BRITISH ASTRONOMICAL ASSOCIATION

VARIABLE STAR SECTION

CIRCULAR No. 23

OFFICERS OF THE V.S.S.

Director: J.E. Isles, 118 Liverpool Road, Watford, Herts. WD1 8DN Tel: Watford (0923) 48128

Secretary: D.R.B. Saw, 12 Taylor Road, Aylesbury, Bucks. HP21 8DR

Chart Curator: S.J. Anderson, 20 Bloomfield Avenue, Luton, Beds. LU2 0PS Tel: Luton (0582) 23360

BINOCULAR GROUP

Co-ordinator: D.A. Pickup, 38 Brockwood Avenue, Penicuik, Midlothian. EH26 9AN Tel: Penicuik 72098

Asst. Co-ordinator: A.L. Smith, 11 Lerryn Road, Gosport, Hants. PO13 0YG
Tel: Fareham (032 92) 4677

Recorder: A.E.J. Forno, 92 Crockford Park Road, Addlestone, Surrey. KT15 2LR Tel: Weybridge (0932) 44668

ECLIPSING BINARY PROJECT

Co-ordinator: J.E. Isles

Predictions: J.C. Smith, 18 St. James' Close, Hanslope, Bucks.

NOVA SEARCH PROJECT

Co-ordinator: C.V. Borzelli, 12 Corbin Avenue, Jersey City, N.J. 07306, U.S.A.

!!!!!!!!!! NOVA CYGNI 1975 - BACK PAGE !!!!!!!!!!

BRITISH ASTRONOMICAL ASSOCIATION: VARIABLE STAR SECTION
CIRCULAR No. 23 1975 SEPTEMBER

VSS Circulars. Members are reminded that SAEs for Circulars should be sent to the Director; if they are sent to anyone else you may miss a Circular. The Director is grateful to those few members who have sent additional stamps to cover increases in postage since SAEs were sent it.

We have no means of knowing which oversea members require the Circulars; therefore, from now on, members outside the UK who wish to receive them are asked to send the Director a batch of (unstamped) addressed envelopes, of at least 22cm x 8cm dimensions, in which Circulars will be despatched. Write "LAST SAE" on one of the envelopes, so that you will know when you have to send more. The only exception to this arrangement will be those overseas groups with whom we exchange publications; they will continue to receive VSS Circulars automatically.

VSS MEETING - CHESTER, 1975 September 13.

Chester Astronomical Society will be our hosts at the first VSS meeting to be held for eight years, on Saturday September 13 (not as stated in the last Circular) at Kingsway High School, whose location is indicated on the enclosed 'finder chart'. The meeting will run from 2 pm to 6 pm and probable speakers include:

D.A. Pickup: The VSS Binocular Group, and Fourier Analysis of Light Curves.
P.W. Hornby: The Eclipsing Binary Programme.
J.A. Bailey: Dwarf Novae as Binary Systems.
S.J. Anderson: The British Photographic Sky Patrol.
S.J. Hynes: "Clouds of Light".
J.E. Isles: Progress of the Variable Star Section.
I.D. Howarth: surprise item.

Refreshments will be available, but so that the organisers can have some idea of the numbers concerned, those who will require them are asked to write to Richard Baum, 25 Whitchurch Road, Chester CH3 5QA. If you do not write you may not be served! Those requiring overnight accomodation may also contact Mr. Baum (Tel: Chester 35464).

There will, in addition, be an exhibition of work done by members of the Chester society and of VSS light curves. Any VSS members who wish to exhibit something may bring the material along, or if unable to attend, send it to the Director.

1974 observations. The following statistics are based mainly on tabulations prepared by the Secretary, Doug Saw, for the main programme, and the Recorder of the Binocular Group, Alan Forno. The Binocular Group figures include about 800 observations of stars not at present included in the official programme; such observations will not be counted next year. Non-programme observations have not been counted in the main programme totals.

A total of 42,731 observations has been reported, this being nearly double the 1973 total and four times the 1972 total. This year's increase is largely due to our "merger" with the Binocular Sky Society and it is likely that any increase in 1975 will not be so great. However, coping with these observations still presents the Section's officers and helpers with a formidable task.

O.J. Knox was once again the leading telescopic observer, and made probably the largest contribution in terms of man-hours. The Director was sorry to hear that recently he has been unwell but is sure that members will be pleased to know that Mr. Knox is getting back into harness and has resumed observing. D. Hufton bagged the highest total overall, 3,875 observations, while several other members reported formidable totals and there are about two dozen observers who may be considered really active for the Section.

