COMMISSION 27 OF THE I.A.U.

INFORMATION BULLETIN ON VARIABLE STARS

Nos. 0001-0100

1961 October – 1965 June

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

Contents

0013 V536 CYGNI
P. Ahnert
REQUEST FOR PHOTOELECTRIC OBSERVATIONS OF AC And
L. Detre
10 August 1962

0014 UN MAXIMUM DE LA VARIABLE DX And
R. Weber
23 October 1962

0015 NEW ERUPTION OF NOVA VY AQUARII
W. Strohmeier
28 October 1962

0016 NOVA VY AQUARII
H. Huth
21 November 1962

0017 NEW BRIGHT VARIABLE STARS
W. Strohmeier
12 December 1962

0018 NOVA OR SUPERNOVA
B.V. Kukarkin
30 December 1962

0019 NOVA URSAE MINORIS 1956
P. Ahnert
A NEW BRIGHT ECLIPSING VARIABLE
W. Strohmeier
30 January 1963

0020 UNUSUAL NEW VARIABLE S7901 CYGNI
C. Hoffmeister
7 February 1963

0021 NOUVELLES ETOILES VARIABLES
R. Weber
28 February 1963

0022 A NEW BRIGHT ECLIPSING VARIABLE
W. Strohmeier
AT HERCULIS
E. Illes-Almar
25 March 1963

0023 ON THE LIGHT VARIABILITY OF THE OBJECT IDENTIFIED WITH THE RADIO SOURCE
3C 273
A.S. Sharov, Yu.N. Efremov
18 April 1963

0024 A NEW BRIGHT ECLIPSING VARIABLE
W. Strohmeier
NEW U Gem-TYPE VARIABLE S7854 Cyg
C. Hoffmeister
18 April 1963

0025 SUPERNOVA IN IC 3112
N. Kurockin
14 May 1963

0026 THE ELEMENTS OF FIVE ECLIPSING VARIABLES
W. Strohmeier
16 May 1963

0027 3C 273
L. Detre
18 May 1963

0028 SUPERNOVA IN NGC 4178
B.V. Kukarkin
20 May 1963

0029 NOVA URSAE MINORIS 1956
F. Borngen
10 June 1963

0030 PROBABLE SUPERNOVA
C. Hoffmeister
ON THE SUPERNOVA IN NGC 4178
K. Lochel
12 June 1963

0031 AN ATTEMPT TO DETECT THE POLARIZATION AND TO EVALUATE THE INFRARED STELLAR MAGNITUDE OF THE UNUSUAL VARIABLE OBJECT 3C 273
V.I. Moroz, V.F. Yessipov
15 June 1963

0032 THE ELEMENTS OF THE VARIABLE STAR 435.1928
W. Strohmeier
28 August 1963

0033 THE ELEMENTS OF THE VARIABLE STAR 16.1929 SAGITTAE
W. Strohmeier
21 September 1963

0034 NOUVELLES ETOILES VARIABLES
R. Weber
11 October 1963

0035 OBSERVED MINIMA OF ECLIPSING VARIABLES
K. Kordylewski
31 October 1963

0036 THE SECONDARY PERIOD OF DL HERCULIS
B. Szeidl
4 November 1963

0037 SUPERNOVA IN NGC 1654
L. Rosino
5 November 1963

0038 THE ELEMENTS OF THE VARIABLE STAR 390.1933 (CEPHEI)
THREE "POORLY KNOWN" VARIABLE STARS
W. Strohmeier, H. Ott
11 November 1963

0039 NOUVELLES ETOILES VARIABLES
R. Weber
16 November 1963

0040 PHOTOELECTRIC AND SPECTROSCOPIC OBSERVATIONS OF 48 PERSEI AND 53 PERSEI
G. Jackisch
20 November 1963

0041 NOTE ON Z CIRCINI
A. van Hoof
12 February 1964

0042 NOUVELLES ETOILES VARIABLES
R. Weber
12 February 1964

0043 THE ELEMENTS OF SIX RR LYRAE STARS IN M92
E.S. Kheylo
27 February 1964

0044 DETERMINATIONS WANTED OF THE GAMMA-VELOCITY OF BETA CEPHEI IN 1964-67
A. van Hoof
29 February 1964

0045 NOVA PUPPIS 1963
C. Hoffmeister
4 March 1964

0046 OBSERVED MINIMA OF ECLIPSING VARIABLES
K. Kordylewski
9 March 1964

0047 FIRST RESULTS FROM THE BAMBERG SOUTH-AFRICAN STATION
W. Strohmeier
12 March 1964

0048 OBJECTIVE PRISM SPECTRUM OF NOVA PUPPIS 1963
E.H. Geyer
24 March 1964

0049 NEW BRIGHT EARLY TYPE ECLIPSING VARIABLE
P. Mayer
RESULTS FROM THE BAMBERG SOUTH-AFRICAN STATION II
W. Strohmeier
24 March 1964

0050 SUPERNOVA IN THE URSA MAIOR CLUSTER OF GALAXIES
M. Lovas
OBJECTIVE PRISM SPECTRUM OF THE SUPERNOVA
B. Balazs
30 March 1964

0051 NEW BRIGHT VARIABLES
W. Strohmeier
10 April 1964

0052 INVESTIGATION OF THE LIGHT VARIATIONS OF THE QUASI-STELLAR RADIO GALAXY 3C 273 ON HEIDELBERG PLATES
E.H. Geyer
27 April 1964

0053 SPECTRUM OF NOVA PUPPIS 1963
G.H. Herbig, K. Wilde
RED-YELLOW SPECTRUM OF THE SUPERNOVA IN UMa
B. Balazs
27 April 1964

0054 ELEMENTS OF SOUTHERN BV-STARS
W. Strohmeier
4 May 1964

0055 BRIGHT SOUTHERN BV-STARS
W. Strohmeier
8 June 1964

0056 PREDISCOVERY MAGNITUDES OF THE SUPERNOVA IN UMa
P. Ahnert
THE ELEMENTS OF THE VARIABLE STAR 78.1933 Cnc
J.M. Kreiner
24 June 1964

0057 i BOOTIS
H. Schneller
24 June 1964

0058 THE BRIGHTNESS OF THE QUASI-STELLAR RADIO SOURCE 3C 48 ON HEIDELBERG PLATES
E.H. Geyer
30 June 1964

0059 BV 431 = NOVA PUPPIS 1964
W. Strohmeier
4 July 1964

0060 THE SECOND NOVA PUPPIS 1963
H. Huth, C. Hoffmeister
7 July 1964

0061 Y CYGNI
H. Schneller
6 August 1964

0062 BRIGHT SOUTHERN BV-STARS
W. Strohmeier, R. Knigge, H. Ott
6 August 1964

0063 BEATS IN THE BRIGHTNESS VARIATION OF TAU LUPI
A. van Hoof, W.S. Pretorius, C. Pikoos
17 August 1964

0064 NOUVELLES ETOILES VARIABLES
R. Weber
4 September 1964

0065 THE ELEMENTS OF THE ECLIPSING VARIABLE SU FORNACIS
Cezmi Guner Omay
5 September 1964

0066 BRIGHT SOUTHERN BV-STARS
W. Strohmeier, R. Knigge, H. Ott
18 September 1964

0067 VARIABLES IN NGC 188
C. Hoffmeister
19 September 1964

0068 V SAGITTAE
G.H. Herbig, G.W. Preston, J. Smak, B. Paczynski
23 September 1964

0069 SZ HYDRAE: AN RRab STAR WITH UNSTABLE PERIOD
L.J. Robinson
24 September 1964

0070 BRIGHT SOUTHERN BV-STARS
W. Strohmeier, R. Knigge, H. Ott
10 October 1964

0071 PHOTOMETRIC LIGHT-CURVE OF RV Oct
E. Schoffel
2 November 1964

0072 PHOTOMETRIC LIGHT-CURVE OF BV 417 = HD 126037 (G5)
U. Kohler
2 November 1964

0073 AG DRACONIS
L.J. Robinson
14 November 1964

0074 BRIGHT SOUTHERN BV-STARS
W. Strohmeier, R. Knigge, H. Ott
16 November 1964

0075 ON THE NATURE OF VARIABLE STARS IN M67 AND NGC 188
Y.N. Efremov, P.N. Kholopov, B.V. Kukarkin, A.S. Sharov
20 November 1964

0076 LIGHT VARIATIONS OF THE MAGNETIC-VARIABLE STAR HD 10783
A.M. van Genderen
23 December 1964

0077 PHOTOMETRIC LIGHT-CURVES OF BRIGHT SOUTHERN BV-STARS. ECLIPSING BINARIES
E. Schoffel, U. Kohler
2 January 1965

0078 NOTE ABOUT THE PERIODS OF THREE VARIABLE STARS
K.K. Kwee
9 January 1965

0079 ON THE VARIABLE STAR SVS 1284 IN M67
N.E. Kurockin
18 January 1965

0080 NEW VARIABLES OF U Gem TYPE
C. Hoffmeister
29 January 1965

0081 BRIGHT SOUTHERN BV-STARS
W. Strohmeier, R. Knigge, H. Ott
10 February 1965

0082 GALAXIES WITH FREQUENT APPEARANCE OF SUPERNOVAE
B.V. Kukarkin
17 February 1965

0083 VARIABILITY OF THE RADIO SOURCE CTA-102
G.B. Sholomitsky
27 February 1965

0084 MINIMA OF RZ CASSIOPEIAE
L.J. Robinson
1 March 1965

0085 DOUBLE-LINED ECLIPSING BINARY BV 382 CEPHEI HD 205372
C. Bartolini, A. Mammano, G. Mannino, R. Margoni
REMARK TO BULLETIN No. 80
C. Hoffmeister
8 March 1965

0086 BRIGHT SOUTHERN BV-STARS
W. Strohmeier, R. Knigge, H. Ott
11 March 1965

0087 THE SPECTRUM OF Z CIRCINI
M.W. Feast
12 March 1965

0088 NOUVELLES ETOILES VARIABLES
R. Weber
GALAXIES WITH FREQUENT APPEARANCE OF SUPERNOVAE
Ch. Bertaud
3 April 1965

0089 BV 623 AND BV 624
W. Strohmeier
6 April 1965

0090 PROBABLE SUPERNOVA IN NGC 4162
C. Hoffmeister
22 April 1965

0091 PHOTOMETRIC LIGHT-CURVES OF SOUTHERN BV-STARS
U. Kohler, E. Schoffel
30 April 1965

0092 A POSSIBLE MAJOR PERIOD CHANGE IN V342 AQUILAE
M.E. Baldwin, L.J. Robinson
30 April 1965

0093 NOVA AURIGAE 1960-1964
SUPERNOVA IN NGC 4162
C. Hoffmeister
3 May 1965

0094 UBV PHOTOMETRY OF RR LYRAE STARS
D.H.P. Jones
5 May 1965

0095 CT TAURI
I.M. Istchenko, P.F. Chugainov
14 May 1965

0096 BP VULPECULAE
H. Huth
14 May 1965

0097 UNUSUAL VARIABLE S5420 AURIGAE - NOVA AURIGAE 1960-1964
M. Popova
3 June 1965

0098 V SAGITTAE
G. Romano
5 June 1965

0099 OBJECT ROSINO-ZWICKY NEAR M88
W. Wenzel
ESTIMATES OF OBJECT ROSINO-ZWICKY
M. Lovas
10 June 1965

0100 BRIGHT SOUTHERN BV-STARS
W. Strohmeier, R. Knigge, H. Ott
PHOTOMETRIC LIGHT-CURVES OF SOUTHERN BV-STARS
E. Schoffel, U. Kohler
30 June 1965

Information Bulletin on Variable Stars
of Commission 27 of the I. A. U.
Number 1

Konkoly Observatory
Budapest.
1961 October 4

TWO VARIABLES OF BETA LYRAE TYPE WITH LONG PERIODS

Recomended for spectrographic and photoelectric observations are the two variables of Beta Lyrae type, EP Lyrae and HP Lyrae. Both objects have been formerly classified as RV Tauri type stars according to their periods when no spectrographic observations were available. Objective prism plates taken with the Sonneberg 50/70/172 cm Schmidt telescope revealed the early supergiant spectral types of both stars.

Data of the two stars:

	period	spectrum	range primary	range second.	max. brightness
EP Lyr	$83^d.315$	AI + GI	$0^m.6$	$0^m.2$ vis.	$9^m.9$ vis.
HP Lyr	140.75	AI + AI	0.5	0.5 pg.	10.5 pg.

Noteworthy are the secondary variations of brightness during primary minimum of EP Lyrae. These lead to the conclusion that the G component of this pair is intrinsically variable.

For further details see MVS 499 - 500 and 586 - 588 (forthcoming).

Sonneberg Observatory of German Academy of Sciences,

W. WENZEL

Commission 27 of the I. A. U.
Information Bulletin on Variable Stars
Number 2

Konkoly Observatory
Budapest
11 January 1962

NOVA T AURIGAE 1891 : A NEW SHORT-PERIOD ECLIPSING BINARY

The discovery by the writer in 1954 of the eclipsing nature ov Nova DQ Her 1934 opened the possibility that the nova phenomenon might result from the binary nature of the objects. Accordingly, since that time observations have, from time to time, been obtained of other old novae in order to determine whether they too might be eclipsing systems. Nova T Aur was placed on the observing program since the light-curve of its nova explosion was almost identical to that of DQ Her, suggesting, that the nature of the systems and/or their orientation in space were the same, so that T Aur might be a favourable case for the detection of eclipses.

The system was observed photoelectrically with the Crossley reflector for an interval of six hours in December, 1958. At first glance, the light-curve appeared to show only the random variations in light charac - teristic of old novae. However, during a recent re-examination of this material the writer concluded that one of the fluctuations in brightness could represent a very shallow eclipse and, further, found that the shape of this variation, agreed with that of one observed at Mount Wilson in 1954. Accordingly, the system was observed intensively during the fall and winter of 1961 with the Crossley reflector. All of the observations were made through a Schott GG 13 filter to improve the accuracy of the observations, since the system is of about m_{pg} 15.2.

The observations confirm the eclipsing nature of the system. The system is of the Algol type. Primary eclipse is partial and lasts about 40 minutes, although asymmetry of the rising branch sometimes extends the duration to nearly 80 minutes. The depth of eclipse is variable; depths from 0.10 mag. to 0.28 mag. have been observed. The eclipse is often preceeded by a bright shoulder 0.05 mag. to 0.10 mag. high. The eclipse-curve is thus similar to those of UX UMa, DQ Her, and RW Tri. The light-curves have not yet been reduced in final form. However, preliminary times of minimum light have been determined, and are listed in the following table:

OBSERVED MINIMA OF T AURIGAE

(colon indicates half weight)

JD hel.	O - C day	Cycle No.	JD hel.	O - C day	Cycle No.
2434797.676:	-0.001	-8574	2437638.944	+0.001	5329
6549.890	E	0	7644.871	+0.001	5358
7614.011	0.000	5207	7666.735	-0.002	5465
7619.943:	+0.005	5236	7666.945:	+0.004	5466
7620.959	0.000	5241			

These minima are represented by the following preliminary elements:

Min. = JD hel. 2436549.890 $+0^d.2043635$ E.

The residuals between the observed minima and those calculated from these elements are given in the table. Since the eclipses are so shallow, it is possible that we are dealing with a system having equal primary and secondary eclipses and a period twice that given above. However, none of the other similar systems show secondary eclipses and the fact that the spectrum gives no indication of a late-type component would indicate that both components are similar in type and luminosty. Thus, it appears probable that the above period is the correct one.

The derivation of meaningful photometric elements for this system will probably be impossible both because of the shallowness of the eclipse and its lack of symmetry and since the analysys of UX UMa, DQ Her, and RW Tri show that even when the light-curve yields a determinate solution, what is being eclipsed is probably not a star in the usual sense. The significant point here is the fact that the system is eclipsing. This result, together with Kraft's recent discovery of the binary nature of WZ Sge, lend support to the theory that all novas are binaries. Further observations, both spectroscopic and photoelectric, of old novae are clearly of the utmost importance.

MERLE F. WALKER
Lick Observatory
University of California

Commission 27 of the I.A.U.
Information Bulletin on Variable Stars
Number 3

Konkoly Observatory
Budapest
11 January 1962

NEW VARIABLES

var	AR 1900.0	D	max		min	type
GR 88	$0^h57^m36^s$	$+52^\circ53'$	11.7	<	12.8	?
GR 89	1 8 11	+48 27	10.7		12.2	EA
GR 90	1 22 10	+49 29	13.0	<	15.0	M
GR 91	1 30 43	+50 26	11.5	<	15.0	UG

Var 88, 89, 91 have been confirmed by Roger Weber. Elements:

GR 89: Min = JD 2435662.479 $+2^d.49468$ E (including Weber's observations)

GR 90: Max = 2435862 $+280^d$.E

GR 91: Period 13^d

G. ROMANO
Treviso

Commission 27 of the I.A.U.
Information Bulletin on Variable Stars
Number 4;

Konkoly Observatory
Budapest
14 January 1962

DISCOVERY OF OVERTONES AND RESONANCE OSCILLATIONS IN BETA CANIS MAJORIS AND IN BETA CEPHEI

A thorough investigation on the radial velocity variation of Beta CMa has disclosed the existence in this star of at least ten different oscillations. These are resp. the free pulsations in the fundamental mode and in the first five overtones (P_0, P_1,..., P_5) and the difference oscillations $P_{i,i+2}$, arising from the coupling between the P_i and the P_{i+2}, from P_{02} to P_{35}.

The ratios P_i/P_0 are entirely consistent with the theoretical predictions for the polytrope of index 3 and $\Gamma_1 = 1.53$.

Of the two periods that have been detected earlier the longer one, $0^d.2513003$, appears to correspond to the free pulsation in the fundamental mode P_0, while the shorter one, $0^d.2500246$, is the period P_{24} of the coupling term between the second and the fourth overtones.

The line broadening is connected with the pulsation in the fundamental mode.

A similar investigation carried out on Beta Cep has lead to the discovery of 55 different oscillations, all with measurable amplitudes. They are: the first ten overtones P_1, P_2,... P_{10}, the difference oscillations $P_{i,i+2}$ between them (9 in number), the further difference oscillations $P_{i,i+3}$ (8),

$P_{i,i+4}(7)$, $P_{i,i+5}(6)$, $P_{i,i+6}(5)$, $P_{i,i+7}(4)$, $P_{i,i+8}(3)$, $P_{i,i+9}(2)$ and $P_{i,i+10}(1)$.

The corresponding amplitudes range from 20 km/sec for the main oscillation to 0.8 km/sec for the smallest.

The ratios P_i/P_0 for the first four overtones are again those foretold by the theory for the polytrope of index 3 with $\Gamma_1 = 1.52$.

The single period given in the GCVS corresponds to the main oscillation wich is $P_{24} \equiv P_0$. So P_{24} is at perfect resonance with P_0, as was the case in Nü Eri.

The absence of line broadening in this star is ascribed to the absence or the extreme weakness of the directly excited fundamental pulsation P_0.

The results thus far obtained from the five stars Theta Oph, Nü Eri, Beta Cep, Beta Cru and Beta CMa show a continuous increase of Γ_1 from 1.51 for the shortest main period to 1.53 for the largest.

Full results will be published in the Zeitschrift für Astrophysik.

A. van HOOF
University of Louvain
Belgium

Commission 27 of the I. A. U.
Information Bulletin on Variable Stars
Number 5

Konkoly Observatory
Budapest
15 January 1962

A WARNING TO THE OBSERVERS OF BETA CMa-TYPE STARS

It is the current policy at most observatories to restrict the telescope time available for the observation of the (all bright) Beta CMa stars to the bright moon period, when work on fainter objects becomes hard or impossible.

Observers should be well aware of the serious danger hidden in this apparently sound procedure, at least when their observations are aimed at the determination of period lengths and amplitudes in these multiperiodical stars.

Let us indeed first consider a short period variable with a single period P and suppose that the observations on it lie clustered around epochs (full moon) that are separated by a characteristic interval T. Let be $P=T/n$, with n large, but not necessarily an integer. In the course of a periodogram analysis the exact period will of course yield the global mean light or velocity curve with the largest amplitude possible. But the periods $P=T/n\pm i$ (i 1, 2, 3, ...) will also fit the observations on the individual full moon periods quite well (as long as $i \ll n$) and since the mean curves derived for the latter are all in phase, the global mean curve will have an amplitude that decreases but slowly with increasing i. On the contrary, for $i=1/2,\ 3/2,\ 5/2, \ldots$ the various groups are of opposite phases and the global mean curve will never reach a significant amplitude. Consequently the periodogram will show, instead

of its normal aspect, a large number of narrow bands closely packed together and having heights that go increasing towards the central one, which corresponds to the true oscillation both in period and amplitude. The latter thus remains easily recognizable in this case.

But if we consider next a variable in which several true periods lie closely together, as is the case of the Beta CMa stars, the band patterns from the various periods will interfere and produce a very misleading spectrum; several of the resulting bands will show high peaks, while others will have their heights reduced almost to nothing. The identification of the physically meaningful bands will then become a very tough job. If our general knowledge of these stars may prove a competent guide at this stage, it is of little help at the next: the determination of accurate periods and of reliable amplitudes. Both remain unknown.

May both the observers and those who have to allocate telescope time keep in mind this special aspect of the investigation of stars with multiple short periods.

A. van HOOF
University of Louvain
Belgium

Commission 27 of the I.A.U.
Information Bulletin on Variable Stars
Number 6

Konkoly Observatory
Budapest
4 February 1962

NOUVELLES ETOILES VARIABLES

Nr	AR /1900,0/			D		m_p max	m_p min	type	nombre d'observ.
97*	1^h	12^m	08^s	+ 50°	08'	12,9	14,0	C	35
98*	1	18	55	+ 51	30	12,2	13,8		40
99	6	21	40	+ 30	27	12,0	13,1	E	40
100	8	34	48	+ 23	39	11,7	12,4		44
101	8	43	50	+ 25	39	12,8	13,6		43
102	8	47	00	+ 24	11	12,1	13,3		45
103	15	53	30	+ 28	55	11,6	12,7		125
104*	16	02	46	+ 27	32	10,5	11,3		103
105	8	19	52	+ 26	04	11,8	13,0	RR	40
106	8	20	24	+ 23	37	12,2	13,0		43
107	15	39	39	+ 28	54	12,0	12,7		51
108	1	20	35	+ 44	24	12,7	13,5	E	35
109	19	13	44	+ 17	29	12,3	13,0	E /?/	82
110*	19	02	07	+ 13	12	12,3	14,5	E	90
111*	19	03	11	+ 18	48	11,9	12,8	E	88
112	20	03	31	+ 42	46	12,8	14,3	RW	44
113	20	04	26	+ 40	25	11,7	12,6	E	44
115	18	44	42	+ 43	36	12,8	14,3	E	47
116	23	17	27	+ 38	30	12,8	13,7	E	32
117*	23	14	41	+ 45	23	12,7	13,5	E	55
118*	23	43	10	+ 44	10	11,2	12,0	I ou SR	71
120*	23	22	05	+ 48	58	10,8	11,8	I	72
133	19	27	33	+ 47	12	12,4	13,3	C	21
149*	23	15	24	+ 46	42	12,8	14,2	LP	40

N.B. Les étoiles marquées du signe /*/ font l'objet de remarques mentionnées ci-après.

R E M A R Q U E S

Wr 97. Variabilité confirmée par Romano /communication privée/.

Wr 98. Variabilité confirmée par Romano /communication privée/.

Wr 104. = BD + 27°2585.

Wr 110. = BD + 13°3908. Éléments provisoires de Weber : Min. hél. = JJ 2437159,415 + 1^{j}1654 E.

Wr 111. = BD + 18°3960. Éléments provisoires de Weber : Min. hél. = JJ 2437099,465 + 0^{j}8573 E.

Wr 117. Le type EB peut être suggéré. La variabilité est estimée par Romano comme très probable.

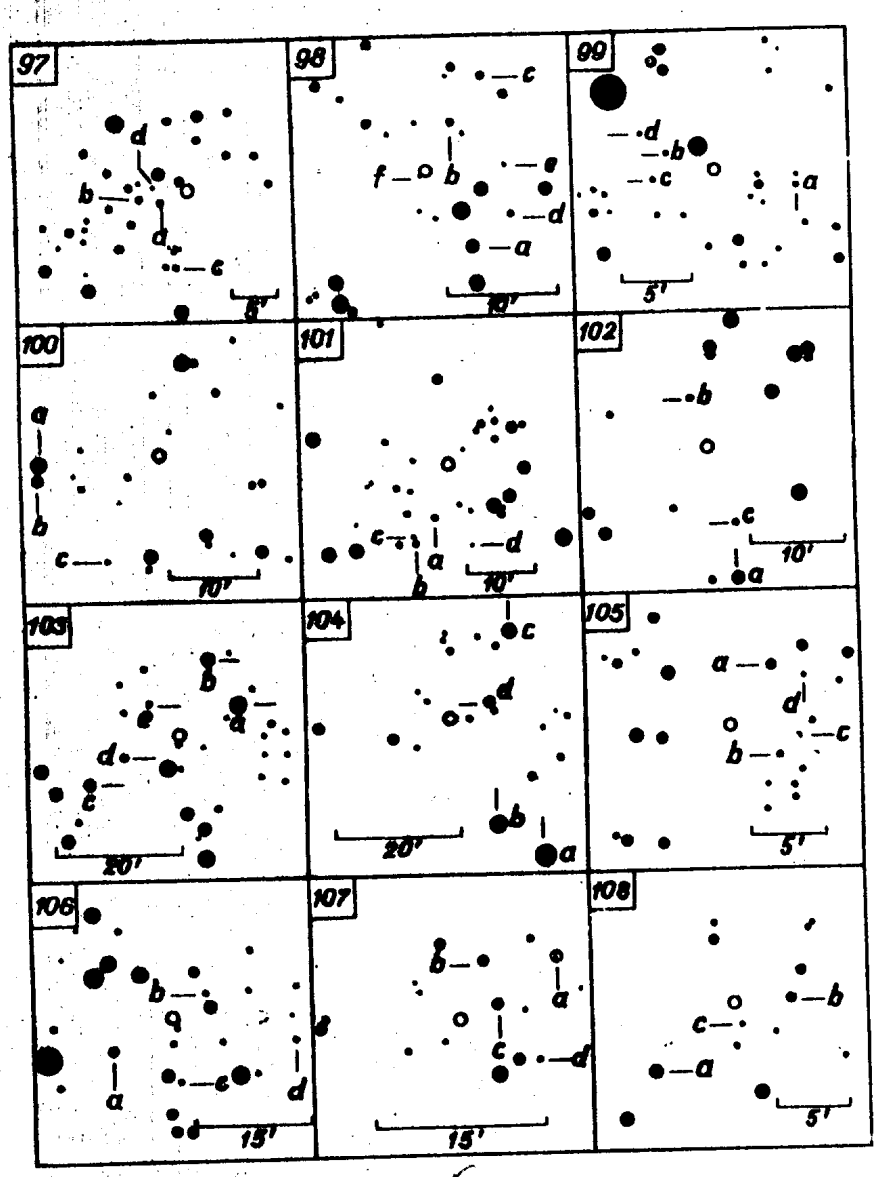
Wr 118. = BD + 43°4549. Sp Ma d'après la Bergedorfer Spektral Durchmusterung. Variabilité confirmée par Romano.

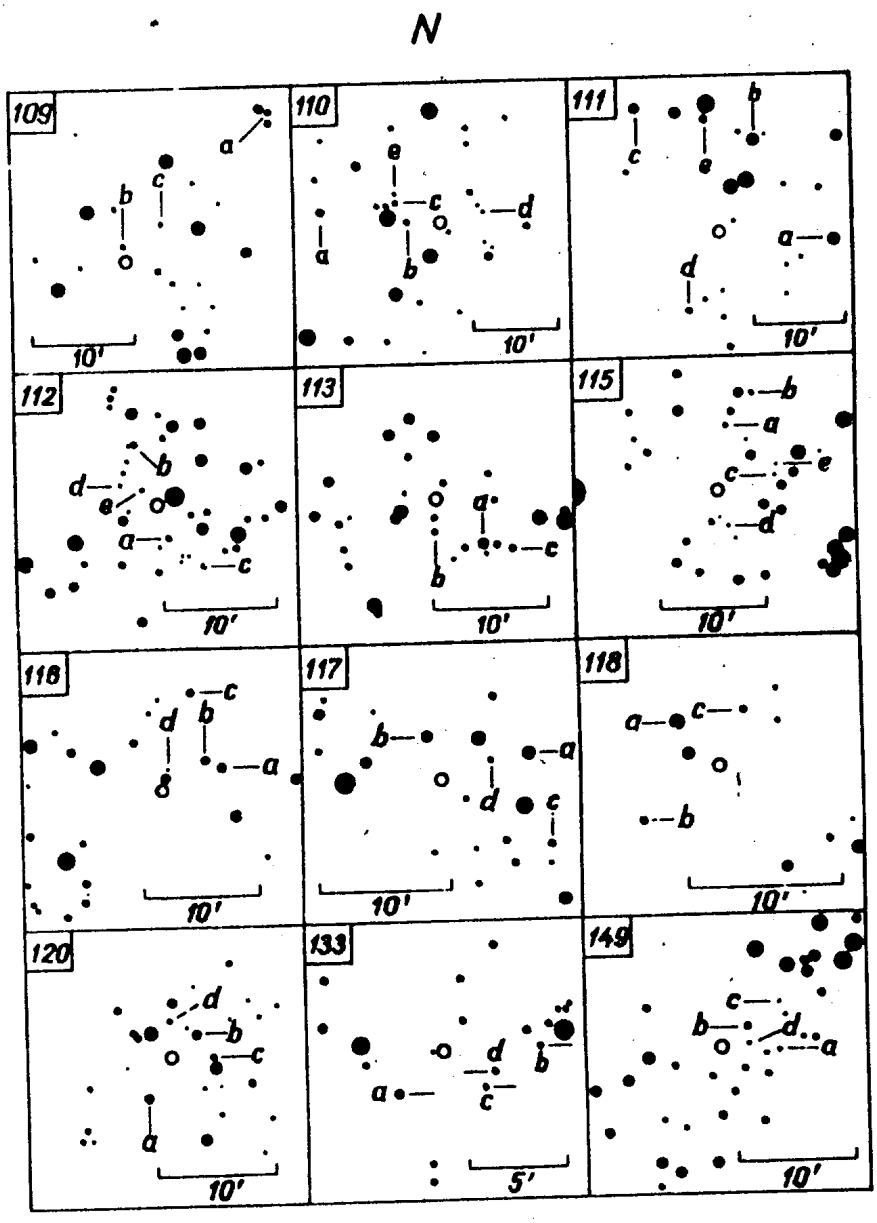
Wr 120. = BD + 48°4051 = HD 220870. sp Nb.

Zinner a signalé le caractère suspecte d'une étoile voisine, BD + 48°4048 qui figure dans le Catalogue des Étoiles Variables Suspectes sous le n° 102258 = Z 2141, sp N. Une plaque panchromatique ne montrant pas de coloration particulière pour l'étoile désignée par Zinner l'identification par cet auteur de l'étoile variable rouge avec BD + 48°4048 paraît erronée.

Wr 149. Étoile rouge, d'après une plaque panchromatique. Variabilité confirmée par Romano/communication privée/.

R. WEBER
8, Rue Blomet, 8
PARIS


N
97
98
99
100
101
102
103
104
105
106
107
108
5'
10'
20'
15'


N
109
110
111
112
113
115
116
117
118
120
133
149
10'
5'

ÉTOILES DE COMPARAISON

	Wr 97 m_p d'après S.A.21	Wr 98 m_p S.A.21	Wr 99 m_p S.A.50	Wr 100 m_p S.A.76
a =	12,6	11,1	12,2	11,4
b =	13,0	12,6	12,6	12,0
c =	13,5	13,0	12,8	12,6
d =	14,2	13,5	13,2	-
e =	-	13,9	-	-
f =	-	14,2	-	-

	Wr 101 m_p S.A.76	Wr 102 m_p S.A.76	Wr 103 m_p S.A.60	Wr 104 m_p S.A.60
a =	12,7	12,3	11,2	10,1
b =	13,1	12,9	11,5	10,8
c =	13,5	13,3	12,0	11,1
d =	13,9	-	12,4	11,4
e =	-	-	12,7	-

	Wr 105 m_p S.A.76	Wr 106 m_p S.A.76	Wr 107 m_p S.A.60	Wr 108 m_p S.A.21
a =	11,8	12,0	11,5	12,6
b =	12,2	12,3	12,0	13,0
c =	12,4	12,7	12,3	13,5
d =	12,8	12,9	12,7	-

	Wr 109 m_p d'après S.A.87	Wr 110 m_p S.A.87	Wr 111 m_p S.A.87	Wr 112 m_p S.A.39
a =	12,0	12,2	11,7	12,1
b =	12,5	12,9	12,0	12,6
c =	13,2	13,5	12,4	13,2
d =	-	14,0	12,6	14,0
e =	-	14,5	13,1	14,4

	Wr 113 m_p S.A.39	Wr 115 m_p S.A.38	Wr 116 m_p S.A.43	Wr 117 m_p S.A.43
a =	11,4	12,6	12,3	12,3
b =	12,1	13,3	12,7	12,6
c =	12,7	13,7	13,1	13,0
d =	-	14,0	13,7	13,7
e =	-	14,5	-	-

	Wr 118 m_p S.A.43	Wr 120 m_p S.A.43	Wr 133 m_p S.A.39	Wr 149 m_p S.A.42
a =	10,8	10,3	12,1	12,8
b =	11,6	11,0	12,4	13,3
c =	12,5	11,4	12,9	13,7
d =	-	11,9	13,4	14,2

Commission 27 of the I. A. U.
Information Bulletin on Variable Stars
Number 7

Konkoly Observatory
Budapest
19 March 1962

NEW BRIGHT VARIABLE STAR

According to our photoelectric observations the star BD + 40°4502 (= PD 12356 = HD 203712 = No 102090 in Moscow Catalogue of Stars Suspected of Variability) appears to be a semiregular or irregular variable. Spectral type : gM6(WILSON), brightness : $7^m,24$ (HR). The comparison star used was BD + 40°4503, B5, $7^m,42$ (HR). The visual brightness of the variable declined from $7^m,53$ on October 11, 1961 to $7^m,87$ on October 31, and thereafter increased with marked fluctuations to $7^m,49$ on December 18, 1961. On November 15, 1960 the brightness of the variable was $7^m,42$. The star was suspected of variability already by PICKERING (HA 45) and by MÜLLER and KEMPF (Potsdam Publ. 17).

H. v. SOCHER
Universitäts-Sternwarte
W i e n

SZ LYNCIS

This bright variable (BD + 44°1718, $8^m,8$) was recently shown by SCHNELLER (AN 286,102.1961) to be an RR Lyrae-star belonging to the short-period group. In February and March, 1962 about 600 observations were obtained in blue and yellow colours with a photoelectric photometer coupled to our 24-inch reflecting telescope. These observations, combined with Schneller's epochs, provide the ephemeris:

Max.helio. = J.D. 2437718,5568 + $0^d,12053487$. E.

The light-range is $0^m,67$ in blue and $0^m,54$ in yellow. No beat-phenomenon is apparent in the light-variations of the star, but the light-curve shows minor deviations from epoch to epoch.

K.GEFFERTH and B.SZEIDL
Konkoly Observatory
Budapest

THE PERIOD OF SZ LYNCIS

Using SCHNELLER's photoelectric observations (AN 286,102,1961) and the epochs of maxima and minima published by SOLOVIEV (Astr.Circ. USSR 159,17) and ZESSEVITCH (Astr.Circ.USSR 170,16) the following formula was obtained for times of maximum light:

Max = 2437368,403 + 0^d,12053473. E, P^{-1} = 8,29636404

The epochs of minima given by Zessevitch were transformed to epochs of maxima by addition of a correction $+0^d$,050 (to the visual minima a correction $+0^d$,045 was applied).

The residuals corresponding to the formula above, listed under the heading O - C, are, in general, large owing to the low accuracy of the epochs.

Maxima		O - C	Maxima		O - C
2433357,20	S	$+0^d$,012	2434414,20	S	-0^d,017
3392,20	S	-0,003	4440,359	Z	-0,014
3946,549	Z	+0,006	4445,21	S	+0,015
3947,607	Z	-0,020	5592,339	Z vis.	+0,015
4034,18	S	+0,009	5593,392	Z "	-0,017
4041,522	S	-0,002	7368,403	Sch pe.	0,000
4064,437	Z	+0,011			

S = Soloviev, Z = Zessevitch, Sch = Schneller

P.WOTNI

Sternwarte
Babelsberg

COMMISSION 27 OF THE I. A. U.

INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 8

Konkoly Observatory
Budapest
9 April 1962

A REMARK ON THE MULTIPERIODICITY OF SOME PULSATING STARS

In connection with the problem of multiperiodicity of some pulsating stars we propose the interpretation of the observed phenomena by means of modulated oscillations (similar to the modulations introduced in radiotechnique). Let us consider the following simple example:

The oscillation f(t) with the frequency α in the form

$$f(t) = A \cos 2\pi\alpha t$$

is changed by means of modulation with the frequency β to:

$$F(t) = (A+A_1 \cos 2\pi\beta t) \cos 2\pi[\alpha t + B\sin 2\pi\beta t].$$

This modification is equivalent to the amplitude modulation from A to $A+A_1 \cos 2\pi\beta t$ with the frequency modulation from αt to $\alpha t + B\sin 2\pi\beta t$. When looking for periodicity of such modulated oscillation we must represent it by means of the series:

$$F(t) = a_0 \cos 2\pi\alpha t + a_1 \cos 2\pi(\alpha+\beta)t + a_2 \cos 2\pi(\alpha+2\beta)t + \ldots$$
$$b_1 \cos 2\pi(\alpha-\beta)t + b_2 \cos 2\pi(\alpha-2\beta)t + \ldots$$

where

$$a_0 = J_0(2\pi B)A$$
$$a_1 = J_1(2\pi B)A + 1/2\left[J_0(2\pi B) + J_2(2\pi B)\right]A_1;$$
$$a_2 = J_2(2\pi B)A + 1/2\left[J_1(2\pi B) + J_3(2\pi B)\right]A_1;$$
$$\ldots\ldots$$
$$b_1 = -J_1(2\pi B)A + 1/2\left[J_0(2\pi B) + J_2(2\pi B)\right]A_1$$
$$b_2 = J_2(2\pi B)A - 1/2\left[J_1(2\pi B) + J_3(2\pi B)\right]A_1$$
$$\ldots\ldots$$

and $J_i(2\pi B)$ denote Bessel functions. It is clear that by means of modulation we get the whole system of frequences of the type:

$$\alpha \pm k\beta, \quad k = 0,1,2 \ldots$$

with different amplitudes.

We are of the opinion that many of the observed phenomena can be regarded as the effect of the high frequency oscillation α with a suitable modulation in low frequency β .

The above considerations can be applied to the following stars:

1. The long period variations of RR Lyr according to A.M. Fringant [1] can be regarded as amplitude and frequency modulation: $\alpha = \frac{1}{P_0}$, $\beta = \frac{1}{P_1}$, $P_1 = 72\ P_0$.

2. According to one of our publications [2] the variations of 12 (DD) Lac can be described not by 2 or more short periods but by means of one short period P_s with the modulation in a long period P_L. The modulation exhibits the character of amplitude and frequency modulation and the long period P_L was found in the variations of many physical properties of the star.

3. The variations of ν Eri according to A. van Hoof [3] are represented by means of a great number of short periods. Some of them can be again regarded as the result of the modulation of the fundamental frequency $\alpha = \frac{1}{P_0} = \omega_0 = \omega_{24}$:

		β
$\alpha - 2\beta = \omega_{02}$	= 5,6375	
$\alpha - \beta = \omega_{13}$	= 5,7019	0,0644
$\alpha = \omega_0$	= 5,7634	0,0615
$\alpha + \beta = \omega_{35}$	= 5,8275	0,0641

The mean value of $\beta = 0,0633$ corresponds to the long period $P_L = 15^d,790$ and the value of 2β to the period $P_b = 7^d,895$. The last one is equal to the beat period given in paper [3]. Probably also other frequences can be added to the same scheme:

$$\alpha + 2\beta = \omega_{46} = 5,8994$$
$$\alpha + 3\beta = \omega_f' = 5,9439$$
$$\alpha - 3\beta = \omega_f = 5,5866.$$

We can remark that this method of representation of complicated variations observed in some variable stars (e.g. with the Blashko-effect) requires from the theoretical point of view the explanation of only two frequences α and β.

References:

[1] Anne-Marie Fringant - Journal des Observat. 44. p. 187, 1961.

[2] A. Opolski and T. Ciurla - Acta Astronomica 11 p. 231, 1961.

[3] A. van Hoof - Z. Astrophys 55 p. 106, 1961.

Antoni OPOLSKI and Tadeusz CIURLA
Wroclaw Astronomical Observatory
Poland

COMMISSION 27 OF THE I. A. U.

INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 9

Konkoly Observatory
Budapest
15 May 1962

NEW BRIGHT ECLIPSING VARIABLE STARS

BV 241 = BD + $73^{\circ}890$ ($8^{m}.5$) = HD 190020 (F5) :

Min = JD 2426444.475 + $1^{d}.682000$. E

BV 289 = BD + $51^{\circ}2997$ ($9^{m}.0$) :

Min = JD 2426355.233 + $2^{d}.346656$. E

BV 307 = BD + $47^{\circ}781$ ($8^{m}.5$) :

Min = JD 2427033.120 + $8^{d}.038044$. E

BV 318 = BD + $14^{\circ}4684$ ($8^{m}.8$) = HD 207741 (A3) :

Min = JD 2426647.345 + $2^{d}.556138$. E

BV 320 = BD - $20^{\circ}6454$ ($8^{m}.5$) = HD 213863 (F0) :

Min = JD 2429881.310 + $0^{d}.5089951$. E

BV 332 = BD + $29^{\circ}2423$ ($8^{m}.5$) = HD 117777 (G5) :

Min = JD 2426002.700 + $0^{d}.8424635$. E

BV 342 = BD + $33^{\circ}4252$ ($8^{m}.0$) = HD 204038 (A3) :

Min = JD 2426029.660 + $0^{d}.7858620$. E

BV 361 = BD + $11^{\circ}1722$ ($8^{m}.7$) = HD 65025 (A3) :

Min = JD 2426770.350 + $25^{d}.5950$. E

BV 374 = BD + $67^{\circ}1485$ ($7^{m}.8$) = HD 217224 (B8) :

Min = JD 2425628.250 + $4^{d}.908756$. E

BV 375 = BD - $12^{\circ}294$ ($8^{m}.8$) = HD 9808 (A2) :

Min = JD 2426619.360 + $1^{d}.939315$. E

BV 376 = BD - $7^{\circ}277$ ($9^{m}.2$) = HD 10354 (A0) :

Min = JD 2426308.350 + $6^{d}.645088$. E

BV 383 = BD - $3^{\circ}5426$ ($9^{m}.5$) = HD 211705 (A0) :

Min = JD 2426929.515 + $2^{d}.159675$. E

BV 387 = BD + $55^{\circ}2920$ ($9^{m}.3$) :

Min = JD 2425883.850 + $11^{d}.12576$. E

The light curves will be published in the Bamberg publications.

W.STROHMEIER
Remeis-Sternwarte
Bamberg

COMMISSION 27 OF THE I. A. U.

INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 10

Konkoly Observatory
Budapest
18 May 1962

MULTIPLE PERIODS IN 15 CANIS MAIORIS

According to C.R. Lynds, J. Sahade and O.Struve (Ap.J., 124,321 p, 1956) the radial velocity variation of 15 CMa obeys a main period of $0^d.184558$ (2K = 6.5 km/sec). Their computed mean RV curve reveals, however, in a striking manner the existence of a secondary period of exactly half that length and with a corresponding amplitude of 2.5 km/sec.

Such an exact 2:1 ratio has been found to exist between the periods $P_{1,3}$ and P_2 (s. foot-note+) in each of the stars Nu Eri (1) and Beta Cep (2), which are the immediate neighbours of 15 CMa when the Beta CMa stars are listed according to period length. Taking into account the similarity in behaviour of the group members, the two periods discovered by Lynds et al. must be considered as the star's $P_{1,3}$ and P_2 respectively.

Postulating further that the ratios

$$P_{1,3} = 1.01 \times P_o \; ; \; P_1 = 0.675 \times P_o \; ; \; P_2 = 0.505 \times P_o \text{ etc.}$$

+ The symbol P_i is used to denote the free pulsation in the fundamental mode (i=o), the first overtone (i=1), the second overtone (i=2) etc., while the symbol $P_{i,j}$ denotes the difference oscillation between P_i and P_j.

(1) A. van Hoof, Zeitschr. f. Astroph., 53,106 S., 1961
(2) id. ibid. (in press)

found in both Nu Eri and Beta Cep hold also good for the present star, we are able to compute the various other periods that must be expected in 15 CMa. In this manner we found:

P_o = o.^{d}182586	(6.o km/sec)	$P_{o,2}$ = o.^{d}186663	(5.3 km/sec)
P_1 = .123154	(2.5 ")	$P_{1,3}$ = .184558	(6.5 ")
P_2 = .o92279	(2.o ")	$P_{2,4}$ = .182586 = P_o	
P_3 = .o746o6	(o.3 ")		
P_4 = .o62o115	(1.5 ")		

The amplitudes added are those of the mean curves computed from Lynds' Sahade's and Struve's observations for each of the periods listed.

