11^h44^m44^s.6$ $-7°45'.1$ Ident.Chart No.3 $A_{pg} = 0^m.4$

BV 729 = CoD $-62°580$ ($9^m.3$) $A_{pg} = 0^m.2$

BV 730 = Cap $-62°2676$ ($10^m.2$) $A_{pg} = 0^m.2$

BV 731 = CoD $-60°4197$ ($9^m.7$) = HD 108 627 (Ao) $A_{pg} = 0^m.2$

BV 732 = CoD $-59°4427$ ($9^m.3$) = HD 111 505 (B5) $A_{pg} = 0^m.2$

BV 733 = 1900: $12^h52^m45^s$ $-66°11'.0$ Ident.Chart No.4 $A_{pg} = 0^m.3$

BV 734 = 1900: $12^h56^m19^s.3$ $-17°7'.6$ Ident.Chart No.5 $A_{pg} = 1^m.0$

BV 735 = CoD $-36°8539$ ($8^m.5$) = HD 116 447 (G5) $A_{pg} = 0^m.2$

BV 736 = 1900: $13^h19^m4^s$ $-39°12'.6$ Ident.Chart No.6 $A_{pg} = 0^m.2$

BV 737 = CoD $-46°8641$ ($9^m.8$) $A_{pg} = 0^m.3$

BV 738 = CoD $-36°8875$ ($9^m.7$) $A_{pg} = 0^m.5$

BV 739 = CoD $-24°11\ 322$ ($7^m.4$) = HD 123 767 (F5) $A_{pg} = 0^m.2$

BV 740 = CoD $-61°4383$ ($9^m.3$) = HD 126 344 (B9) $A_{pg} = 0^m.9$
Min = 243 8520.450 + $3^d.025$. E
EB Light-curve Fig.6

BV 741 = CoD $-53°5598$ ($9^m.5$) = HD 127 329 (Ao) $A_{pg} = 0^m.4$

BV 742 = CoD $-73°994$ ($8^m.2$) = HD 128 575 (Go) $A_{pg} = 0^m.3$

BV 743 = CoD $-53°5654$ ($10\ 3/4^m$) $A_{pg} = 0^m.6$
Min = 243 8475.440 + $5^d.1755$. E
EB Light-curve Fig.7

BV 744 = CoD $-57°5671$ ($7^m.8$) = HD 129 125 (Ko) $A_{pg} = 0^m.4$

BV 745 = CoD $-56°5577$ ($10\ 1/4^m$) $A_{pg} = 0^m.3$

BV 746 = CoD $-57°5693$ ($8^m.2$) = HD 129 860 (A2) $A_{pg} = 0^m.3$

BV 747 = BD $-6°4068$ ($7^m.8$) = HD 129 903 (Go) $A_{pg} = 0^m.4$

BV 748 = CoD $-35°9776$ (10^m) $A_{pg} = 0^m.2$

BV 749 = CoD $-34°10\ 176$ ($9^m.0$) = HD 133 674 (Ao) $A_{pg} = 0^m.5$

BV 750 = CoD $-41°9529$ (10^m) *)
= K3π 2264 ($11^m.5$ - $13^m.5$)

BV 751 = CoD $-63°1065$ ($8^m.5$) = HD 134 528 (Mb) $A_{pg} = 0^m.3$

BV 752 = CoD $-52°6613$ ($8^m.4$) = HD 136 739 (G5) $A_{pg} = 0^m.3$

BV 753 = 1900: $15^h39^m37^s$ $-66°25'.8$ Ident.Chart No.7 $A_{pg} = 0^m.2$

BV 754 = CoD $-28°12\ 005$ (10^m) *)

BV 755 = CoD $-40°10\ 975$ ($6^m.5$) = HD 152 667 (Bo) $A_{pg} = 0^m.2$

BV 756 = CoD $-38°11\ 906$ ($8^m.3$) = HD 157 972 (B9) $A_{pg} = 0^m.3$

BV 757 = CoD $-34°12\ 602$ ($9^m.9$) *)

* = Minimum below plate limit $13^m.0$

Bamberg, Remeis-Observatory
2 November 1965

W. STROHMEIER
R. KNIGGE H. OTT

BV 715 = BD -06° 2990 ($9^m.8$) ; photometric light-curve (Fig. 1).

Min = JD 243 8504.130 + $13^d.07$. E, EB, Ampl. $0^m.74$

Comparison stars:

BD -06° 2993 ($9^m.4$) $10^m.20$ estimated

BD -06° 2998 (9.5) 11.00 estimated

Individual minima (fainter than $11^m.20$)

Minima	E	O - C
243 8471.360	- 2.5	$-0^d.115$
8817.404	+24	-0.406
8818.402	24	+0.592
8824.400	24.5	+0.055
8844.338	26	+0.388
8883.217	29	+0.057

Tentative derivation of light elements.

BV 716 = CoD -37° 6099 ($8^m.0$) = HD 85 207 (F2) ; photometric light-curve (Fig. 2)

Min = JD 243 8441.425 + $8^d.1070$. E, EB, Ampl. $0^m.52$

Comparison-stars:

Cape -37° 3796 $8^m.24$
Cape -37° 3773 9.30 (values from Cape catalogue)

Individual minima (fainter than $9^m.10$)

Minima	E	O - C
243 8441.442	0	$+0^d.017$
8502.261	7.5	+0.033
8814.402	46	+0.055
8818.402	46.5	+0.002
8822.400	47	-0.054
8879.219	54	+0.016
8883.217	54.5	-0.039
8887.218	55	-0.092

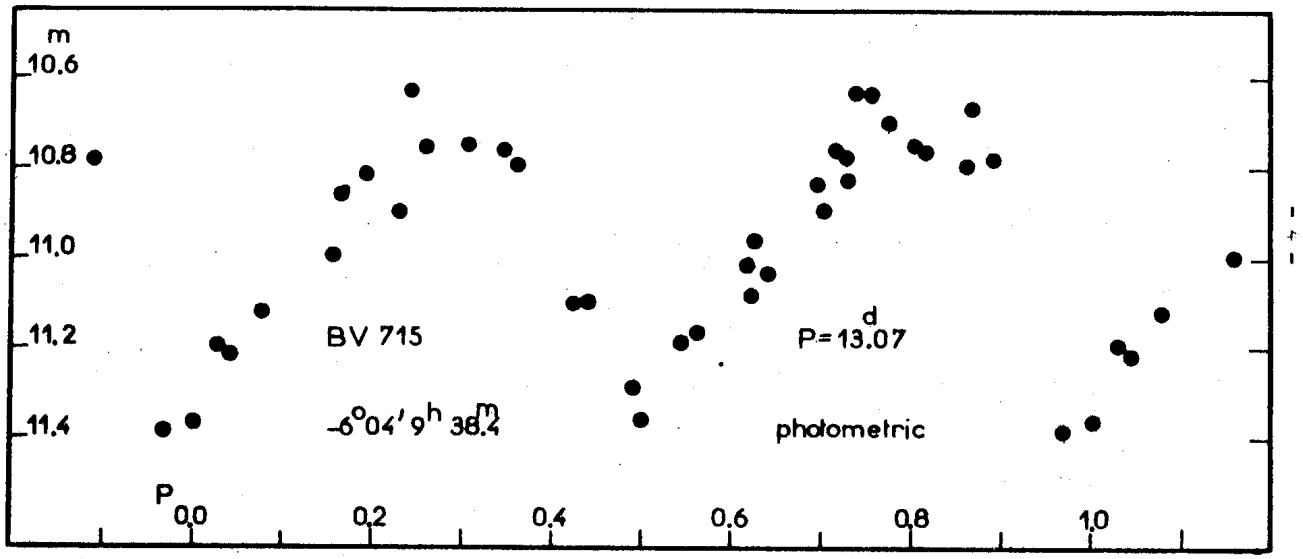

m
10.6
10.8
11.0
11.2
11.4
BV 715
P=13.07d
-6°04' 9h 38.2m
photometric
P
0.0
0.2
0.4
0.6
0.8
1.0

Fig. 1

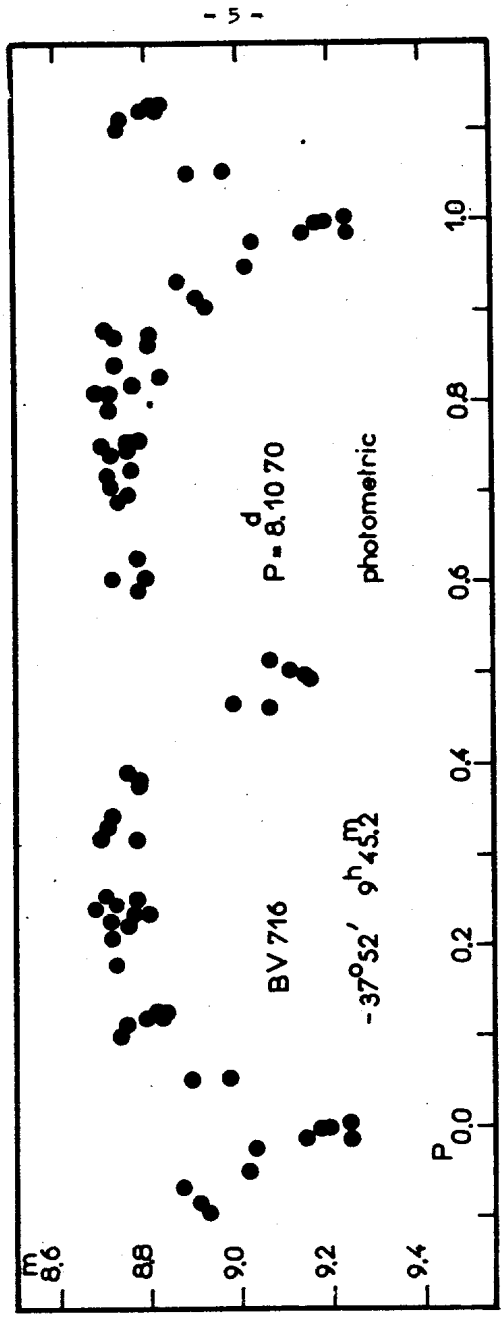

m
8.6
8.8
9.0
9.2
9.4
P
0.0
0.2
0.4
0.6
0.8
1.0
BV 716
-37°52'
9h45.2m
P = 8.d1070
photometric

Fig. 2

BV 718 = CoD -32° 7222 ($9^m.5$) = Cape -32° 2863 ($9^m.7$) ; S = 4931, K3V 1596.
photometric light-curve (Fig. 3)

Min = JD 243 8442.050 + $7^d.151$. E, EB, Ampl. $1^m.20$

Comparison stars:

Cape -33° 2865	$9^m.60$ estimated
Cape -32° 2864	10.30 estimated

Individual minima (fainter than $10^m.60$)

Minima	E	O - C
243 8499.265	8	$+0^d.007$
8828.360	54	+0.156
8878.222	61	-0.039

BV 722 = χ^2 Hya = Cape -26° 4440 ($5^m.7$) = HD 96 314 (B8) ; photometric light-curve (Fig. 4)

Min = JD 243 7483.375 + $16^d.538$. E, EB, Ampl. $0^m.32$

Comparison stars:

HD 96 819 (A_2)	$5^m.50$	(Cousins' catalogue)
HD 96 723 (A0)	6.51	

Individual minima (fainter than $5^m.80$)

Minima	E	O - C
243 7483.197 *	0	$-0^d.178$
8442.485	58	-0.094
8475.375	60	-0.280
8516.255	62,5	-0.745
8517.256	62.5	+0.256
8525,250	63	-0.019
8814.377 *	80.5	-0.307

* = minima by Cousins (information by letter, October 1965) .

BV 722 is already known to be a variable from "Photoelectric Magnitudes and Colours of Southern Stars" by A.W.J. Cousins and R.H. Stoy. Also D.M. Popper has informed us, that this star had been found many years ago by Lick astronomers to have a variable velocity of large range.

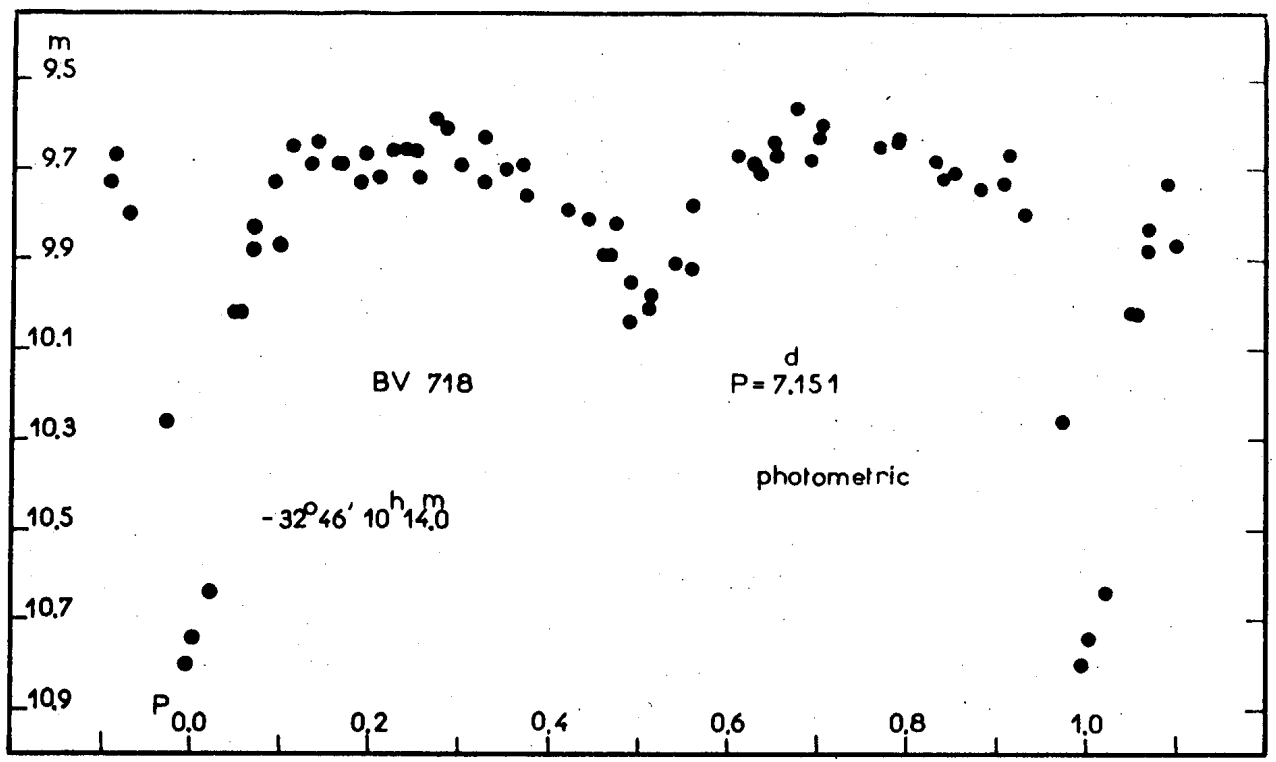


Fig. 3

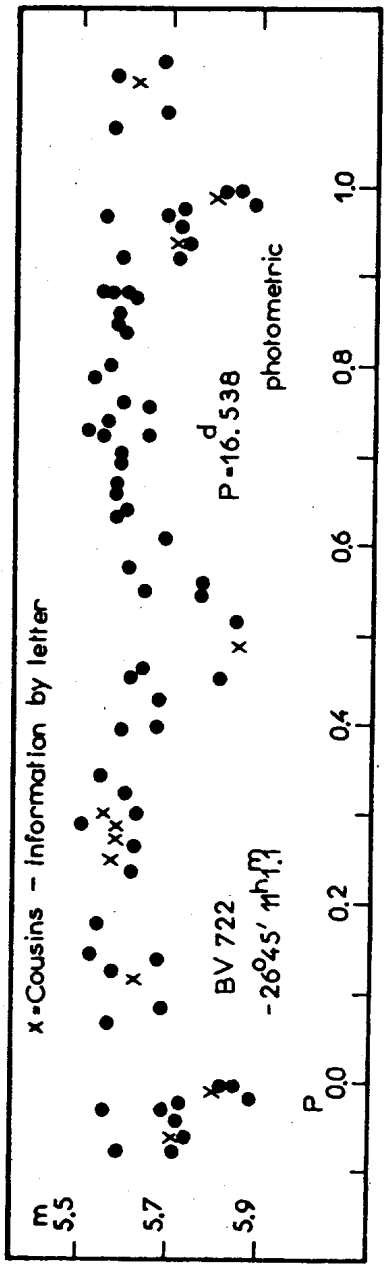

x-Cousins - information by letter
m
5.5
5.7
5.9
P
0.0
0.2
0.4
0.6
0.8
1.0
BV 722
-26°45' 11h11m
P=16.d538
photometric

Fig. 4

BV 725 = CoD -40° 6738 ($9^m.0$) = HD 99 628 (B9) ; photometric light-curve (Fig. 5)

Min = JD 243 8493.450 + $6^d.490$. E, EB, Ampl. $0^m.80$

Comparison stars:

HD 99 432 (A0) $9^m.50$
HD 99 655 (G5) 10.30 (values of the HD-Catalogue)

Individual minima fainter than $9^m.90$

Minima	E	O - C
243 8490.316	-0.5	$+0^d.111$
8493.319	0	-0.131
8503.306	+1,5	+0.121
8516.255	3.5	+0.090
8519.254	4	-0.156
8529.248	5.5	+0.103
8772.548	43	+0.028
8824.444	51	+0.004
8899.213	62.5	+0.138
8902.212	63	-0.108

BV 740 = CoD -61° 4383 ($9^m.3$) = HD 126 344 (B9) ; photometric light-curve (Fig. 6)

Min = JD 243 8520.450 + $3^d.025$. E, EB, Ampl. $0^m.94$

Comparison stars:

HD 126 791 (A0) $8^m.55$
HD 126 843 (B9) 9.25 (mean values from Harvard and Cape catalogues)

Individual minima (fainter than 9.75)

Minima	E	O - C
243 8520.386	0	$-0^d.064$
.431	0	-0.019
8605.208	28	+0.058
8877.402	118	+0.002
.446	118	+0.046
8880.423	119	-0.002
8883.409	120	-0.041

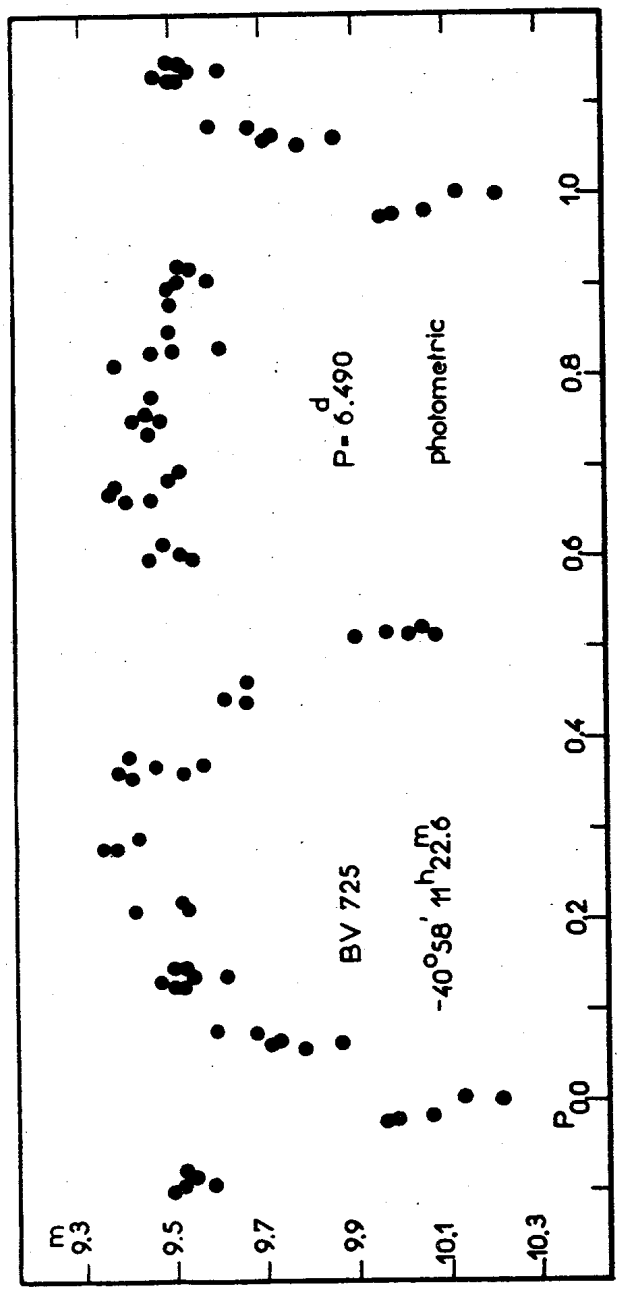

m
9.3
9.5
9.7
9.9
10.1
10.3
P
0.0
0.2
0.4
0.6
0.8
1.0
BV 725
-40°58' 11h22.6m
P= 6.d490
photometric

Fig.5

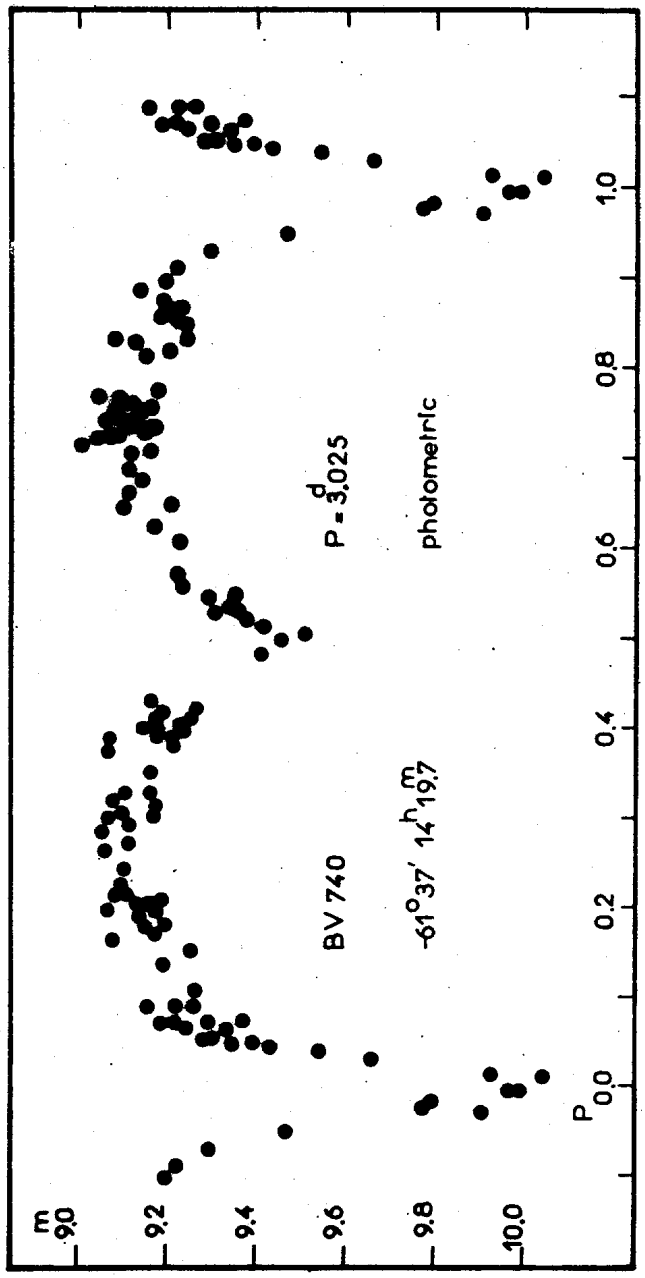

m
9.0
9.2
9.4
9.6
9.8
10.0
P
0.0
0.2
0.4
0.6
0.8
1.0
BV 740
-61°37' 14h19.7m
P = 3,d025
photometric

Fig. 6

BV 743 = CoD -53° 5654 ($10\ 3/4^m$) = Cape - 53° 6056 ($9^m.6$)
photometric light-curve Fig. 7

Min = JD 243 8475.440 + $5^d.1755$. E, EB, Ampl. $0^m.66$

Comparison stars:

Cape -53° 6055 $10^m.00$ estimated
Cape -53° 6048 10.40 estimated

Individual minima (fainter than $10^m.50$)

Minima	E	O - C
243 8475.501	0	+0.061
.553	0	+0.113
8501.438	5	+0.120
8584.246	21	+0.120
8884.407	79	+0.103
8915.302	85	-0.056
.349	85	-0.009

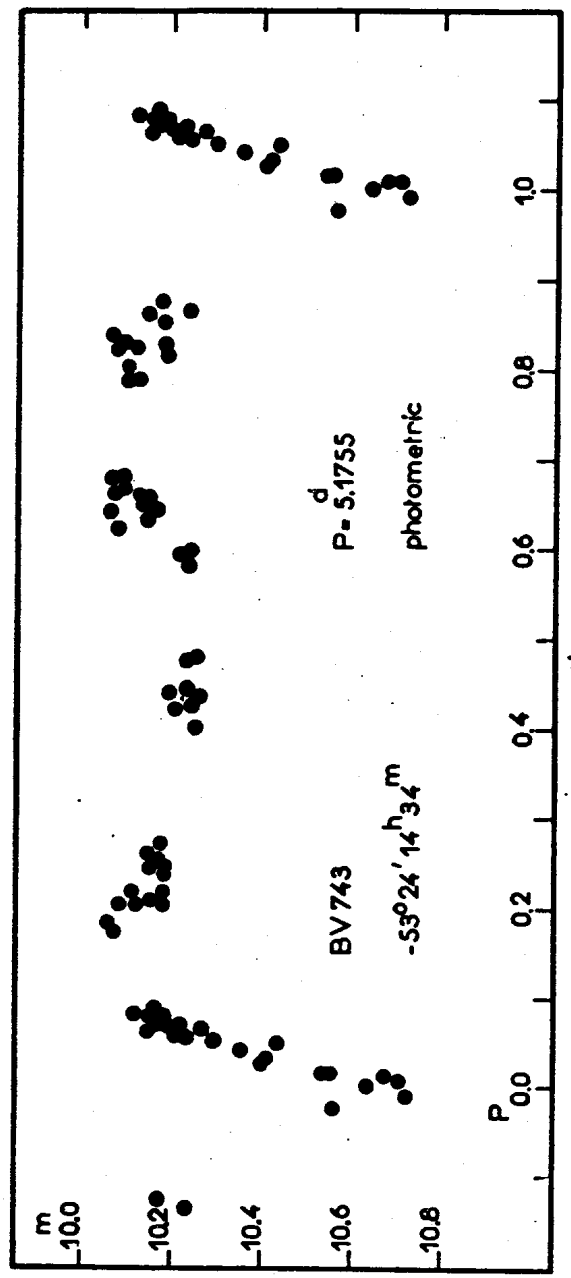
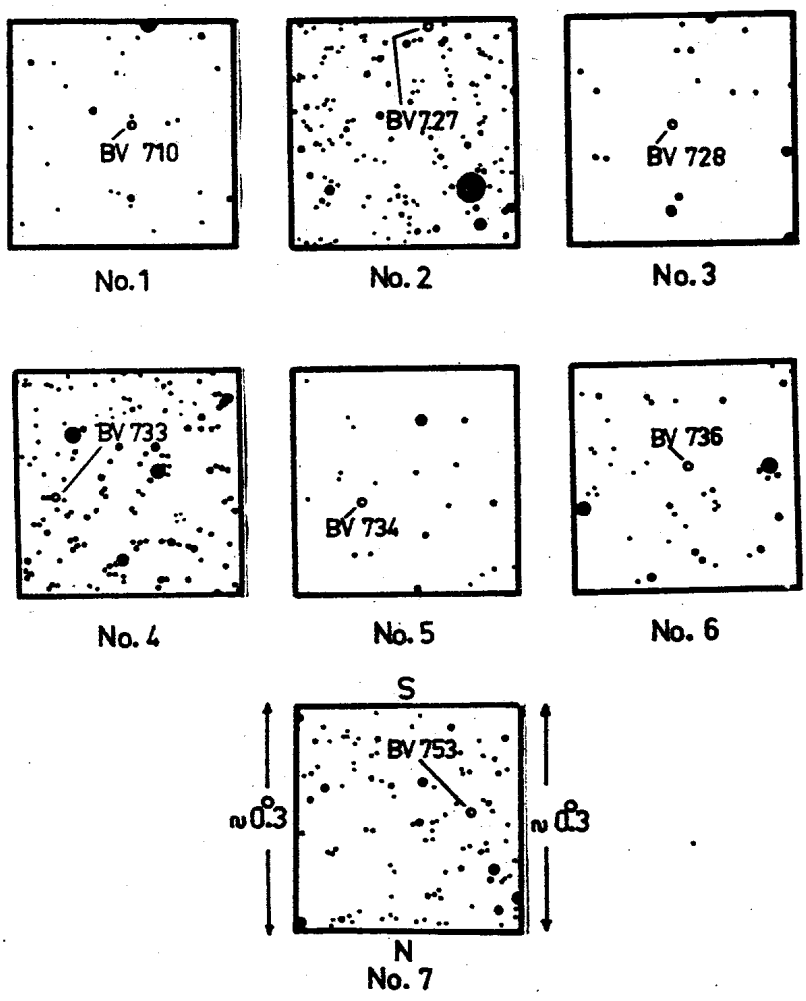

m
10.0
10.2
10.4
10.6
10.8
P
0.0
0.2
0.4
0.6
0.8
1.0
BV 743
-53°24'
14h34m
P = 5.1755 d
photometric

Fig. 7

IDENT. CHARTS



Készült a Központi Fizikai Kutató Intézet Kiadói Csoportjában

Munkaszám: 2366

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 116

Konkoly Observatory
Budapest
22 November 1965

OBSERVATIONS OF AL CAM

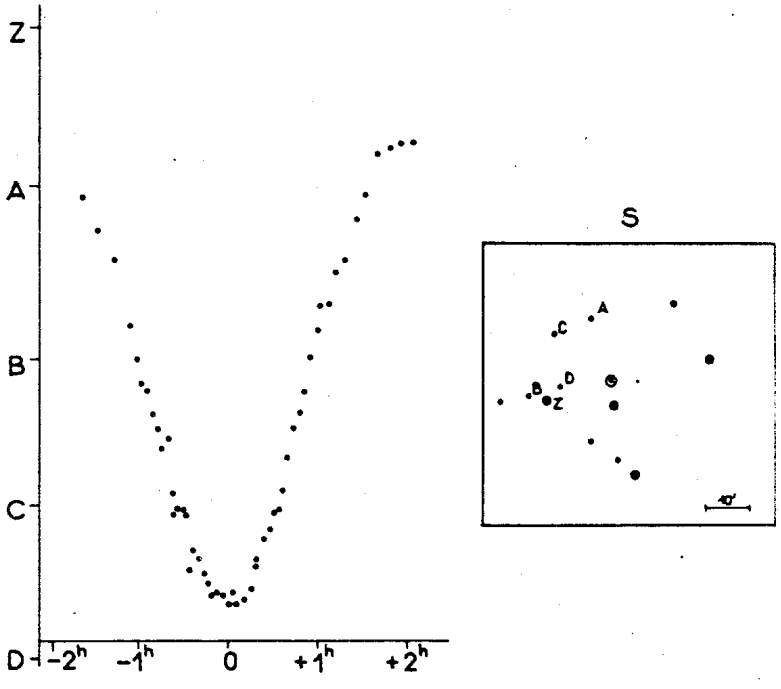
Observations of AL Cam = BV 38 = BD + 81°382 by BAV-members in 1965 September and October show large negative $O - C_1$ against the elements given by Strohmeier in KVB 23, 1958:

$$\text{Min} = \text{JD } 24\ 26411.511 + 1^d.328\ 343 \cdot E$$

Our minima, listed in the following table, together with the observations in KVB23 lead to the new elements:

$$\text{Min} = \text{JD } 24\ 26411.523 + 1^d.328\ 333\ 35 \cdot E$$

$O - C_2$ are the deviations from the new elements.



The lightcurve bases on visual observations by W.Braune, with dots representing sliding averages of 4 individual estimates. Comparison stars are marked on the acoompanying chart. The time of minimum is

$$t_{min} = JD\ 24\ 39029.362 \pm 0^d.001$$

"D" lasts about 4 hours, but "d" is uncertain.

Minimum JD 2439....	E	$O - C_1$	$O - C_2$	Obs.
029.356	+9499	$-0^d.086$	$-0^d.005$	Eck
029.365	"	-0.076	+0.004	Br
033.347	9502	-0.079	+0.001	Br
053.272	9517	-0.079	+0.001	Br
057.254	9520	-0.082	-0.002	Br
057.259	"	-0.077	+0.003	Eck
057.263	"	-0.074	+0.007	Hü

Observers: W.Braune (Br), W.Eckert (Eck), J.Hübscher (Hü).

Berliner Arbeitsgemeinschaft
für Veränderliche Sterne /BAV/
1 Berlin 48, Buckower Chaussee 15
Germany

W. QUESTER, W. BRAUNE

Készült a Központi Fizikai Kutató Intézet Kiadói Csoportjában.
Munkaszáma: 2378

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 117

Konkoly Observatory
Budapest
27 December 1965

FAINT SOUTHERN BV-STARS

On sky patrol plates, taken with the 10 inch Metcalf of the Boyden Observatory, South Africa, further stars were found whose variability seems to be real as can as be seen from the material available till now.- The 10 inch Metcalf has been at the disposal of the Bamberg Observer by courtesy of the Boyden Observatory.

BV 758 = 1900: $7^h34^m08^s$ $-85^o29'.7$ Ident. Chart No. 1 $A_{pg} = 0^m.4$
BV 759 = 1900: $7^h47^m04^s$ $-84^o18'.1$ Ident. Chart No. 2 $A_{pg} = 0^m.6$
BV 760 = 1900: $9^h53^m57^s$ $-79^o06'.4$ Ident. Chart No. 3 $A_{pg} = 0^m.6$
BV 761 = 1900: $10^h28^m26^s$ $-87^o07'.4$ Ident. Chart No. 4 $A_{pg} = 0^m.3$
BV 762 = 1900: $10^h49^m37^s$ $-83^o36'.7$ Ident. Chart No. 5 $A_{pg} = 0^m.5$
BV 763 = 1900: $11^h00^m17^s$ $-74^o22'.8$ Ident. Chart No. 6 $A_{pg} => 1^m.1$
Min = JD 243 8877.325 + $2^d.639$. E min = below the limit
EA Light-curve Fig. 1

BV 764 = Cape -86^o0258 ($10^m.1$) = KT31866 $A_{pg} = 0^m.5$
BV 765 = 1900: $12^h54^m12^s$ $-79^o11'.2$ Ident. Chart No. 7 $A_{pg} = 1^m.0$
Max = JD 243 8472.320 + $1^d.238$. E
Cepheid Light-curve Fig. 2

BV 766 = 1900: $12^h54^m55^s$ $-76^\circ05'.4$ Ident. Chart No. 8 $A_{pg} = 0^m.7$

BV 767 = 1900: $12^h58^m02^s$ $-83^\circ15.9$ Ident. Chart No. 9 $A_{pg} = 0^m.6$

BV 768 = 1900: $13^h13^m26^s$ $-85^\circ21.1$ Ident. Chart No. 10 $A_{pg} = 0^m.3$

BV 769 = 1900: $13^h42^m52^s$ $-79^\circ31.1$ Ident. Chart No. 11 $A_{pg} = 0^m.3$

BV 770 = 1900: $13^h53^m22^s$ $-81^\circ07.1$ Ident. Chart No. 12 $A_{pg} = 0^m.4$

BV 771 = 1900: $14^h39^m02^s$ $-79^\circ15.6$ Ident. Chart No. 13 $A_{pg} = 0^m.9$

Max = JD 243 8877.345 + $1^d.4236$. E

Cepheid Light-curve Fig. 3

BV 772 = 1900: $15^h28^m46^s$ $-87^\circ13'.6$ Ident. Chart No. 14 $A_{pg} = 0^m.3$

BV 773 = 1900: $17^h56^m43^s$ $-84^\circ24.6$ Ident. Chart No. 15 $A_{pg} = 0^m.4$

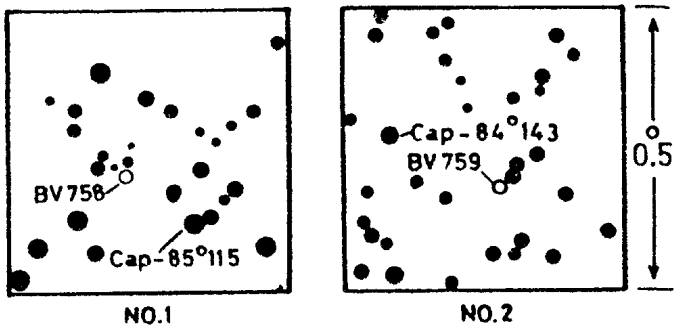
BV 774 = 1900: $21^h46^m41^s$ $-84^\circ44.0$ Ident. Chart No. 16 $A_{pg} = 0^m.6$

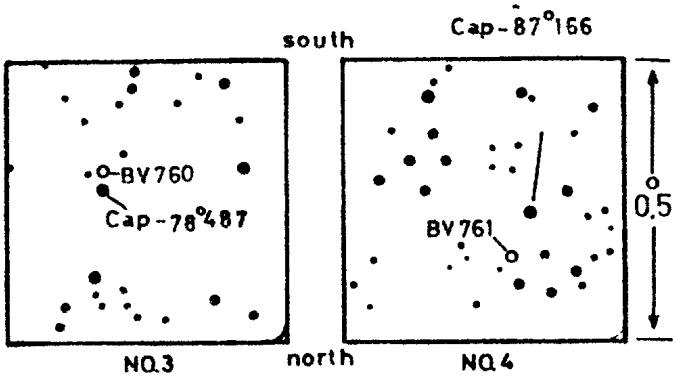
December 1965

R. KNIGGE

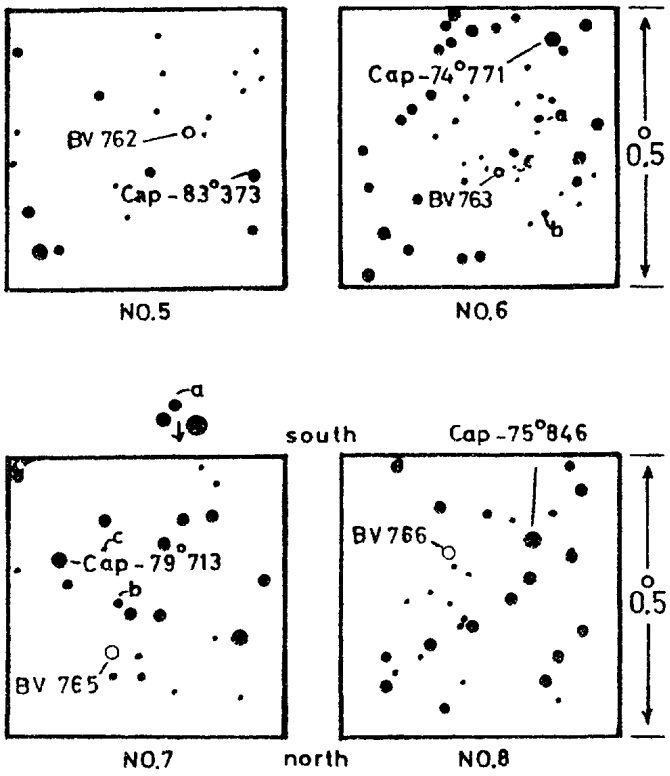
Remeis-Observatory
Bamberg

IDENT. CHARTS

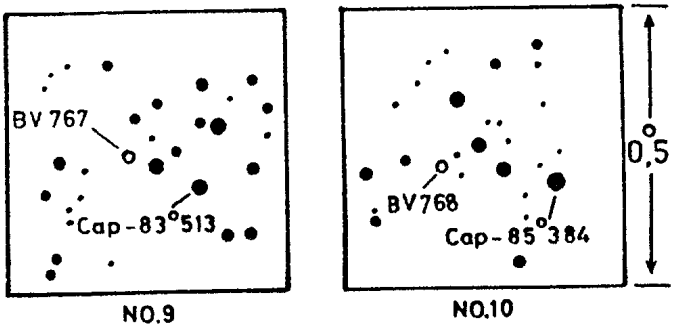


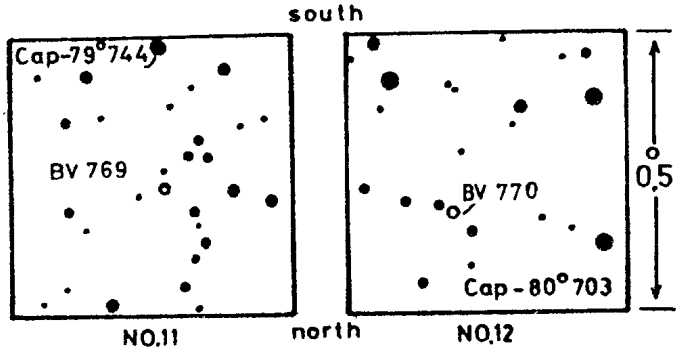


IDENT. CHARTS

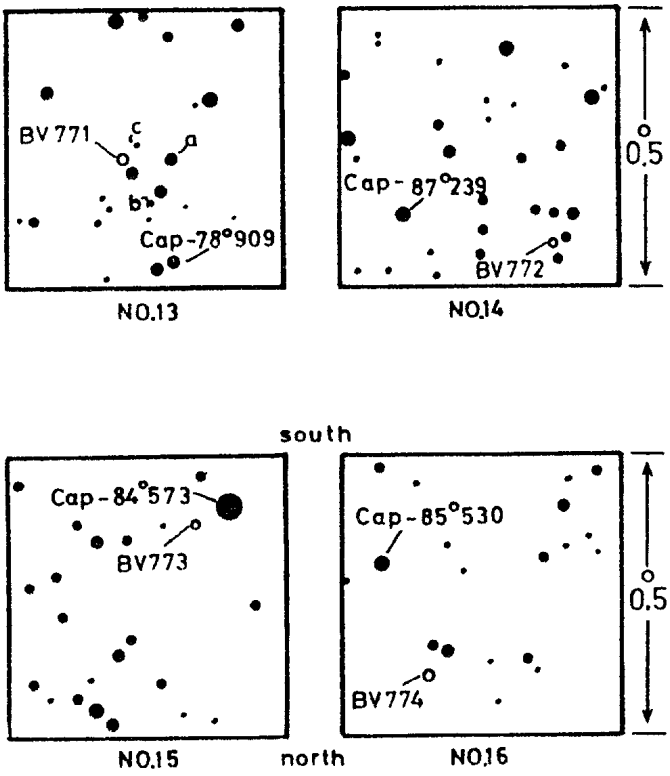


IDENT. CHARTS





IDENT. CHARTS



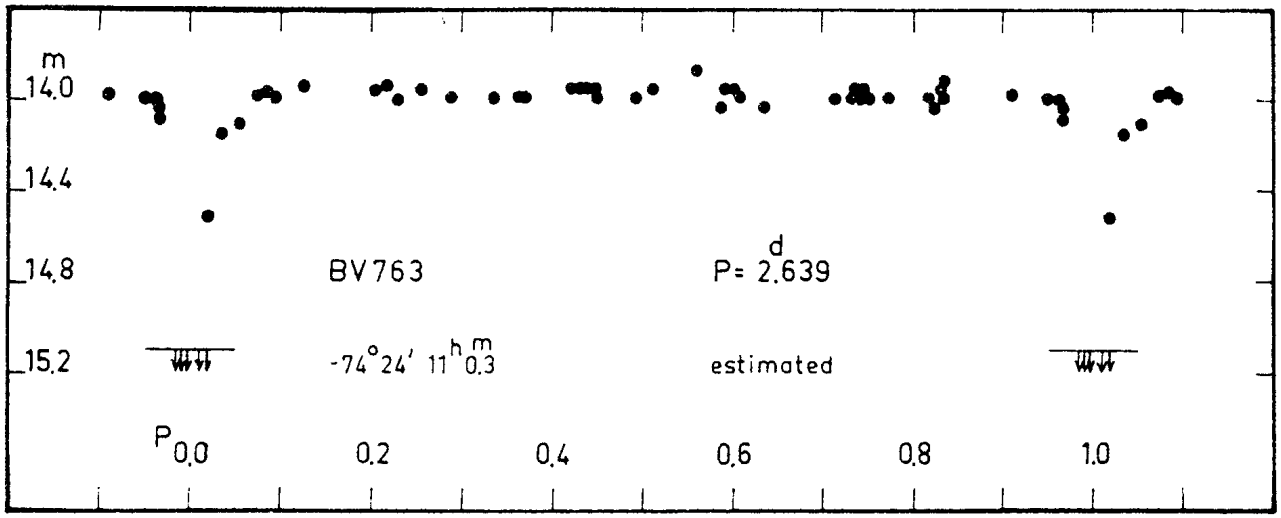

m
14.0
14.4
14.8
15.2
BV763
P= 2.639 d
-74°24' 11h0.3m
estimated
P0.0
0.2
0.4
0.6
0.8
1.0

Fig. 1

BV 763 = 1900: $11^h00^m17^s$ $-74^\circ22'.8$; Light-curve Fig. 1

Min = JD 243 8877.325 + 2.639 . E, EA, Ampl. $> 1^m.1$

Comparison stars:

a = $13^m.6$ estimated
b = $14^m.2$ estimated Ident. Chart No. 6
c = $14^m.4$ estimated

Individual minima (fainter than $15^m.10$)

Minima	E	O - C
243 8877.274	0	-0.051
.297	0	-0.028
.361	0	+0.036
8885.209	3	-0.033
.274	3	+0.032

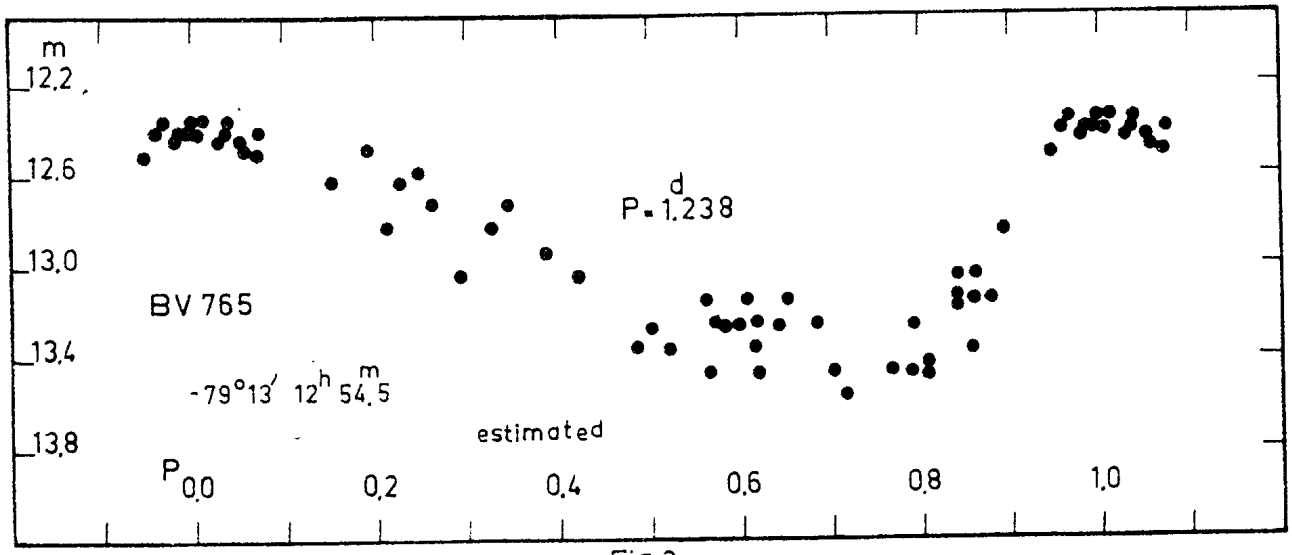

m
12.2
12.6
13.0
13.4
13.8
P 0.0
0.2
0.4
0.6
0.8
1.0
P = 1.238 d
BV 765
-79°13′ 12h 54.5m
estimated

Fig. 2

BV 765 = 1900: $12^h54^m12^s$ $-79^\circ11'.2$; Light-curve Fig. 2

Max = JD 243 8472.320 + $1^d.238$. E, Cepheid, Ampl. $1^m.0$

Comparison stars:

a = $12^m.3$ estimated
b = $12^m.6$ estimated Ident. Chart No. 7
c = $13^m.5$ estimated

Individual maxima (brighter than $12^m.50$)

Maxima	E	O - C
243 8472.339	0	+0.019
.360	0	+0.040
.382	0	+0.062
8878.338	328	-0.046
.359	328	-0.025
.403	328	+0.017
8883.319	332	-0.017
.384	332	+0.048
.406	332	+0.070
8904.355	349	-0.027
8914.281	357	-0.005
.303	357	+0.017
.324	357	+0.038

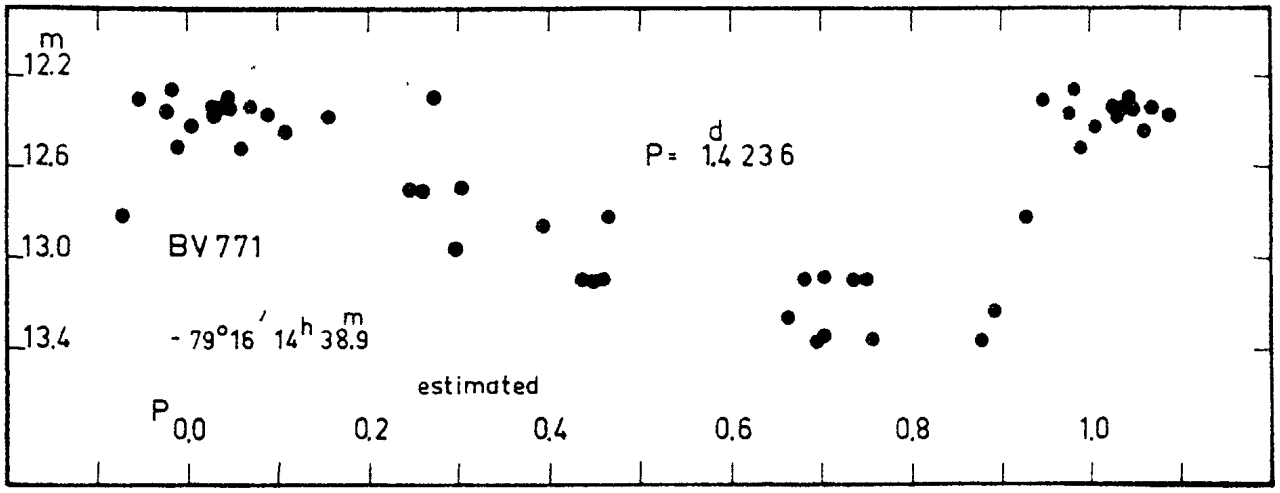

m
12.2
12.6
13.0
13.4
BV 771
- 79°16′
14h 38.9m
P= 1.4 23 6 d
estimated
P
0.0
0.2
0.4
0.6
0.8
1.0

Fig. 3

BV 771 = 1900: $14^h39^m02^s$ $-79^\circ15'.6$; Light-curve Fig. 3

Max = JD 243 8877.345 + $1^d.4236$. E, Cepheid, Ampl. $0^m.95$

Comparison stars:

a = Cape $-79^\circ788$	$10^m.0$	estimated	
b =	12.6	estimated	Ident. Chart No. 13
c =	13.6	estimated	

Individual maxima (fainter than $12^m.40$)

Maxima	E	O - C
243 8877.383	0	+0.038
.404	0	+0.059
.448	0	+0.103
8880.408	2	+0.186
8884.378	5	-0.085
.422	5	-0.041
.443	5	-0.020
8904.355	19	-0.038
.419	19	+0.026
8914.389	26	+0.031
.409	26	+0.051

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 118

Konkoly Observatory
Budapest
27 December 1965

PHOTOMETRIC LIGHT-CURVES OF SOUTHERN BV- STARS

The given magnitudes and amplitudes of the variables have to be understood in connexion with the magnitudes of the comparison stars. Because of the mean error of about 0.1 magnitudes for a single measurement a difference of this order in the depths of the primary and secondary minima cannot be discovered, therefore it may be necessary to double the period in some cases.