The Secretary reports that once again the early morning observations by Knox were invaluable in extending the light curves of many stars, while the positive observations of faint stars by Paterson, and also Howarth, were extremely useful. There was a good response to the RV Tauri project; the Swiss observers have reported their Results directly to the VSS and are included in the table, but it is known that the French observers have secured large numbers of results and it is clear that the final report, which the Dutch group are to publish, will be an extremely valuable document.

Coverage of the programme stars was very uneven; the four most popular objects (Gamma Cas, Rho Cas, R CrB, SS Cyg) were each observed over 1000 times and it is suspected that some observers may be using these bright objects to increase their totals and position in the VSS hit parade. On the other hand, some of the Mira stars have been sadly neglected, in particular V Cam, W CrB, S Cyg and R Hya.

Listed on the following pages are the numbers of results reported by each of the 55 observers who secured 100 or more estimates, and the totals (with the numbers of observers in brackets) for each star on the main and binocular programmes. More observations are required, not only of those stars for which the totals are low, but also for those stars on which only a few members are working. However, attention is drawn to the fact that the stars in list (B) are no longer in the programme and any further observations of them will be neither used by the VSS nor counted in future statistics.

The stars in list (A) are common to the main and binocular programmes, and they have been credited to the observers in either the main programme column or the Binocular Group column, depending on whether they were reported to the Secretary or the Recorder of the Binocular Group. The figures do not therefore indicate the true proportions of telescopic and binocular work by each observer, and it is intended to rectify this point in next year's statistics.

	Main Programme	Binocular Group	Eclipsing Binaries	Total.
D. Hufton	593	3247	35	3875
O.J. Knox	3039	140	-	3179
T. Brelstaff	1434	1597	48	3079
M.D. Taylor	515	2006	125	2646
I.A. Middlemist	540	1739	-	2279
J.A. Bailey	1974	-	-	1974
L.R. Matthews	1242	481	-	1732
P.W. Hornby	436	1053	164	1653
A.K. Porter	1234	362	-	1596
R.A.H. Paterson	1552	-	-	1552
D.P. Griffin	1061	-	-	1061
B.J. Beesley	619	427	-	1046
I.D. Howarth	1020	-	-	1020
D.R.B. Saw	987	-	-	987
G. Broadbent	701	249	-	950
N. Reid	433	485	-	918
E.J.W. West	218	649	11	878
D.A. Rothery	229	579	-	808
G.M. Hurst	108	564	-	672
C.R. Munford	640	-	-	640
P.A. Moore	538	-	-	538
G.J. Kirby	-	525	-	525
A. Gardner	-	442	-	442
J.D. Shanklin	383	56	-	439
D.L. Young	-	398	-	398

cont.

	Main Programme	Binocular Group	Eclipsing Binaries	Total
K. Locher	383	-	-	383
N. Richardson	-	382	-	382
A.B. Scott	-	369	-	369
D. Böhme	-	359	-	359
S.F. Burch	346	-	-	346
Mrs. M. Hoenig	-	343	-	343
W.E. Pennell	293	-	-	293
D. Churchill	271	16	-	287
A. Maudsley	178	49	27	254
D.M. Swain	-	239	-	239
K. Sturdy	229	-	-	229
S. Taylor	200	-	-	200
R.J. Livesey	130	46	-	176
J.W. Mason	175	-	-	175
D. Miles	-	161	-	161
R.D. Pickard	138	9	-	147
M.J. Gainsford	145	-	-	145
F.D. Chesterfield	132	12	-	144
H.W.S. Smith	124	13	-	137
S.R. Heathcote	-	125	-	125
E.H. Collinson	123	-	-	123
R.J. Godden	122	-	-	122
R. Diaghelm	120	-	-	120
G.W.E. Beakman	-	119	-	119
C. Henshaw	119	-	-	119
G.H. Spalding	116	-	-	116
R.L. Lyon	106	-	-	106
M. Peel	48	55	-	103
T.A. Robinson	102	-	-	102
B.N. Marchant	-	100	-	100
50 Observers	1228	450	151	1829
Totals	24324	17846	561	42731