It should be stressed, however, that this material is quite inadequate for the determination of the amplitudes of the longer periods $P_o, P_{1,3}$ etc. This material has been collected in three groups of three consecutive nights and the mean epochs of these groups are separated by intervals which by accident correspond roughly to an integer number of each of the periods $P_o, P_{o,2}$ and $P_{1,3}$, so that the phase relation of these three oscillations is practically the same in the three series of nights. Consequently the mean RV curves computed with these three periods must practically have the same amplitude, which is simply the resultant amplitude of the superposition in a particular phase relation of the three component curves, the amplitudes of which remain unknown.

It is further obvious that the scantiness of the observations does not permit the accurate determination of any period or amplitude.

With this restriction in mind we want newertheless to mention the weakness of the oscillation P_3. The same weakness was noticed earlier in Nu Eri and in Beta Cep.

A. VAN HOOF
University of Louvain
Belgium

Ny. 1105/1962. - Statisztikai Kiadó Vállalat sokszorosító üzeme
Budapest, II., Keleti Károly u. 18/b.

COMMISSION 27 OF THE I. A. U.

INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 11

Konkoly Observatory
Budapest
20 June 1962

NEW BRIGHT ECLIPSING VARIABLE STARS

BV 179 = BD + $48^{\circ}162$ ($9^{m}.2$) :

Min = JD 2426601.475 + $1^{d}.745950$. E

BV 305 = BD + $52^{\circ}483$ ($9^{m}.5$) :

Min = JD 2426295.450 + $0^{d}.931255$. E

BV 384 = BD + $56^{\circ}2885$ ($9^{m}.5$):

Min = JD 2426350.375 + $0^{d}.772002$. E

The light curves will be published in the Bamberg publications.

W.STROHMEIER
Remeis-Sternwarte
Bamberg

COMMISSION 27 OF THE I. A. U.

INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 12

Konkoly Observatory
Budapest
28 June 1962

377. 1943 SAGITTAE

C. Richter of Sonneberg Observatory has discovered the star brightening continuously since 1890 at a rate of $0^m.05$ per year in photographic magnitude (MVS 414).

Further pecularities are:

1. The disk-shaped structure of the photographic image of the object on both red and blue sensitive charts of the Palomar Sky Survey Atlas. The diffraction pattern is entirely missing, just as in the case of planetary nebulae for instance. The diameter of the disk is roughly 30 seconds of arc.

2. The star undergoes rapid light changes of small amplitude ($0^m.1$) and short duration (rise in 2^d). Our photoelectric observations seem to show that the rise to the bursts begins first in the short wave region of the spectrum while in the visual range the brightness is still declining. Our restricted material shows two such cases.

3. Relative to the comparison star BD $+19^\circ$ 4314 (spectral type near A0 according to Sonneberg objective prism plates) the mean brightnesses of the variable during the first half of June 1962 are:

$$v = -0^m.40$$

in the system of our instrument. The system should not be very different from the international UBV system. The amplitudes of light variation in the three colours were $0^m.10$, $0^m.12$, and $0^m.10$ respectively.

W. FÜRTIG and W. WENZEL
Sonneberg Observatory
of
German Academy of Sciences

COMMISSION 27 OF THE I. A. U.

INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 13

Konkoly Observatory
Budapest
10 August 1962

V 536 CYGNI

8 minima observed on plates taken by the 200/300/300 mm Schmidt camera show that the period of V 536 Cyg given in GCVS (Moscow 1958) has to be halved. New elements have been derived from these 8 minima and Perova's 5 minima (Per. Zv. 7.258, 1950):

$$\text{Min.} = \text{J.D. } 2428759.411 + 6^{d}.01020 \cdot E$$

$A = 11^{m}.8 - 14^{m}.1$ pg, $D = 0^{d}.62$, $d = 0^{d}.06$. The value of d is uncertain.

P. AHNERT
Sonneberg Observatory

REQUEST FOR PHOTOELECTRIC OBSERVATIONS OF AC AND

This RR Lyrae-type variable shows considerable light-curve variations. In 1958, 1960 and especially in 1961 we have obtained a great number of photoelectric observations of the star at our 24 inch reflecting telescope. These observations cast doubts upon the reality of the two combining periods of $0^{d}.525$ and $0^{d}.711$ generally accepted up to now. The true fundamental period of the variable is probably longer than these ones. This is supported by the fact that according to Preston (ApJ 130, 507, 1959) the spectral characteristics of AC And are similar to those of KP Cyg with a period of $0^{d}.856$.

The problem of the star can be solved only by a wide-range cooperation. Those who are ready to participate in this programme are kindly requested to inform me about their willingness. I suggest as the limiting dates of the cooperative observations September 20 and October 8, 1962.

L. DETRE
Konkoly Observatory
Budapest

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

NUMBER 14

Konkoly Observatory
Budapest
23 October 1962

UN MAXIMUM DE LA VARIABLE DX AND

La variable DX And (AR:$23^h24^m57^s$ D:+$43^o11'$.1900,0) mp max. 11. min. 16, du type UG (soust-type UV Per), a été observée á son maximum sur trois plaques exposées a la station astrophotographique de Mainterne (France) aux dates suivantes:

		mp*
1962 Octobre 4,848	(T.U.)	11,6
Octobre 4,931	-	11,7
Octobre 5,802	-	12,0

Les observations en notre possession font soupconner que la période de la variable se tient probablement autour de 540j. Dr.G.Romano, qui est le découvreur de cette variable et á qui j'avais communiqué, le 5 Octobre, mon observation du 4 Octobre sur ce maximum, m'écrit qu'il a pu mesurer l'étoile sur des plaques antérieurement obtenues par un de ses correspondants, M. Perissinotto, aux dates suivantes:

J.D. 2437928=20 Septembre 1962	19^h56^m	(T.U.)	mp	13,8 inv.
936=28 Septembre -	20 52	-		10,9
939= 1 Octobre -	20 58	-		11,2

D'autre part, le Dr.Romano m'avait fait savoir qu'il a pris lui-même un cliché posé 5 min. le 9 Octobre 1962 à 22^h45 TMEC, montrant DX And autour de mp 13.

Une note sera publiée dans les "Memorie della S.A.It".

R. WEBER
8, Rue Blomet, 8
Paris (15^e)

* Étoiles de comparaison Romano

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

NUMBER 15

Konkoly Observatory
Budapest
28 October 1962

NEW ERUPTION OF NOVA VY AQUARII

On patrol plates from August 8 to September 25, 1962, the following phot. brightness was estimated:

JD 243 7885,46	-	JD 243 7907.46	$10^m.35$
.51	-	7909.44	$10^m.75$
7902.43	$9^m.75$	.48	$10^m.80$
7903.44	$9^m.85$	7910.42	$10^m.95$
.49	$10^m.00$	.47	$11^m.20$
7904.43	$10^m.20$	7933.37	-
.48	$10^m.25$	.42	-

It is suggested that the maximum was reached about August 20, with the brightness 9^m.

W. STROHMEIER

Remeis Sternwarte
Bamberg

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

NUMBER 16

Konkoly Observatory
Budapest
21 November 1962

NOVA VY AQUARII

Estimates of this recurrent nova (see IAU Circ. 1808 and IAU Inf. Bull. on Variable Stars No 15.) on Sonneberg plates show that the star was still invisible on J. D. 2437897.4 (1962 August 20) and 2437898.4 (August 21). The limit of the plates is only about 13^m because of the low altitude and the position of the star near the edge of the plates. Further observations between August 26 and September 3 confirm Dr.Strohmeier's estimates.

H. HUTH
German Academy of Sciences
Sonneberg Observatory

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

NUMBER 17.

Konkoly Observatory
Budapest
12 December 1962

NEW BRIGHT VARIABLE STARS

BV 389 =	BD + 5°	3700	($9^m.1$)	, M5
390 =	+ 15	3562	(9.4)	, F8
392 =	+ 54	2187	(7.5)	= HD 185 695 (Ma)
393 =	+ 55	2248	(8.9)	= HD 186 715 (Mb)
394 =	+ 42	3471	(8.9)	
395 =	+ 12	4143	(9.4)	
397 =	- 0	3947	(9.2)	
398 =	+ 15	4134	(9.5)	
399 =	+ 41	3991	(8.2)	= HD 200 840 (Ma)
400 =	+ 39	4506	(9.0)	
402 =	+ 13	4709	(8.7)	= HD 204 307 (Mb)
404 =	+ 20	5027	(6.3)	= HD 207 932 (Mb)
406 =	+ 18	5067	(7.3)	= HD 216 724 (Mb)
407 =	+ 30	4877	(9.2)	
408 =	+ 54	3015	(9.2)	
409 =	+ 41	4856	(8.7)	

Details will be published in the Bamberg publications.

W.STROHMEIER
Remeis-Sternwarte
Bamberg

COMMISSION 27 OF THE I. A. U.

INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 18.

Konkoly Observatory
Budapest
30 December 1962

NOVA OR SUPERNOVA

A very interesting star was discovered recently by V. Satyvaldiev on old sky-patrol plates of the Astrophysical Institute of the Tadjik Academy of Sciences in Dushanbe.

The star's position is: RA = $16^h51^m54^s$, Decl. = + $77^\circ12'.3$ (1900.0) $l^{II} = 109^\circ.6$, $b^{II} = + 33^\circ.2$. Before September 8, 1956 the star was invisible (plate limit $12^m.5$). On September 24, 1956 the star had a magnitude about 6^m and in September 1957 its brightness was about $11^m.5$. The star became later invisible again (plate limit $12^m.5$).

The star was estimated by Y. N. Efremov on a plate of the Sternberg Institute taken on May 22, 1957; its magnitude was about 10^m. The star cannot be seen on the plate taken by Y. N. Efremov and myself on December 14, 1962 (plate limit 16^m) and it is also invisible on the Palomar Sky Atlas Chart No. 1433-0 of May 19, 1955 (limiting magnitude $21^m.2$).

The photometric behaviour of this star is very similar to those of Type I supernovae. Considering the nature of this interesting star the following four assumptions can be made.

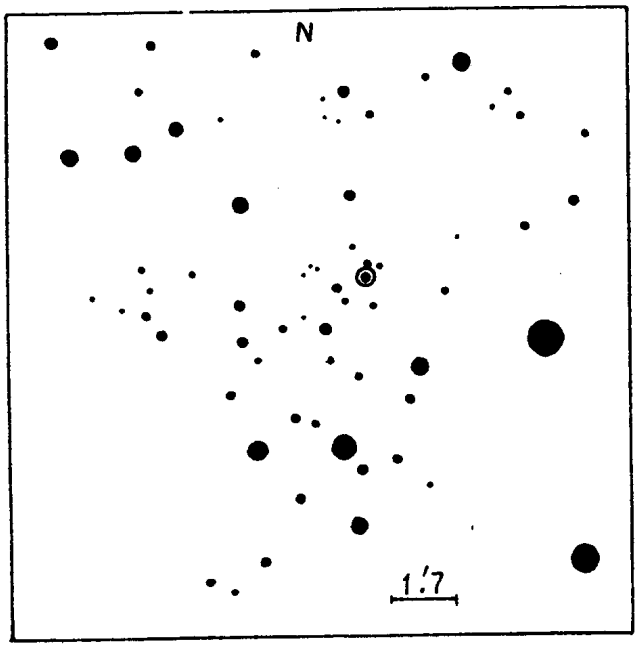
1./ The star may be a slow galactic nova with absolute magnitude M = - 6. The very large amplitude (15^m) and the great distance from the galactic plane (about 1 - 2 kps) are in disaccordance with this assumption.

2./ The star may be an unusual faint galactic supernova with M = - 12. The great distance from the galactic centre (about 35 - 45 kps) contradicts to this assumption.

3./ The star may be a normal Type I supernova with M = - 18. In this case its distance would be about 200-300 kps. But no bright galaxies can be seen in the star's neighborhood. Hence the star may be an intergalactic supernova.

4./ The star may be a normal Type I supernova with M = 0 18 in a very faint galaxy similar to the Sculptor- or Draco-systems. If the distance modulus m- M is about 24^m, the brightest stars in the system would not be visible on the Palomar Charts.

The accompanying map shows the star's surroundings.



Moscow, December 18, 1962

B. V. KUKARKIN
Sternberg Astronomical
Institute

Ny. 8/1963.

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 19

Konkoly Observatory
Budapest
30 January 1963

NOVA URSAE MINORIS 1956

(1900.0: RA $16^h51^m57^s$, Decl. $+77^\circ12'.3$)

The star discovered by Satyvaldiev (s. Inf. Bull. on Var. Stars No.18) could be observed on 53 sky-patrol plates between December 28, 1956 and July 19, 1958. Its brightness decreased very slowly with small irregular fluctuations. The mean photographic magnitude was at the end of 1956 $9^m.0$, in the middle of 1957 $9^m.5$, then it dropped somewhat faster to $11^m.0$ in September 1957. At the beginning of 1958 it reached $12^m.0$ and became weaker than $13^m.0$ in May 1958.

I believe Prof. Kukarkin's first assumption in No. 18 of this Bulletin is the most probable. The high galactic latitude ($+33^\circ$) is not inconsistent with the assumption that the star is a galactic Nova. Nova Arietis (1854) lies at -38°, Nova T Coronae Borealis even at $+49^\circ$.

Also the large amplitude has a predecessor. Nova Cygni was before its outburst 17^m and reached $1^m.5$. Therefore the amplitude of this galactic Nova has been $15^m.5$ or more.

If the star would be a type I Supernova with the absolute magnitude -18^M, then it must have flashed in a very faint member of the local system. The brightest stars of this galaxy must be fainter than -3^M. Furthermore a type I Supernova becomes fainter by a half in 55^d. Since the star had $9^m.0$ at the end of 1956, it should have reached about 16^m in the middle of 1958, but it was still about 13^m at this time.

The light-curve observed at Sonneberg resembles the behaviour of Nova Aquilae in the first three months after its eruption. Nova Aquilae became fainter by 2^m in 200^d, Nova Ursae Minoris by 4^m in 500^d, both with small irregular fluctuations. Assuming that the observation of September 24, 1956 does not show the true maximum but the magnitude about 5^d after it, the brightness of the Nova could have

been about $3^m.5$ near September 19, 1956 - similarly to Nova Aquilae, which was during its maximum about $5^m.5$ brighter than 90^d later. But this supposed maximum could hardly be observed because full moon happened at September 20, 1956.

Summing up all these reasons I suggest that the Nova Ursae Minoris 1956 was a galactic Nova with somewhat unusual but not impossible position and amplitude.

Further information will be given in the MVS.

P. AHNERT
Sonneberg Observatory

A NEW BRIGHT ECLIPSING VARIABLE

BV 412 = BD + 69^o389 ($7^m.7$) = HD 48049 (A0)

Min = JD 2426350.640 + $0^d.771345.E$

Details in the Bamberg Publications.

W. STROHMEIER
Remeis Observatory
Bamberg

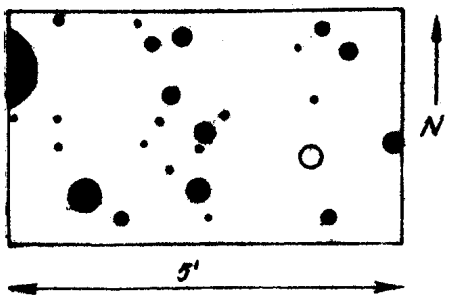
Ny.316/1963. - Statisztikai Kiadó Vállalat sokszorosító üzeme
Budapest, II., Keleti Károly u.18/b.
Felelős vezető: Hajdu Györgyné

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 20

Konkoly Observatory
Budapest
7 February 1963

UNUSUAL NEW VARIABLE S 7901 CYGNI

AR = $20^h21^m.9$ Decl. = $+53^\circ18'$ 1855,0
$20\ 23.1$ $+53\ 27$ 1900.0



When comparing 2 plates 1953 March 20/Sep 3 from the Zeiss-Triplet 170/1200 mm, centered at 33 Cygni, I found a star with a rapid variability of about $1^m.5$, giving at first sight the impression of a Cluster type variable. As this occured on the 19. pair of plates compared, the probability that such an object might have escaped discovery was very small. The further investigations on more than 350 plates had a surprising result: The full range variations from $14^m.8$ to $16^m.5$, often from one day to the other, are only shown in March and April, 1953 (16 plates). The star is faint on a single plate of Jan. 13/14, 1953, and a few minima with a range of 1^m are observed in May and June, but no variability in 1952 (31 plates) and in the second half of the year 1953 (35 plates). From Dec. 6, 1961, to Dec. 2, 1962, there are 107 plates taken with the new Zeiss-Astrograph 400/1600 mm, showing only very rare slight variations with a range of scarcely more than $0^m.2$, the star being generally at maximum light. No plates are available from the years 1932, 35-38, 40-42, 55-57.

There is no doubt that the variable belongs to the RW Aurigae type. It is known that the variability of these stars can be temporarily interrupted at any brightness, but as to the extent of these periods the new variable seems to be unique.

Attention may be drawn in this connection to some stars mentioned in the catalogues as invariable, having been announced as variables, even by experienced investigators, but never being confirmed (RW Aql as an example). It seems not improbable that at least some of these objects are of the type of S 7901 Cyg.

C. HOFFMEISTER
Sonneberg Observatory

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 21

Konkoly Observatory
Budapest
28 February 1963

NOUVELLES ÉTOILES VARIABLES

Wr	AR (1900,0)	D	max	m_p min	type
119	$23^h 48^m 17^s$	$+ 46^\circ 20'$	12,5	13,2	I
122	5 58 35	+ 48 23	10,4	11,2	E
123	5 49 55	+ 43 27	12,3	13,3	C
125	12 38 50	+ 39 16	11,2	12,0	
126	2 17 07	+ 32 34	10,0	10,9	I
127	12 42 58	+ 34 56	11,4	12,1	
128	23 39 28	+ 44 10	11,6	12,3	
135	5 41 16	+ 43 03	9,4	10,1	E
136	23 22 19	+ 45 01	11,4	12,3	C
137	2 17 12	+ 36 33	12,0	12,9	C (?)
138	1 57 32	+ 32 09	11,2	12,1	E
139	2 18 34	+ 32 50	11,8	12,5	C (?)

Remarques

119. = n°1858 de la S.A. 43 Bgd. Sp Mb. Variabilité confirmée par Romano
122. = BD + 48°1340 /m_v = 9,5/.
126. = BD + 32°430 /m_v = 9,0/.
128. = BD + 43°4536 /m_v = 9,4/. Variabilité confirmée par Romano.
135. = BD + 43°1355 /m_v = 8,9/ = n°282 de la S.A. 25 Bgd. Sp B5:p.

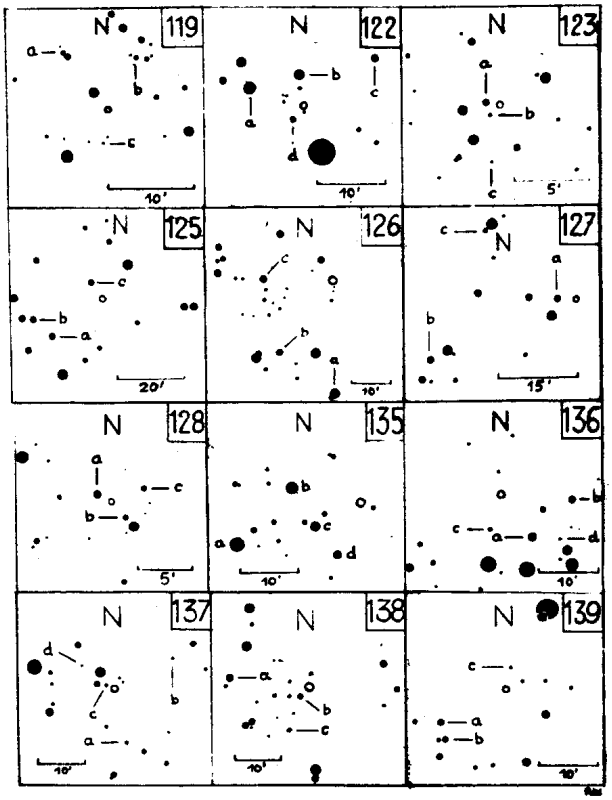
Étoiles de comparaison

	Wr 119 m_p (1)	Wr 122 m_p	Wr 123 m_p	Wr 125 m_p	Wr 126 m_p	Wr 127 m_p
a =	12,3	10,1	12,1	11,1	9,7	11,3
b =	12,7	10,6	12,6	11,5	10,4	11,7
c =	13,2	11,0	13,3	12,0	11,0	12,2
d =	-	11,6	-	-	-	-

	Wr 128 m_p	Wr 135 m_p	Wr 136 m_p	Wr 137 m_p	Wr 138 m_p	Wr 139 m_p
a =	11,5	9,1	11,2	12,0	11,2	11,6
b =	12,0	9,6	11,5	12,2	11,6	11,9
c =	12,3	10,1	11,9	12,6	12,1	12,5
d =	-	10,5	12,3	12,9	-	-

(I). Wr 119, Wr 128 et Wr 136 d'après la S.A. 43. (Bgd).
Wr 122, Wr 123 et Wr 135 d'après la S.A. 25. (Bgd).
Wr 126, Wr 137, Wr 138 et Wr 139 d'après H.A. $2^n + 31^o30'$.
Wr 125 d'après la S.A. 32.
Wr 127 d'après la S.A. 57.

R.WEBER
Station Astro-Photographique
de Mainterne
(Eure-et-Loir)
France



Ny.483/1962. - Statisztikai Kiadó Vállalat sokszorosító üzeme
Budapest,II., Keleti Károly u.18/b.
Felelős vezető: Hajdu Györgyné

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 22

Konkoly Observatory
Budapest
25 March 1963

A NEW BRIGHT ECLIPSING VARIABLE

BV 382 = BD + 70° 1183 ($7^m.2$) = HD 205 372 (A0)
Min = JD 242 6497.425 + $0^d.483$ 2075. E
Details in the Bamberg Publications.

W. STROHMEIER
Remeis Observatory
Bamberg

AT HERCULIS

According to GCVS (Moscow 1958) the star has been classified as a variable of RR Lyrae-type with a period of $0^d.33$. About 350 observations were obtained in blue and yellow colours with a photoelectric photometer attached to our 24-inch reflecting telescope between J.D. 2436999 and 2437148 on 9 nights. Two neighbouring stars were used for comparison. In spite of the fact that our longest continuous series of observations exceeded 40 per cent of the above mentioned period, no definitive light variation could be discovered.

At our request a spectrogram taken with the 48-inch telescope at Haute Provence (France) was kindly placed at our disposal by Mr. F. Spite. The dispersion employed was 80 A/mm. Based on the relative strengths of spectral lines the star has been classified in the MK system as K0 V, consequently it cannot be referred to the pulsating variable stars. There is no trace of emission in the spectrum.

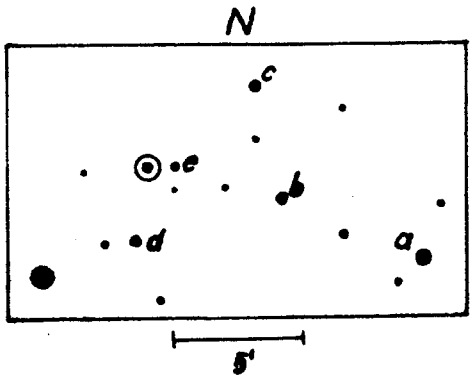
E. ILLÉS - ALMÁR
Konkoly Observatory
Budapest

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 23

Konkoly Observatory
Budapest
18 April 1963

ON THE LIGHT VARIABILITY OF THE OBJECT IDENTIFIED WITH THE RADIO SOURCE 3 C – 273

Examination of 44 plates of the Sternberg Astronomical Institute at Moscow obtained during 1896-1960 and also of the Wolf-Palisa and Palomar charts shows that the star-like object identified with the radio-source 3 C - 273+ is variable within the limits $12^{m}.0$-$12^{m}.7$ (pg). Most of the plates were measured by means of an iris-photometer. Also plates obtained during April-June show the possibility of smaller light variations with amplitudes of $0^{m}.2$-$0^{m}.3$ and lasting a few days.



a $12^{m}.29$ pg
b 12.56
c 12.81
d 13.04
e 13.75

9 April 1963

A.S. SHAROV
Yu.N. EFREMOV
Sternberg Astronomical Institute

+ M.Schmidt, Nature 197, 1040, 1963.

COMMISSION 27 OF THE I. A. U.

INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 24

Konkoly Observatory
Budapest
18 April 1963

A NEW BRIGHT ECLIPSING VARIABLE

BV 267 = BD + 46° 985 ($7^m.7$) = HD 33853 (B9)
Min = JD 242 6650.570 + $0^d.684315$. E
EB, Amplitude $0^m.6$; details in the Bamberg Publications.

W. STROHMEIER
Remeis Observatory
Bamberg

NEW U GEM - TYPE VARIABLE S 7854 CYG

1855.0	$19^h57^m.7$	+ 56°33'
1900.0	19 58.7	+ 56 40

This relatively bright U Gem-star has been found on plates taken with the Astrograph 400/1600 mm. The discovery maximum (1962 Oct 1-10) is observed as follows:

243	7935.41	[$17^m.8$	5 plates	
	7936.37	[17.7	5 "	
	7938.40	[14.0	1 "	1/
	7939.46	13.3	1 "	
	7939.53	13.1	3 "	
	7940.47	13.2	3 "	

1/ Sky Patrol plate

7941.41	13.3	3 plates
7942.51	13.4	4 "
7944.52	13.6	5 "
7946.52	13.7	3 "
7947.58	13.7	2 "
7948.61	13.7	1 "
7959.41	[17.9	5 "
7960.43	[17.9	4 "

Obviously the variable belongs to the subtype with long intervals represented by UV Per. An investigation by Mr. R. Tschaepe on all plates available for the regionyielded only two more maxima: 1931 Nov. 9 and 1952 May 17. On Palomar Mt. Chart the variable is distinctly blue in minimum ($\sim 18^m$). Details and chart will be given in Mitteilungen über veranderliche Sterne.

C. HOFFMEISTER
Sonneberg Observatory

Ny. 815/1963. - Statisztikai Kiadó Vállalat sokszorositó üzeme
Budapest, II., Keleti Károly u. 18/b.
Felelős vezető: Hajdu Györgyné

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 25

Konkoly Observatory
Budapest
14 May 1963

SUPERNOVA IN IC 3112

The supernova in IC 3112 (RA = $12^h15^m18^s$, Decl. = $+26^\circ18'.6$, 1950.0) was discovered on the plate taken at the Crimea-station on 19th February 1963 (U.T. $23^h20^m6^s$). The supernova is situated 10'' east and 18'' south of the nucleus. The blue magnitude is $15^m.8$. According to Dr. W.J. Luyten's private communication the supernova is visible on Palomar plate taken on the early morning of 1 March 1963. The red magnitude is about 16^m. On the Crimea plates taken on 1 February and 30 March the supernova is invisible (plate limit about 17^m).

Moscow, 6 May 1963

N. KUROČKIN
Sternberg Astronomical Institute

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 26

Konkoly Observatory
Budapest
16 May 1963

THE ELEMENTS OF FIVE ECLIPSING VARIABLES

BV 104 (Her) = BD + $34^{\circ}2831$ ($9^{m}.5$) , A0

Min = JD 242 5687.565 + $0^{d}.912\ 729$. E; EA , Ampl. $0^{m}.55$

BV 135 = AD Boo = BD + $25^{\circ}2800$ ($9^{m}.1$), F8

Min = JD 242 5738.440 + $1^{d}.034\ 399$. E; EB, Ampl. $0^{m}.6$

BV 152 (Tau) = BD + $20^{\circ}685$ ($9^{m}.4$) , A9:

Min = JD 242 6350.355 + $0^{d}.474\ 012$. E; EB, Ampl. $0^{m}.5$

BV 211 (Cep) = BD + $80^{\circ}112$ ($9^{m}.2$)

Min = JD 242 6427.575 + $5^{d}.516\ 72$. E; EB, Ampl. $0^{m}.6$

BV 328 (Cas) = BD + $54^{\circ}\ 49$ ($7^{m}.7$) = HD 1873 (B9)

Min + JD 242 5503.435 + $0^{d}.602\ 625$. E; EB, Ampl. $0^{m}.3$

Details in the Bamberg Publications.

W. STROHMEIER
Remeis - Observatory
Bamberg

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

Konkoly Observatory
Budapest
18 May 1963

3 C 273

In No. 23 of these Bulletins the light variation of the radio source 3C 273 was announced by Dr. EFREMOV and Dr. SHAROV from the Sternberg Astronomical Institute, Moscow. According to a letter by Dr. Harlan J. SMITH from the Yale University Observatory (New Haven Conn. U.S.A.), he and Miss Dorrit HOFFLEIT found - independently of the above named - in March the light of this object to be variable. They estimated about 600 magnitudes of it on Harvard plates and sent a summary of these observations to the British journal Nature on 9 April. Dr. SMITH asks individuals having plates from which magnitudes of 3 C 273 can be estimated to be so kind and to communicate the magnitudes to him (or the existence of the plates) for the master light curve which he is assembling on IBM cards.

So far he has about 1400 observations from Harvard plates but in particular the years before 1920 and after 1952 are in desperate need of more observations.

As Dr. SMITH writes, he interprets the several modes of variations as indicating that the luminous source in 3C 273 may in fact be a hyper-star of around 10^6 and 10^7 solar masses, pulsating under gravity. This interpretation is consistent with the photometric observations and furthermore relates to the recent remarks by HOYLE and FOWLER to the effect that a class of hyper-stars in this mass range may exist (MN 125 No. 2; Nature, 9 February 1963).

L. DETRE
editor

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 28

Konkoly Observatory
Budapest
20 May 1963

SUPERNOVA IN NGC 4178

Mrs. Zaytsheva at the Sternberg Southern Station discovered on plates taken on May 14 and 16 a Supernova preceding 36 seconds of arc south the centre of NGC 4178. Photographic magnitude 14,5. Nine spectra had been obtained.

Moscow, 17 May 1963

B.V. KUKARKIN
Sternberg Astronomical Institute

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 29.

Konkoly Observatory
Budapest
10 June 1963

NOVA URSAE MINORIS 1956

This recently discovered object (s. Inf. Bull. on Var. Stars No. 18/19; MVS 731/733) had an outburst as a Nova in September 1956 but, according to an information by Kukarkin, it was again fainter than 16^m on December 14, 1962. In order to confirm its present brightness and its spectral type several plates were taken with the Tautenburg Schmidt-Camera in the U, B, V-System, M 13 being used as a standard (A.J. 61, 1956, p. 254). The data of the expositions as well as the resulting magnitudes of the Nova, reduced to equal zenithal distance, are arranged in the following list:

Colour Region	Plate	Emulsion	Filter	J.D.	Exposition	Mag.
B	865	Astro-spezial	GG 13	243 8089.63	10 min.	$16^m.7$
U	934	Astro-spezial	UG 2	8142.50	20 min.	$16^m.35$
V	942	Astro-pan	GG 11	8143.56	20 min.	$17^m.2$
B	947	Astro-spezial	GG 13	8146.43	10 min.	$17^m.0$

By means of the U-, B- and V-Magnitudes one gets the colour indices (U-B) = -0.65 and (B-V) = -0.2. Supposing that the Nova did not change its brightness during the exposure time, and assuming that it is a main sequence star one can derive for the Nova the spectral type B 3.

F. BÖRNGEN
Tautenburg Observatory

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 30.

Konkoly Observatory
Budapest
12 June 1963

PROBABLE SUPERNOVA

On May 23, 1963, when comparing two plates of March 1 and 4 (Astrograph 400/1600 mm), I found a southerly extension of a small galaxy in Coma. The extension is invisible on Feb. 28/March 1 (7 plates), March 1/2 (5 plates); it is visible on March 2/3 (4 plates), 3/4 (2 plates), and 4/5 (1 plate). Further plates are not available. The combined brightness is about 16^m, the extension being somewhat fainter than the undisturbed galaxy. On Palomar Sky Chart No. 135 the galaxy is to be found 11.3 mm east and 25.9 mm north of 5 Comae.

C. HOFFMEISTER
Sonneberg Observatory

ON THE SUPERNOVA IN NGC 4178

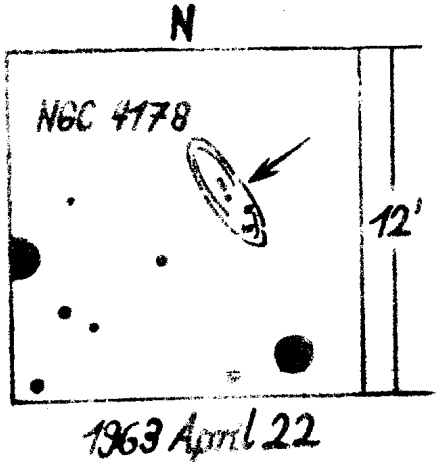
A plate of the Virgo-Cluster (center of plate: 20 Vir), taken on April 22, 1963, with the 40 cm Astrograph (f=160 cm) of Sonneberg Observatory, was compared at the end of April with another plate (same center), taken 25 years earlier, on February 21, 1938. On both plates the galaxy NGC 4178 in near the edge and that of April 22, 1963, shows a nucleus, formed by two star-like condensations, whereas another faint star-like object preceding south is to be seen, which is missing in 1938.

A second plate of May 20, 1963, (after receipt of the discovery announcement by ZAYTSEVA) confirmed this object, noted in April, as a Supernova.

On both plates the Supernova was compared with Selected Area 80 of the Harvard-System, whereby the following magnitudes were obtained:

1963 April 22 (J.D. 243 8142.4)	$15^{m}.80$ (HR)
1963 May 20 (J.D. 243 8170.4)	$14^{m}.30$ (HR)

This confirms that the Supernova was already rising on April 22, 1963, and might have reached its maximal brightness as early as towards the end of April.



K. LÖCHEL
Sonneberg Observatory
of the German Academy of Sciences

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 31

Konkoly Observatory
Budapest
15 June 1963

AN ATTEMPT TO DETECT THE POLARIZATION AND TO EVALUATE THE INFRARED STELLAR MAGNITUDE OF THE UNUSUAL VARIABLE OBJECT 3C 273

Unusual intensity distribution in the optical spectrum of the radio-source 3C 273 (1) suggests a possible contribution of the synchrotron mechanism of radiation. Therefore on May 13, 1963 an attempt has been made by the authors to detect the polarization of this object. We used a photoelectric photometer with a polaroid analyser attached to the 50 inch reflector at the Southern Crimean Station of the Sternberg Astronomical Institute. The effective spectral region of the Sb-Cs photomultiplier is 3500-5800 A when used without filter. No polarization was detected within the limits of accuracy (1 %).

We made also an attempt to evaluate the infrared stellar magnitude of this object by means of a Cs-O multiplier combined with a red filter (spectral region 6400-1100 A, effective wavelength 3850 A). The star AGK2 + 2°1579 was used for comparison. The infrared stellar magnitude of the object is $12^{m}_{,}5$ in a system in which the infrared stellar magnitudes of the A0 stars are equal to the visual magnitudes. This observation was made on May 26, 1963. Assuming I = $12^{m}_{,}5$ and V = $12^{m}_{,}6$, the continuous spectrum of the object can be represented very roughly (through two points only) in the form $J \sim \nu^{0,4}$, that is in satisfactory accordance with the spectrophotometric investigations by Oke (1). These evaluations should be considered as tentative because the optical radiation of the object 3C 273 is variable (2,3).

Moscow, 6 May 1963 V.I.MOROZ, V.F.YESSIPOV
Sternberg State Astronomical Institute

(1) J.B.Oke, Nature (in print)
(2) A.S.Sharov and Yu.N.Efremov, Comm.27. Inf.Bull.Var.Stars No. 23,1963.
(3) Harlan J.Smith and Dorrit Hoffleit, Nature,18 May 1963

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 32

Konkoly Observatory
Budapest
28 August 1963

THE ELEMENTS OF THE VARIABLE STAR 435. 1928

The star is No. 4833 in the Catalogue of Stars Suspected of Variability (Moscow, 1951) = P 1914 = Bgd 1955 (RA = $19^h\ 45^m.5$, D = + 45° 58'.6, m_{pg} = 11.35, Sp: B8). According to R. Weber the star is variable between 11.2 and 12.9 magnitudes. He suspected Algol-type (JO 46. p.107.1963)

Estimates on Bamberg plates confirmed Weber's suspicion and led to the following elements:

$$\text{Min} = \text{JD } 2426352.250 + 3^d.556275 \cdot E$$

The observed minima are listed below. Weber's minima are marked by an asterisk.

Minima

JD	E	0 - C	JD	E	0 - C
242 6352.231	0	$-0^d.019$	243 6786.427*	2934	$+0^d.066$
6928.365	162	-0. 002	6811.389*	2941	+ 0. 134
.380	162	+0. 013	6818.333	2943	- 0. 034
6942.408	166	-0. 184	6843.288	2950	+ 0. 027
6985.269	178	+0. 002	7188.322:	3047	+ 0. 102
.290	178	-0. 023	.368:	3047	+ 0. 148
7625.407	358	+0. 011	7579.294	3157	- 0. 116
243 6761.460*	2927	-0. 007			

W. STROHMEIER
Remeis Observatory
Bamberg

Correction to Inf. Bull. No.28: The sentence: "Nine spectra have been obtained" should be omitted from the text.

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 33.

Konkoly Observatory
Budapest
21 September 1963

THE ELEMENTS OF THE VARIABLE STAR 16.1929 SAGITTAE

The star is No. 4577 in the Catalogue of Stars Suspected of Variability (Moscow 1951) = CT 3 201 = BD + 18°4005 ($9^m.4$). According to R. Weber (JO 46, 105, 1963) the star is variable between 11.0 and 12.0 magnitudes; he suspected EB type.

Estimates on Bamberg plates confirmed Weber's suspicion and led to the following elements:

$$\text{Min} = \text{JD } 242\,4822.180 + 2^d.775\,320 \cdot E$$

The observed minima are listed below.

(A) = V. Albitzky, AN 235, 317, 1928
(W) = R. Weber, by letter

Minima

JD	E	0 - C	JD	E	0 - C
242 4822.182 (A)	0	+0.002	243 7190.363	4456	+1.357
6956.386	769	-0.015	7201.465 (W)	4460	+1.358
8778.387	1425	+1.376	7222.297 (W)	4468	-0.013
9079.470	1534	-0.051	.344 (W)	4468	+0.034
243 6814.372	4321	+0.034	.368 (W)	4468	+0.058
7015.596 (W)	4393	+1.435	7441.571 (W)	4547	+0.011
7115.457 (W)	4429	+1.365	7466.488 (W)	4556	-0.050
7172.376 (W)	4450	+0.022	7605.293 (W)	4606	-0.011

Depth of secondary minimum about $0^m.6$.

W. STROHMEIER

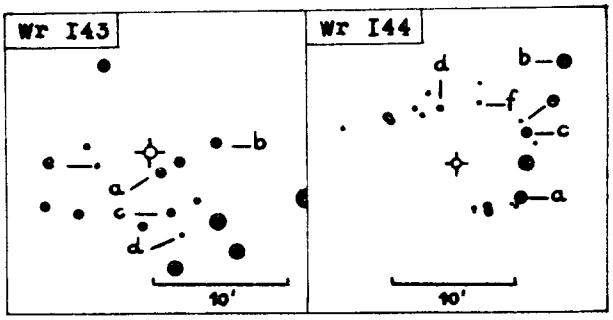
Remeis Observatory
Bamberg

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 34.

Konkoly Observatory
Budapest
11 October 1963

NOUVELLES ÉTOILES VARIABLES

Dés.	AR (1900,0)	D	max. mp	min. mp	type	nombre d'obs.
Wr 143	$17^h54^m38^s$	$+41^o21'$	11,7	13,5	SR	72
Wr 144	18 29 52	+42 55	11,9	<14,5	M	64



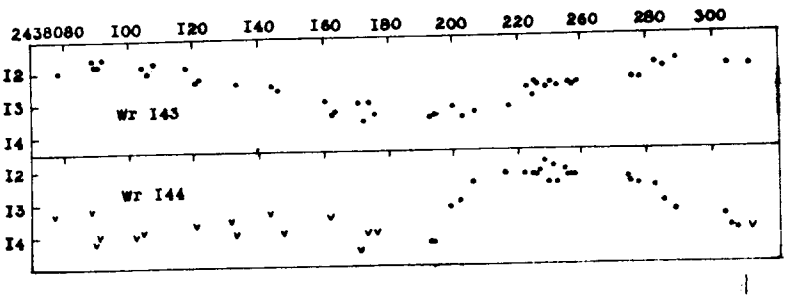
	Wr 143	Wr 144
	mp*	mp**
a	11,7	11,5
b	12,1	12,2
c	12,5	12,6
d	13,2	13,2
e	13,4	13,8
f	-	14,3

* d'après H.A.85. 18^h $+46^o30'$

** d'après S.A.38.

Wr 143. = BD $+41^o2943$. Un maximum observé le JJ 2436660 et les deux maximums observés en 1963 (courbe de lumière ci-dessous) suggèrent une période voisine de 180 j.

Wr 144. Un maximum précédent (JJ 2437046) suggère une période voisine de 295 j. ou 390 j.



R. WEBER
Station Astro-Photographique
de Mainterne
Eure-et-Loire
France

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 35

Konkoly Observatory
Budapest
31 October 1963

OBSERVED MINIMA OF ECLIPSING VARIABLES

From brightness estimates made at the mountain station of the Konkoly Observatory ($\lambda = 1^h19^m35\overset{s}{.}6$; $\varphi = +47^\circ55'08''$) by means of the Expedition Telescope of the Cracow University Observatory the following epochs of minima have been obtained.

	Minimum 24382..	O-C		Minimum 24382..	O-C
TT And	88.370	+.^{d}045	U Cep	56.59	+.^{d}07
UU "	67.4936	+.0597	RS "	66.84	-.04
XZ "	58.4276	+.0085	SW Cyg	64.16	+.05
CP "	85.528	-	UW "	96.503	+.04
SU Aqr	62.521	-.005	UZ "	83.9	.00
XZ "	67.47	-	W Del	53.27	-.04
QY Aql	70.15	-.05	TT "	58.482	+.082
V340"	64.29	+.05	AV "	94.71	-.50
V688"	65.43	+.18	BH "	66.26	+.05
CL Aur	69.504	+.006	BI "	58.53	-.14
YY Boo	90.27	.00	BW "	91.34	-.05
SS Cam	67.76	+.47	Z Dra	88.5218	+.0336
RT CMa	97.71	-.25	RR "	88.493	+.008
AB Cas	88.51	+.02	SX "	69.580	+.055

	Minimum 24382..	O-C		Minimum 24382..	O-C
TZ Eri	83.62	$+^{d}.04$	AY Mon	97.50	$-^{d}.16$
SZ Her	56.4938	+.0099	CU Peg	68.46	+.06
DI "	87.6	+.1	Z Per	87.4183	-.0124
GL "	66.326	+.048	VY Sct	64.49	-.10
RV Lyr	92.367	+.017	RW Tau	66.4853	-.0096
EW "	56.416	+.008	AX Vul	56.48	+.02

The O-C values relate to the linear ephemerides in Rocznik Astronomiczny Obsevatorium Krakowskiego No 34.

K. KORDYLEWSKI
Astronomical Observatory
Cracow

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 36

Konkoly Observatory
Budapest
4 November 1963

THE SECONDARY PERIOD OF DL HERCULIS

This variable star of RR Lyrae type was investigated by Zessewitch (Odessa Isv. 3,257, 1953) who found strong variations in the light curve with a period of $49^d.2$. He obtained the elements:

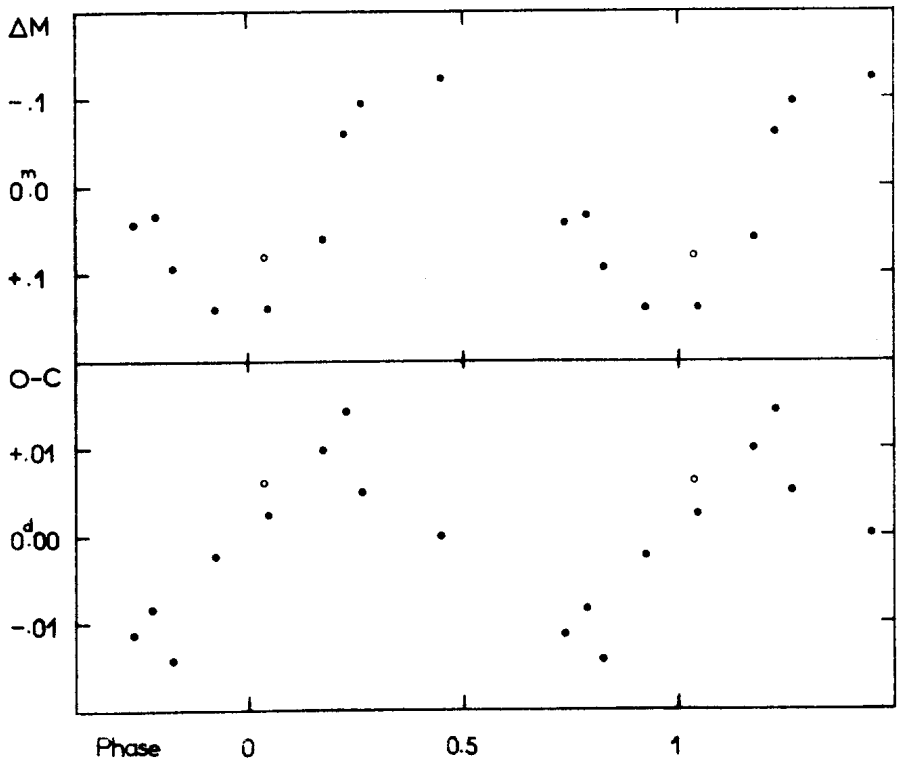
$$\text{Max. hel} = 2426959.212 + 0^d.5916291.E$$

$$\text{Min. ampl.} = 2426975 + 49^d.235.n$$

With the 24" telescope of the Konkoly Observatory 750 photoelectric observations have been obtained in blue and yellow. These observations show that the length of the secondary period is essentially shorter than the value given by Zessewitch. The new elements are:

$$\text{Max. hel} = 2438208.4282 + 0^d.59162786.E$$

$$\text{Min. ampl} = 2438227 + 33^d.6.n$$



The figure shows the variations of the heights of the maxima (above) and the phase variations of the maxima (below) in blue color. As the variable has a close companion which was measured together with the variable, the true amplitude of the variation of the maximum brightness must be larger than shown in the figure.