BV 424 = CoD $-65^{o}2086$ = HD 144 375(F_5) (Fig. 1)

Min = JD 243 8228.285 + $2^{d}.7095$. E, EB, Ampl. $0^{m}.6$ 1a

Comparison stars:

HD 144 403 (A_o)	$8^{m}.65$	(mean values of Harvard and Cape catalogues)
HD 144 560 (K_2)	$9^{m}.30$	

Individual minima (fainter than $9^{m}.40$)

Minima	E	O - C
243 8228.315	0	+0.030
8266.224	14	+0.006
8553.417	120	-0.008

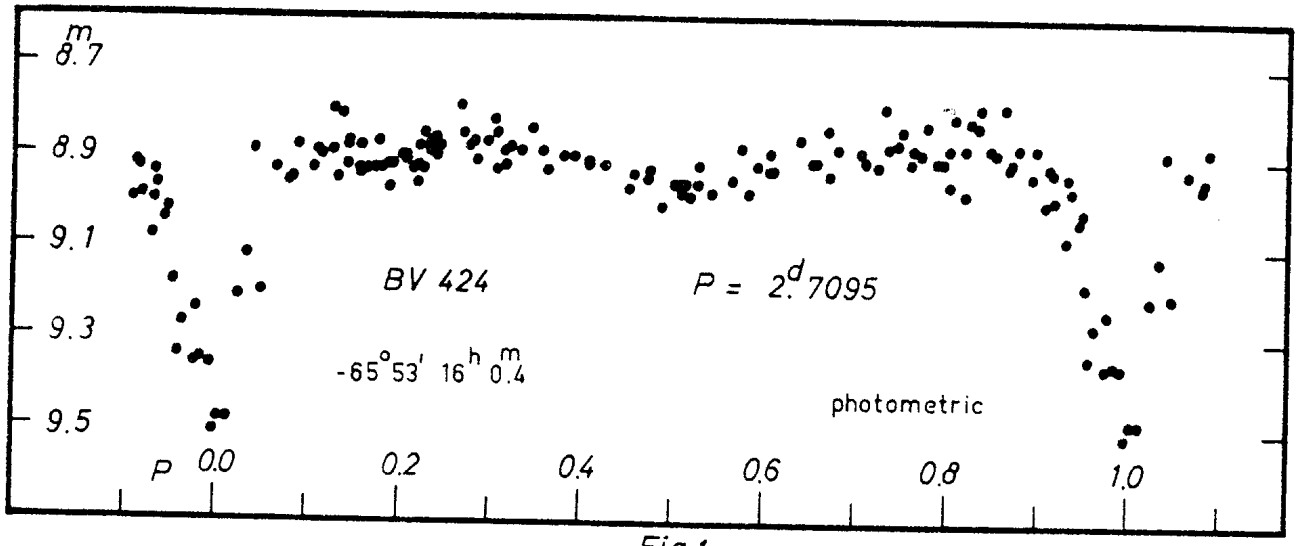

m
8.7
8.9
9.1
9.3
9.5
BV 424
P = 2.d7095
-65°53' 16h 0.4m
photometric
P 0.0
0.2
0.4
0.6
0.8
1.0

Fig.1

BV 445 = BD $-10^{\circ}3826$ ($8^{m}.5$) = HD 123 423 (F_5) (Fig. 2)

Min = JD 242 6087.505 + $2^{d}.334\ 715$. E, EA, Ampl. $0^{m}.7$ [1b]

Comparison stars:

HD 123 900 (F_o) $9^{m}.1$

HD 123 286 (F_8) $10^{m}.1$ (Data from Harvard catalogue)

The light-curve has been derived using sky patrol plates of the Bamberg Southern Station, covering a time-interval of 404 days = 173 epochs. In deriving the period, however, sky patrol plates from Bamberg have been used additionally. By means of these plates a total time-interval of 12 692 days = 5 479 epochs could be covered. The sky patrol plates of Bamberg have been estimated and minima are given in the following list:

Minima	E	O - C
242 6087.481	0	-0.024
6505.452	179	+0.032
7182.516	469	+0.027
7483.639	598	-0.029

Photometric minima (fainter than $9^{m}.70$)

Minima	E	O - C
243 8475.501	5306	+0.002
8578.244	5350	+0.017
8779.403	5479	-0.003

BV 445 has been already published in Inf. Bull. on Var. Stars No. 62 [1b]. The period given there is wrong.

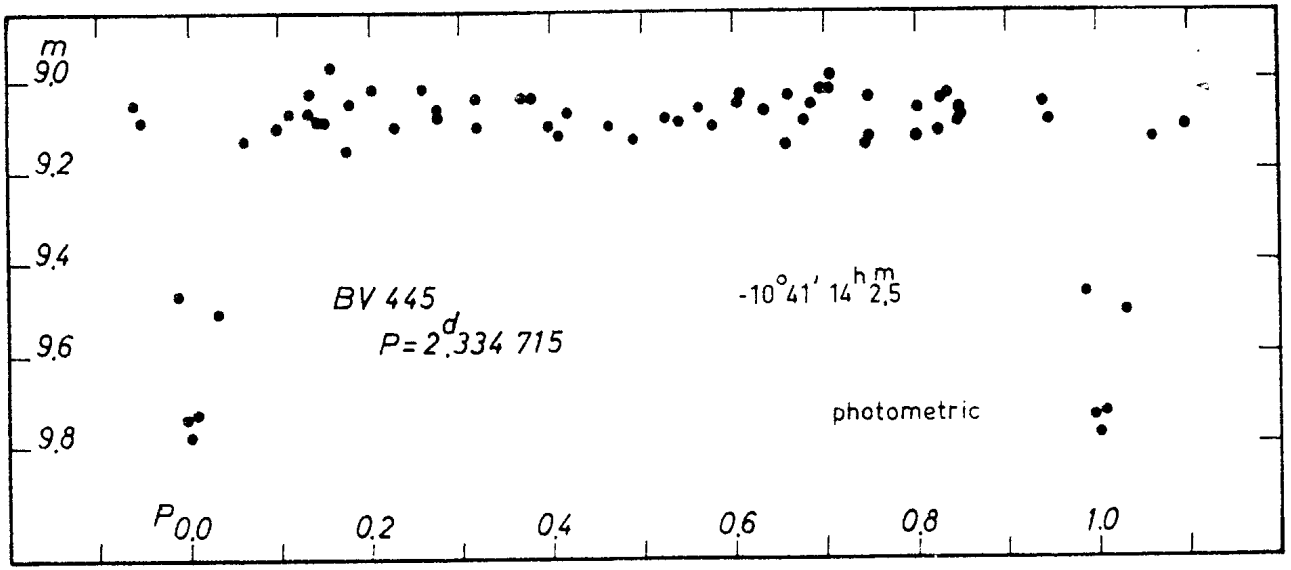

m
9.0
9.2
9.4
9.6
9.8
BV 445
P = 2d.334 715
-10°41' 14h m 2.5
photometric
P 0.0
0.2
0.4
0.6
0.8
1.0

Fig. 2

BV 458 = 1900: $6^h7^m54^s$ $-66^\circ57'.9$ = HD 271 924 (A_o) (Fig. 3)

Max = JD 243 8379.425 + $1^d.3338$. E, Cepheid, Ampl. $0^m.95$ 1c

Comparison stars:

a = Cape $-66^\circ495$ $9^m.4$ (Value from the Cape catalogue)

b = $10^m.6$ estimated (Fig. 3, Ident. chart)

Individual maxima (brighter than $9^m.95$)

Maxima	E	O - C
243 8379.453	0	+0.028
8707.526	246	-0.026
.572	246	+0.032
8739.506	270	-0.045
8798.279	314	+0.041
8810.272	323	+0.030

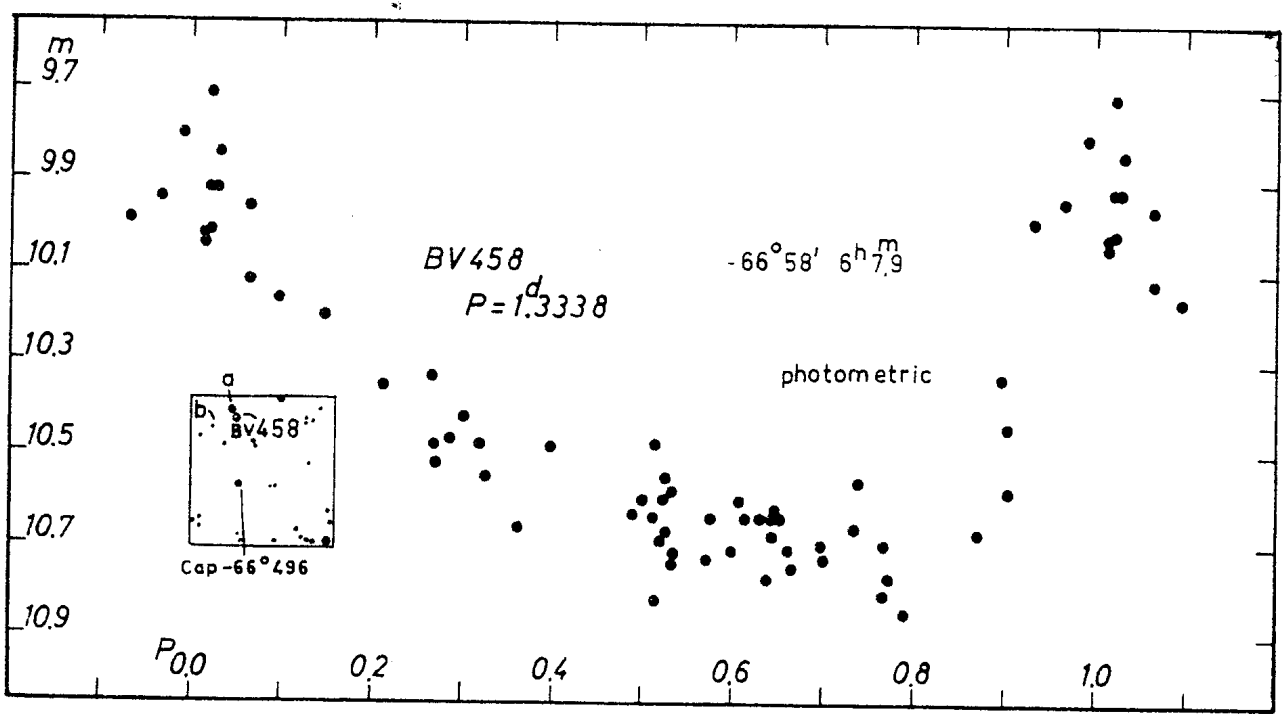

m
9.7
9.9
10.1
10.3
10.5
10.7
10.9
BV458
P = 1.d3338
-66°58' 6h 7.m9
photometric
a
b
BV458
Cap-66°496
P 0.0
0.2
0.4
0.6
0.8
1.0

Fig. 3

BV 477 = CoD $-77^{\circ}608$ ($10^{m}.0$) = Cape $-77^{\circ}905$ ($9^{m}.2$) (Fig. 4)

Min = JD 243 8494.410 + $2^{d}.1162$. E, AE, Ampl. $0^{m}.7$ 1c

Comparison stars:

Cape $-78^{\circ}822$ $9^{m}.0$
Cape $-77^{\circ}604$ 10.0 (Data from Cape catalogue)

Individual minima (fainter than $9^{m}.90$)

Minima	E	O - C
243 8494.403	0	-0.007
8547.287	25	-0.028
8583.247	42	-0.043
8877.447	181	+0.005
8911.292	197	-0.009

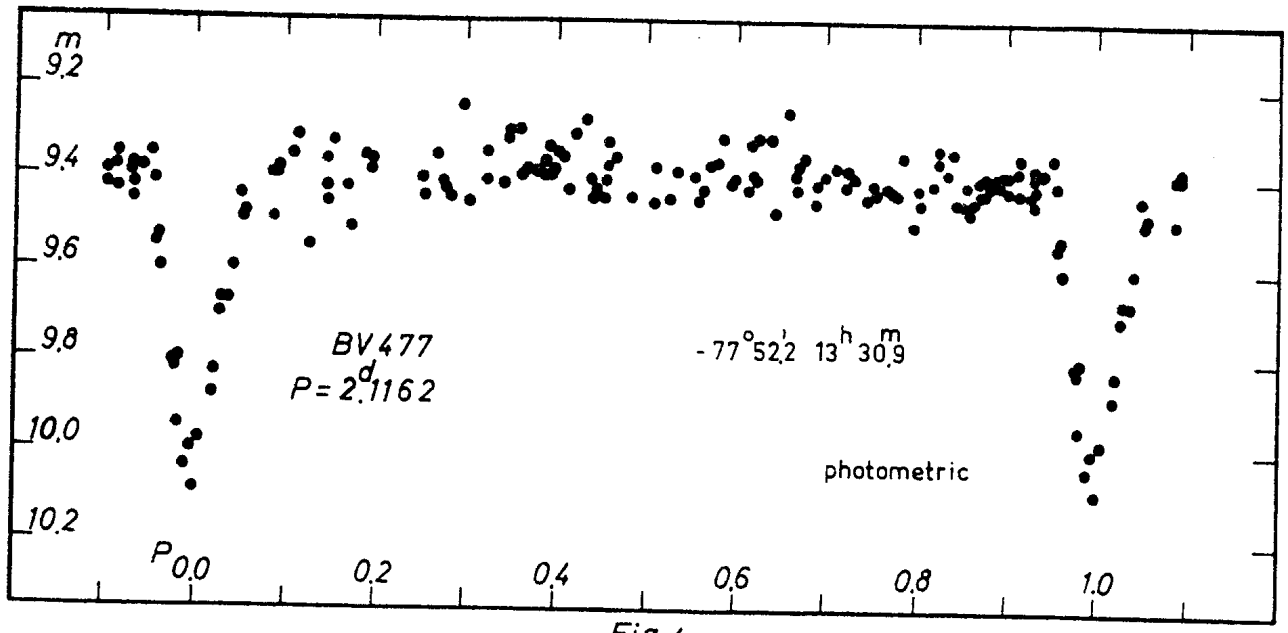

m
9.2
9.4
9.6
9.8
10.0
10.2
BV 477
P = 2.d1162
-77°52,2 13h30,9
photometric
P 0.0
0.2
0.4
0.6
0.8
1.0

Fig. 4

BV 510 = CoD $-55^{\circ}5858$ ($10^{m}3/4$) = Cape $-55^{\circ}6204$ ($9^{m}.6$) (Fig. 5)

Min = JD 243 8205.310 + $0^{d}.86\ 956$. E, EA, Ampl. $0^{m}.45$ 1d

Comparison stars:

Cape $-55^{\circ}6207$	$9^{m}.4$	
Cape $-55^{\circ}6203$	$10^{m}.1$	(Data from Cape catalogue)

Individual minima (fainter than $9^{m}.80$)

Minima	E	O - C
243 8205.284	0	-0.026
8524.438	367	0.000
8592.250	445	-0.013
8877.452	773	-0.027
8884.457	781	+0.022

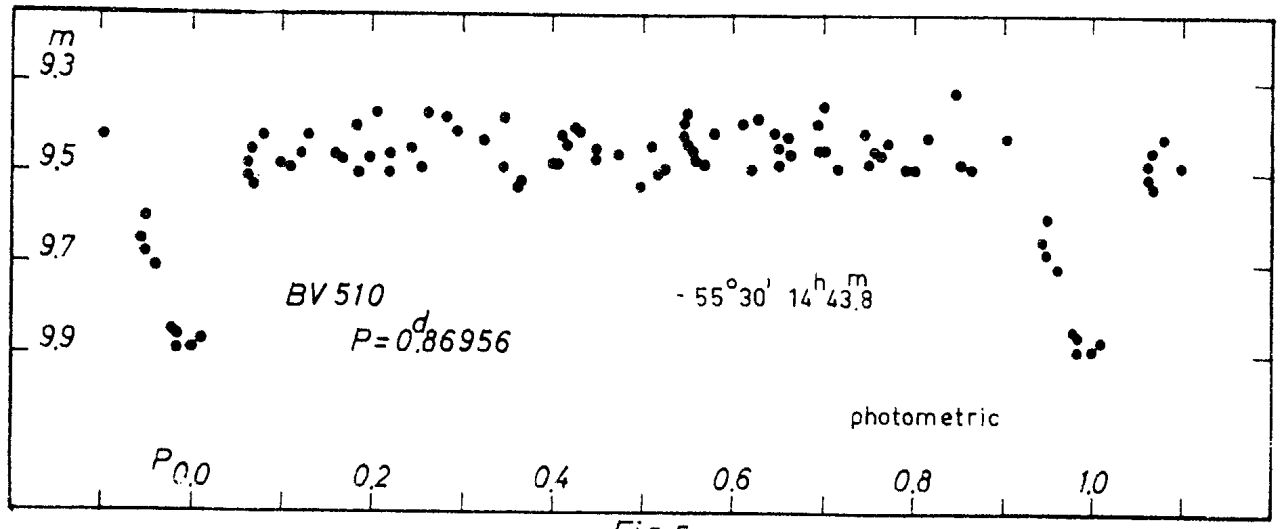

m
9.3
9.5
9.7
9.9
BV 510
P= 0.86956
- 55°30' 14h43.8m
photometric
P 0.0
0.2
0.4
0.6
0.8
1.0

Fig. 5

BV 526 = CoD -64°898 ($9^m.0$) = HD 132 461 (B_9) (Fig. 6)

Min = JD 243 8199.250 + $6^d.460$. E, EB, Ampl. $0^m.3$ 1e

Comparison stars:

HD 131 782 (A_3)	$8^m.0$	(mean values of Harvard and
HD 132 023 (A_2)	$9^m.2$	Cape catalogues)

Individual minima (fainter than $9^m.0$)

Minima	E	O - C
243 8199.313	0	+0.063
8548.331	54	+0.239
8580.245	59	-0.147
.290	59	-0.102
8877.447	105	-0.105
.491	105	-0.061
8916.345	111	+0.033
.392	111	+0.080

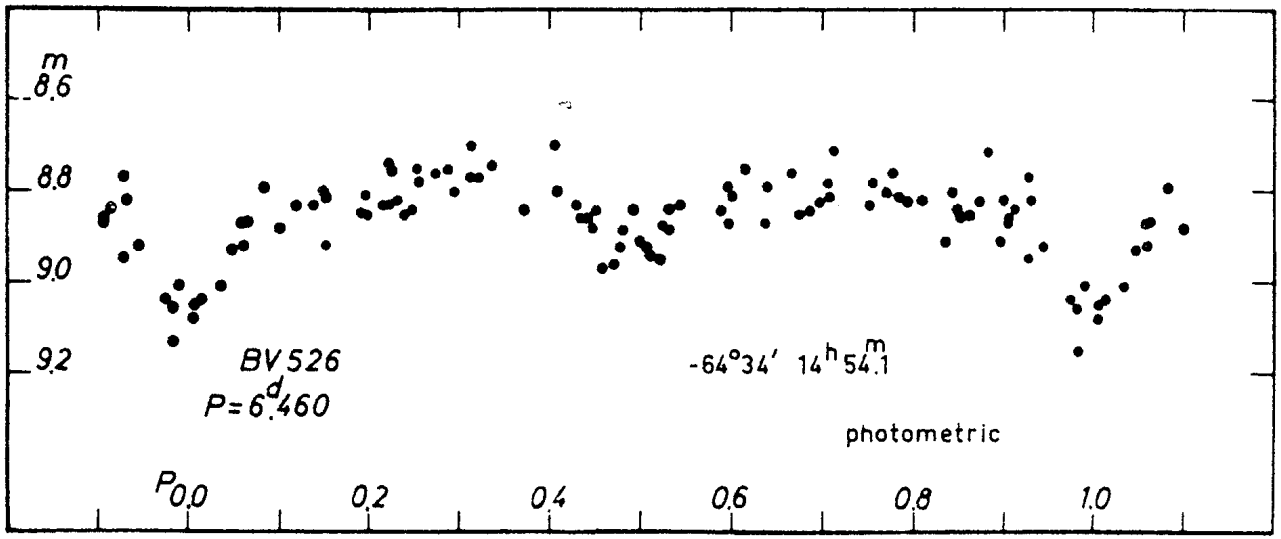

m
8.6
8.8
9.0
9.2
BV 526
P = 6.d460
-64°34' 14h54.m1
photometric
P 0.0
0.2
0.4
0.6
0.8
1.0

Fig.6

BV 556 = BD $-16^{\circ}4888$ ($8^{m}.3$) = HD 170 097 (B_9) (Fig. 7)

Min = JD 243 8505.574 + $5^{d}.2747$. E, EW, Ampl. $0^{m}.6$ 1e

Comparison stars:

HD 170 604 (B_3)	$8^{m}.5$	(Data from Harvard catalogue)
HD 170 378 (B_8)	$9^{m}.4$	

Individual minima (fainter than $8^{m}.80$)

Minima	E	O - C
243 8505.574	0	$\pm$0.000
8587.386	15.5	+0.054

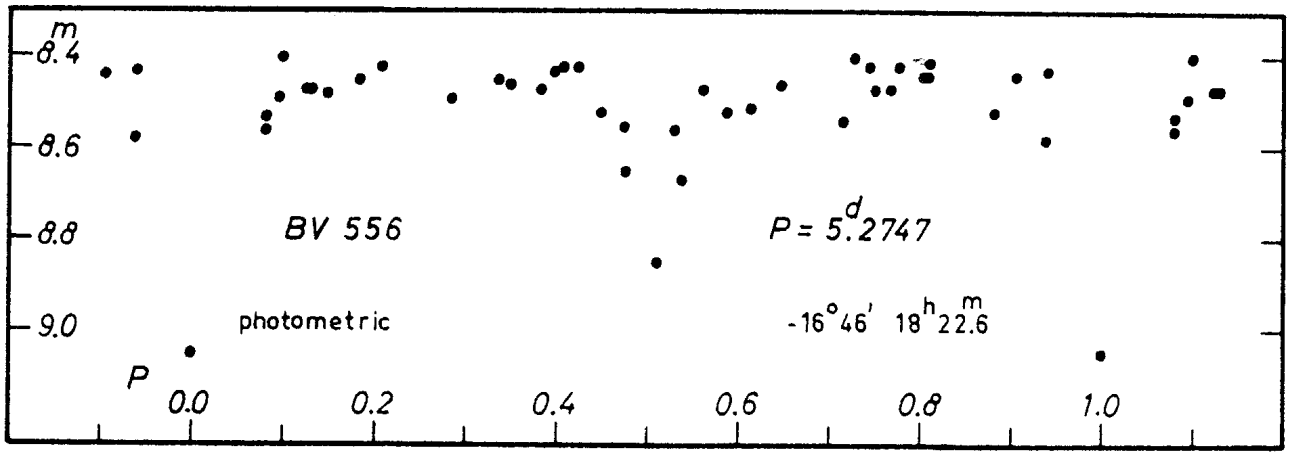

m
8.4
8.6
8.8
9.0
BV 556
P = 5.d2747
photometric
-16°46'
18h22.6m
P
0.0
0.2
0.4
0.6
0.8
1.0

Fig. 7

BV 577 = CoD $-34^{o}10981$ ($7^{m}.2$) = HD 147 683 (B_8) (Fig. 8)

Min = JD 243 8230.250 + $1^{d}.7309$. E, EW, Ampl. $0^{m}.3$ [1f]

Comparison stars:

HD 147 387 (F_2)	$7^{m}.20$	estimated
HD 146 745 (F_2)	7.65	estimated

In the Harvard catalogue as well as in the Cape catalogue the comparison star a is fainter than b in contrary to their values derived from sky patrol plates.

Individual minima (fainter than $7^{m}.50$)

Minima	E	O - C
243 8230.265	0	+0.015
8499.406	155.5	+0.001
.428	155.5	+0.023
.514	155.5	+0.109
8505.485	159	+0.022
8551.376	185.5	+0.045
8557.374	189	-0.016
8577.290	200.5	-0.005
8584.292	204.5	+0.073
8590.294	208	+0.017
8610.209	219.5	+0.027
8616.212	223	-0.028
8885.452	378.5	+0.057
8911.384	393.5	+0.025

The period given in Inf.Bull. on Var.Stars No. 81 [1f] appears to be wrong as may be seen from new plate-material. A better light-curve result from the period of $1^{d}.7309$. E.

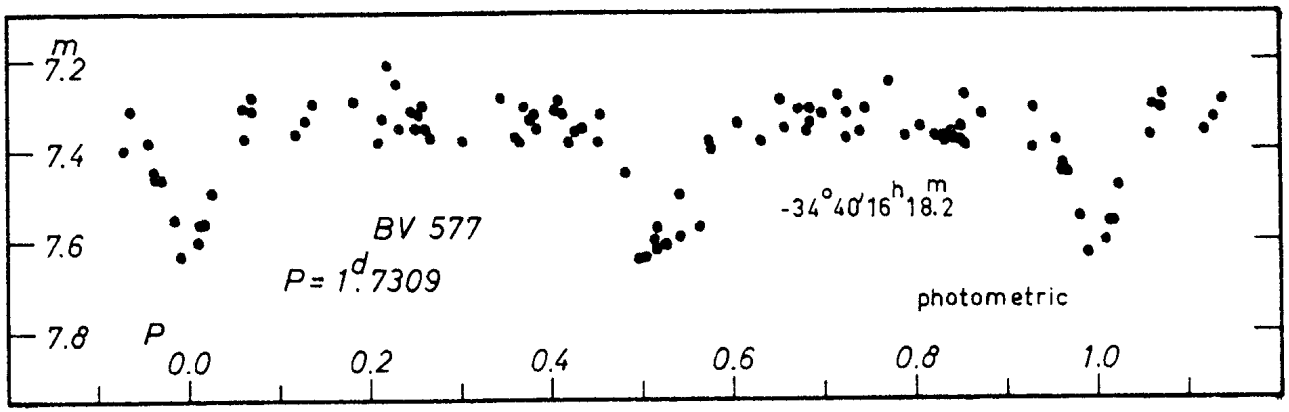

m
7.2
7.4
7.6
7.8
P
0.0
0.2
0.4
0.6
0.8
1.0
BV 577
P = 1d.7309
-34°40'16h18.2m
photometric

Fig.8

BV 581 = CoD $-54^{o}7490$ ($8^{m}.9$) = HD 161 337 (B_8) (Fig. 9)

Min = JD 243 8233.340 + $1^{d}.8744$. E, EW, Ampl. $0^{m}.5$ [1f]

Comparison stars:

HD 157 624 (B_8)	$7^{m}.82$	
HD 157 943 (A_o)	$9^{m}.40$	(Cousins' catalogue [2])

Individual minima (fainter than $9^{m}.80$)

Minima	E	O - C
243 8233.310	0	-0.030
8264.225	16.5	-0.038
8265.223	17	+0.018
8498.540	141.5	-0.028
8529.514	158	+0.019
8606.317	199	-0.030
8607.253	199.5	-0.030
.299	199.5	+0.016
8608.253	200	+0.033
8621.292	207	-0.049
8622.270	207.5	-0.008
8638.219	216	+0.009

BV 581 has been published without light-curve in Inf. Bull. on Var. Stars No. 81 [1f]. The period and classification there as the first communication has been changed.

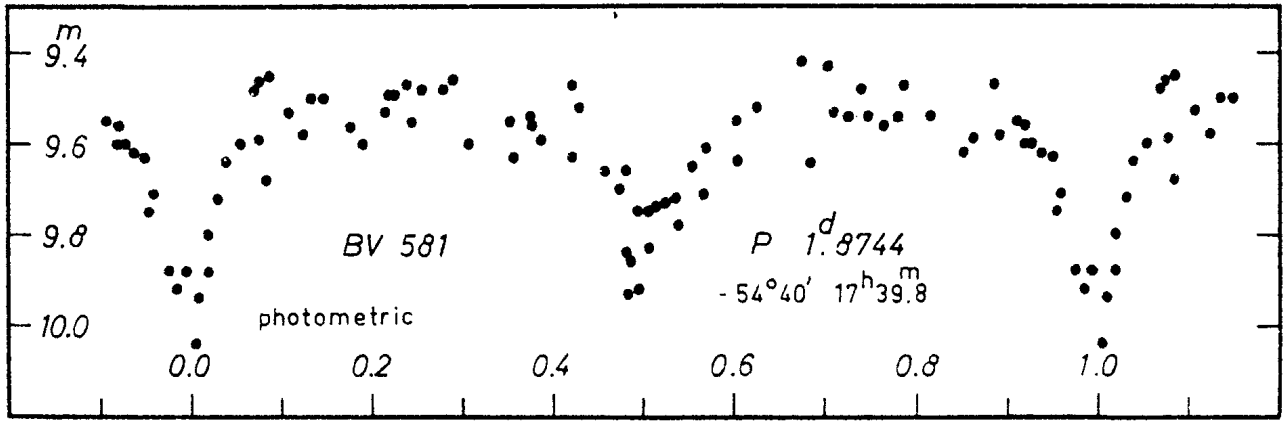

m
9.4
9.6
9.8
10.0
BV 581
photometric
P 1.d8744
-54°40' 17h39.m8
0.0
0.2
0.4
0.6
0.8
1.0

Fig.9

REFERENCES :

COMMISSION 27 OF THE I. A. U. INFORMATION BULLETIN ON VARIABLE STARS

1a/ NUMBER 51, W. STROHMEIER, New Bright Variables.

1b/ NUMBER 62, W. STROHMEIER, R. KNIGGE, H OTT, Bright Southern BV-Stars.

1c/ NUMBER 66, W. STROHMEIER, R. KNIGGE, H. OTT, Bright Southern BV-Stars.

1d/ NUMBER 70, W. STROHMEIER, R. KNIGGE, H. OTT, Bright Southern BV-Stars.

1e/ NUMBER 74, W. STROHMEIER, R. KNIGGE, H OTT, Bright Southern BV-Stars.

1f/ NUMBER 81, W. STROHMEIER, R. KNIGGE, H. OTT, Bright Southern BV-Stars.

2/ Royal Observatory Bulletins, NUMBER 64, A. W. J. COUSINS and R. H. STOY, Photoelectric Magnitudes and Colours of Southern Stars.

December 1965

E. SCHÖFFEL

Remeis Observatory
Bamberg

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 119

Konkoly Observatory
Budapest
27 December 1965

MINIMA OF ECLIPSING VARIABLES

This report continues the one in IBVS # 114, and contains 110 observed minima of 24 eclipsing variable stars. All are visual timings reduced by the tracing-paper method, except where noted. Elements in the 1958 General Catalogue of Variable Stars were used to compute O-C's unless otherwise specified. The number of estimates used for each minimum is given under n.

J.D. (+2400000)	E	O - C	n	Observer
RT Andromedae				
39045.662	+23733	-0.029	17	R. Swanberg
39045.663	+23733	-0.028	11	M. Baldwin
39050.696	+23741	-0.026	12	R. Monske
39052.586	+23744	-0.015	12	R. Monske
39062.649	+23760	-0.023	13	R. Monske
39064.535	+23763	-0.024	13	R. Monske
39069.567	+23771	-0.023	10	M. Baldwin
39077.745	+23784	-0.021	14	M. Baldwin
XZ Andromedae				
33559.527	+ 498	+0.002	4	J. Ashbrook
33582.597	+ 515	-0.002	4	J. Ashbrook
34266.653	+1019	-0.011	6	J. Ashbrook
37180.732	+3166	+0.008	21	J. Ashbrook
37582.638	+3440	+0.022	21	J. Ashbrook

J.D. (+2400000)	E	O - C	n	Observer
XZ Andromedae				
39045.662	+4540	+0.048	29	M. Baldwin
39045.662	+4540	+0.048	18	R. Swanberg
39053.805	+4546	+0.047	13	R. Monske
39063.308	+4553	+0.049	7	T. de Menten
39064.664	+4554	+0.048	9	D. Williams
39064.665	+4554	+0.049	12	T. Cragg
39064.665	+4554	+0.049	15	R. Monske
39068.736	+4557	+0.048	26	R. Swanberg
BX Andromedae				
37180.688	+36865.5	+0.024	18	J. Ashbrook
CX Aquarii				
39036.663	+22852	+0.020	16	R. Monske
39036.666	+22852	+0.023	15	M. Baldwin
39046.673	+22870	+0.022	13	R. Monske
39050.564	+22877	+0.021	13	R. Monske
39051.673	+22879	+0.018	13	R. Monske
OO Aquilae				
37111.598	+5693	-0.003	12	J. Ashbrook
37112.604	+5695	-0.010	16	J. Ashbrook
37113.617	+5697	-0.011	15	J. Ashbrook
37118.690	+5707	-0.006	25	J. Ashbrook
37128.576	+5726.5	-0.002	15	J. Ashbrook
37132.620	+5734.5	-0.013	8	J. Ashbrook
37147.576	+5764	-0.007	5	J. Ashbrook
37148.588	+5766	-0.009	18	J. Ashbrook
37172.660	+5813.5	-0.010	22	J. Ashbrook
37199.509	+5866.5	-0.021	16	J. Ashbrook
37200.522	+5868.5	-0.021	11	J. Ashbrook
37201.548	+5870.5	-0.009	12	J. Ashbrook
37217.517	+5902	-0.004	12	J. Ashbrook
37508.650	+6476.5	-0.025	6	J. Ashbrook
37518.546	+6496	-0.012	6	J. Ashbrook
37539.573	+6537.5	-0.017	10	J. Ashbrook
39036.651	+9491.5	-0.014	13	M. Baldwin

J.D. (+2400000)	E	O - C	n	Observer
V346 Aquilae				
39019.715	+6951	-0.014	12	T. Cragg
39029.670	+6960	-0.014	17	R. Monske
39050.693	+6979	-0.014	17	R. Monske
39059.547	+6987	-0.011	16	R. Monske
SV Camelopardalis				
38977.481	+11280	-0.015	9	A. Howell
39036.794	+11380	-0.010	11	M. Baldwin
39050.419	+11403	-0.025	12	A. Howell
39077.712	+11449	-0.014	12	M. Baldwin
39080.680	+11454	-0.011	12	M. Baldwin
RZ Cassiopeiae				
38665.534	+17829	-0.035	16	J. Ashbrook
39045.624	+18147	-0.036	15	M. Baldwin
39050.401	+18151	-0.040	9pg	T. de Menten
39050.406	+18151	-0.035	11	A. Howell
39050.409	+18151	-0.032	10	T. de Menten
39052.795	+18153	-0.036	13	R. Monske
39056.379	+18156	-0.038	9pg	T. de Menten
39056.381	+18156	-0.036	8	A. Howell
39075.501	+18172	-0.040	20	L. Robinson
TV Cassiopeiae				
39070.402	+10456	+0.010	10	T. de Menten
39079.472	+10461	+0.017	9	L. Robinson
39088.527	+10466	+0.009	10	L. Robinson
AB Cassiopeiae				
39067.633	+9936	+0.057	18	M. Baldwin
XX Cephei				
39080.649[1]	+5983	-0.073	13	M. Baldwin.
TY Delphini				
39052.542	+9262	-0.020	16	R. Monske

J.D. (+2400000)	E	O - C	n	Observer
AI Draconis				
39057.418	+12028	+0.018	10	A. Howell
SZ Herculis[2]				
39029.596	+2326	+0.010	11	R. Monske
SW Lacertae				
39029.646	+48818.5	+0.032	12	R. Monske
39036.701	+48840.5	+0.031	12	R. Monske
39038.625	+48846.5	+0.031	14	T. Hering
39047.605	+48874.5	+0.031	13	R. Monske
39051.776	+48887.5	+0.032	13	R. Monske
39053.698	+48893.5	+0.030	12	R. Monske
39062.678	+48921.5	+0.030	13	R. Monske
39063.637	+48924.5	+0.027	13	R. Monske
39064.602	+48927.5	+0.030	13	R. Monske
FL Lyrae				
39051.433	+2385	+0.001	10	A. Howell
39053.606	+2386	-0.004	16	R. Monske
Beta Lyrae[3]				
28325.39	-134	-0.01	14	J. Ashbrook
28855.51	- 93	+0.15	14	J. Ashbrook
29191.48	- 67	-0.04	12	J. Ashbrook
29656.65	- 31	-0.12	14	J. Ashbrook
29824.82	- 18	+0.01	14	J. Ashbrook
30703.70	+ 50	-0.08	14	J. Ashbrook
31078.80	+ 79	+0.17	13	J. Ashbrook
31311.39	+ 97	+0.09	13	J. Ashbrook
31530.99	+114	-0.05	15	J. Ashbrook
U Ophiuchi				
35655.621	+16321	+0.009	16	J. Ashbrook

J.D. (+2400000)	E	O - C	n	Observer
V566 Ophiuchi[4]				
35658.467	+1008	+0.005	17	J. Ashbrook
35672.383	+1042	-0.007	13	J. Ashbrook
35689.597	+1084	+0.002	11	J. Ashbrook
35990.667	+1819	-0.014	16	J. Ashbrook
36012.810	+1873	+0.008	23	J. Ashbrook
BV 544 Ophiuchi[5]				
38936.772	+19819.5	-0.014	9	D. Williams
38949.683	+19839	-0.001	9	D. Williams
RT Persei				
39051.750	+6903	-0.018	13	R. Monske
Beta Persei[6]				
39046.674	+377	-0.007	18	R. Monske
39069.612	+385	-0.008	13	L. Robinson
39069.615[7]	+385	-0.005	9pe	D. Engelkemeir
39089.689	+392	-0.002	11	L. Robinson
39092.552	+393	-0.007	12	J. Ashbrook
39092.553	+393	-0.006	11	L. Robinson
RW Tauri				
39077.762	+1681	+0.008	19	M. Baldwin
X Trianguli				
39057.679	+4490	+0.026	17	R. Swanberg
39059.623	+4492	+0.027	15	R. Monske
39092.649	+4526	+0.021	10	D. Williams
39095.567	+4529	+0.025	12	D. Williams

1). This is a revised determination by Baldwin, from more complete data, of a minimum published in IBVS No. 111.

2). O - C was computed from the elements given in Sky and Tele., 25, 5, 277.

3) These are normal minima, each formed by fitting a mean light curve to faint estimates. O - C's were computed from elements derived by J. Ashbrook from these minima only:

$$\text{Min} = \text{JD}\odot\ 2430057.48 + 12^{d}.9260\ E$$
$$\pm .03 \qquad \pm .0004 \text{ (mean errors)}.$$

4). These are normal minima formed with a mean light curve. O - C's were computed from the elements of L. Binnendijk, AJ, 64, 65, 1959.

5). O - C's were computed from the elements given by Schöffel and Köhler in IBVS No. 77.

6). O - C's were computed from the elements given in Sky and Tele., 27, 5, 316.

7). The time of minimum was determined by fitting the observations to a normal light curve.

This work is sponsored by the American Association of Variable Star Observers, with David B. Williams as program coordinator. The reductions are made by the writer with Joseph Ashbrook, except in a few cases which were checked.

L. J. ROBINSON
"Sky and Telescope"
49 Bay State Rd.
Cambridge, Mass. 02138
USA

Ny. 159/1966. - Statisztikai Kiadó Vállalat sokszorosító üzeme
Budapest, II., Keleti Károly u. 18/b.
Felelős vezető: a Statisztikai Kiadó Vállalat igazgatója

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 120

Konkoly Observatory
Budapest
14 February 1966

BRIGHT SOUTHERN BV-STARS

On sky patrol plates of Bamberg Southern-Station 20 further stars were found whose variability seems to be real as can be seen from the material available till now.