(A) Stars common to main and binocular programmes

R And	342	(25)	Omi Cet	220	(20)	R Hya	63	(12)
R Aql	288	(21)	R CrB	1548	(47)	U Mon	288	(25)
CO Aur	372	(32)	S CrB	228	(16)	U Ori	234	(24)
V Boo	339	(25)	W CrB	134	(15)	R Sct	685	(43)
X Cam	203	(14)	R Cyg	233	(19)	R Ser	344	(24)
XX Cam	255	(14)	W Cyg	873	(38)	T UMa	310	(20)
Gam Cas	1168	(28)	Chi Cyg	324	(20)	V Vul	67	(12)
Rho Cas	1155	(39)	AC Her	364	(24)			

(B) Stars now dropped from the main programme

R Ari	59	(5)	S Cep	29	(3)	W Lyr	51	(5)
R Aur	49	(1)	T Cep	219	(15)	R Peg	53	(2)
X Aur	159	(13)	U Cyg	168	(11)	R Per	41	(1)
R Boo	78	(4)	S Del	29	(3)	R Tri	19	(4)
S Boo	22	(2)	R Dra	143	(9)	R UMa	254	(13)
AF Cam	38	(3)	R Gem	95	(9)	S UMa	249	(14)
R Cas	23	(5)	T Her	87	(6)	S UMi	123	(8)
T Cas	157	(11)	U Her	59	(4)	S Vir	26	(2)
W Cas	96	(5)	R Leo	197	(18)			
HT Cas	33	(3)	R Lyn	22	(3)			

(C) Other stars on the main programme

RX And	463	(17)	SS Her	150	(20)	V372 Ori	69	(6)
DZ And	106	(6)	AH Her	217	(10)	V529 Ori	64	(4)
UU Aql	131	(10)	SU Lac	22	(4)	V566 Ori	56	(6)
UW Aql	146	(11)	X Leo	238	(20)	CSV 100567 Ori	39	(5)
RW Aur	42	(3)	AY Lyr	258	(11)	Var. No.2 Ori	36	(5)
SS Aur	504	(23)	EG Lyr	30	(10)	RU Peg	481	(28)
SU Aur	49	(4)	EP Lyr	43	(10)	S Per	279	(22)
U Boo	168	(17)	RS Oph	263	(16)	RS Per	213	(16)
V Cam	41	(8)	TT Oph	16	(6)	TZ Per	433	(17)
Z Cam	687	(18)	TX Oph	12	(4)	UV Per	238	(10)
TW Cam	203	(20)	UZ Oph	6	(2)	BU Per	206	(15)
S Cas	169	(12)	V564 Oph	10	(3)	GK Per	22	(4)
UV Cas	161	(8)	T Ori	49	(7)	Nova Per 1974	76	(9)
EQ Cas	5	(4)	CN Ori	107	(10)	R Sge	73	(12)
T CrB	555	(24)	CT Ori	100	(14)	WZ Sge	218	(10)
S Cyg	75	(8)	CZ Ori	118	(10)	Nova Sgr 1974	5	(4)
SS Cyg	1077	(33)	DY Ori	105	(10)	Z Sex	115	(19)
BC Cyg	237	(12)	GW Ori	21	(3)	T Tau	157	(10)
BI Cyg	260	(11)	IU Ori	62	(6)	RV Tau	305	(31)
CI Cyg	56	(7)	KS Ori	36	(5)	RY Tau	36	(4)
DF Cyg	39	(10)	KX Ori	7	(2)	SU Tau	273	(19)
V360 Cyg	36	(10)	LP Ori	70	(6)	BW Tau	2	(1)
HR Del	223	(14)	MX Ori	56	(6)	SU UMa	316	(16)
AB Dra	302	(10)	NU Ori	97	(6)	SW UMa	234	(11)
U Gem	328	(19)	NV Ori	35	(5)	CH UMa	240	(13)
SS Gem	199	(22)	V359 Ori	6	(2)	SN NGC 4414	19	(4)
SU Gem	97	(11)	V361 Ori	64	(6)			