The observations will be continued in 1964.

B.SZEIDL
Konkoly Observatory
Budapest

Ny.2312

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 37

Konkoly Observatory
Budapest
5 November 1963

SUPERNOVA IN NGC 1654

A supernova near the faint elliptical galaxy NGC 1654 ($4^h43^m45^s$; $-2^\circ9'.0$; 1960) has been found by the writer on plates obtained last year with the 50-40 cm Schmidt telescope of Asiago. The star is about 25" south-east of the center of NGC 1654. The observed magnitudes, in a provisional photographic scale, are:

Sept	30, 1962	(17	Dec	20, 1962	17.4
Oct	4	(17.5		22	17,4
	9	16.9	Jan	14, 1963	17.6
	24	15.0		24	17.6
Nov	23	16.5		28	(17.5
	26	16.5?	Feb	23	(17.5
	30	17.1	Mar	12	(17.5
Dec	3	17.2	Oct	13	(17.5
	5	17.2		18	(17.5

The light curve is that of a supernova type I. It is likely that the maximum ($\sim$14.5) may have been reached around Nov. 1, 1962. It would be desirable to have other observations of this supernova on patrol plates taken in October-November 1962.

L. ROSINO
Astrophysical Observatory
Asiago

Ny. 2336/1963

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 38

Konkoly Observatory
Budapest
11 November 1963

THE ELEMENTS OF THE VARIABLE STAR 390.1933 (CEPHEI)

The star is No 5411 in the Catalogue of Stars Suspected of Variability (Moscow 1951) = BD + 77°813 ($9^m.5$), Mira type, $m_{ph} = 12^m.5$ $-15^m.5$. According to maxima obtained on Bamberg plates we have the elements:

Max = JD 242 6782 + $331^d.E$

Individual maxima:	E	O-C
242 6782 ± 10 (M)	0	0
7105 ± 15 (M)	1	- 8
9080	7	-19
9465:	8	+35:
243 1001 (G)	10	+ 9
6380	29	- 1

(M) = O. Morgenroth, AN 250, 1933 (G) = E. Geyer, Veröff. Bamberg V, 9, 1960

THREE "POORLY KNOWN" VARIABLE STARS

AA UMa

The elements in the GCVS (Moscow 1958) are:
Min = JD 243 4087.293 + $3^d.0703$ (?). E, type EA

The corrected elements based on Bamberg patrol plates are:
Min = JD 242 5687.345 + $0^d.763\,839$.E, type EB

Primary Minima			Secondary Minima		
JD	E	O-C	JD	E	O-C
242 5687.344	0	-0.001	242 6772.405	1420	+0.409
6434.385	978	+0.006	6798.381	1454	+0.413
6770.455	1418	-0.013	7183.342	1958	-0.400
6796.401	1452	-0.038	7516.369	2394	+0.393
7126.424	1884	+0.006	7901.372	2898	+0.422
7155.433	1922	-0.010	8609.421	3825	+0.392
7158.482	1926	-0.017	8991.381	4325	+0.433
7449.529	2307	+0.008	9317.500	4752	+0.393
7478.516	2345	-0.031	243 6614.460	14305	+0.398
8213.385	3307	+0.025	6663.372	14369	+0.425
8219.481	3315	+0.010	7022.387	14839	+0.436
8957.362	4281	+0.022			
243 4087.297*	10997	+0.015			
4452.396	11475	-0.001			
5183.384*	12432	-0.007			
5186.458*	12436	+0.011			
6612.492	14303	-0.042			
6658.343	14363	-0.021			

* = V.P.Tsessewitch, AC Kasan 170,1956

The estimated light-curve is shown in the figure.

EH Peg

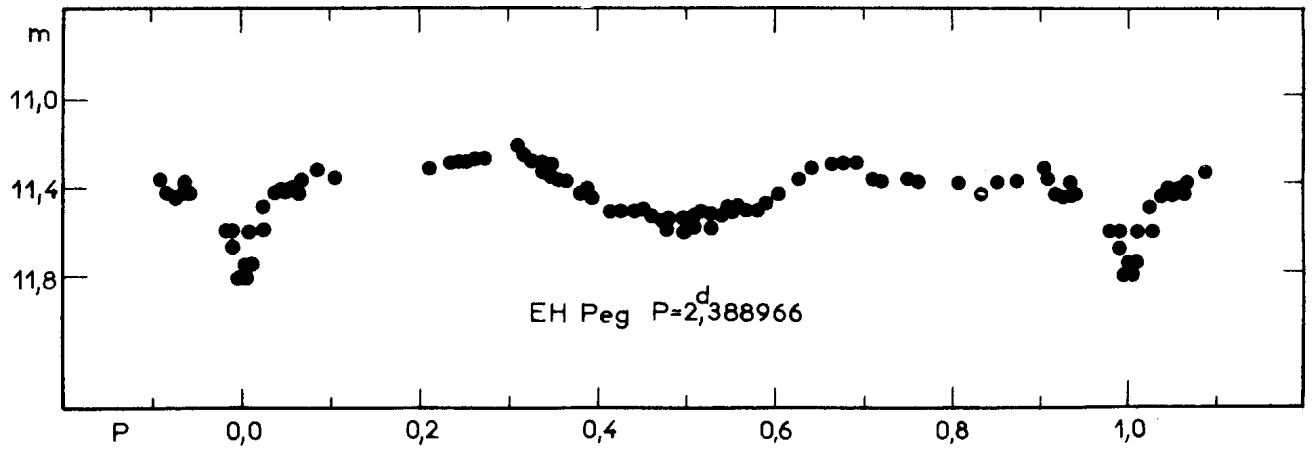
The elements in the GCVS (Moscow 1958) are:
Min = JD 243 1326.660 + 2^d.367.E, type EA.

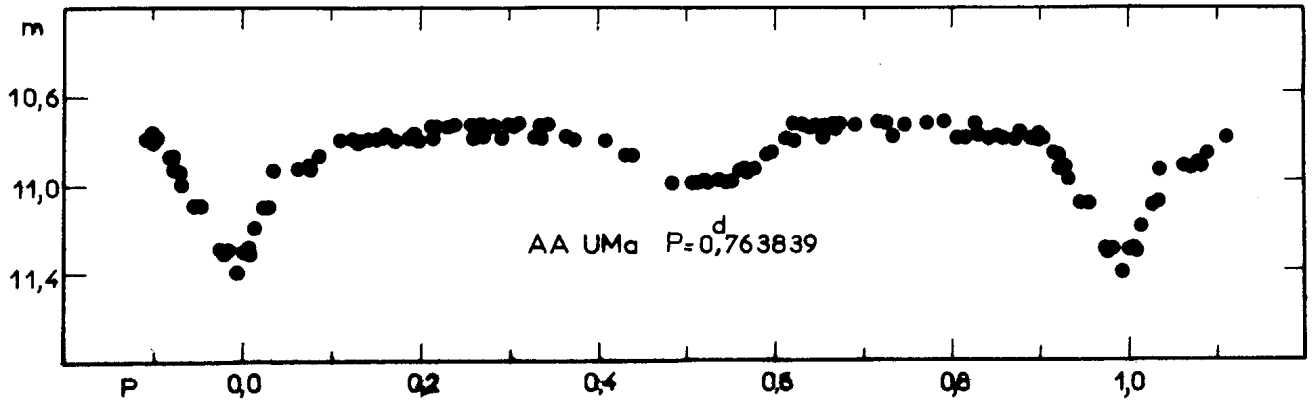
The corrected elements based on Bamberg patrol plates are:
Min = JD 242 5883.360 + 2^d.388 966.E, type EB.

Primary Minima			Secondary Minima		
JD	E	O-C	JD	E	O-C
242 5883.374	0	+0.014	242 6632.328	313	+1.222
7689.381	756	-0.037	243 1317.19*	2274	+1.32
8408.494	1057	-0.003	1324.33*	2277	+1.29
9108.475	1350	+0.011	1329.08*	2279	+1.27
243 7233.353	4751	+0.013	1331.31*	2280	+1.11
7964.338	5057	-0.024	1343.25*	2285	+1.10
385	5057	+0.024	7559.380	4887	+1.143
			.431	4887	+1.194
			7957.334	5054	+1.140

* = V.P.Tsessewitch, Odessa Isv. IV,1954

The estimated light-curve is shown in the figure.


m
11,0
11,4
11,8
EH Peg P=2,388966
P
0,0
0,2
0,4
0,6
0,8
1,0


m
10,6
11,0
11,4
AA UMa P=0,763839
P
0,0
0,2
0,4
0,6
0,8
1,0

RV Oct = 29.1916 = HV 3384

From our South-African-plate material the following elements have been obtained:

Max. = 243 8196.190 + $0^{d}.61798$.E

Individual maxima	E	O-C
243 8196.221	0	+0.031
8199.312	5	+0.032
8202.350	10	-0.020
8204.200	13	-0.024
8205.442	15	-0.018
8294.442	159	-0.007
8317.324	196	+0.010

The star is an RR Lyrae variable of type a . Photographic range: $11^{m}.7$ - $12^{m}.2$.

W.STROHMEIER and H.OTT
Remeis Observatory
Bamberg

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 39

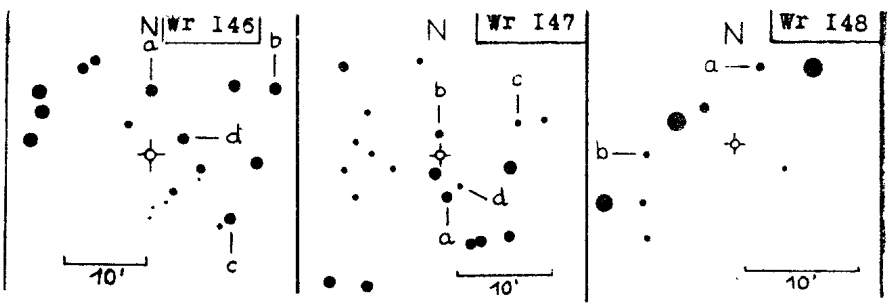
Konkoly Observatory
Budapest
16 November 1963

NOUVELLES ÉTOILES VARIABLES

Dés.	AR (1900,0)	D	max	min	type	nombre d'observ.
Wr 146	$18^h\ 53^m\ 31^s$	$+27^o\ 31'$	10,7	11,7	I	47
Wr 147	21 16 44	+41 51	10,7	11,8	E	83
Wr 148	23 50 33	+46 12	11,5	12,4		102

Étoiles de comparaison

	a	b	c	d	
Wr 146	10,8	11,0	11,4	11,9	(d'après S.A.63)
Wr 147	10,2	11,0	11,5	12,0	(d'après S.A.41 Bgd)
Wr 148	11,66	12,42			(Magnitudes Bgd)



Remarques

Wr 146 = BD +27°3177 (Lyr). Variabilité confirmée par Romano (com. privée). D'après Romano, cette variable est probablement une semirégulière avec une période d'environ 33 j.

Wr 147 = BD +41°4100 (Cyg). Variabilité confirmée par W. Strohmeier (com. privée) d'après les plaques de Bamberg. Les éléments calculés par W. Strohmeier sont:

Minimum = JJ 243 7877,468 + 0,517588. E

Ces éléments, appliqués aux minima utilisables sur les plaques de Bamberg et les plaques de la Station de Mainterne, donnent les résultats suivants:

/W/	JJ 243	8340,272	+894	+0,080
/W/		8286,369	+790	+0,006
/W/		8217,426	+657	-0,096
/W/		8206,476	+636	-0,178
/S/		7960,303	+160	+0,021
/W/		7877,468	0	0,000
/W/		7875,438	-4	+0,040
/W/		7874,463	-6	+0,101
/S/		7578,312	-578	+0,010
/S/	243	4707,226	-6125	-0,016
/W/		3566,389	-8329	-0,089
/S/	242	8783,448	-17570	+0,001
/S/		8020,542	-19044	+0,020
/S/		7333,400	-20372	+0,235
/S/		7332,406	-20374	+0,276
/S/		6951,466	-21112	+0,281
/S/		,426	-21112	+0,241

/S/ Strohmeier /W/ Weber

Wr 148 = BD +45°4361 (And) = n°1895 Bgd (S.A. 43) Sp G: :K2. mph II, 90 Variabilité confirmée par Romano (com. privée).

Des renseignements complémentaires seront publiés pour Wr 146 et Wr 148.

R. WEBER
Station Astrophotographique
de Mainterne

Ny. 2402/1963.

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 40

Konkoly Observatory
Budapest
20 November 1963

PHOTOELECTRIC AND SPECTROSCOPIC OBSERVATIONS OF 48 PERSEI AND 53 PERSEI

The Be-star 48 Persei has already been observed some time ago (see VSS 5, No. 5). In order to get acquainted more accurately with the light variation the star was observed photoelectrically in February and March 1963 in the yellow region. During this time it had a maximum as well as a minimum of brightness; the amplitude is $0^m.10$. In case the light variation should be periodic which is probable, at least approximately, the "period" during the time of observation might be about 55 days.

The spectrum of this star was taken simultaneously on Agfa-Z emulsion. The plates show the Balmer series beginning with $H\gamma$. $H\gamma$, $H\delta$ and $H\epsilon$ are often to be seen with emission components. A certain frequency of the emissions might be possible during the descent towards the minimum of brightness, the emissions showing then sometimes central absorptions.

Together with 48 Persei the star 53 Persei has been observed photoelectrically in V. Its brightness fluctuates within about $0^m.15$. Even if one takes into consideration that the error of the measurements is larger in this case than with 48 Per, yet the range of $0^m.07$ must be regarded as absolutely certain. A period could not be determined.

Details of both stars will soon be published in MVS.

G. JACKISCH
Sonneberg Observatory

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 41

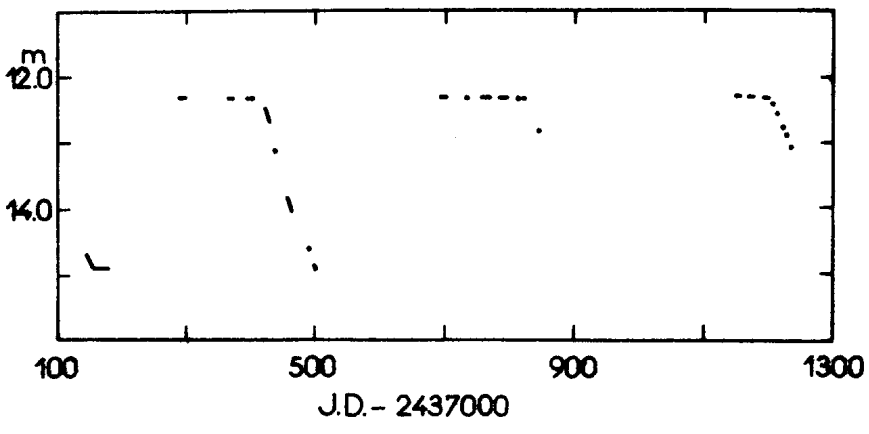
Konkoly Observatory
Budapest
12 February 1964

NOTE ON Z CIRCINI

While the first edition of Kukarkin and Parenago's "General Catalogue of Variable Stars " listed Z Cir as a probable eclipsing binary, the second edition mentions the eclipsing and the semiregular types of variability as equally possible.

An investigation, just carried out at Louvain, proves that the star cannot be an eclipsing variable, but that it is almost certainly an R Coronea Borealis star with a strong tendency towards periodicity and whith a short characteristic interval between the minima. Both properties make it a really interesting object for observers in the southern hemisphere.

The brightness of Z Cir was estimated on 326 Metcalf plates, taken by the writer and by several other observers at the Boyden



Observatory between 1960,6 and 1963,6. The results of the estimates are shown in the Figure. Magnitudes were derived from star-counts and the tables in Groningen Publication No. 43.

As can be seen, the estimates confirm the existence of the long-living flat maximum which had been noticed earlier by the Harvard observers and had led them to presume variability of the Algol type.+/

The beginning of the descending branch could be well located on three occasions, namely on JD 2437409, 2437829 and 2438197. The interval between the two outer data covers two unequal cycles of 394 days mean length. If this trial period is corrected to 394,6 days, it accounts fairly well for our own minima and for all those communicated in Harvard Bulletin No. 883+/.

But this characteristic interval leaves no possibility that the star could be an eclipsing binary because:

1/ either $394\overset{d}{.}6$ is the orbital period (the observations require an eccentric orbit), but then we are forced to the conclusion that the eclipse lasts for about half a period, which is absurd. The descending branch is indeed seen to last for more than 90 days and the never observed ascending one should have approximately the same duration in case of an eclipse, hence the foregoing conclusion;

2/ or $394\overset{d}{.}6$ is only half the orbital period. But this assumption is excluded at once by the fact that both the odd and the even minima have amplitudes greater than $2\overset{m}{.}5$.

Hence our general conclusion: it appears most probable that Z Cir is a variable of the R CrB type, and a very interesting one, because of the trend to periodicity in the occurence of the minima and of the rather high frequency (1 in 13 months) of the latter.

A. VAN HOOF
Astronomical Institute
University of Louvain
(Belgium)

+/ H.H. Swope, Harvard Bulletin No. 883, 1931.

Ny.413/1964. - Statisztikai Kiadó Vállalat sokszorosító üzeme
Budapest, II., Keleti Károly u. 18/b.
Felelős vezető: Hajdu Györgyné

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 42

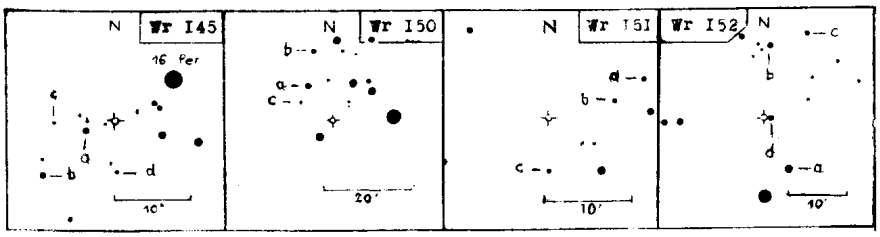
Konkoly Observatory
Budapest
12 February 1964

NOUVELLES ÉTOILES VARIABLES

Dés.	AR (I900.0)	D	max mp	min mp	type	
Wr 145	$2^h\ 44^m\ 53^s$	+37°51'	11,3	12,4	SR	33
Wr 150	2 48 59	+42 11	10,5	11,6	I ?	33
Wr 151	3 10 43	+41 56	10,7	11,4	I ?	34
Wr 152	5 39 09	+44 18	10,5	11,6	I	97

Étoiles de comparaison

	(a)	(b)	(c)	(d)	
Wr 145	11,0	11,3	11,9	12,4	d'après H.A.85. 3^h +39°30'
Wr 150	10,6	11,3	11,9	-	
Wr 151	10,7	11,1	11,5	-	
Wr 152	10,48	10,67	11,14	11,54	(magn. de la S.A.25 Bgd).



Remarques

Wr 145. Période de 180^j ±

Wr 150. = BD $+41^o563$.

Wr 151. = BD $+41^o645$.

Wr 152. = n^o724 de la S.A. 25 Bgd. 11^m06. Sp d:Mb.
L'étoile n^o723. 11^m54. Sp F8 (étoile de comparaison "d" cidessus) est désignée dans la Berg. Spektral Durchm. comme étant DB $+44^o1280$. Il est plus probable que c'est l'étoile n^o724 (Wr 152) qui est l'étoile BD.

Des détails seront publiés dans le "Bulletin de la Station Astrophotographique de Mainterne" (BASM).

R. WEBER
Station Astrophotographique
de Mainterne

Erratum (Inf. Bull. No. 34)

Dans le diagramme des courbes de lumiere de Wr 143 et Wr 144, les JJ en abscisses doivent être lus: "2438080..... 220 - 240 - 260 - 280" au lieu de: "220 - 260 - 280 - 300".

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 43

Konkoly Observatory
Budapest
27 February 1964

THE ELEMENTS OF SIX RR LYRAE STARS IN M 92

Observations of the globular cluster M 92 during 1961-1963 were made with the 28" reflector at the Main Astronomical Observatory of the Academy of Sciences of the Ukrainian SSR. For brightness estimates of the variables the visual method was employed, and 218 plates were thus examined. Stars 3, 11, 17 and 18 (1) were chosen to provide a calibration sequence. Elements of variables 2, 3, 4, 5 and 8 (2) are:

Number	Max. JD hel	Period	(M-m) /P
2	2437872,335	0^d,643910	0,16
3	,707	,637456	,15
4	,518	,628909	,18
5	,020	,619674	,35
8	,039	,673194	,26

The period of variable 1 has been found to be changing. The following elements satisfy the observations:

$$Max_{hel} = JD2437872,373 + 0^d,702700E + 0,00000019E^2$$

The value q=0,00000019 is unusually large. More observations are desirable to obtain q with higher accuracy.

References

(1) H.Arp, W.Baum, A.Sandage 1953, AJ 58, 4
(2) H.Sawyer, 1955, Publ DDO 2, 73.

Kiev, 5 February 1964

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

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 44

Konkoly Observatory
Budapest
29 February 1964

DETERMINATIONS WANTED OF THE GAMMA-VELOCITY OF BETA CEPHEI IN 1964—67

Beta Cep has been reported by B.Smith (1) to be a spectroscopic binary with the elements:

$K_1 . \sin i = 16.0$ km/sec, $e = 0.66$

$\omega = 187^\circ$, $P = 50$ years.

The binary nature of the star and Smith's period are also mentioned in the second edition of Kukarkin and Parenago's "General Catalogue of Variable Stars".

The reality of this period was however called in question by Struve (2), and it is easy to show that the whole set of elements is not self-consistent. The mass-function, for instance, admits only a maximum orbital velocity of 11 km/sec for the period and the eccentricity given, and for an assumed mass of 20 $M_\odot$ (chosen deliberately high) and a mass ratio = 2 (which seems not exaggerate, since the secondary is invisible). This excludes Smith's value for the projected orbital velocity.

But Smith's value for $K_1 . \sin i$ was based on a few very low gamma-velocities determined at Yerkes and Poulkovo in the years 1914-17. Since then 50 years have elapsed, hence it would be desirable to follow the run of the gamma-velocity in the course of this and the coming years.

The interest of accurate determinations of the orbital elements of Beta Canis Maioris stars which are at the same time members of binary systems lies in the fact that in this case the mass function enables one to make a fair estimate of the probable inclination of the orbital and hence of the equatorial plane. This in turn enables

one to derive the probable velocity of rotation. And the knowledge of the real velocity of rotation provides an experimental test of the soundness or the incorrectness of some recent interpretations of the beat phenomena observed in those stars. (3) (4) (5).

A. VAN HOOF
Astronomical Institute
University of Louvain.
Belgium

References

(1) B. Smith, Astroph. Journ., 98, 82, 1943.

(2) O. Struve, D. H. McNamara, S. M. Kung and C. Beymer, id., 118, 39, 1953.

(3) S. Chandrasekhar and N. R. Lebovitz, id., 136, 1105, 1962.

(4) E. Böhm-Vitense, Publ. Astr. Soc. Pacific, 75, 154, 1963.

(5) A. van Hoof, Zeitschr. f. Astroph., in print.

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 46

Konkoly Observatory
Budapest
4 March 1964

NOVA PUPPIS 1963

1875.0	$7^h\,58^m$	16^s	-28°	7:6
1900.0	7 59	17	-28	11.6

I found this object on plates from the Astrograph 400/1600 mm. The Nova is invisible 1962 Dec 5, 6, 7 (fainter than 17^m), bright 1963 Jan 20. On Sky Patrol plates invisibility was observed 1962 Dec 25 and 28, the star being fainter than 11^m; it appears first 1963 Jan 18, $7^m.8$. Its behaviour seems to be that of a slow Nova: 1963 Jan 18, 20 about $0^m.6$ brighter than CoD $-28^\circ 5372$ ($8^m.3$), Sp. A2, ptg. $8^m.4$, Jan 30 about $8^m.5$, Feb 23, 24, 27 $8^m.0$, March 17 $8^m.0$, March 23 about 10^m. On 20 Astrograph plates 1963 Dec 20 to 1964 Feb 14 the Nova is about 18^m, practically without further decline. The first rise probably occurred during the time of moonlight (full moon Jan 10, last quarter Jan 17, 1963). On Palomar Atlas the praenova is visible as a bluish star of about $18^m.5$. Further information will be given in Astronomische Nachrichten.

Sonneberg Observatory, February 24, 1964.

C. HOFFMEISTER

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 46

Konkoly Observatory
Budapest
9 March 1964

OBSERVED MINIMA OF ECLIPSING VARIABLES

Continuation to Information Bulletin on Variable Stars
Number 35

	Minimum 2438...	O-C d		Minimum 2438...	O-C d
RY Aur	289.563	+.034	T LMi	430.487	-.042
S Cnc	426.668	-.028	CQ Ori	455.21	+.18
RX CMa	440.40	-.04	FF Ori	446.39	+.01
EG CMa	440.5	-	TY Peg	293.399	-.023
" "	455.1	-	RV Per	275.578	+.005
AK CMi	448.304	+.006	RW Per	456.53	+.03
WY Cep I	284.368	-.011	RY Per	292.62	-.02
" " II	277.481	-.028	SX Psc	283.5153	-.0255
XX Cep	302.3209	-.0334	XZ Pup	448.383	-
TW Dra	292.4384	+.0066	AI Sgr	287.90	+.02
RW Gem	418.4428	-.0011	VZ Sct	290.375	+.045
RX Hya	446.362	-.043	XY UMa	448.274	-.014
TY Hya	440.383	+.065	BD Vir	455.68	+.18
EU Hya	449.285	-.008			

The O-C values relate to the linear ephemerides in Rocznik Astronomiczny Obserwatorium Krakowskiego No 35.

Piszkéstető, 8 March 1964

Mountain Station of the
Konkoly Observatory

K. KORDYLEWSKI
Astronomical Observatory
Cracow

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 47

Konkoly Observatory
Budapest
12 March 1964

FIRST RESULTS FROM THE BAMBERG SOUTH - AFRICAN STATION

Nova Position (1900): Rect. $1^h11^m45^s$ b = -79^o
BV 416 Decl. -18^o 27!7

1963 Sep. 19	JD 243 8292.46	$> 14^m.5$
Sep. 21	8294.44	10.5
Sep. 22	8295.45	10.8
Sep. 24	8297.45	12.0
Oct. 11	8314.41	13.5
Nov. 15	8349.30	> 14.5

Praenova (Mt. Palomar Atlas): blue 18^m
red 19

Cepheid BV 417 = CoD -61^o4468 ($7^m.1$) = HD 128 037 (G_5)
Max = JD 243 8195.3 + $7^d.1$. E , Ampl. $0^m.8$

Eclipsing Star BV 418 = CoD -67^o2082 ($8^m.9$) = HD 156 545 (Ao)
Min = JD 243 8196.375 + $2^d.316$. E
EA , Ampl. $0^m.8$

W. STROHMEIER
Remeis-Observatory
Bamberg

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 48

Konkoly Observatory
Budapest
24 March 1964

OBJECTIVE PRISM SPECTRUM OF NOVA PUPPIS 1963

Nova Puppis 1963, discovered by C. Hoffmeister (UAI Circ. 1857 and Inf. Bull. on Variable Stars 45) was found on a blue objective prism film (Perutz Phototechnisch B) which was obtained by the 36/44/62.5 cm Schmidt camera and a 5°.5 flint prism (dispersion 635 A/mm at H-gamma) on April 20, 1963 at the Boyden Observatory, South Africa.

The brightness of the post maximum nova was estimated $10^{m}.5$ pg, and the spectrum shows the following features:

Weak emission band:	from λ4750 A to 4660 A
" " "	" "4610 " 4550
" " "	" "4465 " 4360
H-gamma line in absorption, faint	
Strong and bright emission band	from λ4185 A to 4120 A
H-delta line in absorption, broad	
H-epsilon line in absorption, broad and strong	
Emission band, medium bright	from λ3960 A to 3945 A
K-line, sharp and faint	
Emission band, medium bright	from λ3930 A to 3910 A
H-zeta in absorption, very broad	
Bright emission band	from λ3850 A to 3810 A
Strong and bright emission band	from λ3765 A to 3715 A

The position of the emission bands was measured against the H-delta-line, which was considered as resting.

The K-line appears as if it would be superimposed on one single emission band extending from H-epsilon to H-zeta.

March 17, 1964.

E.H.GEYER
Landessternwarte
Heidelberg-Königstuhl

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 49

Konkoly Observatory
Budapest
24 March 1964

NEW BRIGHT EARLY TYPE ECLIPSING VARIABLE

During the photoelectric measurements of some OB stars in Auriga, the variability of HD 35 652 (BD $+34^{\circ}1051$) was detected. The elements are:

$$\text{Min I} = \text{J.D. } 243\ 8448.406 + 1^{d}.81150.E,$$

type EB. The depth in primary minimum is $0^{m}.48$, in secondary $0^{m}.39$ (V magnitudes). In maximum we have $V=8^{m}.19$, $B-V=+0^{m}.22$ and $U-B=-0^{m}.71$. HD Catalogue gives for this star only type B. The star is included in a list of radial velocities of B stars (Petrie and Pearce, Victoria Publ. 12, 1, 1962) as B5nn, with a note that the star may be a double spectrum binary. The colours obtained by us indicate that the type is earlier than B5; a private communication by Petrie supports this. Hence, HD 35 652 is a very interesting case of eclipsing variables.

PAVEL MAYER
Astronomical Institute
Charles University
Prague

RESULTS FROM THE BAMBERG SOUTH-AFRICAN STATION II.

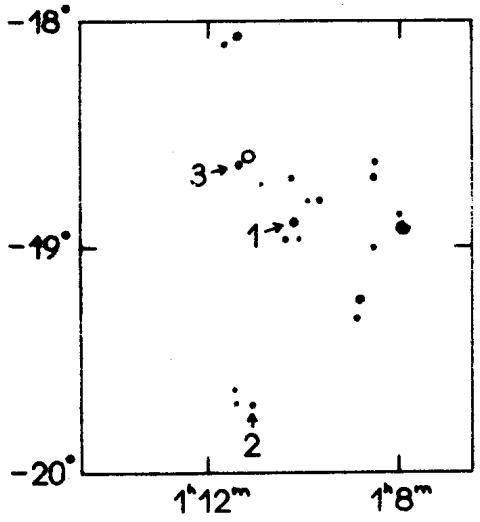
Eclipsing Stars

BV 419 = CoD - 56° 6944 ($7^{m}.5$) = HD 159 441 (A3)
Min = JD 243 8224.375 + $0^{d}.629\ 66$ .E
EB (with strong secondary minimum) Ampl. $0^{m}.6$

BV 420 = CoD - 53° 7423 ($6^m.3$) = HD 161 783 (B3)
Min = JD 243 8227.333 + $1^d.587$.E
EA (without secondary minimum) Ampl. $0^m.5$

Details in the Bamberg Publications.

Chart for Nova communicated in Inf. Bull. on Var. Stars 47.



1. BD -18° 205 $8^m.3$ HD 7717 G5
2. BD -19° 212 9.0 HD 7785 G0
3. BD -18° 206 9.3

Our classification of the star as a Nova was based on its invisibility on all our plates taken at Bamberg since 1932.

W. STROHMEIER
Remeis-Sternwarte
Bamberg

Ny. 700/1964. - Statisztikai Kiadó Vállalat sokszorosító üzeme
Budapest, II., Keleti Károly u. 18/b.
Felelős vezető: Hajdu Györgyné

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 50

Konkoly Observatory
Budapest
30 March 1964

SUPERNOVA IN THE URSA MAIOR CLUSTER OF GALAXIES

In the night of March 13, when comparing two plates of December 14, 1963 and March 12, 1964 (Zeiss Schmidt - telescope 60/90/180 cm at our mountain station), I found a supernova about 96" SE from the nucleus of the anonymous spiral galaxy at RA=$11^h52^m.2$ and D=+53°32' (1855). Cloudy weather prevented me from taking the control plate this night. A plate on March 15 confirmed the object, and on March 16 the finding was communicated to Copenhagen and to the centres of the supernova search program by telegrams or telephone. The accompanying chart shows the position of the supernova and the comparison sequence, for which provisional magnitudes have been determined by transfer of the NPS on a plate obtained by B. Balázs on March 18, and measured by me with the Becker iris-photometer.

a = $10^m.97$; b = $13^m.35$; c = $14^m.04$; d = $14^m.26$; e = $15^m.59$
f = $16^m.05$; g = $16^m.18$; h = $16^m.42$; i = $17^m.36$; j = $17^m.43$

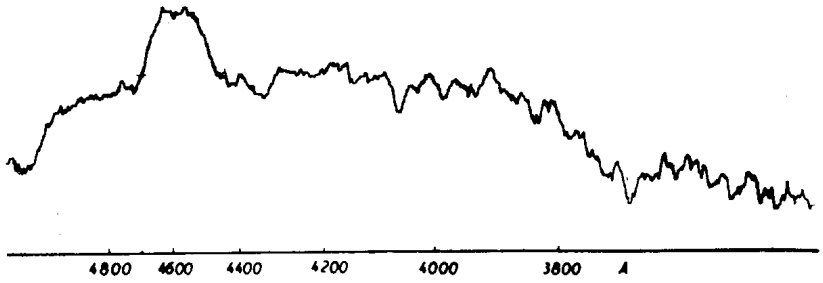
Using this sequence I obtained the following provisional magnitudes for the supernova:

Dec.	14/15, 1963	J.D. 2438377.620	$>19^m.3$
March	12/13, 1964	467.446	13.21
"	15/16,	470.642	13.52
"	16/17	471.450	13.47
"	18/19	473.568	13.40

M. LOVAS
Konkoly Observatory
Budapest

OBJECTIVE PRISM SPECTRUM OF THE SUPERNOVA

On March 18/19 I have obtained an unwidened spectrum of the supernova with the aid of the 5^o objective prism, of UBK7 glass, attached to the 60/90/180 cm Schmidt-telescope. Kodak OaO plate was used, with an exposure time of 40 minutes. In the figure a microphotometer record of the spectrum is shown; the wavelengths are only approximate. The spectrum is typical for a supernova of Type I, a few weeks after maximum light.



B. BALÁZS
Konkoly Observatory
Budapest

Prof. B.V. KUKARKIN, to whom the discovery was communicated in the evening of March 16 by telephone, writes in a letter of March 23:

On plates taken at Abastumani Observatory the supernova was invisible on February 12 (limiting magnitude about 16), it was already $14^m.0$ on February 15 and $13^m.6$ on February 16.

The brightness of the supernova was estimated by Dr. Markarian on a plate taken on March 16 U.T. 18^h40^m at the Burakan Observatory as $13^m.3$.

EDITOR

J.719/1964.

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 51

Konkoly Observatory
Budapest
10 April 1964

NEW BRIGHT VARIABLES

BV 421 = CoD $-85^{\circ}47$ ($8^{m}.8$) = Cape $-85^{\circ}55$ ($8^{m}.6$):
Ampl. $0^{m}.6$, RR Lyr ?

BV 422 = 31 Men = CoD $-84^{\circ}63$ ($6^{m}.2$) = HD 39 780 (Ao):
Ampl. $0^{m}.80$, EA, 2 Minima, Period ?

JD 243 8196.221	$6^{m}.55$	JD 243 8316.233	$6^{m}.55$
.276	6.80	.278	6.95
.330	6.95	.324	6.95
.388	7.00	.370	6.65
.445	6.70	.415	6.50
.498	6.50	.460	6.30
		.504	6.20

BV 423 = CoD $-72^{\circ}13$ ($10^{m}.0$) = HD 1372 (F2):
Ampl. $0^{m}.7$, RR Lyr ?

BV 424 = CoD $-65^{\circ}2086$ ($9^{m}.0$) = HD 144 375 (F5):
Ampl. $0^{m}.8$, EA, 2 Minima, Period ?

JD 243 8228.217	$10^{m}.20$	JD 243 8266.224	$10^{m}.55$
.267	10.45		
.315	10.55		

BV 425 = BD $-20^{\circ}1188$ ($8^{m}.2$) = HD 38 882 (Fo):
Ampl. $0^{m}.9$, EA, 2 Minima: JD 243 8315.595 and
JD 243 8408.369

W. STROHMEIER
Remeis-Observatory
Bamberg

Correction to No. 50: The magnitudes of the comparison stars e - j for the Supernova should be read as follows; e=$16^{m}.05$, f=$17^{m}.43$. (The arrow for star f was drawn erroneously. It should point to the next star SW of the labelled one.), g=$17^{m}.36$, h=$16^{m}.18$, i=$16^{m}.42$, j=$15^{m}.59$.

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

NUMBER 52

Konkoly Observatory
Budapest
27 April 1964

INVESTIGATION OF THE LIGHT VARIATIONS OF THE QUASI-STELLAR RADIOGALAXY 3C 273 ON HEIDELBERG PLATES

The radiogalaxy 3C 273 is visible on 105 plates of the Heidelberg plate collection and its brightness was estimated by eye using SMITH and HOFFLEIT's comparison stars. Most of these stars are identical with those used by SHAROV and EFREMOV. The bulk of the observations lies between 1892 and 1915 (91 plates) where they are most needed, and were obtained at two instruments: the 6 inch double astrograph (A-plates) and the 16 inch Bruce double astrograph (B-plates). Therefore, nearly without exceptions, the observations consist of two exposures and in many cases three or more plates are available per night. For the birghtness of the comparison stars WARNER and SWASEY photographic magnitudes were used, slightly corrected to fit our estimates to the best:

Comparison Star	6 inch Telescope m_{pg}	Bruce-Telescope m_{pg}	Remarks
A'	12.07	12.07	Sharov and Efremov's
B	12.33	12.34	a-star
C	12.65	12.62	b- "
D	12.81	12.84	c- "
E	13.04	13.06	d- "

The following table gives the individual magnitude estimates of all plates investigated.

Telescope	J.D.	m_{pg}	Telescope	J.D.	m_{pg}
	241....			241....	
A	2179.375	$12^m.23$	A	6194.507	$12^m.52$
A	2179.472	12.18	A	6194.534	12.46
A	2179.472	12.14	A	6554.596	12.57
A	2182.370	12.20	A	6554.619	12.61
A	2182.370	12.14	A	6554.619	12.54
A	2182.455	12.14	A	6913.452	12.49
A	2182.455	12.07	A	6913.494	12.49
A	2182.548	12.14	A	6918.547	12.52
A	2182.548	12.07	A	6918.567	12.57
A	2541.445	12.43	B	7273.574	12.48
A	2544.415	12.28	B	7273.574	12.45
A	2544.415	12.32	B	7291.466	12.41
A	2916.415	12.36	B	7291.466	12.39
A	2916.415	12.42	A	7303.382	12.52
A	3270.452	12.70	A	7303.367	12.57
A	3270.452	12.52	A	7303.418	12.58
A	3270.515	12.57	A	7667.361	12.26
A	3656.459	12.27	A	7668.383	12.41
A	3656.459	12.33	A	7668.383	12.27
A	4725.445	12.58	B	8024.460	12.73
A	4725.445	12.52	B	8024.460	12.59
A	4727.444	12.60	A	8419.504	12.39
A	4727.444	12.57	B	8445.424	12.39
A	5108.418	12.26	B	8445.424	12.45
A	5108.418	12.20	A	8745.411	12.29
A	5110.454	12.28	A	8745.442	12.49
A	5110.454	12.20	A	8745.486	12.46
A	5129.412	12.26	B	9127.517	12.56
A	5129.412	12.16	B	9127.517	12.56
A	5457.438	12.39	A	9505.361	12.71
A	5457.469	12.46	A	9505.394	12.71
A	5457.512	12.40	A	9505.427	12.52:
A	5813.414	12.49	B	9510.535	12.68
A	5813.442	12.41	B	9510.535	12.64
A	5813.473	12.39	A	9828.427	12.58
B	5814.504	12.45	A	9828.457	12.57
B	5814.504	12.48	A	9828.487	12.59
B	5815.556	12.50	B	9861.409	12.48
B	5815.556	12.48	B	9861.409	12.45
A	5848.384	12.57	B	9882.434	12.73
A	5848.451	12.57	B	9882.434	12.68
A	5852.397	12.46			
A	5852.397	12.52		242....	
A	6194.486	12.57	B	0221.429	12.55

Tele-scope	J.D.	m_{pg}	Tele-scope	J.D.	m_{pg}
	242....			243....	
B	0221.429	12.62	B	0456.387	12.51
A	0222.480	12.68	B	0456.387	12.45
A	0222.480	12.73	B	0461.398	12.55
B	0579.429	12.29	B	0461.398	12.66
B	0579.429	12.27	B	0463.405	12.66
B	0953.488	12.41	B	0463.405	12.68
B	4612.444	12.45	B	6287.480	12.78
B	7158.376	12.95	B	7469.429	12.68
B	7158.376	12.91			
B	7534.446	12.44			
B	7534.446	12.48			

E.H. GEYER
Landessternwarte
Heidelberg-Königstuhl

Literature:

Information Bull. on Variable Stars 27 (1963)

Huth, H.: MVS 2, Heft 1 (1963)

Sandage, A.: Astrophys.J. 139, 416 (1964)

Sharov, A.S. and Efremov, Y.N.: Inform. Bull. on Variable Stars 23 1963; Russ.Astron.J. 40, 950(1963)

Smith, H.J. and Hoffleit, D.: Astron.J. 68, 292 (1963); Nature Vol. 198, 650 (1963), Sky and Telescope XXVIII, 8/ 1964

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 53

Konkoly Observatory
Budapest
27 April 1964

SPECTRUM OF NOVA PUPPIS 1963

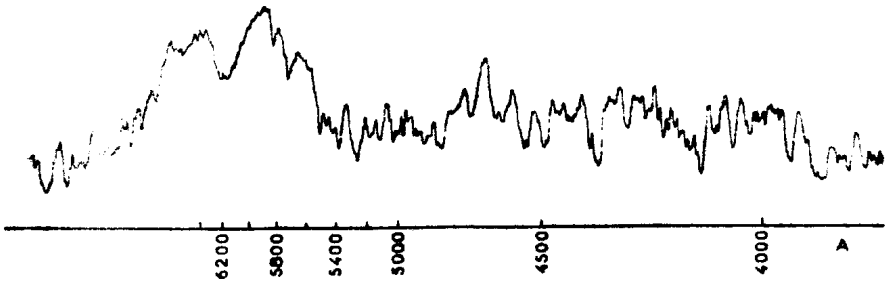
Hoffmeister's Nova Puppis 1963 was observed spectroscopically on 1964 April 14 with low dispersion (430 A/mm at Hγ) at the Crossley reflector. The visual magnitude was about 15. The spectrum in the photographic region is dominated by one very strong, broad asymmetrical emission band at the position of [O III] λλ 5007, 4959. There is a continuous spectrum with broad, but weak emission maxima at the positions of (in decreasing order of strength) [Ne III] λ 3868+H8, N III λλ 4634, 4640+ He II λ 4686, Hβ, Hγ, Hδ. The very large value of the ratio [O III] /Hβ is unusual: the measured equivalent widths of λ 5007/ λ 4959/Hβ are 28./9./≤ 0,24 (where the intensity of the [O III] blend has been subdivided in the proportions of 3.0:1).

G.H. HERBIG
K. WILDE
Lick Observatory, University of California
Mount Hamilton Calif., U.S.A.

RED-YELLOW SPECTRUM OF THE SUPERNOVA IN UMA

On April 2/3 I have obtained an unwidened spectrum of the supernova, found on March 12/13 by M. Lovas, using a 5° objective prism of UBK7 glass, attached to the 60/90/180 cm Schmidt-telescope at our mountain station. Kodak OaD plate was used, with an exposure time of 45 minutes. In the figure a microphotometer record of the

supernova is shown; the wavelenghts are only approximate. The red-yellow spectrum shows the absorption at λ 6190 A, characteristic for a supernova of Type I. The photographic brightness of the supernova was at the time of the exposure about $14^{m}.8$. Therefore the blue part of the spectrum was very weak on the plate.