BV 775 = CoD -30° 11826 ($8^{m}.4$) = HD 131 750 (A2) $A_{pg} = 0^{m}.35$

BV 776 = CoD -65° 1949 ($8^{m}.0$) = HD 137 626 (G5) $A_{pg} = 0^{m}.3$

BV 777 = CoD -65° 1989 ($9^{m}.2$) = HD 139 535 (Mb) $A_{pg} = 0^{m}.35$
= K3π 2400

BV 778 = 1900: $15^{h}50^{m}31^{s}.2$ $-16^{\circ}52'.2$ Ident. Chart No. 1 $A_{pg} = 0^{m}.35$

BV 779 = CoD -75°922 ($8^{m}.0$) = HD 148 891 (Ao) $A_{pg} = 0^{m}.4$

BV 780 = 1900: $17^{h}7^{m}8^{s}.8$ $-16^{\circ}41'.2$ Ident. Chart No. 2 $A_{pg} = 0^{m}.4$

BV 781 = 1900: $17^{h}34^{m}19^{s}.2$ $-45^{\circ}31'.3$ Ident. Chart No. 3 $A_{pg} = 0^{m}.3$

BV 782 = CoD -63°1310 ($8^{n}.5$) = HD 162 933 (Ma) $A_{pg} = 0.3$
= K3π 3543

BV 783 = 1900: $17^{h}48^{m}51^{s}.0$ $-31^{\circ}41'.5$ Ident. Chart No. 4 $A_{pg} = 0^{m}.35$

BV 784 = CoD -36° 12423 ($3^{m}.0$) = HD 167 618 (Mb) $A_{pg} = 0^{m}.2$

BV 785 = BD -16°4836 ($7^{m}.8$) = HD 168 701 (Ko) $A_{pg} = 0^{m}.4$
= HD 168 702 (A)

BV 786 = CoD -33°13269 ($8^{m}.0$ = HD 170 280 (B9) $A_{pg} = 0^{m}.2$

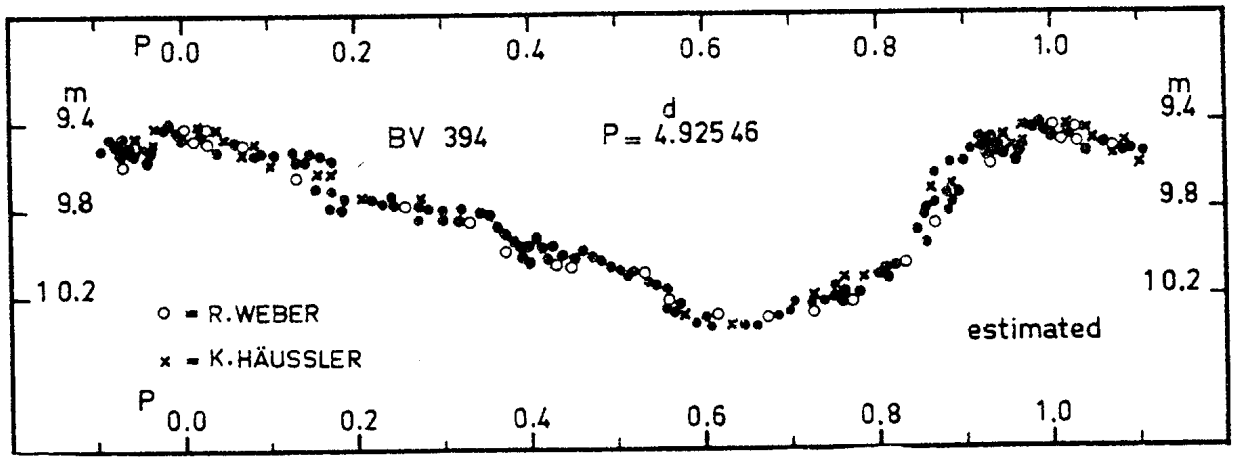
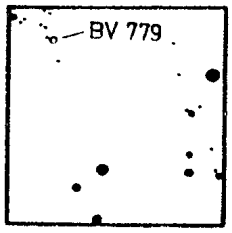
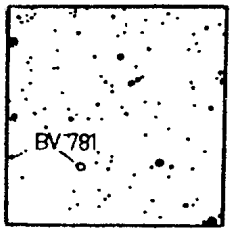

P 0.0
0.2
0.4
0.6
0.8
1.0
m
9.4
9.8
10.2
BV 394
P = 4.d925 46
o = R.WEBER
x = K.HÄUSSLER
estimated

Abb. 1

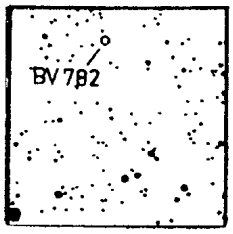
IDENT. CHARTS



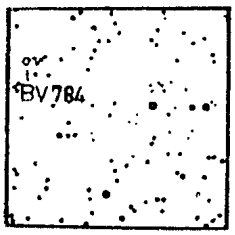
No. 1



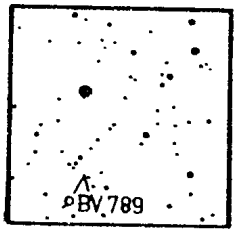
No. 2



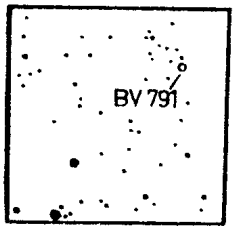
No. 3



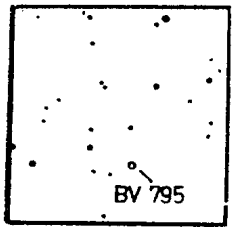
No. 4



No. 5



No. 6



No. 7

BV 787 = CoD $-62^{\circ}1254$ ($4^{m}.5$) = HD 173 948 (B2) $A_{pg} = 0^{m}.45$
= K3II 101 766

BV 788 = 1900: $19^{h}26^{m}40^{s}.6$ $-61^{\circ}33'.8$ Ident. Chart No. 5 $A_{pg} = 0^{m}.25$

BV 789 = CoD $-24^{\circ}15680$ ($9^{m}.3$) = HD 188 297 (Ao) $A_{pg} = 0^{m}.4$

BV 790 = 1900: $19^{h}54^{m}14^{s}$ $-25^{\circ}37'.7$ Ident. Chart No. 6 $A_{pg} = 0^{m}.3$

BV 791 = CoD $-50^{\circ}13373$ ($7^{m}.6$) = HD 204 370 (A2) $A_{pg} = 0^{m}.6$

BV 792 = CoD $-81^{\circ}831$ ($5^{m}.6$) = HD 210 967 (Mb) $A_{pg} = 0^{m}.3$

BV 793 = CoD $-57^{\circ}8564$ ($8^{m}.8$) = HD 212 936 (F5) $A_{pg} = 0^{m}.35$)

BV 794 = 1900: $23^{h}27^{m}9^{s}.1$ $-17^{\circ}57'.9$ Ident. Chart No. 7 $A_{pg} = 0^{m}.25$

Bamberg, Remeis-Observatory,
12 January 1966

W. STROHMEIER

H. FISCHER H. OTT

Ny. 390/1966.

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 121

Konkoly Observatory
Budapest
14 February 1966

BV 394 = BD+42°3471 ($8^m.9$)

Observations by R. WEBER, Paris (communication by letter) and K. HAUSSLER (communicated in Hartha Beobachtungs-Zirkular 1966, No. 34, 35, 36) proved our data concerning variability and type of Cepheid of BD +42°3471 ($8^m.9$) given in Vol. VI, No. 16 of the "Veröffentlichungen der Remeis-Sternwarte Bamberg"

According to his observations HAUSSLER had already derived a period on which we based our calculations. Because of the large time-interval covered by our observations we could improve the period and we had to enlarge it from $4^d.925\ 249$ to $4^d.925\ 46$. The period is accurate according to an interval of 2564 epochs (1932-1965).

Magnitude-estimations of HAUSSLER have been fitted to our lightcurve.

Elements: Max = 242 6427.300 + $4^d.925\ 46$. E (Cep)

ptg. magnitudes: $9^m.4$ - $10^m.3$ (Fig. 1)

Maxima

JD	E	O-C	JD	E	O-C
242 6427.558	0	$+0^d.258$	242 8752.452	472	$+0^d.335$
6811.522	78	+0.034	9077.449	538	+0.252
.536	78	+0.050	9111.387	545	-0.309
.552	78	+0.066	243 6731.506	2092	+0.144 W. +/
.572	78	+0.086	6756.462	2097	+0.472 W.
* .593	78	+0.107	6761.460	2098	+0.445 W.
6860.467	88	-0.273	6780.417	2102	-0.200 W.
.488	88	-0.252	6785.421	2103	-0.121 W.
.509	88	-0.231	6810.398	2108	+0.228 W.
6949.355	106	-0.044	6815.367	2109	+0.272 W.
.376	106	-0.023	6899.250	2126	+0.422 H. ++/
.398	106	-0.001	7199.479	2187	+0.178 H.
7003.255	117	-0.323	7583.294	2265	-0.173
.278	117	-0.301	7903.395	2330	-0.227
7274.398	172	-0.081	7933.319	2336	+0.144
7333.334	184	-0.251	8258.431	2402	+0.176 H.
.356	184	-0.229	8322.333	2415	+0.047 H.
7983.490	316	-0.251	8652.473	2482	+0.181 H.
.515	316	-0.230	8672.423	2486	+0.429 H.
8067.350	333	-0.128	9002.357	2553	+0.358 H.
8107.292	341	+0.411	9056.292	2564	+0.113 H.
8126.272	345	-0.312			

+/ = R. WEBER, communication by letter

++/ = K. HAUSSLER, Harthaer Beobachtungs-Zirkular (HBZ), 1966, No. 34, 35, 36.

Bamberg, Remeis-Observatory
1 February 1966

H. OTT

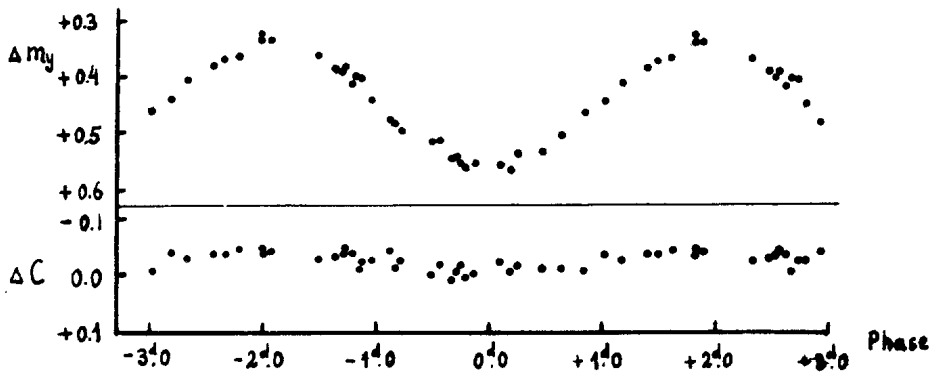
COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 122

Konkoly Observatory
Budapest
27 February 1966

ON THE VARIABILITY OF HD 234677

This star was observed spectroscopically by D. M. Popper in 1950-53[1]. He found the hydrogen Hβ -Hε and the calcium H and K lines to be in emission. The spectral type was estimated as K6V. He also noticed that the hydrogen lines on one of the spectrograms were much stronger than on the others. It was supposed that this intensification was due to a flare process like that observed in UV Ceti stars.

Attempts to observe the flares of this star photoelectrically were made by A. Masani et al. in 1954[2] and P. F. Chugainov in 1960[3] but no flares have been observed. The light of the star was constant in 1954 and 1960.



New series of photoelectric observations of HD 234677 have been obtained in 1965. The photometer equipped with blue and yellow filters on the 64 cm telescope was used. The comparison stars in both series of observations, 1960 and 1965, were HD 172268 and HD 172468. No flares of HD 234677 were observed in 1965 too, but it was found that its light varies periodically. The light and colour curves obtained are given in the figure where Δm_y and ΔC are the magnitudes and the colour differences with respect to HD 172268.

The elements of the light variation are:

$$\text{Min. hel.} = 2439033.48 + 3^d.826\ E.$$

The differences of the yellow and blue magnitudes HD 234677-HD 172268 in 1954-65 are given in the following table. The value for 1954 is given by A. Masani et al. with respect to HD 171911. We reduced it to HD 172268 using the magnitude differences HD 171911-HD 172268 obtained by us.

	Δm_{blue}	Δm_{yellow}
1954	+0.19	+0.24
1960	+0.20	-
1965	(+0.29)-(+0.55)	(+0.33)-(+0.56)

It must be noticed that the magnitudes of HD 234677 in 1954 were the same as in 1960. The star was observed in 1954 in 3 nights and in 1960 in 18 nights. If the periodical variation had existed at that time, it would have been observed. Taking into account all these data, it is difficult to say what is the cause of the periodical variations of HD 234677 at the present time.

The star is not known as a spectroscopic binary, but even if the eclipse-hypothesis is taken into consideration, it would be necessary to suppose that the inclination of its orbit has been changed between 1954-60 and 1965. The star differs from pulsating variables by its small colour-variations. The existence of a spot on the surface of a rotating star may be proposed as the cause of the observed light variations. In this case not only the light but also the colour would be variable because the temperature of a spot may be smaller than the other parts of the surface of the star.

During the period of the photometric observations three spectrograms of HD 234677 with a dispersion of 80 A/mm were obtained by Dr. R. E. Gershberg on the 2.6 m reflector. The phases were $0^d.90$, $1^d.06$ and $3^d.80$ respectively. The main features of the spectrum are in good agreement with D. M. Popper's description. $H\beta$, $H\gamma$, $H\delta$ and CaII H and K are in emission and the spectral type of the star is K6V. The intensity of the emissions is probably variable but no definite correlation with phase was noticed.

P. F. CHUGAINOV

Crimean Astrophysical Observatory
of the Academy of Sciences of the
U. S. S. R.

(1) D. M. Popper, 1953, Publ. Astron. Soc. of the Pacific, 65, 278..

(2) A. Masani, P. Broglia, E. Pestarino, 1955, Contr. dell'Osserv. Astron. di Milano-Merate, Nuov. Ser. N 59.

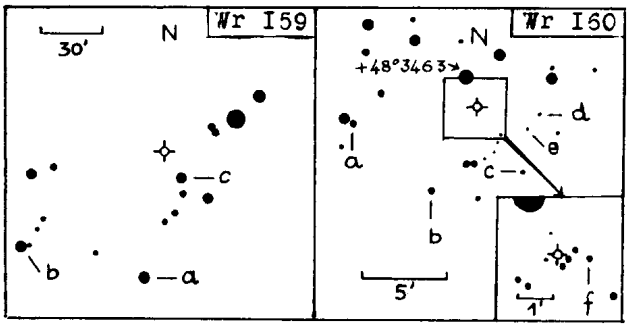
(3) P. F. Chugainov, 1961, Izvestia Crim. Astroph. Obs., 26, 171.

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 123

Konkoly Observatory
Budapest
7 March 1966

NOUVELLES ETOILES VARIABLES

Dés.	AR (1900, 0)	D	mp max	mp min	type	nombre d'observ.
Wr 159	$18^h04^m,7$	$+41^o42'$	8,6	9,3	I	133
Wr 160	$21^h37^m,2$	$+48^o12'$	12,5	<15	UG?	126



Etoiles de comparaison

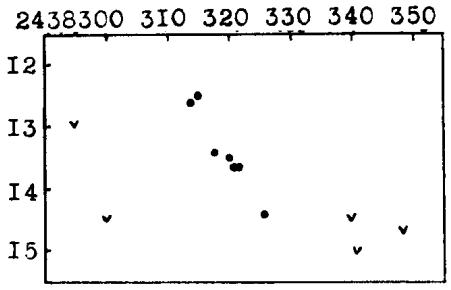
	a	b	c	d	e	f	
Wr 159	8,5	9,0	9,2	-	-	-	(d'après H. A. 85 $18^h,+46^o30'$)
Wr 160	12,3	12,9	13,3	14,0	14,7	15,2	(d'après le S.A.41)

Remarques

Wr 159 = BD +41°2988 = HD 166253 sp Ma .

Wr 160. Le seul maximum observé (Octobre 1963) apparait sur des plaques Voigtländer f:600mm, D:133mm exposées aux dates juliennes suivantes:

	mp
2438295,335 (T. U.)	<13
300,474	<14,5
314,303	12,6
315,306	12,5
318,286	13,4
320,288	13,5
321,276	13,7
322,271	13,7
326,271	14,4
340,272	<14,5
341,251	<15
349,246	<14,7



L'étoile est invisible sur 114 autres plaques obtenues depuis 1942 et atteignant au moins la magnitude 13.

La rapidité du déclin suggère le type UG. D'autres observations sont désirables pour confirmer cette hypothese. Il peut également s'agir d'une nova faible.

ROGER WEBER

Station Astrophotographique
de Mainterne (Eure-et-Loir)
France

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 124

Konkoly Observatory
Budapest
15 March 1966

VELOCITY CURVE OF BV 312 TAURI

45 spectra of the eclipsing binary BV 312 = BD+20°785[1], with dispersion of 42 A/mm at H-gamma, have been secured at Asiago during the last two years. Radial velocities of this star were previously fully lacking[2]. Only the spectrum of one component is observable in the blue region. The following uncorrected elements have been obtained:

T_o=2438805.696[3]; P=2^d.056297[3], [4]; K = 68 km/s; y=-2 km/s; e = 0.

Detailed results will appear later. So far no photoelectric observations are planned here.

Astrophysical Observatory, Asiago
February 25, 1966

R. MARGONI
A. MAMMANO

References

1) W. Strohmeier et al.: Bamberg Veröff. V, 9, 1960.
2) A Finding List for Observers of Ecl. Var.; Penn. Univ. Publ. IX, 1963.
3) W. Strohmeier: Sky and Tel., XXVI, 264, 1963.
4) Sky and Tel., XXIX, 255, 1965.

Ny. 594/1966.

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 125

Konkoly Observatory
Budapest
16 March 1966

RZ VULPECULAE

The star probably belongs to the group of the so called nova-like variables or to the U Gem stars. The light-outbursts take place in intervals of about 1 500 days, the limits of brightness being $12^{m}.5$ and $15^{m}.5$ photographically. Superposed on these long term variations are secondary changes with durations less than 100^{d} and with amplitudes $1^{m}.0$ or more. Night runs of plates show some evidence of still shorter variations (order of magnitude: hours), but these need confirmation by more observations.

Spectral type according to Herbig (ApJ 131, p. 632) G2, luminosity class IV or V.

For further details see forthcoming paper in MVS.

German Academy of Sciences
Sonneberg Observatory

L. MEINUNGER

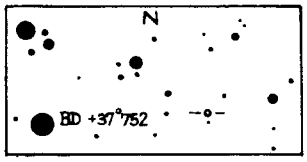
Ny.594/1966.

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 126

Konkoly Observatory
Budapest
17 March 1966

NEW FLARE STAR S 9537 PER

1855.0	3^h	8^m	42^s	$+37^o$	2:2
1900.0	3	11	34	+37	12.3
1950.0	3	14	46	+37	23.4



The discovery flare 1965 Oct. 22/23 is covered by 4 plates:

243 9056.400	$17^m.5$	Astrograph 400/1960 mm,	exp. 60^m
.484	14.5	" 400/1600 "	" 100
.490	14:	Sky Patrol	" 40
.520	15:	" "	" 40

With regard to the long exposure times the star might have been brighter than 14^m at maximum; it is faint on 2 Astrograph plates of the following night. In all 77 Astrograph plates have been examined. There is another flare observed on a single plate 1964 Sep. 1/2, 243 8640.554. According to Palomar Sky Atlas the star is reddish, but obviously not red enough for Spectrum M.

Sonneberg Observatory

C. HOFFMEISTER

Ny. 594/1966.

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 127

Konkoly Observatory
Budapest
18 March 1966

NEW BRIGHT VARIABLE STAR

Recently I discovered with Dr. Helmut Abt a new variable star of visual magnitude 5.86. The star is HR 7484 (HD 185912, BD+54°2193, Boss 5026, GC 27206), and has been known to be a double-line spectroscopic binary since Harper's work on it in 1919 (Ap. J. 51, 187, 1920). Observations of the star with a photoelectrically equipped 16" reflecting telescope on Kitt Peak revealed that the star is also an eclipsing binary demonstrating two eclipses, which seem to be nearly the same depth, some 0.2 magnitude.

We have almost completed a new velocity curve obtained with the Kitt Peak 84" telescope and coudé spectrograph, and these modern observations with those of Harper in 1919 have yielded a more accurate period of 7.64074 days. The system seems to be a rather eccentric one with the secondary eclipse occuring at phase 0.74, and both components are of spectral type F5V. The final orbital elements based on our new velocity curve will be calculated when we have obtained a few remaining observations.

In addition we have almost completed a three-color UBV light curve of the eclipses, which we hope to use with the velocity curve to determine absolute dimensions of the system.

Kitt Peak National Observatory
March 11, 1966.

MICHAEL S. SNOWDEN

Ny. 59/1966.

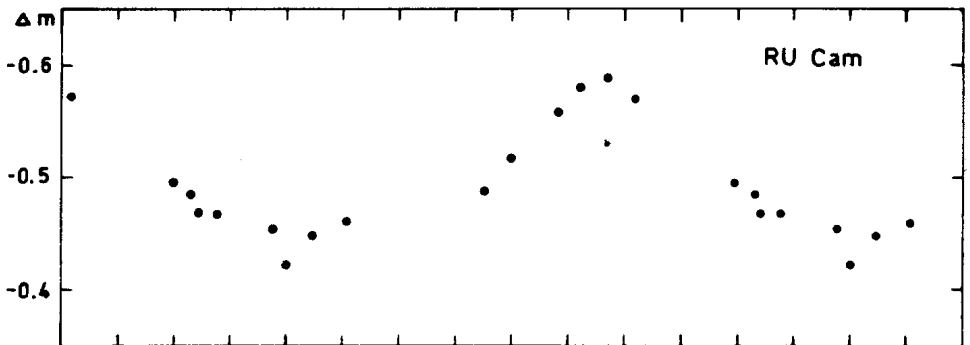
COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 128

Konkoly Observatory
Budapest
22 March 1966

NOTE ON THE AMPLITUDE OF THE CEPHEID RU CAM

Alerted by a preprint of an article by Fernie and Demers on RU Cam, which will be published as a letter to the Astrophysical Journal, in which they suggested the stopping of the star's light variation, the author has made a quick reduction of his own observations of this cepheid. The photo-electric observations were made with the 10-inch refractor of the Leiden Observatory in combination with a Corning 3384 filter with an effective wavelength of 5390 A. Observations were made from September 1965 until February 1966.

My results do not suggest that the pulsation has actually come to an end, but they confirm Fernie an Demers' result that the range has become very small. It is seen from the diagram that the range is about $0^m.13$. The observations indicate that the period has remained practivally unchanged.



A correction for differential extinction has not been applied, because it does not exceed 0.01 magnitude. The error of the points, which are a mean of four individual observations, is about $0^m.01$. The phase was calculated with a period of $22^d.134$ with the formula $\varphi = p^{-1}$ (J.D. - 2430000). As comparison star BD+70°447 was used. The table gives the heliocentric Julian date, the magnitude differences and the phases.

Hel. J.D.	m	φ
2439018,519	-.489	.451
019.562	-.518	.498
024.490	-.581	.721
025.543	-.589	.768
026.550	-.571	.814
030.512	-.496	.993
031.561	-.468	.040
053.444	-.485	.029
054.494	-.467	.076
056.651	-.454	.174
059.525	-.460	.304
079.363	-.422	.200
080.389	-.449	.246
178.498	-.558	.679

Leiden Observatory
4 March 1966

W. WAMSTEKER

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 129

Konkoly Observatory
Budapest
28 March 1966

MINIMA OF ECLIPSING VARIABLES

This report continues the one in IBVS No. 119, and contains 84 observed minima of 20 eclipsing variable stars. All are visual timings reduced by the tracing-paper method, except where noted. Linear elements in the 1958 General Catalogue of Variable Stars were used to compute O - C's unless otherwise specified. The number of estimates used for each minimum is given under n.

J.D. (2,400,000)	E	O - C	n	Observer
RT Andromedae				
39069.567	+23,771	-0.023	13	R. Monske
39074.600	+23,779	-0.021	12	R. Monske
39079.632	+23,787	-0.021	13	R. Monske
39084.667	+23,795	-0.017	12	R. Monske
39084.668	+23,795	-0.016	15	R. Swanberg
39089.695	+23,803	-0.021	13	R. Monske
39113.597	+23,841	-0.018	8	M. Baldwin
39130.572	+23,868	-0.024	16	R. Monske
39135.596	+23,876	-0.032	19	D. Friedman
XZ Andromedae				
39007.660	+4,512	+0.050	15	W. Lowder
39079.594	+4,565	+0.048	16	R. Monske
39079.597	+4,565	+0.051	18	L. Hazel
39083.668	+4,568	+0.050	22	M. Baldwin
39091.811	+4,574	+0.050	20	M. Baldwin
39102.668	+4,582	+0.049	19	M. Baldwin
39117.598	+4,593	+0.049	13	R. Monske
39136.600	+4,607	+0.049	17	M. Baldwin
39140.672	+4,610	+0.049	13	M. Baldwin
39155.603	+4,621	+0.050	19	M. Baldwin

J.D. (2,400,000)	E	O - C	n	Observer
WW Aurigae				
39092.709	+2,308.5	+0.011	17	M. Baldwin
39140.672	+2,327.5	-0.001	14	M. Baldwin
AR Aurigae				
39092.678	+2,987	+0.013	16	M. Baldwin
Y Camelopardalis				
39140.648	+4,449	-0.017	14	M. Baldwin
39173.702	+4,459	-0.018	30	L. Hazel
SV Camelopardalis				
39083.644	+11,459	-0.013	9	M. Baldwin
39096.697	+11,481	-0.007	12	F. Sanner
39102.625	+11,491	-0.010	11	M. Baldwin
39137.607	+11,550	-0.019	13	F. Sanner
39140.574	+11,555	-0.018	11	M. Baldwin
RZ Cassiopeiae				
39070.722	+18,168	-0.038	14	R. Monske
39094.627	+18,188	-0.038	15	M. Baldwin
39112.557	+18,203	-0.037	13	M. Baldwin
39143.631	+18,229	-0.041	15	R. Swanberg
39155.584	+18,239	-0.039	14	M. Baldwin
39180.676	+18,260	-0.047	17	J. Ashbrook [3]
TV Cassiopeiae				
39117.523	+10,482	+0.003	19	R. Monske
AB Cassiopeiae				
39086.773	+ 9,950	+0.061	21	M. Baldwin
39093.608	+ 9,955	+0.061	15	M. Baldwin
U Cephei				
39086.776	+12,514	+0.751	26	M. Baldwin
39091.764	+12,516	+0.754	29	M. Baldwin
39144.116	+12,537	+0.756	26	M. Baldwin
XX Cephei				
39087.650	+ 5,986	-0.084	15	M. Baldwin
39094.664	+ 5,989	-0.082	13	M. Baldwin

J.D. (2,400,000)	E	O - C	n	Observer
ZZ Cephei				
39035.826	+ 5,431	0.000	16	M. Baldwin
39093.660	+ 5,458	+0.006	17	M. Baldwin
Z Draconis				
39086,697	+ 4,286	+0.012	14	M. Baldwin
39139.636	+ 4,325	+0.011	15	M. Baldwin
SW Lacertae				
39023.389	+48,799	+0.029	13	G. Comello
39023.546	+48,799.5	+0.025	14	G. Comello
39069.737	+48,943.5	+0.033	13	R. Monske
39070.695	+48,946.5	+0.029	13	R. Monske
39074.545	+48,958.5	+0.029	13	R. Monske
39079.675	+48,974.5	+0.029	12	R. Monske
39083.524	+48,986.5	+0.030	13	R. Monske
39089.619	+49,005.5	+0.031	12	R. Monske
39096.677	+49,027.5	+0.033	13	R. Monske
39112.712	+49,077.5	+0.033	15	R. Swanberg
39116.562	+49,089.5	+0.034	14	R. Monske
39117.517	+49,092.5	+0.027	14	R. Monske
Y Leonis				
39177.646	+ 3,255	+0.030	11	C. Ricker
RT Persei				
39079.791	+ 6,936	-0.007	13	R. Monske
39091.675	+ 6,950	-0.015	14	M. Baldwin
39120.556	+ 6,984	-0.013	17	D. Williams
39148.587	+ 7,017	-0.013	20	M. Baldwin
39154.532	+ 7,024	-0.013	15	R. Monske
39165.576	+ 7,037	-0.012	13	R. Monske
ST Persei				
39091.712	+ 3,611	-0.065	25	M. Baldwin
Beta Persei[2)]				
39069.611	+ 385	-0.009	25	R. Monske
39089.690	+ 392	-0.001	17	R. Monske
RW Tauri				
39102.679	+ 1,690	+0.005	23	M. Baldwin

J.D. (2,400,000)	E	O - C	n	Observer
X Trianguli				
39091.681	+4,525	+0.025	14	M. Baldwin
39092.655	+4,526	+0.027	15	M. Baldwin
39093.622	+4,527	+0.023	7	M. Baldwin
39093.622	+4,527	+0.023	20	R. Monske
39094.594	+4,528	+0.023	18	M. Baldwin
39128.599	+4,563	+0.025	18	M. Baldwin
39129.570	+4,564	+0.024	23	R. Monske
39129.571	+4,564	+0.025	18	M. Baldwin
39130.540	+4,565	+0.023	20	L. Hazel
39130.542	+4,565	+0.025	21	R. Monske
39163.564	+4,599	+0.015	13	L. Hazel
39165.507	+4,601	+0.015	16	L. Hazel
39165.519	+4,601	+0.027	15	R. Monske
39166.495	+4,602	+0.031	13	R. Monske

1). The time of minimum was determined by fitting the observations to a mean light curve.

2). O - C's were computed from the elements in Sky and Tele., 27, 5, 316.

3). Some of the minima reported by J. Ashbrook in IBVS No. 119 were determined with a mean light curve.

This work is sponsored by the American Association of Variable Star Observers, with David B. Villiams as program coordinator. The reductions are made by the writer with Joseph Ashbrook, except in some cases which were checked.

We would like to acknowledge the work of Dr. R. Szafraniec (Cracow Observatory) and of Dr. V. P. Zessevich (Odessa Astronomical Observatory). Their extensive visual observations of eclipsing variable stars has provided much guidance for this program.

L. J. ROBINSON

"Sky and Telescope"
48 Bay State Rd.
Cambridge, Mass. USA

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 130

Konkoly Observatory
Budapest
5 April 1966

EMISSION LINES IN THE FLARE STAR YZ CMI

This star has displayed flare activity in 1943 (Schneller, 1960), in 1958 (Roques, 1961), and recently last month (Andrews, 1966), when three flares of about 1 magn. were detected between February 21 and 23 during only 8 hours of monitoring. According to L.H. Solomon (1966) radio-optical observations did not reveal any burst larger than $0^m.4$ between February 26 and March 1 inclusive, during 20 hours of observation. Two spectra of the star were obtained at Asiago on February 27, 1966 at 20^h35^m U.T. and 21^h55^m U.T. (exposure 55^m and 40^m respectively) and another one on March 13, 1966, 22^h14^m U.T. On the first two spectra, taken with the newtonian spectrograph with dispersion of 280 A/mm at $H\gamma$ on Kodak 103a0 plates, emission lines of $H\beta$, $H\gamma$, $H\delta$, $H\epsilon$, H8 and Ca II 3933A have been identified on a fairly strong continuum. Other features appear in emission, but He II 4686 is absent. The spectrum in March was taken with the Cassegrain spectrograph with 70 A/mm at $H\gamma$ on Kodak 103aF emulsion. With two hours of exposure, only the $H\alpha$ region has been recorded and a fairly strong $H\alpha$ emission appears over an intense continuum. Two Schmidt plates taken March $13^d22^h01^m$ and $14^d19^h21^m$ U.T., 1966, do not show any variation in the photographic magnitude of the variable.

Astrophysical Observatory, Asiago
March 29, 1966

G. CHINCARINI
A. MAMMANO

References

Andrews A.D.: I.A.U. Circular No. 1951, 1966.
Roques P.E.: Ap.J. 133, 914, 1961
Schneller H.: G.u. Literatur Ver. Sterne, Bd. V, 146, 1960.
Solomon L.H.: I.A.U. Circular No. 1952, 1966.

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 131

Konkoly Observatory
Budapest
19 April 1966

NEW ELEMENTS FOR THE BINARY BV 267 FROM PHOTOELECTRIC AND SPECTROSCOPIC OBSERVATIONS

The variability of BD + $46^{\circ}985$ ($7^{m}.7$) was firstly announced by Strohmeier (1959), who photographically found an EB light curve with a period of $0^{d}.684315$ (Strohmeier et al., 1963).

Radial velocities obtained from single-lined spectra at Asiago (40 A/mm at H_{γ}) and photoelectric observations made at Loiano in 1964-1966 yielded the following preliminary elements:

Min = JD 2438769.3316 + $1^{d}.24730$ E

K = 70 km/s, γ = + 10 Km/s, e = 0

The light curve is of the Algol type.

A detailed study of the system will be published.

We are indebted to Dr. Strohmeier who kindly supplied elements and identification chart in advance of publication.

Asiago and Bologna
Astronomival Observatories
March 31, 1966

R. MARGONI
A. MAMMANO
R. BIOLCHINI
C. BARTOLINI

References

W. Strohmeier, 1959; Bamberg Veröff. V, No. 3.
W. Strohmeier, R. Knigge, H. Ott, 1963; Bamberg Veröff. V, No. 17.
W. Strohmeier, 1963; Sky and Tel. XXVI, 264.

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 132

Konkoly Observatory
Budapest
22 April 1966

NOTE ON THE CLASSIFICATION OF BC ERI

The General Catalog of Variable Stars lists BC Eri as an RRc of period 0.264 day, and it was placed on the University of Arizona program of multi-color observations of RR Lyrae stars.

When the B-V index was found to be nearly constant (+0.34 mag.) from minimum to maximum light, the star's classification became suspect and further observations were secured. These show the minima, of alternately unequal depths, to have a narrow, symmetrical shape while the maxima are broad and smoothly rounded, so that there can be no doubt that BC Eri is actually a W UMa type star of period 0.528 day.

We do not yet have a complete light curve, but we can state that $V_{pri} = 11.32$, $V_{sec} = 11.26$, and $V_{max} = 10.83$ mag., aproximately.

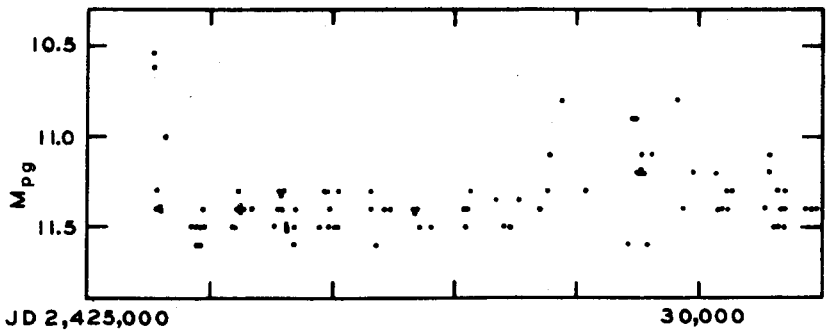
W. S. FITCH

Steward Observatory
University of Arizona

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 133

Konkoly Observatory
Budapest
9 May 1966

RT CETI



The variable star RT Ceti was discovered by Emily M. Hughes in 1930 (HB, No. 877, 1930), and was described as of short period. Apparently, no other study of this star has been made.

During another investigation, the writer made about 700 observations of RT Ceti. A portion of these (principally from plates taken with Harvard's 3-inch patrol cameras) is shown in the accompanying light curve. It appears that the star has relatively long intervals of small fluctuations (~ 0.3 magnitude), while at other times its variation is > 0.5 magnitude. One change of 0.9 magnitude occurred in 30 days. The photographic range of RT Ceti was found to be 10.6-11.7.

One well-exposed objective-prism spectrum (a 60-minute exposure in 1906 with the 24-inch Bruce doublet, then at Arequipa, Peru) was found and classified as M6.

It is concluded that RT Ceti is a late-type irregular variable.

L. J. ROBINSON

"Sky and Telescope"
49 Bay State Rd.
Cambridge, Mass. USA

Ny. 931/1966.

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 134

Konkoly Observatory
Budapest
5 May 1966

SPECTRUM OF THE EARLY-TYPE FLARE STAR BD +13°1048

The variability of the sixth magnitude star BD $+31^{\circ}1048$ was discovered by Andrews 1964 who found an increase of at least 3^{m} on March 1, 1964, and rapid changes in brightness on March 10 and 14, with amplitudes up to 2 magnitudes. Two spectrograms in the blue region taken at Herstmonceaux and Edinburgh show normal B8 features, in agreement with the HD classification but not in accord with the present scheme of flare stars. However, according to the strict temporal meaning of the word, the object is claimed to be a flare star (Andrews, 1965). The author of the discovery hopes that possibly H_{α} could be detected in emission, but this is not the case. Two spectra obtained at Asiago on November $22^{d}3^{h}5^{m}$ U.T., 1964 and November $8^{d}22^{h}53^{m}$ U.T., 1965, both on Kodak 103aF with a two-prisms camera (dispersion 42 A/mm at H_{γ}), do not leave any doubt about the absence of any emission line, even in the red region. H_{α} itself appears strong in absorption.

Astrophysical Observatory, Asiago
April 8, 1966

A. MAMMANO

References

Andrews A. D., Armagh Contribution No. 46, 1964
Andrews A. D., Armagh Contribution No. 49, 1965

Ny. 931/1966.

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 135

Konkoly Observatory
Budapest
16 May 1966

NOTE ON THE AMPLITUDE OF RU CAM

Fernie and Demers (Ap. J., in press, as reported by Wamsteker (1966) have reported recently that the light amplitude of RU Cam became very small during the season of 1965/66. It may be of interest to quote here some photometric results obtained for this star by the present writer during the two seasons of 1961/62 and 1963/64 (all the observations were made at the Lick Observatory).

In 1961/62 RU Cam showed an extremely large amplitude in V amounting to about 1.6 mag (see Michalowska-Smak and Smak 1965 for details). Photoelectric observations of various observers made in the 1950's showed that between JD 2434000 and JD 2435500 the visual amplitude was only about 1 mag, but around JD 2435900 Delsemme and Delsemme-Jehoulet (1958) reported V_{min} = 9.55 which gave for the amplitude 1.3-1.4 mag. Therefore between JD 2435500 and JD 2437700 there was a systematic increase in the amplitude from 1.0 mag to 1.6 mag, primarily due to the decrease of the star's brightness at minimum.

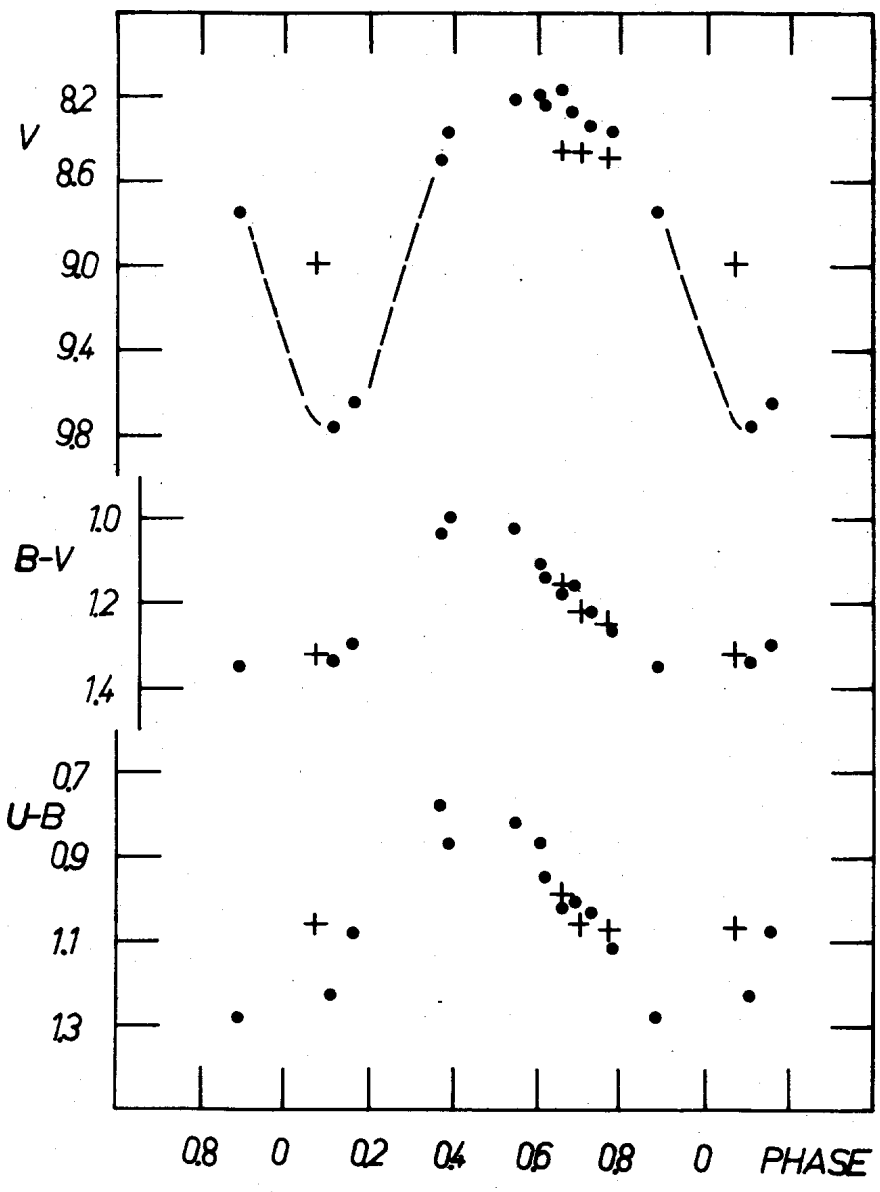
In 1963/64 the writer obtained only four measurements of RU Cam; they are given in the table below. When plotted against phase and compared with the 1961/62 observations these data show that

a) the visual light amplitude was only about 0.55 mag;

b) the B-V variations were probably similar to those in 1961/62

c) the U-B variations showed much smaller amplitude than those in 1961/62; and

d) there was no significant phase shift between the two seasons.



RU Cam in 1961/62 (filled circles) and in 1963/64 (crosses).

Moreover, the 1963/64 data together with the new observations by Wamsteker (1966) show clearly that RU Cam became both - fainter at maximum and brighter at minimum - as compared to earlier observations.

Photoelectric observations of RU Cam in 1963/64

JD hel	Phase	V	B-V	U-B
2438365.74	0.77	8.49	1.26	1.07
429.68	0.66	8.45	1.16	0.99
430.66	0.70	8.46	1.22	1.06
438.72	0.07	8.99	1.32	1.06

Phases were computed from the elements given in the General Catalogue of Variable Stars.

Institute of Astronomy,

Polish Academy of Sciences,

Warsaw, Poland

May 2, 1966

J. SMAK

References

Delsemme, A. H. and Delsemme-Jehoulet, D. 1958. Mém. Soc. Roy. Sci. Liège, 4-e Série, 20, 328.

Michalowska-Smak, A., and Smak, J. 1965. Acta Astron., 15, 333.

Wamsteker, W. 1966. IAU Information Bull. on Variable Stars, No 128.

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 136

Konkoly Observatory
Budapest
21 May 1966

A NEW BRIGHT SOUTHERN VARIABLE STAR

The star CPD $-67^{\circ}3312$ = HD 156545 (Ao) has been found to be variable on the Gevaert 67A50 Scientia plates taken by A. Van Hoof, F. C. Bertiau and the authors during the years 1957-1964. All the photographic plates have been taken with the 10" -Metcalf telescope of the Boyden Observatory (South-Africa) with an exposure time of 30 minutes.

We estimated the variable on 320 plates using the five comparison stars:

a :	$-67^{\circ}3337$	$7^{m}.8$
b :	$-68^{\circ}2914$	8 .1
c :	$-68^{\circ}2916$	8 .5
d :	$-68^{\circ}2921$	8 .8
e :	$-67^{\circ}3319$	9 .1

The estimates proved the star to be of the Algol type. The period has been derived by least squares from twelve minima:

$$P = 2^{d}.312923 \pm 0^{d}.000033$$

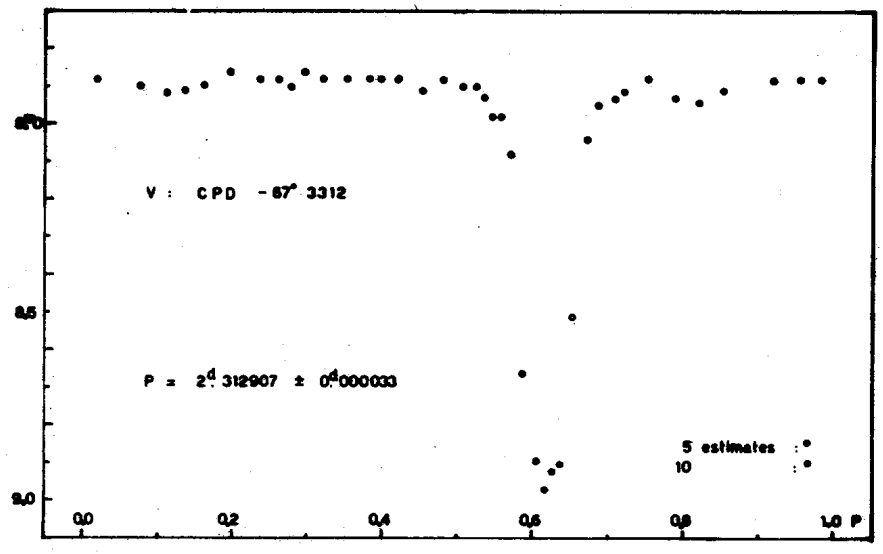
The extreme values are:

$$7^{m}\ 88 \text{ and } 8^{m}.97$$

Mean epoch of minimum: JD 2436891.904

The individual minima (fainter than $8^{m}.80$) are:

J. D. min.	E	O - C	J. D. min.	E	O - C
2436 038.4375	0	$-0^d.0212$	7 132.4416	473	$-0^d.0221$
6 052.3142	6	-0 .0219	7 146.2774	479	-0 .0638
6 066.2275	12	+0 .0139	7 190.2565	498	-0 .0299
6 110.2249	31	+0 .0661	7 486.3451	626	+0 .0066
6 813.2922	335	+0 .0097	8 196.3918	933	-0 .0091
6 894.2590	370	+0 .0247	8 261.2092	961	+0 .0469
					$-0^d.0001$



R. DEURINCK
R. BRIERS

Astronomisch Instituut
Universiteit Leuven, Belgium

Ny 980/66

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 137

Konkoly Observatory
Budapest
31 May 1966

TWO NEW SHORT PERIOD VARIABLES

The stars HR 5329 and β Cassiopeiae are probably members of the δ Scuti group.