(D) Other stars on the Binocular Group programme

RS And	17	(6)	V CVn	168	(14)	RV Cyg	99	(10)
SU And	16	(5)	Y CVn	231	(14)	TT Cyg	97	(8)
TZ And	37	(8)	TU CVn	229	(15)	AF Cyg	242	(15)
AQ And	77	(9)	W CMa	9	(3)	CH Cyg	382	(16)
BZ And	35	(7)	WZ Cas	189	(12)	V460 Cyg	93	(10)
V Aql	69	(9)	V377 Cas	212	(9)	V973 Cyg	6	(3)
V450 Aql	102	(9)	V391 Cas	97	(9)	V1351 Cyg	5	(1)
V1293 Aql	92	(7)	V393 Cas	123	(10)	P Cyg	372	(17)
CSV 101849 Aql	88	(7)	V465 Cas	205	(16)	CSV 8232 Cyg	23	(3)
UU Aur	298	(21)	CSV 171 Cas	101	(9)	CSV 8307 Cyg	97	(5)
AB Aur	118	(8)	Wr 162 Cas	168	(13)	CSV 8683 Cyg	76	(6)
AE Aur	276	(14)	+49° 4329 Cas	66	(4)	28 Cyg	152	(11)
NO Aur	45	(6)	W Cep	160	(13)	+47° 2801 Cyg	95	(4)
Psi1 Aur	37	(5)	RU Cep	71	(8)	U Del	307	(28)
+31° 1048 Aur	76	(4)	RW Cep	190	(16)	EU Del	347	(27)
RV Boo	29	(7)	RX Cep	125	(9)	+19° 4450 Del	122	(11)
RW Boo	30	(7)	SS Cep	158	(9)	RY Dra	490	(23)
RX Boo	89	(12)	AR Cep	235	(13)	TX Dra	141	(9)
UV Boo	131	(12)	FZ Cep	8	(3)	UW Dra	70	(6)
U Cam	54	(5)	NN Cep	74	(7)	UX Dra	148	(10)
RY Cam	95	(11)	Mu Cep	158	(11)	VW Dra	87	(8)
ST Cam	120	(10)	CSV 927 Cep	111	(5)	AH Dra	125	(9)
UV Cam	120	(11)	+59° 2383 Cep	92	(5)	AT Dra	93	(9)
UX Cam	30	(7)	+60° 2217 Cep	101	(5)	69 Dra	102	(8)
VZ Cam	126	(8)	+84° 0536 Cep	11	(3)	TU Gem	53	(10)
ZZ Cam	136	(11)	33 Cet	24	(3)	TV Gem	146	(14)
+61° 0668 Cam	104	(7)	RR CrB	78	(9)	WY Gem	139	(14)
X Cnc	89	(10)	SW CrB	79	(9)	BN Gem	87	(8)
RS Cnc	137	(18)	T Cyg	163	(12)	BQ Gem	50	(9)
RT Cnc	30	(8)	RU Cyg	28	(5)	BU Gem	167	(15)

cont. ..

(D) continued:

DW	Gem	14	(3)	S	Mon	35	(4)	Y	Tau	60	(9)
IS	Gem	57	(7)	RV	Mon	1	(1)	TT	Tau	35	(7)
NQ	Gem	4	(2)	SX	Mon	1	(1)	BU	Tau	154	(11)
X	Her	237	(18)	V505	Mon	15	(2)	CE	Tau	79	(6)
ST	Her	48	(8)	X	Oph	76	(6)	CSV 6048	Tau	97	(7)
SX	Her	31	(7)	V2048	Oph	87	(3)	+22° 0743	Tau	17	(2)
UW	Her	47	(4)	W	Ori	67	(9)	W	Tri	21	(4)
IQ	Her	89	(12)	BL	Ori	42	(7)	Z	UMa	318	(23)
OP	Her	199	(14)	BQ	Ori	38	(8)	RY	UMa	237	(20)
V566	Her	49	(5)	CK	Ori	39	(7)	ST	UMa	175	(10)
g	Her	267	(17)	+14° 1247	Ori	45	(7)	TV	UMa	11	(4)
U	Hya	15	(2)	AG	Peg	192	(20)	VW	UMa	250	(14)
SX	Lac	10	(4)	GO	Peg	46	(6)	VY	UMa	226	(11)
CSV 8775	Lac	144	(12)	X	Per	329	(16)	V	UMi	38	(5)
CSV 102195	Lac	132	(10)	SU	Per	33	(8)	RW	Vir	4	(3)
RX	Lep	19	(4)	AD	Per	26	(7)	RX	Vir	3	(2)
Y	Lyn	123	(8)	KK	Per	30	(8)	SS	Vir	7	(3)
SV	Lyn	44	(7)	PR	Per	28	(8)	SW	Vir	4	(2)
CSV 100869	Lyn	24	(3)	Z	Psc	17	(3)	BK	Vir	3	(1)
R	Lyr	320	(15)	TV	Psc	67	(7)	V	Vul	3	(2)
XY	Lyr	98	(8)	TX	Psc	58	(7)				
Del^2	Lyr	144	(9)	S	Sct	65	(9)				

1974 light-curves. The following notes on main programme stars in constellations And - Cyg, plus AB Dra, are based on the plots prepared by the Secretary from observations reported to him. They will be continued in a future Circular.