B. BALÁZS
Konkoly Observatory
Budapest

Ny. 874/1964. - Statisztikai Kiadó Vállalat sokszorosító üzeme
Budapest, II., Keleti Károly u. 18/b.
Felelős vezető: Hajdu Györgyné

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 54

Konkoly Observatory
Budapest
4 May, 1964

ELEMENTS OF SOUTHERN BV-STARS

BV 421 = CoD -85° 47; communicated in Inf. Bull. on Var. Stars 51
RRc: Max = JD 243 8261.485 + $0^{d}.574\ 63$. E

BV 422 = CoD -84° 63; communicated in Inf. Bull. on Var. Stars 51
EA: Min = JD 243 8196.370 + $8^{d}.569$. E

BV 423 = CoD -72° 13; communicated in Inf. Bull. on Var. Stars 51
RRc: Max = JD 243 8261.510 + $0^{d}.297\ 59$. E

BV 426 = CoD -68° 1434 ($9^{m}.2$) = HD 131 356 (G_5) = K3III 2215
C: δ Max = JD 243 8205.700 + $37^{d}.966$. E

BV 427 = Cape -82°898 ($9^{m}.2$)
EB: Min = JD 243 8263.440 + $5^{d}.872$. E

Details in the Bamberg Publications.

W. STROHMEIER
Remeis-Observatory
Bamberg

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 55

Konkoly Observatory
Budapest
8 June 1964

BRIGHT SOUTHERN BV-STARS

BV 428 = 26 Cir = CoD $-63^{\circ}1029$ ($6^{m}.5$) = HD 130 701/2 (F5/A2)

Cepheid? EB?
Ampl. (phg) = $0^{m}.5$ Max = JD 243 8225.350 + $4^{d}.281$. E

BV 429 = CoD $-40^{\circ}9552$ ($8^{m}.7$) = HD 136 483 (G0)

Cepheid
Ampl. (phg) = $0^{m}.6$ Max = JD 243 8196.33 + $17^{d}.83$. E

BV 430 = 9 Cha = CoD -78° 342 ($6^{m}.7$) = HD 75 747 (A5)

EA or EB
Ampl. (phg) = $0^{m}.5$ Min = JD 243 8442.300 + $1^{d}.672$. E

W. STROHMEIER
Remeis-Observatory
Bamberg

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 56

Konkoly Observatory
Budapest
24 June 1964

PREDISCOVERY MAGNITUDES OF THE SUPERNOVA IN U Ma

The brightness of the supernova found by M. Lovas at the mountain station of the Konkoly Observatory was measured on our sky patrol plates. These measurements cover the interval between the Soviet and Hungarian observations (Inf. Bull. No. 50).

J.D. 2438 439.50	1964	Febr.	13	[14^m.3 invisible
440.57			14	14.3 suspicious ?
446.57			20	13.2
457.36		March	2	12.85
463.47			8	13.3
465.52			10	13.1
502.50		Apr.	16	[14.3 invisible

The comparison sequence is the same as published in Inf. Bull. No. 50.

P. AHNERT
Sonneberg Observatory

THE ELEMENTS OF THE VARIABLE STAR 78.1933. Cnc

The star is No. 1389 in the CSSV(Moscow 1951) = SVS 540 Cnc. According to P. Koulikovsky (Per. Zv. 4. 295, 1934) the star is of Algol type varying between 12.6 and 14.5 m_{pg}. On the basis of 53 brightness estimates made by K. Kordylewski at the mountain station of the Konkoly Observatory by means of the 8" expedition telescope of the Cracow University Observatory the Algol type was not confirmed.

The observations show two quick rises of brightness. The brightness was equal to that of the comparison star A (Acta Astr. Suppl. 1950. 1.) at the moments:

$$\text{J.D. } 243\ 8418^{d}.4696 \pm {}^{d}.0033;$$
$$\text{J.D. } 243\ 8430^{d}.4151 \pm {}^{d}.0030.$$

Moreover, from 448 observations covering the period 1936-1950 (Kordylewski l.c.) and from 180 observations between 1955 and 1960 (made available to me by K. Kordylewski) I found that the star is an RR Lyrae variable of type a.

The elements are:

$$\text{Hel. Max.} = \text{J.D. } 243\ 8418^{d}.5002 + 0^{d}.5431583 . E$$
$$M - m = 0^{d}.0532$$
$$A_{vis} = 12^{m}.12 - 13^{m}.05$$

No Blashko effect has been found.

Cracow, 8 June 1964

J. M. KREINER
Astronomical Observatory of the
Jagellonian University

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 57

Konkoly Observatory
Budapest
24 June 1964

i BOOTIS

From 21 photoelectric observations obtained between J.D. 243 8540.3991 and .5087 the following epoch of minimum can be derived:

Hel. J.D. 243 8540.4649 $\pm$ $0^d.0003$ m.e.

The elements

Min = J.D. 243 7362.6179 + $0^d.267\ 814\ 191.n$

$\pm$ 2 $\pm$ 171 m.e.

valid after March 1961 provide O - C = + $0^d.0002$.

The mean error of the 15 minima observed since March 1961 and used in deriving the above ephemeris amounts to $\pm$ $0^d.00055$.

Before March 1961 the following elements were valid:

Min = J.D. 243 4132.517 + $0^d.267\ 812\ 271.n$ + $0^d.115\ 242.10^{-9}.n^2$.

$\pm$ 0005 $\pm$ 220 $\pm$ 017.... 10^{-9} m.e.

This formula is based on 41 minima and gives for the mean error of one minimum $\pm$ $0^d.0012$.

The period of i Bootis seems to be practically constant since March 1961.

A more exhaustive discussion will follow elsewhere.

Potsdam, 11 June 1964

H.SCHNELLER
Astrophysical Observatory

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 58

Konkoly Observatory
Budapest
30 June 1964

THE BRIGHTNESS OF THE QUASI - STELLAR RADIO SOURCE 3C 48 ON HEIDELBERG PLATES

The light variation of the quasi-stellar radio source 3C 48 - like that of the radio galaxy 3C 273 - can be traced back over 60 years.

The variability of 3C 48 was discovered by SMITH and HOFFLEIT (3) and by MATTHEWS and SANDAGE (1). On a pair of plates of the Heidelberg plate collection taken in 1902 with the 16" Bruce astrograph the object is clearly visible. In 1963 twelve plates were taken by SCHMIDT (2) with the same instrument for aberration measurements of 3C 48. All these plates were measured with the Sartorius iris-diaphragm photometer of the Heidelberg Observatory. The magnitudes of our comparison stars were derived by comparison with Selected Area 45, lying within the field of our plates. For the comparison stars B and D, MATTHEWS and SANDAGE's photoelectric B-values - fitting well into our sequence - have been adopted as photographic magnitudes. Not all of our comparison stars are identical with those used by SMITH and HOFFLEIT for the investigation of 3C 48 on Harvard plates. On three good plates we compared also these stars with our magnitude sequence. There exists a scale difference of +0.75 magnitudes between SMITH and HOFFLEIT's and our system in the range of $15^m.5$ to $16^m.5$.

The mean magnitudes of the comparison stars are inserted in Table I. Table II. contains the magnitudes for 3C 48 obtained on our plates.

Table I

Comparison stars SMITH HOFFLEIT	Heidelberg	m_{pg}	Remarks
C		13.30	
D		14.31	
E	B	14.03	MATTHEWS and SANDAGE's comp. star
E'		14.71	
F	D	15.20	MATTHEWS and SANDAGE's comp. star
F'	a	15.08	
G		15.18	
G'	c	16.07	
H		16.44	
	b	15.99	
	d	16.26	

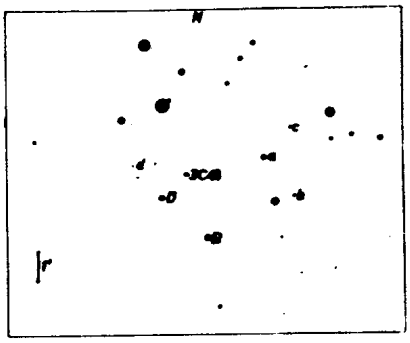


Table II

J.D.	3C 48 m_{pg}	J.D.	3C 48 m_{pg}
241 6019.428	15.85	243 8321.469	16.12
6019.428	15.95	8357.456	16.07
243 8226.505	15.95	8370.295	16.03
8234.520	16.11	8380.498	16.10
8237.517	16.32	8382.283	16.10
8241.537	16.15	8399.381	16.08
8290.476	16.25	8411.290	16.30

Literature

1/ MATTHEWS, T. A. and SANDAGE, A. R.: Astrophys. J. 138, 30 (1963)
2/ SCHMIDT, Th.: Zeitschrift f. Astrophys., in print (1964)
3/ SMITH, H. J. and HOFFLEIT, D.: Publ. Astr. Soc. Pacific 73, 292 (1961)

E. H. GEYER
Landessternwarte
Heidelberg - Königstuhl

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 59

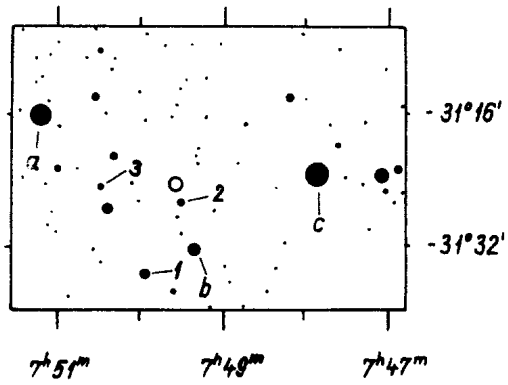
Konkoly Observatory
Budapest
4 July 1964

BV 431 = NOVA PUPPIS 1964

On sky patrol plates of the Bamberg Southern Station another Nova was discovered not farther than 3° from Nova Puppis 1963 (C. Hoffmeister, Inf. Bull. No. 45).

Position of the Nova:

1875.0 $7^h48^m33.7^s$ $-31°19.8'$
1900.0 $7^h49^m32.2^s$ $-31°23.6'$



1 = CoD $-31°5198$ ($9^m.3$)
2 = CoD $-31°5188$ ($9^m.7$)
3 = $10^m.5$
a = CoD $-31°5226$ ($7^m.0$)
b = CoD $-31°5183$ ($7^m.5$)
c = CoD $-31°5165$ ($8^m.1$)

Estimated magnitudes of the Nova:

1963 Dec 10	JD 243 8374.535	(fainter than 14^m),	invisible
1963 Dec 13	8377.512	(fainter than 14^m),	invisible
1964 Feb 13	8439.357	$9^m.1$	
1964 Feb 14	8440.361	9 .4	
1964 Feb 15	8441.355	9 .6	
1964 Feb 16	8442.354	9 .8	
1964 Feb 17	8443.354	10 .4	
1964 March 6	8461.296	(fainter than 14^m),	invisible
1964 March 16	8471.270	(fainter than 14^m),	invisible

On earlier and on later plates the Nova is fainter than the plate limit, 14^m.

Bamberg, 26 June 1964

W. STROHMEIER
Remeis Observatory

Ny. 1281/1964. - Statisztikai Kiadó Vállalat sokszorosító üzeme
Budapest, II., Keleti Károly u. 18/b.
Felelős vezető: Hajdu Györgyné

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 60

Konkoly Observatory
Budapest
7 July 1964

THE SECOND NOVA PUPPIS 1963

The Nova announced by W. Strohmeier (Inf. Bull. No. 59.) as first observed on a Boyden Observatory plate of February 13, 1964, had its ascent in December 1963. In spite of the low meridian altitude the region is well covered by sky patrol plates of Sonneberg Observatory yielding the following magnitudes:

1963 Dec.	9/10	243 8373.560	$11^m.5$	invisible
"	14/15	8378.563	10.6:	
"	19/20	8383.539	8.6	
"	20/21	8384.511	8.0	
"	21/22	8385.540	8.3	
"	22/23	8386.523	8.0	
"	23/24	8387.519	8.0	
1964 Jan.	11/12	8406.444	8.5	
"	"	8406.482	8.5	
"	15/16	8410.434	9.5	
"	16/17	8411.458	9.6	
"	17/18	8412.479	9.5	
"	19/20	8414.435	9.6	
"	20/21	8415.467	9.7	
"	"	8415.510	9.7	
Feb.	13/14	8439.372	10.0	
"	14/15	8440.348	10.0	
"	"	8440.392	10.3	

The Nova was found invisible on 169 South African plates from the years 1935 (2), 1936 (7), 1937 (50), 1938 (8), 1952 (46), 1953 (53), 1959 (3) and on 150 Sonneberg plates from the years 1929 to 1962. No faint star could so far be identified with the Nova on Mt. Palomar Charts $7^h\ 48^m\ -30^o$.

Sonneberg Observatory, July 3, 1964.

H. HUTH, C. HOFFMEISTER

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 61

Konkoly Observatory
Budapest
6 August 1964

Y CYGNI

For the star Y Cygni exhibiting apsidal rotation R.S. Dugan published in 1931 (Princ. Contr. No. 12) the following elements:

"Even" t_{min} = J.T.240 9534.3195 + $2^d.996\ 3331\ n + 0^d.1380 \sin 0^\circ.06266\ n - 0^d.0074 \sin 0^\circ.12532\ n$

"Odd" t_{min} = J.T.240 9635.8175 + $2^d.996\ 3331\ n - 0^d.1380 \sin 0^\circ.06266\ n - 0^d.0074 \sin 0^\circ.12532\ n$

According to these elements the minima shall reach their extreme positions in 1967, the even minima passing through a negative, the odd minima through a positive maximum.

The correction of these apparently rather accurate elements (s. A.N. 287, 186, 1963 = Mitt. Potsdam Nr. 106) will only be worth, after a great number of exact moments will be obtained for the even and likewise for the odd minima in the next years, from 1964 to about 1970.

Therefore I give in the Table below the moments of the minima for the time interval 1964 August 12 - December 18 calculated by using Dugan's elements. Only the first sinusoidal term was taken into account. The minima given here are those for n = 9704 to n = 9750. In this interval the period will increase from $2^d.996\ 277$ to $2^d.996\ 284$ for the even minima and diminish from $2^d.996\ 390$ to $2^d.996\ 382$ for the odd minima. Hereby, the odd minima will occur at the beginning of the interval mentioned $1^d.754$ and at the end of it $1^d.759$ later than the even ones. A similar table for 1965 will be given later. The even minima are not listed here since they occur in the afternoon hours.

J.D.M.A.T.G.		U.T.	
243 8000.000 +			
619.597	1964. Aug.	12^d	$2.^h3$
622.593		15	2.2
625.589		18	2.2
628.586		21	2.1
631.582		24	2.0
634.578		27	1.9
637.574		30	1.8
640.571	Sept.	2	1.7
643.567		5	1.6
646.563		8	1.5
649.560		11	1.4
652.556		14	1.3
655.552		17	1.2
658.548		20	1.2
661.545		23	1.1
664.541		26	1.0
667.537		29	0,9
670.534	Oct.	2	0.8
673.530		5	0.7
676.526		8	0.6
679.522		11	0.5
682.519		14	0.4
685.515		17	0.4
688.511		20	0.3
691.507		23	0.2
694.504		26	0.1
697.500		29	0.0
700.496		31	23.9
703.492	Nov.	3	23.8
706.489		6	23.7
709.485		9	23.6
712.481		12	23.6
715.478		15	23.5
718.474		18	23.4
721.470		21	23.3
724.467		24	23.2
727.463		27	23.1
730.459		30	23.0
733.455	Dec.	3	22.9
736.452		6	22.8
739.448		9	22.8
742.444		12	22.7
745.440		15	22.6
748.437		18	22.5

Astrophysikalisches Observatorium Potsdam, July 30, 1964.
H. SCHNELLER

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 62

Konkoly Observatory
Budapest
6 August 1964

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 432 = 1900: $1^h10^m2^s$, $-57^\circ15'.7$ Identification-Card No. 1
max = pg. $10^m.8$, min fainter than pg. $14^m.0$ (invisible)

BV 433 = CoD $-46^\circ394$ ($8^m.6$) = HD 8729 (Mb), $A_{pg} = 0^m.5$

BV 434 = CoD $-34^\circ2092$($8^m.2$) = HD 33 452 (Mc) $A_{pg} = 0^m.7$
= K3π 507

BV 435 = CoD $-72^\circ301$($10^m.1$) = HD 271 706 (G0), $A_{pg} = 0^m.6$

BV 436 = CoD $-68^\circ397$ ($9^m.3$) = HD 45 819 (Mb), $A_{pg} = 0^m.6$

BV 437 = 61 Pic
= CoD $-56^\circ1537$($6^m.0$) = HD 46 355 (K0), $A_{pg} = 0^m.4$
= K3π 100 749

BV 438 = CoD $-48^\circ2884$($8^m.5$) = HD 57 897 (B9), $A_{pg} = 0^m.4$

BV 439 = 1900: $7^h47^m55^s.3$, $-51^\circ47'.8$ Identification-Card No. 2
max = pg. $12^m.0$, min fainter than $14^m.0$ (invisible)

BV 440 = CoD $-61^\circ2676$($8^m.1$) = HD 91 218 (A2), $A_{pg} = 0^m.5$

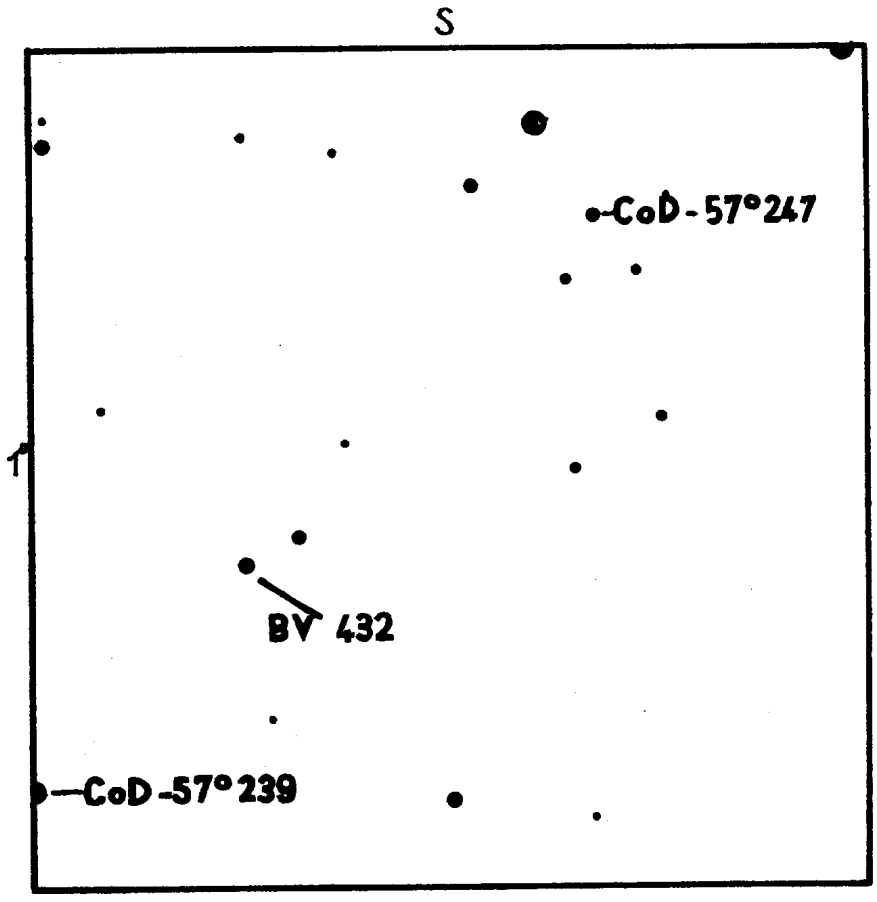
BV 441 = γ Cha
= CoD -77° 454($4^m.4$) = HD 92 305 (Ma), $A_{pg} = 0^m.4$

BV 442 = BD $-19^\circ3231$($9^m.0$) = HD 98 412 (F8), $A_{pg} = 0^m.5$

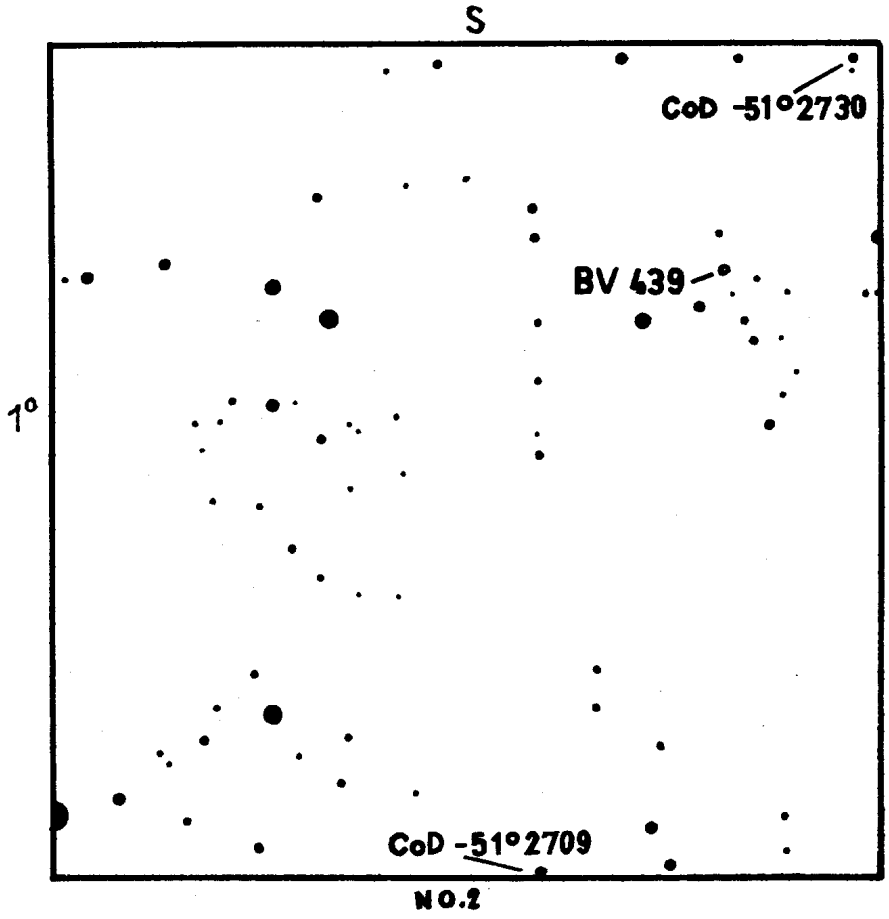
BV 443 = BD $-17^\circ3949$($7^m.0$) = HD 120 901/2 (F2/A2), $A_{pg} = 0^m.6$

BV 444 = CoD $-66^\circ1516$($7^m.8$) = HD 122 314 (A5), $A_{pg} = 0^m.5$

BV 445 = BD $-10^\circ3826$($8^m.5$) = HD 123 423 (F5), EA or EB $A_{pg} = 0^m.6$
Min = JD 242 6087.480 + $1^d.692\,35 \cdot E$



NO. 1


S
CoD -51°2730
BV 439
1°
CoD -51°2709
NO.2

BV 446 = BD - 9°3870 ($8^m.5$) = HD 124 036 (Mb), $A_{pg} = 0^m.5$

BV 447 = CoD -57°5640 ($9^m.8$) = Cape -57°6710 ($9^m.6$) $A_{pg} = 0^m.6$

BV 448 = CoD -40°9496 ($6^m.2$) = HD 135 876 (B8) $A_{pg} = 0^m.6$

BV 449 = BD -12°4227 ($7^m.0$) = HD 135 681 (A2), EA or EB, $A_{pg} = 0^m.5$
Min = JD 242 5758.425 + $0^d.494\ 14 \cdot E$

BV 450 = CoD -44°10 140 ($8^m.0$) = HD 137 518 (B0) $A_{pg} = 0^m.5$

BV 451 = CoD -28°12 358 ($6^m.4$) = HD 150 894 (A2) $A_{pg} = 0^m.4$

Details in the Bamberg-publications.

Bamberg, Remeis-Observatory
1 August 1964

W. STROHMEIER
R. KNIGGE, H. OTT

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 63

Konkoly Observatory
Budapest
17 August 1964

BEATS IN THE BRIGHTNESS VARIATION OF τ' LUPI

At his announcement in 1956 that τ' Lup was a β CMa star, B.E. Pagel (Monthly Notices, 116, 10, 1956,) communicated the following elements:

$$P = 0^d.177365 \pm 15$$

$$2K = 10.6 \pm 0.8 \text{ km/sec}$$

$$\overline{\Delta m}_{\left(\frac{Y+B}{2}\right)} = 0^m.03$$

Photoelectric observations carried out at the Boyden Observatory on 29 nights, spread over the interval 1964 March 19/20 - July 13/14 clearly reveal beats with a period of 8.0 days. J D 2438506 is the epoch of a well observed maximum in the amplitude.

In the course of a beat cycle the brightness variation in the short period cycle changes from

$$m_y = 0^m.025 \quad \text{to} \quad m_y = 0^m.035$$

in yellow light. The ratio of the amplitudes in yellow and in ultraviolet light is

$$m_y / m_u = 0.75 .$$

From the run in the epochs of maximum light there can be concluded that the stronger oscillation corresponds to the shorter of the two main periods, as is usually the case among β CMa stars. We find:

$$P_0 = 0^d.177353 \pm 6 \qquad m_0 = 0^m.030$$

$$P_{02} = 0^d.181374 \pm 6 \qquad m_{02} = 0^m.005$$

$$P_2 = 0^d.089670 \pm 9$$

Hence the ratio

$$\frac{P_2}{P_0} = 0.5056 .$$

The same ratio was found earlier for ν Eri, (A. Van Hoof, Zeitschr. f. Astroph., 53, 124, 1961,) the main beat of which matches that of τ' Lup.

A. VAN HOOF

W.S. PRETORIUS

C. PIKOOS

Boyden Observatory,
Bloemfontein, O.F.S.
South Africa

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 64

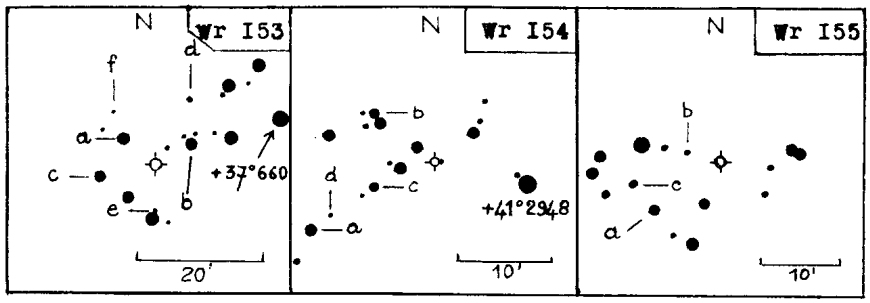
Konkoly Observatory
Budapest
4 September 1964

NOUVELLES ETOILES VARIABLES

Dés	AR (1900,0)	D	max mp	min mp	type	nombre d'observ.
Wr 153	$2^h\ 50^m\ 48^s$	$+37^\circ 30'$	11,0	<13,2	E	36
Wr 154	$17\ 57\ 20$	$+41^\circ 46$	11,3	12,5	I	83
Wr 155	$21\ 40\ 11$	$+44^\circ 39$	11,2	11,7	I	105

Etoiles de comparaison

	a	b	c	d	e	f	
Wr 153	11,0	11,2	11,5	12,2	12,9	13,2	(d'après H.A.8: $3^h+39^\circ 30'$)
Wr 154	11,1	11,8	12,2	12,7	(d'après H.A.85. $18^h +46^\circ 30'$)		
Wr 155	11,34	11,75	11,98	(S.A.41 Bgd)			



Remarques

Wr 153. Variabilité confirmée, d'après les plaques de Bamberg, par W.Strohmeier qui a obtenu les éléments suivants:

E : JJ 243 8433,340 $+0^{j}797652$

Wr 154. Les magnitudes données sont incertaines, l'étoile ayant un compagnon serré W non séparé sur les plaques examinées. Pas de coloration sensible.

Wr 155. = $n^{o}464$ Bgd (S.A.41) AR: $21^{h}40^{h}40^{m}2$; D: $+44^{o}38'7$ (1900,0) m_{p} = 11,41; Sp KO

Des renseignements seront publiées dans le 3. "Bulletin de la Station Astrophotographique de Mainterne".

R.WEBER
Station
Astrophotographique
de Mainterne
(EURE-ET-LOIR)
France

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 65

Konkoly Observatory
Budapest
5 September 1964

THE ELEMENTS OF THE ECLIPSING VARIABLE SU FORNACIS

I have observed this variable star on Harvard College Observatory plates and found the following elements

$$\text{Min J.D.} = 2414869.805 + 2^{d}.4346597.E$$

Moments of mean minima:

E	min J.D.	O-C
0	2414869.84	$+0^{d}.04$
902	2417065.87	0.00
2427	2420778.71	-0.01
2443	2420817.64	-0.04
3451	2423271.84	+0.02
3959	2424508.60	-0.02
5565	2428418.67	-0.02
6061	2429626.28	0.00
6340	2430305.55	0.00
6820	2431430.37	+0.01
7221	2432450.49	+0.01

$D = 0^{P}.11$ $\quad d = 0.00$

August 20, 1964

CEZMI GÜNER OMAY
Ankara University Observatory
Ankara - Turkey

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 66

Konkoly Observatory
Budapest
18 September 1964

BRIGHT SOUTHERN BV - STARS

On sky patrol plates of Bamberg Southern Station 31 further stars were found whose variability seems to be real as can be seen from the material available till now.

BV 452 = CoD $-61^{\circ}632$ ($7\overset{m}{.}9$) = HD 21 765(F2) $A_{pg} = 0\overset{m}{.}5$

BV 453 = CoD $-33^{\circ}1755$ ($9\overset{m}{.}0$) (Fo) $A_{pg} = 0\overset{m}{.}7$

BV 454 = CoD $-57^{\circ}956$ ($10\overset{m}{.}3/4$) $A_{pg} = 0\overset{m}{.}4$

BV 455 = CoD $-45^{\circ}1909$($9\overset{m}{.}6$) = HD 273 665(Ao) $A_{pg} = 0\overset{m}{.}4$
= K3III 545

BV 456 = 1900: $5^{h}35^{m}56^{s}$ $-68^{\circ}35\overset{'}{.}1$ Ident.Card 1 $A_{pg} = 0\overset{m}{.}6$
max = $11\overset{m}{.}6$ (pg) min = $12\overset{m}{.}2$ (pg)

BV 457 = CoD $-81^{\circ}172$ ($9\overset{m}{.}1$) = HD 37 909(A3) $A_{pg} = 0\overset{m}{.}6$

Max = JD 243 8314.4932 + $0\overset{d}{.}187\,47 \cdot E$
RRc Light-curve Fig. 1

BV 458 = 1900: $6^{h}7^{m}54^{s}$ $-66^{\circ}57\overset{'}{.}9$ = HD 271 924(Ao) $A_{pg} = 0\overset{m}{.}4$
= K3III 725

BV 459 = CoD $-80^{\circ}208$ ($9\overset{m}{.}2$) = HD 43 013(F5) $A_{pg} = 0\overset{m}{.}5$

BV 460 = CoD $-74^{\circ}299$ ($10\overset{m}{.}2$) $A_{pg} = 0\overset{m}{.}5$

BV 461 = 1900: $6^{h}19^{m}35\overset{s}{.}3$ $-73^{\circ}26\overset{'}{.}7$ Ident.Card 2 $A_{pg} = 0\overset{m}{.}5$
max = $11\overset{m}{.}5$ (pg) min = $12\overset{m}{.}0$ (pg)
= K3III 747

BV 462 = 1900: $6^{h}41^{m}42^{s}$ $-74^{\circ}6\overset{'}{.}9$ Ident.Card 3 $A_{pg} = 0\overset{m}{.}4$
max = $13\overset{m}{.}0$ (pg) min = $13\overset{m}{.}4$ (pg)
= K3III 858

BV 463 = CoD $-41^{\circ}2894$ (10^{m}) $A_{pg} = 0\overset{m}{.}5$

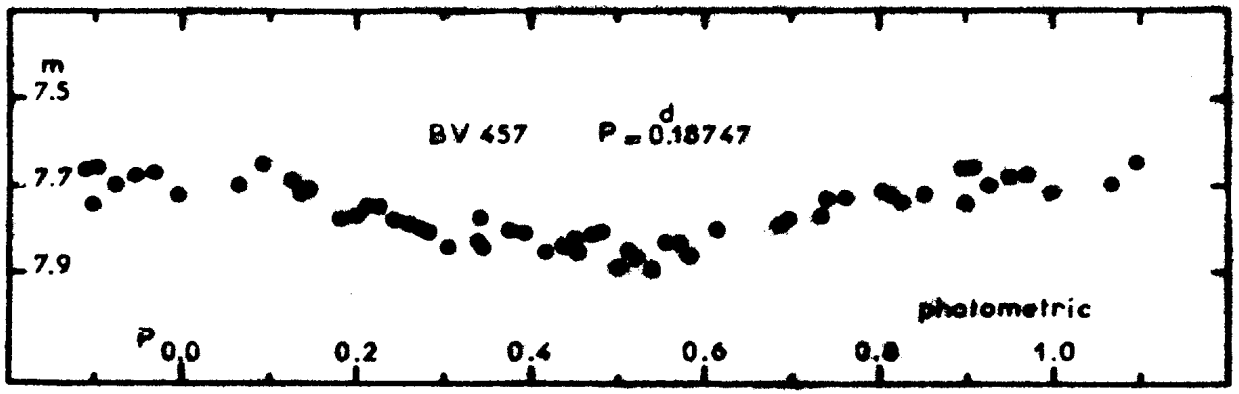


FIG. 1

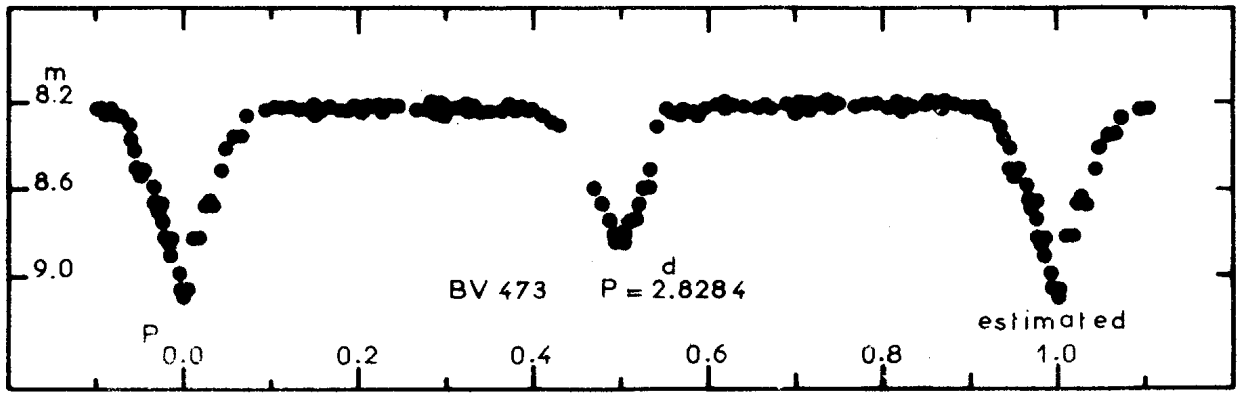


FIG. 2

BV 464 = CoD $-44^{o}3318(9^{m}.7)$ $A_{pg} = 0^{m}.5$
K3II 1025

BV 465 = Cap $-63^{o}756$ $(9^{m}.5)$ $A_{pg} = 0^{m}.5$
= K3II 1099

BV 466 = CoD $-22^{o}4975(9^{m}.7)$ $A_{pg} = 0^{m}.4$

BV 467 = CoD $-34^{o}3970(6^{m}.4)$ = HD 63 786(Ao) $A_{pg} = 0^{m}.5$

BV 468 = CoD $-34^{o}4842(6^{m}.3)$ = HD 71 801(B5) $A_{pg} = 0^{m}.4$

BV 469 = CoD $-42^{o}5038(7^{m}.5)$ = HD 79 154(A2) $A_{pg} = 0^{m}.6$

BV 470 = CoD $-57^{o}2897(7^{m}.0)$ = HD 86 118(B5) $A_{pg} = 0^{m}.5$
= 163 Car

BV 471 = CoD $-36^{o}6274(9^{m}.3)$ $A_{pg} = 0^{m}.6$
= K3II 1595

BV 472 = CoD $-51^{o}5013(9^{m}.8)$ $A_{pg} = 0^{m}.5$
= K3II 1645

BV 473 = CoD $-81^{o}391$ $(8^{m}.3)$ = HD 93 486(F5) $A_{pg} = 0^{m}.8$

Min = JD 243 8439.490 + $2^{d}.8284$. E
EW Light-curve Fig. 2

BV 474 = CoD $-53^{o}3911(8^{m}.1)$ = HD 97 317(F8) $A_{pg} = 0^{m}.5$

BV 475 = CoD $-64^{o}554$ $(6^{m}.0)$ = HD 101 379/380 (Go/Ao) $A_{pg} = 0^{m}.3$
= 12 Mus
= K3II 101 211

BV 476 = CoD $-58^{o}4603(6^{m}.3)$ = HD 108 968(F8p) $A_{pg} = 0^{m}.4$
= 35 Cru

BV 477 = CoD $-77^{o}608$ $(10^{m}.0)$ $A_{pg} = 0^{m}.6$

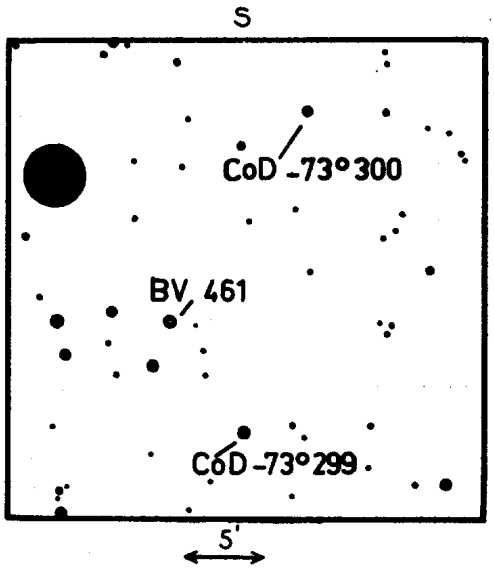
BV 478 = Cap $-64^{o}2772(9^{m}.3)$ $A_{pg} = 0^{m}.4$

BV 479 = CoD $-60^{o}5320(7^{m}.9)$ $A_{pg} = 0^{m}.5$

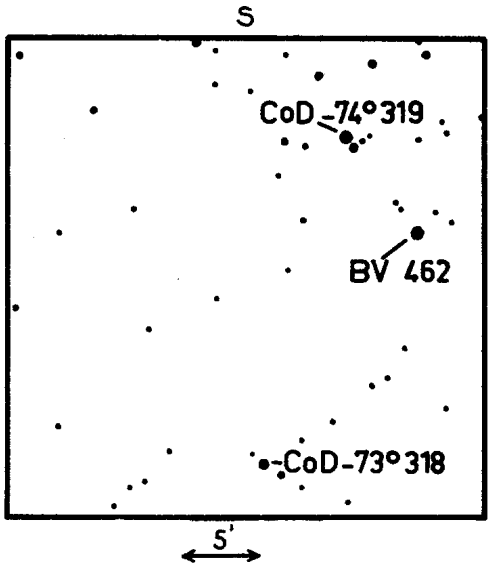
BV 480 = CoD $-60^{o}6363(8^{m}.6)$ = HD 149 573(A3) $A_{pg} = 0^{m}.4$

BV 481 = CoD $-44^{o}12$ 569$(5^{m}.7)$ = HD 168 905(B3) $A_{pg} = 0^{m}.5$

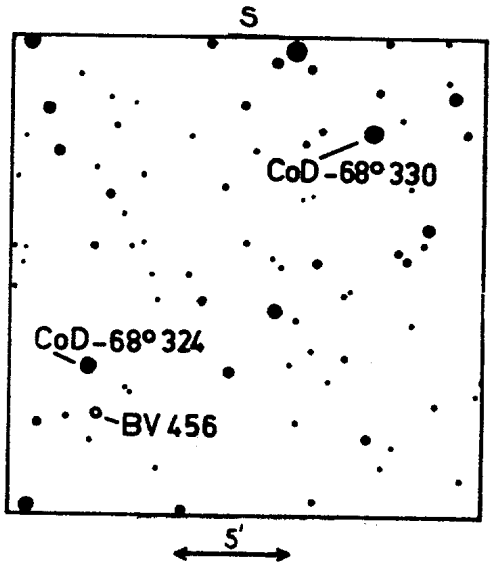
BV 482 = CoD $-70^{o}1798(7^{m}.3)$ = HD 199 005(F2) $A_{pg} = 0^{m}.6$
= K3II 5295



IDENT. CARD. 2



IDENT. CARD. 3



IDENT.CARD. 1.

Bamberg, Remeis-Observatory
15 September 1964

W.STROHMEIER
R.KNIGGE H.OTT

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 67

Konkoly Observatory
Budapest
19 September 1964

VARIABLES IN NGC 188

Four variables have been found in the old galactic cluster NGC 188 on plates taken with the Schmidt Camera 135/200/400 cm of Karl Schwarzschild Observatory. The stars S 8279 and S 8280 had been noticed by Dr. Richter first and have been recovered independently by the author. Three of the new variables proved to be pulsating stars with ultra-short periods.

	1855.0			
S 8278 Cep	0^h	$33^m.9$	$+84^\circ 28'$	Ecl. $17^m.0$ $-17^m.5$
				min = 243 8331.492 + $0^d.74055 . E$
S 8279 Cep	0	36.0	+84 26	RRs 16.2 -16.9
				max = 243 8246.381 + $0^d.143829 . E$
S 8280 Cep	0	36.1	+84 27	RRs 16.2 -16.8
				max = 243 8246.383 + $0^d.1503085 . E$
S 8474 Cep	0	33.3	+84 33	RRs 17.0 -17.5:
				max = 243 8246.454 + $0^d.126246 . E$

Sonneberg Observatory, 15 September 1964

C. HOFFMEISTER

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 68

Konkoly Observatory
Budapest
23 September 1964

V SAGITTAE

There is now in press in the Astrophysical Journal Supplements a lengthy paper dealing with the well-known "nova-like" variable V Sagittae. We present here an abstract of that paper together with a proposal for revision of the traditional methods of observing this star, based on the new interpretation of the system.

The new observations were made at Lick Observatory in 1959-63: spectroscopically (with the 120-inch and Crossley reflectors) at 48 and 350 Å/mm, and photoelectrically in UBV. The complex light variations are resolvable into 3 apparantly independent activities: (I) a strictly cyclic variation produced by an eclipsing binary system, with primary minima occurring at $JD_{\odot}$ 2437889.9154 ($\pm$ 0.0015) + $0^d.514195$ ($\pm$ 0.000004) E; (II) an occasional major and very sudden brightening of as much as 3 mag.; (III) minor fluctuations with a time scale of a few days. When the system is faint, additional minor, rapid fluctuations with a time scale of about one hour are present. It might be mentioned that the cycles of about 17^d found by the early observers correspond to the resonance between the day and the eclipsing period of V Sge.

The spectrum of V Sge contains broad, hazy emission lines of H, He II, O III, O VI, N IV, and N V, much as in a WN5 star, on a hot continuum. A unique feature is the presence of sharp fluorescent O III lines at λ 3132 and λ 3444; these are double, and oscillate (180^o out of phase) in the $0^d.51$ period with semi-amplitudes of K_1 = 320 km/sec, K_2 = 85 km/sec. Component 1 is the star of lesser mass and radius but higher surface brightness that is eclipsed at primary minimum. The hazy O VI emissions and the complex absorption reversals in the H, He II lines are produced by detached material in the binary system.

Analysis of the light curve and colors indicates that component 1 ($m_1 = 0.74\odot$, $R = 1.07\odot$, $T = 44\,000^\circ$) lies very near its limiting Roche surface while component 2 ($m_1 = 2.8\odot$, $R = 1.40\odot$, $T = 22\,000^\circ$) lies well within its lobe.

At the time of a major outburst (II, above), the emission lines become very broad and strong, the fluorescent O III lines vanish, and the eclipses become very shallow. The colors change, but this is due entirely to the effect of the strengthened emission lines on the UBV color system. The observational data at the time of the outburst can be explained by the sudden ejection from component 1 of a semi-opaque shell of hot material that very quickly (the spectra indicate an expansion velocity of 400-500 km/sec) envelops the entire binary system. The small-scale fluctuations of V Sge near minimum can be interpreted as due to minor changes in the effective dimensions of the same star.

The estimated reddening of V Sge ($E_{B-V} = +0.40$) leads to a distance of 2.75 kpc and a total $M_V = -1.0$ outside eclipse, but in the absence of activity of type II. Complete details will be found in the paper cited, which should appear in early 1965.

It is clear that in the future, random or inaccurately timed observations of V Sge will be of little value. It is suggested that in particular those variable star associations having V Sge on their programs consider best how to meet the new requirements. We tabulate below revised magnitudes for the comparison star sequence of Mitchell (Pub. McCormick Obs. 6, 289, 1935) which has been used widely (for example by the AAVSO), and recommend that after 1 January 1965, all visual (or photographic) observers change to these new magnitudes, which have been measured photoelectrically by Smak, mainly with the 24-inch reflector. The "magn" identifications are those of Mitchell.

"Magn"	V	B-V	No. obsns.	"Magn"	V	B-V	No obsns.
7.8	7,13	-0.02	1	11,0	10,92	+0.86	2
8.3	8.21	+0.81	2	11.0	10.95	+1.27	2
8.6	8.37	+1.03	1	11.5	11.69	+1.00	2
9.4	9.16	+1.71	1	12.4	12.31	+1.59	2
9.7	9.91	+0.22	1	12.4	12.60	+0.45	1
10.5	10.68	+0.24	Std	13.0	13.10	+1.34	1
10.8	10.68	+1.12	1	13.4	13.94	+1.13	1

Since the color of V Sge is never far from B-V = 0.0, it is suggested that the very red comparison stars be avoided. Observers should also note that there is a companion of mag. 14 at 9".7, 267°.