The variability of β Cas was first observed on October 16, 1964, and was confirmed on August 6 and 19, 1965. The period of this star is 0.104 days and its amplitude is 0.04 mag. in V (Figure 1).

The variability of HR 5329 was observed first on August 13, 1964. This variability has been confirmed on several nights. The period of this star is near 0.069 days. The amplitude in V is near 0.04 mag. but may vary by about one hundredth of a magnitude (Figure 2).

Lowell Observatory
Flagstaff, Arizona
May 19, 1966

ROBERT L. MILLIS

Ny. 1108/1966.

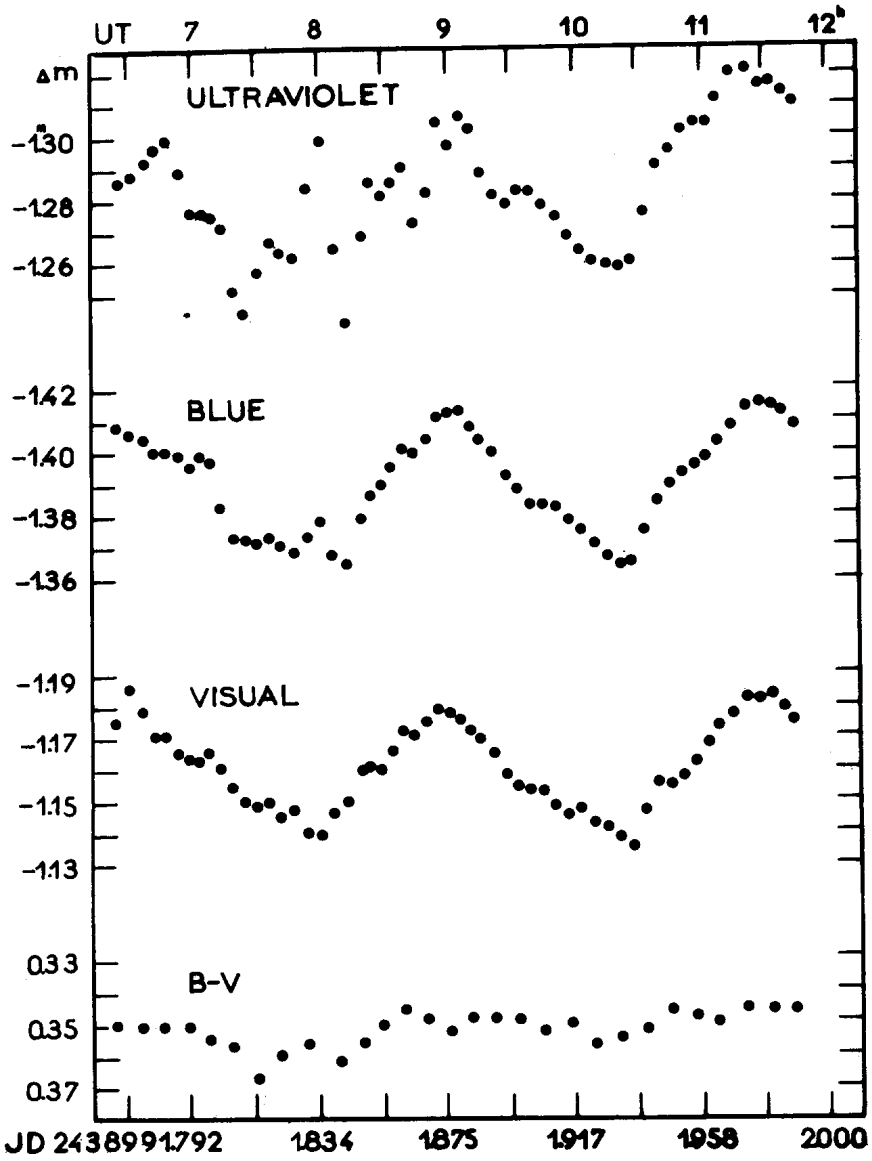


Fig. 1.

Observations of β Cas on August 19, 1965. Comparison star = η Cas.
Δ m = $m_{var.} - m_{comp.}$

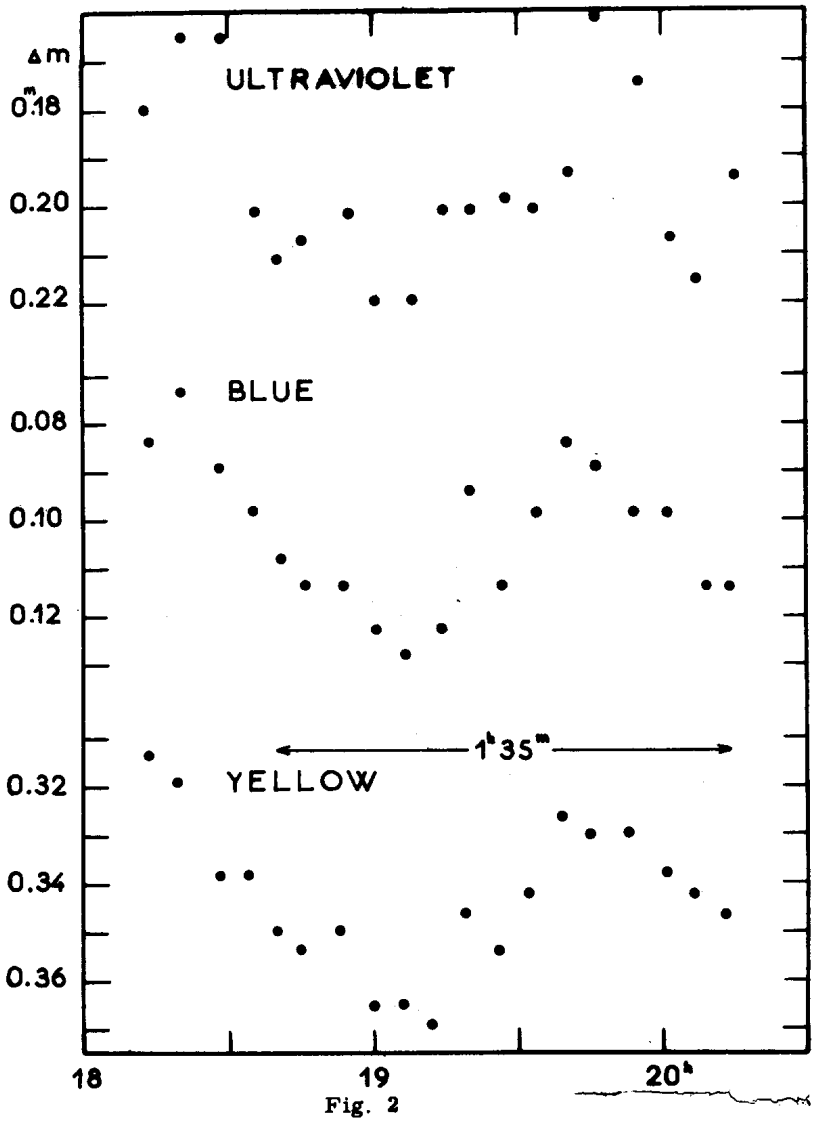


Fig. 2

Observations of χ^2 Boo A = BS 5329 on August 28, 1964. Comparison star = BD+52°1804. Δ m = $m_{var.} - m_{comp.}$ not transformed to UBV system.

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 138

Konkoly Observatory
Budapest
9 June 1966

PHOTOELECTRIC OBSERVATIONS OF THE NEW DELTA SCUTI VARIABLE HD 107904

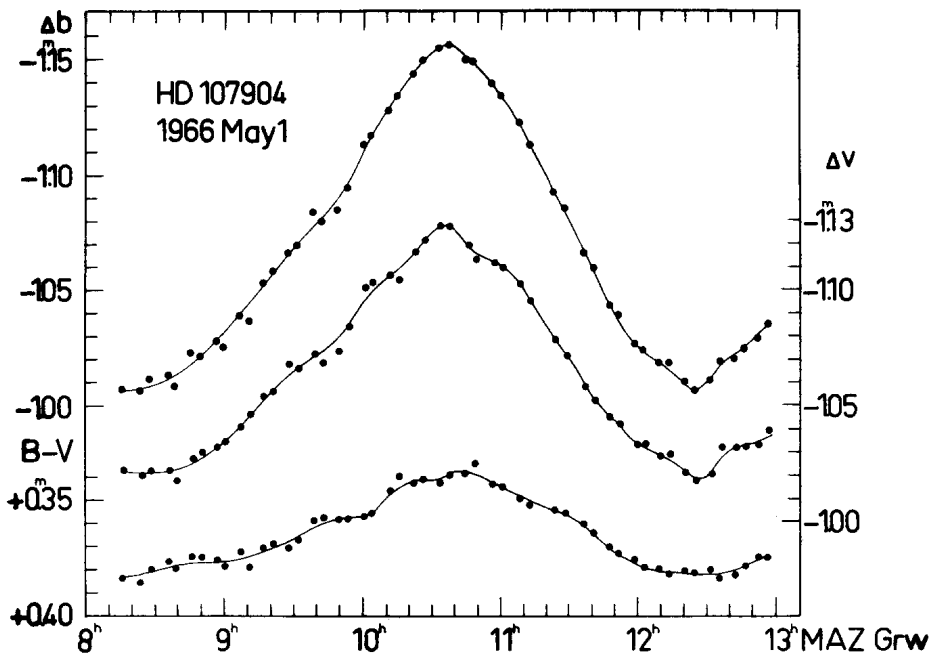
HD 107904 (Fo) belonging to the Hyades moving group was suggested by O. J. Eggen to be a δ Scuti-variable. From 22 spectra taken with the 36" Yapp reflector D.H. P. Jones and C. M. Haslam (The Observatory 86, 34, 1966) derived a radial velocity curve of about 30 km/sec amplitude and a period of $0^d.1707$ - typical for a δ Scuti-variable.

A first series of photoelectric b, v observations with the 24" reflector of the Lippert Astrograph (1966 May) covering a whole period show the respective light variation (figure). The comparison star used was BD +43°2221 of spectral type F2, for which star preliminary measurements give V = $7^m.098$ and B-V = $0^m.369$ in the B, V system.

The ordinates in the figure give the magnitude differences $\Delta b = b^o_{var} - b^o_{comp}$ and $\Delta v = v^o_{var} - v^o_{com}$ in the instrumental system. The color B-V refers to the B, V system. As it was an extraordinary photometric night the mean error of one observation turned out to be about $\pm 0^m.002$.

As yet photoelectric measurements have been made in 4 nights yielding the following results:

Maximum	Δm_b^{max}	ampl.$_b$	Δm_v^{max}	ampl.$_v$
243 9247.4423	$-1^m.156$	$0^m.150$	$-1^m.127$	$0^m.110$
9259.5075:	-1.070	0.029	-1.067	0.019
9262.4850	-1.100	0.065	-1.095	0.047
9266.4129	-1.111	0.056	-1.096	0.044



It is known that variations in form and amplitude of the light curve are quite usual for δ Scuti variables. Further observations are urgently needed to get at the secondary period of these variations.

1966 May 29

A. A. WACHMANN

Hamburg Bergedorf
Sternwarte

Ny. 1117/1966.

COMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 139

Konkoly Observatory
Budapest
14 June 1966

PHOTOELECTRIC OBSERVATIONS OF NOVA HER 1963

Nova Her 1963 showed gradual brightening before its maximum (1). The light curve during decline was observed in many observatories, however rapid fluctuations, in few hours observation, were not observed.

The nova showed random changements in brightness of 0.02, 0.05 magnitudes during the summer 1965 when it was observed by Chincarini in blue and ultraviolet light with the 24" of the Lick Observatory. The maximum amplitude of light variations was of 0.13 magnitudes in one hour. Such fluctuations were also observed the year before by Almár at the Konkoly Observatory and a short periodicity, about 1 hour, was suspected (2). Observations by Almár and Chincarini at the Astrophysical Observatory of Asiago (March 16, 1966) and by Almár (March 28, 1966) showed after a period of constant brightness a decrease in luminosity. Following these observations Rosino announced the presence of a minimum of 40 minutes duration and $0^{m}.1$ depth similar to the partial eclipse of the Algol-type binaries (3).

Observations of the nova were carried out at Lick Observatory on the nights April 20, 21, 22 and 27 (U.T.). The 1P21 cell without any filter has been used. The light curve of the nova is now characterized by:

a/ fluctuations of amplitude between 0.2 and 0.1 magnitudes and lasting from 5 to 50 minutes

b/ overimposed a few minima with amplitude of 0.1-0.2 magnitudes and lasting only 15 minutes were observed.

A preliminary analysis of the observations did not show evidence of eclipse. However a piece of the light curve observed on April 22 is almost exactly (within 0.02 magnitudes) repeated on the light curve of the night April 27. During this period, lasting about 90 minutes, the nova increased in brightness of about 0.2 magnitudes with fluctuations of 0.06-0.10 magnitudes. The same features lasting 90 minutes seem to be present on the night April 20, in this case the agreement is poorer. A period P = 359.5 minutes could agree with all our observations. More observations are needed in order to understand the nature of the periodicity. A spectrum obtained at the Crossley during 1965 showed very strong hydrogen and nebular emissions on a faint continuum. Most of the light should, therefore, be coming from the expanding gaseous shell.

Lick Observatory
May 29, 1966

G. CHINCARINI
V. S. HOWARD

Referendes:

(1) W. Götz Sky and Telescope (April 1966)
(2) I. Almár Private communication (March 1966)
(3) L. Rosino I. A. U. Circular No. 1953.

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 140

Konkoly Observatory
Budapest
27 June 1966

Veröffentlichungen der Remeis-Sternwarte Bamberg
Astronomisches Institut der Universität Erlangen-Nürnberg
Band VI, Nr 32

BRIGHT SOUTHERN BV-STARS

On sky patrol plates of Bamberg Southern Station 24 further stars were found whose variability seems to be real as can be seen from the material available till now.

BV 795 = BD $-18^{\circ}349$ ($9^{m}.2$) $A_{pg} = 0^{m}.30$

BV 796 = CoD $-70^{\circ}124$ ($7^{m}.3$) = HD 15 701 (Mb) $A_{pg} = 0^{m}.30$
= K3II224 = HV 132

BV 797 = CoD $-33^{\circ}1041$ ($9^{m}.6$) $A_{pg} = 0^{m}.30$

BV 798 = CoD $-23^{\circ}2484$ ($9^{m}.3$) = HD 33 575 (A5) $A_{pg} = 0^{m}.30$

BV 799 = CoD $-76^{\circ}219$ ($8^{m}.5$) = HD 37 513 (F8) $A_{pg} = 0^{m}.30$

BV 800 = CoD $-56^{\circ}1293$ ($10\ 1/4^{m}$) $A_{pg} = 0^{m}.25$

BV 801 = CoD $-43^{\circ}2223$ ($9^{m}.7$) $A_{pg} = 0^{m}.50$

BV 802 = BD $-11^{\circ}1766$ ($9^{m}.0$) = HD 53 339 (B5) $A_{pg} = 0^{m}.30$

BV 803 = CoD $-40^{\circ}2926$ (10^{m}) $A_{pg} = 0^{m}.30$

BV 804 = CoD $-69^{\circ}450$ ($8^{m}.3$) = HD 60 023 (A2) $A_{pg} = 0^{m}.25$

BV 805 = CoD $-37^{\circ}3645$ ($8^{m}.8$) = HD 60 099 (B9) $A_{pg} = 0^{m}.80$

BV 806 = CoD $-36^{\circ}4005$ (10^{m})		$A_{pg} = 0^{m}.25$
BV 807 = CoD $-54^{\circ}2078$ ($9^{m}.1$)	= HD 67 956 (Ao)	$A_{pg} = 0^{m}.30$
BV 808 = Cap $-31^{\circ}2250$ (10^{m})		$A_{pg} = 0^{m}.35$
BV 809 = CoD $-25^{\circ}5968$ ($8^{m}.4$)	= HD 70 654 (Mb)	$A_{pg} = 0^{m}.25$
= K3II1289 = 271.1930		
BV 810 = CoD $-33^{\circ}5398$ ($9^{m}.4$)		$A_{pg} = 0^{m}.35$
BV 811 = CoD $-27^{\circ}6141$ ($7^{m}.2$)	= HD 77 137 (Go)	$A_{pg} = 0^{m}.50$
BV 812 = CoD $-42^{\circ}13506$ (10^{m})		$A_{pg} = 0^{m}.25$
BV 813 = CoD $-43^{\circ}12888$ (10^{m})		$A_{pg} = 0^{m}.35$
BV 814 = CoD $-31^{\circ}16600$ ($9^{m}.8$)		$A_{pg} = 0^{m}.30$
= K3II4610 = S 5064		
BV 815 = CoD $-34^{\circ}15074$ ($9^{m}.7$)		$A_{pg} = 0^{m}.40$
BV 816 = CoD $-34^{\circ}15271$ ($9^{m}.8$)		$A_{pg} = 0^{m}.30$
BV 817 = CoD $-39^{\circ}14541$ (10^{m})		$A_{pg} = 0^{m}.25$
BV 818 = CoD $-56^{\circ}8473$ (11^{m})		$A_{pg} = 0^{m}.40$

Bamberg, Remeis-Observatory

18 June 1966

W. STROHMEIER
H. FISCHER H. OTT

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 141

Konkoly Observatory
Budapest
30 June 1966

LONG PERIOD VARIABLE STARS WITH LARGE INTRINSIC POLARIZATION

The polarimetric observations of long period variable stars made by the writer until the beginning of March 1966 were published recently (Ap. J., 144, 857, 1966). In the accompanying table some new observations are listed which were made with the 21-inch telescope of the Lowell Observatory using Polaroid J-filter as an analyser. In this table P and Θ denote the percentage polarization and position angle of the plane of vibrations in the equatorial coordinates, respectively; the superscripts V and B denote the yellow and blue filters of the UBV photometric system.

The stars V Canum Venaticorum and Z Ursae Majoris, both having periods slightly shorter than 200^d, reached the maximum polarization when they were at minimum brightness. The variables RS Cancri, R Leonis, and U Herculis were least polarized at maximum brightness. The ful list of the polarimetric observations of red variable stars made in the present programme will be published in a Lowell Observatory Bulletin.

HD	Star	Spectral Type	Period	Date 1966 (U. T.)	V	Percentage Polarization		Position Angle	
						P^V	P^B	θ^V	θ^B
41698	S Lep	M6	90^d	Mar. 21	7.1	1.8	2.6:	51°	56°
44639	V Mon	M5e-M8e	335	Feb. 23	9.4	0.9	1.8	27	11
				Mar. 22	7.9	1.0	2.0	9	12
78712	RS Cnc	M6 Ib - II(S)	120 and 1700	Mar. 16	5.9	0.5	0.8	53	58
				Mar. 17	5.9	0.5	0.5	54	62
				Apr. 14	5.5	0.1	0.2	50	33
				Apr. 25	5.5	0.2	0.3	12	175
84748	R Leo	M7e-M8e	313	Mar. 17	6.1	0.5	0.4	16	43
92763	R UMa	M3e-M6e	302	May 23	7.0	0.8	0.8	48	51
				June 17	7.1	0.4	0.5	42	34
103681	Z UMa	M5 IIIe	198	Mar. 22	7.7	0.9	1.1	8	3
				Mar. 29	7.8	0.8	1.0	10	10
				Apr. 13	8.2	1.0	1.4	38	42
				Apr. 25	8.5	1.3	2.4	54	47
				May 16	9.1	1.4	2.6	41	41
				June 14	8.4	0.2	0.4	56	4
				June 17	8.3	0.4	0.6	57	34
108105	SS Vir	Vir Ne (C6 e)	355	Apr. 11	6.6	0.1	0.8	176	14
				May 15	7.4	0.3	0.9	167	3
				June 14	7.2	0.1	0.9	5	7
115898	V CVn	M4e-M6e	192	Mar. 15	8.2	5.4	7.2	102	100
				Mar. 17	8.2	5.4	7.1	101	98
				Mar. 29	8.0	5.1	6.4	103	99
				Apr. 9	7.8	4.7	5.5	104	102
				Apr. 11	7.8	4.5	5.4	103	103
				Apr. 17	7.8	4.2	4.7	105	103
				Apr. 26	7.6	3.3	3.8	102	101
				May 15	7.5	3.1	3.3	104	103
				June 13	6.8	2.3	2.7	103	109

HD	Star	Spectral Type	Period	Date 1966 (U.T.)	V	Percentage Polarization		Position Angle	
						p^V	p^B	θ^V	θ^B
120499	R CV n+/	M6e-M8e	328	May 16	8.9	0.9	1.5	27	23
				June 13	7.7	1.0	1.5	22	30
136753	S CrB	M6e-M8e	361	Mar. 18	6.1	1.0	1.4	163	167
				Mar. 29	6.2	0.8	1.4	161	163
				Apr. 11	6.4	0.6	1.2	157	159
				Apr. 17	6.7	0.6	1.1	154	162
				May 16	7.7	0.6	1.4	152	159
				June 17	8.8	0.4	1.3	143	152
141826	V CrB	N2 ($C6_2$)e	358	Mar. 18	8.6	2.0	2.2	147	142
				Apr. 14	8.9	1.8	1.8	148	160
144205	X Her	M6e	95	Apr. 18	6.7	1.2	1.6	59	57
			and	May 22	6.4	0.7	0.8	60	54
			746	June 14	6.4	0.0	0.3	73:	179
148206	U Her	M7e-M8e	406	Apr. 24	9.1	1.7	4.5	155	148
				Apr. 25	9.0	1.6	4.2	149	154
				May 15	8.5	0.6	1.1	125	165
				May 23	8.5	0.3	0.2	132	153
				June 14	8.9	0.7	1.9	68	52
186686	RT Cyg	M2e-M4e	190	Mar. 29	8.6	...	0.3	...	47
				Apr. 16	7.6	0.2	0.2	163	22
				Apr. 25	7.0	0.1	0.4	47	34
				May 15	7.0	0.1	0.2	43	56
				June 17	8.3	0.2	...	155	...
187796	χ Cyg	S7e-S10e	407	May 15	6.2	1.6	2.1	88	82
				May 23	6.4	1.5	1.9	91	84
				June 17	7.2	1.2	1.2	92	79

+/ Appreciable polarization of R CVn was first noticed by T. Gehrels in April 1966.

June 21, 1966
Lowell Observatory
Flagstaff, Arizona

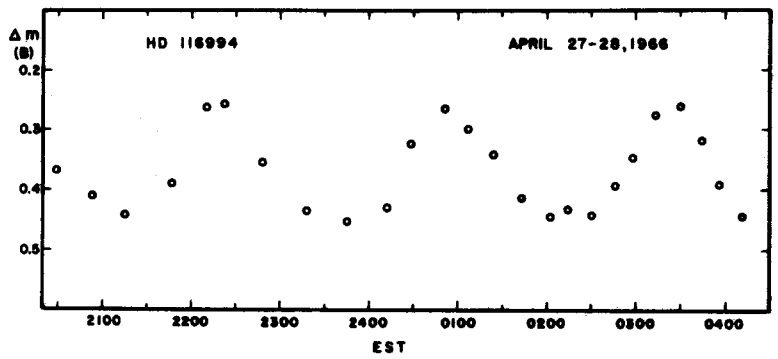
K. SERKOWSKI

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 142

Konkoly Observatory
Budapest
6 July 1966

PHOTOELECTRIC OBSERVATION OF HD 116994

On April 27-28, 1966, photoelectric observation (UBV) of HD 116994 (A5) = DM -50^{o} 7794 was made at Cerro Tololo Inter-American Observatory, using the 16-inch reflecting telescope. From the estimates of recorded readings, it is shown to be a variable. Its variation of light in blue (B) is shown in the accompanied figure, where $\Delta m = m_{var} - m_{comp}$. The comparison star observed was HD 118014 (AO) = DM -52^{o} 7601. No correction was made here for differential extinction. The period is estimated to be $0^{d}.104$. This star is most likely belonging to the group of dwarf cepheids. Detailed reduction and analysis of the observed data are being carried out.



June 27, 1966

KWAN-YU CHEN
University of Florida
Gainesville, Florida
U. S. A.

Ny. 1257/1966.

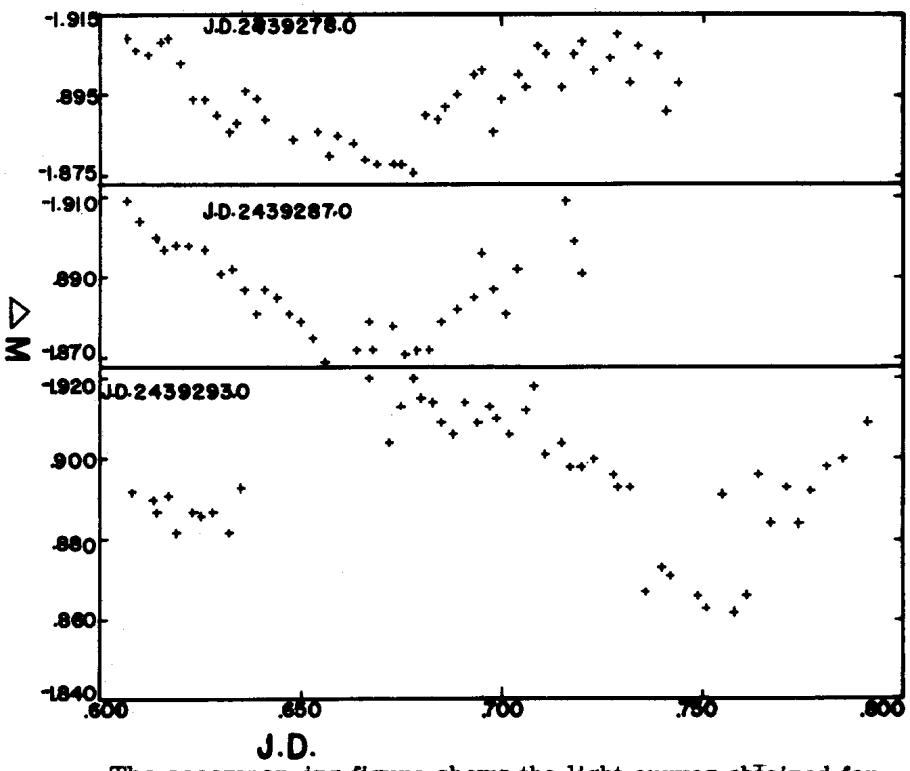
COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 143

Konkoly Observatory
Budapest
7 July 1966

LIGHT VARIABILITY OF 20 CANUM VENATICORUM

At the AAS-NASA Symposium on the Magnetic and Other Peculiar and Metallic-Line A Stars Robert C. Cameron suggested that 20 C Vn (HD 115604 [FO]: $\alpha = 13^h\ 13^m.1$, $\delta = +41^\circ\ 6'$ [1900]) might be a Delta Scuti type star because it showed high metal indices. To investigate this suggestion we have observed it photoelectrically with a twelve inch reflector on three nights. The photometer used an EMI 6094 with Schott GG13 plus Corning 5030 filters.

Two comparison stars were used, HD 116127 and HD 114905. There was no evidence of variation of the comparison stars during the course of any night, although the third night was rather poor and showed appreciable scatter. The magnitudes for HD 114905 were converted to values equivalent to the magnitudes of HD 116127 by subtracting the mean difference between the comparison stars for each night. The mean differences for the three nights were $0^m.355$, $0^m.362$ and $0^m.347$. The differences between the comparison stars observations yielded a mean probable error for a single difference of $0^m.008$.



The accompanying figure shows the light curves obtained for three nights. It appears that 20 C Vn is variable with an amplitude of about $0^{m}.03$ magnitude. The observations are too limited to derive an accurate period or even to establish that the variation is periodic. However, from the individual curves a period of about 0.13 day may be inferred. The light variation and spectral type indicate that 20 C Vn is a Delta Scuti variable.

June 30, 1966

W. H. WEHLAU
S. C. N. CHEN G. SYMONDS
University of Western Ontario
London, Ontario, Canada

Ny. 1257/1966.

COMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 144

Konkoly Observatory
Budapest
9 July 1966

NOTES ON NEW VARIABLE STARS

HD $+54^{\circ}2193$ ($5^{m}.8$)

The variability of BD $+54^{\circ}2193$ was announced by M.S.Snowden in IBVS 127. I wish to point out that the variability of this star was already discovered in 1928 at the Babelsberg Observatory. In Vierteljahrsschrift der Astr.Gesellschaft Bd 64, p. 156 (1929) the epoch of a patrol plate (J.D. 2425507.420; 1928 Sep.17), showing the star faint, was given.

Potsdam, Astrophysikalisches Observatorium
June 10, 1966

H. SCHNELLER

HD 156 545 = BV 418

Elements of this star have been given in the following numbers of the IBVS:

No 47: elements
No 77: improved elements and photometric light curve.
No 136: independent discovery of the variability by R.Deurinck and R. Briers, elements and light-curve.

Elements given in numbers 77 and 136 are fully compatible as may be seen by two half-minima on new patrol plates of the Bamberg Southern Station, fitting the light-curve of No 77 with the elements of No 136.

JD Half-Minima	Phase	E	O - C	Brightness+/
243 8943.383	0.964	886	$-0^{d}.083$	$8^{m}.95$
8971.319	0.042	899	+0.097	9 .15

+/ (Derived using the comparison stars given in No 77).

Bamberg Observatory
June 24, 1966

W. STROHMEIER

BV 345 = V 796 Cyg

BV 345 ($19^h30^m48^s.1$, $+47^\circ07'.9$, 1900.0), announced as variable by Strohmeier (Ver.d. Remeis-Sternwarte, Bamberg Bd V. Nr 8.) is identical with V 796 Cyg ($19^h31^m3^s$ $+47^\circ05'.6$; 1900.0), as was found by the second author observing the star on our patrol plates.

V 796 Cyg = S 4782 was discovered by Hoffmeister at Sonneberg. (Astr. Abh. Erg. Bd. 12, Nr 1). Zessevitsch found type EB with the elements

Min. = J.D. 2435691.417 + $0^d.74047$. E (11^m - $11^m.5$ pg) Sovi. Astr. Circ. No. 173).

The first author found a better representation of the observations by the new elements:

Min = 24 37997.108 + $1^d.480834$. E

Observed Minima:

J.D. hel.	O - C	E	
2436817.545	-0.079	-796,5	(Min II)
6898.284	- .045	-742	
7189.354	+ .041	-545,5	(Min II)
7192.341	+ .066	-543,5	(Min II)
7249.300	+ .013	-505	
7913.424	- .017	- 56,5	(Min II)+/
7939.369	+ .014	- 39	+/
7959.355	+ .008	- 25,5	(Min II)+/
8232.532	- .029	+159	+/
8235.510	- .012	+161	+/
8255.495	- .019	+174,5	(Min II)
8640.491	- .039	+434,5	(Min II)
8652.399	+ .022	+442,5	(Min II)
8669.388	- .019	+454	
9049.266	+ .025	+710,5	(Min II)
9052.276	+ .074	+712,5	(Min II)

+/ published already in Harthaer Beobachtungs-Zirkular Nr. 29/30.

Bruno H. Bürgel-Sternwarte
7302 Hartha DDr

H. BUSCH

K. HÄUSSLER

44. I BOOTIS

From 130 photoelectric observations during 5 nights between 1966 April 26 and May 2 the following 6 Minima could be derived.

J.D.hel.	n	O - C
243 9242.4050:	7019	-0.d0007
9243.3465	7022.5	+0.0035
9245.3520	7030	+0.0003
9245.4865	7030.5	+0.0009
9247.3600	7037.5	-0.0003
9248.4310	7041.5	-0.0005

The O-C's have been obtained from the elements given in IBVS 57, 1964. They show that the period was constant during the last 5 years.

Potsdam, Astrophysikalisches Observatorium
June 10, 1966

H. SCHNELLER

COMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 145

Konkoly Observatory
Budapest
22 July 1966

NOTE ON V796 CYG = S4782 = BV 345

The period of V796 Cyg, given in the First Supplement to the Second Edition of the GCVS, Moscow 1960, page 37, could be improved by considering estimated minima on Bamberg sky patrol plates.

The elements of V796 Cyg are:

Min = JD 243 5691.417 + $0^d.740438$ E

Minima	E	O - C
JD 242 6620.317	-12250	$+0^d.006$
.359	-12250	+0.048
6810.580	-11994	-0.024
7327.388	-11296	-0.041
7330.343	-11292	-0.048
7333.356	-11287	+0.003
8020.522	-10359	+0.043
8779.435	- 9334	+0.007
9050.467	- 8968	+0.038
243 6789.439	+ 1482	-0.048
6841.294	+ 1552	-0.023

Bamberg Observatory,
July 14, 1966

W. STROHMEIER

Y CYGNI

(Continuation of IBVS No. 61)

For improving the period of apsidal rotation the observation of this star is requested. Therefore I give in the table below the moments of "odd"-minima (Princeton Contr. 12, 1931) for 1966.

J. D. M. A. T. G.		U. T.	
243 9328.36	1966 July	21^d	23.^{h}9
31.35		24	23.8
34.35		27	23.7
37.35		30	23.6
40.34	Aug.	2	23.5
43.34		5	23.4
46.34		8	23.3
49.33		11	23.3
52.33		14	23.2
55.32		17	23.1
58.32		20	23.0
61.32		23	22.9
64.32		26	22.8
67.31		29	22.7
70.31	Sep.	1	22.6
73.30		4	22.6
76.30		7	22.5
79.30		10	22.4
82.29		13	22.3
85.29		16	22.2
88.28		19	22.1
91.28		22	22.0
94.28		25	21.9
97.27		28	21.9
9400.27	Oct.	1	21.8
03.27		4	21.7
06.26		7	21.6
09.26		10	21.5
12.25		13	21.4
15.25		16	21.3
18.25		19	21.2
21.24		22	21.2
24.24		25	21.1
27.24		28	21.0
30.23		31	20.9
33.23	Nov.	3	20.8
36.23		6	20.7

Astrophysikalisches Observatorium
Potsdam, June 10, 1966

H. SCHNELLER

NOUVELLE ÉTOILE VARIABLE

En étudiant l'étoile variable Br 51, signalée par M. BRUN (" 37 étoiles variables nouvelles dans Lacerta" - Journal des Observateurs vol. 47,46,1964) j'ai trouvé une étoile susceptible d'être une étoile variable nouvelle. Sa position est

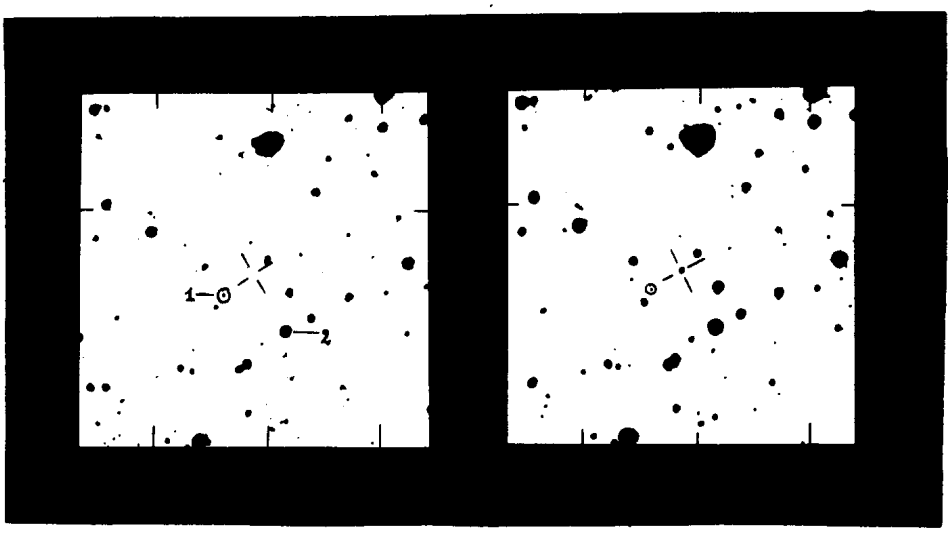
1900,0	22. 26. 07	+ 48° 39,2
1950,0	22. 28. 11	+ 48° 54,6.

Les deux cartes sont des agrandissements à l'échelle de 1° = 12 cm de plaques Ferrania LS 61 exposées

a - le	6. 7. 1964	de	22h41	à	23h11 (TU)
b - le	8. 9. 1964	de	20h50	à	21h50 (TU)

à l'aide d'une chambre photographique équipée d'un objectif Berthiot-Olor, f = 500 mm, f/D = 6.

L'étoile suspecte ne figure pas dans le Catalogue Photographique du Ciel, section de Catania. Elle figure sur les planches 590 et 599 de l'Atlas de Palomar.



1 = variable BR 51 (variation confirmée)
2 = BD +48° 3746 = AGK_2 +48° 1916

E. SCHWEITZER
67-Strasbourg
1, rue Beethoven

Ny. 1375/1966.

COMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 146

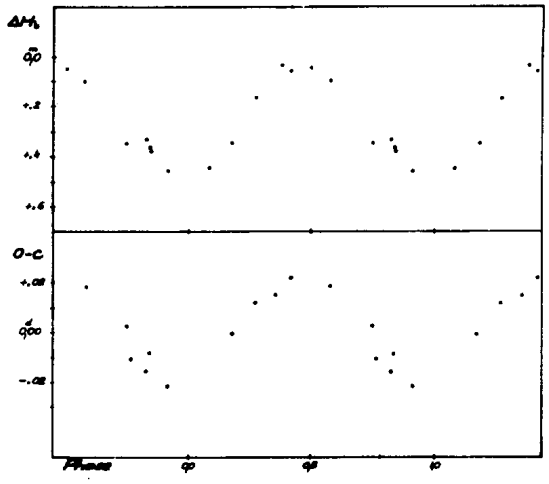
Konkoly Observatory
Budapest
22 July 1966

THE SECONDARY PERIOD OF THE RRab STAR Z CANUM VENATICORUM

Photoelectric observations of Z CVn carried out in 1964 at the Konkoly Observatory utilizing an EMI 9502B multiplier attached to the 24" Newton telescope showed that the light curve changed periodically. During the spring of 1966 twelve maxima have been obtained, which enabled us to derive the secondary period:

$$P_b = 22^d,75$$

being the shortest one among the secondary periods so far known for RRab stars.



The first column of the Table contains the observed maxima, the second column the O - C values computed with the following elements:

$$\text{Max. hel.} = 2439\,172{,}602 + 0^{d}{,}6537975\ E \qquad (1)$$

In the third column the heights of the maxima relative to the comparison star are listed in blue (ΔM_b) and yellow (ΔM_y) in the instrumental system.

In the figure the ΔM_b and O-C values obtained in 1966 are plotted against the phase of the secondary period. The phase of the secondary period was computed by the formula:

$$\text{Min. ampl.} = 2439\ 176{,}12 + 22^{d}{,}75 \qquad (2)$$

J. D. max.	O - C	M_b	M_y
2439 172,593	$-0^{d}009$	+0,365	+0,655
182,420	+0,011	0,170	0,450
195,455:	--	0,380	0,610
216,395	-0,011	--	--
240,581	-0,016	0,335	--
242,536	-0,022	0,460	0,670
246,475	-0,006	0,450	0,750
248,441	-0,001	0,350	0,640
252,379	+0,014	0,040	0,375
261,520	+0,002	0,350	0,695
280,497	+0,018	0,100	0,400
299,460	+0,021	0,060	0,390

S. KANYÓ

Budapest
Konkoly Observatory

COMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 147

Konkoly Observatory
Budapest
25 July 1966

THE ECLIPSE OF AZ CAS

Photoelectric observations of the present year eclipse of the long period eclipsing binary AZ Cas ($P \sim 3400$ days; $m_{pg} = 9.9$) are carried out with the 40 cm refractor of the Teramo Observatory. Unfavorable weather conditions together with the occurrence of night lower culmination of the star prevented the observation of the beginning of the eclipse which has been entered between April 14 and May 18, 1966: according to Ashbrook (ApJ Suppl. 15) the beginning of the partial phase was expected to occur April 24, whereas Richter (MVS 331) foresaw the phenomenon for March 24.

At present the star is $0^m.30$ weaker (V magnitudes) than at the maximum of light and appears to be very red (provisional value of B - V: $+2^m.20$). The end of the eclipse is to be expected to occur next August. Accurate photometric and spectographic observations of the partial phase, whose length would range from 5 to 10 days, should be of fundamental importance for the derivation of the light elements and for the study of the phenomena related to the filtering of the light of the blue component through the outer envelopes of the red giant.

Teramo Observatory
July 20, 1966.

P. TEMPESTI

Ny. 1375/1966.

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
Number 148

Konkoly Observatory
Budapest
5 August 1966

PHOTOELECTRIC MINIMA OF ECLIPSING VARIABLES

There are given 13 observed minima for 5 eclipsing variable stars. The photoelectric observations were reduced by the tracking-paper method, except the star RZ Cassiopeiae, in which case the analytical method described by Kwee and van Woerden was applied.

J.D.hel.	E	O - C	n	Observer
RZ Cassiopeiae[1/]				
2439025.3008	18,130	-0.d039	20	H. Minti, A. Ion
032.4730	18,136	-0.039	64	H. Minti, A. Ion
062.3562	18,161	-0.037	38	H. Minti, D. Dragusin
068.3316	18,166	-0.038	61	H. Minti, D. Dragusin
TX Herculis[2/]				
318.3201	2,259	-0.003	23	H. Minti, R. Dinescu
321.4111	2,260.5	-0.005	54	H. Minti, R. Dinescu
V 566 Ophiuchi[3/]				
294.4382	9,884	+0.002	36	H. Minti, R. Dinescu
319.4218	9,945	-0.002	107	H. Minti, R. Dinescu
44i Bootis[4/]				
210.3994	6,888.5	+0.010	63	H. Minti, R. Dinescu
224.4624	6,941	+0.008	66	H. Minti, R. Dinescu
252.4480	7,045.5	+0.007	76	H. Minti, R. Dinescu
290.3855	7,187	+0.008	91	H. Minti, R. Dinescu
V 839 Ophiuchi[5/]				
313.4494	7,217	+0.004	53	H. Minti, R. Dinescu

Note to Table

1/ O - C's were computed from the elements given by P. P. Parenago in "Variable stars" 9, 125, 1951.

2/, 3/, 4/, 5/ O - C's were computed from the elements given in "Rocznic Astronomiczny", 37, 1966.

Bucarest Observatory,
Astrophysical Section

C. POPOVICI

Ny. 1409/1966.

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
Number 149

Konkoly Observatory
Budapest
6 August 1966

MIRA PRIOR TO FABRICIUS

In HO PENG YOKE's list of ancient observations [1], No. (577) contains the information that a "guest star" in the constellation Thien-Tshang was discovered in Korea in 1592, November 28 (Gregorian calendar). This star "diminished only on" 1594, February 20. (From the accurate date one can suppose that diminishing means disappearing). Very probably the "guest star" was Mira = o Ceti, for the following reasons: a) Mira is about 10^{o} distant from the star ξ Ceti, which belongs to Thien-Tshang. b) The hitherto first observations of Mira were those of D. FABRICIUS, who discovered the star 1596, August 13 and notes the disappearence in October. According to GUTHNICK [2], the corresponding maximum lies around July 1. If one counts backwards with a mean period (which is possible for such short a time), one gets a maximum four periods before FABRICIUS in the November of 1592 and a time of disappearence after the following maximum in January of 1594. The minimum was presumably not perceived, because it has occured between heliacal setting and rising of Mira. In view of the semiregular behavior of Mira, the agreement seems to be convincing.

Heidelberg, Astronomisches Rechen-Institut
July 27, 1966

P. BROSCHE

[1] Ho Peng Yoke, Vistas in Astronomy, Vol. 5 (1962), 127.

[2] P. Guthnick, Nova Acta Leopoldina Bd. LXXIX, Nr. 2, Halle 1901.

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
Number 150

Konkoly Observatory
Budapest
8 August 1966

OBSERVATIONS OF VARIABLE F-TYPE STARS WITH SHORT PERIODS

After extended UBV photoelectric observations of about 70 bright field F stars, made between October 1965 and February 1966 with the Mount Wilson 60-inch and Palomar 20-inch reflectors, the following stars were found to show short period, small amplitude light variations. Approximate periods are given in parentheses: -HR 1287 ($0^d.134$), HR 1706 ($0^d.122$), HR 2107 ($0^d.137$), HR 3265 ($0^d.13$), HR 3888 ($0^d.13$), HR 4715 ($0^d.169$)+/, HR 5005 ($0^d.14$), and HR 5017 ($0^d.14$). Some variation has also been detected in the star HR 2539 and in the close binary system HR 3889 although the nature of the variation is uncertain. There is strong evidence that the light amplitudes of most of the stars listed are changing in the manner shown by some of the known Delta Scuti stars.

More extensive observations with the Cassegrain photoelectric spectrum scanner on the Mount Wilson 60-inch and the Coudé spectrograph on the 100-inch have been completed to determine effective temperatures, surface gravities, masses and pulsation characteristics of these stars. A number of non-variable stars in the same region of the Colour-Magnitude Diagram have also been investigated to look for possible differences in physical characteristics between variable and non-variable stars.

The UBV observations of HR 1287 and HR 2107 were made in collaboration with Dr. A. R. Sandage.

Mount Wilson and Palomar Observatories,
July 29, 1966

I. J. DANZIGER
R. J. DICKENS

+/ HR 4715 = 4 CVn was found to be variable in radial velocity with a period of $0^d.17$ by Jones and Haslam (Observatory 86, 34, (1966) Photoelectric observations of this star have been already published by Wachmann (IBVS 138).