R And: Fell from 12.3 on Jan 8 to 14.1 on Feb 22. Unobserved until Jun 9, 13.0; rose to max (6.8) at end Sep and fell to 9.7 at end Dec.

RX And: Maxima occurred on the following dates: Jan 5, 23, Feb 10, Mar 1, 23±, gap until May 23±, Jun 6, 19, Jul 4, 17, 31, Aug 17 & 23 (peculiar double max), Sep 9, 30, Oct 18, Nov 3, 21, Dec 17 28. Extreme range 10.6 - 13.7, period 17 days.

DZ And: Observations range 9.8 - 10.3 and are too few to say more than that the star is certainly variable.

R Aql: Fell from 7.0 on Jan 19 to min (11.1) mid May, max (6.5) beginning Oct, down to 9.5 at end Dec.

UU Aql: Maxima (11.0) on Jul 17, Oct 16, Dec 6. Observations at minimum range 14.5 - 15.5. Underobserved.

UW Aql: Possible variations 9.1 - 9.5 with period about 75 days. Underobserved.

R Ari: Rose from 8.9 on Jan 6 to max (8.0) beginning Feb, fell to 8.8 on Mar 3; unobserved until Jul 15, 8.7, then max (8.5) late Jul, min (12.6) mid Nov, up to 10.4 on Dec 22.

R Aur: Rose from 10.7 on Jan 7 to max (7.6) mid May; no observations Feb 12 - Apr 21 but there was clearly a hump on the rise at 9.8. Near min (13.1) at end Dec.

X Aur: Min (12.7) late Jan, max (8,3) early Apr, min (13.2±) mid Jul, max (8.8) beginning Oct, near min (13.2) at end Dec.

SS Aur: Maxima Jan 25 (11.0, L), Mar 28 (11.8, S), Aug 10± (11.0±, S), Oct 3± (11.4±, S), Dec 4 (10.8, L). No positive observations May 19 - Aug 11 and if one maximum was missed the period comes to 63 days.

CO Aur: Slight irregular variations 7.5 - 7.8.

R Boo: Rose from 7.7 on Jan 7 to max (7.0) end Jan, min (12.5) beginning Jun, max (7.4) early Sep, down to 11.7 on Dec 12.

S Boo: Rose from Feb 22, 13.8 to max (9.3) beginning Jul, fell to Oct 13, 12.8.

U Boo: Rose from Jan 5, 11.0 to max (10.6) late Jan, min (12.8) early Apr, max (10.3) early Aug (with secondary max on rise at 10.8), fell to Oct 8, 12.5.

V Boo: Rose from Jan 7, 9.6 to max (8.0) Jun/Jul, min (9.8) early Oct, up to 8.5 in Dec.

V Cam: Faint for most of the year, min (14.9) probably in Jun, max (9.1) end Nov, down to 10.0 at end Dec.

X Cam: Rose from Jan 6, 10.6 to max (7.6) early Feb, min (13.4) late Apr, max (8.4) mid Jul, min (13.3) end Sep, max (8.6) late Nov, down to 9.7 at end Dec.

Z Cam: Maxima occurred on the following dates: Feb 1, 26, Mar 25, Apr 18, May 19, Jun 13, Jul 5, Aug 1, Sep 3, 30, Oct 20, Nov 9, 25. Extreme range 10.4 - 13.5, period 25 days. The Nov 9 max is followed by fall to only 12.7, rise to only 11.2 on Nov 25, fall to 11.5 and standstill continuing at the end of the year.

TW Cam: Variations 9.8 - 10.6 with mean "period" 43 days; alternate maxima are 0.1 m deeper. Formal (double) period = 86 days.

XX Cam: Possible slight fluctuations 7.25 - 7.55. Underobserved mid-Apr - end Jun.

S Cas: Fell from Jan 7, 10.3, to min (15.2) end Sep, up to 14.5 at end Dec.

T Cas: Fell from Jan 7, 11.1, to min (12.3) early Mar, max (7.2) end Nov, down to 7.8 on Dec 24. As usual a pronounced hump on the rise.

W Cas: Rose from 10.3 early Jan to max (9.0) end Apr, near min (11.7) Dec.