G.H. HERBIG
G.W. PRESTON
J.SMAK
(Lick Observatory,
University of California,
Mt. Hamilton, Calif., U.S.A.)

B. PACZYNSKI
(Institute of Astronomy,
Polish Academy of Sciences,
Warsaw, Poland)

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 69

Konkoly Observatory
Budapest
24 September 1964

SZ HYDRAE: AN RR_{ab} STAR WITH UNSTABLE PERIOD

To extend G. Lange's unpublished listing of maxima later than 1929, SZ Hydrae was examined on more than 1 000 Harvard patrol plates. Annual light curves (1899-1900 to 1951-1952) were plotted and combined into an approximate mean light curve. This curve was then fitted to each season's observations to determine the heliocentric times of maxima given in Table I.

All maxima to about 1930 are fitted by,

$$\text{J. D. Max.}_{\odot} = 2\,415\,714.1429 + 0^{d}.537\,428\,15\ E. \quad (A).$$

Later observations to 1952 showed large 0 - C residuals, requiring the elements:

$$\text{J. D. Max.}_{\odot} = 2\,431\,881.5537 + 0^{d}.537\,230\,51\ E. \quad (B).$$

Lange's observations from 1959 to 1962 (Ms.) show progressively larger positive residuals from B ($0^{d}.06$ to $0^{d}.12$), indicating a lengthened period.

The 0 - C values show that the period of SZ Hydrae also has slow oscillations, and rather large differences between successive residuals hint at short-term variations.

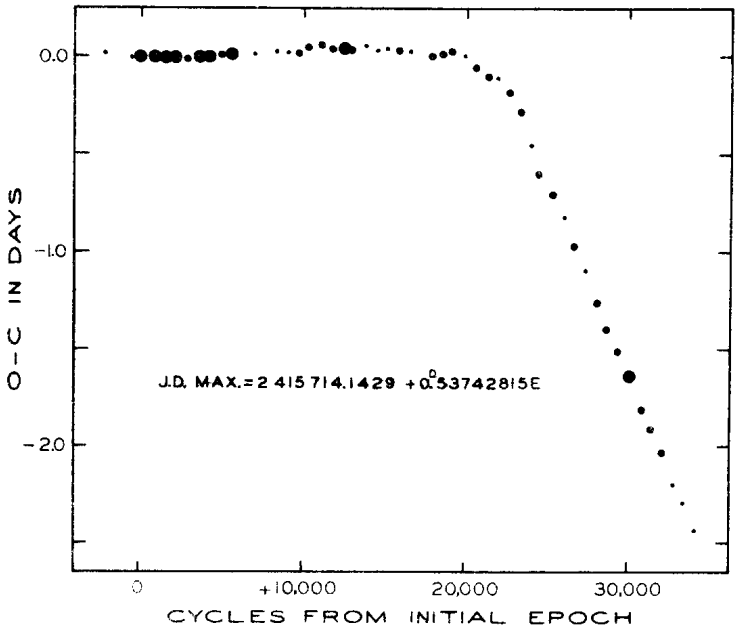
The shape and amplitude of the light curve varied considerably from season to season, as if a strong Blazko effect were present.

TABLE I.

Hel. J.D. 24...	E	O - C A
15 064.943	- 1 208	+0.d013
15 414.249	558	-0.009
15 714.143	0	0.000
16 170.956	+ 850	-0.001
16 539.089	1 535	-0.006
16 886.269	2 181	-0.005
17 216.243	2 795	-0.012
17 626.850	3 559	0.000
17 981.015	4 218	0.000
18 351.844	4 908	+0.004
18 716.228	5 586	+0.011
19 467.013	6 983	+0.009
20 195.782	8 339	+0.026
20 561.231	9 019	+0.024
20 923.453	9 693	+0.019
21 278.179	10 353	+0.042
21 658.157	11 060	+0.059
21 995.111	11 687	+0.045
22 391.727	12 425	+0.039
22 670.642	12 944	+0.029
23 119.963	13 780	+0.060
23 477.323	14 445	+0.030
23 841.173	15 122	+0.042
24 224.348	15 835	+0.030
24 578.514	16 494	+0.031
25 309.387	17 854	+0.002

TABLE I. cont.

Hel. J.D. 24...	E	O - C A	E	O - C B
25 668.401	+18 522	+0.d014		
25 977.437	19 097	+0.029		
26 410.575	19 903	0.000		
26 763.611	20 560	-0.055		
27 124.180	21 231	-0.100		
27 493.386	21 918	-0.107		
27 884.024	22 645	-0.179		
28 234.321	23 297	-0.286	-6 789	+0.d025
28 600.135	23 978	-0.460	6 108	-0.015
28 933.236	24 412	-0.603	5 488	+0.003
29 327.026	25 331	-0.709	4 755	+0.003
29 693.974	26 014	-0.825	4 072	+0.023
30 047.993	26 673	-0.971	3 413	+0.007
30 416.004	27 358	-1.098	2 728	+0.015
30 777.526	28 031	-1.265	2 055	-0.019
31 164.339	28 751	-1.401	1 335	-0.012
31 522.692	29 418	-1.512	668	+0.008
31 881.563	30 086	-1.643	0	+0.009
32 276.402	30 821	-1.814	+ 735	-0.016
32 605.210	31 433	-1.912	1 347	+0.007
32 966.244	32 105	-2.030	2 019	+0.022
33 343.348	32 807	-2.200	2 721	-0.010
33 674.309	33 423	-2.295	3 337	+0.017
34 052.520	34 127	-2.433	4 041	+0.018



This diagram shows the residuals from elements "A". Only maxima determined from Harvard patrol plates are plotted. Dot size indicates relative weight.

L. J. ROBINSON
"Sky and Telescope"
49 Bay State Rd.
Cambridge 38, Mass.
U. S. A.

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 70

Konkoly Observatory
Budapest
10 October 1964

BRIGHT SOUTHERN BV - STARS

On sky patrol plates of Bamberg Southern Station 28 further stars were found whose variability seems to be real as can be seen from the material available till now.

BV 483 = CoD -50° 410($7^{m}.9$) = HD 9 528 (Go) $A_{pg} = 0^{m}.6$

BV 484 = CoD -68° 152($9^{m}.4$) = HD 19 717 (Go) $A_{pg} = 0^{m}.4$

BV 485 = 1900: $3^{h}57^{m}6^{s}$ $-84^{\circ}26'.2$ Ident.Card.No.1 $A_{pg} = 0^{m}.8$

Min = JD 243 8408.350 + $2^{d}.6011$. E
EB max. = 11.8 (pg)

BV 486 = CoD -80° 146($5^{m}.8$) = HD 28 525 (Ko) $A_{pg} = 0^{m}.6$
= δ Men

BV 487 = CoD $-45^{\circ}2165$($9^{m}9$) $A_{pg} = 0^{m}.8$
Max = 243 8375.2 + $57^{d}.5$. E
max. = 9.9 (pg)

BV 488 = 1900: $5^{h}47^{m}4^{s}.4$ $-40^{\circ}28'.2$ Ident.Card.No.3 $A_{pg} = 0^{m}.7$
max. = $12^{m}.4$ (pg)

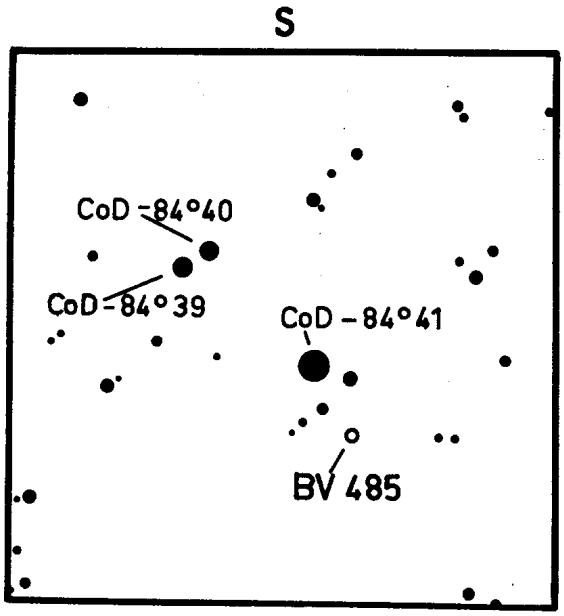
BV 489 = 1900: $7^{h}15^{m}35^{s}.7$ $-22^{\circ}12'.6$ Ident.Card.No.4 $A_{pg} = 0^{m}.4$
max. = $13^{m}.0$ (pg)

BV 490 = CoD $-48^{\circ}2869$(10^{m}) $A_{pg} = 0^{m}.7$

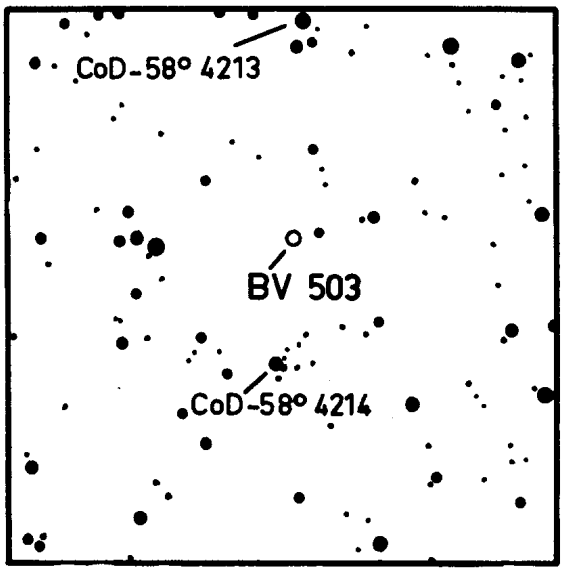
BV 491 = CoD $-26^{\circ}4296$($9^{m}.2$) $A_{pg} = 0^{m}.3$

BV 492 = 1900: $7^{h}28^{m}37^{s}.4$ $-30^{\circ}10'.9$ Ident.Card.No.5 $A_{pg} = 0^{m}.3$
max. = $11^{m}.5$ (pg)

BV 493 = 1900: $7^{h}56^{m}46^{s}.7$ $-30^{\circ}38'.6$ Ident.Card.No.6 $A_{pg} = 0^{m}.4$
max. = $11^{m}.4$ (pg)


S
CoD -84°40
CoD -84°39
CoD -84°41
BV 485

No. 1


CoD-58° 4213
BV 503
CoD-58° 4214

No. 2

6'

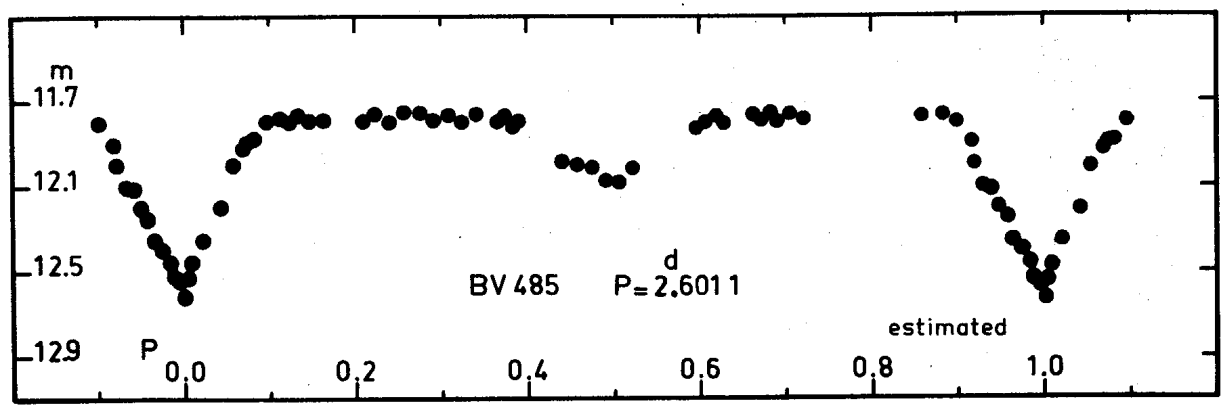

m
11.7
12.1
12.5
12.9
P
0.0
0.2
0.4
0.6
0.8
1.0
BV 485 P=2.6011 d
estimated

Fig.1

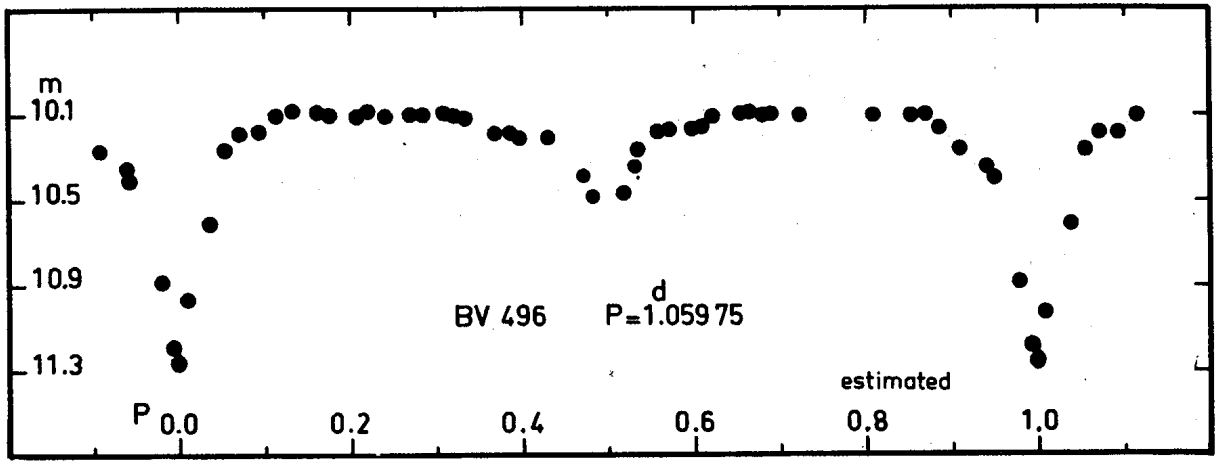
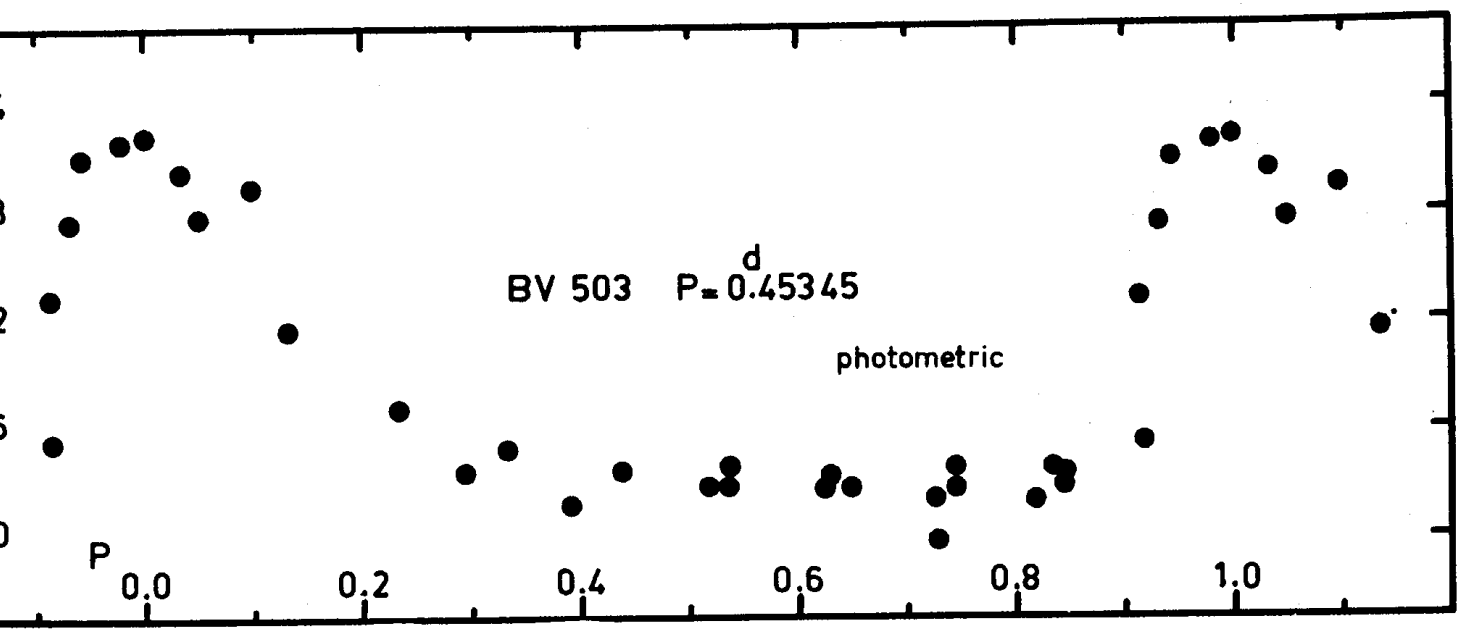
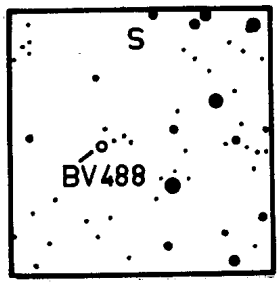
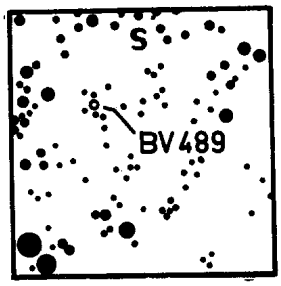

m
10.1
10.5
10.9
11.3
P
0.0
0.2
0.4
0.6
0.8
1.0
BV 496 P=1.05975 d
estimated

Fig.2

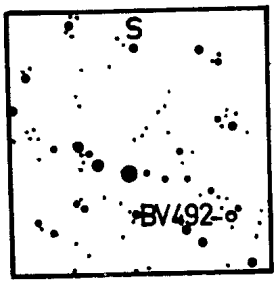

BV 503 P= 0.45345 d
photometric
P
0.0
0.2
0.4
0.6
0.8
1.0



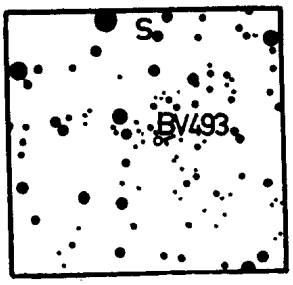
No. 3



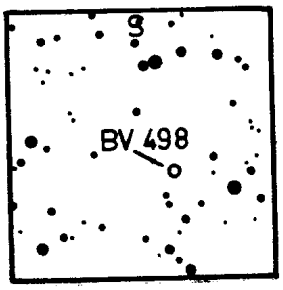
No. 4



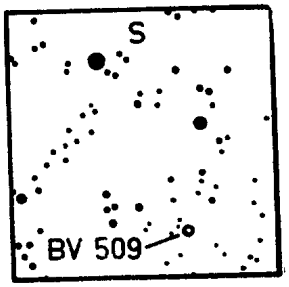
No. 5



No. 6



No. 7



No. 8

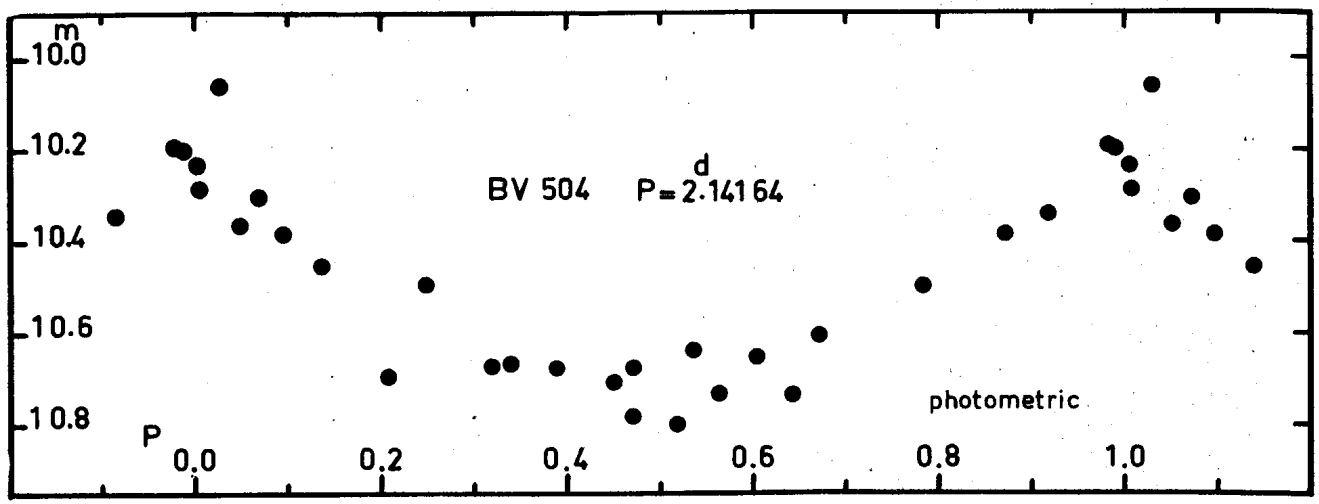

m
10.0
10.2
10.4
10.6
10.8
BV 504 P = 2.14164 d
photometric
P
0.0
0.2
0.4
0.6
0.8
1.0

Fig. 4

BV 494 = CoD $-44^{\circ}4679(6^{m}.5)$ = HD 74 167(K5) = $A_{pg} = 0^{m}.4$

BV 495 = CoD $-31^{\circ}6443(9^{m}.5)$ = HD 74 352(A3) = $A_{pg} = 0^{m}.4$
Min = 243 8406.515 + $1^{d}.124\ 55$. E
EA max. = $9^{m}.5$ (pg)

BV 496 = CoD $-50^{\circ}3501(10^{m})$ Light-curve Fig. 2 = $A_{pg} = 1^{m}.1$
Min = 243 8374.535 + $1^{d}.059\ 75$. E
EB max. = $10^{m}.1$ (pg)

BV 497 = CoD $-48^{\circ}4047(10^{m}.0)$ = $A_{pg} = 0^{m}.5$

BV 498 = 1900: $8^{h}48^{m}5^{s}$ $-71^{\circ}17'.8$ Ident. Card. No. 7 = $A_{pg} = 0^{m}.6$
max. = $10^{m}.6$ (pg)

BV 499 = Cap -72° 764($9^{m}.7$) = $A_{pg} = 0^{m}.7$

BV 500 = CoD $-60^{\circ}2736(5^{m}.3)$ = m Car = HD 83 944(B9) = $A_{pg} = 0^{m}.5$

BV 501 = CoD $-28^{\circ}8693(9^{m}.3)$ $A_{pg} = 0^{m}.6$

BV 502 = CoD $-35^{\circ}7392(9^{m}.0)$ $A_{pg} = 0^{m}.6$

BV 503 = 1900: $11^{h}41^{m}12^{s}$ $-58^{\circ}48'.3$ Ident. Card. No. 2 $A_{pg} = 1^{m}.3$
Max = 243 8440.435 + $0^{d}.453\ 45$. E
RRa max. = $10^{m}.5$ (pg)

BV 504 = CoD $-26^{\circ}8952(9^{m}.7)$ Light-curve Fig. 4 $A_{pg} = 0^{m}.6$
Max = 243 8461.510 + $2^{d}.141\ 64$. E
RR Lyr

BV 505 = CoD $-32^{\circ}8937(9^{m}.3)$ $A_{pg} = 0^{m}.6$

BV 506 = CoD $-50^{\circ}7457(10^{m})$ $A_{pg} = 0^{m}.5$

BV 507 = CoD $-49^{\circ}8078(9^{m}.8)$ = HD 118 532 (Fo) $A_{pg} = 0^{m}.4$

BV 508 = BD $-14^{\circ}3885(9^{m}.2)$ = HD 123 660 (F5) $A_{pg} = 0^{m}.5$
Min = 243 8494.325 + $6^{d}.1148$. E
EB

BV 509 = 1900: $14^{h}16^{m}31^{s}$ $-57^{\circ}24'.4$ Ident. Card. No. 8 $A_{pg} = 0^{m}.4$
max. = $12^{m}.1$ (pg)

BV 510 = CoD $-55^{\circ}5858(10^{m}.3/4)$ $A_{pg} = 0^{m}.5$

Bamberg, Remeis-Observatory
1 October 1964

W. STROHMEIER
R. KNIGGE H. OTT

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 71

Konkoly Observatory
Budapest
2 November 1964

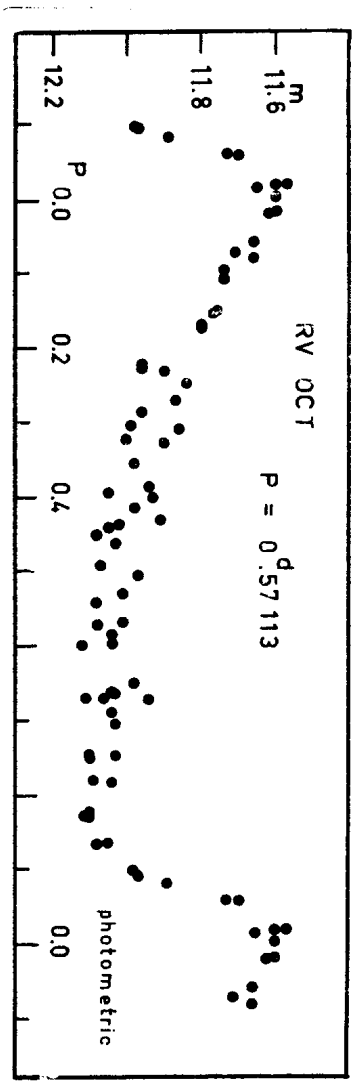
PHOTOMETRIC LIGHT-CURVE OF RV OCT

The photographic plates used are from the Bamberg South-African Station. A photometer with iris diaphragm after Becker has been employed (W. BECKER and C. BIBER, ZfA 1956, vol. 41, p. 52). In deriving the light-curve (see figure), maximum brightness and amplitude have been adjusted to the values given in the General Catalogue of Variable Stars, Moscow 1958. The mean error for the value derived from one plate is about $\pm 0^m.05$.

As W. STROHMEIER and H.OTT reported (Information Bulletin on Variable Stars, Number 38, 1963), RV Octantis is an RR Lyrae variable of type ab. The estimated period derived by W. STROHMEIER had to be slightly shortened. The elements of RV Oct are:

$$\text{Max} = \text{JD } 243\,8196.190 + 0^d.57113 \cdot E$$

Individual maxima (brighter than $11^m.65$)	E	0-C
JD 243 8294.441	172	$+ 0^d.017$
8314.410	207	- 0.003
8374.400	312	+ 0.018
8439.490	426	- 0.001
8442.353	431	+ 0.011
8443.487	433	- 0.003



Bamberg, Remeis Observatory
1 October 1964

E. SCHÖFFEL

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 72

Konkoly Observatory
Budapest
2 November 1964

PHOTOMETRIC LIGHT-CURVE OF BV 417 = HD 126 037 (G 5)

In Number 47 of the Information Bulletin on Variable Stars of Commission 27 of the I. A. U., W. STROHMEIER reported the Cepheid BV 417 to have a period of $7^d.1$. Ample new plate material from the Bamberg South-African Station now allowed a complete light-curve (see figure) and a more accurate period to be derived. The elements of BV 417 are:

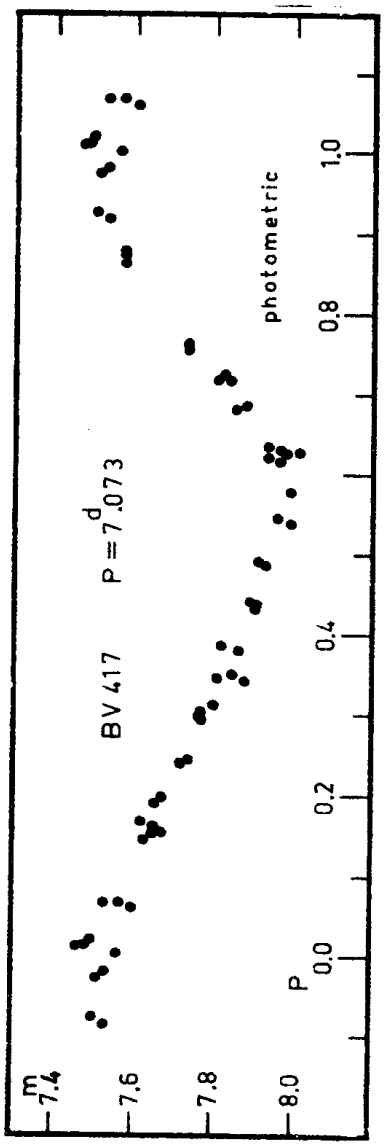
$$\text{Max} = \text{JD } 243\,8195.2 + 7^d.073 \cdot E$$

BV 417 is a Cepheid of type CδC with an amplitude of $0^m.5$. In deriving the light-curve the following comparison-stars have been used:

HD 129 041 (A_2) $7^m.40$ (same value in the Harvard and Cape catalogues)
HD 128 215 (A_3) $7^m.85$ (mean value of Harvard and Cape)

Individual maxima (brighter than $7^m.60$)

Maxima	E	O - C
JD 243 8471.538	39	+ $0^d.491$
8498.451	43	- 0.888
.495	43	- 0.844
8499.443	43	+ 0.104
.488	43	+ 0.149
8520.386	46	- 0.172
.431	46	- 0.127
JD 243 8548.286	50	- $0^d.564$
.331	50	- 0.519
8549.331	50	+ 0.481
8577.244	54	+ 0.102
8583.247	55	- 0.968
8584.247	55	+ 0.032



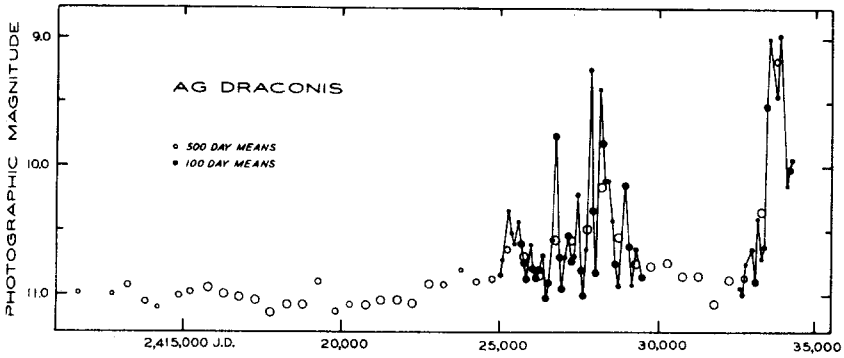
Bamberg, Remeis Observatory
27 October 1964

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 73

Konkoly Observatory
Budapest
14 November 1963

AG DRACONIS

The accompanying light curve is preliminary. It is based on nearly 3 000 estimates from Harvard patrol plates taken between 1890 and 1952. Circle size indicates relative weight.



Protracted outbursts were observed only twice - in the late 1920's continuing throughout the 1930's, and again in the 1950's. The light variations of AG Draconis from J.D.2 430 000 to J.D. 2 437 000 have been described by Sharov ("Variable Stars," 13, 54, 1960).

At least during its outbursts, AG Draconis varies cyclically with a period of about one year. This effect was previously noted in the 1950 eruption.

The writer will more fully discuss his observations in a future paper.

L.J.ROBINSON
41 Linnaean St.
Cambridge 38, Mass.
U.S.A.

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 74

Konkoly Observatory
Budapest
16 November 1964

BRIGHT SOUTHERN BV - STARS

On sky patrol plates of Bamberg Southern Station 55 further stars were found whose variability seems to be real as can be seen from the material available till now.

BV 511 = 1900: $2^h52^m24^s$ $-69^o9'.3$ Ident. Card. No. 1 $A_{pg} = 0^m.4$
= K3II 259 max. = $13^m.2$ (pg)

BV 512 = CoD $-57^o5052(10^m)$ $A_{pg} = 0^m.7$

BV 513 = CoD $-51^o7566(8^m.7)$ = HD 117 470(Ao) $A_{pg} = 0^m.5$

BV 514 = CoD $-49^o8095(6^m.8)$ = HD 118 767(Mb) $A_{pg} = 0^m.7$

BV 515 = CoD $-44^o8979(8^m.1)$ = HD 121 291(A2) $A_{pg} = 0^m.5$

BV 516 = CoD $-54^o5601(6^m.7)$ = HD 124 195(B9) $A_{pg} = 0^m.7$

BV 517 = 1900: $14^h16^m36^s$ $-58^o6'.9$ Ident. Card. No. 2 $A_{pg} = 0^m.4$
max. = $12^m.0$ (pg)

BV 518 = CAP $-38^o5865(10^m.6)$ $A_{pg} = 0^m.6$
= K3II 2141

BV 519 = CoD $-60^o5251(8^m.2)$ = HD 127 631(Mb) $A_{pg} = 0^m.5$
= K3II 2152

BV 520 = CoD $-39^o9021(9^m.7)$ $A_{pg} = 0^m.8$

BV 521 = 1900: $14^h31^m41^s$ $-59^o21'.6$ Ident. Card. No. 3 $A_{pg} = 0^m.4$
max. = $12^m.0$ (pg)

BV 522 = CoD $-55^o5799(8^m.5)$ = HD 129 328(Ao) $A_{pg} = 0^m.5$

BV 523 = CoD $-66^o1653(7^m.5)$ = HD 130 233(F8) $A_{pg} = 0^m.5$
Max. = 243 8196.300 + $3^d.07$. E (C S)

BV 524 = CoD $-36^{\circ}9645(6^{m}.8)$ = HD 130 328(Mb) $A_{pg}=0^{m}.$

BV 525 = BD $-19^{\circ}3991(8^{m}.5)$ = HD 132 232(Ma) $A_{pg}=0^{m}.3$

BV 526 = CoD $-64^{\circ}898(9^{m}.0)$ = HD 132 461(B9) $A_{pg}=0^{m}.4$

BV 527 = CoD $-72^{\circ}1092(7^{m}.8)$ = HD 133 766(Fo) $A_{pg}=0^{m}.6$

BV 528 = Cap $-70^{\circ}2005(9^{m}.8)$ = k3π 2301 $A_{pg}=0^{m}.5$

BV 529 = CoD $-52^{\circ}6743(9^{m}.0)$ = HD 138 141(B9) $A_{pg}=0^{m}.5$

BV 530 = CoD $-40^{\circ}9711(9^{m}.9)$ $A_{pg}=0^{m}.3$

BV 531 = CoD $-45^{\circ}10\,078(7^{m}.2)$ = HD 139 206(B8) $A_{pg}=0^{m}.3$

BV 532 = CoD $-61^{\circ}4964(9^{m}.1)$ = HD 139 337(B9) $A_{pg}=0^{m}.4$

BV 533 = 1900: $15^{h}36^{m}1^{s}.3$ $-43^{\circ}20'.8$ Ident. Card. No. 4. max. = $11^{m}.0$ (pg) $A_{pg}=0^{m}.4$

BV 534 = CoD $-63^{\circ}1123(9^{m}.0)$ = HD 140 809(Ao) $A_{pg}=0^{m}.5$

BV 535 = CoD $-61^{\circ}5175(8^{m}.1)$ = HD 142 493(Ao) $A_{pg}=0^{m}.5$

BV 536 = BD $-21^{\circ}4228(8^{m}.8)$ = HD 142 666(A3) $A_{pg}=0^{m}.4$

BV 537 = CoD $-54^{\circ}6576(9^{m}.2)$ = HD 144 972(Ko) $A_{pg}=0^{m}.4$

BV 538 = 1900: $16^{h}4^{m}8^{s}.7$ $-36^{\circ}31'.0$ Ident. Card. No. 5 max. = $11^{m}.5$ (pg) $A_{pg}=0^{m}.5$

BV 539 = 1900: $16^{h}8^{m}39^{s}$ $-44^{\circ}41'.2$ Ident. Card. No. 6 max. = $11^{m}.5$ (pg) $A_{pg}=0^{m}.5$

BV 540 = CoD $-31^{\circ}12\,824(9^{m}.3)$ $A_{pg}=0^{m}.6$

BV 541 = CoD $-26^{\circ}11\,312(9^{m}.9)$ $A_{pg}=0^{m}.5$

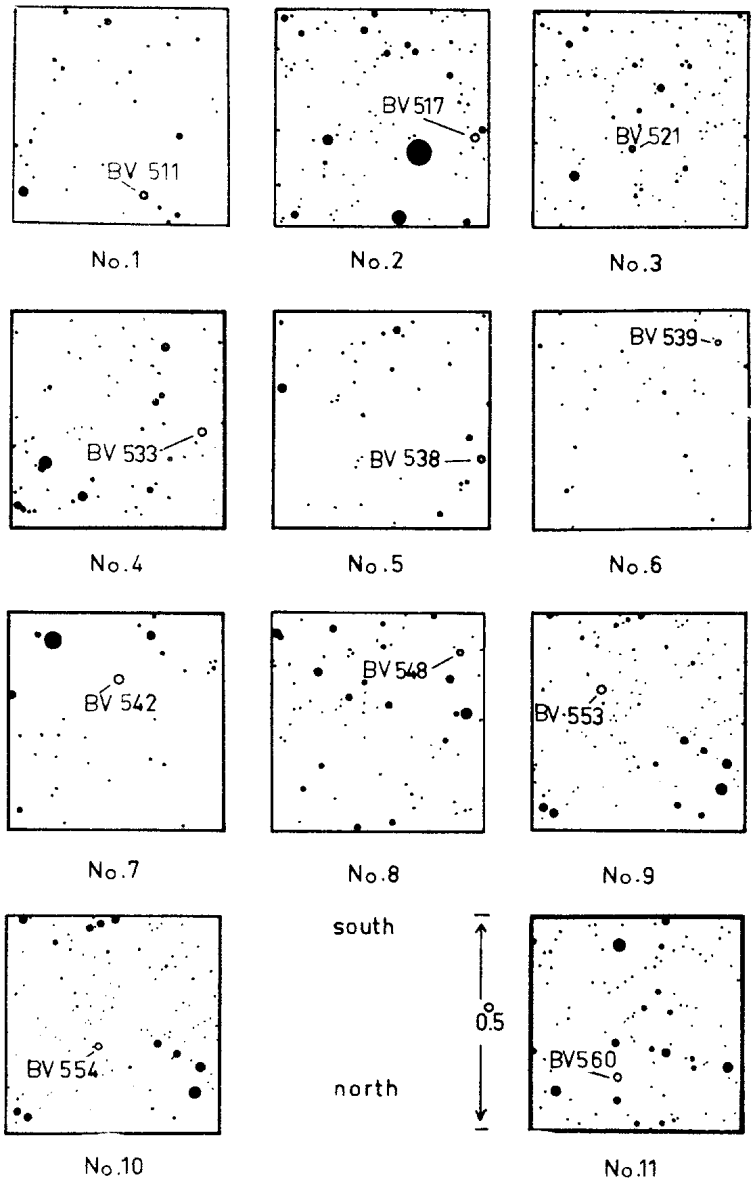
BV 542 = 1900: $16^{h}23^{m}37^{s}.3$ $-45^{\circ}49'.5$ Ident. Card. No. 7 max. = $11^{m}.0$ (pg) $A_{pg}=0^{m}.2$

BV 543 = CoD $-45^{\circ}10\,787\,(8^{m}.5)$ = HD 149 450 (B5) $A_{pg}=0^{m}.5$

BV 544 = BD $-15^{\circ}4395(6^{m}.5)$ = HD 151 676(A3) $A_{pg}=0^{m}.7$

BV 545 = CoD $-43^{\circ}11\,567(7^{m}.3)$ = HD 156 157(B9) $A_{pg}=0^{m}.4$

BV 546 = CoD $-61^{\circ}5824(9^{m}.0)$ = HD 157 961 (F2) $A_{pg}=0^{m}.4$


BV 511
BV 517
BV 521
BV 533
BV 538
BV 539
BV 542
BV 548
BV 553
BV 554
BV 560
south
north
0.5
No.1
No.2
No.3
No.4
No.5
No.6
No.7
No.8
No.9
No.10
No.11

BV 547 = CoD $-40^{\circ}11\ 648(7^{m}.7)$	= HD 159 654(F5)	$A_{pg}=0^{m}.6$
BV 548 = 1900: $17^{h}35^{m}10^{s}.7$ $-43^{\circ}45'.8$	Ident.Card.No. 8 max. $=11^{m}.5$(pg)	$A_{pg}=0^{m}.6$
BV 549 = CoD $-34^{\circ}12\ 293(9^{m}.0)$	= HD 163 302(Ao)	$A_{pg}=0^{m}.4$
BV 550 = CoD $-41^{\circ}12\ 245(10^{m})$		$A_{pg}=0^{m}.3$
BV 551 = BD $-22^{\circ}4522(8^{m}.3)$	= HD 164 717(B3)	$A_{pg}=0^{m}.3$
BV 552 = CoD $-25^{\circ}12\ 793(7^{m}.2)$	= HD 165 814(B8)	$A_{pg}=0^{m}.4$
BV 553 = 1900: $18^{h}16^{m}45^{s}.1$ $-32^{\circ}43'.7$	Ident.Card.No. 9 max. $=11^{m}.0$(pg)	$A_{pg}=0^{m}.5$
BV 554 = 1900: $18^{h}17^{m}2^{s}$ $-32^{\circ}25'$	Ident.Card.No. 10 max. $=12^{m}.5$(pg)	$A_{pg}=0^{m}.2$
BV 555 = CoD $-45^{\circ}12\ 481(10^{m})$		$A_{pg}=0^{m}.3$
BV 556 = BD $-16^{\circ}4888(8^{m}.3)$	= HD 170 097(Bo)	$A_{pg}=0^{m}.5$
BV 557 = CoD $-37^{\circ}12\ 628(9^{m}.9)$		$A_{pg}=0^{m}.3$
BV 558 = CoD $-43^{\circ}12\ 748(9^{m}.9)$		$A_{pg}=0^{m}.3$
BV 559 = CoD $-27^{\circ}13\ 509(10^{m})$		$A_{pg}=0^{m}.4$
BV 560 = 1900: $19^{h}6^{m}24^{s}.2$ $-18^{\circ}41'.5$	Ident.Card.No. 11 max. $=11^{m}.8$(pg)	$A_{pg}=0^{m}.5$
BV 561 = CoD $-28^{\circ}15\ 917(7^{m}.3)$	= HD 183 764(B9)	$A_{pg}=0^{m}.6$
BV 562 = CoD $-39^{\circ}12\ 825(9^{m}.7)$		$A_{pg}=0^{m}.3$
BV 563 = BD $-7^{\circ}5056(7^{m}.2)$	= HD 186 575(F8)	$A_{pg}=0^{m}.3$
BV 564 = CoD $-59^{\circ}7830(6^{m}.7)$	= HD 208 496(F5)	$A_{pg}=0^{m}.3$
BV 565 = CoD $-23^{\circ}17\ 470(7^{m}.8)$	= HD 213 8188(Go)	$A_{pg}=0^{m}.5$

Bamberg, Remeis-Observatory
11 November 1964

W.STROHMEIER
R.KNIGGE H. OTT

Ny.2318/1964.

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

NUMBER 75

Konkoly Observatory
Budapest
20 November 1964

ON THE NATURE OF VARIABLE STARS IN M 67 AND NGC 188

The discovery of ultra-shortperiod variables in old galactic clusters M 67 (N. Kurochkin, 1960a, 1960b) and NGC 188 (C.Hoffmeister, 1964a, 1964b) is extremely interesting. The presence of these stars in old galactic clusters is perhaps typical. According to the discoverers these variables are RR Lyrae-type or RR Lyrae-similar stars.

Recently photometrical investigations of the stars in M 67 (O.J.Eggen, A.R.Sandage, 1964) and NGC 188 (A.R.Sandage, 1962) have been published. The colour excesses E (B-V) in M 67 and NGC 188 are very small ($0^m.05$ and $0^m.06$ respectively).

The variable S 8280 (C. Hoffmeister, 1964b, P = $0^d.15$) is identical with the star No 114 (Ring II) in NGC 188. It has $(B-V)_0=+0^m.87$ and $M_v=+4^m.8$.

The variable C П 3 1284 (N. Kurockin, 1960b, P = $0^d.13$) is identical with the star Vanderlinden 687 (H.L.Vanderlinden, 1945) of spectral class GO (Trümpler) and $M_v = +3^m.2$. This variable is also identical with the star III-33 on Eggen and Sandage's map.

It is also significant that the variable C П 3 1277 (N.Kurochkin, 1960a, P=$0^d.15$) near M 67 has $M_v=+3^m.6$ and spectrum KO (G.Herbig, 1961).

All these variables are situated on the upper boundary of the main sequence and there is no similarity of their position in the HRD to that of ordinary RR Lyrae stars or dwarf RR Lyrae stars. Very probably all these variables belong to the W Ursae Majoris type and it is necessary to double their periods.

The presence of W UMa variables in old galactic clusters is very surprising. The search for these variables in old galactic and globular clusters is extremely desirable.

We should like to thank Prof. Dr. C. Hoffmeister for identification map of the variable stars in NGC 188.

REFERENCES

O.J. Eggen, A.G. Sandage, ApJ 140, 130, 1964.

G.Herbig, private communication, 1961.

C.Hoffmeister, MVS Bd.2, Heft 3, 1964a.

C.Hoffmeister, Inf.Bull.V.S. 67, 1964b.