Ny. 1409/1966.

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
Number 151

Konkoly Observatory
Budapest
22 August 1966

DS CYGNI

Un astronome amateur belge, M. Marc Ducuroir, faisant des essais photographiques dans la région de la Selected Area 40, y a trouvé une étoile de 11 ième magnitude ne figurant pas sur la carte de la S A 40 (Vehrenberg edit.). Cette étoile ne se trouve pas non plus sur le vieil atlas photographique de Franklin-Adams. Elle a été retrouvée sur une plaque du 15 décembre 1925 faite au Triplet Zeiss de l' Observatoire. A cette époque sa magnitude était 14, 5 environ. MM Arend et Roland ont bien voulu nous aider à l' identifier: il s' agit de DS Cyg dont les caractéristiques sont mal connues selon le catalogue de Kukarkin (spectre N, type Ib, mag 13, 5 - 16).

La variable DS Cyg semble donc beaucoup plus brillante que la normale. Je n' ai pas trouvé de référence récente la concernant et peut-être cette augmentation d'éclat est-elle déjà ancienne? et connue? A tout hazard, pour que cette observation ne se perde pas, je la porte à connaissance.

M. Ducuroir dispose de plusieurs clichés en date des 16 juillet, 4 août et 8 août. J' ai procédé sommairement à un examen au microphotomètre des clichés du 4 août (pose 15m HPS Ilford) et du 8 août (pose 1 h HPS Ilford). La magnitude actuelle vaut 10, 9.

Le 11 août 1966

A. KOECKELENBERGH
Observatoire Royal de Belgique
Uccle

Ny. 1524/1966.

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
Number 152

Konkoly Observatory
Budapest
26 August 1966

NOTE ON THE VARIABLE RU CAM

In connection with the reports that the light amplitude of RU Cam became very small during the season of 1965/66 (Wamsteker 1966) it may be of interest to examine the behaviour of the variable in earlier epochs. There are two sets of photoelectric observations of the star, reduced to the B, V system, obtained by Eggen, Gascoigne and Burr (1957) (between JD 2432821 and JD 2433028) and by Mitchell, Iriarte, Steinmetz and Johnson (1964) (between JD 2437014 and JD 2437053). V and B-V observations of this two sets against phase = P^{-1} (JD -2430000) with P = $22^{d}.134$ (from the GCVS 1958) are plotted on figure 1 (crosses: obs. of Eggen et al., filled circles: obs. of Mitchell et al.). The data show that between the two sets of observations there is

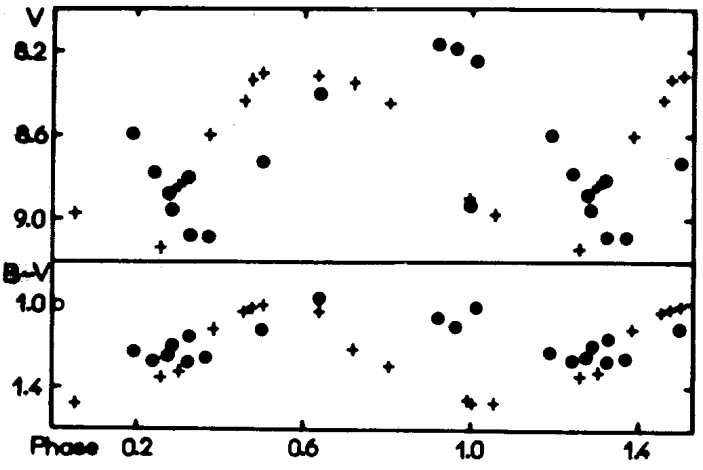


Fig. 1

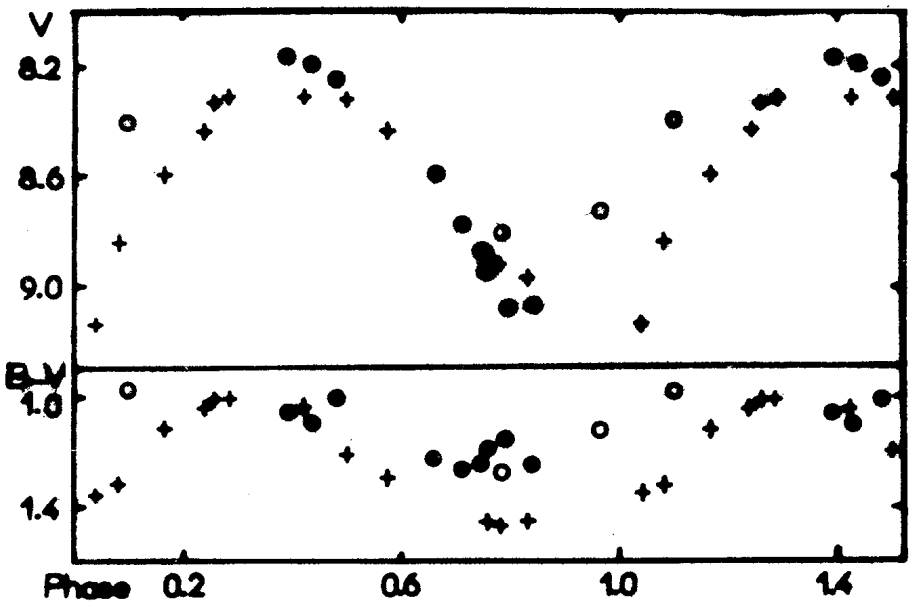


Fig. 2

a/ a phase shift;
b/ a change of the shape of light and colour curves;
c/ a change of amplitude of V and B-V.

In our catalogue of photoelectric observations of cepheids (Nikolov 1965) we have made an effort to accord the two series of observations, assuming for the period P = $22^{d}.1711$. V and B-V against phase, computed with this period, are plotted on figure 2.

If this period is valid for the two sets of observation, one may conclude that there is

a/ a significant decrease in amplitude of B-V from $0^{m}.48$ by Eggen and al. to $0^{m}.30$ by Mitchell and al.
b/ a decrease of light amplitude after JD 2437045 (the three observations noted by open circles).

Astronomical Observatory
University of Sofia N. S. NIKOLOV

References

Eggen, O. J.; Gascoigne, S. C. B.; Burr, E, F., 1957. M. N. 117, 406.

Mitchell, R. I.; Iriarte, B.; Steinmetz, D.; Johnson, H. L., 1964 Bull. Obs. Tonantzintla y Tacubaya, 3, 153.

Nikolov, N. S., 1965, Dissertation, Astr. Inst. Sternberg, Moscow.

Wamsteker, W., 1966. IBVS 128.

CYCLIC AMPLITUDE VARIATIONS OF RU CAM

Nikolov's preceding note and Smak's report in IBVS No 135 are based on different material. Herewith I take into consideration all available photoelectric observations (Ref. 1-11).

The phase shifts between different sets of observations of RU Cam can be seen from the O-C diagram in Fig. 1. The observed photoelectric V magnitudes of maximum and minimum light are plotted against epoch number in Fig. 2. Both maxima and minima show cyclic variations, but with opposite phase. The amplitude variations are primarily due to differences in the brightness of the minima. The broken curves in Fig. 2 are tentative representations of the observational data with a cycle of 84 P $\sim$ 5.1 years. This cycle-length is corroborated by visual observations of amateur observers of the Danish "Astronomisk Selskab", who found very faint minima around the epochs E = -148 and E = +20 respectively (Edelberg, M. 1932, AN 246, 176; Nielsen, A. and Sjögren, T. 1943, AN 273, 270). The cycles are of very different amplitude and shape. Secondary cycles are very common in RR Lyrae variables, and as we now see, they may be present also in Population II Cepheids.

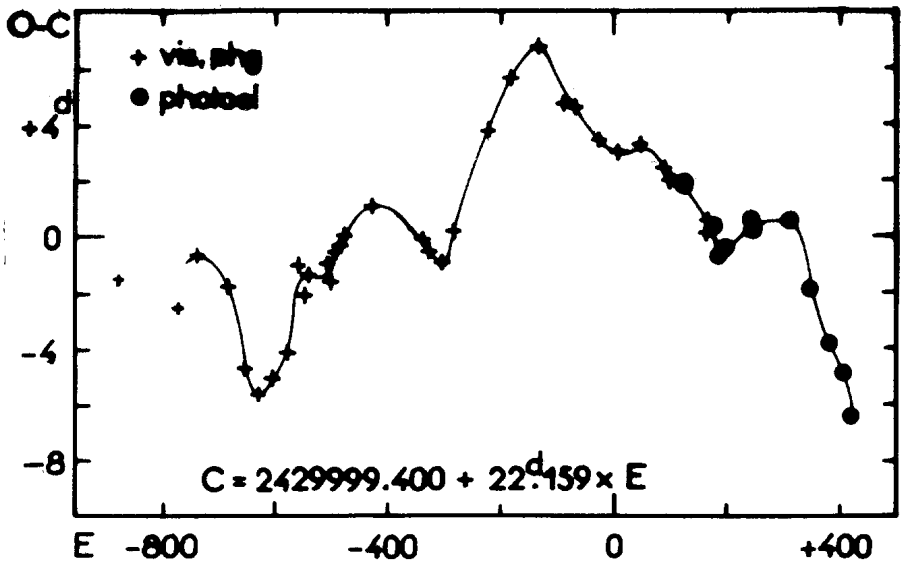


Fig. 1

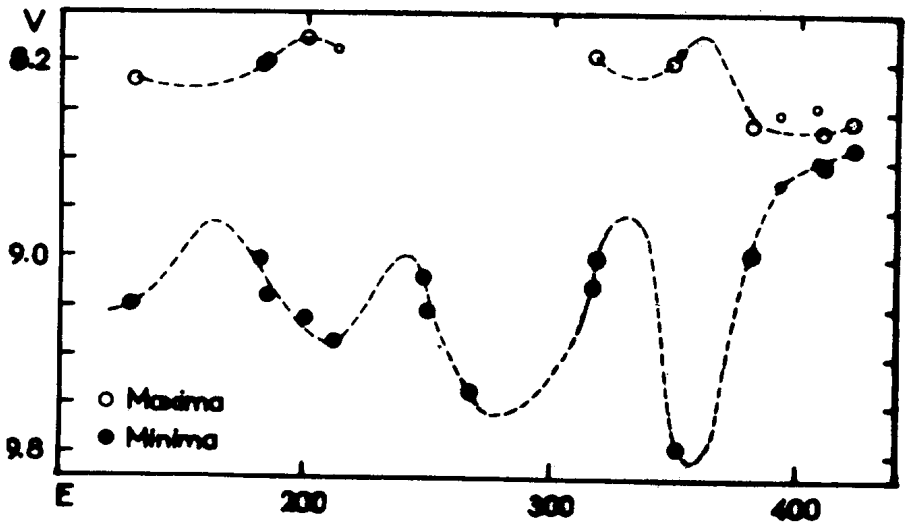


Fig. 2

If the above interpretation is correct, we may expect in the next months, or at latest next year, an increase of the amplitude. At present (1966 August) the amplitude in V is only $0^{m}.08$ (Ref. 11).

Konkoly Observatory, Budapest

L. DETRE

References to photoelectric observations:

1. / Eggen, O. J., Gascoigne, S. C. B. and Burr, E. J. 1957. MN 117, 406

2. / Lènouvel, F. et Jehoulet, D. 1953. Ann. d'Aph. 16, 139

3. / Lenouvel, F. et Daguillon, J. 1954. JO 37, 137

4. / Lenouvel, F. et Fiogere, Cl. 1957. JO 40, 37

5. / Delsemme, A. H. et Delsemme-Jehoulet, D. 1958. Mém. Soc. Roy. Sci. Liège, 4-e série 20, 328.

6. / Mitchell, R. I., Iriarte, B., Steinmetz, D., Johnson, H. L. 1964. Tonantzintla y Tacubaya Bol. Num. 24.

7. / Michalowska Smak, A., Smak, I. 1965. Acta Astr. 15. 333.

8. / Wamsteker, W. 1966. IBVS No 128.

9. / Smak, I. 1966. IBVS No 135.

10. / Demers, S., Fernie, J. D. 1966. ApJ 144, 440.

11. / Detre, L., Szeidl, B. 1966. unp.

Ny. 1524/1966.

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 153

Konkoly Observatory
Budapest
1 September 1966

IMPROVED ELEMENTS FOR SEVEN RR LYRAE STARS

The following elements were derived from Harvard patrol-plate estimates. The plates generally spanned the interval 1890-1950, while other observers' maxima often extended coverage into the 1960's. An approximate value $\overline{(O-C)}$ for the residual of a single normal maximum is given, as well as the total interval covered by the observations.

YZ AQUARII

Max $JD_{\odot}$ = 2435364.429 + $0^d.5519319$ E

Interval: 2412971-38298

$\overline{O-C}: \pm 0^d.02$

AA AQUARII

Max $JD_{\odot}$ = 2420748.585 + $0^d.6088901$ E

Interval: 2413146-37545

$\overline{O-C}: \pm 0^d.02$

BN AQUARII

Max $JD_{\odot}$ = 2429395.742 + $0^d.4696410$ E + $(3^d.3 \times 10^{-10})E^2$

Interval: 2413762-37872

$\overline{O-C}: \pm 0^d.01$

BO AQUARII

Max $JD_{\odot}$ = 2426589.427 + $0^{d}.6940195$ E

Interval: 2413408-37549

$\overline{O - C}$: $\pm$ $0^{d}.02$

RU CETI

Max $JD_{\odot}$ = 2426964.003 + $0^{d}.58630000$ E - $(1^{d}.20 \times 10^{-9})E^{2}$

Interval: 2411392-38294

$\overline{O - C}$: $\pm$ $0^{d}.03$

RX CETI

Max $JD_{\odot}$ = 2429961.094 + $0^{d}.5737055$ E

Interval: 2411659-33572

$\overline{O - C}$: $\pm$ $0^{d}.02$

Max $JD_{\odot}$ = 2427328.366 + $0^{d}.5737092$ E - $(6^{d}.57 \times 10^{-10})E^{2}$

Interval: 2427328-37913

$\overline{O - C}$: $\pm$ $0^{d}.015$

RW SCULPTORIS

Max $JD_{\odot}$ = 2424731.866 + $0^{d}.45170768$ E

Interval: 2411254-34309

$\overline{O - C}$: $\pm$ $0^{d}.02$

A discussion of RU Ceti, RX Ceti, and RW Sculptoris has been sent to Variable Stars; it is planned to submit a paper on the other stars to the same journal in the near future.

L. J. ROBINSON
"Sky and Telescope"
Cambridge, Mass.
USA

Ny. 1525/1966.

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 154.

Konkoly Observatory
Budapest
1 September 1966

MINIMA OF ECLIPSING VARIABLES

This report continues the one in IBVS No. 129, and contains 106 observed minima of 37 eclipsing variable stars. All are visual timings reduced by the tracing-paper method, except where noted. Linear elements in the 1958 General Catalogue of Variable Stars were used to compute O - C's unless otherwise specified. The number of estimates used for each minimum is given under n.

J. D. ⊙ (2,400,000)	E	O - C	n	Observer
RT Andromedae				
39318.633	+24,167	-0.014	22	C. Anderson
AB Andromedae				
39320.799	+12,791.5	+0.054	14	D. Williams
OO Aquilae				
39269.767	+ 9,951.5	-0.024	13	R. Monske
39271.793	+ 9,955.5	-0.026	13	R. Monske
39286.487	+ 9,984.5	-0.029	11	A. Howell
39287.505	+ 9,986,5	-0.024	12	A. Howell
39287.755	+ 9,987	-0.028	12	R. Monske
39288.765	+ 9,986	-0.031	13	R. Monske
39289.786	+ 9,991	-0.024	14	R. Monske
39291.805	+ 9,995	-0.032	17	D. Williams
39297.636	+10,006.5	-0.029	10	R. Monske
39298.652	+10,008.5	-0.027	12	R. Monske
39299.665	+10,010.5	-0.027	14	R. Monske
39300.679	+10,012.5	-0.027	14	R. Monske
39317.661	+10,046	-0.023	14	R. Monske
39318.672	+10,048	-0.025	11	R. Monske
39322.725	+10,056	-0.027	12	R. Monske
39328.809	+10,068	-0.024	11	R. Monske

J. D. ⊙	E	O - C	n	Observer
V342 Aquilae[1]				
39328.751	+ 1,090	+0.004	31	R. Monske
V346 Aquilae				
39300.720	+ 7,205	-0 026	17	R. Monske
AR Aurigae				
49183.616:	+ 3,009	-0.012	13	R. Monske
Y Camelopardalis				
39183.612	+ 4,462	-0.025	18	R. Monske
SV Camelopardalis				
39273.425	+11,779	-0.015	13	A. Howell
39290.621	+11,808	-0.018	11	F. Sanner
39291.796	+11,810	-0.029	11	F. Sanner
39294.769	+11,815	-0.021	13	F. Sanner
AL Camelopardalis[2]				
39260.493	+ 9,673	-0.080	21	A. Howell
39280.411	+ 9,688	-0.087	11	A. Howell
RZ Cassiopeiae				
39052 7928	+18,.153	-0.0382	89pe	A. Stokes
39186.656	+18,265	-0.043	15	R. Monske
39198.609	+18,275	-0.043	15	R. Monske
39198.614:	+18,275	-0.038	23	D. Lucas
39259.567	+18,326	-0.043	9	A. Howell
39315.750:	+18,373	-0.036	14	C. Anderson
39321.722	+18,378	-0.041	16	R. Swanberg
39327.695	+18,383	-0.044	23	D. Lucas
39327.699	+18,383	-0.040	12	J. Ashbrook[3]
AB Cassiopeiae				
39183.819	+10,021	+0.059	19	R. Monske
39186.550	+10,023	+0.057	14	R. Monske
39201.593	+10,034	+0.064	21	R. Monske

J. D. ⊙	E	O - C	n	Observer
XX Cephei				
39183.520	(6,027	-0.045	11	R. Monske
EG Cephei[4]				
39291.800	+22,699	+0.008	18	D. Williams
Y Cygni				
39299.762	+ 9,934	+0.008[5]	21	D. Friedman
ZZ Cygni				
39287.493	+28,873	-0.011	13	A. Howell
V 477 Cygni				
39288.751	+ 2,745	-0.052	8	D. Williams
39295.793	+ 2,748	-0.051	11	D. Williams
Z Draconis				
39192.578	+ 4,364	+0.013	12	C. Ricker
39200.717	+ 4,370	+0.007	13	R. Monske
39200.724	+ 4,370	+0.014	11	T. Cragg
39230.585	+ 4,392	+0.012	22	D. Lucas
39234.656	+ 4,395	+0.010	12	R. Monske
39272.664	+ 4,423	+0.010	20	R. Monske
39291.669	+ 4,437	+0.011	15	R. Monske
39295.740	+ 4,440	+0.010	10	T. Cragg
39299.813	+ 4,443	+0.010	15	R. Monske
39314.743	+ 4,454	+0.009	22	D. Lucas
AI Draconis				
39245.621:	+12,185	+0.007	18	L. Hazel
39262.417	+12,199	+0.020	12	A. Howell
39269.604	+12,205	+0.014	19	J. Ashbrook
39275.610	+12,210	+0.026	22	D. Friedman
39288.782	+12,221	+0.011	15	R. Monske
39294.782	+12,226	+0.017	17	R. Monske
39300.773	+12,231	+0.014	15	R. Monske
39318.757	+12,246	+0.016	16	R. Monske

J.D. ⊙	E	O - C	n	Observer
SZ Herculis[6]				
39245.573	+ 2,590	+0.010	17	A. Howell
39259.482	+ 2,607	+0.012	21	A. Howell
39286.477	+ 2,640	+0.010	14	A. Howell
39294.657	+ 2,650	+0.009	15	R. Monske
39294.661	+ 2,650	+0.013	19	D. Lucas
39303.658	+ 2,661	+0.011	16	R. Monske
39303.662	+ 2,661	+0.015	21	D. Lucas
39321.659	+ 2,683	+0.014	11	W. Hampton
39330.656	+ 2,694	+0.012	12	W. Lowder
SW Lacertae				
39322.789	+49,732.5	+0.041	15	R. Swanberg
39323.748	+49,735.5	+0.038	12	R. Swanberg
39330.802	+49,757.5	+0.036	15	R. Swanberg
VX Lacertae				
39291.801	+ 4,716	-0.025	16	D. Williams
CM Lacertae				
39295.788	+ 7,646	0.000	12	D. Williams
Y Leonis				
39199.567	+ 3,268	+0.032	16	R. Monske
39231.603	+ 3,287	+0.033	19	R. Monske
39231.605	+ 3,287	+0.035	21	L. Hazel
UV Leonis				
39201.638	+10,342	-0.002	13	F. Sanner
39240.638	+10,407	-0.007	14	D. Williams
T. Leonis Minoris				
39212.651	+ 5,085	-0.034	17	L. Hazel
39230.771	+ 5,091	-0.034	12	T. Cragg
SS Librae				
39287.706	+13,238	+0.028	14	R. Monske
39323.641	+13,263	+0.013	16	R. Monske

J.D. ⊙	E	O - C	n	Observer
Delta Librae				
39269.494:	+ 2,068	-0.015	6	A. Howell
FL Lyrae				
39238.753:	+ 2,471	-0.001	21	L. Hazel
39284.492	+ 2,492	-0.003	14	A. Howell
39299.749:	+ 2,499	+0.007	14	R. Monske
39299.753	+ 2,499	+0.011	22	D. Friedman
39310.625	+ 2,504	-0.008	21	J. Ashbrook
39323.702	+ 2,510	0.000	18	R. Monske
Beta Lyrae				
39276.4	+ 3,149	-0.1[7]	7	A. Howell
U Ophiuchi				
39269.449	+18,475.5	+0.002	8	A. Howell
39288.731	+18,487	-0.006	12	D. Williams
39300.475	+18,494	-0.003	13	A. Howell
BV 544 Ophiuchi				
38937.772[8]	+19,821	-0.006	9	D. Williams
RT Persei				
39199.546	+ 7,077	-0.018	12	R. Monske
U Sagittae				
39320.798	+ 6,564	+0.004	15	D. Williams
BV 312 Tauri				
39194.338[9]	+ 6,591	-0.001	9	A. Howell
X Trianguli				
39198.548	+ 4,635	+0.024	14	R. Monske
W Ursae Majoris				
39229.775	+14,208	+0.006	6	T. Cragg
39230.777	+14,211	+0.008	10	T. Cragg
TX Ursae Majoris				
39245.394	+ 7,449	-0.041	11	A. Howell

1 O - C was computed from elements given in IBVS No. 92.

2 O - C's were computed from elements in the 1960 supplement to the General Catalogue of Variable Stars.

3 The time of minimum was determined by fitting the observations to a mean light curve.

4 O - C was computed from elements in the 1960 supplement to the General Catalogue of Variable Stars.

5 Elements for apsidal motion were used in computing O - C.

6 O - C's were computed from the elements in Sky and Tele., May, 1963, page 277.

7 Quadratic elements were used in computing O - C.

8 The minimum at JD. 38936.772, reported in IBVS No. 119, is wrong; substitute the one given in this report.

9 O - C computed from elements given in Sky and Tele., November, 1963, page 264.

This work is sponsored by the American Association of Variable Star Observers, with David B. Williams aa program coordinator. All reductions were made by the writer with Joseph Ashbrook.

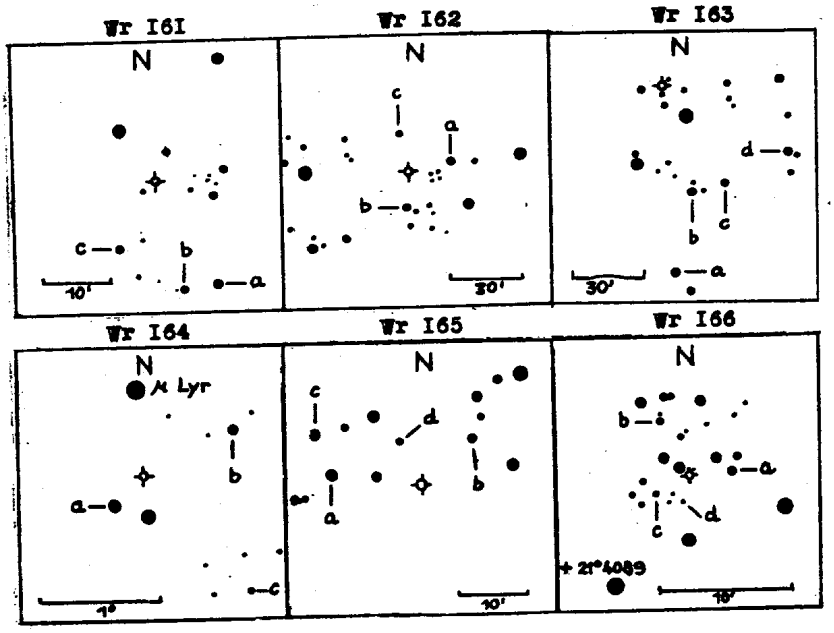
L. J. ROBINSON
"Sky and Telescope"
49 Bay State Rd.
Cambridge, Mass. USA

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 155

Konkoly Observatory
Budapest
22 September 1966

NOUVELLES ETOILES VARIABLES

Dés.	α /1900,0/	δ	max m_p	min	type	nombre d'obs.
Wr 161	$00^h39^m41^s$	+ 60°27'	9,6	10,3	I	92
Wr 162	01 07 25	+ 57°04'	8,4	9,1	I	113
Wr 163	01 12 00	+ 57°16'	7,7	8,9	I	113
Wr 164	18 20 36	+ 38°43'	8,0	8,7	I	161
Wr 165	19 57 08	+ 18°42'	10,9	11,6	I	138
Wr 166	20 06 51	+ 21°52'	12,5	13,3	I	112



Etoiles de comparaison

	a	b	c	d
Wr 161	9,3	9,9	10,3	-
Wr 162	8,4	8,9	9,2	-
Wr 163	7,4	8,1	8,4	8,9
Wr 164	7,5	8,2	8,7	-
Wr 165	10,7	11,0	11,2	11,6
Wr 166	12,3	12,6	13,0	13,6

Remarques

Wr 161 = BD $+60^{\circ}97$. Etoile orangée.
Wr 162 = BD $+56^{\circ}223$ = HD 7177. Sp K5.
Wr 163 = BD $+57^{\circ}237$ = HD 7733. Sp Mb.
Wr 164 = BD $+38^{\circ}3160$ = HD 169646. Sp K2.
Wr 165 = BD $+18^{\circ}4358$. Etoile orangée.
Wr 166. Etoile orangée. Variabilité et amplitude confirmées par Romano /com. privée/.

Des détails seront publiées dans le Bulletin de la Station Astrophotographique de Mainterne.

ROGER WEBER
Station Astrohotographique
de Mainterne
/Eure-etLoir /
France

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 156

Konkoly Observatory
Budapest
23 September 1966

POSSIBLE FLARE ACTIVITY IN A G-TYPE STAR

During 60-inch photoelectric observations in the Small Magellanic Cloud, C.J. Butler has found a 10th magnitude star used by H.C. Arp as a secondary standard[+] which increased suddenly by 0.1 magnitude in blue, showing the characteristic gradual decline of the stellar flares in dMe stars. The star, designated by Arp as R in his Plate 1 /approximate position, $0^h59^m.0, -72^\circ54'$, 1960/ was substantially brighter than normal in blue for more than half an hour after the main event. Maximum occurred at 1^h10^m U.T. on 10th September 1966. On an ADH objective prism plate the star appears as an early G-type star. Arp gives the colours, B-V = 0.74, C_U = 1,73, and a visual magnitude 10.58. Monitoring of the star is planned to confirm the unusual rapid variation of so early a spectral type.

Boyden Observatory
September 11, 1966

A. D. ANDREWS

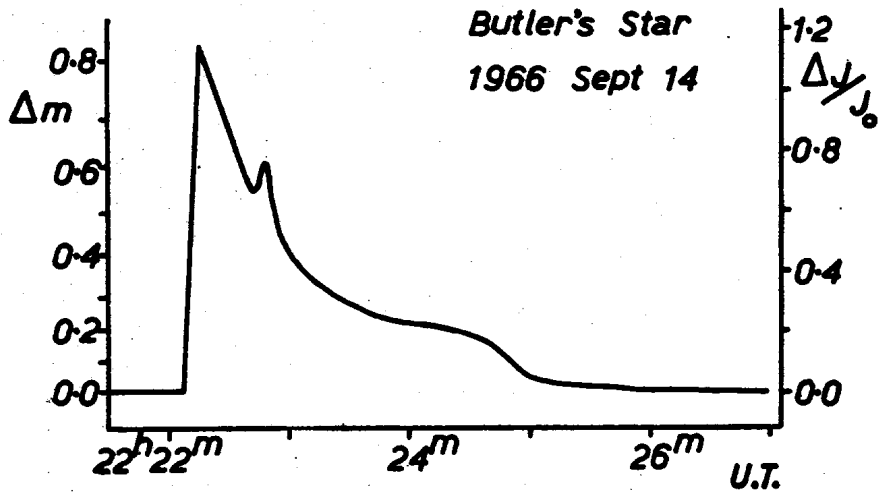
[+]H.C. Arp, Astronomical Journal, Vol. 63 /1958/, 118.

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 157

Konkoly Observatory
Budapest
26 September 1966

FURTHER FLARE ACTIVITY IN BUTLER'S STAR IN THE SMC

The early G-type star in the direction of the Small Magellanic Cloud, suspected by C.J. Butler to have exhibited a rapid flare-like variation/1/,has been monitored for seven hours at the 16-inch Nishimura reflector by J.P. Eksteen. On the night 14-15 September 1966, further activity was observed at $22^h22^m.5$ U.T.when a flare of 0.8 magnitude /blue/ occorred with a duration of about 3 minutes s. Figure.



This short duration is typical of flares of moderate energy observed in the UV Ceti-type stars. However, from a comparison with several flare stars /2/, the rates of increase and decline and the energy involved in a star of this luminosity clearly differentiates this event from the classical flares in the dMe-type stars. A luminosity classification for this star is urgently needed, as well as a search for abnormal spectral features, especially emission lines.

Boyden Observatory,
Bloemfontein
September 17, 1966

A. D. ANDREWS
C. J. BUTLER
J. P. EKSTEEN

/1/ A. D. Andrews, I.B.V.S., No. 156 /1966/.
/2/ A. D. Andrews, Irish Astron. Journ., Vol. 7, No. 1;
Armagh Obs. Contrib., No. 49 /1965/.

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 158

Konkoly Observatory
Budapest
27 September 1966

Veröffentlichungen der Remeis-Sternwarte Bamberg
Astronomisches Institut
der Universität Erlangen-Nürnberg
Band VI, Nr 33.

NEW SOUTHERN VARIABLES

On sky patrol plates of Bamberg Southern-Station 35 further stars were found whose variability seems to be real as can be seen from the material available till now.

BV 819 = CoD $-31^\circ 3831$ /$9^m.7$/ = Cap $-31^\circ 1363$ /$9^m.8$/ $A_{pg} = 0^m.25$
BV 820 = BD $-9^\circ 2106$ /$8^m.5$/ = HD 60 389 /A5/ $A_{pg} = 0^m.40$
BV 821 = CoD $-59^\circ 1898$ /$7^m.7$/ = HD 70 333 /B9/ $A_{pg} = 0^m.25$
BV 822 = CoD $-25^\circ 6189$ /$7^m.7$/ = HD 72 346 /Ao/ $A_{pg} = 0.20$
BV 823 = CoD $-31^\circ 6412$ /$9^m.5$/ = Cap $-31^\circ 2519$/$9^m.7$/ $A_{pg} = 0^m.25$
BV 824 = Cap $-21^\circ 3878$/$10^m.5$/ $A_{pg} = 0^m.35$
BV 825 = CoD $-35^\circ 5031$ /$9^m.0$/ = HD 74 995 /Ao/ $A_{pg} = 0^m.30$
BV 826 = CoD $-43^\circ 5684$ /$9^m.9$/ = Cap $-43^\circ 4115$/$9^m.6$/ $A_{pg} = 0^m.20$
BV 827 = CoD $-31^\circ 7978$ /$8^m.3$/ = HD 87 982 /A5/ $A_{pg} = 0^m.20$
BV 828 = CoD $-33^\circ 6773$ /$9^m.9$/ $A_{pg} = 0^m.20$
BV 829 = CoD $-30^\circ 8293$ /$9^m.3$/ $A_{pg} = 0^m.40$
BV 830 = CoD $-72^\circ 589$ /$8^m.9$/ = HD 89 143 /Ao/ $A_{pg} = 0^m.25$
BV 831 = CoD $-31^\circ 8125$ /$9^m.4$/ = HD 89 298 /A/ $A_{pg} = 0^m.45$
BV 832 = Cap $-71^\circ 1180$ /9.6/ $A_{pg} = 0^m.35$
BV 833 = CoD $-62^\circ 492$ /$8^m.8$/ = HD 95 993 /B8/ $A_{pg} = 0^m.40$
BV 834 = CoD $-26^\circ 8394$ /$7^m.6$/ = HD 97 056 /K5/ $A_{pg} = 0^m.30$
BV 835 = CoD $-29^\circ 8996$ /$9^m.2$/ = Cap $-29^\circ 3486$/$9^m.8$/ $A_{pg} = 0^m.20$
BV 836 = CoD $-60^\circ 3709$ /$9^m.8$/ = Cap $-60^\circ 3284$/$9^m.2$/ $A_{pg} = 0.25$

BV 837 = CoD -68°982 /9^m.1/ = Cap -68°1567 /8^m.7/ A_{pg} = 0^m.30
= K3P 1778 = S 4592 Spec. B9/[x]

BV 838 = CoD -50°6762 /10^m/ = Cap -50°4937 /9^m.7/ A_{pg} = 0^m.20

BV 839 = CoD -56°4504 /1^m.6/ = HD 108 903 /Mb/ A_{pg} = 0^m.30
= K3P 101 285

BV 840 = CoD -36°8111 /9^m.7/ = A_{pg} = 0^m.40

BV 841 = CoD -25°9508 /6^m.9/ = HD 112 374 /Go/ A_{pg} = 0^m.30

BV 842 = CoD -30°10313 /9^m.8/ A_{pg} = 0^m.25

BV 843 = CoD -37°8365 /9^m.4/ = HD 113 764 /A2/ A_{pg} = 0^m.25

BV 844 = BD -9°3641 /8^m.0/ = HD 114 557 /Mb/ A_{pg} = 0^m.30

BV 845 = CoD -44°8795 /9^m.8/ = Cap -44°6457 /9^m.7/ A_{pg} = 0^m.30

BV 846 = CoD -37°8864 /8^m.5/ = HD 119 627 /B9/ A_{pg} = 0^m.25

BV 847 = BD -13°3845 /7^m.0/ = HD 124 304 /Mb/ A_{pg} = 0^m.30

BV 848 = CoD -83°189 /4^m.2/ = HD 124 882 /K2/ A_{pg} = 0^m.30

BV 849 = CoD -32°10043/9^m.3/ = A_{pg} = 0^m.25

BV 850 = CoD -50°8673 /10^m/ = Cap -50°7074 /9^m.9/ A_{pg} = 0^m.35

BV 851 = CoD -42°9876 /9^m.6/ = Cap -42°6864 /9^m.3/ A_{pg} = 0^m.25
= K3P 2228 = S 5001

BV 852 = Cap -20°6091 /9^m.8/ = Cap -20°6091 /9^m.8/ A_{pg} = 0^m.30

BV 853 = CoD-41°10894 /10^m/ = Cap -41°7631 /9^m.9/ A_{pg} = 0^m.25

---

[x] = Cape Photographic Catalogue Vol. XXI.

Bamberg, Remeis-Observatory
September 20, 1966

W. STROHMEIER

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 159

Konkoly Observatory
Budapest
29 September 1966

Veröffentilichungen der Remeis-Sternwarte Bamberg
Astronomisches Institut der Universität Erlangen-Nürnberg
Band VI, Nr 34

THE CEPHEID BV 428 = 26 CIR

For BV 428[+] = Cap $-63^{\circ}3436$ /$6^{m}.8$/ = HD 130 701/F5/ and HD 130 702 /A_2/ the elements are:

Max = JD 243 8199.325 + $5^{d}.275$. E

C δ, Amplitude /pg./ = $0^{m}.50$, sky patrol plates

Maxima	E	O-C	Minima	E	O-C
243 8199.312	0	-0.013	243 8471.538	51	+3.188
8225.350	5	-0.350	8498.495	56	+3.770
8494.492	56	-0.233	8551.332	66	+3.857
8499.488	57	-0.512	8588.249	73	+3.849
8500.485	57	+0.485	8592.247	74	+2.572
8521.429	61	+0.329	8603.212	76	+2.987
8584.246	73	-0.154	8604.208	76	+3.983
8589.251	74	-0.424	8878.405	128	+3.880
8605.208	77	-0.292	8883.409	129	+3.609
8879.449	129	-0.351	8887.403	130	+2.328
8885.406	130	+0.331	8904.376	133	+3.476
8906.355	134	-0.270	8914.346	135	+2.896
8911.340	135	-0.110	8930.300	138	+3.025
8916.345	136	-0.380	8940.219	140	+2.394
8932.304	139	-0.246	9236.458	196	+3.233
8933.261	139	+0.711			
9259.357	201	-0.243			
9270.353	203	+0.203	Phase: 0.620		
9291.255	207	+0.005			

x Variablitiy and primary period are published in IBVS 55, 1964.

Remeis-Observatory
Bamberg, September 22, 1966.

W. STRÖHMEIER

T. 2871.

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 160

Konkoly Observatory
Budapest
6 October 1966

TON S 120: A NEW VERY SHORT-PERIOD ECLIPSING BINARY

During the photoelectric UBV survey of faint U Gem-type and nova-like stars it was found that Ton S 120 /$\alpha = 23^h47^m.5$, $\delta = -26^\circ 39'$, 1950.0/ is an eclipsing binary with a period of 3^h28^m. This star was listed by Chavira /1958/ as a "decidedly violet" object in his survey of blue stars near the South Galactic Pole; its galactic coordinates are: $l^{II} = 33^\circ$, $b^{II} = -76^\circ$. Greenstein /1966/ in his spectroscopic investigation of faint blue stars near the galactic poles found it to be a strong emission-line object resembling a U Gem star or an old nova with very broad emission lines of H, HeI and HeII.

The present photoelectric observations were secured in July and September 1966 on the Mount Wilson 100-inch telescope with the offset photometer and pulse counting system. The light-curve of Ton S 120 resembles that of Nova DQ Her /Walker 1956/ but with much deeper eclipses. The eclipse is partial, its depth is 2.5 mag., its duration is about 30 minutes. Secondary eclipse has not been detected. The UBV measurements outside eclipses are V=15.6, B-V=+0.1, U-B=-0.8 mag. The preliminary light elements are: primary minimum Hel. JD 2439326.981 + $0^d.144623$ E . The star is not known to undergo any outbursts that have been recorded in the available astronomical literature.

September 29, 1966
Mount Wilson and Palomar Observatories
Pasadena, California, U.S.A.

W. KRZEMINSKI

References:
Chavira, E. 1958. Bol. Obs. Tonantzintla y Tacubaya, 2, No. 17,15.
Greenstein, J.L. 1966, Ap.J., 144, 496.
Walker, M.F. 1956, Ap.J., 123, 68.

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 161

Konkoly Observatory
Budapest
7 October 1966

Veröffentlichungen der Remeis-Sternwarte Bamberg
Astronomisches Institut der Universität Erlangen-Nürnberg
Band VI, Nr. 35

BV 677 AND BV 714, TWO CEPHEIDS

BV 677 = BD $-16^{\circ}2312$ /$9^{m}.5$/, b $=+9^{\circ}$, Pup, Ampl. $0^{m}.55$, sky patrol plates:

$$\text{Max} = \text{JD } 243\,7314.25 + 13^{d}.88 \cdot E$$

Maxima	E	O - C
243 7315.37	0	$+1^{d}.12$
7368.35	4	-1.42
8493.23	85	-0.82
8772.46	105	+0.81
8786.41	106	+0.88
8798.37	107	-1.04
8814.31	108	+1.02
8842.25	110	+1.20
9118.50	130	-0.15
9173.32	134	-0.85
9174.34	134	+0.17
9202.25	136	-0.32

BV 714 = CoD -49° 4464 /10^{m}/, b = $+2^{\circ}$, Vel, Ampl. $0^{m}.45$, sky patrol plates:

Max = JD 243 8380.53 + $11^{d}.185$. E

Sinusoidal light-curve.

Maxima	E	O - C
243 8379.5	0	$-1^{d}.0$
8491.0	10	-1.4
8504.0	11	+0.4
8514.7	12	-0.1
8526.0	13	+0.1
8760.5	34	-0.3
8772.5	35	+0.5
8816.6	39	-0.1
8827.9	40	0.0
8883.7	45	-0.1
9118.5	66	-0.2
9179.3	73	+0.3
9232.2	76	+1.6
9253.2	78	+0.2

Remeis-Observatory
Bamberg, 1966 Oct. 1

W. STROHMEIER

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 162

Konkoly Observatory
10 October 1966

DETERMINATION OF THE MASS AND THE MODEL OF THE VARIABLES: RT AURIGAE, ETA AQUILAE, X CYGNI, MIRA CETI AND BM CASSIOPEIAE OF POP. I, AND RR LYRAE AND TWO TYPICAL VARIABLES OF POP. II.

The authors, prosecuting a work started with the study of the internal constitution of Eta Aquilae, published in the Combined Colloquium of the Commissions 27 and 42, Bamberg 1965(1), have applied the same computational scheme to study the following stars: RT Aurigae, X Cygni, Mira Ceti, of Population I, and RR Lyrae and two typical variables of Pop. II.

Assuming the radius and the effective temperature derived from the observations, they compute for each of these stars a set of models with different masses, and the characteristic frequency of the adiabatic oscillation for every model; then they choose the model, and therefore the mass, for which the frequency so calculated equals the observed one.

The authors put in evidence that for each of the studied stars the mass so chosen is nearly coincident with the one corresponding to the minimum of the graph $\sigma = \sigma(M)$, which can be made for each star, likewise to that noticed for Eta Aquilae in the previously mentioned paper.

Moreover, the authors applied this method to the star BM Cassiopeiae, the mass of which has been determined in a different way ($\bar{M} = 14.3$)(2), and they found a very remarkable agreement, as shown in Table 1, where the results for each star are referred.

(1) A. Masani, A. Martini, M. Nelli, E. Albino - Study of the Constitution of Eta Aquilae - Astronomisches Institut der Universität, Erlangen-Nürnberg, Bd. IV, Nr. 40. - IAU Coll. on Var. Stars p. 255.

(2) Thiessen - Zeitschr. für Astr. - 39. 65, 1956.

Table 1

Star	Pop.	R (cm)	T_{eff} (^oK)	σ_{obs} (cm^{-1})	$\bar{M}$	x_i	x_e	$\bar{M}_e$	$\sigma_{calc.\ ad.}$	λ
RT Aur	I	9.6 (11)	6.0 (3)	1.95(-5)	0.806	.008	.0059	0.707	1.9 (-5)	-1.5 (-5)+3.05(-5)i
Eta Aqu	I	4.0 (12)	5.12(3)	1.03(-5)	5.35	.0084	.0032	1.29	1.06(-5)	-2.14(-6)+9.11(-6)i
X Cyg	I	4.77(12)	5.0 (3)	4.43(-6)	3.	.0046	.0033	1.73	4.16(-6)	-2.93(-6)+3.46(-6)i
Mira	I	2.73(13)	2.3 (3)	2.14(-7)	0.6	.00005	.00003	0.338	2.03(-7)	-7.52(-11)+2.82(-7)i
RR Lyr	II	3.75(11)	8.0 (3)	1.32(-4)	1.75	.0568	.0228	0.776	1.3 (-4)	-7.59(-7)+1.3 (-4)i
-	II	5.5 (11)	8.0 (3)	5.1 (-5)	1.5	.022	.013	0.655	5.47(-5)	-2.08(-5)+4.58(-5)i
-	II	1.92(12)	5.9 (3)	4.88(-6)	2.	.0098	.004	0.664	5.12(-6)	-4.42(-7)+7.57(-6)i
BM Cas	I	1.56(13)	4.41(3)	2.69(-6)	14.3	.0014	.0082	0.35	2.56(-6)	-2.46(-8)+2.59(-6)i

x_i = value of $x = r/R$ in the point where L (luminosity) starts decreasing

x_e = value of $x = r/R$ in the point where $L = 0$.

M_e = mass of the nucleus, (in solar units), in $x = x_e$.

λ = damping + $\sigma_{calc.\ non\ adiab.}$ [1].

The authors continued the computation for each mass so determined, also for the non adiabatic approximation, as it is shown in Table 1.

The small mass deduced for Mira Ceti is interesting: it must be underlined that, for this star, the fitting with the internal partially degenerate nucleus occurs in a satisfactory way. This fact assumes great importance to understand the evolutive process that brings to the formation of such stars.

The authors give in Table 2, for its peculiar importance, the model they obtained for the variable Mira Ceti.

Table 2

Model of Mira Ceti

$x = r/R$	$y = m(r)/M$	$\log \varrho$	$\log P$	$\log \bar{K}$	$\log T$	$L(r)/L(R)$
0.961	1.	-10.296	0.739	-4.732	3.27	1.
0.814	0.907	- 8.0255	3.21	-3.244	3.474	1.
0.675	0.774	- 8.078	3.818	1.69	4.016	1.
0.396	0.602	- 8.016	4.425	1.174	4.369	1.
0.0177	0.562	- 7.447	6.246	-0.124	5.162	1.
0.0000493	0.5615	0.678	16.564	-0.514	7.652	0.999
0.0000333	0.56149	1.322	17.32	-0.536	7.808	0.
	$\psi_1 = -6.2$	$\psi_2 = -7.2$		$\psi_c = 25$		
0.	0.	6.795	22.446	--	7.808	0.