UV Cas: Probable slight variations 10.9 - 11.4.

Gamma Cas: Nearly constant all year at 2.35.

Rho Cas: Ditto at 4.9, variations not exceeding $0^m.2$.

S Cep: Min (11.5) beginning Feb, max (8.7) Oct.

T Cep: Rose from Jan 2, 9.2 to max (5.9) early Jun, min (10.1) early Dec. A secondary max on the rise at 7.7.

Omicron Cet: Rose from Jan 5, 8.6 to Mar 28, 3.0. Unobserved until Jul 10, 5.5, min (9.0) end Nov, at 8.2 at end Dec. This should be the last max to be lost in daylight for several years.

R CrB: Fell from 8.0 on Jan 1 to 11.2 on Feb 23, rose to 8.0 on Apr 27, 7.0 on Jun 5, 6.5 on Jul 8, 6.05 by Dec.

S CrB: Max (6.0) early Feb, min (12.8) mid Sep, up to 7.9 on Dec 24.

T CrB: At minimum, fluctuations 9.9 - 10.2, period $120^{\pm}$ days.

W CrB: Fell from 8.8 on Jan 18 to min (12.8) mid May, then max (7.8) end Aug, down to 11.9 on Nov 11 (last observation).

R Cyg: Fell from 7.4 on Jan 2 to min (13.7) early Sep, up to 6.8 on Dec 31.

S Cyg: Rose from 14.2 on Jan 19 to max (9.9) mid May, fell to 14.5 mid Aug and remained faint for the rest of the year.

U Cyg: Rose from 11.6 on Jan 6 to max (7.8) mid Jul, fell to 10.4 on Dec 29.

W Cyg: Fell from 6.2 on Jan 1 to min (7.1) late Feb, then max (6.2) beginning Sep, min (7.2) early Dec, 6.7 on Dec 31.

SS Cyg: No maxima were missed although the light-curves of the first four were incomplete: Jan 15 (8.4, S), Feb 26 (8.4, L or A), Apr 8 (8.5, S), May 6 (8.4, S), Jun 25 (8.4, L), Aug 12 (8.5, S), Sep 14 (8.5, S), Oct 20 (8.5, S), Nov 20 (8.7, S), Dec 24 (8.5, L). The magnitude at minimum was disturbed, a subsidiary rise to 10.5 occurring on Nov 13.

BC Cyg: Rose from 10.45 in Jan to 9.55 in Jun, fell to 9.9 in Sep, probable rise to 9.7 in Nov, down to 10.0 in Dec.

BI Cyg: Slow variations 9.5 - 9.8 probable.

Chi Cyg: Rose from 9.5 on Jan 6 to max (5.2) early Apr, then min (13.9) end Nov, about 13.2 at end Dec. There was no detectable hump on the rise.

AB Dra: Observations are few and often discordant; however maxima, whose magnitudes range 11.9 - 12.7, appear to have occurred around Jan 19, Feb 7, 26, Apr 28, Jun 1, 23, Jul 15, 31, Aug 26, Sep 17, Oct 5, 19, Nov 16, Dec 4, 29. Mean interval between maxima is 25 days. Minimum mag. 13.5 - 13.9. The light-curves of most maxima are peculiar and the variable is probably undergoing an erratic phase with reduced amplitude.

Photography with Tri-X. Mr. W.E. Pennell has been securing some valuable results on V493 Mon, following the request by J.K. Kalinowski of Indiana University. His photographs have been obtained with Tri-X and a filter equivalent to Wratten 8, giving a similar response to the human eye for most stars. This method has been criticised by Dr. Kalinowski and copies of his letters and Mr. Pennell's replies have been sent to the Director since they will be of interest to other astrophotographers. There is not room to publish the correspondence in full, and it is hoped that no important points have been overlooked in the following summary.

Dr. K.: "The V filter's effective wavelength is about 5480 A and the response is small beyond 6000 A. On the other hand, Tri-X is nearly as sensitive at 6500 A as it is at bluer wavelengths and a W8 filter passes essentially all of this red light. Hence red stars will be recorded on film as brighter than blue stars of the same V magnitude and the error will become larger as one proceeds down the spectral sequence. If you wish to do visual photometry with Tri-X film I urge you to switch to either a Wratten 58 or 61 filter. Unfortunately they transmit less light than the W8, but either is a much better approximation to the V bandpass. Alternatively, to minimise contamination by neighbours you might consider using a red filter, say one that turns on around 6000 A, to utilise only the reddest 500 or 600 A of Tri-X's spectral sensitivity (e.g. a Wratten 24, 25, 26 29 or similar filter). You would not then be on any photometric system but you could establish your own sequence."