N.Kurochkin, Astr.Circ. USSR, 210, 1960a.

N.Kurochkin, Astr.Circ. USSR, 212, 1960b.

A.R. Sandage, ApJ 135, 333, 1962

H.L.Vanderlinden, Medd.Univ.Gent, No.10, 1945.

Sternberg State Astronomical Institute
Moscow, 11 Nov. 1964

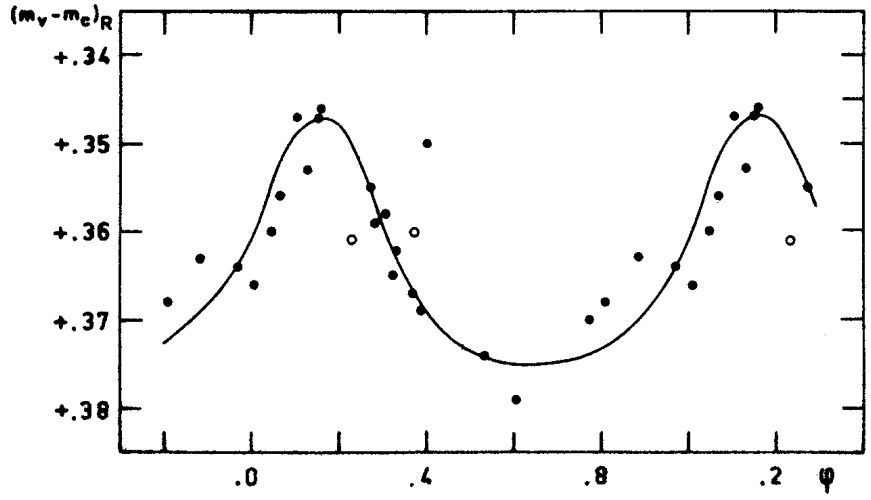
Y.N. EFREMOV
P.N. KHOLOPOV
B.V. KUKARKIN
A.S. SHAROV

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 76.

Konkoly Observatory
Budapest
23 December 1964

LIGHT VARIATIONS OF THE MAGNETIC-VARIABLE STAR HD 10783

HD 10783 (= BD + 7°275), spectrum A2p, is one of the magnetic variable stars mentioned in the catalogue of Babcock (Ap.J.Supp. no 3, 1957). Steinitz (1964, Leiden thesis) derived for the magnetic variations a period of $4^d.134$. The dispersion in the magnetic measures is however still rather large. During 23 nights in 1964 this star has been observed photoelectrically at the Leiden Observatory with the 45-cm Zunderman reflector. A red filter (effective wavelength 5960 Å) has been used. The comparison star was BD + 8°258 (= HD 10262), of spectral type F2. The normal points in the figure are means of about ten individual observations, corrected for differential extinction. The values of the differential extinction between variable and comparison seldom exceeded $^m.007$.



From our measures we derived a better and more accurate period of $4^{d}.1565$ for the photoelectric as well as for the magnetic variations. The phases have been computed with the formula:

phase = (JD - 2430000) X.240587.

The observations will be published in the B.A.N.

A.M. VAN GENDEREN

Leiden Observatory

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 77

Konkoly Observatory
Budapest
2 January 1965

PHOTOMETRIC LIGHT-CURVES OF BRIGHT SOUTHERN BV-STARS ECLIPSING BINARIES

General remarks: The light-curves are derived from sky patrol plates of Bamberg Southern Station. The exposure time of these plates is one hour, and decreasing sensibility of the photographic plates during this time causes distortion of the light-curves of short period variables especially near minima (e.g. see light-curve of BV 419 fig. 2). Another effect of long exposure time is the small depth of minima of short period variables. The amplitude of BV 419 for instance should be larger than $0^m.3$. All Julian Dates are heliocentric mid-exposure times of the sky patrol plates.

BV 418 = HD 156 545 (A_0) (Fig. 1)

Min = JD 243 8196.413 + $2^d.3129$. E . EA, Ampl. $1^m.5$

Comparison - stars

HD 158 081 (A_0) $8^m.1$

HD 156 922 (G_5) $9^m.6$

The period, derived by W. STROHMEIER[1a/], could be improved by including new plate material and had to be slightly shortened.

Individual minima (fainter than $9^m.6$)

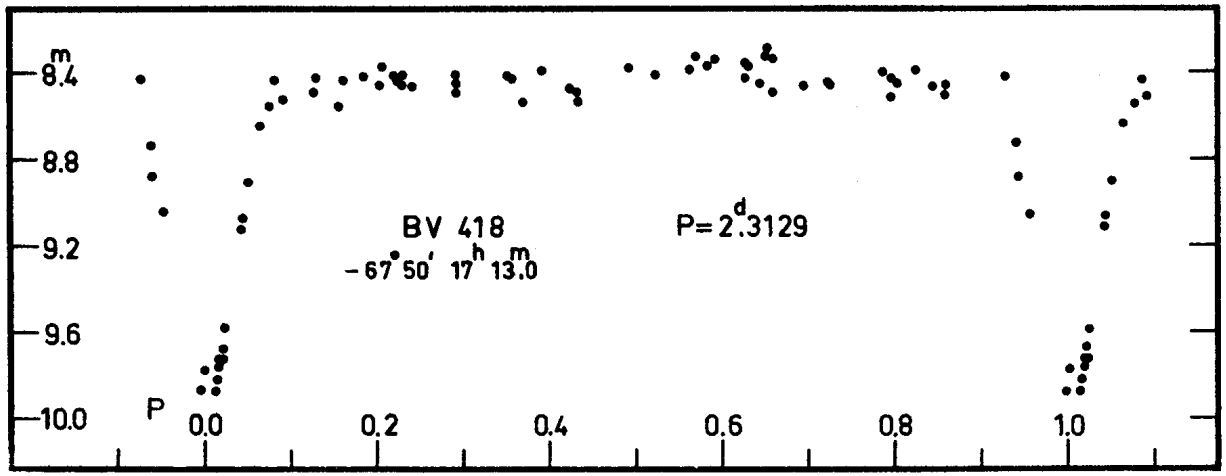


Fig.1

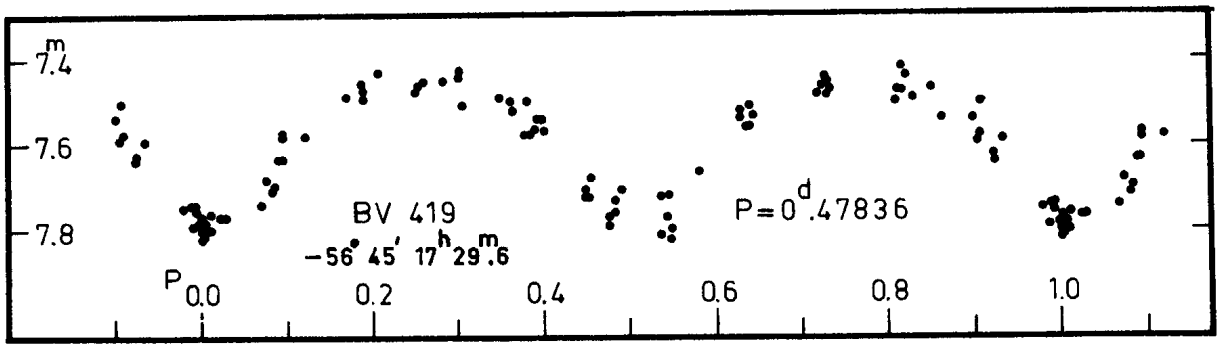


Fig. 2

Minima	E	O - C
JD 243 8196.448	0	+ 0^d.013
8254.276	25	+ 0.040
8529.472	144	+ 0.001
.517	144	+ 0.046
8580.340	166	- 0.014
.386	166	+ 0.032
8587.344	169	+ 0.051
8638.219	191	+ 0.042

BV 419 = HD 159 441 (A_3) (Fig. 2)

Min = JD 243 8196.392 + 0^d.47836 . E . EW, Ampl. 0^m.3

Comparison - stars

HD 158 852 (A_0) 7^m.35 (mean values of Harvard and Cape catalogues)

HD 159 772 (B_9) 8^m.05

The period of 0^d.47836 is 3/4 of the period estimated by W.STROHMEIER[1b].

Individual minima (fainter than 7^m.75)

Minima	E	O - C	Minima	E	O - C
JD 243 8196.395	0	+0^d.005	JD 243 8277.225	169	-0^d.010
8224.363	58.5	+0.014	8498.482	631.5	+0.006
8230.368	71	+0.012	8501.573	638	-0.013
8236.322	83.5	-0.013	8549.423	738	+0.001
8254.277	121	+0.003	8555.421	750	+0.020
8255.233	123	+0.003	8560.424	761	0.000
8260.272	133.5	+0.021	8561.381	763	0.000
8261.225	135.5	+0.015	8583.385	809	0.000
8266.226	146	-0.007	8584.340	811	-0.002
.272	146	+0.039	8585.299	813	+0.001

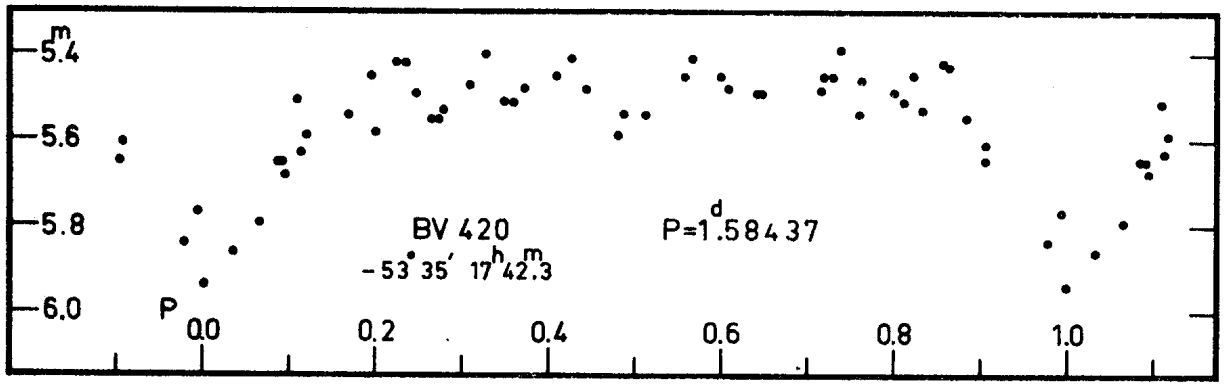


Fig. 3

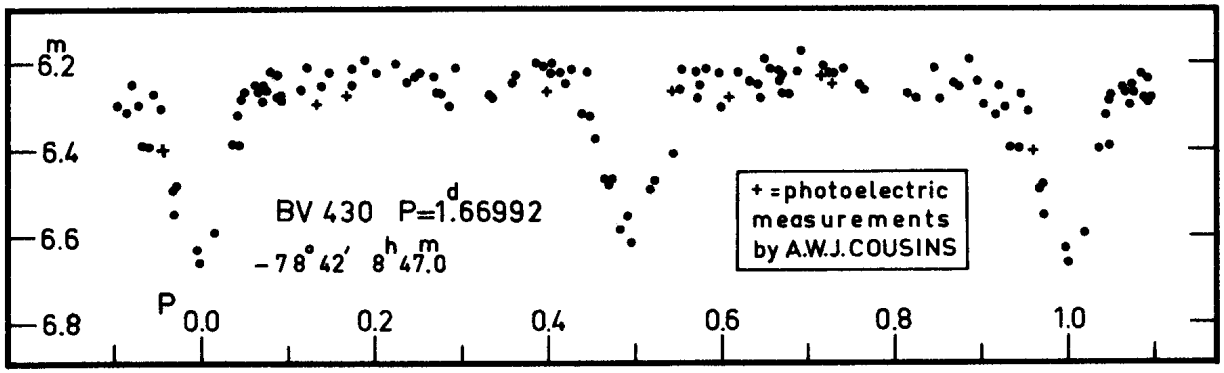

m
6.2
6.4
6.6
6.8
BV 430 P=1.d66992
-78° 42' 8h 47.m0
+ = photoelectric measurements by A.W.J. COUSINS
P
0.0
0.2
0.4
0.6
0.8
1.0

Fig.4

BV 420 = HD 161 783 (B_3) (Fig. 3)

Min = JD 243 8230.519 + $1^d.58437$. E . EA, Ampl. $0^m.5$ [1b]

Comparison - stars

HD 167 128 (B_5) $5^m.50$

HD 161 917 (A_0) $6^m.15$ (by photometric connexion to stars from COUSINS' catalogue[2])

Individual minima (fainter than $5^m.75$)

Minima	E	O - C
JD 243 8235.330	3	$+0^d.058$
8254.278	15	-0.007
8585.386	224	+0.032
8620.274	246	0.000
8636.211	256	+0.093

BV 430 = HD 75 747 (A_5) (Fig. 4)

Min = JD 243 8380.515 + $1^d.66992$. E . EA, Ampl. $0^m.4$

Comparison - stars

HD 75 416 (B_9) $5^m.36$

HD 72 922 (K_0) $6^m.70$ (COUSINS' catalogue[2])

The period, estimated by W.STROHMEIER[1c], had to be slightly shortened. A.W.J. COUSINS was so kind to comminicate his photoelectric measurements to W.STROHMEIER. These measurements are from 1960 and have been very useful in improving the period.

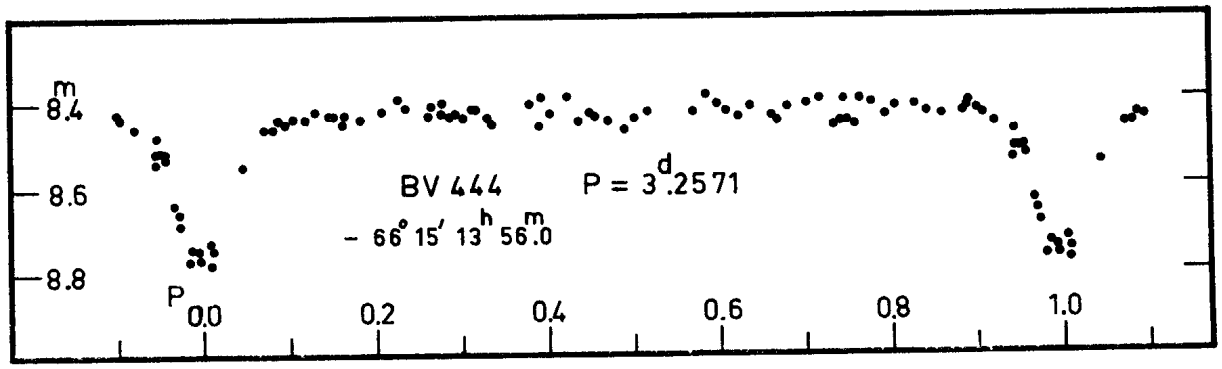


Fig.5

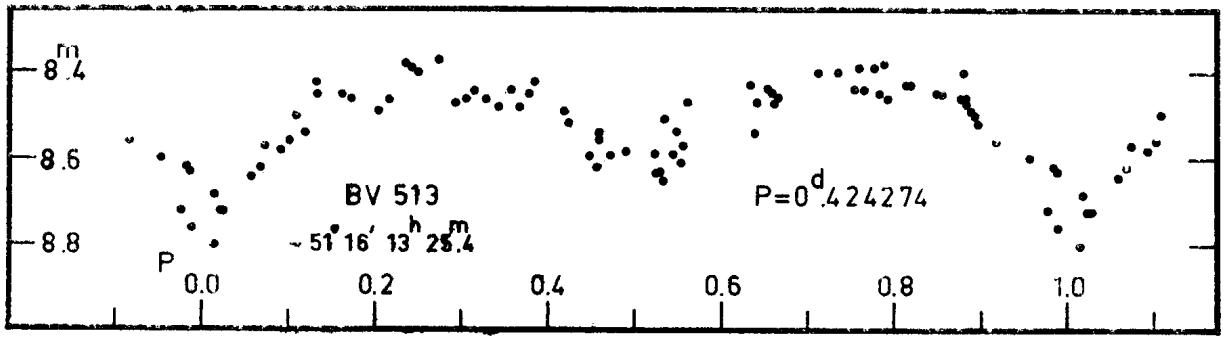


Fig.6

Individual minima (fainter than $6^m.55$)

Minima	E	O - C
JD 243 8380.537	0	$+0^d.013$
8385.542	3	+0.008
8406.412	15.5	+0.005
8442.353	37	+0.020
8472.333	55	-0.037
8493.232	67.5	-0.012
8503.263	73.5	-0.001

BV 444 = HD 122 314 (A_5) (Fig. 5)

Min = JD 243 8229.200 + $3^d.2571$. E . EA, Ampl. $0^m.35$ [1d/]

Comparison - stars

HD 121 810 (B_9) $8^m.10$ (mean values of Harvard and Cape catalogues)

HD 122 131 (F_0) $8^m.70$

The magnitudes of the comparison - stars, used in photometry of BV 444, have little accuracy because of the largely differing values in the Harvard and Cape catalogues. The amplitude of $0^m.35$ derived for BV 444 therefore should be understood in connection with a difference of $0^m.60$ between both comparison - stars.

Individual minima (fainter than $8^m.70$)

Minima	E	O - C
JD 243 8229.216	0	$+0^d.016$
8473.467	75	-0.015
.512	75	+0.029
8499.488	83	-0.052
8548.331	98	-0.065
8584.202	109	-0.022
.247	109	+0.047

BV 513 = HD 117 470 (A_0) (Fig. 6)

Min = JD 243 8190.253 + $0^d.424274$. E . EB, Ampl. $0^m.3$ [1e/]

Comparison - stars

HD 118 014 (A_0) $8^m.3$ (mean values of Harvard and Cape catalogues)

HD 117 785 (A_2) $8^m.8$

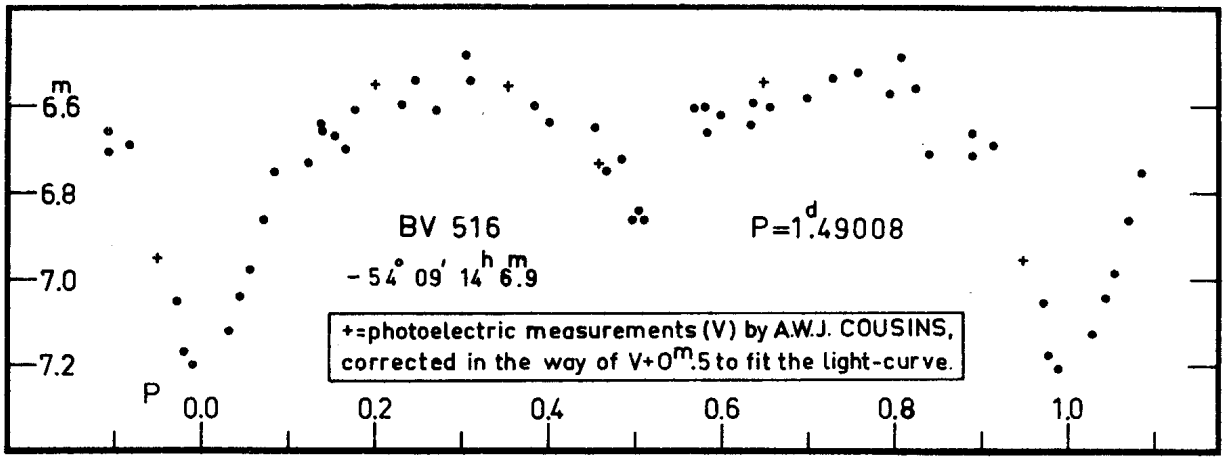

m
6.6
6.8
7.0
7.2
BV 516
P=1d.49008
-54° 09' 14h 6m.9
+=photoelectric measurements (V) by A.W.J. COUSINS,
corrected in the way of V+0m.5 to fit the light-curve.
P
0.0
0.2
0.4
0.6
0.8
1.0

Fig. 7

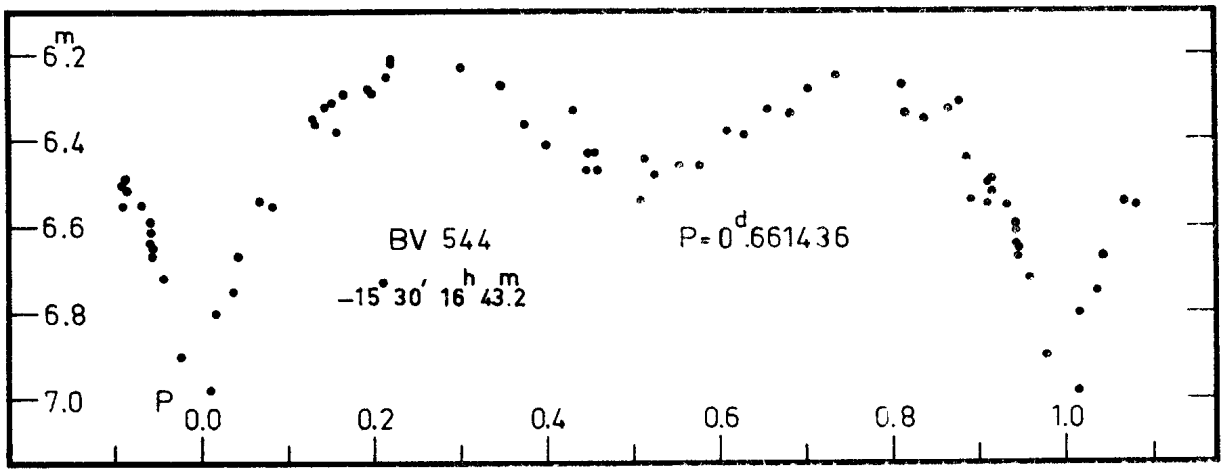


Fig.8

Individual minima (fainter than $8^m.70$)

Minima	E	O - C
JD 243 8190.263	0	$+0^d.010$
8443.533	597	-0.012
8554.286	858	+0.006
8557.245	865	-0.005
8577.201	912	+0.010

BV 516 = HD 124 195 (B_9) (Fig. 7)

Min = JD 243 8524.410 + $1^d.49008$. E . EB, Ampl. $0^m.65$ [1e/ 3/]

Comparison - stars

HD 123 515 (B_9) $5^m.93$ (COUSINS' catalogue [2/])

HD 121 336 (A_2) $6^m.72$ (by photometric connexion to stars from COUSINS' catalogue)

As in the case of BV 430, the photoelectric measurements (1953-1956) by A.W.J. COUSINS have been very useful in improving the period.

Individual minima (fainter than $7^m.10$)

Minima	E	O - C
JD 243 8524.393	0	$-0^d.017$
8530.340	4	-0.029
8548.291	16	+0.044

BV 544 = HD 151 676 (A_3) (Fig. 8)

Min = JD 242 5827.455 + $0^d661436$. E . EB, Ampl. $0^m.7$ [1e/]

Comparison - stars

HD 151 527 (A_0) $6^m.12$

HD 151 884 (B_8) $6^m.91$

The light-curve has been derived using sky patrol plates of the Bamberg Southern Station, covering a time-interval of 85 days = 128 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 12 756 days = 19 285 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
JD 242 5827.413 (1/2)	0	$-0^d.042$
6886.451	1601	+0.037
7159.618	2014	+0.031
7212.507	2094	+0.005
7597.450	2676	-0.008
JD 243 7072.538	17001	+0.010
7076.511	17007	+0.014
7078.499	17010	+0.018
7080.455	17013	-0.011
.499	17013	+0.033

Photometric minima (fainter than $6^m.70$)

Minima	E	O - C
JD 243 8502.535	19163	-0.018
.558	19163	+0.005
.575	19163	+0.022
8557.424	19246	-0.028
8583.257	19285	+0.009

REFERENCES

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

1a/ NUMBER 47, W.STROHMEIER, First Results from the Bamberg South-African Station.

1b/ NUMBER 49, W.STROHMEIER, Results from the Bamberg South-African Station II.

1c/ NUMBER 55. W.STROHMEIER, Bright Southern BV - Stars.

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

1e/ NUMBER 74, 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.

3/ Supplement to the General Catalogue of Variable Stars, MOSCOW 1960, p.213 and p.218.

E.SCHÖFFEL, U.KÖHLER

Remeis - Observatory
Bamberg

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 78

Konkoly Observatory
Budapest
9 January 1965

NOTE ABOUT THE PERIODS OF THREE VARIABLE STARS

Among a number of Cepheids which the author has observed photoelectrically at the McDonald Observatory, USA, in July 1963, there are three variables which appeared to be RR Lyrae stars. These three stars are: V 414 Oph, V 558 Oph and EN Lyr. In the following table the new provisional periods are given together with the old periods and their references.

Name	New period	Old period	Reference
V 414 Oph	$^d.431284$	$3^d.16590$	C. Hoffmeister, KVBB N°19, 1938
V 558 Oph	.425884	2.89522	C. Hoffmeister, KVBB N°28, 1943
EN Lyr	.70283	2.36456	M. Zverev, V.S. 5, 107, 1936

In all the three cases the new and old periods differ one or two units in their reciprocals.

Sterrewacht, Leiden, Netherlands
4 January 1965

K.K. KWEE

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 79

Konkoly Observatory
Budapest
18 January 1965

ON THE VARIABLE STAR *CΠ*3 1284 IN M67

The note by four authors (1) attracted anew our attention to the variable stars in M67 (2,3). The stars CΠ 3 1283 and CΠ 3 1284 have been again investigated on 50 plates obtained with the 16-inch astrograph of the Sternberg Astronomical State Institute (JD 2434059.37 -2437699.33). 54 exposures of M67 were made on two days (JD 2437377.25-2437378.43) on 4 plates. It has permitted to derive the elements of variable CΠ3 1284:

Min I hel = $2437378.322 + 0^{d}.3604364 \cdot E$,

Max I = $13^{m}.82$; Max II = $13^{m}.80$; Min I = $14^{m}.24$; Min II = $14^{m}.23$ pg.

The mean light curve is shown in fig.1. Each point is equivalent to 5 observations. Thus, the classification of the star CΠ 3 1284 belonging to the W UMa type, according to (1), is confirmed.

An attempt was made to compute a model of the system of this double star. If the modulus of M67 is $m-M=9^m.38$ (4) and the physical properties of the components are identical, then we have $m_{max}=14^m.57$ pg, $m_{max}=13^m.97$ pv for the magnitudes of each component, and $T_e=6000^o$, $IPg-IPv=+0^m.60$, $BC = 0^m.05$ for the stars of spectral class GO (5). Using the formula $M_{bol}=96.57-10\log T_e - 5 \log R$ (6), the following radii of the components were obtained: $R_{1,2}=0.773 \cdot 10^6 km=1.112 R_\odot$. Hence if the mass is proportinal to R^3, then $\mathfrak{M}_{1,2}=1.374 \mathfrak{M}_\odot$. According to Kepler's law we can compute now the radius of the relative circular orbits: $a_o=2.078 \cdot 10^6$ km, or $R_{1,2}=0.377 a_o$.

The dimensions of the components are probable such that they fill or nearly fill the innermost contact surfaces of Roche's model (7). The radius of the star perpendicular to the plane of the orbit should be in this case equal to $y_{12}=0.374 a_0$.

The intensity of the light in the minimum I is 0.679 of the total intensity of the components. This corresponde to the inclination $i_o \simeq 64^o$ between the plane of orbit and the visual plane (the tidal form of the components were taken into account graphically).

It is interesting that the period is constant over the interval of about 3640^d, or $\sim$ 10000P. It can be considered as the evidence of rather high stability of this close binary system.

The amplitude of the light variation of the second variable star in M67, CЩ3 1283, is so small, that its investigation seems to be practically impossible by photographic methods.

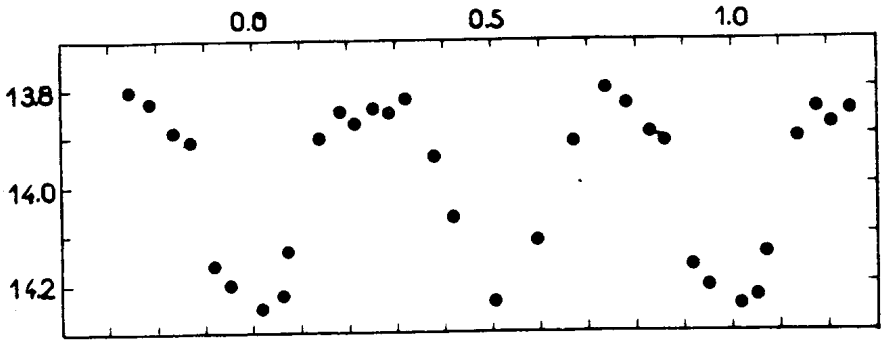


Fig1. CW3 1284 P = 0^d.36

REFERENCES

1. Y.N.Efremov, P.N.Kholopov, B.V.Kukarkin, A.S.Sharov, IBVS, No 75, 1964
2. N.E.Kuročkin, Astr.Circ.USSR, No 212, 1960.
3. N.E.Kuročkin, Astr.Circ.USSR, No 220, 1961.
4. O.J.Eggen, A.R.Sandage, ApJ 140, 130, 1964.
5. H.L.Vanderlinden, Medd Univ Gent, No 10, 1955.
6. C.W.Allen, Astrophysical Quantities 1955.
7. M.Plavec, P.Kratochvil, BAC 15, 165, 1964.

Sternberg State Astronomical Institute
Moscow, 5 January 1965.

N.E.KUROČKIN

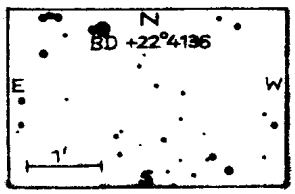
COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 80

Konkoly Observatory
Budapest
29 January 1965

NEW VARIABLES OF U GEM TYPE

On plates, taken with the Schmidt-Telescope 134/200/400 cm of Karl-Schwarzschild Observatory, covering 11.5 square degrees, centered at 28 Vul, I found a variable in the position

1855.0	$20^h32^m10^s$		$+22^\circ12'.1$
1900.0	20 34	9	+22 21.5



S 9068 Vul, Observations

1964 Aug	6	242 8614.46	[19^m
"	8	8616.48	~20
"	12	8620.52	~20
"	14	8622.48	15
"	27	8635.34	16
Sep	1	8640.40	19
"	2	8641.40	19.5
"	3	8642.42	19.5
"	11	8650.43	[19
"	13	8652.39	19.5
"	14	8653.37	[19.5

The increase of $\sim 5^m$ in 2^d and the rather steep decline 13^d later suggest that the star might have been much brighter in the meantime. Because of the moonlight there is only a slight hope that the region might have been photographed elsewhere.

The place of the star is covered by 173 plates of the 140 mm Triplet from 1928 to 1964. The variable is not separated from the s.p. star 15^m. On 16 plates it might be visible, but only on 2 plates it is rather certain: 1930 Aug 20 $15^m.5$, and 1955 Sep 22 15^m. It has never been observed brighter than 15^m. The investigation of 447 Sky Patrol plates from 1929 to 1964 with limits between 12^m and 14^m gave no positive result. On Palomar Sky Atlas the star is hardly visible on the blue, invisible on the red plate.

Three more variables of U Gem type were found in the area around τ Cyg:

	RA 1855.0	D	
S 9108 Cyg	$21^h\ 1^m58^s$	$+36^o39'.1$	$13^m.5 - 18^m$
S 9110 Cyg	21 2 26	+36 14.2	15.5 - 18
S 9113 Cyg	21 5 19	+38 21.7	18 -[20

Two other areas centered at ε Aql and ε Cyg did not yield any new U Gem type variables so far.

C. HOFFMEISTER
Sonneberg Observatory

Ny.290/1965. - Statisztikai Kiadó Vállalat sokszorosító üzeme
Budapest, II., Keleti Károly u. 18/b.
Felelős vezető: Hajdu Györgyné

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 81

Konkoly Observatory
Budapest
10 February 1965

BRIGHT SOUTHERN BV - STARS

On sky patrol plates of Bamberg Southern Station 37 further stars have been found whose variability seems to be real as can be seen from the material available till now.

BV 566 = CoD $-59^{\circ}5398(9^{m}.1)$ = HD 129 935(B8) = $A_{pg}=0^{m}.5$

BV 567 = CoD $-67^{\circ}1660(9^{m}.7)$ Light-curve Fig. 1 $A_{pg}=0^{m}.4$
Min = 243.8232.773+$1^{d}.030\ 26$. E
(EB)

BV 568 = Cap $-65^{\circ}2960(9^{m}.6)$ $A_{pg}=0^{m}.6$

BV 569 = CoD $-53^{\circ}6024(10^{m}\ 3/4)$ Light-curve Fig. 2 $A_{pg}=1^{m}.0$
Min = 243 8499.554 + $4^{d}.102$. E
(EA)

BV 570 = CoD $-47^{\circ}10\ 300(8^{m}.9)$ max = 11^{m}, min = under plate limit

BV 571 = BD $-21^{\circ}4189(10^{m})$ $A_{pg}=0^{m}.3$

BV 572 = CoD $-53^{\circ}6488(6^{m}.5)$ = HD 145 384(Ma) $A_{pg}=0^{m}.4$
= 39 Nor

BV 573 = CoD $-53^{\circ}6533(6^{m}.3)$ = HD 146 003(Ma) $A_{pg}=0^{m}.4$

BV 574 = CoD $-44^{\circ}10\ 742(9^{m}.6)$ = HD 146 241(Ao) $A_{pg}=0^{m}.4$
Min = 243 8471.500 + $3^{d}.509$. E
(EA)

BV 575 = CoD $-65^{\circ}2126(9^{m}.4)$ $A_{pg}=0^{m}.6$
= K3Ⅱ 2628
= S 5022

BV 576 = Star in open cluster Cr 302 (cluster near Antares)
Center of the cluster: Ident. Chart No. 1
1900: $16^{h}17^{m}30^{s}$ $-26^{\circ}18'.1$ max = $12^{m}.8$, min = under plate limit

BV 577 = CoD $-34^{\circ}10\ 981(7^{m}.2)$ = HD 147 683(B8) $A_{pg}=0^{m}.4$
Min = 243 8230.080 + $13^{d}.1015$. E
(EA) Light-curve Fig. 3

BV 578 = CoD $-43^{\circ}10\ 900(5^{m}.5)$ = HD 149 038(Bo) $A_{pg}=0^{m}.3$

BV 579 = CoD $-62^{\circ}1089(9^{m}.0)$ = HD 149 647(Ao) $A_{pg}=0^{m}.3$

BV 580 = CoD $-48^{\circ}11\ 047(8^{m}.2)$ = HD 149 967(Mb) $A_{pg}=0^{m}.3$

BV 581 = CoD $-54^{\circ}7490(8^{m}.9)$ = HD 161 337(B8) $A_{pg}=0^{m}.3$
Max = 243 8498 + 27^{d} . E
(Cepheid)

BV 582 = CoD $-45^{\circ}12\ 024(8^{m}.9)$ = HD 162 985(A2) $A_{pg}=0^{m}.5$
Min = 243 8229.420 + $0^{d}.868\ 75$. E
(EB)

BV 583 = CoD $-29^{\circ}14\ 267(9^{m}.0)$ = HD 163 632(Ao) $A_{pg}=0^{m}.4$

BV 584 = CoD $-35^{\circ}12\ 429(7^{m}.5)$ = HD 167 231(Ao) $A_{pg}=0^{m}.2$

BV 585 = 1900: $18^{h}9^{m}18^{s}.7$ $-20^{\circ}38'.6$ Ident. Chart No. 2 $A_{pg}=0^{m}.4$

BV 586 = 1900: $18^{h}15^{m}15^{s}.9$ $-18^{\circ}29'.7$ Ident. Chart No. 3 $A_{pg}=0^{m}.4$

BV 587 = CoD $-31^{\circ}15\ 582(9^{m}.5)$ $A_{pg}=0^{m}.4$

BV 588 = CoD $-46^{\circ}12\ 764(9^{m}.6)$ = HD 176 387(Ao) $A_{pg}=0^{m}.3$

BV 589 = CoD $-26^{\circ}13\ 888(8^{m}.3)$ = HD 178 755(B9) $A_{pg}=0^{m}.3$

BV 590 = CoD $-47^{\circ}13\ 121(8^{m}.2)$ = HD 187 418(A2) $A_{pg}=0^{m}.7$
Min = 243 8282.255 + $0^{d}.891\ 80$. E
(EA) Light-curve Fig. 4

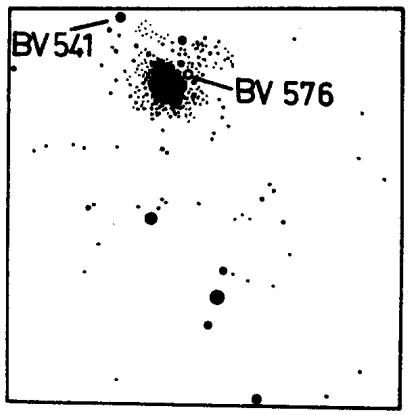
BV 591 = CoD $-58^{\circ}7640(8^{m}.5)$ = HD 189 408(Mc) $A_{pg}=0^{m}.3$

BV 592 = BD $-12^{\circ}5641(6^{m}.2)$ = HD 190 390(F5) $A_{pg}=0^{m}.4$

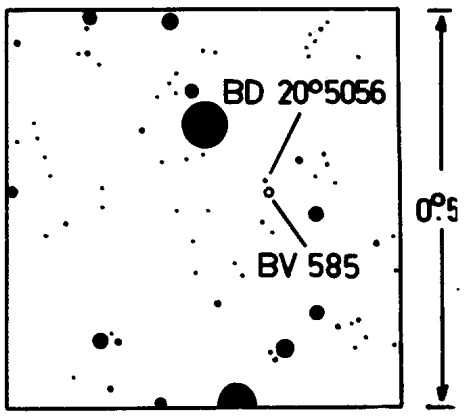
BV 593 = CoD $-33^{\circ}14\ 857(7^{m}.2)$ = HD 193 174(Fo) $A_{pg}=0^{m}.3$

BV 594 = CoD $-32^{\circ}16\ 135(9^{m}.2)$ = HD 196 982(Pec) $A_{pg}=0^{m}.6$

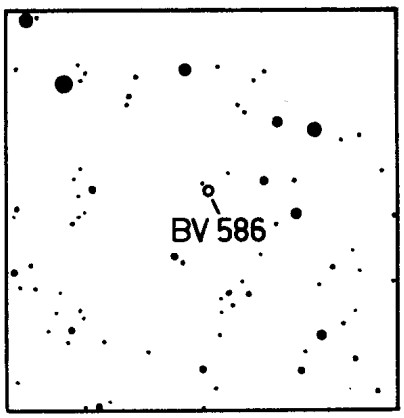
IDENT. CHARTS



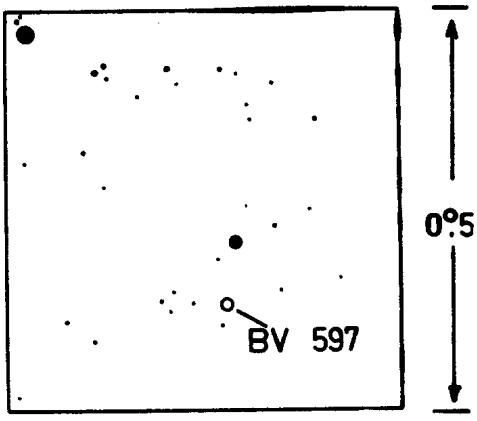
NO. 1



NO. 2



NO. 3



NO. 4

BV 595 = CoD $-54^{\circ}8763(8^{m}.2)$ = HD 197 163(F2) $A_{pg}=0^{m}.3$

BV 596 = CoD $-51^{\circ}12\ 696(9^{m}.7)$ = HD 197 415(F8) $A_{pg}=0^{m}.4$

BV 597 = 1900: $20^{h}39^{m}41^{s}.9\ -23^{\circ}11'.1$ Ident. Carth No. 4 $A_{pg}=0^{m}.4$
max = $11^{m}.8$

BV 598 = CoD $-66^{\circ}2455(10^{m}.2)$ $A_{pg}=0^{m}.3$

BV 599 = CoD $-43^{\circ}14\ 428(8^{m}.3)$ = HD 201 964(Ao) $A_{pg}=0^{m}.4$

BV 600 = BD $-17^{\circ}6422(6^{m}.8)$ = HD 209 278(A2) $A_{pg}=0^{m}.8$
Min = 243 8618.250 + $18^{d}.25$. E
(EA or EB ?)

BV 601 = CoD $-39^{\circ}14\ 830(9^{m}.7)$
Max = 243 8261.000 + $7^{d}.536$. E $A_{pg}=0^{m}.5$
(Cepheid)

BV 602 = CoD $-41^{\circ}15\ 163(6^{m}.2)$ = HD 218 655(Mb) $A_{pg}=0^{m}.4$

Photometric light-curve of BV 567 = CoD $-67^{\circ}1660(9^{m}.7)$

(Light-curve Fig. 1)

Comparison-stars:

Cap $-67^{\circ}2687(9^{m}.92)$

Cap $-67^{\circ}2692(10^{m}.46)$

Magnitudes are obtained by photometric connection to stars from Cousins'* catalogue (HD 143 832 = $7^{m}.59$ and HD 143 039 = $9^{m}.86$)

Min = JD 243 8232.773 + $1^{d}.030\ 26$. E, Ampl. $0^{m}.3$, EB

Individual minima (fainter than $10^{m}.4$)

Minima	E	O - C
243 8233.264	0.5	- $0^{d}.024$
8525.386	284	+ 0.019
8556.289	314	+ 0.024
8557.289	315	- 0.016
8588.206	345	- 0.007
8605.256	361.5	+ 0.044

* Royal Observatory Bulletins, Number 64
A.W.J. Cousins and R.H.Stoy:
"Photoelectric Magnitudes and Colours of Southern Stars"

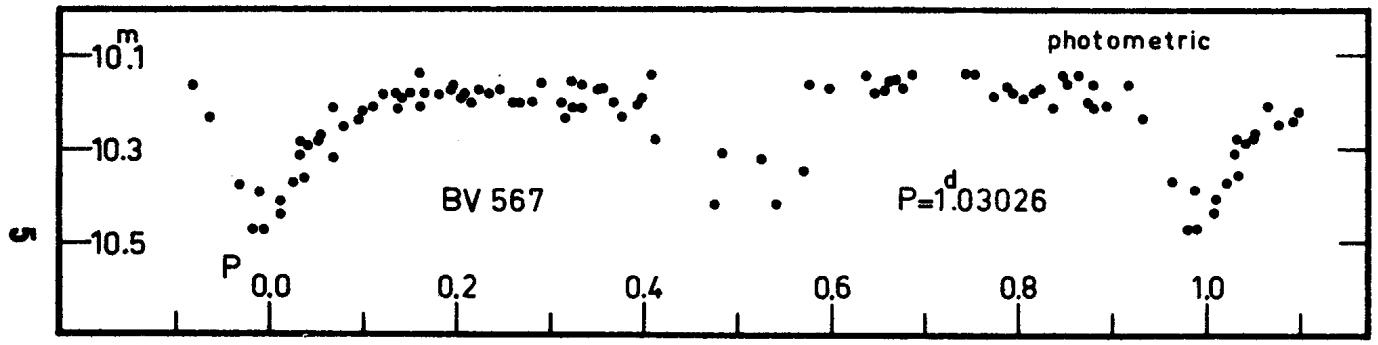


FIG. 1

Photometric light-curve of BV 569 = CoD $-53^{\circ}6024(10^{m}3/4)$

(Light-curve Fig. 2)

Comparison - stars:

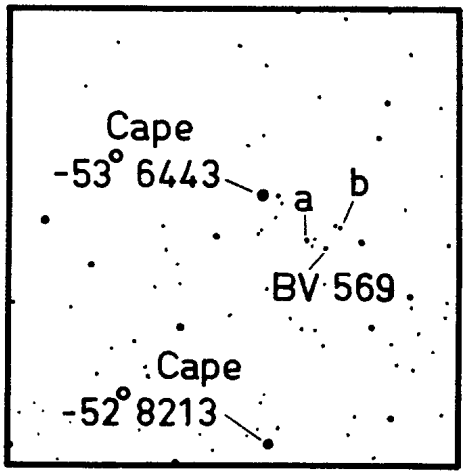
a = $10^{m}.7$ and b = $11^{m}.7$ see identification-chart added.

Magnitudes by photometric connection to HD 129 735($9^{m}.12$, Cousins* and Cap $-45^{\circ}7001$ ($10^{m}.80$ Cousins).