A. MASANI, A. MARTINI, M. NELLI,
Astronomical Observatory
of Milano-Merate

E. ALBINO
Centro di Calcolo della Universita
di Genova

DS CYGNI

L'examen de 66 clichés obtenus avec une chambre photographique Dogmar Goerz (O = 113 mm, F = 494 mm) entre juillet 1945 et janvier 1959 montre que l'étoile DS Cygni a varié le plus souvent entre la 13è et la 14è grandeur mais aucun maximum ayant l'importance de celui du mois d'août dernier n'a été décelé.

Trois clichés du télescope Schmidt de 400 mm d'ouverture pris ultérieurement ont donné les magnitudes suivantes:

	T. U.	m_p
1962 octobre	21,885	12,75
1966 septembre	23,890	13,2
1966 septembre	23,915	13,2

26 Septembre 1966

CH. BERTAUD

Observatoire de Meudon

Comme suite à la note concernant DS Cyg publiée dans le n° 151 de l'IBVS, j'ai examiné cette étoile sur 20 plaques de ma collection, depuis 1942.

Sur 8 de ces plaques donnant la m_p-limite 13,5, DS Cyg est invisible. Sur 12 autres plaques, la variable est visible: la maximum observé (24 Avril 1963) est m_p 13,2 d'après les étoiles de la S.A. 40 Mt. Wilson dans le champ de laquelle DS Cyg est se trouve également située.

Mais je dois faire remarquer que, selon ce qu'indique M. A. Koeckelenbergh dans sa note, les trois clichés où l'augmentation d'éclat de la variable a été remarquée ont été obtenus sur des plaques Ilford HPS qui sont des plaques panchromatiques. DS Cyg étant une variable irrégulière nettement rouge (spectre N), l'augmentation d'éclat apparente peut trouver sa cause dans la nature des plaques utilisées par l'observateur.

Paris, 9 Octobre 1966

R. WEBER

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 163

Konkoly Observatory
Budapest
14 October 1966

APSIDAL MOTION IN AG PERSEI

The following minima were determined from 30 and 16 photoelectric observations, respectively, with the photometer /RCA 931-A photomultiplier, no filter/ of the 9-inch reflector of my private observatory:

m_1 = JD 2439062.4362, E = +6958, O - C = $+0^d.0090$

m_2 = JD 2439063.4150, E = $+6958\frac{1}{2}$, O - C = $-0^d.0007$

The comparison elements are those by Joseph Ashbrook /AJ 55, 4, 1949/. This new determination of the displacement of secondary minimum /s - p - $0^P.5$ = $-0^P.0175$/ permits a version of his values for the period of apsidal motion /72 years/ and orbital eccentricity /0.0670/. I find

$$\omega = 60^\circ.2 + 4^\circ.824\,/t - 1927.18/,$$

corresponding to P_2 = 74,6 years, and e = 0.0680.

J. MORLEY B.Sc., A.I.M., F.R.A.S.
44 West St., Eston
Middlesbrough, Yorks
England

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 164

Konkoly Observatory
Budapest
29 October 1966

Veröffentlichungen der Remeis-Sternwarte Bamberg
Astronomisches Institut der Universität Erlangen-Nürnberg
Band VI, Nr. 37

BV 449 AND BV 600, TWO BRIGHT EB-STARS

The derivation of periods of variable stars from sky patrol plates often leads to preliminary or even to pseudo-periods because of the special nature of the distribution of exposure times in Julian date, caused by the observing conditions. Often the number of minima is too small for a final statement. However, BV-stars are bright new variables and because of the general interest (photoelectric or spectroscopic measurements) in such stars the early announcement should not be hampered by the possibility that a later correction to the first results might come out to be necessary.

BV 499 = BD $-12^{\circ}4227$ ($7^{m}.0$) = HD 135 681 (A2)

Min = JD 242 6811.490 + $0^{d}.612\ 077$. E

Minima	E	O - C
242 5758.429	-1720.5	+0.018
6811.463	0	-0.027
.492	0	+0.002
7131.650 (3/4)	523	+0.044
7185.499	611	+0.030
7212.415	655	+0.015
242 7216.396	661.5	+0.017
243 7376.598	17261	+0.047
7819.408	17984.5	+0.019

Minima	E	O - C
243 8202.290	18610	+0.047
8471.538	19050	-0.019
8494.492	19087.5	-0.018
8502.482	19100.5	+0.015
8525.427	19138	+0.007
8548.331	19175.5	-0.041
8556.329	19188.5	-0.001
8580.245 (3/4)	18227.5	+0.045
8587.251	19239	+0.012
8880.423	19718	-0.001
8911.340	19768.5	+0.006
8934.302	19806	+0.015
8942.261	19819	+0.017
8964.219	19855	-0.060
9235.410	20298	-0.019
9261.400 (3/4)	20340.5	-0.042
9269.376	20353.5	-0.023
9289.310	20386	-0.018

Ampl. $0^m.40$, the secondary minimum is of similar depth as the primary minimum.

BV 600 = BD -17° 6422 ($6^m.8$) = HD 209 278 (A2)

Min = JD 243 6814.440 + $0^d.945.006$. E

Minima	E	O - C
243 6814.418	0	-0.022
6850.330	38	-0.020
6868.306	57	+0.001
7174.435 (3/4)	381	-0.052
7203.355 (1/2)	410.5	-0.010
8618.444	1909	-0.012
8636.400	1928	-0.011
8672.286	1966	-0.036
8691.244	1986	+0.022
8692.250 (1/4)	1987	+0.083
9023.337 (1/4)	2337.5	-0.059
9051.246	2367	-0.023

Ampl. $0^m.60$, the secondary minimum is half of the primary minimum.

Remeis-Observatory, Bamberg

W. STROHMEIER

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 165

Konkoly Observatory
Budapest
10 November 1966

3 C 446

During the month of October, 1966, a photographic patrol of the quasi stellar object 3 C 446 was initiated at the Bethany Observing Station of Yale University Observatory using the 40" telescope. Eye estimates of eleven plates, exposed on K 103aO emulsion, revealed that significant, short period, optical variations occurred over an interval of nineteen days Between October 11 and October 19, 3 C 446 decreased in brightness by at least 0,5 magnitudes, with the majority of the change occuring in the three day interval between October 16 and October 19. Thereafter, the object was observed to brighten again so that by October 30 it had reestablished, roughly, its magnitude of 16 October.

3 November 1966

J. H. HUNTER Jr.
A. J. WESSELINK

Yale University Observatory
New Haven, Connecticut

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 166

Konkoly Observatory
Budapest
21 November 1966

Veröffentlichungen der Remeis-Sternwarte Bamberg
Astronomisches Institut der Universität Erlangen- Nürnberg
Band VI, Nr. 38

ELEMENTS FOR TWO SONNEBERG EA-VARIABLES

The derivation of periods of variable stars from sky patrol plates often leads to preliminary or even to pseudo-periods because of the special nature of the distribution of exposure times in Julian date, caused by the observing conditions. However, the majority of our announcements has been exact, respectively, has given the correct order of the period, as may be seen from later photoelectric or spectroscopic measurements.

Both variables discussed here have been discovered and classified as EA-stars by C. Hoffmeister (Erg. AN 12, Nr. 1, 1949).

S 4930 = K3T1595 = CoD $-36^{\circ}6274$ ($9^{m}.3$) = CAP $-36^{\circ}4216$ ($9^{m}.4$) = BV 471

Min = JD 242 8844.550 + $1^{d}.837\,962$. E

Minima	E	O - C
242 8844.568 (S)[x/]	0	+0.018
8880.505 (S)	19.5	+0.115
243 4368.495 (S)	3005.5	-0.050
4415.361 (S)	3031	-0.052
8407.504	5203	+0.038
8441.442 (1/2)	5221.5	-0.026
8442.444	5222	+0.056
8443.443 (1/2)	5222.5	+0.137
8489.319	5247.5	+0.063
8500.263 (1/2)	5253.5	-0.020
8501.262	5254	+0.060
8524.209 (3/4)	5266.5	+0.032
8525.206 (1/2)	5267	+0.110
8815.404 (1/2)	5425	-0.090
8816.424 (3/4)	5425.5	+0.011
8817.404 (1/2)	5426	+0.072
8827.362 (1/2)	5431.5	-0.079
8828.360	5432	0.000
8886.218 (1/2)	5463.5	-0.037
8887.218	5464	+0.044
9179.412	5623	+0.002
9202.349 (1/2)	5635.5	-0.036
9225.267 (1/2)	5648	-0.092

Ampl. $0^m.70$, with a deep secondary minimum (1/2 - 3/4 of the primary minimum).

S 4939 = K3II 1645 = CoD $-51^\circ 5013$ ($9^m.8$) = CAP $-51^\circ 3551$ ($9^m.5$) = BV 472

Min = JD 242 8694.240 + $2^d.384\ 082$. E

Minima	E	O - C
242 8694.240 (S)[x/]	0	0.000
8894.502 (S)	84	-0.001
243 4369.480 (S)	2380.5	-0.067
4517.270 (S)	2442.5	-0.090
4561.257 (S)	2461	-0.209
4573.260 (S)	2466	-0.126
8440.406	4088	+0.039
450	4088	+0.083
8471.404	4101	+0.034
8501.306	4113.5	+0.145
8519.255 (1/2)	4121	+0.213
8520.252	4121.5	+0.018
8788.472	4234	+0.029
.517	4234	+0.074
8818.402 (1/2)	4246.5	+0.158
.446 (1/2)	4246.5	+0.202
8824.400 (1/2)	4249	+0.196
8825.404	4249.5	+0.008
8880.219	4272.5	-0.011
.267	4272.5	+0.037
8886.218	4275	+0.028
8898.210	4280	+0.099
8899.213	4280.5	-0.090
8905.215	4283	-0.048
9179.413	4398	-0.020
.458	4398	+0.025
9210.306	4411	-0.120
.349	4411	-0.077

Ampl. $0^m.70$, with a deep secondary minimum (3/4 of the primary minimum).

Remeis-Observatory
Bamberg, November 15, 1966 W. STROHMEIER

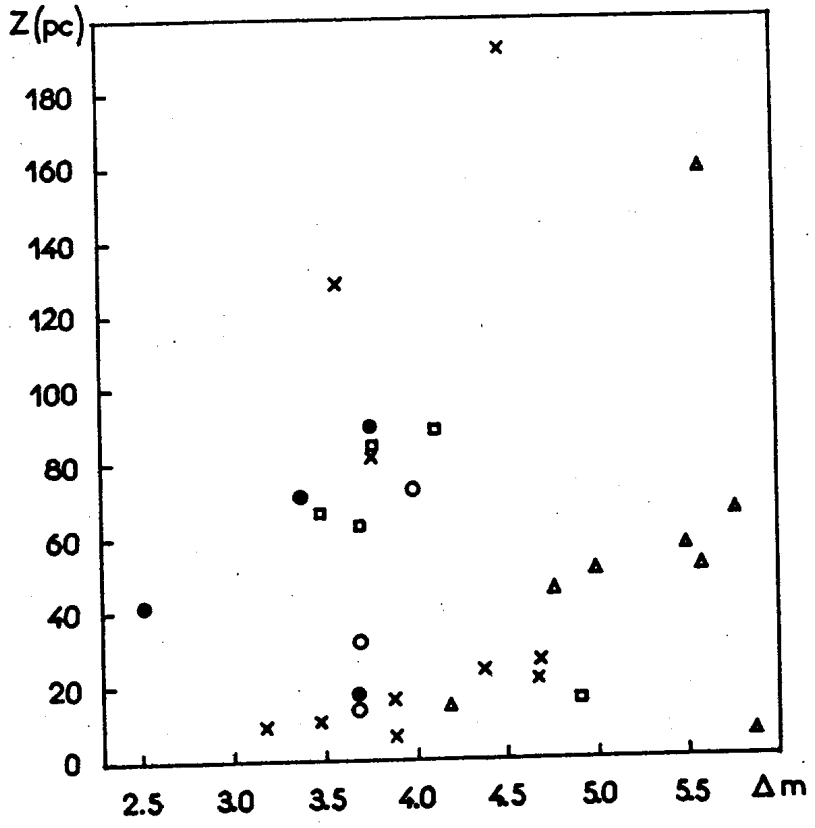
x/ (S) = Sonneberg; many thanks to Ing. H.Huth for his friendly support of the work with the Sonneberg plate material.

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 167

Konkoly Observatory
Budapest
24 November 1966

REPARTITION DANS LE PLAN GALACTIQUE DES ÉTOILES DU TYPE U GEMINORUM

Nous avons tout d'abord supposé que toutes les étoiles du type U Geminorum ont la même magnitude absolue au minimum. On a adopté $M_{min} = +9,5$, valeur voisine de celle que j'avais utilisé dans un autre travail (+9, 8) (1) et en accord avec une détermination faite par Kraft (2) sur cinq étoiles: $M = 9,5 \pm 0,5$.



Nous avons admis arbitrairement une valeur de l'absorption A = 2,0 mag/kpc dans le plan de la Galaxie, et déterminé la distance au Soleil r et la distance z au plan galactique.

Pour 30 étoiles bien observées on a construit (figure 1, $\times$ max. normaux 1 (L) < 10 j, $\bullet$ max. symétriques id, Δ max. normaux 1 (L) > 10 j, o max. symétriques id, $\square$ s.t. SU UMa id) un diagramme Δ m/z: on voit qu'il existe deux groupes de répartition en z. Les étoiles à maxima normaux prédominent dans le groupe le plus proche du plan, les étoiles à maxima symétriques et le sous-type SU UMa dans l'autre.

La séparation observée permet deux hypothèses:

- ou le M_{min} est bien la même dans tous les cas, et il existe réellement deux groupes de répartition en z,

- ou bien, il existe deux groupes de M_{min} distinctes. Cette dernière hypothèse parait plus probable, la différence entre des deux groupes étant supérieure ou égale à 1 magnitude.

Drancy, le 14 Novembre 1966

MICHEL PETIT

(1) M. Petit: Asiago Cont. 119. 1961

(2) R. P. Kraft: ApJ 135. 408. 1962.

"T 3096"

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 168

Konkoly Observatory
Budapest
26 November 1966

Veröffentlichungen der Remeis-Sternwarte Bamberg
Astronomisches Institut der Universität Erlangen-Nürnberg
Band VI, Nr. 39

ELEMENTS FOR SONNEBERG EA-VARIABLES (II)

Also both these variables are discovered and classified as EA-stars by C. Hoffmeister (Erg. AN 12, Nr. 1, 1949).

S 4952 = K3T 1778 = CAP -68° 1567 ($8^{m}.7$) = HD 102 547 (B9) = BV 837

Min = JD 242 8687.275 + $5^{d}.903\ 22$. E

Minima	E	O - C
242 8687.243 (S)	0	-0.032
8846.603 (S)	27	-0.059
8852.601 (S)	28	+0.036
8911.563 (S)	38	-0.034
.617 (S)	38	+0.020
243 4242.268 (S)	941	+0.063
4342.526 (S)	958	-0.034
.576 (S)	958	+0.016
4407.469 (S)	969	-0.026
4490.307 (S)	983	+0.167
4543.293 (S)	992	+0.024
8439.492	1652	+0.098
8498.362	1662	-0.065
.406	1662	-0.021
8504.304	1663	-0.026
.348	1663	+0.018
.375	1663	+0.045
.392	1663	+0.062
9230.369	1786	-0.057
.410	1786	-0.016
9236.272	1787	-0.057
.324	1787	-0.005
.369	1787	+0.040

(S) = Sonneberg, many thanks to Dr W. Wenzel for his kind support of the work with the Sonneberg plate-material.

Ampl. $0^{m}.60$ with a weak secondary minimum.

S 5022 = K3T 2628 = CAP $-65^{\circ}3284$ ($9^{m}.0$) = BV 575, Cape: Ao
Min = JD 242 8713.325 + $2^{d}.339\,485$. E

Minima	E	O - C
242 8713.337 (S)	0	+0.012
8748.379 (S)	15	-0.038
243 4267.296 (S)	2374	+0.034
4302.317 (S)	2389	-0.038
4365.577 (S)	2416	+0.056
4482.487 (S)	2466	-0.008
4489.569 (S)	2469	+0.056
4536.336 (S)	2489	+0.033
4571.433 (S)	2504	+0.038
8202.342	4056	+0.066
8223.308	4065	-0.024
8230.314	4068	-0.036
8581.292	4218	+0.019
8588.294	4221	+0.003
8885.452	4348	+0.046
8906.391	4357	-0.070
9271.392	4513	-0.029

(S) = Sonneberg, many thanks to Dr W. Wenzel for his kind support of the work with the Sonneberg plate-material.

Ampl. $0^{m}.45$, without a secondary minimum.

Remeis-Observatory,
Bamberg, 1966, November 20

W. STROHMEIER

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 169

Konkoly Observatory
Budapest
10 December 1966

T PYXIDIS

Bateson reported that Albert Jones observed brightening of the recurrent Nova T Pyxidis, RA: $9^h00^m32^s$, D: $-31^\circ58'.7$, 1900.0. Its visual magnitude was on 7th December 12.9, previously it was invisible, fainter than 13.5 magnitude.

Canberra Solar Observatory,
7 December 1966

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 170

Konkoly Observatory
Budapest
15 December 1966

EU TAURI

Three colour photoelectric observations were made on the star EU Tauri (BD +18°955, HD 38321, S 3736, Wood 197) on seven nights beginning in Oct., 1966 and continuing to the present time, Dec., 1966. The observations were made on the 28 inch reflector at Flower and Cook Observatory using BD +18°959 and BD +18°966 as the comparison and check stars respectively.

The results of the partially reduced observations show that EU Tauri is definitely not an eclipsing variable star as described in The Finding List for Observers of Eclipsing Variables (Wood et al, University of Pennsylvania Astro. Series, Vol. IX, 1963.). In this list EU Tauri appears as star No. 197 and is classified as a W Ursae Majoris type eclipsing variable with a period of 0.5954 days. This data was originally obtained by Azarnova from photographic observations in 1950-1951 (Azarnova, Variable Stars Vol. 9, p. 45, 1953.). The results of my observations indicate, rather, that EU Tauri is a classical cepheid with a period of about 2.105 days, having a light curve typical of that of a cepheid of this short period.

Observations made at maximum and minimum light yield the following amplitudes for this star:

$\Delta V' = 0.35$, $\Delta B' = 0.46$, $\Delta U' = 0.53$

The preliminary elements are given at this time as:

Elements: Blue max. JD 2439450.665 + $2^{d}.105$ E

Ptg. mag. about 8.6 - 9.1

The completion of the remainder of the light curve will hopefully be made in the next few months with additional data from future observations and from observations made here on the same telescope in 1963-1964 by L. Binnendijk. Publication of the complete light curve in U, B, V magnitudes with a refined Ephemeris and other photometric parameters characterizing this star will be made in the near future. The data from all previous observations (those of Azarnova and Binnendijk) will be studied in detail for any real period and light changes that may have taken place.

Flower and Cook Observatories

December 8, 1966

EDWARD F. GUINAN

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 171

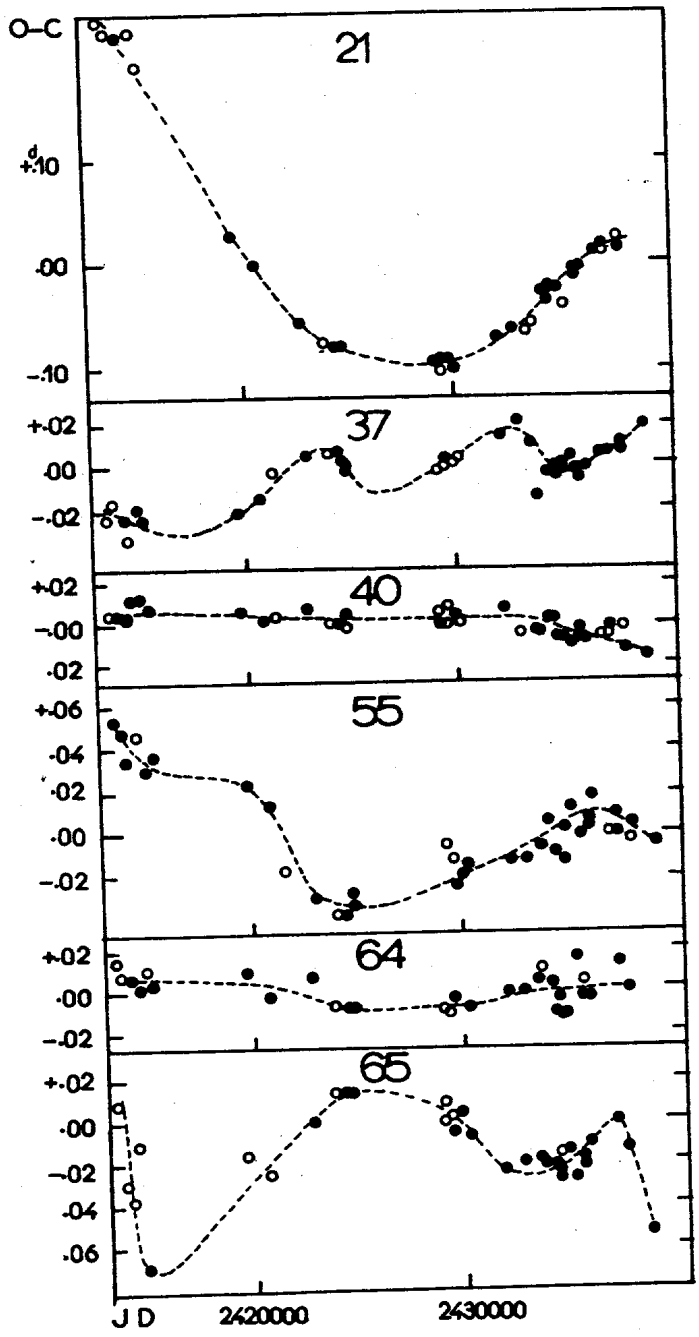
Konkoly Observatory
Budapest
27 December 1966

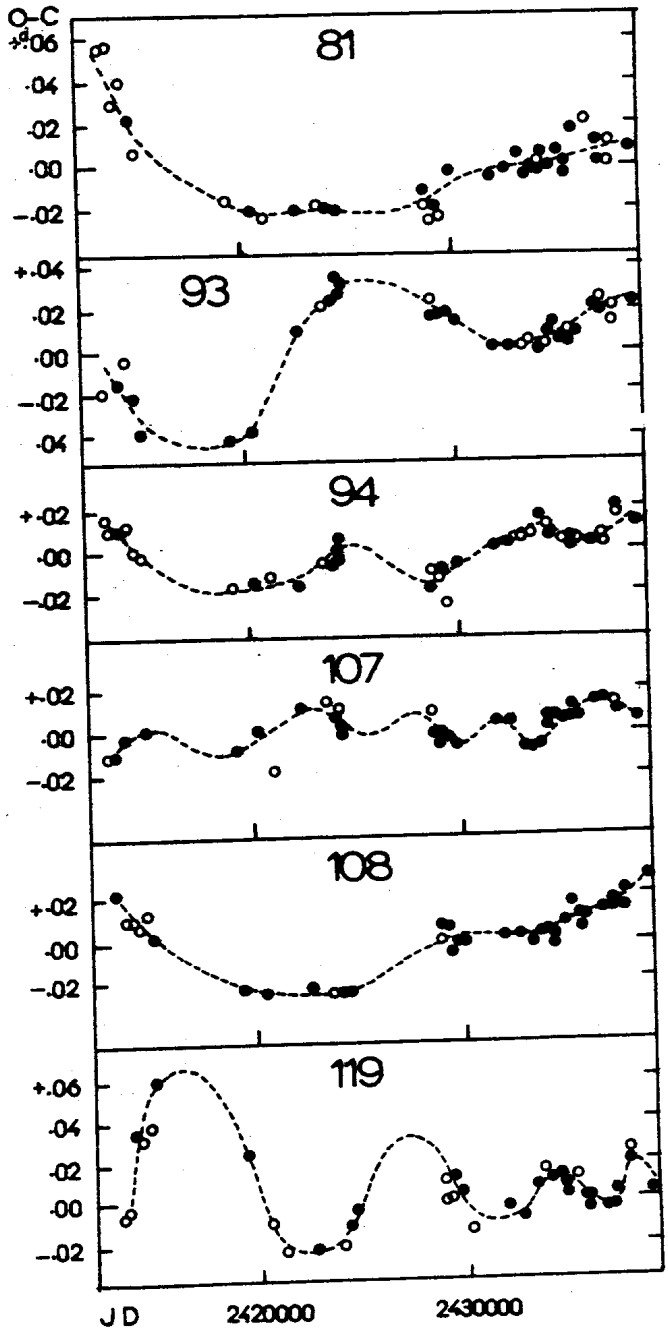
ON 12 RR LYRAE STARS IN M 3

120 plates from the Moscow collection have been measured and the magnitudes obtained for variables 21, 37, 40, 55, 64, 65, 81, 93, 94, 107, 108 and 119 [1] were combined with all observations published up to the present [2 - 13]. All magnitudes were reduced to Kukarkin's system [14]. From season moments of maxima calculated by the modified method of superposition of the mean light curve O - C diagrams were plotted (s. Figures. Open circles denote uncertain values). On the basis of mean-weighted light curves also period-amplitude and period-asymmetry relations were deduced. Our results differ slightly from those given in [13].

DATA ON 12 RR LYRAE STARS IN M 3

	T_o JD hel	P	Max	A		
		d	m	m		m
21	2430000.415	0.5157336	14.81	1.46	0.150	0.56
37	.241	.3266384	15.34	0.78	.390	.05
40	.397	.5515416	15.01	1.31	.140	.48
55	.032	.5298136	14.88	1.43	.125	.53
64	.382	.6054590	15.32	0.94	.180	.30
65	.332	.6683394	14.79	1.43	.140	.43
81	.461	.5291108	14.86	1.44	.130	.55
93	.420	.6023007	15.24	1.03	.150	.32
94	.304	.5236936	14.90	1.43	.130	.51
107	.039	.3090348	15.40	0.74	.400	.03
108	.250	.5196047	14.94	1.36	.140	.53
119	.192	.5177411	14.76	1.49	.170	.53


O–C
21
d
+.10
.00
–.10
37
+.02
.00
–.02
40
+.02
–.00
.02
55
+.06
.04
.02
.00
–.02
64
+.02
.00
–.02
65
+.02
.00
–.02
.04
.06
J D
2420000
2430000


O–C
81
93
94
107
108
119
JD
2420000
2430000

Var 65 has an amplitude unusually large for RR_b stars*. On P - A and P - $\bar{S}$ diagrams it deviates from all the other stars. Generally our O - C diagrams (see figure) resemble those of 23 . Nevertheless, the period-change could be expressed for none of the stars by a parabolic law. It appears to have cyclical character. This can be well seen for variables 37, 65, 93, 94, 107 and 119. The positive correlation [15] is likely to take place in this case.

References:

1. Sawyer, H., Publ. DDO II, 2, 1955.
2. Bailey, S., HA 78, 1913.
3. Baker R. and Baker, H., AJ 61, 283, 1956.
4. Belserene, E., AJ 57, 237, 1952.
5. Greenstein, J., AN 257, 301, 1935.
6. Hett, J., AJ 50, 15, 1942.
7. Larink, J., Berg. Abh. 2, 6, 1922.
8. Müller, Th., Berl. Bab. Veröff. 11, 1, 1933.
9. Roberts, M. and Sandage, A., AJ 60, 185, 1955.
10. Rybka, E., BAN 5, 257, 1930.
11. Schwarzschild, M., HC No. 437, 1940
12. Slavenas, P., AN 240, 169, 1929.
13. Szeidl, B., Bud. Mitt. No. 58, 1965.
14. Kukarkin, B. V. and Kukarkina, G. P., Per. Zv. 13, 239, 1961.
15. Balázs-Detre, J. and Detre, L., Bamb. Kl. Veröff. IV, 184, 1965.

Main Astronomical Observatory of the
Ukrainian Academy of Sciences

E. S. KHEYLO

* The star belongs to the long period sequence. S. [13] p. 72. Editor.

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 172

Konkoly Observatory
Budapest
29 December 1966

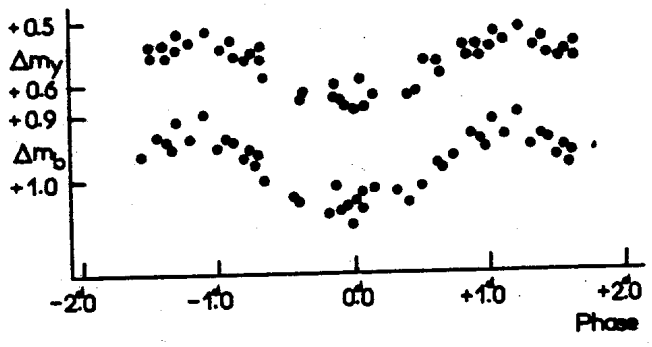
NEW MICROVARIABLE HD 117555

According to P. W. Merrill[1] the star HD 117555 has rather large rotational velocity (v sin i = 75 km/sec), the spectral class being gG. H_α and CaII H and K are in emission. It was found also that the profiles of emission lines vary with a period of about 5 days[2].

We have obtained photoelectric observations of HD 117555. The star was observed during May-August 1966. The photometer equipped with blue and yellow filters on the 64-cm telescope was used. The comparison stars were HD 117567 and HD 117876.

We conclude that the light of HD 117555 varies periodically, the elements of variation being:

Min. hel. = 2439298. 818 + $2^d.412$ E.



The light curves obtained are given in the figure where Δm_y and Δm_b are magnitude differences in the yellow and blue light with respect to HD 117567.

The type of variability as well as the properties of the star (high rotation and late spectral class) are unusual.

P. F. CHUGAINOV

Crimean Astrophysical Observatory
of the Academy of Sciences of the
U. S. S. R.

(1) P. W. Merrill, 1948, Publ. Astron. Soc. of the Pacific, 60, 382.
(2) G. H. Herbig, 1965, Private Communication.

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 173

Konkoly Observatory
Budapest
29 December 1966

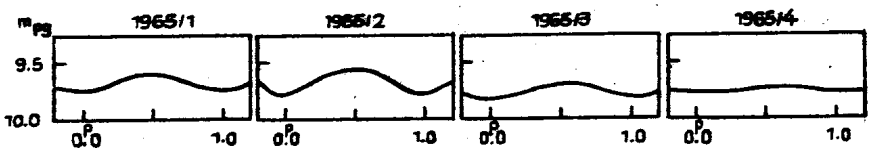
REMARK CONCERNING THE AMPLITUDE OF RU CAM DURING 1965

The strong decrease of the amplitude of RU Cam, discovered by DEMERS and FERNIE (ApJ 144, p. 440), can be traced continuously on plates of the Sonneberg Sky Patrol. In particular the outstanding behaviour, mentioned by the above quoted authors, of four U-observations on J.D. 243 8894 ... 8922 might be explained as follows.

At Sonneberg the observations of each three months were combined into one mean light curve. These curves show that in the second quarter of 1964 the amplitude of RU Cam in the photographic region (blue-sensitive emulsion ORWO ZU 2) was still $0^m.65$ but decreased during the third quarter to $0^m.15$. Also in the following time (1964/4 and 1965/1) the brightness showed a fluctuation of this amount only.

But in the second quarter of 1965 the amplitude became remarkably larger, $0^m.25$ photographically (see figure). It was then that the above mentioned four isolated photoelectric U-values of strong deviation appeared. One must take into account that in 1960 the period of RU Cam shortened to $22^d.073$, so that for the time of decreasing amplitude the following elements can be given:

$$\text{Min.} = 243\ 7114.0 + 22^d.073 \cdot E.$$



According to this formula we have for the quoted U-values the phases 0.66, 0.94, 0.98 and 0.93 (+ integers). Thus the observations show in the U-region a minimum of brightness with a range of about $0^m.8$ in accordance with the instantaneous elements.

From 1965/3 onward the variation of brightness flattened again, being not larger than about $0^m.1$ photographically till the end of 1966.

Our results confirm the conclusion from other photoelectric material that the decrease of the amplitude in the V-region is considerably stronger than in U, and m_{pg} takes a medium position. Furthermore the remark by DEMERS and FERNIE (1. c.) on the constancy of the mean intensity might be applied in general only to the bolometric magnitude.

A detailed description of the Sonneberg observations will be given by HUTH in a forthcoming number of MVS.

H. HUTH

W. WENZEL

Sternwarte Sonneberg
der
Deutschen Akademie der Wissenschaften

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 174

Konkoly Observatory
Budapest
30 December 1966

CSV 4769

This variable star has been discovered by PARENAGO (V. S. 5. 206-212. 1938). Its preliminary designation is SVS 872 (1900: $19^h36^m06^s + 36^o26'$). The discoverer suspected shortperiodic light variation.

On sky patrol plates of Bruno-H.-Bürgel-Observatory Hartha between J. D. 243 6817 and 243 9061 (n = 202) the star was found to be an eclipsing binary. Observed minima:

Min. I	E	O - C	Min. II	E	O - C
243 6819.464	-1392	-0.003	243 7199.444	- 944,5	+0.012
6899.249	-1298	+ 27	7959.386	- 49,5	+ 13
7191.362	- 954	- 3	9028.380	+1209,5	- 6
8322.366	+ 378	+ 4			
8642.462	+ 755	- 10			
8671.334	+ 789	- 7			

Min. hel. = J. D. 243 8001.404 + 0^d,84909682 . E

Max. I $11^m.32$; Min. I $11^m.77$; · Max. II $11^m.28$; Min. II $11^m.75$

Type: W Ursae Majoris

Bruno H. Bürgel-Sternwarte, Hartha

H. BUSCH
K. HÄUSSLER

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 175

Konkoly Observatory
Budapest
3 January 1967

NEW VARIABLE STAR IN EQUULEUS

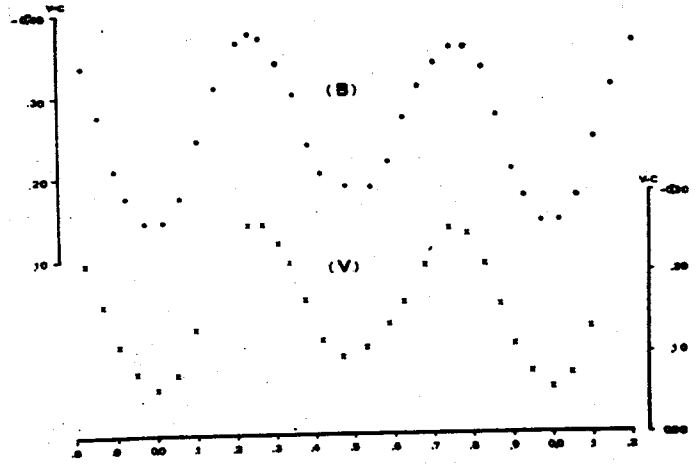
During photoelectric observations of S Equ, the nearby star BD +5° 4655 (= HD 199464, $9^m.1$, AO) appeared to be variable. Therefore, we began systematic photoelectric observations in two colors (B and V) of this star, using for comparison BD +5° 4656 (= HD 199501, $9^m.1$, AO).

We obtained the preliminary elements:

Primary Min.: JD 2439382.427 + $0^d.881$ E

Depth of Prim. Min.: $0^m.20$ (V), $0^m.30$ (B)

Depht of Sec. Min.: $0^m.16$ (V), $0^m.18$ (B)



According to the shape of the light curve (s. Figure) the variable is of the W Ursae Majoris type.

Osservatorio Astrofisico
Catania
December 20, 1966

S. CATALANO
M. RODONÒ

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 176

Konkoly Observatory
Budapest
4 January 1967

IMPROVED AND CURRENT ELEMENTS FOR 50 CEPHEIDS

The following elements were derived from published and unpublished data in the course of a study of the phase lag of the luminosity-curve behind the velocity-curve for Cepheids (see Astr. Circular USSR, N 311, 1964). Many of the Cepheids were simultaneously searched for variability of their periods. Detailed data will be published in another paper.

TT Aql	$Max_V JD$ = 2437236.10 + 13.^{d}7546 E	(>2418500)	(2)
V336	35335.20 + 7.30388 E	(>2428000)	(2)
RX Aur	37599.54 + 11.62275 E	(>2433000)	(1)
AN	36822.85 + 10.2906 E		
RW Cam	36847.88 + 16.4145 E	(>2427000)	(1)
RW CMa	28201.83 + 5.72941 E		
TV	35567.16 + 4.66981 E		
VY Car	34794.38 + 18.9484 E		(3)
ℓ	04632.7 + 35.5354 E		
RS Cas	36861.58 + 6.2972 E	(>2435300)	(1)
RW	37168.23 + 14.7958 E	(>2429000)	(1)
RY	33424.05 + 12.1376 E	(>2424000)	(3)
SW	36846.84 + 5.4410 E		
V Cen	35089.38 + 5.4937 E		(3)
AZ	35223.40 + 3.21340 E		(2)
V339	35163.96 + 9.4661 E		
V419	35236.88 + 5.5085 E	(>2433500)	(1)
S Cru	35170.50 + 4.6901 E	(>2427400)	(2)
SZ Cyg	36779.33 + 15.1079 E	(>2431500)	
MW Cyg	36808.45 + 5.95469 E	(>2428000)	(1)
V386	29417.58 + 5.25762 E		
β Dor	35206.44 + 9.84200 E	(>2429000)	(1)
W Gem	37627.34 + 7.91413 E	(>2428000)	(1)
RZ	34128.00 + 5.52952 E	(>2427500)	(1)
AD	36831.28 + 3.78796 E		

X Lac	Max_V JD = 2436814.00 + 5.44506 E	(>2429000)	(1)
SV Mon	37092.00 + 15.2316 E	(>2427000)	(2)
SZ	37627.56 + 16.327 E	(>2433000)	(1)
AC	29636.68 + 8.01427 E		
R Mus	34847.38 + 7.51027 E		
S	37835.90 + 9.6590 E		
S Nor	34586.58 + 9.75444 E	(>2434000)	(1)
BF Oph	34941.04 + 4.06776 E	(>2426000)	(1)
SX Per	29145.60 + 4.28994 E	(>2422000)	(2)
UX	37215.71 + 4.97247 E		
RS Pup	34824.14 + 41.388 E	(>2427500)	(1)
WX	35256.41 + 8.9377 E	(>2426700)	(1)
AT	35582.40 + 6.6652 E	(>2432200)	(2)
U Sgr	34947.55 + 6.74531 E	(>2430500)	(1)
X	35643.51 + 7.0126 E	(>2419500)	(1)
VY	34567.83 + 13.557 E		
WZ	37910.24 + 21.8509 E	(>2427000)	(1)
AP	37234.16 + 5.05796 E	(>2426500)	(2)
BB	36790.11 + 6.63683 E		
V350	35358.29 + 5.15419 E		
RU Sct	26190.47 + 19.701 E	(>2429000)	(1)
ST Tau	37594.62 + 4.03443 E	(>2430000)	(2)
SZ	37626.21 + 3.14887 E	(>2432500)	(2)
AH Vel	34866.28 + 4.22713 E		

Notes: (1) P var; (2) P possible var; (3) Elements in General Cat. Var. St. 1958 are incorrect.

New observations and estimates on old plates would be very valuable for the following stars: U Car (new), V Car (new), IT Car (new), AP Cas (JD 2427000 - 36000), W Sgr (new), TY Sct (new), EV Sct (old and new!).

Astronomical Council Acad. Sci. USSR,
December, 1966

G. S. TSAREVSKY

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 177

Konkoly Observatory
Budapest
18 January 1967

VZ TELESCOPII

The star VZ Tel ($\alpha_{1900} = 18^h11^m18^s$, $\delta_{1900} = -52^\circ08'7$) was discovered as a variable by C. D. Boyd (Harv. Ann. 90, 243, 1939) and is classified as of type "RCrB ?" in the 1948-edition of Kukarkin and Parenago's GCVS and as of type "SR" in the 1958-edition of the same catalogue.

Estimates of the star have been made at the Astronomical Institute of the University of Louvain on 262 plates which have been taken in the course of the years 1960-66 with the 10"-Metcalf telescope of the Boyden Observatory, mainly by the senior writer.

The results of these estimates are given in graphical form in the Figure. The light variation which they reveal is neither that of a R CrB-type star, nor that of a RV-Tau star with its typical alternation of deep and undeep minima. A cycle with a single maximum and a single minimum but with a changing duration and amplitude is what appears to be present, so that the star should really be classified as a semi-regular variable.

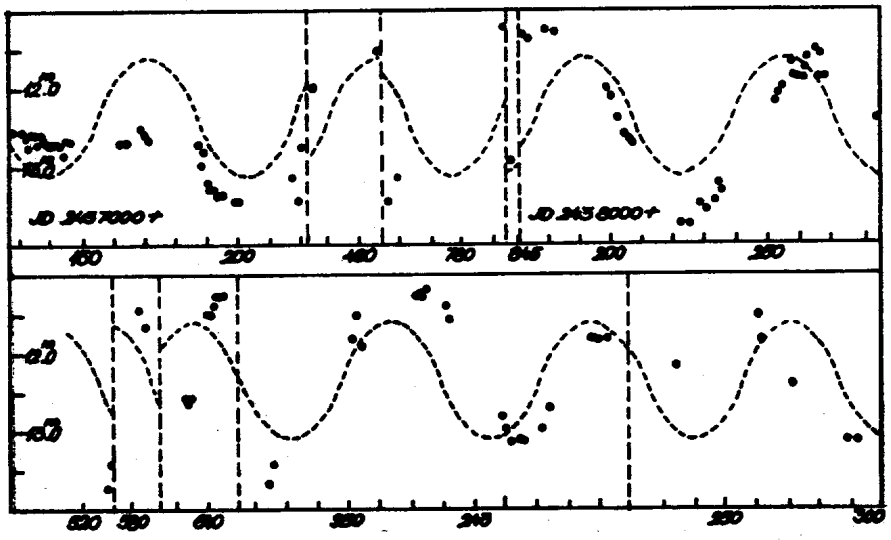


Table 1 summarizes the results of a least squares treatment applied to the epochs of observed maximum light, which yielded the ephemeris

$$\text{JD max} = 2438190 + 63^{d}66\ E$$
$$\pm 3.5 \quad \pm .38$$

With this ephemeris phases were computed for all the observations which were afterwards combined in a mean lightcurve. This curve is represented by the dashed line in the Figure. That its amplitude $\triangle m = 1^{m}.5$ is definitely smaller than that of most of the individual cycles is of course mainly due to the to and fro shifts of the latter with respect to the mean cycle.

All magnitudes have been derived from star counts compared with the Tables in Groningen Publication No 43. The authors have no information about the colour or the spectral class of the variable.

Table 1.

JD max (Obs.)	E	O - C	JD max (Obs.)	E	O - C
2437180	0	+ 8.3	2438583	22	+10.7
486	5	- 4.0	645	23	+ 9.1
792	10	-16.4	965	28	+10.7
8178	16	-12.3	9020	29	+ 2.0
264	17	+10.0	255	33	-17.6

A. van HOOF
E. MERTENS

Astronomical Institute
University of Louvain
(Belgium)

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 178

Konkoly Observatory
Budapest
20 January 1967

Veröffentlichungen der Remeis-Sternwarte Bamberg
Astronomisches Institut der Universität Erlangen-Nürnberg
Band VI, Nr. 40

BRIGHT SOUTHERN BV-STARS

On sky patrol plates of the Bamberg Southern Station 25 further stars were found whose variability seems to be real according to the material available till now.

For notice

The BV-stars with numbers from 854 up to 870 are not published in the INFORMATION BULLETIN VARIABLE STARS, COMMISSION 27 OF THE I. A. U. (BUDAPEST). These stars are fainter objects of the southern sky not to be found in the major catalogues (HARVARD, CORDOBA, CAPE). Stars not registered in these catalogues will be published in the future in "VERÖFFENTLICHUNGEN DER REMEIS-STERNWARTE BAMBERG" only.

BV 854 - BV 870: see VERÖFFENTLICHUNGEN DER REMEIS-STERNWARTE BAMBERG, Bd. VI, Nr. 36

BV 871 = CoD -37° 777($9^m.3$)	= HD 12 463 (Go)	$A_{pg} = 0^m.20$
BV 872 = CoD -67° 1216($4^m.7$)	= HD 106 849 (Mb)	$A_{pg} = 0^m.20$
= K5III 101257($4^m.2$ Mb)		
BV 873 = CoD -69° 1080($8^m.5$)	= HD 113 956 (Ao)	$A_{pg} = 0^m.20$
BV 874 = CoD -62° 891($6^m.0$)	= HD 131 492 (B3)	$A_{pg} = 0^m.40$
BV 875 = Cap -20° 6090($9^m.6$)		$A_{pg} = 0^m.35$
BV 876 = BD -3° 3758($7^m.3$)	= HD 135 895 (Ao)	$A_{pg} = 0^m.20$
BV 877 = CoD -24° 12156($8^m.8$)	= HD 138 503 (B5)	$A_{pg} = 0^m.35$
BV 878 = CoD -44° 10556($9^m.3$)	= HD 143 085 (Fo)	$A_{pg} = 0^m.35$
= K5III 2520 = HV 2963		
BV 879 = CoD -59° 5992($8^m.5$)	= HD 143 511 (Ao)	$A_{pg} = 0^m.25$

BV 880 =	CoD -38°10893($7^m.3$)	= HD 144 668 (Ao)	
	CoD -38°10894($7^m.0$)	= HD 144 667 (Ao)	$A_{pg} = 0^m.30$
BV 881 =	CoD -52° 7603($7^m.3$)	= HD 149 401 (Ma)	$A_{pg} = 0^m.30$
BV 882 =	CoD -36°11034($9^m.5$)	= Cap -36°7064($9^m.6$)	$A_{pg} = 0^m.25$
BV 883 =	CoD -42°12317($9^m.8$)	= Cap -42°7859($9^m.4$)	$A_{pg} = 0^m.20$
BV 884 =	CoD -43°12674($8^m.1$)	= HD 171 577 (Ao)	$A_{pg} = 0^m.35$
BV 885 =	CoD -57° 7406($7^m.8$)	= HD 174 139 (Ao)	$A_{pg} = 0^m.30$
BV 886 =	BD -11° 4766($9^m.3$)	= HD 174 245 (B8)	$A_{pg} = 0^m.40$
BV 887 =	CoD -52° 8886(10^m)	= Cap -52°11289($10^m.2$)	$A_{pg} = 0^m.30$
BV 888 =	BD -19° 5292($8^m.0$)	= HD 177 559 (B5)	$A_{pg} = 0^m.40$
BV 889 =	CoD -53° 8070($9^m.4$)	= HD 179 364 (A2)	$A_{pg} = 0^m.20$
BV 890 =	CoD -48°13332(10^m)		$A_{pg} = 0^m.20$
BV 891 =	BD -18° 5593($8^m.0$)	= HD 190 642 (G5)	$A_{pg} = 0^m.25$
BV 892 =	CoD -42°14707($9^m.9$)	= Cap -42°9020($10^m.2$)	$A_{pg} = 0^m.40$
BV 893 =	CoD -80° 767($7^m.6$)	= HD 196 818 (G5)	$A_{pg} = 0^m.30$
BV 894 =	CoD -72° 1636($8^m.5$)	= HD 197 070 (A5)	$A_{pg} = 0^m.20$
BV 895 =	CoD -51°12963($8^m.2$)	= HD 204 554 (F5)	$A_{pg} = 0^m.20$

Remeis-Observatory
Bamberg, 1967 Januar 1

W. STROHMEIER

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 179

Konkoly Observatory
Budapest
24 January 1967

RÉPARTITION GALACTIQUE DES CEPHEIDES TYPIQUES DE GRANDE PERIODE

En 1958, Fernie (1) a émis l'hypothese que les céphéides typiques de grande période (P $>$10j) sont associées aux nuages d'hydrogène.