W.E.P.: "I believe that for 90% of the stars in a given field, Tri-X + W8 does what is asked of it - namely to indicate magnitudes to within $0^m.2$ - $0^m.3$. Of course this does not equate with professional standards. The whole object is to cut out the cumbersome plate reductions, with short exposure "see at a glance" pictures. Wratten 58 transmits only 28% of sunlight (compared with an 80% transmission for Wratten 8) and would be a serious limitation for small apertures. My aim was to iron out the yellow dip in the Tri-X sensitivity curve. Looking at the transmission graph for W8 there is a cut-off at 4600 A, but it is open-ended for red wavelengths - but the sensitivity of Tri-X falls off very rapidly over 6000 A and disappears completely above 6450 A.

This is for 35 mm film - it should not be confused with Tri-X Pan Plate Type B which Dr. K. was looking at. It is certainly my intention to try to improve the filter combination. It should be noted that the light yellow filters I use are x 1½ photographic ones and are not true Wratten filters and possibly do not have the same cut-off at 4600 A."

Dr. K.: "I would tend to agree that measures of normal stars to within perhaps ±0.03 are probably possible using this filter/film combination. However, stars with strong emission or very red stars will not be accurately monitored by this technique. People should be aware that the problem does exist and is greatest for very late-type stars. For observers who can afford the additional light-loss a filter better matched to the V bandpass is strongly recommended."

V566 Oph. Prof. Kaitchuck of Ball State University, Indiana, is interested in VSS observations of this eclipsing binary and has written to the Director: "I would like to encourage you and your group to continue to observe this system. I was particularly impressed by your 1974 timing (see August Journal). The agreement between this single visual observation and an unpublished photoelectric timing I did that same year is very good." This star recently underwent a period change, which was discussed by Kaitchuck and Bookmyer in a paper in the AAVSO Journal, but "we both feel that the O-C diagram shows so much scatter in the data points that we can't tell exactly what is going on." It is possible that the shape of the light-curve is variable, in which case visual timings are of not greatly inferior accuracy compared with photoelectric results. However, it is important to get a good run on both falling and rising branches because of the variable's small amplitude.

S Per. A paper by Horace A. Smith in the same issue (Vol 3, No 1) of the AAVSO Journal presented the results of a periodogram analysis of this star's light-curve 1880 - 1974, from AAVSO observations since 1911 and from all available observations before that date. The result - waves of unequal amplitude and periods 825 and 940 days - is almost identical to that obtained, from different observations and by a simplified method of discussion, in the VSS report in the 1973 June Journal, and confirms that the GCVS data require revision. It is, however, clear that this star is not fully 'worked out' in view of the many irregularities and the possibility of a very slow variation in mean brightness.

VSS programme. Jeremy Bailey writes: "Can I suggest two objects as possible additions to the VSS programme. The first is V Sge, a nova-like variable which is also an eclipsing binary. The eclipses are well over a magnitude deep when the star is faint (Herbig, G.H., Preston, G.W., Smak, J., and Paczynski, B., Ap. J., 141, 617, 1965) and so should easily be observable visually. The other object is HZ Her (= the X-ray binary Her X-1). This normally shows variations with a period of 1.7 days and a range of about 13 - 15, interpreted as being due to X-ray heating of one side of the primary by its neutron star companion. However, analysis of patrol plate observations (Jones, C.A., Forman, W., and Liller, W., Ap. J., 182, L109, 1973) shows that at intervals of around 10 years the star exhibits an 'extended low' state where the X-ray heating is apparently absent and the star is nearly constant at around 15 with only a small amplitude ellipsoidal variation. The transition from 'extended high' to 'extended low' has never been observed. It is not known how long the transition would take or when it is likely to occur, so it would seem well worth keeping a watch on the star."

While it is easy to appreciate how important observations of these objects could be - indeed they probably have a better claim to our atten-

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tion than some objects already on our working list - there is a danger that our programme, already large, may become too large for us to be able to make use of the results reported by observers, or for all the stars on the programme to be covered adequately. Perhaps there is a case for dropping more stars from the programme, possibly as well as some of those which have been earmarked for inclusion when adequate charts are available. Members may over-estimate the amount of time which the Section's officers are able to spend on their work for the VSS and the amount of money which the BAA is able to spend on publications, so the final decisions must rest with the VSS officers and the BAA Council; but the Director will always welcome constructive suggestions on ways in which the methods, programme and publications of the Section might be improved, and the more interesting can be published in VSS Circulars. Meanwhile, of course, it is essential that observers conform to the methods and programme at present laid down, in the observations they report to the Section.