Min = JD 243 8499.554 + $4^{d}.102$. E, Ampl. $1^{m}.0$, EA

Individual minima (fainter than $11^{m}.5$)

Minima	E	O - C
243 8499.492	0	$-0^{d}.062$
.537	0	- 0.049
8528.385	7	+ 0.117
8606.227	26	+ 0.021



* Royal Observatory Bulletins, Number 64
A.W.J. Cousins and R.H.Stoy:

"Photoelectric Magnitudes and Colours of Southern Stars"

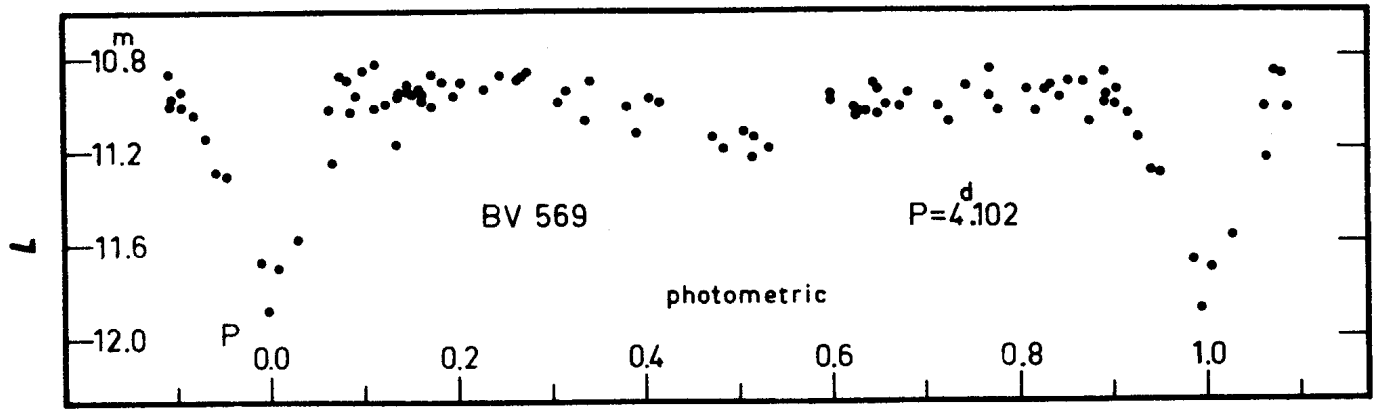


FIG. 2

Photometric light-curve of BV 577 = CoD $-34^{\circ}10$ 981($7^{m}.2$)
= HD 147 683(B8)

(Light-curve Fig.3)

Comparison-stars:

HD 146 745($7^{m}.15$) F2 (derived from HD visual magnitudes
HD 147 387($7^{m}.70$) F2 by adding $0^{m}.43$ respectively $0^{m}.42$
as B-V correction)

Min = JD 243 8230.080 + $13^{d}.101\ 5$. E, Ampl. $0^{m}.4$, EA

Individual minima (fainter than $7^{m}.5$)

Minima	E	O - C
243 8230.269	0	+ $0^{d}.189$
8505.489	21	+ 0.277
8551.382	24.5	+ 0.315
8557.380	25	- 0.238
8577.295	26.5	+ 0.025
8584.296	27	+ 0.475
8590.298	27.5	- 0.073
8610.212	29	+ 0.188
8616.215	29.5	- 0.359

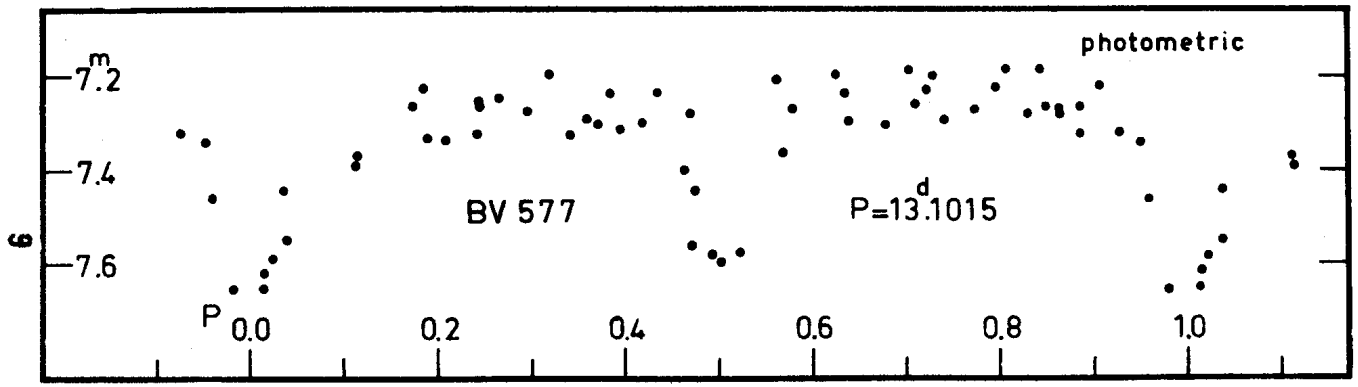


FIG. 3

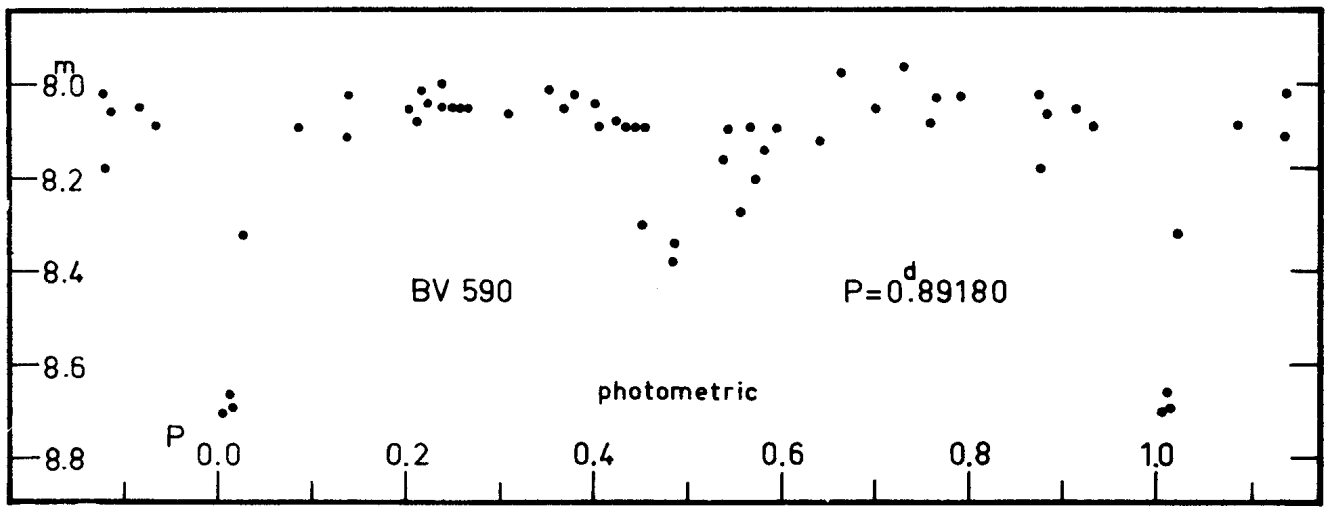


FIG. 4

Photometric light-curve of BV 590 = CoD $-47^{\circ}13$ 121($8^{m}.2$)
= HD 187 418(A2)
(Light-curve Fig. 4)

Comparison - stars:

HD 187 652(A2) $7^{m}.85$ (estimated)
HD 186 975(Ko) $8^{m}.34$ (from Cousins' catalogue)

Min = JD 243 8282.255 + $0^{d}.891\ 80$. E, Ampl. $0^{m}.65$, Ea or EB

Individual minima (fainter than $8^{m}.6$)

Minima	E	O - C
243 8560.513	312	+ $0^{d}.016$
8585.476	340	+ 0.009
8636.312	397	+ 0.012

Bamberg, Remeis-Observatory
1 February 1965

W.STROHMEIER
R.KNIGGE H.OTT

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 82

Konkoly Observatory
Budapest
17 February 1965

GALAXIES WITH FREQUENT APPEARANCE OF SUPERNOVAE

In the following table seven galaxies in wich two or more supernova have been appeared are given. The consecutive columns contain the NGC number, the type and the absolute magnitude of the galaxies, the number of supernova-appearances, the time interval in years between the first and the last appearance of a supernova, and finally the type of the supernova according to F. Zwicky's classification.

NGC	Type	M	n	t	SN
3184	Sc	$-19^{m}1$	3	16	-
3938	Sc	-19.3	2	3	II
4157	Sc	-19.1	2	18	II
4303	SBc	-19.8	3	38	I,III
4321	Sc	-19.7	3	58	I
5236	Sc	-19.6	3	34	V
6946	Sc	-19.6	3	31	II

It is evident that all these galaxies are giants of class Sc (SBc). Practically, supernova of all types appear in these galaxies. The mean frequency of supernova-appearances in these galaxies is one per 15 years. Supernova of type I have the frequency approximately one per 35 years. That is about 20 times greater than usually adopted!

It seems extremely desirable to observe the giant galaxies of class Sc (SBc) systematically.

A more detailed paper is to be published in the "Astrophysics" (USSR).

Sternberg Astronomical Institute
Moscow, 6 February 1965

B. V. KUKARKIN

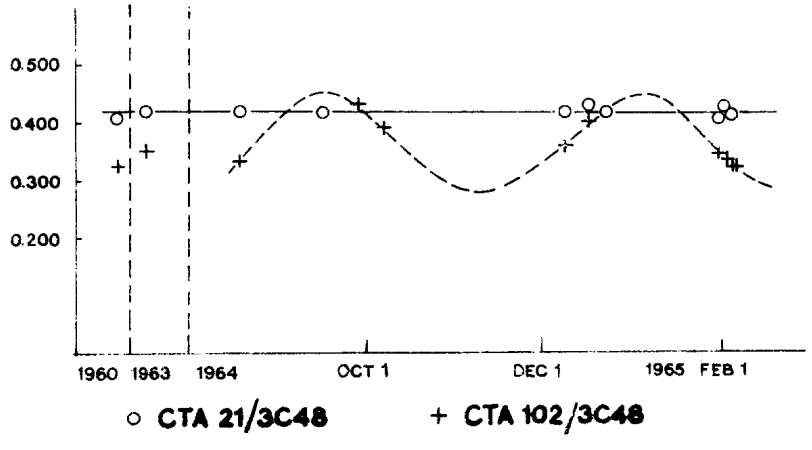
COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 83

Konkoly Observatory
Budapest
27 February 1965

VARIABILITY OF THE RADIO SOURCE CTA - 102

During the period from August 1964 to February 1965 measurements of the flux densities of CTA-21 and CTA-102 were made, at the wavelength 32.5 cm with the aid of a modulation radiometer, The flux densities of both sources have been determined relative to 3C-48. It should be noted, that according to recent spectral measurements the radio flux density of 3C-48 is constant within 3 % [1] .

In the figure the determined ratios of the flux densities - CTA-21/3C-48 and CTA-102/3C-48, together with those obtained from previous measurements [2, 3] have been plotted against time. One can see, that the ratio CTA-21/3C-48 remains constant within the errors of measurement, while the ratio CTA-102/3C-48 varies at least within 0.320-0.430; these limits are far in excess of the errors of measurement.



The flux density of CTA-102 varies roughly according to a sinusoidal law with a period close to 100 days. Variations with shorter periods may be also present. The linear diameter of the source cannot exceed the value $cT \simeq 0.1$ parsec $= 2.10^4$ a.u. Compared with the angular diameter of CTA-102, $\theta = 0''.01$, obtained by the method presented in [4], an upper limit for its distance can be determined: $R \leq 2$ megaparsec. This can be considered as the indication of the galactic origin of CTA-102.

1 Matthews, T.A., Sandage, A.R., Astrophys.J., 138, 30, 1963.

2 Harris, D.E., Roberts, J.A., Publ. Astron. Soc. Pacific, 72, 237, 1960.

3 Conway, R.G., Kellerman, K.I., Long, R.J., Mon. Not. Roy. Astron. Soc., 125, 261, 1962.

4 Slish, V.I., "Nature", 199, 628, 1963.

G.B. SHOLOMITSKY
Sternberg Astronomical Institute
Moscow

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 84

Konkoly Observatory
Budapest
March 1, 1965

MINIMA OF RZ CASSIOPEIAE

A. Mak and L. Plaut have recently published many visual estimates of RZ Cassiopeiae by members of the Netherlands Association for Astronomy and Meteorology [1]. After correspondence with Mr. Mak, I have determined 13 minima from this material. Kordylewski's tracing-paper method was used; O-C's were calculated from Parenago's elements [2].

J.D. 2,430,000+	E	O - C (d)	n	Observer
7960.351	+17,239	-0.020	28	A. Mak
8003.373	17,275	-0.027	24	D. Riphagen
8003.375	17,275	-0.025	16	N. P. de Jongh
8021.299	17,290	-0.030	24	D. Riphagen
8021.304	17,290	-0.025	21	N. P. de Jongh
8046.403	17,311	-0.026	25	D. Riphagen
8089.427	17,347	-0.031	20	D. Riphagen
8089.431	17,347	-0.027	18	A. J. Schipper
8315.329	17,536	-0.032	18	D. Riphagen
8315.334	17,536	-0.027	18	A. J. Schipper
8388.248	17,597	-0.023	15	B. v. d. Kerckhove
8462.354	17,659	-0.023	24	B. v. d. Kerckhove
8524.501	+17,711	-0.029	22	B. v. d. Kerckhove

This reduction was carried out as part of "Sky and Telescope's eclipsing variable star program.

[1]. "Observations of Variable Stars", Report No. 6, Kapteyn Astronomical Laboratory, Groningen, November 1964.

[2]. "Variable Stars", 9, 2, Moscow 1953.

L.J. ROBINSON

"Sky and Telescope"
49 Bay State Rd.
Cambridge 38, Mass.

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 85

Konkoly Observatory
Budapest
8 March 1965

DOUBLE-LINED ECLIPSING BINARY BV 382 CEPHEI HD 205372

This star was previously announced as an EW binary having the period $0^d.483$; (1) (2) (3).

Spectroscopic and photoelectric observations made respectively at the Astrophysical Observatories of Asiago and Bologna show that the variable is a double-lined system whose period is approximately twice the old one. The spectral types of both components are about AO V, so that the binary belongs to the beta-Lyrae type.

The following preliminary elements have been derived;

$P = 0^d.936171$

$T_o = 2438225.6858$ JD (primary minimum)

$e = 0.00$, $V_o = -22$ km/s, $i = 71^o$

$K_1 = 172$ km/s, $K_2 = 187$ km/s

$a_1 = 2.3 \times 10^6$ km, $a_2 = 2.5 \times 10^6$ km

$r_1 = 1.8 \times 10^6$ km, $r_2 = 1.7 \times 10^6$ km

$m_1 = 2.7\,\odot$, $m_2 = 2.5\,\odot$

$\varrho_1 = 0.16\,\odot$, $\varrho_2 = 0.16\,\odot$

Further results will be given in a paper which is now in print.

References:

1/ I.B.V.S. No.22, 1963.

2/ Bamberg Veröff., Bd. V. Nr. 17, 1963.

3/ Sky and Telescope, XXVI. 264, 1963.

Astrophysical Observatories
Asiago and Bologna
February 11, 1965

C. BARTOLINI
A. MAMMANO
G. MANNINO
R. MARGONI

Remark to Bulletin No. 80

On the little chart the variable is hardly to be recognized as a small ring. The variable is the star 9.4 mm from the right side and 3.8 mm from below.

C. HOFFMEISTER

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 86

Konkoly Observatory
Budapest
11 March 1965

Veröffentlichungen der Remeis-Sternwarte Bamberg
Astronomisches Institut der Universitat Erlangen-Nürnberg

Band VI, Nr 24

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 603 = BD $-12^{\circ}72$ ($6^{m}.7$) = HD 2 438 (Mb) $A_{pg} = 0^{m}.4$
= K3II 100 029 = Zi 24

BV 604 = CoD $-35^{\circ}556$ (10^{m}) $A_{pg} = 0^{m}.4$

BV 605 = CoD $-45^{\circ}823$ ($9^{m}.1$) = HD 16 308 (Go) $A_{pg} = 0^{m}.6$
= K3II 233 = S 4806
Min = 243 8319.420 + $5^{d}.7875$. E
(EA)

BV 606 = CoD $-43^{\circ}798$ ($8^{m}.9$) = HD 16 456 (A2) $A_{pg} = 0^{m}.5$

BV 607 = CoD $-54^{\circ}758$ ($7^{m}.9$) = HD 25 210 (F2) $A_{pg} = 0^{m}.4$

BV 608 = BD $-5^{\circ}803$ ($8^{m}.6$) = HD 25 491 (F8) $A_{pg} = 0^{m}.3$

BV 609 = BD $-9^{\circ}1284$ ($7^{m}.0$) = HD 40 535 (Fo) $A_{pg} = 0^{m}.3$

BV 610 = CoD $-30^{\circ}4030$ ($7^{m}.3$) = HD 55 173 (B3) $A_{pg} = 0^{m}.4$
Min = 243 8400.395 + $0^{d}.547\,384$. E
(EB)

BV 611 = CoD $-53^{\circ}8226$ (10^{m}) = HD 184 956 (Mc) $A_{pg} = 0^{m}.5$
= K3II 4744 = S 5080

BV 612 = BD $-21^{\circ}5657$ ($9^{m}.5$) $A_{pg} = 0^{m}.5$
Min = 243 8252.290 + $6^{d}.031\ 45$. E
(EA)

BV 613 = CoD $-34^{\circ}14\ 646$ ($8^{m}.5$) = HD 198 103 (A3) $A_{pg} = 0^{m}.5$
Min = 243 8295.265 + $4^{d}.435$. E
(EA)

BV 614 = BD $-15^{\circ}5822$ ($9^{m}.4$) $A_{pg} = 0^{m}.3$

BV 615 = CoD $-36^{\circ}14\ 598$ ($7^{m}.7$) = HD 200 670 (F5) $A_{pg} = 0^{m}.4$

BV 616 = BD $-18^{\circ}5936$ ($8^{m}.8$) = HD 204 059 (A5) $A_{pg} = 0^{m}.4$

BV 617 = CoD $-32^{\circ}16\ 576$ ($7^{m}.6$ = HD 204 179 (F2) $A_{pg} = 0^{m}.3$

BV 618 = Cap $-69^{\circ}3215$ ($10^{m}.0$) $A_{pg} = 0^{m}.4$

BV 619 = CoD $-48^{\circ}14\ 210$ ($9^{m}.5$) $A_{pg} = 0^{m}.8$

BV 620 = CoD $-35^{\circ}15\ 630$ ($5^{m}.3$) = HD 217 792 (Fo) $A_{pg} = 0^{m}.3$
Max = 243 8260.250 + $7^{d}.975$. E
(Cepheid)

BV 621 = CoD $-70^{\circ}1918$ ($7^{m}.8$) = HD 219 381 (Mc) $A_{pg} = 0^{m}.4$

BV 622 = CoD $-60^{\circ}8139$ ($7^{m}.0$) = HD 223 967 (Ao) $A_{pg} = 0^{m}.3$

Bamberg, Remeis-Observatory
1 March 1965

W. STROHMEIER
R. KNIGGE H. OTT

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 87

Konkoly Observatory
Budapest
12 March 1965

THE SPECTRUM OF Z CIRCINI

The light curve of Z Cir has recently been discussed by van Hoof (Information Bulletin Number 41, 1964). The variable is peculiar in that a rather flat maximum occupies about half of the period (which is $394^{d}.6$). This originally suggested an eclipsing variable but van Hoof has shown that this is unlikely. Instead he suggests the light curve resembles most nearly the R CrB type variables though with certain unique features (a strong periodic tendency and a short interval between minima).

A spectrum of the variable was obtained on 1965 February 25 with the f/2 camera (86A/mm) at the Cassegrain focus of the 74-inch Radcliffe reflector. This shows the star to be of spectral type M (strong TiO bands). In addition Hδ is seen in emission. The spectrum is typical of that expected for a Mira type variable.

Further photometric observations would be of interest to establish whether or not the light curve precludes the classification of the star as a Mira type variable. It may be mentioned that some Mira type variables do have relatively flat light curves near maximum light (e.g. S Pavonis, period = 389 days; Campbell, Studies of Long Period Variables A.A.V.S.O., 1955).

I am grateful to Professor van Hoof for kindly sending me a map of the field of Z Cir.

1965, February 26.

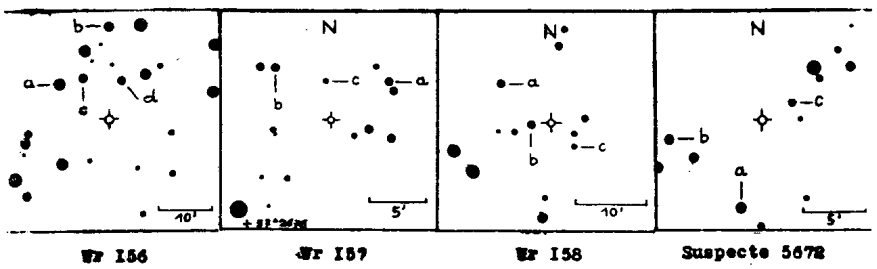
M.W. FEAST
Radcliffe Observatory Pretoria
S. Africa

COMMISSION 27 OF THE I. A. U
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 88

Konkoly Observatory
Budapest
3 April 1965

NOUVELLES ETOILES VARIABLES

Dés.	α (1900,0)	δ	max	mp min	type	nombre d'observ.
Wr 156	$22^h\ 17^m\ 17^s$	$+45^o09'$	9,8	10,7	I	72
Wr 157	$22^h\ 58^m\ 17^s$	$+58^o08'$	11,3	12,0	I	56
Wr 158	$23^h\ 18^m\ 05^s$	$+58^o46'$	11,2	12,2	I	56
Susp. 5672	$23^h\ 06^m\ 00^s$	$+60^o43'$	11,6	12,6	I	56



Wr 156 Wr 157 Wr 158 Suspecte 5672

Etoiles de comparaison

Wr 156	Wr 157	Wr 158	Susp. 5672
a = 9,5	11,0	11,2	11,6
b = 10,0	11,4	11,5	12,0
c = 10,3	12,0	12,2	12,6
d = 10,7	-	-	-

Remarques

Wr 156 = BD $+44^{\circ}4106$ = HD 212185 Sp Mb

Wr 158 = BD $+58^{\circ}2583$

Susp 5672 T.E.Espin. AN 137, 369-376, 1895. = DO 42604 (M5) = Zi 2124

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

ROGER WEBER

Station Astrophotographique
de Mainterne

GALAXIES WITH FREQUENT APPEARANCE OF SUPERNOVAE

The galaxy NGC 2841 should be added to the list of Prof. B.V.Kukarkin. Type Sb, M = -19,9, n = 2, T = 45 years. The first supernova has exploded in 1912 and the second, which is of type I, in 1957. Evidently this addition does not change the valuable conclusions of Prof. B.V. Kukarkin about giant galaxies and their supernovae.

Ch. BERTAUD

Observatoire de Meudon

Ny.711/1965. - 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 89

Konkoly Observatory
Budapest
6 April 1965

BV 623 AND BV 624

Both stars are given as a variable respectively suspected variable star in the Catalogue of Photoelectric Magnitudes and Colours of Southern Stars by A.W.J. COUSINS and R.H.STOY, published as Number 64 of the Royal Observatory Bulletins.

BV 623 = BD -15° 5848 ($6^{m}.0$) = HD 199 603 (A3)

Comparison-stars: HD 199 443 (A3) HD 200 157 (F5)

The light-curve has been derived assuming a difference of $1^{m}.46$ between the comparison-stars as given in the Harvard Catalogue. The magnitudes for the variable, however, have been corrected so that the B-values of the photoelectric measurements made at the Cape Observatory fit the light-curve. Mr. A.W.J.COUSINS has been so kind to communicate these measurements to me. By means of these measurements in connection with estimated minima on Bamberg sky patrol plates and the photometric evaluation of the plate material from the Bamberg South-African Station, an exact period could be derived.

Min = JD 242 6160.500 + $1^d.575531$. E, EB, Ampl. $0^m.$.

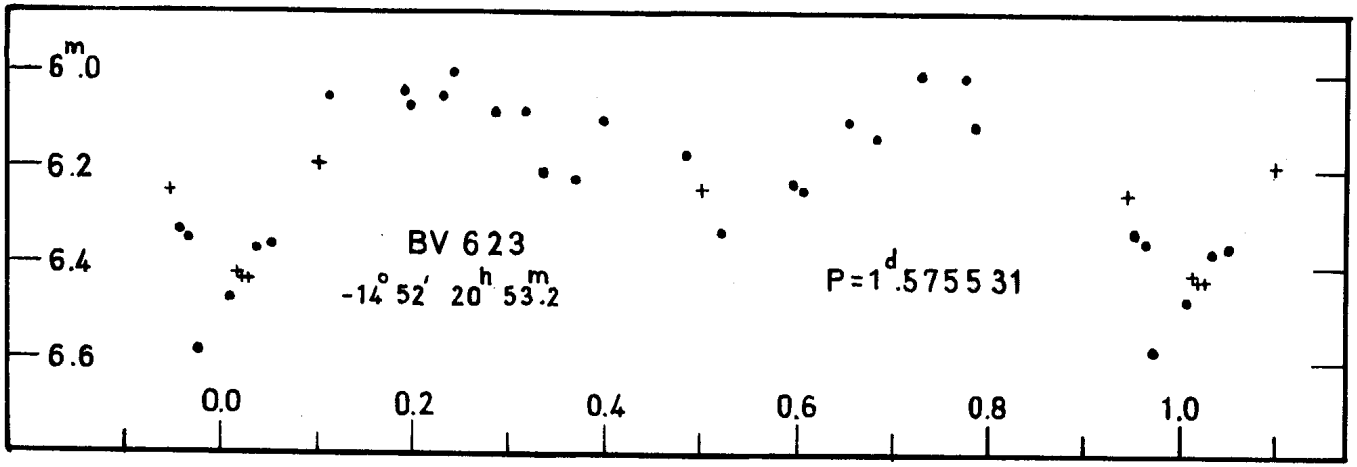
Estimated minima	E	O - C	Estimated minima	E	O - C
JD 242 6160.524	0	+ $0^d.024$	JD 243 6817.376	6764	$-0^d.016$
6546.478	245	- 0.027	7173.406	6990	-0.056
6929.416	488	+ 0.057	7578.312	7247	-0.061
7386.228	778	- 0.035	7904.435	7454	-0.073
7416.217	797	+ 0.019	8287.349	7697	-0.013
.235	797	+ 0.037			

Photoelectric measurements obtained at the Cape Observatory

	E	O - C	V	B-V
JD 243 4575.438	5341	$+0^d.027$	$6^m.17$	$+0^m.25$
.411	5341	+0.030	6.18	0.25
.444	5341	+0.033	6.19	0.24
5636.532	6014.5	+0.001	6.02	0.22
5692.378	6050	-0.085	6.02	0.23
5727.285	6072	+0.161	5.95	0.24

Photometric minima (fainter than $6^m.3$)

Minima	E	O - C	Minima	E	O - C
JD 243 8561.560	7871	$+0^d.056$	JD 243 8636.362	7918.5	$+0^d.019$
8583.522	7885	-0.040	8640.359	7921	+0.078
8613.440	7904	-0.057	8643.362	7923	-0.070
8621.388	7909	+0.013			



+=photoelectric measurements obtained at the Cape Observatory

BV 624 = CoD -34° 483 ($8^{m}.0$) = HD 7 676 (A3)

Comparison-stars:

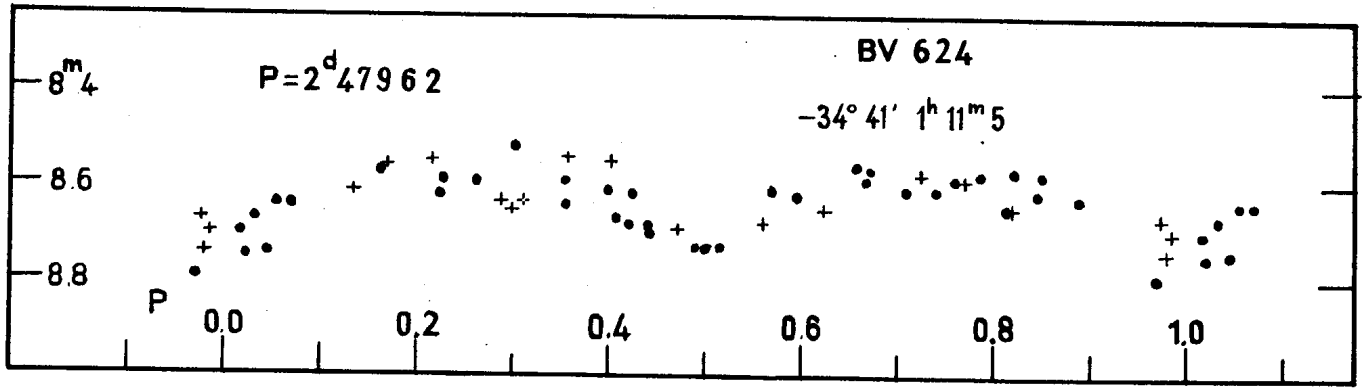
HD 7 898 (A3) $8^{m}.00$ Magnitudes are B-values from the catalogue
HD 7 817 (F8) $8^{m}.75$ of A.W.J.COUSINS and R.H.STOY.

Min = JD 243 6498.450 + $2^{d}.47962$. E, Ecl. Binary, Ampl. $0^{m}.2$

The photoelectric measurements, used in deriving a more accurate period, have been obtained at the Cape Observatory under the supervision of R.H.STOY.

Photoelectric measurements obtained at the Cape Observatory

	V	B - V	E	O - C
JD 243 6210.363	$8^{m}.40$	$+0^{m}.25$		
6498.398	8.42	0.32	0	$-0^{d}.052$
6542.400	8.39	0.19		
6548.376	8.40	0.21		
6561.325	8.35	0.19		
6564.306	8.38	0.30		
6567.309	8.38	0.21		
6568.300	8.38	0.18		
6570.297	8.38	0.29		
.324	8.42	0.28	29	$-0^{d}.035$
6576.315	8.36	0.19		
6583.292	8.36	0.19		
6584.298	8.43	0.22		
6888.461	8.40	0.23		
6891.423	8.41	0.28		
6893.449	8.42	0.23		
6898.438	8.42	0.21		



+ = photoelectric measurements obtained at the Cape Observatory

Photometric minima (fainter than $8^m.7$)

Minima	E	O - C
JD 243 8292.461	723.5	$+0^d.006$
8297.457	725.5	+0.043
8318.419	734	-0.072
8338.325	742	-0.003
8348.302	746	+0.055
8354.304	748.5	-0.142
8358.280	750	+0.115
8649.497	867.5	-0.023

Bamberg, 31 March 1965

W. STROHMEIER
Remeis Observatory

89

VERÖFFENTLICHUNGEN DER REMEIS-STERNWARTE BAMBERG
ASTRONOMISCHES INSTITUT DER UNIVERSITÄT ERLANGEN-NÜRNBERG

Band VI. Nr. 25

W. STROHMEIER

BV 623 AND BV 624

1965

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 90

Konkoly Observatory
Budapest
22 April 1965

PROBABLE SUPERNOVA IN NGG 4162

On plates, taken by Mr. K. Löchel with the astrograph 400/1600 mm for my program on RR Lyrae-stars near the galactic pole, I found a star $16^{m}.5$ on 2 plates of 1965 April 1, missing on plates of 1962 to 1964. It is at the sf edge of the galaxy; the position is

$12^{h}\ 4^{m}\ 35^{s}$	$+\ 24^{o}\ 55'.7$	1855.0
12 6 52	+ 24 40.6	1900.0

No other plates are available from 1965. Palomar Sky Atlas shows at the place of the pretended Supernova a knot which is also indicated on the best of our earlier plates. The new object is situated immediately south of this knot.

C. HOFFMEISTER
Sonneberg Observatory

COMMISSION 27 OF THE I A.U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 91

Konkoly Observatory
Budapest
30 April 1965

PHOTOMETRIC LIGHT-CURVES OF SOUTHERN BV-STARS

BV 421 = Cape -85° 55 (Fig.1)

Comparison-stars:
Cape -85° 65 $9^{m}.3$
Cape -85° 60 $9^{m}.7$

Magnitudes of comparison-stars have been derived by photometric connexion to stars (HD 94 009 G5; HD 89 499 G5) from the catalogue of COUSINS and STOY[1] .

Min = JD 243 8315.787 + $1^{d}.14926$. E, EW, Ampl. $0^{m}.4$

The photometric derivation of the light-curve proved BV 421 to be an eclipsing binary in contrary to its publication as RRc in Inf.Bull.on. Var. Stars, No. 54[2] . The period given there had to be doubled.

Individual minima (fainter than $9^{m}.7$)

Minima	E	O - C
JD 243 8316.323	0.5	$-0^{d}.039$
8374.356	51	- 0.043
.401	51	+ 0.002
8408.324	80.5	+ 0.022
8427.279	97	+ 0.014
8435.314	104	+ 0.004
8439.312	107.5	- 0.020
.356	107.5	+ 0.024
8440.449	108.5	- 0.033
8443.353	111	- 0.002
.398	111	+ 0.043

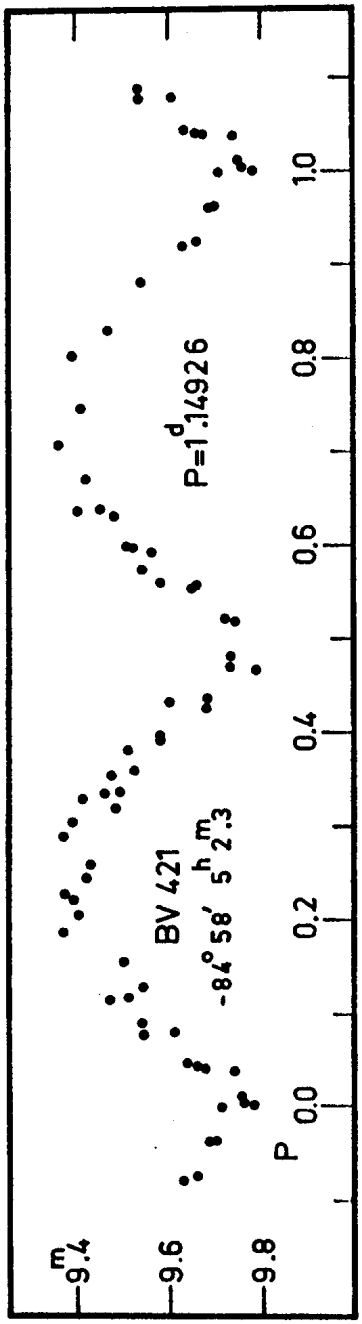


Fig.1

BV 423 = HD 1372 (F2) (Fig.2)

Comparison-stars:

HD 1024 (F5) $9^m.8$
HD 1446 (G0) $10^m.6$

Min = JD 243 8257.540 + $0^d.59480$. E,EW, RRc?, Ampl. $0^m.4$

The light-curve shows that BV 423 is probably an eclipsing binary of type EW, however, the possibility of BV 423 being an RRc-type pulsation variable can not be excluded. The period now derived is nearly twice the period given in Inf.Bull. on Var.Stars, No. 542 . The light-curve shows more scattering than usually , since BV 423 is very near to the edge of the photographic plates used.

Individual minima (fainter than $10^m.85$)

Minima	E	O - C
JD 243 8257.502	0	- $0^d.043$
8263.490	10	- 0.002
8297.364	67	- 0.028
8309.322	87	+ 0.034
8314.322	95.5	- 0.011
.367	95.5	+ 0.024
8339.293	137.5	- 0.032
8641.497	645.5	+ 0.014
8695.294	736	- 0.019
340	736	+ 0.027
8701.258	746	- 0.003

BV 426 = HD 131 356 (G5) (Fig.3)

Comparison-stars:

HD 130 635 (A2) $8^m.45$
HD 130 210 (A3) $9^m.2$ (mean values of Harvard and Cape catalogues)

Max = JD 243 8207.0 + $36^d.9$. E, C6 , Ampl. $0^m.4$

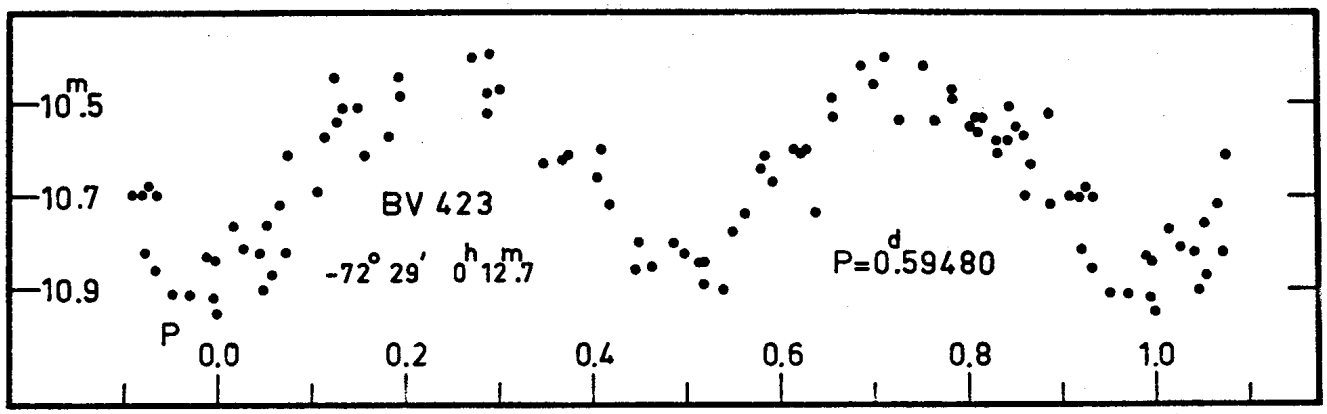


Fig. 2

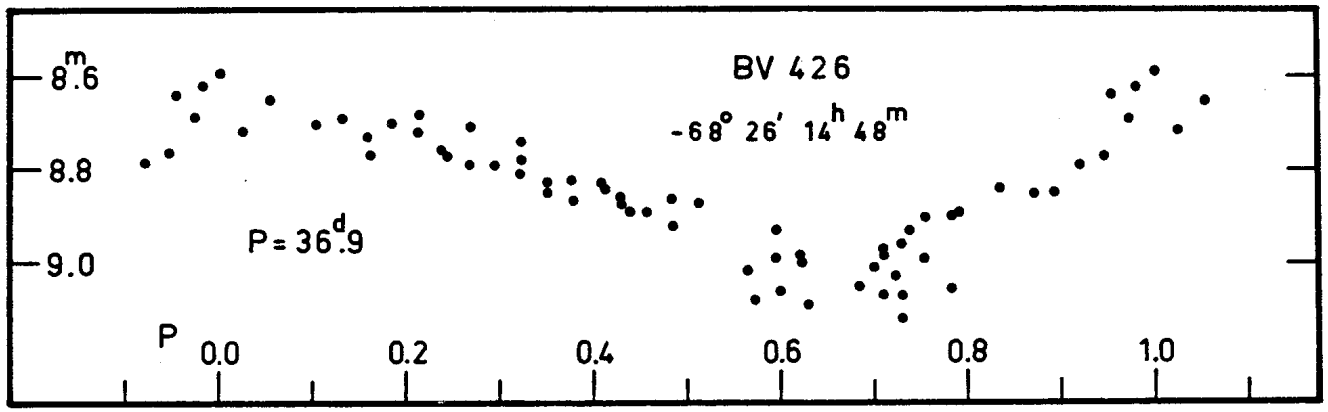


Fig. 3

The period in Inf.Bull. on Var. Stars, No. 54[2] , had to be shortened by one day.

Individual maxima (brighter than $8^m.75$)

Maxima	E	O - C
JD 243 8205.284	0	- $1^d.716$
6.277	0	- 0.723
8502.485	8	+ 0.035
3.485	8	+ 1.035

BV 429 = HD 136 483 (G0) (Fig.4)

Comparison-stars:

HD 136 146 (A5) $8^m.95$
HD 135 815 (A2) $9^m.45$

Magnitudes of comparison-stars have been derived by photometric connexion to stars (HD 131 099 A2; HD 134 288 F0) from the catalogue of COUSINS and STOY[1] .

Max = JD 243 8197.3 + 16.73 . E. Cδ , Ampl. $0^m.4$

The period, given in Inf.Bull. on Var. Stars, No. 55[2], had to be shortened by one day.

Individual maxima (brighter than $9^m.2$)

Maxima	E	O - C
JD 243 8196.330	0	- $0^d.970$
8498.495	18	+ 0.055
8548.331	21	- 0.299
8581.245	23	- 0.845
2.245	23	+ 0.155
3.247	23	+ 1.157

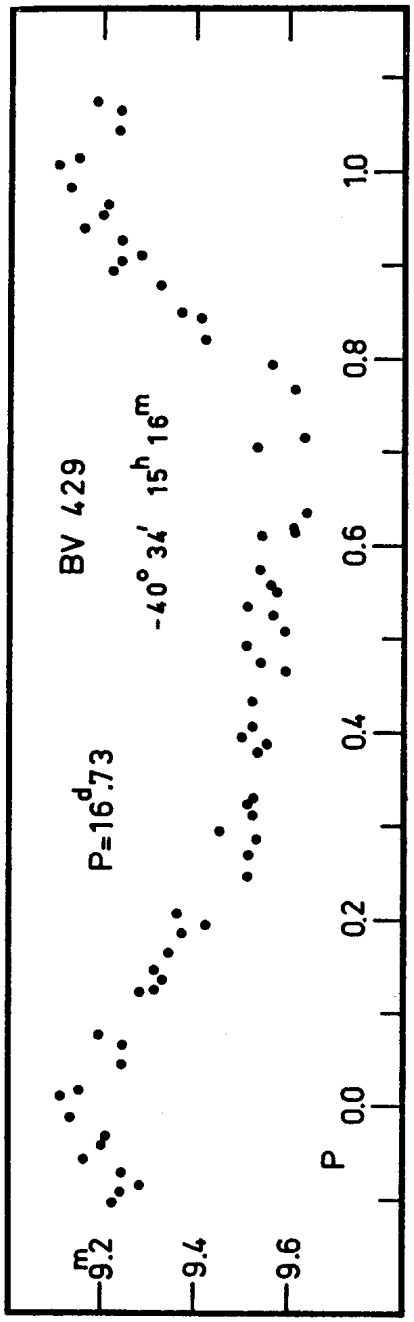


Fig.4

BV [illegible] = HD 130 233 (F8) (Fig.5)

Comparison-stars:

HD 130 042 (K0) $8^m.10$
HD 129 496 (F8) $9^m.25$

Magnitudes of comparison-stars have been derived by photometric connexion to stars (HD 123 151 K0; HD 125 833 K0) from the catalogue of COUSINS and STOY[1] . Preliminary elements had been published in Inf. Bull. on Var. Stars, No 74[2] .

Max = JD 243 8206.05 + $3^d.0651$. E, C6 , Ampl. $0^m.5$

Individual maxima (brighter than $8^m.10$)

Maxima	E	O - C
JD 243 8206.278	0	+ $0^d.228$
8230.220	8	- 0.351
8475.556	88	- 0.223
8494.495	94	- 0.326
8500.488	96	+ 0.188
8549.335	112	- 0.006
8555.333	114	- 0.138
8561.336	116	- 0.266
8580.248	122	+ 0.256
8583.250	123	+ 0.193
8586.252	124	+ 0.130
8589.254	125	+ 0.068
8592.250	126	- 0.003
8604.210	130	- 0.303

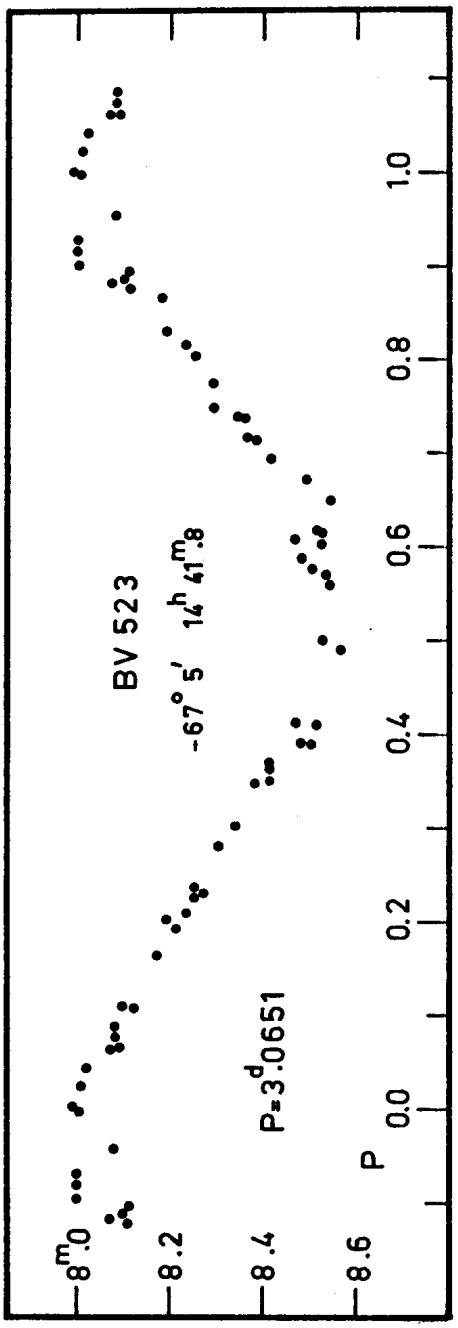


Fig.5

BV 601 = CoD -39° 14830 (Fig.6)

Comparison-stars:

CoD -40° 14 903 $10^{m}.45$
CoD -39° 14 831 $10^{m}.77$

Magnitudes of comparison-stars have been derived by photometric connexion to stars (HD 213 628 G0, HD 213 657 F5) from the catalogue of COUSINS and STOY[1] .

Max = JD 243 8260.438 + $0^{d}.34741$, E, RR, Ampl. $0^{m}.25$

BV 601 has been published first without light-curve in Inf.Bull. on Var. Stars, No. 81[2] . The period given there is wrong.