Nous avons utilisé les distances déterminées par Walraven, Muller et Oosterhoff (2) et par Petit (3) d'après l'étude de l'absorption, ainsi que quelques déterminations plus récentes. On construit un diagramme où l'on reporte la position de près d'une centaine de céphéides typiques de période supérieure à 10j, comparée avec la position des nuages d'hydrogène, d'après les observations faites sur 21 cm par Oort, Kerr et Westerhout (4). (Les longitudes sont exprimées dans le nouveau système de coordonnées galactiques: lII, bII).

Il semble que l'on puisse confirmer l'hypothèse de Fernie, car environ 80 % de ces étoiles sont associées aux nuages d'hydrogène alors que les céphéides typiques de période plus courte ont une répartition bien différente. Elles sont particulièrement nombreuses dans les bras galactiques: Car, Cas-Per et Cyg.

En se limitant à r = 4kpc du Soleil, on trouve, comme dispersion autour du plan galactique σ_z = 75 pc, ce qui correspond à une épaisseur du système d'environ 175 pc. Cette valeur est proche de celles obtenues pour les nuages d'hydrogène: 150 pc (Westerhout 5), 220 pc (McGee et Murray, 6).

Drancy, le 14 Janvier 1967

MICHEL PETIT

(1) J. D. Fernie: AJ 63. 219. 1958
(2) Th. Walraven, A. B. Muller et P. Th. Oosterhoff: BAN 14. 81. 1958
(3) M. Petit: Ann. d'Astr 23. 710. 1960
(4) J. H. Oort, F. J. Kerr et G. Westerhout: MN 118. 379. 1958
(5) G. Westerhout: BAN 14. 215 et 261. 1958
(6) R. X. Mc Gee et J. D. Murray: Australian J. Phys. 14. 260. 1961

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 180

Konkoly Observatory
Budapest
25 January 1967

MINIMA OF ECLIPSING VARIABLES

This report continues the one in IBVS No. 154, and contains 151 observed minima of 41 eclipsing variable stars. All are visual timings reduced by the tracing-paper method, except where noted. Linear elements in the 1958 General Catalogue of Variable Stars were used to compute the O - C's, unless otherwise specified. The number of estimates used for each minimum is given under n.

J.D. ⊙ (2430000)	E	O - C	n	Observer
RT Andromedae				
9323.664	+24,175	-0.015	17	Carl Anderson
9340.643	+24,202	-0.017	19	D. Lucas
9350.712	+24,218	-0.011	12	F. Sanner
9355.740	+24,226	-0.014	13	F. Sanner
XZ Andromedae				
9349.696	+ 4,764	+0.053	17	M. Baldwin
9353.766	+ 4,767	+0.051	15	R. Swanberg
9421.634	+ 4,817	+0.056	24	D. Livingston
9421.635	+ 4,817	+0.057	13	D. Williams
9421.637	+ 4,817	+0.059	30	F. Chapman
9425.707	+ 4,820	+0.057	19	M. Baldwin
AB Andromedae				
9316.819	+12,779.5	+0.056	14	M. Baldwin
9348.682	+12,875.5	+0.058	10	M. Baldwin
9349.676	+12,878.5	+0.056	13	M. Baldwin
9352.662	+12,887,5	+0.055	10	M. Baldwin
9426.675	+13,110.5	+0.057	12	M. Baldwin
9432.650	+13,128,5	+0.058	8	M. Baldwin
9433.646	+13,131,5	+0.059	9	M. Baldwin
9435.637	+13,137,5	+0.058	12	M. Baldwin
9435.804	+13,138	+0.059	12	M. Baldwin
9436.632	+13,140.5	+0.058	10	M. Baldwin
CX Aquarii				
9358.592	+23,431	+0.034	12	R. Monske
9378.594	+23,467	+0.021	16	R. Monske

J.D. ⊙ (2430000)	E	O - C	n	Observer
BV 623 Aquarii				
8990.0584 ↓[1]	+ 8,143	+0.0095	27pe	L. Kalish
8990.8241 ↓[1]	+ 8,143.5	+0.0126	17pe	L. Kalish
OO Aquilae				
9293.841	+ 9,999	-0.023	10	M. Baldwin
9315.642	+10,042	-0.014	7	M. Baldwin
9316.649	+10,044	-0.021	11	M. Baldwin
9317.660	+10,046	-0.024	11	M. Baldwin
9319.689	+10,050	-0.022	14	M. Baldwin
9320.701	+10,052	-0.023	13	M. Baldwin
9337.677:	+10,085.5	-0.025	13	R. Monske
9342.747	+10,095,5	-0.023	14	R. Monske
9350.602	+10,111	-0.023	13	R. Monske
9352.626	+10,115	-0.027	10	M. Baldwin
9355.664	+10,121	-0.029	12	R. Monske
9355.665	+10,121	-0.028	16	M. Baldwin
V342 Aquilae ↓[2]				
9318.584	+ 1,087	+0.010	33	M. Baldwin
V346 Aquilae				
9341.659	+ 7,242	-0.023	21	R. Monske
9342.769	+ 7,243	-0.019	20	R. Monske
WW Aurigae				
9169.712	+ 2,339	+0.001	18	M. Baldwin
AR Aurigae				
9435.856	+ 3,070	+0.014	14	M. Baldwin
Y Camelopardalis				
9173.706	+ 4,459	-0.014	25	M. Baldwin
9183.617	+ 4,462	-0.020	16	L. Hazel
SV Camelopardalis				
9348.739	+11,906	-0.021	10	F. Sanner
9361.790	+11,928	-0.018	11	F. Sanner
R Canis Majoris				
9169.678	+ 3,217	+0.005	14	M. Baldwin

J.D. ⊙ (2430000)	E	O - C	n	Observer
RZ Cassiopeiae				
9315.748	+18,373	-0.038	18	M. Baldwin
9321.726	+18,378	-0.037	10	T. Cragg
9327.697	+18,383	-0.042	45pe	A. Stokes
9364.756:	+18,414	-0.036	14	R. Thompson
9364.757	+18,414	-0.035	18	F. Sanner
9375.505 [3]	+18,423	-0.044	12	J. Ashbrook
9385.677 [4]	+18,431.5	-0.032	30pe	J. Ruiz
9393.436 [3]	+18,438	-0.039	6	J. Ashbrook
9400.609	+18,444	-0.040	14	R. Thompson
9406.584	+18,449	-0.042	15	R. Thompson
9419.733	+18,460	-0.040	15	Sterling Anderson
9425.713	+18,465	-0.039	9	M. Baldwin
9431.688	+18,470	-0.038	15	T. Cragg
9443.646	+18,480	-0,032	9	J. Ashbrook
9456.779	+18,491	-0.047	33	D. Friedman
TV Cassiopeiae [5]				
4261.516:	+ 7,803	-0.023	5	J. Ashbrook
5662.683:	+ 8,576	-0.003	10	J. Ashbrook
6108.584	+ 8,822	-0.004	5	J. Ashbrook
7132.711	+ 9,387	-0.002	14	J. Ashbrook
8274.659	+10,017	+0.002	16	J. Ashbrook
9338.655	+10,604	-0.004	11	J. Ashbrook
9358.596	+10,615	-0.001	7	J. Ashbrook
AB Cassiopeiae				
9432.593	+10,203	+0.064	19	M. Baldwin
9436.694	+10,206	+0.065	21	M. Baldwin
U Cephei				
8909.773	+12,443	+0.742	12	D. Williams
9435.805	+12,654	+0.779	34	M. Baldwin
XX Cephei				
9433.569	+ 6,134	-0.091	14	M. Baldwin
EG Cephei [4]				
9358.785	+22,822	+0.005	14	R. Monske

J.D. ⊙ (2430000)	E	O - C	n	Observer
BV 382 Cephei [6]				
8606.7068	+ ,407	-0.0006	37pe	J. Ruiz
8622.636	+ 427	+0.014	18pe	A. Stokes
8634.795	+ 437	+0.002	27pe	A. Stokes
8642.759	+ 445.5	+0.009	33pe	A. Stokes
8644.635	+ 447.5	+0.013	--pe	A. Stokes
8649.757	+ 453	-0.014	--pe	A. Stokes
8652.585	+ 456	+0.005	19pe	A. Stokes
8652.588	+ 456	+0.008	89pe	J. Ruiz
8694.7047	+ 501	-0.0028	40pe	J. Ruiz
8700.7885	+ 507.5	-0.0041	27pe	J. Ruiz
8703.6015	+ 510.5	+0.0004	30pe	J. Ruiz
8708.7487	+ 516	-0.0013	26pe	J. Ruiz
8711.5587	+ 519	+0.0002	17pe	J. Ruiz
8997.0911 [7]	+ 824	+0.0004	--pe	J. Ruiz
8997.5592 [7]	+ 824.5	+0.0004	--pe	J. Ruiz
9405.7367	+ 1,260.5	+0.0074	--pe	A. Stokes
Y Cygni [8]				
9293.768	+ 9,932	+0.007	16	M. Baldwin
9341.702	+ 9,948	0.000	18	R. Monske
9350.690	+ 9,951	+0.001	18	R. Monske
9134.588	+ 9,979	-0.001	14	R. Monske
V477 Cygni				
9356.826	+ 2,774	-0.041	13	F. Sanner
9429.592	+ 2,805	-0.032	14	F. Sanner
W Delphini				
9358.695	+ 4,434	+0.101	30	R. Monske
YY Delphini				
9355.702	+17,098	+0.036	13	R. Monske
AI Draconis				
9342.729:	+12,266	+0.012	20	R. Monske
TW Draconis				
9350.621	+ 1,946	0.000	20	R. Monske
RX Herculis				
8966.763	+ 3,259	-0.006	13	D. Williams
8998.795	+ 3,277	+0.011	19	D. Loring

J.D. ⊙ (2430000)	E	O - C	n	Observer
SZ Herculis				
9293.839	+ 2,649	+0.009	17	M. Baldwin
9312.660	+ 2,672	+0.014	11	M. Baldwin
9316.746	+ 2,677	+0.009	20	M. Baldwin
9347.841:	+ 2,715	+0.017	19	Curtis Anderson
9348.654	+ 2,716	+0.012	11	M. Baldwin
9352.744	+ 2,721	+0.011	23	R. Swanberg
9366.654	+ 2,738	+0.013	20	W. Lowder
9375.653	+ 2,749	+0.013	15	W. Lowder
CT Herculis				
8894.754	+ 4,473	+0.038	22	R. Monske
8953.728	+ 4,506	+0.062	19	R. Monske
9321.739	+ 4,712	+0.088	11	T. Cragg
9355.666	+ 4,731	+0.075	17	R. Monske
SW Lacertae				
9335.773	+49,773	+0.036	19	R. Swanberg
9344.910	+49,801.5	+0.033	18	D. Loring
9348.766	+49,813.5	+0.040	14	R. Swanberg
9349.729	+49,816.5	+0.041	20	M. Baldwin
9352.772	+49,826	+0.037	15	R. Swanberg
9426.705	+50,056.5	+0.046	13	M. Baldwin
9429.591	+50,065.5	+0.045	11	M. Baldwin
9429.592	+50,065.5	+0.046	12	R. Monske
9432.638	+50,075.	+0.045	10	M. Baldwin
9433.598	+50,078	+0.043	10	M. Baldwin
9434.552	+50,081	+0,035	11	R. Monske
9435.686	+50,084.5	+0.047	12	M. Baldwin
9436.643	+50,087.5	+0.042	12	R. Monske
9436.646	+50,087.5	+0.045	12	M. Baldwin
9445.623:	+50,115.5	+0.042	21	F. Chapman
9449.630	+50,128	+0.040	20	F. Chapman
VX Lacertae				
9363.794	+ 4,783	-0.024	13	D. Williams
Delta Librae				
9320.701	+ 2,090	-0.009	12	M. Baldwin
RT Persei				
9435.683	+ 7,355	-0.015	13	M. Baldwin

J.D. ⊙ (2430000)	E	O - C	n	Observer
IK Persei [10]				
9125.411 [11]	+17,348	+0.009	--	M. Baldwin
9125.744 [11]	+17,348.5	+0.004	--	M. Baldwin
Beta Persei [12]				
9436.635	+513	-0.003	21	R. Monske
9479.642	+528	-0.008	12	J. Olivarez
U. Sagittae				
9337.698:	+6,569	+0.001	30	R. Monske
V505 Sagittarii				
9319.664	+4,907	-0.016	11	M. Baldwin
BV 312 Tauri [13]				
9169.664	+6,579	+0.001	19	M. Baldwin
X Trianguli				
7220.509	+2,599	+0.016	9	J. Ashbrook
7552.769	+2,941	+0.013	21	J. Ashbrook
9431.721	+4,875	+0.030	14	T. Cragg
9432.691	+4,876	+0.028	10	M. Baldwin
9433.662	+4,877	+0.028	15	M. Baldwin
9434.632	+4,878	+0.026	18	R. Monske
9435.606	+4,879	+0.029	15	M. Baldwin
9436.576	+4,880	+0.027	16	M. Baldwin
9436.578	+4,880	+0.029	15	R. Monske
AW Vulpeculae				
9376.600	+15,954	-0.010	13	R. Monske
BU Vulpeculae				
9384.643	+10,170	+0.052	20	R. Monske

1). Normal times of minima from observations between JD 38967 and 39024. O - C's were computed from elements given in IBVS No. 89.

2). O - C computed from elements given in IBVS No. 92.

3). Reduced with a mean light curve.

4). Observations in yellow light: 1P21 + GG 7. Depth of minimum about 0.11 magnitude. Reduced by Kwee- van Woerden method, giving a probable error of $\pm$ 0^d.001.

5). Reduced with a mean light curve.

6). O - C's computed from elements given in IBVS No. 85. Minima by Ruiz reduced by Kwee- van Woerden methods; those of Stokes by the tracing-paper method.

7). Normal times of minima from 119 observations between JD 38931 and 39063.

8). Elements for apsidal motion were used in computing O - C's.

9). O - C's were computed from the elements in Sky and Tele., May, 1963, page 277.

10). O - C's computed from elements given in MVS, 407-8.

11). Normal times of minima from 320 observations between JD 39045 and 39204.

12). O - C's computed from elements given in Sky and Tele., 27, 5, 316.

13). O - C computed from elements in Sky and Tele., 26, 5, 264.

14). O - C computed from 1960 supplement to GCVS.

This work is sponsored by the American Association of Variable Star Observers, with David B. Williams as program coordinator. The reductions were made by the writer with Joseph Ashbrook, except in some cases which were checked.

L. J. ROBINSON
"Sky and Telescope"
49 Bay State Rd.
Cambridge, Mass. USA

"T 83"

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 181

Konkoly Observatory
Budapest
1 February 1967

Veröffentlichungen der Remeis-Sternwarte Bamberg
Astronomisches Institut der Universität Erlangen-Nürnberg
Band VI, Nr. 41

ELEMENTS FOR SONNEBERG VARIABLES (III)

S 4806 = KSW 233 = CoD $-45^{\circ}823$($9^{m}.1$) = HD 16 308(Go) = BV 605

Min = JD 242 8776.575 + $5^{d}.7836$. E

Minima	E	O - C
242 8776.551(S)	0	-0.024
8782.550(S)	1	+0.191
8811.481(S)	6	+0.204
8892.297(S)	20	+0.049
243 4253.611(S)	947	-0.033
4363.440(S)	966	-0.093
4398.391(S)	972	+0.157
4548.645(S)	998	+0.037
4571.603(S)	1002	-0.139
8319.418	1650	-0.097
8348.345	1655	-0.088
.391	1655	-0.042
8354.347	1656	+0.130
8377.284	1660	-0.067
8380.273(1/4)	1660.5	+0.030
8386.279(1/4)	1661.5	+0.253
8643.544	1706	+0.147
8649.540(1/4)	1707	+0.360
8701.393	1716	+0.160
.438	1716	+0.205
8724.361	1720	-0.006
8750.285(1/4)	1724.5	-0.108
8753.285	1725	0.000
9106.285(3/4)	1786	+0.200
.328(1/2)	1786	+0.243
9360.613	1830	+0.050

Ampl. $0^{m}.55$, with a weak (1/4) secondary minimum, EA

S 4841 = K 3W 450 = CoD -45°1704(9.m6) = CAP -45°523(9.m4) = BV 641

Min = JD 242 8752.600 + 6.d978 85 . E

Minima	E	O - C
242 8752.666(S)	0	+0.066
8815.498(S)	9	+0.088
8843.420(S)	13	+0.005
243 4419.346(S)	812	-0.060
4482.265(S)	821	+0.029
8292.596	1367	-0.002
8355.438	1376	-0.060
8404.305	1383	-0.045
8425.278	1386	-0.008
8697.521	1425	+0.060
8739.416	1431	+0.082
8753.376	1433	+0.004
8760.285	1434	+0.014
.332	1434	+0.061
.378	1434	+0.107
.425	1434	+0.154
8767.333	1435	+0.008
8788.287	1438	+0.101
9060.507	1477	+0.146

Ampl. 0.m85, without a secondary minimum, EA

S 4915 = K3H 1469 = CoD -55°2785($9^m.5$) = CAP -55°2299($9^m.4$) = BV 594

Min = JD 242 8655.225 + $2^d.446\ 80$. E

	Minima	E	O - C
242	8655.269(S)	0	+0.044
	8682.237(S)	11	+0.097
	8794.640(S)	57	-0.053
	8843.569	77	-0.060
	8870.570(S)	88	+0.027
	8897.516(S)	99	+0.058
	8924.426(S)	110	+0.053
243	4341.583(S)	2324	-0.005
	4395.404(S)	2346	-0.014
	4488.409(S)	2384	+0.013
	4542.246(S)	2406	+0.020
	4564.249(S)	2415	+0.002
	8442.397	4000	-0.028
	.442	4000	+0.017
	8474.288	4013	+0.055
	.331(1/2)	4013	+0.098
	8501.218(1/2)	4024	+0.070
	.262(1/4)	4024	+0.114
	8518.213(3/4)	4031	-0.063
	8760.449(1/2)	4130	-0.060
	.498	4130	-0.011
	.510	4130	+0.001
	.538	4130	+0.029
	.556	4130	+0.047
	8814.358	4152	+0.019
	.402(3/4)	4152	+0.063
	8841.292	4163	+0.039
	9181.375	4302	+0.016
	.421(1/2)	4302	+0.062
	9198.351(1/4)	4309	-0.135
	9225.267(1/4)	4320	-0.134
	9230.240	4322	-0.055
	9235.230	4324	+0.042

Ampl. $0^m.90$, without a secondary minimum, EA

S 4931 = K3V 1596 = CoD -32°7222($9^m.5$) = CAP -32°2863($9^m.7$) = BV 718

Min = JD 242 8216.500 + $7^d.150\ 75$. E

Minima	E	O - C
242 8191.531(S)	-3.5	+0.059
8216.458(S)	0	-0.042
8245.384(S)	4	+0.281
243 4416.354(S)	867	+0.110
4480.362	876	-0.239
8442.442(1/2)	1430	+0.298
8471.360(1/4)	1434	+0.613
8474.331(1/2)	1434.5	+0.008
8499.265	1438	-0.085
8517.211(1/2)	1440.5	-0.016
8521.208(1/3)	1441	+0.405
8524.209(1/2)	1441.5	-0.169
8528.204(3/4)	1442	+0.250
8828.360	1484	+0.077
8878.222	1491	-0.120
8885.217(3/4)	1492	-0.277
9178.428(3/4)	1533	-0.248
9200.353(1/2)	1536	+0.224
9207.319	1537	+0.039
9232.280(1/2)	1540.5	-0.027

Ampl. $1^m.10$, with a deep (1/2) secondary minimum, EA

All these four variables have been discovered by C. HOFFMEISTER (Erg. AN 12, Nr. 1, 1949), classified as EA (S 4931 as LP?). The minima (S=Sonneberg) have been determined by Miss H. GESSNER from Sonneberg sky patrol plates. For this work I am very thankful to Miss GESSNER.

Remeis-Observatory Bamberg
1967 Jan. 25

W. STROHMEIER

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 182

Konkoly Observatory
Budapest
6 February 1967

18-MIN. LIGHT-VARIATIONS OF HZ 29

HZ 29, a peculiar hydrogen-deficient white dwarf (Greenstein and Matthews 1957), was observed photoelectrically by the writer on eight nights in 1962 using the Crossley reflector of the Lick Observatory; at the writer's request the star was observed also on a single night by Dr. W. Krzeminski with the 42-inch reflector of the Lowell Observatory. The visual inspection of all the tracings led to the conclusion that on some occasions quasi-periodic variations were present with the amplitude of the order of a few hundreths of a magnitude and period of about 9 minutes (Whitford 1962). The entire photoelectric material has recently been re-analysed by means of the autocorrelation technique and the surprising result has been obtained that the light variations of HZ 29 have strictly periodic character, their period being equal to about 18 minutes (instead of 9 minutes suspected previously). The apparent lack of periodicity in some tracings was entirely due to the instrumental "noise" which heavily masked the star's intrinsic variation. The latter is seldom visible on the original tracings and become apparent only in the composite light curves based on several individual cycles (see Fig. 1).

A detailed account of the photoelectric observations of HZ 29 and their analysis will be given in an extensive paper to appear in the forthcoming issue of "Acta Astronomica" (Vol. 17, Number 3, 1967). Here I wish to present the more important points.

1. The light curve of HZ 29 has a shape of a slightly distorted double sinusoid (see Fig. 1). The secondary minimum is shifted toward $0^P.6$ and slightly shallower than the primary. The amplitude amounts to about 0.05 mag. in the ultraviolet and to about 0.03 mag. in the blue; no yellow observations were available.

2. No definite interpretations of these variations can be offered at present though it is tempting to advance a hypothesis of the binary nature of HZ 29. The double structure of the absorption lines of helium (Greenstein and Matthews 1957) could then be interpreted in terms of the large amplitude radial velocity variations averaged over time during the relatively long exposure. A direct spectroscopic test of this hypothesis will be rather difficult but seems entirely possible.

3. More photometric observations are urgently needed in order to determine a more accurate value of period and to study its stability.

January 31, 1967

J. SMAK

Institute of Astronomy,
Polish Academy of Sciences
Warsaw, Poland

References

Greenstein, J. L. and Matthews, M. S. 1957, Ap. J., 126, 14.
Whitford, A. E. 1962, A. J., 67, 640.

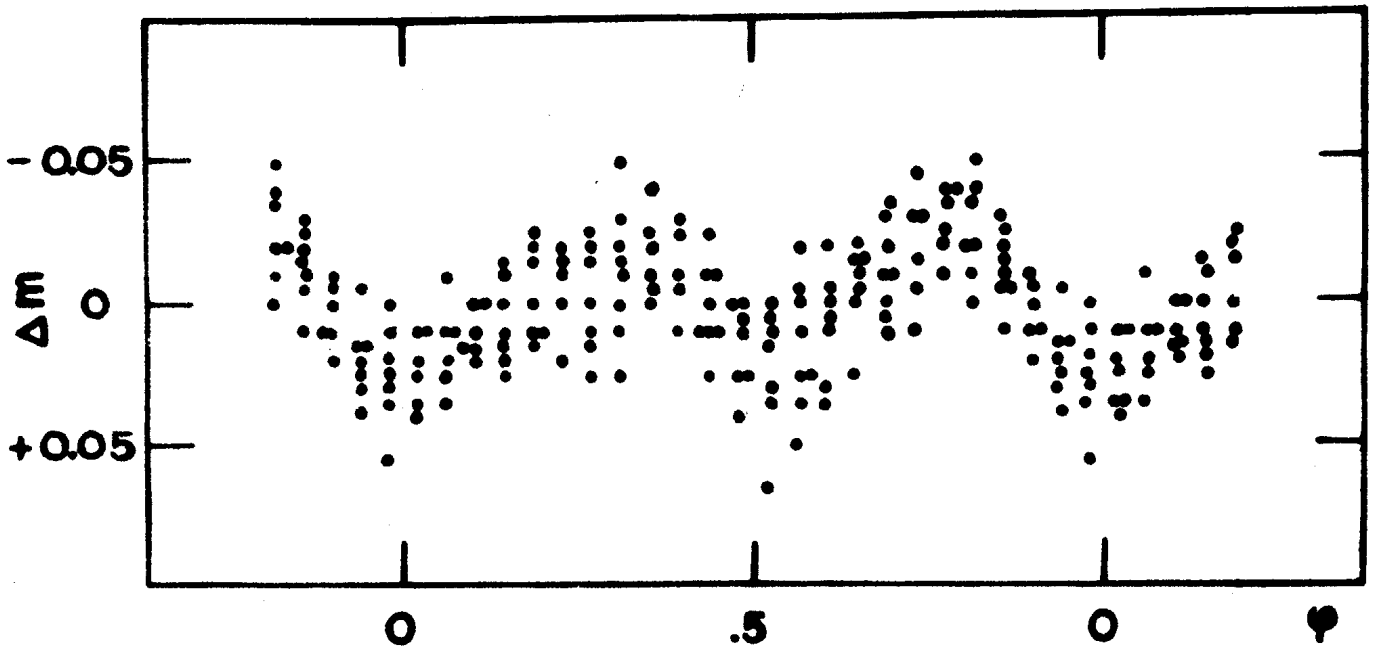


Fig. 1.
Composite ultraviolet light curve of HZ 29 based on 185 observations made on February 4 UT, 1962.
Phases were computed using P = 0.0122 day

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 183

Konkoly Observatory
Budapest
7 February 1967

NOUVELLES ETOILES VARIABLES

Dés	α 1900,0	δ	max mp	min	type	nombtr d'observ
Wr 167	$0^h\ 34^m\ 15^s$	$+46^\circ 01'$	10,6	12,6	SR?	81
Wr 168	19 59 18	+ 21 13	8,1	8,6	I	164
Wr 169	20 05 43	+ 19 59	10,2	10,8	E	156
Wr 170	23 49 04	+ 45 02	11,4	12,2	E	141
Wr 171	23 49 55	+ 44 50	9,6	10,2	I	141

Remarques

Wr 167 - = BD $+45^\circ 171$. sp Mc (Bergedorf). Variations périodiques autour de 70j

Wr 168 - = BD $+21^\circ 4036$ = HD 190337. sp Ma.

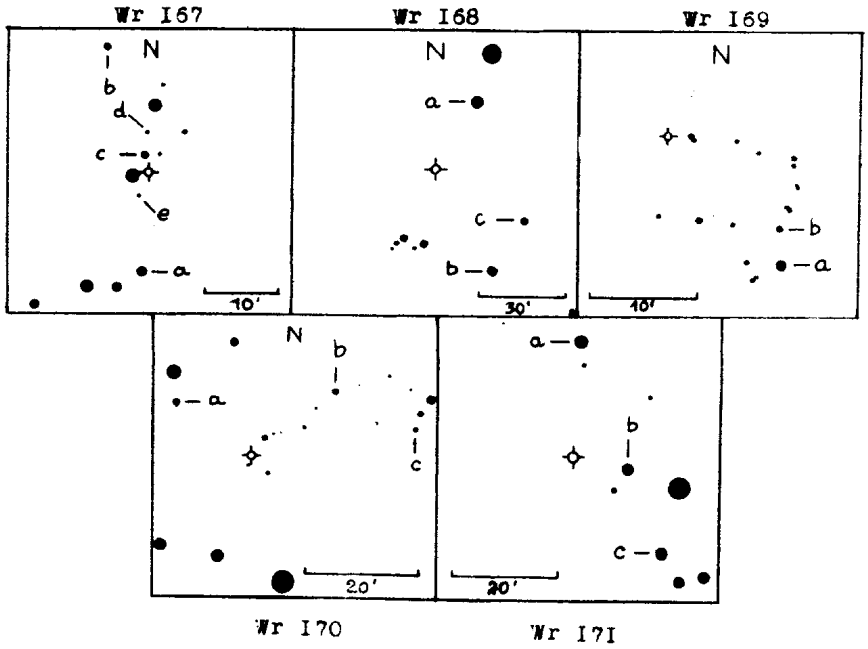
Wr 169 - = BD $+19^\circ 4304$ Variabilité confirmée par G. Richter qui a reconnu cette étoile comme variable a éclipses (MVS 4, 2, 33, Déc 1966)

Wr 170 - = Variabilité confirmée par G. Romano (com. privée).

Wr 171 - = BD $+44^\circ 4520$. sp K4 (Bergedorf). Variabilité confirmée par G. Romano (com. privée). BD $+44^\circ 4520$ est l'étoile centrale de la S. A. 43.

Étoiles de comparaison

	a	b	c	d	e	
Wr 167	10, 72	11, 22	11, 55	12, 25	12, 61	(magn. S. A. 20 de Bergedorf)
Wr 168	8, 0	8, 2	8, 8	-	-	(magn. H. D. C.)
Wr 169	10, 2	10, 8	-	-	-	(d'apres H. A. 85 $20^h +17^o30'$)
Wr 170	11, 43	12, 20	12, 31	-	-	(magn. S. A. 43 de Bergedorf)
Wr 171	9, 60	9, 98	10, 15	-	-	(magn. S. A. 43 de Bergedorf)



Des détails seront publiés dans le Bulletin de la Station Astrohpotographique de Mainterne.

ROGER WEBER

Station Astrophotographique
de Mainterne
(Eure-et-Loir)
France

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 184

Konkoly Observatory
Budapest
15 February 1967

Veröffentlichungen der Remeis-Sternwarte Bamberg
Astronomisches Institut der Universität Erlangen-Nürnberg

ELEMENTS FOR SONNEBERG VARIABLES (IV)

S 4885 = KZ 1099 = CAP $-63^{\circ}756(9^{m}.5)$ = BV 465

Min = JD 242 8843.475 + $2^{d}.227\,635$. E

Minima	E	O - C
242 8843.420(S)	0	-0.055
8890.386(S):	21	+0.131
8930.412(S)	39	+0.059
243 4305.492(S):	2452	-0.144
4335.538(S):	2465.5	-0.171
4352.350(S)	2473	-0.066
4422.398(S):	2504.5	-0.189
4479.315(S):	2530	-0.077
8354.527	4269.5	+0.164
8374.491	4278.5	+0.080
.535	4278.5	+0.124
8433.344	4305	-0.100
8461.251(1/2)	4317.5	-0.038
.296(3/4)	4317.5	+0.007
8471.270	4322	-0.043
8489.257(1/2)	4330	+0.123
8708.574	4428.5	+0.018
8785.316(1/2)	4463	-0.094
.362(3/4)	4463	-0.048
.383	4463	-0.027
.408	4463	-0.002
8812.271(1/2)	4475	+0.129
.315(1/4)	4475	+0.173
8822.266(3/4)	4479.5	+0.100
.310(1/2)	4479.5	+0.144
8842.253	4488.5	+0.038
9176.279(1/2)	4638.5	-0.081
.313(3/4)	4638.5	-0.047
9196.276(1/2)	4647.5	-0.133

Ampl. $0^{m}.55$, with about the same deep secondary minimum, EA or EB

S 4949 = K3M1754 = CAP -77°692(9.m0) = BV 704, Cape: Ao

Min = JD 242 8820.600 + 2.d228 685 . E

Minima	E	O - C
242 8820.623(S)	0	+0.023
8878.553(S)	26	+0.007
243 8524.254	4354	-0.040
.299	4354	+0.005
8553.199(1/2)	4367	-0.068
.242	4367	-0.025
8562.201	4371	+0.019
8760.556	4460	+0.021
8818.446	4486	-0.035
.492	4486	+0.011
.537	4486	+0.056
8827.362	4490	-0.034
8885.217(1/4)	4516	-0.124
.266(1/2)	4516	-0.075
.312	4516	-0.029
.359	4516	+0.018
8914.254(3/4)	4529	-0.060
9179.412(1/4)	4648	-0.116
.458(1/2)	4648	-0.070
.503	4648	-0.025
.549	4648	+0.020
9197.344	4656	-0.013
9235.275	4673	+0.030

Ampl. 0.m35, without a secondary minimum, EA

S 5001 = K3W 2228 = CoD $-42^{\circ}9876$($9^{m}.6$) = CAP $-42^{\circ}6864$($9^{m}.3$) = BV 851

Min = JD 242 7987.310 + $0^{d}.470\ 069$. E

Minima	E	O - C
242 7987.299(S)	0	-0.011
8275.470(S)	613	-0.005
8357.273(S)	787	+0.003
8366.248(S,1/4)	806	+0.046
243 4399.609(S,1/4)	13640.5	+0.050
4479.493(S,1/2)	13810.5	+0.019
4508.396(S)	13872	+0.011
4537.285(S)	13933.5	-0.010
4540.340(S)	13940	-0.011
4541.296(S)	13942	+0.005
4566.260(S)	13995	+0.054
4573.262(S)	14010	+0.005
8195.312	21715	+0.019
8228.219	21785	+0.020
8474.553	22309	+0.027
8494.492(1/2)	22351.5	-0.012
8498.500	22360	-0.005
8502.482(1/2)	22368.5	-0.014
8548.337	22466	+0.008
8555.332(1/4)	22481	-0.049
.376	22481	-0.005
8556.334	22483	+0.013
8560.331(1/2)	22491.5	+0.014
8581.249	22536	+0.009
8589.251(3/4)	22553	+0.024
8605.209	22587	-0.002
8885.406(3/4)	23183	+0.023
8933.308	23285	-0.024
8934.302(1/2)	23287	+0.029
8966.214(3/4)	23355	-0.024
9209.525(1/2)	23872.5	+0.015
9230.455(3/4)	23917	+0.026
9287.307	24038	-0.002
9291.299(1/2)	24046.5	-0.006

Ampl. $0^{m}.40$, with a deep (1/2) secondary minimum

S 5018 =KSW 2442 = BV 753, 1900: $15^h39^m37^s$ $-66^\circ25'.8$, Max = $11.^m7$

Min = JD 242 8664.358 + 0^d614 606 . E

Minima	E	O - C
242 8664.363(S)	0	+0.013
8712.262(S)	78	-0.087
8752.251(S)	143	+0.013
8933.533(S)	438	-0.014
243 4584.428(S)	9551	-0.014
4566.391(S)	9603	-0.011
8471.582	15957	-0.020
8500.485	16004	-0.009
8521.395	16038	+0.010
8553.329	16090	-0 015
.374(3/4)	16090	+0.030
8577.290	16129	-0.024
8582.245	16137	+0.014
8585.246(1/3)	16142	-0.058
.291	16142	-0.013
8606.225	16176	+0.025
8822.516(3/4)	16528	-0.025
8883.409	16627	+0.022
8887.403(1/2)	16633.5	+0.021
8915.349	16679	+0.002
.392(1/3)	16679	+0.045
8835.314(3/4)	16711.5	-0.007
8839.304	16718	-0.012
9232.462(3/4)	17195	-0.021
9261.400	17242	+0.031
9269.376	17255	+0.017
9289.310(1/2)	17287.5	-0.024
.354(1/2)	17287.5	+0.020
9293.297(3/4)	17294	-0.052
.343	17294	+0.014
9314.260(3/4)	17328	+0.035

Ampl. $0.^m35$, with a very deep (3/4) secondary minimum, EA

S 5120 =KS 5295 = CAP $-70^{\circ}2812(7^{m}.4)$ = HD 199 005 (F2) = BV 482

Min = JD 242 8667.600 + $1^{d}.899\ 75$. E

Minima	E	O - C
242 8667.571(S)	0	-0.029
8863.310(S)	103	+0.036
243 8258.408(1/2)	5048.5	-0.080
.454(3/4)	5048.5	-0.034
8260.361(1/2)	5049.5	-0.027
.404(3/4)	5049.5	+0.016
8261.360	5050	+0.022
.406(1/2)	5050	+0.068
8282.274	5061	+0.039
8319.238(1/2)	5080.5	+0.042
8560.508(3/4)	5207.5	-0.040
.545(3/4)	5207.5	-0.003
8561.511	5208	+0.013
8580.478	5218	-0.018
8618.444(1/2)	5238	-0.046
8638.397(1/2)	5248.5	-0.041
8640.354(3/4)	5249.5	+0.016
.398(1/2)	5249.5	+0.060
8641.312	5250	+0.024
.357(1/2)	5250	+0.069
9019.281(1/2)	5449	-0.057
.326	5449	-0.012
9020.242(1/2)	5449.5	-0.046
.288(3/4)	5449.5	0.000
.333(1/2)	5449.5	+0.045
9378.326(1/2)	5638	-0.064
.372	5638	-0.018
9379.336(3/4)	5638.5	-0.004
.381(1/2)	5638.5	+0.041
9380.285	5639	-0.005
.331(1/2)	5639	+0.041

Ampl. $0^{m}.60$, with a very deep (3/4) secondary minimum, EA

The variables have been discovered and classified as EA variables by C. HOFFMEISTER (Erg. AN 12, Nr. 1, 1949). The minima S=Sonneberg) were determined by Miss H. GESSNER from Sonneberg sky patrol plates. I am very thankful to Miss GESSNER.

Remeis Observatory Bamberg
February 10, 1967

W. STROHMEIER

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 185

Konkoly Observatory
Budapest
20 February 1967

NEW VARIABLE STARS

During a survey of variable stars, on plates taken with the Schmidt telescope 40/50/100 of Asiago Astrophysical Observatory, I have found the following new variable stars:

var	RA 1900	D	Max	min	type
GR 120	$11^h32^m07^s$	$+56^\circ$ 50'	16.7	17.4	RR
GR 121	11 34 15	+54 37	16.5	17.5	RR
GR 122	11 34 22	+55 42	16.7	17.5	RR
GR 123	11 52 47	+55 48	15.7	17.0	RR

GR 122 is near to a small galaxy.

Padua Observatory, Italy

G. ROMANO

PHOTOELECTRIC OBSERVATIONS OF TX UMa

Three photoelectric minima of TX UMa, obtained at the Nürnberg Observatory in the years 1965, 1966 and 1967 show large negative O-C's against the elements given by F.B. Wood (I) in GCVS and by H. Rügemer (II) in SAC 38, respectively.

$$\text{Min} = \text{JD } 2416426.783 + 3^d.0633175 \cdot E + 0^d.021 \cdot \sin(0^\circ.09474 \cdot E + 64^\circ.42) \quad \text{(I)}$$

$$\text{Min} = \text{JD } 2435584.7500 + 3^d.0633175 \cdot E \quad \text{(II)}$$

Our photoelectric observations are inconsistent with the remark in SAC 38, page 105 "A minimum recently observed by K. Kordylewski is in agreement with our ephemeris".

The Nürnberg observations of TX UMa lead to the new elements:

$$\text{Min} = \text{JD } 2438856.353 + 3^{d}.063243 \cdot E \qquad \text{(III)}$$

The minima obtained at the Nürnberg Observatory are given in the following Table together with the O-C's computed with the formulas (I) to (III)

Minima	O - C (I)	O - C (II)	O - C (III)
2438856,354	$-0^{d}.053$	$-0^{d}.019$	$+0^{d}.001$
39193,308	-0.067	-0.030	-0.002
39536,394	-0.076	-0.036	+0.001

Nürnberg Observatory

E. POHL

85 Nürnberg, Lützowstr. 10
Western Germany

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 186

Konkoly Observatory
Budapest
23 February 1967

V 439 OPHIUCHI, A CEPHEID WITH SECONDARY PERIOD

This variable star was observed since 1931 by Tsessevich (1,2), Hoffmeister, Piotrovski (3), and Storch (4). Hoffmeister classified the star as RRc. Storch determined the following correct elements:

$$\text{Max} = \text{JD } 2438942.915 + 1^{d}.893\ E$$

I estimated the variable on 117 Odessa sky patrol plates in the interval J.D 2436378 - 2438964. All the observations were used for improving the elements to

$$\text{Max} = \text{JD } 2438942.859 + 1^{d}.892958\ E$$

My observations show a large scatter. The variable seems to be similar to TU Cas. Therefore, I looked for a secondary period or for a beat period which resulted from the combined effect of a primary and a secondary period. The value of the beat period finally adopted is:

$$P_b = 2.441 \quad P_o = 4.62 \text{ days.}$$

However, photoelectric observations are needed for corroberating these results.

Odessa Astronomical Observatory

E. B. GUSEV

References:

1. V. P. Tsessevich AN 247, 5911
2. V. P. Tsessevich Izv. Odessa Astron. Observ. II, II, 116, 1952
3. S. Piotrovsky, Acta Astronomica Suppl. 5, 584, 1962
4. C. Storch PASP 78, 462, 210, 1966

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 187

Konkoly Observatory
Budapest
27 February 1967

MINIMA OF ECLIPSING VARIABLES

Given are 125 observed minima for 15 eclipsing variable stars. All are visual (v) and photographic (pg) estimates reduced by the tracing-paper method and by fitting the observations to the mean light curve. Elements in the General Catalogue of Variable Stars were used to compute O-C's unless otherwise specified. The number of estimates used is given under n.