An Apology. The Director regrets that, following his recent move, he has had less time to devote to the Section. The situation should improve towards the end of the year when decorating is finished. In the meantime it is intended to continue unabated the preparation of reports for the Journal, while VSS Circulars will continue to appear, and all correspondence will be dealt with, although sometimes after some delay. There will, however, be a pause in the issue of new charts (except for the Binocular Group), and the new chart catalogue will also be delayed. Members who have requested copies from Mr. Anderson will receive them in due course and need not write again.

Overseas visitors. The Director was pleased recently to meet Frank Bateson, Director of the Variable Star Section of the Royal Astronomical Society of New Zealand, and Tom Cragg, of Hale Observatories, a leading member of the AAVSO, both of whom were recently in England. As well as having a useful exchange of ideas, some agreement was reached on possible further areas for international collaboration. In particular, the VSS will take part in the programme of observation of long-period classical Cepheids (the object of which is to detect period changes which may result from stellar evolution) which is being co-ordinated for the AAVSO by Mr. Cragg. Further details will be given in a forthcoming issue of the Journal, but in the meantime interested members may write to Mr. Cragg at Hale Observatories, Mount Wilson, Calif. 91023, U.S.A.

STOP PRESS: NOVA CYGNI 1975

Most members will by now know of the discovery by Honda, on 1975 Aug 29.07 GMAT, of a brilliant nova in Cygnus at about 21h 10m, +47° 50' (1950), the brightest in the northern hemisphere since 1934. This area was swept for novae by George Alcock the previous evening, so that it was almost certainly then below sixth magnitude. The magnitude at the time of discovery is reported as 3. During the evening of Aug 29, and on subsequent nights, I received many reports of independent discoveries by our members. My own estimates, reduced according to the sequence given below, showed a possible rise from 2.5 at 08.18 to 2.2 at 11.40; I was unsure of the reality of this rise but the nova was certainly brighter the following night, Aug 30, when I glimpsed it through cloud at magnitude 1.5. I was clouded out on Aug 31, but observations reported to me by several members suggest that a fall of some tenths of a magnitude had occurred.

I understand that the spectrum was photographed on the night of discovery at Herstmonceux and by Steve Anderson, but no details are known at the time of writing. Observers agree that the colour on Aug 29, 30 and 31 was yellowish, as was to be expected; the spectrum of a nova at maximum generally resembles that of an F, G or K giant.

A chart is hardly necessary at the moment; the following comparison stars may be used as long as the nova remains a naked-eye object. Magnitudes are means of photo-electric V measures given in the US Naval Observatory Catalog. All the stars can be identified in Norton's Star Atlas.

Alpha Lyr	0.04	A0	Delta Cyg	2.87	A0		Pi^2 Cyg	4.23	B3
Alpha Cyg	1.25	A2	Beta Cyg	3.08	K3		63 Cyg	4.53	K4
Gamma Cyg	2.21	F8	Xi Cyg	3.71	K5		Pi^1 Cyg	4.66	B3
Alpha Dep	2.44	A7	Nu Cyg	3.93	A0		60 Cyg	5.37	B1
Epsilon Cyg	2.46	K0	Rho Cyg	4.02	G8	Struve	2741 Cyg	5.61	B8

The nova is ideally placed for observation, being circumpolar and currently almost overhead in the evening. It is unusual for the rise of a fast nova (as this apparently is) to be recorded, and the object should also attract good coverage by our observers during its decline. Its behaviour will be discussed at our Chester meeting on Sep 13, and again at the BAA meeting in London on Oct 29, and I should be grateful if members would send me summaries of their observations, reduced according to the above sequence, shortly before these dates. Full details of observations should, of course, be sent to Doug Saw at the end of the year.

RR Lyrae project AE Boo and DY Her being no longer effectively observable, these stars have been replaced by DH Peg and DY Peg. Observations of AE Boo and DY Her will now be analysed and should be sent to me immediately. Participants in this project will find enclosed charts for DH & DY Peg and AE UMa, with predictions for September and October. Other interested members should write to me.

John Isles
1975 September 1