Individual maxima (brighter than $10^{m}.5$)

Maxima	E	O - C
JD 243 8260.472	0	+ $0^{d}.034$
8315.327	158	- 0.002
8338.246	224	- 0.012
8615.486	1022	+ 0.005
8692.296	1243	+ 0.027
8708.259	1289	+ 0.010

BV 612 = BD -21° 5657 (Fig.7)

Comparison-stars:

a = Cape -21° 7603 $10^{m}.0$
b = see figure $10^{m}.5$ (estimated)

The elements of BV 612 have been communicated already in Inf. Bull. on Var. Stars, No. 86[2] .

Min = JD 243 8252.290 + $6^{d}.03145$, E, EA, Ampl. $0^{m}.7$

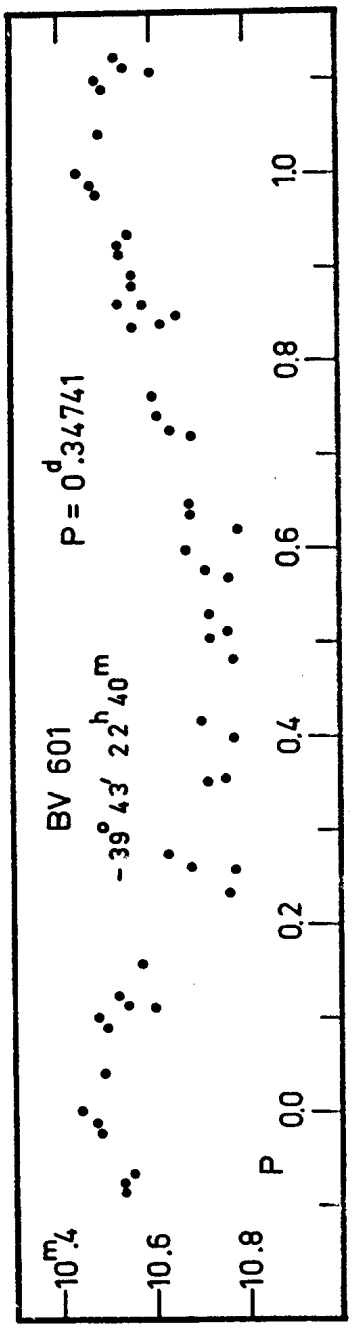

BV 601
$-39^{\circ}43'$ $22^{h}40^{m}$
P = $0^{d}.34741$
$10^{m}.4$
10.6
10.8
P
0.0
0.2
0.4
0.6
0.8
1.0

Fig.6

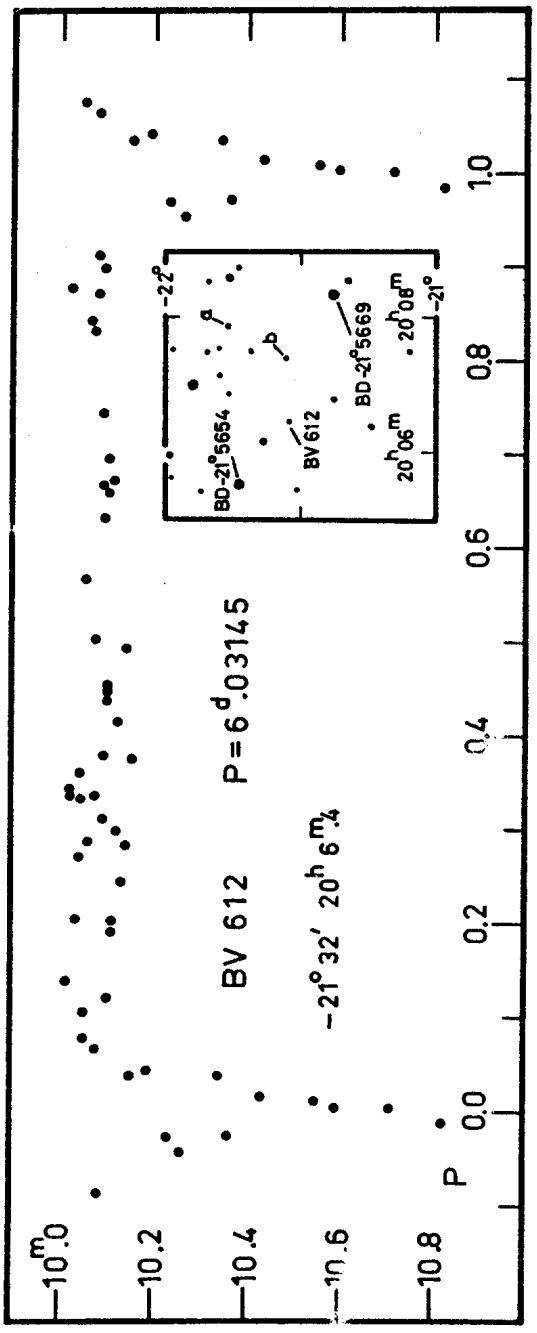

10.0
10.2
10.4
10.6
10.8
m
P
0.0
0.2
0.4
0.6
0.8
1.0
BV 612
P = 6d.03145
-21° 32' 20h 6m.4
-22°
-21°
20h 08m
20h 06m
BD-21°5654
BD-21°5669
BV612
a
b

Fig. 7

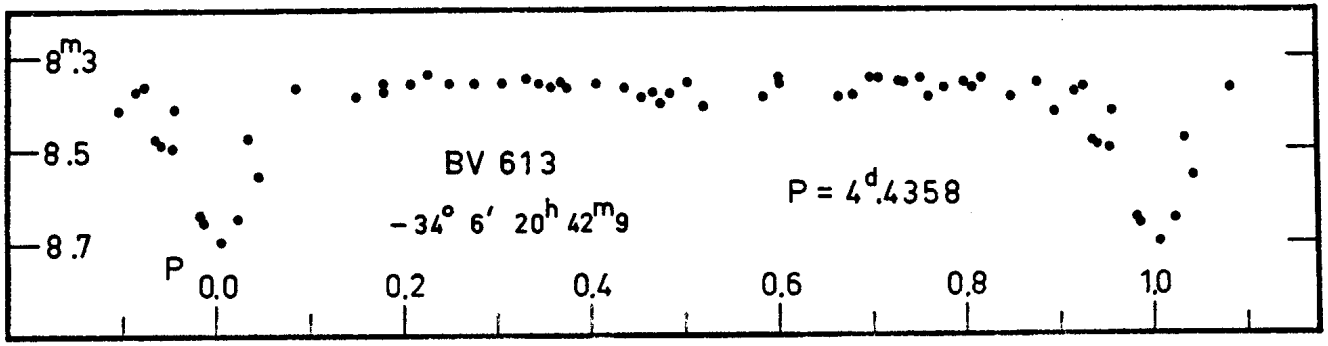


Fig. 8

Individual minima (fainter than $10^m.4$)

Minima	E	O - C
JD 243 8252.369	0	+ $0^d.079$
8258.367	1	+ 0.045
8264.362	2	+ 0.009
8638.312	64	+ 0.006
8650.273	66	- 0.096

BV 613 = HD 198 103 (A3) (Fig.8)

Comparison-stars:

Cape -34° 8793 $8^m.2$
Cape -34° 8797 $8^m.6$

The elements of BV 613 have been communicated already in Inf. Bull. on Var. Stars, No. 86[2] .

Min = JD 243 8295.265 + $4^d.4358$. E,EA, Ampl. $0^m.3$

Individual minima (fainter than $8^m.6$)

Minima	E	O - C
JD 243 8295.270	0	+ $0^d.005$
8583.522	65	- 0.070
8641.362	78	+ 0.105
8672.244	85	- 0.064

1 Royal Observatory Bulletins, No.64, A.W.J. COUSINS and R.H.STOY, Photoelectric Magnitudes and Colours of Southern Stars.

2 Publications of W. STROHMEIER, R. KNIGGE and H. OTT.

Bamberg, 14 April 1965

U. KÖHLER, E. SCHÖFFEL
Remeis-Observatory

COMMISSION 27 OF THE I.A.U.

INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 92

Konkoly Observatory
Budapest
30 April 1965

A POSSIBLE MAJOR PERIOD CHANGE IN V342 AQUILAE

The eclipsing variable V342 Aquilae is the fainter component of ADS 12259 = 0Σ 370 ($\rho = 19.5''$, $\Theta = 14^{\circ}$). It has a visual range 9.0 - 12.5; $D = 13^{h}$, $d = 3^{h}$. A finder chart with step sequence was published by Zessevich[1]. Elements in the 1958 "General Catalogue of Variable Stars" are:

$$\text{J.D. min}_{\odot} = 2428023.550 + 3^{d}.390842\ E \qquad (A).$$

From observations in 1964, M.Baldwin[2] found a large residual from (A). All minima known to the writers are collected below:

J.D.	E_A	$O - C_A$	E_B	$O - C_B$	Obs'r.	Ref.
2,400,000+						
28023.550	0	$0^{d}.000$			P	3
31343.180	+979	-0.004			Z	1
34520.399	1916	-0.004			S	4
34920.527	2034	+0.004			S	5
34988.343	2054	+0.004			S	5
35632.603	2244	+0.004	0	$-0^{d}.000$	S	6
36073.427	2374	+0.018	+130	-0.000	S	7
38599.691	+3119	+0.105	+875	-0.000	B	2

Observers: J. Piegza, V. Zessevich, R. Szafraniec, M. Baldwin.

It seems that in 1956 the period of V342 Aquilae lengthened by about 10 seconds. Szafraniec[7] first noted that the period was variable, and an increasing period was mentioned in SAC 30, 104, 1959. At present, mid-eclipse is coming about 2.5 hours later than predicted by (A).

These new elements are based on the last three minima in the table, and should be regarded as tentative (residuals are indicated in column five).

$$\text{J.D. min}_{\odot} = 2435632.603 + 3^{d}.3909574\ E \qquad (B).$$

The writers would like to receive unpublished or new observations of this star.

M. E. BALDWIN
2349 Travis Loop
Holloman AFB
New Mexico 88330

L.J. ROBINSON
41 Linnaean St., Apt # 3
Cambridge, Mass. 02138

[1]V. Zessevich, Odessa Izvestia, IV. 80, 1954.

[2]M. Baldwin, unpublished observation sent to "Sky and Telescope's" eclipsing variable star program.

[3]J. Piegza, the initial epoch in SAC 14, 56; see also AAc 2,125, which was unavailable to the writers.

[4]R. Szafraniec, SAC 25, 82.

[5]R. Szafraniec, AAc 5,193.

[6]R. Szafraniec, SAC 28, 106.

[7]R. Szafraniec, SAC 29, 106.

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 93

Konkoly Observatory
Budapest
3 May 1965

NOVA AURIGAE 1960–1964

1855.0	$6^h\ 6^m\ 32^s$	$+28^\circ$	37!8
1900.0	6 9 23	+28	37.2

The variability of this object was first announced by Dr.M. Popova from Sofia, who, during a temporary stay at Sonneberg Observatory in 1960, compared plates of the camera 140/700 mm. The preliminary designation is S 5420 Aur. According to Mrs. Popova the variability was "slow" between $12^m.5$ and $[14^m.5$ (MVS 463, 1960; AN 286.8., 1961), and the star seemed to be red, thus suggesting a long period variable. In April 1965 I recovered the variable independently on plates from the astrograph 400/1600 mm, and, after examining many plates, I came to regard it as a Nova of RT Serpentis-type.

The star was invisible 1959 January to April; it appears first in October 1959, rising slowly to the maximum $11^m.3$, 1963 Jan. 17/18; 1964 Dec. 9 it was 14^m, descending rapidly to $15^m.5$ on Dec.23, and being invisible, $[15^m.5$, on 140 mm-plates in February and March 1965. Strong fluctuations up to $1^m.5$ are superimposed to the light-curve. Another rise, but not brighter than 13^m, is covered by our plates from mid-September 1942 to the end of 1943. On Palomar Sky Atlas the praenova is visible as a faint blue star, about 18^m on the blue plate, 19^m on the red plate, 1951 Nov. 3/4. The image is absolutely star-like

without any trace of a shell, as might have been expected from a preceding outburst.

In order to fill the gaps, caused by bad weather, contributions from other observatories would be highly appreciated.

C. HOFFMEISTER
Sonneberg Observatory

SUPERNOVA IN NGC 4162

Compare Bulletin No. 90

The supernova is confirmed by a plate of 1965 April 19, the star being about $17^{m}.5$

C. HOFFMEITER
Sonneberg Observatory

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 94

Konkoly Observatory
Budapest
5 May 1965

UBV PHOTOMETRY OF RR LYRAE STARS

Photoelectric photometry of RR Lyrae Stars on the UBV System begun at the Royal Greenwich Observatory and continued at the Kottamia station, Helwan Observatory, United Arab Republic, gives the following results:

	Max			Min						
	V	B-V	U-B	V	B-V	U-B	<V>	<B-V>	<U-B>	Rising Branch
SS Psc	10.78	.26	.22	11.19	.35	.26	10.98	.30	.23	44% c
AH Cam	11.31	.62	.52	12.33	.95	.58	11.88	.85	.55	21% a
UY Cam	11.33	.15	.13	11.66	.24	.21	11.49	.20	.17	46% c
TT Lyn	9.46	.20	--	10.17	.47	--	9.87	.39	--	20% a
RY Com	11.66	.06	--	12.84	.44	--	12.36	.31	--	24% a
AV Peg	9.91	.18	--	10.86	.55	--	10.48	.42	.13:	20% a

I am grateful to Prof. A.H. Samaha for the opportunity to use the 74 in. reflector at Kottamia.

D. H. P. JONES
Royal Greenwich Observatory

COMMISSION 27 OF THE I.A.U.
INFORMATION BULLETIN ON VARIABLE STARS
NUMBER 95

Konkoly Observatory
Budapest
14 May 1965

CT TAURI

CT Tau is considered as belonging to the RW Aur type of variables. But this is inconsistent with the periodicity of its light variation, suspected from photographic observations obtained at the Tashkent Astronomical Observatory. To clear up the question, the star has been observed photoelectrically at the Crimean Astrophysical Observatory during some nights in December 1964 and January 1965.

The periodicity was confirmed and the following minima were observed:

J.D. hel. 2438755.384
763.392
785.397

The very small amplitude of the colour variations excludes the possibility that pulsations are the cause of the light variations of CT Tau. It seems reasonable to conclude that the star is of W UMa type with the elements:

$$\text{Min. hel.} = 2434310.315 + 0^{d}.6668276E$$

havint nearly equal minima, the limits of the light variations being 10.34-11.21 in V. The photographic observations are also in good agreement with these elements.

Determination of the luminosity and spectral type of CT Tau is very important. Mean values of its colour indices are: B-V = + 0.14, U-B = - 0.49. The colour excess, E_{B-V}, is about 0.4. Assuming the visual absorption in this direct-

ion to be about $1^m.2$ per kps, we obtain for CT Tau $m-M \sim 10$ and $M \sim 0$. The value of $Q = -0.59$ corresponds to spectral class B3 in good agreement with N.B. Kalandadze's result /Abastumany Bull. N. 31/. Other determinations of the spectral class were given by G.H. Herbig: B5:n /Trans. I.A.U., 8, 805/ and B2n /Ap.J., 131, 632/. It is probable that the luminosity of the star is abnormally low for its spectral class.

It is well known that there are no W UMa stars of spectral class B. We come to the conclusion that CT Tau, together with such stars as BH Cen, $P = 0^d.79$, Sp B5, and BZ Pyx, $P = 0^d.66$, Sp B7V, constitutes a special group of eclipsing variables. The data about these stars are taken from "A Finding List for Observers of Eclipsing Variables" by R.H. Koch et al. 1963.

I.M. ISTCHENKO

Tashkent Astronomical Observatory

P.F. CHUGAINOV

Crimean Astrophysical Observatory

Készült a KFKI Kiadói Csoportjában

KFKI 2142

COMMISSION 27 OF THE I.A.U.

INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 96

Konkoly Observatory
Budapest
14 May 1965

BP VULPECULAE

In the General Catalogue of Variable Stars this star has been classified as RR Lyrae type variable. By phctoelectric observations at Budapest E. Illés-Almár found the star to undergo minima like an eclipsing variable, thus confirming the statement of the discoverer (Hoffmeister,[1]). She has given the provisional elements:

$$\text{Min.} = \text{J.D. } 243\,6860.331 + 1^d.938.E \quad (2)(3).$$

Observations of faint light on Sonneberg plates yielded the improved formula:

$$\text{Min.} = \text{J.D. } 243\,7438.547 + 1^d.940\,346.E.$$

From the mean light curve the following characterizing data can be derived:

$$\text{Algol type, } A_1 = 0^m.9, \quad A_2 = 0^m.4, \quad D = 0^p.1 .$$

The observations of Strohmeier and Ott (4) are also in accordance with the improved elements.

Observed times of faint light:

J.D.	m_{pg}	E	O-C	
242 5831.362		-5982	$-0^d.035$	S.O.
6512.439		5631	-0.020	S.O.
6545.469		5614	+0.024	S.O.
6647.308		5561.5		S.O.
6648.332		5561	+0.049	S.O.
6868.522		5447.5		S.O.
6930.399				S.O.
8074.410		4826	-0.027	S.O.
8078.299		4824	-0.019	S.O.
9114.476		4290	+0.013	S.O.

(1) AN 255. 406; 1935
(2) EBC 1 - EBC 32; 1960
(3) AZ 210. 21; 1960
(4) Bamberg Veröff. V,12; 1961

KFKI 2143

Continued

	J.D.	m_{pg}	E	O-C	
243	4221.446	10.7	-1658	-0.007	H.
	4580.427	10.9	1473	+0.010	H.
	5224.585	10.9	1141	-0.027	H.
	5226.576	11.0	1140	+0.023	H.
	5721.355	11.0	885	+0.014	H.
	6433.446	11.0	518	-0.002	H.
	6790.450	10.9	334	-0.021	H.
	6860.331		298	+0.007	I.
	7116.458	10.7	166	+0.008	H.
	7438.547	11.3	0	0	H.
	7642.260	10.7	105	-0.023	H.
	7898.427	11.0	237	+0.018	H.
	7933.365	10.7	255	+0.030	H.
	7935.294	11.1	256	+0.018	H.
	8001.256	11.1	290	+0.009	H.
	8255.437	10.9	421	+0.004	H.
	8323.326	10.8	456	-0.019	H.
	8614.433	10.7	606	+0.036	H.

S.O. = W. Strohmeier and H. Ott; H. = H. Huth; I. = E. Illés-Almár.

H. HUTH
Sonneberg Observatory

Készült a KFKI Kiadói Csoportjában

COMMISSION 27 OF THE I.A.U.

INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 97

Konkoly Observatory
Budapest
3 June 1965

UNUSUAL VARIABLE S 5420 AURIGAE– NOVA AURIGAE 1960–1964

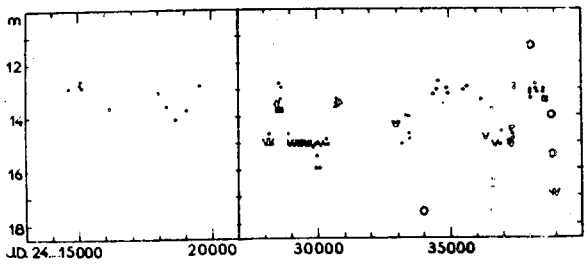
In IBVS No.93 C.Hoffmeister makes the assumption that variable S 5420 Aurigae is a Nova of RT Serpentis-type.

The star has been investigated on 116 plates of the Sternberg Astronomical Institute, Moscow (JD 2414691-2438500). Six rises of the brightness have been found, the first one has occured in 1899-1900. The results from Moscow plates and the estimates obtained by me in 1960 on Sonneberg plates of the camera 140/700 mm after the discovery of the variable are shown in the figure, together with Hoffmeister's estimate on Palomar Sky Atlas, 1951 Nov. 3/4, and his observations published in IBVS No.93 (1963 Jan.17/18, 1964 Dec.9 and 23, 1965 February and March).

S 5420 Aurigae is apparently a blue variable of new type. Its brightness varies between $11^{m}.3$ and 18^{m}. A cycle of about 2500-3300 days may be present in the light variations.

S 5420 Aurigae lies in the direction of the anticentre of our Galaxy, $l^{II}=183$, $b^{II}=5.5$.

Further observations, especially spectroscopic ones, are utmost desirable.



M.POPOVA
Sofia–Moscow
Sternberg Astronomical Institute

KFKI 2152

Készült a KFKI Kiadói Csoportjában

COMMISSION 27 OF THE I.A.U.

INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 98

Konkoly Observatory
Budapest
5 June 1965

V SAGITTAE

In a recent paper on V Sge (1) G.H.Herbig, G.W.Preston, J.Smak and B.Paczynski have found that this star is an eclipsing variable. I have re-examined the photographic observations of V Sge made between JD 2435627 and 2436461 (2). The discussion of these observations have confirmed Herbig's conclusions, namely:

1.- The depth of the primary minimum changes with the mean brightness of V Sge. It reaches $1^m.3$ when the variable is near its minimum.

2.- Sudden and rapid fluctuations of light occur in some phases of the light curve.

3.- The scattering of photographic magnitudes outside eclipse blot out the visibility of secondary minimum. The scattering is produced by superposition of observations made on different nights.

4.- Herbig's elements have been slightly changed as follows:

$$\text{min}\odot = 2437889.9154 + 0^d.514202\ E$$

The observed minima are listed below:

min ⊙ JD 243....	E	O − C	min ⊙ JD 243....	E	O − C
5662.435	4332	$+0^d.043$	5802.208	4060	$-0^d.047$
663.438	4330	+ .017	6079.416	3521	+ .006
696.360	4266	+ .030	096.351	3488	− .028
697.374	4264	+ .016	371.417	2953	− .060
699.438	4260	+ .023	404.407	2889	+ .021
716.373	4227	− .010	424.435	2850	− .005
717.441	4225	+ .028	426.470	2846	− .026
782.213	4099	+ .012	461.422	2778	− .040

1 Ap.J. Vol 141, n°2, 617.

2 Pubb.n° 119 Oss.Astronomico di Padova 1960

G.ROMANO
Padua Observatory
Italy

KFKI 2151 Készült a KFKI Kiadói Csoportjában

COMMISSION 27 OF THE I.A.U.

INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 99

Konkoly Observatory
Budapest
10 June 1965

OBJECT ROSINO-ZWICKY NEAR M 88

On plates taken with the Sonneberg 40 cm astrograph (1:4) the following estimates of brightness were made:

Plate	Date (UT)	Est.
GC 142	1961 Dec. 3.1	$14^m.6$
153	Dec. 17.2	15.0
1337	1965 March 8.1	<17
1352	Apr. 2.0	12.8
1356	Apr. 3.0	12.8
1362	Apr. 5.9	12.8
1365	Apr. 27.9	15.0
1370	May 20.9	<17

German Academy of Sciences
Sonneberg Observatory — W. WENZEL

Estimates on plates taken with the Zeiss Schmidt-telescope (60/90/180 cm) of our mountain station:

1964 Jan.	10.1	$\sim 20^m.0$	1965 Feb.	7.9	$19^m.0$
Apr.	9.0	19.8	Feb.	26.1	18.5
May	5.9	19.0	March	11.1	19.0:
May	6.9	19.0	Apr.	5.0	13.0
1965 Jan.	11.2	19.0:	Apr.	6.0	13.0

Konkoly Observatory, Budapest — M. MOVAS

Készült a Központi Fizikai Kutató Intézet Kiadói Csoportjánál

KFKI 2158

COMMISSION 27 OF THE I.A.U.

INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 100

Konkoly Observatory
Budapest
30 June 1965

BRIGHT SOUTHERN BV-STARS

On sky patrol plates of Bamberg Southern-Station 12 further stars were found whose variability seems to be real as can be seen from the material available till now.

BV 625 = CoD $-75^{\circ}26$ ($7^{m}.8$) = HD 5505(G_0) $A_{pg} = 0^{m}.3$

BV 626 = CoD $-28^{\circ}307$ (10^{m}) $A_{pg} = 0^{m}.3$
Max = JD 243 8297.700 + $0^{d}.61$. E
(Cepheid)
Light-curve Fig. 1

BV 627 = 1900: $1^{h}22^{m}22^{s}.9$ $-50^{\circ}27'.2$ Ident.Chart.No.1 $A_{pg} = 0^{m}.4$
(Cepheid)

BV 628 = CoD $-45^{\circ}587$ ($10^{m}1/4$) EA $A_{pg} = 0^{m}.4$

BV 629 = CoD $-80^{\circ}135$ ($10^{m}.0$) $A_{pg} = 0^{m}.4$

BV 630 = CoD $-24^{\circ}2419$ ($8^{m}.5$) = HD 29055 (A_5) $A_{pg} = 0^{m}.3$

BV 631 = 1900: $6^{h}39^{m}54^{s}$ $-72^{\circ}20'.5$ = HD 271 453 (F_5) $A_{pg} = 0^{m}.3$
Ident.Chart.No.2

BV 632 = CoD $-28^{\circ}5802$ 9.6 $A_{pg} = 0^{m}.5$
Min = JD 243 8455.400 + $2^{d}.652$. E EB
Light-curve Fig. 2

BV 633 BD $-22^{\circ}6252$ ($9^{m}.8$) $A_{pg} = 0^{m}.3$

BV 634 = BD $-20^{\circ}4458$ ($9^{m}.8$) = HD 71 581(A_0) $A_{pg} = 0^{m}.3$

BV 635 = CoD $-65^{\circ}10$ ($9^{m}.8$) = HD 110 994(M_a) $A_{pg} = 0^{m}.2$

BV 636 = BD $-17^{\circ}6451$ ($9^{m}.1$) = HD 210 215(M_b) $A_{pg} = 0^{m}.4$

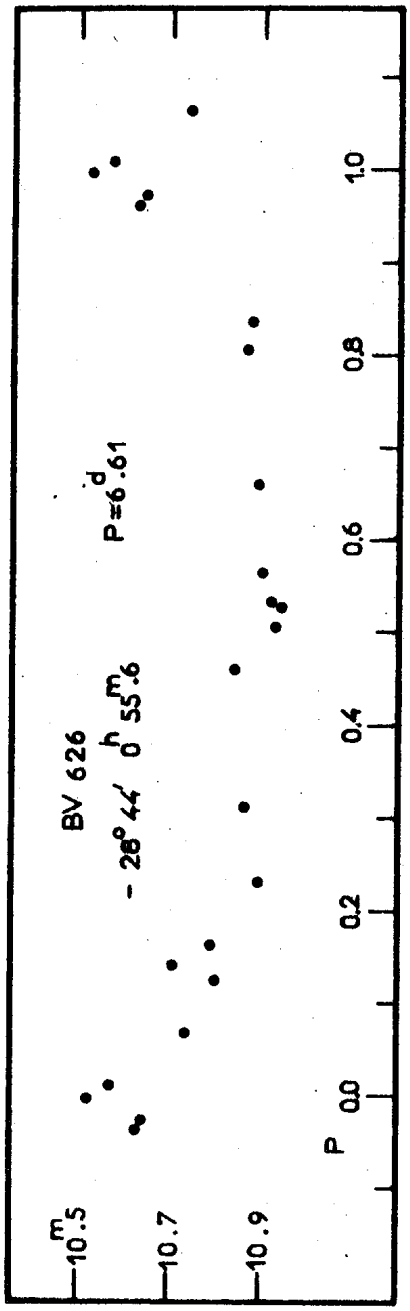


Fig.1

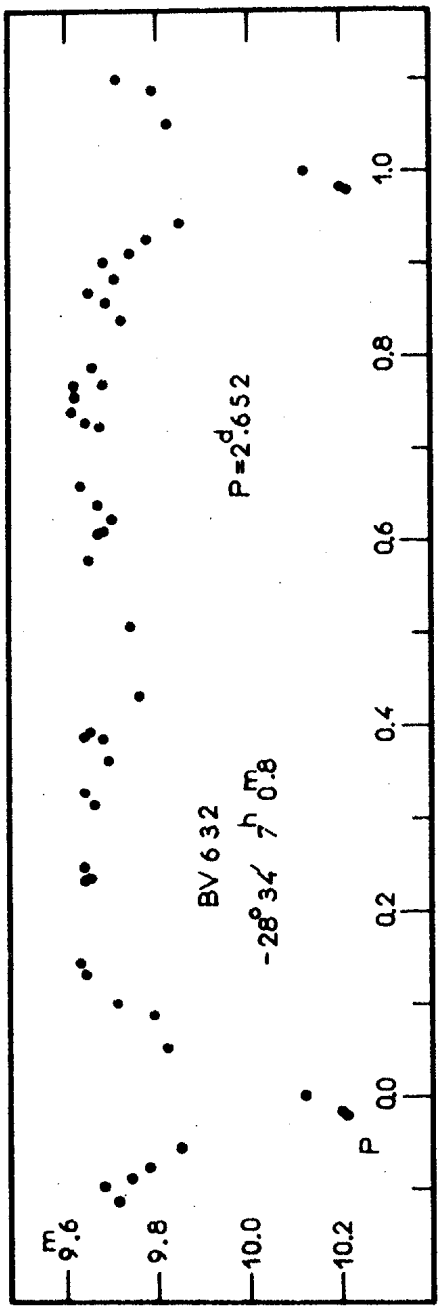
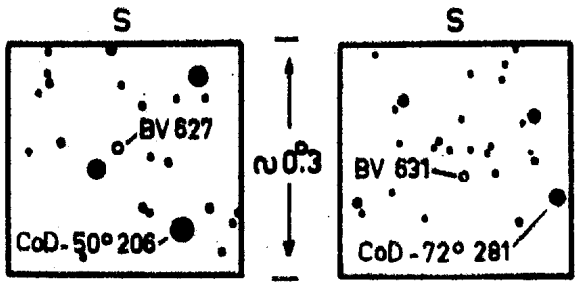


Fig.2



No. 1. No. 2.

Bamberg, Remeis-Observatory
15 June 1965

W. STROHMEIER
R.KNIGGE H.OTT

PHOTOMETRIC LIGHT-CURVES OF SOUTHERN BV-STARS

BV 480 = HD 149 523 A3 (Fig.1)

Comparison-stars:

HD 150 481 (A0) $8^m.55$

HD 150 009 (A0) $8^m.95$

Magnitudes of comparison-stars are mean values from Harvard and Cape catalogues. BV 480 has been already published in Inf. Bull. on Var. Stars, No.66 [2].

Min = JD 243 8229.510 + $1^d.13857$. E, Eb, Ampl. $0^m.2$

Individual minima (fainter than $8^m.75$)

Minima	E	O - C
JD 243 8229.317	0	+ $0^d.007$
8255.203	21	+ 0.008
.267	21	+ 0.042
8261.225	28	+ 0.041
8494.539	233	- 0.011
8498.545	237.5	- 0.130
8502.529	240	+ 0.010
8585.340	311	+ 0.003
8587.300	314.5	- 0.037
.345	314.5	+ 0.018
8615.213	339	- 0.004
8619.219	342.5	+ 0.013
.259	342.5	+ 0.057

BV 534 = HD 140 809 (A0) (Fig.2)

Comparison-stars:

Cape -64^0 3300 $8^m.59$

Cape -65^0 3626 $9^m.05$

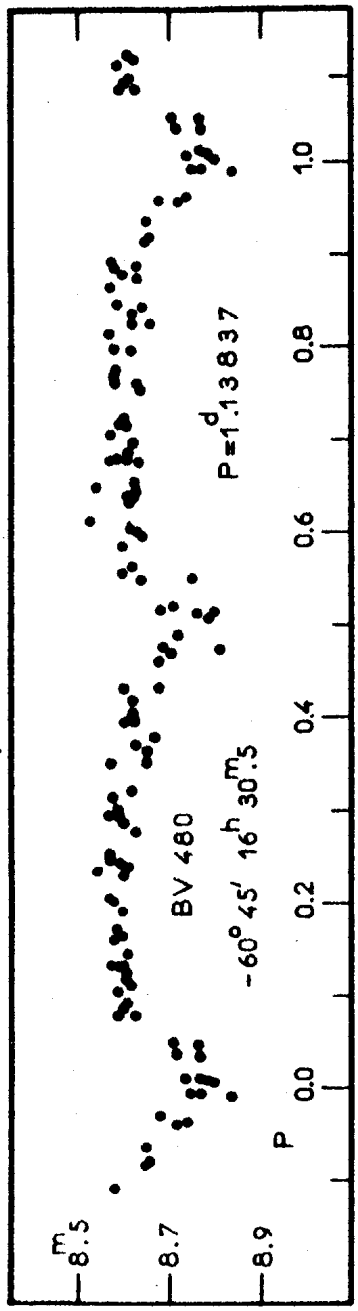


Fig.1

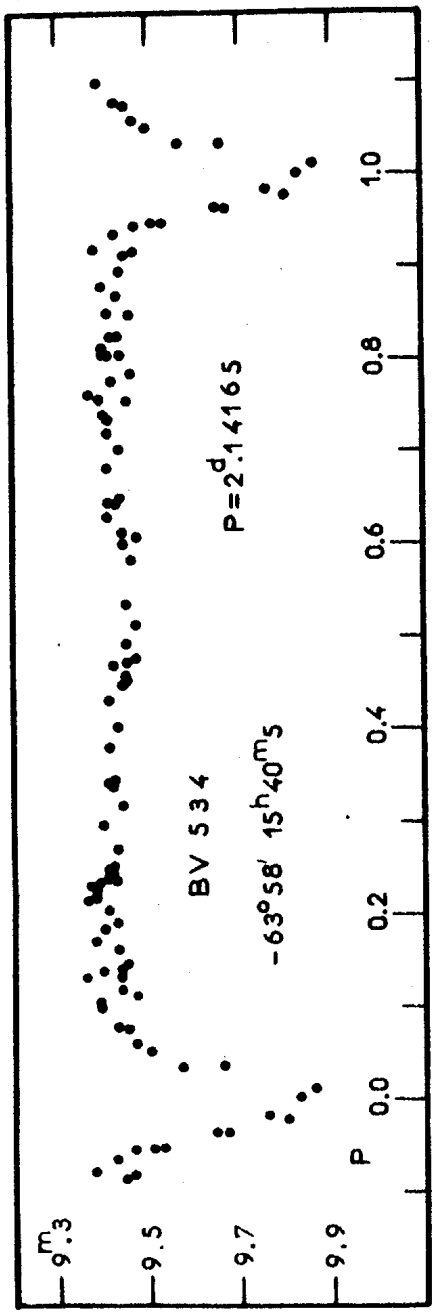


Fig. 2

Magnitudes of comparison-stars have been derived by photometric connexion to stars (HD 135 337 B9; HD 143 039 A2) from the catalogue of COUSINS and STOY [1].
BV 554 has been already published in Inf. Bull. on Var. Stars, No. 74 [2].

Min = JD 243 8204.360 + $2^d.14165$. E, EA, Ampl. $0^m.4$

Individual minima (fainter than $9^m.65$)

Minima	E	O - C
JD 243 8204.331	0	- $0^d.029$
8234.269	14	- 0.074
8551.337	162	+ 0.030
.381	162	+ 0.074
8553.379	163	- 0.074
8581.249	176	- 0.041
.296	176	+ 0.006

BV 540 = CoD -31° 12 834 (Fig.5)

Comparison-stars:

CoD -31° 12 833 $10^m.25$
CoD -31° 12 834 $10^m.90$

Magnitudes of comparison-stars have been derived by photometric connexion to stars (Hd 149 062 G5; HD 146 499 F8) from the catalogue of COUSINS and STOY [1].
BV 540 has been already communicated in Inf. Bull. on Var. Stars, No. 74 [2].

Min = JD 243 8204.520 + $10^d.78$. E, EA, Ampl. $0^m.5$

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

Minima	E	O - C
JD 243 8204.332	0	- $0^d.188$
8549.380	32	- 0.100 *
8560.381	33	+ 0.121 *
8614.213	38	+ 0.053

* These minima are twofold because BV 540 is to be found on sky patrol plates of two different declinations and therefore it has been photographed by two cameras simultaneously.

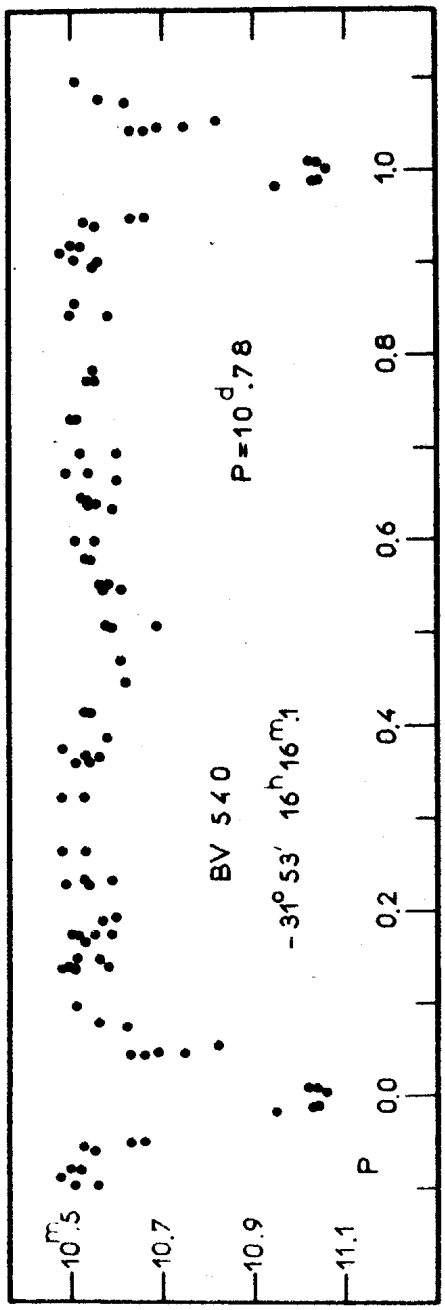


Fig.3

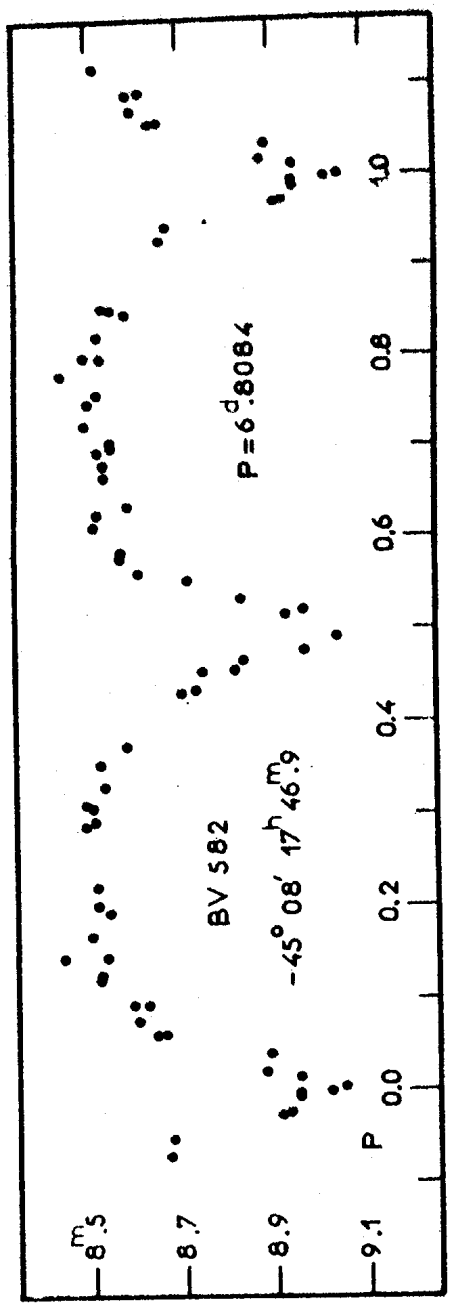


Fig.4

BV 582 = HD 162 985 (A2) (Fig.4)

Comparison-stars:

HD 163 358 (F8) $8^m.40$
HD 162 617 (F5) $9^m.05$

Magnitudes of comparison-stars are mean values from Harvard and Cape catalogues.
BV 582 has been already published in Inf. Bull. on Var. Stars, No.81 [2]. The period given there is wrong.

Min = JD 243 8233.210 + $6^d.8084$. E, EB, Ampl. $0^m.5$

Individual minima (fainter than $8^m.9$)

Minima	E	O - C
JD 243 8233.315	0	+ $0^d.105$
8260.273	4	- 0.171
8267.223	5	- 0.029
8505.577	40	+ 0.029
8529.518	43.5	+ 0.141
8556.468	47.5	- 0.143
8580.388	51	- 0.052
8614.305	56	- 0.178
8621.295	57	+ 0.004
8638.218	59,5	- 0.094
8645.224	60.5	+ 0.103

BV 585 (Fig.5)

Comparison-stars:

a = HD 314 050 (A5) $10^m.5$ estimated
b = see fig. $11^m.1$ estimated

BV 585 has been published together with an identification-chart in Inf. Bull. on Var. Stars, No.81 [2].

Max = JD 243 8257.625 + $6^d.155$. E, Cé , Ampl. $0^m.4$

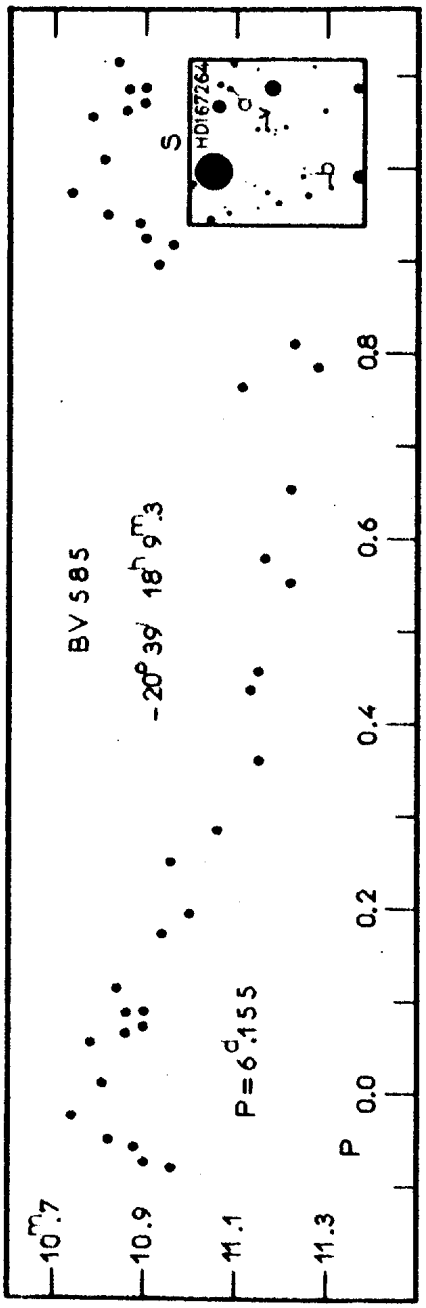

BV 585
-20° 39' 18h 9m.3
P=6d.155
P
0.0
0.2
0.4
0.6
0.8
10m.7
10.9
11.1
11.3
S
HD167264

Fig.5

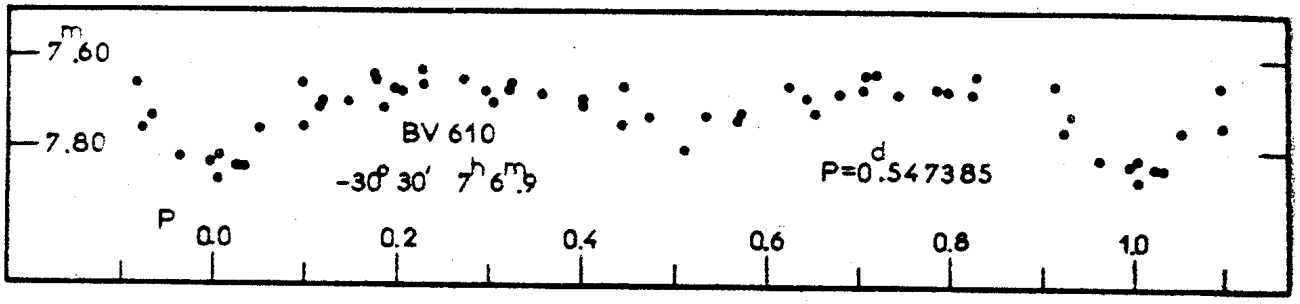


Fig. 6

Individual maxima (brighter than $10^m.9$)

Maxima	E	O - C
JD 243 8257.269	0	- $0^d.356$
8528.511	44	+ 0.066
8553.461	48	+ 0.396
8578.378	52	+ 0.693
8590.341	54	+ 0.346
8608.300	57	- 0.160
8614.303	58	- 0.312
8621.295	59	+ 0.525

BV 610 = HD 55 173 (B3) (Fig.6)

Comparison-stars:

HD 56 554 (B5) $7^m.5$
HD 56 998 (A0) $8^m.0$

The elements of BV 610 have been already communicated in Inf. Bull. on Var. Stars, No.86 [2] .

Min = JD 243 8400.400 + $0^d.547385$. E, EB, Ampl. $0^m.2$

Individual minima (fainter than $7^m.8$)

Minima	E	O - C
JD 243 8400.416	0	+ $0^d.016$
8406.417	11	- 0.004
8428.327	51	+ 0.010
8462.253	113	- 0.002
8708.575	563	- 0.003
8798.326	727	- 0.023

1) Royal Observatory Bulletins, No. 64, A.W.J. COUSINS and R.H. STOY, Photoelectric Magnitudes and Colours of Southern Stars.

2) Publications of W. STROHMEIER, R. KNIGGE and H. OTT.

Bamberg, 19 June 1965

E. SCHÖPFEL, U. KÖHLER
Remeis-Observatory