J. D. hel. (2430000)		O-C	E	n	Observer
WZ Andromedae					
9004,440	pg	+0^{d},005	18811	21	Todoran
9006,522	"	0,000	18814	23	"
9041,312	"	+0,007	18864	9	"
9324,445	"	+0,006	19271	9	"
9381,492	"	+0,008	19353	12	"
XZ Andromedae					
8262,498	v	+0,029	3963	15	Popa
8345,299	"	+0,037	4024	11	"
TV Cassiopeiae					
8972,515	v	+0,004	104020	17	Popa
8981,579	"	+0,005	104070	14	"
AB Cassiopeiae[1)]					
7580,477	v	+0,008	8848	25	Popa
8269,390	"	+0,015	9352	25	"
8310,395	"	+0,014	9382	12	"
8981,527	"	+0,007	9873	31	"
9022,534	"	+0,008	9903	24	"

J. D. hel. (2430000)		O-C	E	n	Observer
U Cephei					
8271,562	v	+0^{d},097	12187	11	Popa
8286,522	"	+0,099	12193	10	"
8291,508	"	+0,099	12195	10	"
8306,463	"	+0,097	12201	20	"
8311,448	"	+0,095	12203	9	"
8316,434	"	+0,095	12205	8	"
8336,378	"	+0,095	12213	7	"
8969,615	"	+0,119	12467	16	"
8979,587	"	+0,120	12471	19	"
9029,444	"	+0,117	12491	13	"
9034,430	"	+0,117	12493	15	"
9049,389	"	+0,118	12499	12	"
9094,259	"	+0,115	12517	16	"
ZZ Cygni [2]					
8920,3830	pg	+0,0046	28289	7	Todoran
8969,426	v	+0,010	28367	19	Popa
8976,3310	"	+0,0057	28378	7	Todoran
8979,4755	"	+0,0074	28383	8	"
8981,3603	"	+0,0062	28386	8	"
8988,2755	"	+0,0066	28397	5	"
9013,4165	pg	+0,0029	28437	12	"
9030,3920	v	+0,0058	28464	5	"
9032,2757	"	+0,0036	28467	12	"
9035,4200	"	+0,0049	28472	9	"
9037,3080	"	+0,0070	28475	9	"
9093,2490	pg	+0,0012	28564	15	"
9289,3780	"	+0,0020	28876	12	"
9292,5210	"	+0,0019	28881	9	"
9326,4660	"	+0,0017	28935	13	"
9357,2695	"	+0,0030	28984	6	"
9380,5290	"	+0,0037	29021	4	"

J.D. hel. (2430000)		O-C	E	n	Observer
Z Draconis					
8937,377	v	+0^{d},010	4176	5	Todoran
8975,386	pg	+0,011	4204	10	"
9256,374	"	+0,009	4411	6	"
9294,381	"	+0,008	4439	5	"
9321,532	"	+0,010	4459	5	"
9404,336	"	+0,011	4520	8	"
RZ Draconis [3]					
7149,497	v	+0,005	13979	8	Popa
7197,422	"	+0,004	14066	11	"
7213,397	"	+0,003	14095	15	"
8198,365	"	+0,004	15883	8	"
8199,463	"	0,000	15885	10	"
8209,378	"	-0,001	15903	9	Todoran
8210,480	"	-0,001	15905	5	"
8210,482	"	+0,001	15905	10	Popa
8215,447	"	+0,009	15914	8	"
8220,398	"	+0,002	15923	7	"
8247,389	pg	0,000	15972	10	Todoran
8248,490	"	-0,001	15974	7	"
8258,406	v	-0,001	15992	5	"
8306,334	pg	+0,001	16079	7	"
8605,465	v	+0,006	16622	10	Popa
8885,305	"	+0,001	17130	9	"
8885,308	pg	+0,003	17130	5	Todoran
8885,302	v	-0,003	17130	9	"
8951,410	"	0,000	17250	14	Popa
8972,342	"	-0,001	17288	12	"
8977,300	"	-0,001	17297	12	"
8978,411	"	+0,008	17299	13	"
9021,371	pg	0,000	17377	11	Todoran
9022,473	v	0,000	17379	8	"
9022,481	"	+0,008	17379	18	Popa
9032,390	"	+0,001	17397	10	"
9032,394	"	+0,005	17397	9	Todoran
9037,347	"	+0,001	17406	13	"
9074,256	pg	+0,001	17473	12	"

J. D. hel. (2430000)		O-C	E	n	Observer
TU Herculis [4]					
8142,484	pg	+0^{d},002	300	9	Todoran
8210,492	"	0,000	330	13	"
8956,307	"	-0,018	659	10	"
9033,378	"	-0,024	693	7	"
9289,552	"	-0,018	806	8	"
9339,424	"	-0,020	828	6	"
9380,230	"	-0,019	846	10	"
9389,298	"	-0,019	850	9	"
RV Lyrae [5]					
7914,468	pg	-0,002	920	8	Todoran
8184,396	"	-0,001	995	9	"
8605,484	"	-0,001	1112	8	"
8670,263	"	-0,003	1130	14	"
8983,379	"	-0,002	1217	4	"
9037,364	"	-0,002	1232	19	"
9260,504	"	-0,002	1294	8	"
Z Persei					
8663,341	pg	-0,056	2575	9	Todoran
8669,455	"	-0,055	2577	15	"
RT Persei [6]					
7564,466	v	+0,008	4862	10	Popa
7565,315	"	+0,007	4863	10	"
9013,5313	pg	-0,0082	6568	10	Todoran
9030,5225	"	-0,0050	6588	9	"
9037,3160	v	-0,0067	6596	8	"
9071,2900	pg	-0,0088	6636	7	"
9093,3740	"	-0,0093	6662	8	"
9381,3270	"	-0,0038	7001	7	"

J.D. hel. (2430000)		O-C	E	n	Observer
XZ Persei					
8684,430	pg	$0^d,000$	11752	13	Todoran
8714,374	"	+0,002	11778	6	"
9390,390	"	+0,009	12365	8	"
X Trianguli [7]					
7151,528	v	+0,004	14852	15	Popa
7192,333	"	+0,004	14894	18	"
8316,401	"	+0,008	16051	5	Todoran
8318,346	"	+0,010	16053	5	"
8319,310	"	+0,003	16054	21	Popa
8320,280	"	+0,001	16055	21	"
8658,378	pg	+0,005	16403	6	Todoran
9030,478	v	+0,008	16786	12	"
9032,417	"	+0,004	16788	13	"
9033,390	"	+0,006	16789	10	"
9034,338	"	-0,018	16790	22	Popa
9096,543	pg	+0,009	16854	12	Todoran
9373,426	"	+0,005	17139	6	"
UX Ursae Majoris					
9265,4004	pg	-0,0075	60630	4	Todoran
9268,3546	"	-0,0033	60645	5	"
9277,4003	"	-0,0045	60691	6	"
9285,4640	"	-0,0044	60732	6	"
9291,3650	"	-0,0035	60762	5	"

Notes: Elements not contained in the GCVS:

1) $2425486,4254 + 1^d,3668562.E + 1^d,262.10^{-9}.E^2$
2) $2421137,4377 + 0,62861764.E - 2,961.10^{-11}.E^2$
3) $2429448,787 + 0,55087668.E$
4) $2437462,3909 + 2,2669718.E$
5) $2434603,3674 + 3,599025.E$
6) $2433434,6624 + 0,84940272.E$
7) $2422722,3107 + 0,97153337.E$

I. TODORAN
I. POPA

Astronomical Observatory
Cluj, Rumania

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 188

Konkoly Observatory
Budapest
2 March 1967

Veröffentlichungen der Remeis-Sternwarte Bamberg
Astronomisches Institut der Universität Erlangen-Nürnberg
Band VI, Nr. 43

ELEMENTS FOR BV 646 AND BV 752

BV 646 = K3Π(0619-54) = CAP $-54^{\circ}1026(8^{m}.8)$ = HD 44 863(A2)

Min = JD 242 8656.275 + $0^{d}.795\ 101$. E

Minima	E	O - C
242 8656.270(S)	0	-0.005
8755.667(S)	125	+0.004
8806.562(S)	189	+0.013
8837.544(S)	228	-0.014
8845.513(S)	238	+0.004
8874.545(S)(1/2)	274.5	+0.015
8892.420(S)	297	0.000
8904.405(S)	312	+0.059
243 4252.623(S):	7038.5	+0.030
4281.555(S):	7075	-0.059
4305.492(S):	7105	+0.024
4352.350(S):	7164	-0.028
4364.308(S):	7179	+0.003
4504.297(S):	7355	+0.054
8315.595(1/3)	12148.5	+0.046
8354.483(1/3)	12197.5	-0.036
8407.370	12264	-0.024
8427.324(3/4)	12289	+0.053
8435.271(3/4)	12299	+0.049
8468.249(1/2)	12340.5	+0.030
8701.573	12634	-0.008
8707.526(1/2)	12641.5	-0.018
.572(1/2)	12641.5	+0.028
8709.528	12644	-0.004
.573(3/4)	12644	+0.041
8740.483(1/2)	12683	-0.058

	Minima	E	O - C
243	8760.376(3/4)	12708	-0.042
	.420	12708	+0.002
	8768.360	12718	-0.010
	.404(3/4)	12718	+0.034
	8772.369(3/4)	12723	+0.024
	8786.319(1/3)	12740.5	+0.060
	8813.271(1/3)	12774.5	-0.022
	8815.270	12777	-0.010
	8817.269(1/2)	12779.5	+0.001
	8819.268	12782	+0.012
	8825.265(1/2)	12789.5	+0.046
	9054.566(3/4)	13078	-0.040
	9123.425(1/3)	13164.5	+0.043
	9125.422(1/2)	13167	+0.052
	9150.378(1/3)	13198.5	-0.038
	9168.282	13221	-0.023
	.327	13221	+0.022
	9174.286(1/2)	13228.5	+0.018
	9176.279	13231	+0.023
	9178.285(1/3)	13233.5	+0.041
	9180.281(1/2)	13236	+0.049

(S) = Sonneberg. Many thanks to Miss H. GESSNER for her work.

Ampl. $0^m.95$, with a deep (1/2) secondary minimum, EB

BV 752 = CAP $-52^\circ 8272(7^m.8)$ = HD 136 739(G5), b = $+3^\circ$

Max = JD 243 8202.145 + $9^d.285$. E

	Maxima	E	O - C
243	8202.290	0	+0.145
	8229.216	3	-0.784
	8230.217	3	+0.217
	.265	3	+0.265
	8471.538	29	+0.128
	.582	29	+0.172
	8498.495	32	-0.770
	8499.488	32	+0.223
	.533	32	+0.268
	8500.485	32	+1.220
	8553.329	38	-1.646

Maxima	E	O - C
243 8556.329	38	+1.354
8582.245	41	-0.585
.290	41	-0.540
8583.247	41	+0.417
.292	41	+0.462
8584.247	41	+1.417
.292	41	+1.462
8592.247	42	+0.132
8879.449	73	-0.501
8906.355	76	-1.450
.391	76	-1.414
8916.345	77	-0.745
.392	77	-0.698
8917.361	77	+0.271
8964.219	82	+0.704
.265	82	+0.750
8972.238	83	-0.562
9185.474	106	-0.881
.515	106	-0.840
9204.419	108	-0.506
9214.390	109	+0.180
.432	109	+0.222
9232.338	111	-0.442
.382	111	-0.398
.462	111	-0.318
9270.353	115	+0.433
.398	115	+0.478
9271.392	115	+1.472
9287.307	117	-1.183
.353	117	-1.137
9289.310	117	+0.820
.354	117	+0.864
9315.258	120	-1.087
.301	120	-1.043
9345.219	123	+1.019

Ampl. $0^{m}.40$, the minimum is about phase 0.5. According to spectral type and galactic latitude the star is probably a Cepheid.

Remeis Observatory
Bamberg, February 25, 1967 W. STROHMEIER

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 189

Konkoly Observatory
Budapest
15 March 1967

LES MAXIMA FAIBLES DES ETOILES DU TYPE U GEMINORUM

Les étoiles du type U Geminorum ont toutes deux grands types de maxima bien séparés:

- maxima longs, normaux (L) ou symétriques (SL)
- maxima courts, normaux (C) ou symétriques (SC)

Mme Lortet-Zuckermann (1, 2) a montré, sur SS Cygni, l'existence d'une catégorie supplémentaire, que nous nommons maxima faibles (F): 37 d'entre eux ont été retrouvés par cet auteur: ce sont des maxima très courts, et nettement moins brillants que les maxima C. Ils forment un groupe bien séparé.

Au cours d'une étude (3) des courbes de lumière d'une vingtaine d'étoiles, nous avons recherché si d'autres variables présentaient le même phénomène. Nous avons retrouvé 11 maxima F bien observés sur SS Aur, 11 sur Z Cam et 13 sur RU Peg.

Nous indiquons ci-dessous, pour les maxima L, C et F les caractéristiques suivantes:

- la magnitude moyenne des maxima
- la largeur moyenne (en jours) des maxima, définie au niveau $m_v = 13,0$ pour SS Aur, $m_v = 12,0$ pour Z Cam et RU Peg.
- l'énergie dégagée, calculée en posant:

$$E = \int_{\text{explosion}} (I(t) - I\,\text{min})\, dt$$

où I min est l'intensité correspondante à la mag. minimum

		SS Aur	Z Cam	RU Peg
m max	max L	10,71	10,50	10,63
	max C	10,87	10,75	11,11
	max F	11,37	11,10	11,66
l max	max L	12,82	13,52	14,0
	max C	6,17	6,88	5,86
	max F	4,46	3,90	3,0
E	max L	507	177	114
	max C	183	76	38
	max F	64	32	12

Quelques maxima faibles peu observés ont également été notés sur UU Aql, BV Cen, U Gem et CZ Ori; notons enfin que les maxima extrèmement courts et faibles signalés sur UV Per par Petit et Brun (4) se rattachent probablement au type F.

Il serait interessant d'obtenir des spectres de ces étoiles durant les maxima faibles.

Drancy, le 6 Mars 1967

MICHEL PETIT

(1) M.C. Zuckermann: Ann d'Astr. 24. 431. 1961
(2) M.C. Lortet-Zuckermann: Ann d'Astr 27. 65. 1964
(3) M. Petit et L. Menager: Ciel et Terre, à paraître
(4) M. Petit et A. Brun: JO 39. 37. 1956

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 190

Konkoly Observatory
Budapest
28 March 1967

THE PERIOD OF AB ANDROMEDAE

Observations of AB And made by BAV-members in the years 1963 to 1966 show large positive $O-C_1$'s against L. BINNENDIJK's (AJ 64, 69. 1959) elements

$$\text{Min I} = \text{JD } 2436109.57835 + 0^d.331\,889\,40 \cdot E. \qquad (1)$$

Table I: BAV-Minima of AB Andromedae

Min (JD 243...)	$O-C_1$	$O-C_2$	Observer
8983.436	+0.027	+0.003	W. Quester
8984.428	+0.024	-0.001	W. Braune
.429	+0.025	0.000	W. Eckert
.430	+0.026	+0.001	J. Dueball
9024.589	+0.026	+0.001	W. Braune
9026.580	+0.026	+0.001	" "
9056.442:	+0.018:	-0.008:	M. Seidl
9058.447	+0.031	+0.006	" "
9061.434:	+0.031:	+0.006:	" "
9063.421	+0.027	+0.002	" "
9391.324	+0.023	-0.005	" "
9403.435:	+0.020:	-0.008:	J. Hübscher
.445	+0.030	+0.002	W. Braune

Using these observations and those published by L. J. ROBINSON in IBVS 180 (observer M. BALDWIN) one obtains 2 normal minima:

JD 243 9024.589 $O-C_1 = +0^d.026$
9391.328 $+0.027$.

In his work BINNENDIJK gives normal minima. These, together with some new ones, based mainly on BAV observations, are given in Table II. New elements, derived from the last 11 normal minima in Table II, are

$$\text{Min I} = \text{JD } 2436109.57928 + 0^d.331\,892\,15 \cdot E \qquad (2)$$
$$\pm .00057 \quad \pm .000\,000\,17$$

The residuals against these elements are given as $O-C_2$ in Tables I and II. From the latter it can be seen that these elements sufficiently represent the observations from 1954 (JD 243 5000) onwards. In Table II roman numbers behind each time of minimum denote primary or secondary minimum, the letters e, p, v stand for photoelectrical, photographical and visual observations respectively.

The variation of the period of AB And since 1900 can be followed by means of the $O-C_3$'s in Table II. They are calculated with elements by P. Th. OOSTERHOFF (BAN 11, 217 1950)

$$\text{Min I} = \text{JD } 242\,5502.11989 + 0^d.331\,886\,486 \cdot E. \qquad (3)$$

The graph shows these $O-C_3$'s plotted against time. The square represents BINNENDIJK's photoelectrical observations; it also encloses 2 visual minima.

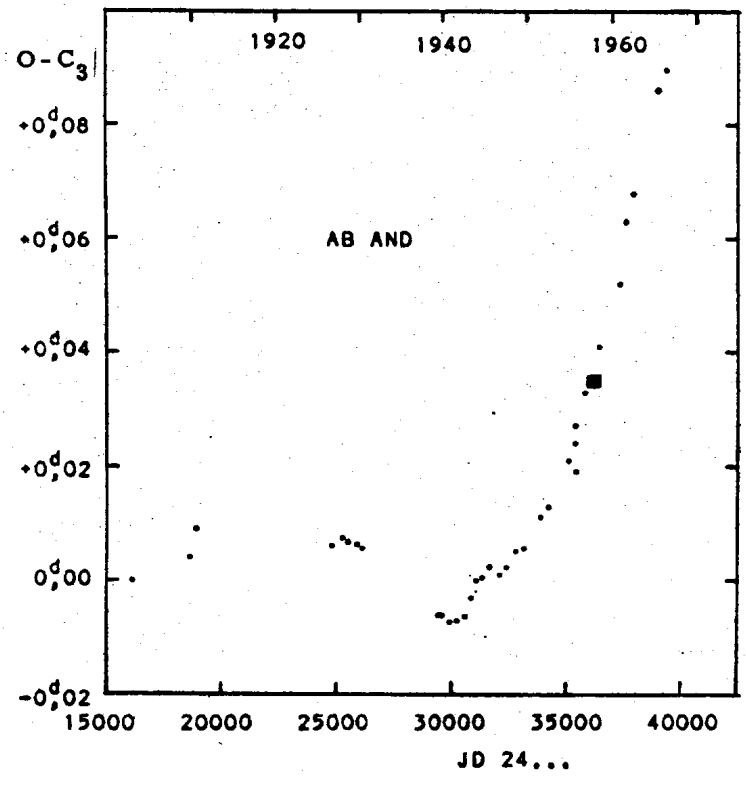


Table II: Normal Minima of AB Andromedae

Min (JD 24...)		O - C_2	O - C_3	References
16 103.925	II p		+0^d.001	BINNENDIJK, L.
18 684.512	I p		+0.004	"
18 963.633	I p		+0.009	"
24 760.360	I p		+0.006	"
25 276.4445	I p		+0.0074	"
25 502.1267	I p		+0.0068	"
25 873.5073	I p		+0.0064	"
26 216.1793	II p		+0.0056	"
29 523.583	I p		-0.006	"
29 550.6312	II p		-0.0060	"
29 907.7398	II p		-0.0072	"
30 257.8803	II p		-0.0070	"
30 611.8379	I p		-0.0063	"
30 962.645	I p		-0.003	"
31 046.615	I p		0.000	"
31 350.4580	II p		+0.0004	"
31 707.9018	I p		+0.0025	"
32 133.0469	II p		+0.0010	"
32 413.1603	II p		+0.0022	"
32 793.671	I p	+0^d.026	+0.005	"
33 207.3684	II p	+0.0200	+0.0059	"
33 886.578	I v	+0.012	+0.011	"
34 264.600	I v	+0.009	+0.013	"
35 075.407	I v	+0.004	+0.021	"
35 304.411	I v	+0.002	+0.024	RUDOLPH, R. AN 285, 162 (190)
35 370.460	I v	+0.005	+0.027	BINNENDIJK, loc. cit.
35 379.413	I v	-0.004	+0.019	RUDOLPH, loc. cit.
35 782.336	I v	+0.002	+0.033	BINNENDIJK, loc. cit.

Min (JD 24...)		O - C_2	O - C_3	References
36 069.421	I v	+0^d.001	+0^d.035	BINNENDIJK, loc. cit.
36 108.418	II v	0.000	+0.036	RUDOLPH, l. c. + 1 min. EBC3 (1960)
36 109.57835	I e	-0.0009	+0.0345	BINNENDIJK, loc. cit.
36 124.68008	II e	-0.0003	+0.0354	"
36 132.64609	II e	+0.0003	+0.0361	"
36 459.559	II v	-0.001	+0.041	BRAUNE, W., QUESTER W. AN 286 209 (1963) + 2 minima EBC 3 (1960)
37 325.296	I v	-0.004	+0.052	DUEBALL, J., LEHMANN, P. B. AN 288, 168 (1965)
37 566.589	I v	+0.003	+0.063	" "
37 944.446	II v	+0.001	+0.068	" "
39 024.589	I v	+0.001	+0.086	- -
39 391.328	I v	-0.001	+0.090	- -

Berliner Arbeitsgemeinschaft für Veränderliche Sterne (BAV)
1 Berlin 58, Buckower Chaussee 15
Germany

W. QUESTER

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 191

Konkoly Observatory
Budapest
28 March 1967

VERÖFFENTLICHUNGEN DER REMEIS-STERNWARTE BAMBERG
ASTRONOMISCHES INSTITUT DER UNIVERSITÄT
ERLANGEN-NÜRNBERG
Band VI, Nr. 44

ELEMENTS FOR THREE BAMBERG VARIABLES

BV 741 = CAP $-53^{\circ}6010(9^{m}.4)$ = HD 127 329 (Ao)

Min = JD 242 8328.300 + $2^{d}.267\ 310$. E

Minima	E	0 - C
242 8328.290(S)	0	-0.010
8743.250(S)	183	+0.032
8752.251(S)	187	-0.036
243 4361.574(S)	2661	-0.038
8234.218(1/2)	4369	+0.046
8474.508	4475	-0.004
.553(1/2)	4475	+0.041
8499.443	4486	-0.010
.488(1/2)	4486	+0.035
8524.288(1/3)	4497	-0.105
.433(1/2)	4497	+0.040
8549.286(3/4)	4508	-0.047
.331	4508	-0.002
8556.285(1/4)	4511	+0.150
8583.201(1/3)	4523	-0.142
.246(1/2)	4523	-0.097
8590.204(1/2)	4526	+0.059
8880.423(1/2)	4654	+0.062
8914.300(3/4)	4669	-0.070
.346	4669	-0.024
8939.258(3/4)	4680	-0.053
8964.219	4691	-0.032
9270.308(3/4)	4826	-0.030
.353	4826	+0.015

Ampl. $0^{m}.45$, no secondary minimum, EA

BV 799 = CAP $-76^{\circ}329(8\overset{m}{.}8)$ = HD 37 513 (F8)

Min = JD 242 8778.650 + $2\overset{d}{.}090\ 550$. E

Minima	E	0 - C
242 8778.618(S)	0	-0.032
243 4335.383(S)	2658	+0.051
8355.438	4581	-0.022
8380.494(1/2)	4593	-0.052
8443.266	4623	+0.003
.410(1/4)	4623	+0.147
8767.288	4778	-0.010
.333	4778	+0.035
8813.271	4800	-0.019
9118.455(3/4)	4946	-0.055
9139.334(1/2)	4956	-0.082
.378	4956	-0.038
9442.453(1/4)	5101	-0.103
.497(1/2)	5101	-0.049
.542	5101	-0.004

Ampl. $0\overset{m}{.}35$, no secondary minimum, EA

BV 568 = CAP $-65^{\circ}2960(9\overset{m}{.}6)$

Min = JD 243 4365.525 + $1\overset{d}{.}911\ 485$. E

Minima	E	0 - C
243 4365.577(S)	0	+0.052
4513.608(S)	77.5	-0.057
4538.379(S)	90.5	-0.135
.511(S)	90.5	-0.003
8234.218(1/4)	2024	-0.153
.265(1/2)	2024	-0.106
8557.285	2036	-0.023
.330	2036	+0.022
.374	2036	+0.066
8581.245(1/2)	2048.5	+0.043
.294(1/2)	2048.5	+0.092
8582.201	2049	+0.043
.245(3/4)	2049	+0.097
.290(3/4)	2049	+0.132
8583.246(1/2)	2049.5	+0.132
.292(1/4)	2049.5	+0.178
8605.254	2218	+0.055
8606.225(1/2)	2218.5	+0.071
8607.208(3/4)	2219	+0.098

Minima	E	0 - C
243 8855.460(1/2)	2349	-0.143
.507(1/2)	2349	-0.096
.555(3/4)	2349	-0.048
8878.405(1/2)	2361	-0.136
8879.403(3/4)	2361.5	-0.094
.449(3/4)	2361.5	-0.048
8880.423(3/4)	2362	-0.029
.474(1/2)	2362	+0.022
8902.347(1/2)	2373.5	-0.088
8904.332	2374.5	-0.014
.376	2374.5	+0.030
8905.310(3/4)	2375	+0.008
.358(3/4)	2375	+0.056
.404(1/2)	2375	+0.102
8906.355(1/2)	2375.5	+0.097
8930.254(1/2)	2388	+0.103
.300(1/2)	2388	+0.149
9270.353(1/2)	2566	-0.043
.398(3/4)	2566	+0.002

Ampl. $0^{m}.75$, with a secondary minimum nearly as deep as the primary minimum, EB

(S) = Sonneberg. Again many thanks to Miss H. GESSNER for her search of minima on Sonneberg Sky Patrol Plates.

Remeis Observatory
Bamberg, March 21, 1967

W. STROHMEIER

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 192

Konkoly Observatory
Budapest
30 March 1967

A HISTORICAL RECORD POSSIBLY RELATED TO THE RADIO SOURCE CAS A

The list of HO PENG Yoke (1) No. (577) and the list of XI ZE-ZONG and PO SHU-JEN (2) No. 83 mention two different Korean sources reporting that a "guest star" was seen to the west of the constellation Wang-Liang from 1592, Dec. 4 to 1593, March. According to (1), the constellation Wang-Liang consists of Beta, Kappa, Gamma, Eta and Alpha Cas. Thus, the position and time scale of the phenomenon seem to allow the identification with the supernova supposed to be the origin of Cas A. The date is about 100 years earlier than the epoch 1700 that was derived from proper motions of the filaments, but this discrepancy also holds for the case of the Crab nebula (3). Full details will be given in "Sterne und Weltraum".

Heidelberg, Astronomisches Rechen-Institut
March 22, 1967

P. BROSCHE

(1) Ho Peng Yoke, Vistas in Astronomy, Vol. 5 (1962), 127.
(2) Xi Ze-zong and Po Shu-jen, Acta Astr. Sinica 13 (1965), 1.
(3) P. Brosche, Zeitschr. f. Astrophysik 64 (1966), 1.

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 193

Konkoly Observatory
Budapest
1 April 1967

A NEW ECLIPSING VARIABLE STAR IN LEO

Photoelectric observations of BD $+18^{\circ}2304$ (coordinates 1855: RA = $9^{h}\ 52^{m}\ 47^{s}$, D = $+18^{\circ}\ 33'$) performed by us on March 20 and 21, 1967 at the refractor of the Teramo Observatory show the star to be an eclipsing binary of type Beta Lyrae. The provisional elements are:

$$\text{Min.} = \text{J.D. } 243\,9571{,}388 + 0^{d}{,}290 \cdot E$$

Amplitude in V: $0^{m}{,}44$. Visual magnitude at maximum in the HD system: $9^{m}{,}1$.

Teramo Observatory
March 22, 1967

R. DE CARLO
G. SABATINI

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 194

Konkoly Observatory
Budapest
12 April 1967

WR 131

The variability of this star (RA = $19^h22^m07^s$, D = $+47^o03'$; 1900.0) was announced by R. WEBER in JO 43. No. 8 p. 119. 1960. He published 60 observations and suspected Algol type. From estimates on 127 sky patrol plates (JD. 243 6819 -243 9028) we obtained the preliminary elements:

Min. JD (hel.) = 243 7146.546 + $4^d,56427$. E
Max. $11^m.3$ pg; Min I $12^m.3$; Min. II $11^m.8$

The following Table contains our epoch of minimum and those obtained by WEBER and HUTH (Sonneberg),

Min. (hel.)	E	O - C	n	Observer
JD. 2436758.583	- 85	0,000	60	WEBER
6790.521	- 78	-0,012	120	HUTH
7146.546	0	0,000	127	BUSCH

The details will be published in our HBZ (Harthaer Beobachtungszirkular).

I thank Mr. HUTH for his observations.

Bruno-H.-Bürgel Sternwarte, DDR 7302 Hartha

H. BUSCH

PHOTOELECTRIC MINIMA OF AB AND

Three photoelectric minima of AB And, obtained at the Nürnberg Observatory in the years 1963, 1964 and 1965 show large positive O-C's against the elements in GCVS (I) and SAC 38 (II), respectively

Min: JD 2435 075,400 + $0^d,331888$. E (I)

Min: JD 2436 109,57835 + $0^d,33188940$. E (II)

The new elements (III), published by W. QUESTER in IBVS No. 190 represents our photoelectric minima very well.

Min: 243 6109,57928 + 0^d,331 892 15 . E (III)

The following Table gives our minima together with the O-C's resulting from formulas (I) to (III)

Minima	O - C (I)	O - C (II)	O - C (III)
2438 288,453:	+0^d,045:	+0,021:	+0^d,002:
38 672,449	+0,047	+0,021	-0,001
39 051,305 m	+0,053	+0,025	-0,000

m = secondary minimum.

Nürnberg Observatory
6 April 1967

E. POHL

85 Nürnberg, Lützowstr. 10.
Western Germany

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 195

Konkoly Observatory
Budapest
12 April 1967

Veröffentlichungen der Remeis-Sternwarte Bamberg
Astronomisches Institut der Universität Erlangen-Nürnberg
Band VI, Nr. 46

BRIGHT SOUTHERN BV-STARS

On sky patrol plates of the Bamberg Southern Station 25 further stars were found whose variability seems to be real as can be seen from the material available till now.

BV 914 - BV 982: see Veröffentlichungen der Remeis-Sternwarte Bamberg, Vol. VI, No. 45.

		A_{pg}
BV 983 = CoD -44° 135 (10^m)	= Cap -44° 63 ($9^m.8$)	$0^m.30$
BV 984 = Cap -83° 9 ($9^m.8$)	= CoD -83° 5 ($9^m.3$)	$0^m.40$
BV 985 = BD -18° 316 ($9^m.2$)	=	$0^m.35$
BV 986 = CoD -36° 732 ($9^m.0$)	= Cap -36° 177 ($9^m.9$)	$0^m.50$
BV 987 = Cap -58° 195 ($9^m.9$) = K3II 5965 = S 6475	= CoD -58° 432 (10^m)	$0^m.25$
BV 988 = CoD -35° 886 (10^m) = K3II 231 = HV 8019		$0^m.30$
BV 989 = Cap -63° 185 ($7^m.9$)	= HD 17 755 (F5)	$0^m.35$
BV 990 = CoD -38° 946 ($9^m.5$)		$0^m.35$
BV 991 = Cap -56° 495 ($10^m.6$) = K3II 275 = S 4812		$0^m.35$
BV 992 = CoD -50° 993 (10^m)		$0^m.35$
BV 993 = CoD -46° 1038 ($9^m.9$) = K3II 307 = S 4815	= Cap -46° 322 ($9^m.8$)	$0^m.30$

				A_{pg}
BV 994 = Cap -55°	551 ($9^{m}.1$)	= CoD -55° 731 ($8^{m}.3$)		$0^{m}.25$
= K3Ⅱ 334 = HV 94				
BV 995 = Cap -55°	663 ($4^{m}.1$)	= HD 29 305 (A_o)		$0^{m}.30$
BV 996 = BD -20°	1007 ($9^{m}.0$)	= HD 32 982 (K_2)		$0^{m}.40$
BV 997 = BD -11°	1310 ($9^{m}.5$)			$0^{m}.45$
BV 998 = CoD -39°	3143 ($9^{m}.7$)	= Cap -39° 1306 ($9^{m}.5$)		$0^{m}.35$
BV 999 = Cap -85°	373 ($9^{m}.5$)	= HD 114 591 (Mb)		$1^{m}.50$
BV 1000 = BD -18°	527 ($7^{m}.8$)	= HD 19 115 (Fo)	s. next page	
BV 1001 = Cap -83°	648 ($9^{m}.8$)			$0^{m}.35$
BV 1002 = CoD -48°	12392 ($9^{m}.4$)	= HD 167 405 (Ao)		$0^{m}.70$
BV 1003 = CoD -26°	15757 ($9^{m}.9$)			$0^{m}.25$
BV 1004 = CoD -28°	17474 ($9^{m}.1$)	= HD 207 570 (Go)		$0^{m}.20$
BV 1005 = CoD -38°	15466 ($9^{m}.3$)	= HD 220 345 (K2)		$0^{m}.55$
BV 1006 = Cap -63°	4884 ($9^{m}.2$)			$0^{m}.35$
BV 1007 = Cap -61°	6789 ($9^{m}.2$)	= HD 224 852 (F)		$0^{m}.40$

BV 1000 = BD $-18^{\circ}527$ ($7\overset{m}{.}8$) = HD 19 115 (Fo)

Min = JD 242 5994.275 + $2\overset{d}{.}158\ 250$. E

Minima	E	O - C
242 5994.243	0	-0.032
6308.438(1/2)	145.5	+0.138
6351.283(1/2)	165.5	-0.182
6598.612	280	+0.027
.626	280	+0.041
6624.622(3/4)	292	+0.138
6650.373	304	-0.010
6981.522(1/2)	457.5	-0.151
7099.309	512	+0.010
243 6824.528(1/2)	5018	+0.154
6851.556(1/2)	5030.5	+0.204
6895.404(1/2)	5031	-0.192
7315.267(1/2)	5245.5	-0.108
7696.260	5422	-0.046
8708.394(1/2)	5891	-0.132
8760.285	5915	-0.039
8995.639(3/4)	6024	+0.066
9442.408(3/4)	6231	+0.077
9443.405(1/2)	6231.5	-0.005
9444.404(1/2)	6232	-0.085

Ampl. $0\overset{m}{.}45$, with deep (1/2) secondary minimum , EB

Extreme high maxima:

242 7297.401	603.75	+0.083
243 7319.251	5247.25	+0.099
7416.383	5292.25	+0.109
8701.438	5887.75	-0.073
8726.360	5899.25	+0.029
9383.551	6203.75	+0.033

Remeis-Observatory, Bamberg, April 15, 1967

W. STROHMEIER
H. OTT

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 196

Konkoly Observatory
Budapest
18 April 1967

RECENT OBSERVATIONS OF THE SUPERNOVA IN NGC 1058

The peculiar supernova discovered by P. Wild in 1961 was the object of previous photometric and spectroscopic work by the writer (Bertola, 1963, 1964, 1965) and Zwicky (1964), who has called this supernova of type V. Further photometric observations carried out at Asiago from January 1966 to February 1967 are given here. The supernova, which raised the maximum (m_{pg} = 12.5) during the outburst of December 1961, was visible as a faint star of 18th magnitude since 1937. In the years 1963-65 the object was fluctuating around m_{pg} = 18.5 and an outburst of almost one magnitude was observed in September 1964. During the period covered by the present observations the supernova has fallen down to $m_{pg} \simeq 19.5$. However, the last observation of February 9 shows again a small outburst. The following Table lists the observations. The asterisk near to the plate number indicates plates obtained with the 90-65 Schmidt telescope, the remaining were obtained with the 122 cm reflector. Emulsions 103a-0 without any filter were employed. The comparison sequence given by the writer (1963, 1964) has been further extended by assigning magnitude m_{pg}=19.6 to the star placed between n and o (see Fig. 1 of the 1963 paper).

TABLE

Plate No.	Date	UT	m_{pg}
111+	Jan 19, 1966	17^h33^m	18.8:
7621	Jul 17	1 49	>18
7647	Aug 12	0 10	19.5
7729	Sep 13	0 17	19.6
7772	22	0 51	19.5
363+	Oct 14	1 48	19.5:
370+	21	23 09	19.5:
378+	Nov 7	20 32	19.6:
7902	Dec 10	23 03	19.3
7948	Jan 15, 1967	23 56	19.2
7966	Feb 9	18 09	18.9

Because of the peculiarity of the light curve of this exceptional supernova, characterized by the presence of outburst at minimum, it is suggested a continuous survey of it.

Osservatorio Astronomico, Padova

F. BERTOLA

References:

Bertola F., 1963, Asiago Contr. No. 142.
1964, Ann. d'Ap. 27, 319.
1965, Asiago Contr. No. 171.

Zwicky F., 1964, Ap. J. 139, 514.

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 197

Konkoly Observatory
Budapest
24 April 1967

REVISED EPHEMERIS FOR NOVA T AURIGAE

Walker (1) has found that Nova T Aur is an eclipsing binary of short period. As part of my program of photometry of cataclysmic variables, this star was observed on three nights in February with the 36-inch, Cassegrain reflector at Kitt Peak National Observatory, Tucson, Arizona.

It was not found possible to reconcile all the observations. If Walker's first minimum is omitted, the elements

Hel. Min. = JD 243 7614.011 + $0^d.2043786$ E,

are derived.

Minima	E	O-C
243 6549.790	-5207	(-0.022)
7614.011	0	0.000
7619.943	29	+0.005
7620.959	34	-0.001
7638.944	122	-0.001
7644.871	151	-0.001
7666.738	258	-0.003
7666.944	259	-0.001
9528.630	9368	0.000
9529.652	9373	0.000
9532.716	9388	-0.001

Obviously continued surveillance of this object is warranted.
This work has been supported by the National Science Foundation.

GEORGE S. MUMFORD

Tufts University
Medford, Mass. 02030 USA

(1) Walker, M. F., Ap. J., 138, 313, 1963.

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 198

Konkoly Observatory
Budapest
24 April 1967

Correction to IBVS No. 193. Prof. Tempesti cabled: The announcement of the variability of the star BD +18°2304 is erroneous, the variable concerned is identical with XY Leo. Teramo Observatory.

PHOTOELECTRIC MINIMA FOR SW LAC

Since a long time it is known that this eclipsing variable has a variable period. Photoelectric observations, made at the Nürnberg observatory in the years 1963 till 1966, show large, increasing positive O-C's against the elements given in GCVS (I) and SAC 38 (II), respectively:

$$\text{Min: JD } 2423\,372.7974 + 0^d.32071483 \cdot E + 0^d.023 \cdot \sin(0^\circ.0053 \cdot E - 76^\circ) - 0^d.0022 \cdot \sin(0^\circ.0086 \cdot E - 60^\circ) \quad \text{(I)}$$

$$\text{Min: JD } 2435\,667.474 + 0^d.320722 \cdot E \quad \text{(II)}$$

From five photoelectric minima I derived the new elements:

$$\text{Min: JD } 2438\,235.518 + 0^d.32072829 \cdot E \quad \text{(III)}$$

The minima obtained at the Nürnberg Observatory are given in the following Table together with the O-C's computed with formulas (I) to (III).

Minima	O-C (I)	O-C (II)	O-C (III)
2438 235.518	$-0^d.011$	$+0^d.023$	$0^d.000$
708.271	+0.012	+0.032	0.000
709.393 (m)	+0.011	+0.032	-0.001
39 059.468	+0.027	+0.038	-0.001
443.381	+0.047	+0.047	0.000

(m) = secondary minimum.

Nürnberg Observatory,

E. POHL

85 Nürnberg, Lützowstr. 10
Western Germany

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 199

Konkoly Observatory
Budapest
30 April 1967

Veröffentlichungen der Remeis-Sternwarte Bamberg
Astronomisches Institut der Universität Erlangen - Nürnberg
Band VI, Nr. 49

ELEMENTS FOR SONNEBERG VARIABLES (V)

S 4812 = K3II 275 = CAP $-56^{\circ}495$ ($10^{m}.6$) = BV 991

Min = JD 242 8048.610 + $0^{d}.480\,4562$. E

Minima	E	O - C
242 8048.615(S)	0	$+0^{d}.005$
8073.568(S)	52	-0.026
8122.400(S)	153.5	+0.040
8403.666(S)	739	-0.001
8844.450(S)	1656.5	-0.036
8861.353(S)	1691.5	+0.051
8890.358(S)	1752	-0.011
243 4239.579(S)	12885.5	+0.051
8263.624	21261	+0.031
8268.616(3/4)	21271.5	-0.018
8315.504	21369	+0.026
8374.315	21491.5	-0.019
8697.431	22164	-0.010
8724.361	22220	+0.014
9006.594(3/4)	22807.5	-0.021
9032.518(3/4)	22861.5	-0.041
9054.476(3/4)	22907	+0.056
9106.328	23015	+0.019
9409.475	23646	-0.002
9436.399	23702	+0.016

Ampl. $0^m.35$, with a very deep (3/4) secondary minimum, EW. For periods under $0^d.5$, the data which are obtained on sky patrol plates are preliminary. Therefore also the period must be considered as uncertain.

S 4815 = K3II 307 = CoD $-46^o1038(9^m.9)$ = BV 993

Min = JD 242 8761.550 + $2^d.608\ 107$. E

Minima	E	O - C
242 8761.563(S)	0	$+0^d.013$
8821.547(S)	23	+0.011
8842.418(S)	31	+0.017
8889.325(S)	49	-0.022
243 4272.534(S)	2113	+0.054
8257.637	3641	-0.031
8355.392(1/3)	3678.5	-0.080
8397.280(1/3)	3694.5	+0.079
8711.395(1/2)	3815	-0.083
8723.359(1/3)	3819.5	+0.144
8724.406(1/2)	3820	-0.113
8728.410(1/2)	3821.5	-0.021
8753.285(3/4)	3831	+0.077
.331(1/3)	3831	+0.123
8995.639(1/2)	3924	-0.133
9380.551(1/3)	4071.5	+0.093
9410.459	4083	+0.008
9435.396(1/3)	4092.5	+0.168
9436.399(1/3)	4093	-0.133
.444(3/4)	4093	-0.088
9444.404	4096	+0.048

Ampl. $0^m.45$, with a remarkable (1/2) secondary minimum, EB

S 7615 = CoD $-48^{\circ}2869(10^{m})$ = BV 490

Min = JD 242 8848.750 + $2^{d}.589\ 635$. E

Minima	E	O - C
		d
242 8848.517(S)	0	-0.233
243 4302.536(S)	2106	+0.015
4328.420(S)	2116	+0.002
4359.486(S)	2128	-0.007
4416.438(S)	2150	-0.027
4512.258(S)	2187	-0.024
8386.456(1/2)	3683	+0.080
8443.310	3705	-0.038
8461.344(1/4)	3712	-0.131
.367(1/2)	3712	-0.108
8707.572(3/4)	3807	+0.082
8759.432(1/4)	3827	+0.149
8768.404(1/4)	3830.5	+0.057
8785.292(1/2)	3837	+0.113
.340(1/4)	3837	+0.161
8816.291	3849	+0.036
9150.378	3978	+0.060
9168.327(1/4)	3985	-0.118
9176.279	3988	+0.055
9445.540	4092	+0.004

Ampl. $1^{m}.05$, with a weak secondary minimum, EA

(S) = Sonneberg. Again many thanks to Miss H. GESSNER for her search of minima on Sonneberg Sky Patrol Plates.

Remeis Observatory
Bamberg, April 24, 1967

W. STROHMEIER

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 200

Konkoly Observatory
Budapest
17 May 1967

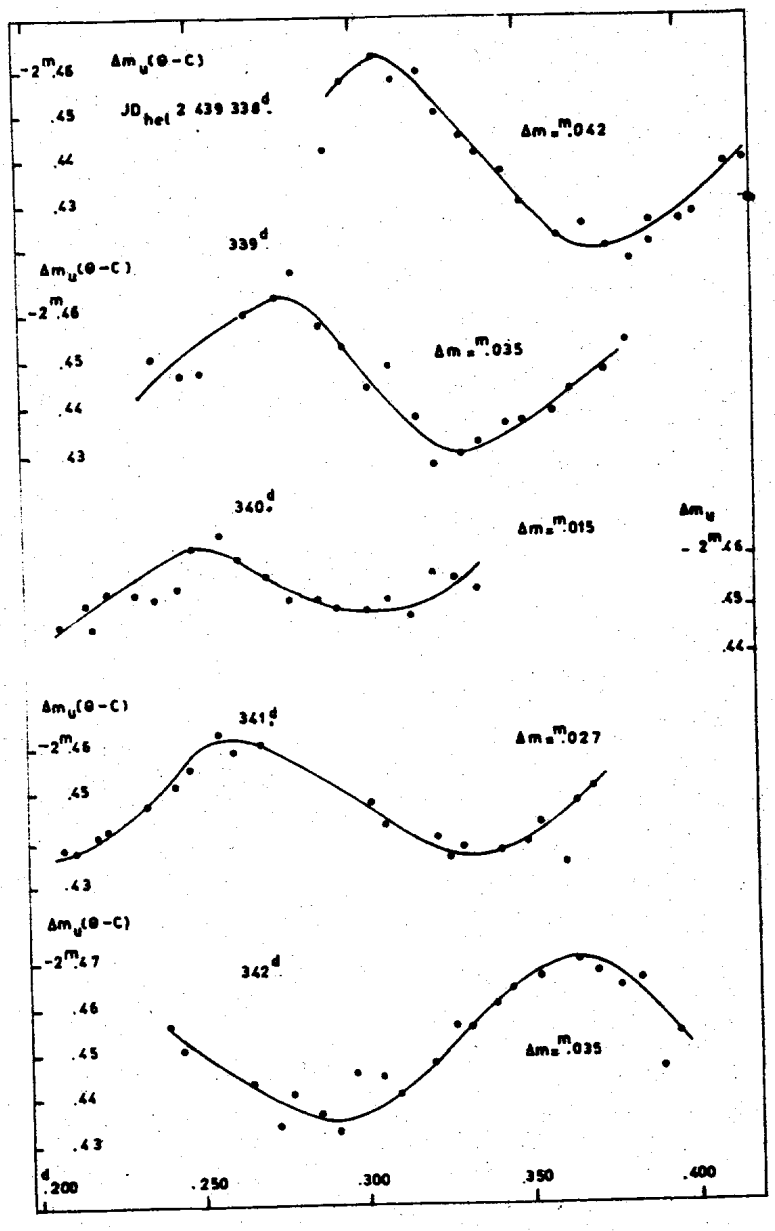
THE BEAT-PERIOD IN THETA OPHIUCHI

The first systematic photoelectric observations of Theta Oph were made in 1958 on A. VAN HOOF's request, with the 1,50 m - telescope of the Boyden Observatory at Bloemfontein, by Dr. H. HAFFNER, G. LYNGA and L. O. LODEN. All their observations of the variable Theta Oph and of the comparison star 44 Oph were made in ultraviolet light. Prof. A. VAN HOOF published the first photoelectric light curves of this Beta CMa star. He mentioned a short period P_o = $0^d.140531$ and a beat period of about 6 days.

In 1966, we intended to start with a new search about these periods. The variable star Theta Oph was observed very intensively in 1966, during the months June, July and August, with the same instruments as in 1958. Our photoelectric observations were carried out in three colours: U, B and V. The light curves derived, by means of the comparison star HD 158643, show very clearly the variability of the amplitude from night to night.

The short period cycle of the light variations has the value $P_o = 0^d.140531$ as VAN HOOF (1) found in 1958. This value fits our observations very well, but the amplitude seems to change with a period of about 4 days.

The light curves presented in this paper are a selection out of 23 ones obtained in 1966.


Δm_u(B-C)
-2^m.46
.45
.44
.43
JD_hel 2 439 338^d.
Δm = m.042
339^d
Δm_u(B-C)
-2^m.46
.45
.44
43
Δm = m.035
340^d
Δm = m.015
Δm_u
- 2^m.46
.45
.44
Δm_u(B-C)
341^d
-2^m.46
.45
.43
Δm = m.027
Δm_u(B-C)
-2^m.47
342^d
.46
.45
.44
.43
Δm = m.035
d
.200
.250
.300
.350
.400

The differences between maximum and minimum light obtained from the ultraviolet light curves are presented in Table 1. We are only giving the values out of two intensive observation periods.

Table 1.

		Min.	Max.
JD 2 439 309	Δm_u (O-C)	$0^m.030$	
310			.032
311			.036
313		.032	
315			.046
316			.043
317		.030	
319			.036
336		.026	
337			.037
338			.042
339			.035
340		.015	
341			.027
342			.035
343			.034

It is possible to indicate the beat period of 4 days also in Fig. 1 of VAN HOOF's paper (1).

In Table 2, we are giving our estimates of the amplitudes from his light curves.

Table 2.

JD 2436 380	$\Delta m_u = 0^m.04$	Max.
382	.02	Min.
413	.02	Min.
414		
415	.04	Max.

The best value of the beat period that fits all these observations is:

$$P_b = 3^d.9..;$$

From the results in Table 1 we see that the values of the amplitudes in the maxima and in the minima are not constant. They seem to change with another long period of about 16 days (maybe $4 \times 3^d.9 = 15^d.6$).

Acknowledgments are due to the Belgian Ministry of National Education and Culture, "Nationaal Fonds voor Wetenschappelijk Onderzoek", for the grant that made possible our stay at the Boyden Observatory, Bloemfontein, South-Africa.

May 10, 1967.

Remy BRIERS
Astronomisch Instituut
Leuven
Belgium

(1) VAN HOOF, A. Zs. f. Astroph. 54, 255 (1962).