BRITISH ASTRONOMICAL ASSOCIATION: VARIABLE STAR SECTION

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New eruptive variable. IAUC 2408 and IBVS 692 report observations of a probable bright new U Gem star in Ursa Major, at (1950) 10^h 03^m 09^s, + 67° 47' 27" according to IAUC 2423, discovered by Tanskij at the Crimean Astrophysical Observatory. The photographic range is at least 10.7 - 16.2, and the period may be in the region of 380^d. The maxima observed so far are quite short, the star remaining above 12m for up to 6 days.

The object has been identified at 11.9m on a photovisual plate by W.E. Pennell exposed on 1971 Apr 18, six days after an 11.4m maximum reported in the IBVS.

D.S. Brown is preparing a photovisual sequence, and preliminary charts for Tanskij's Eruptive Variable will shortly be available from the Acting Director.

T Cassiopeiae. The Acting Director had received estimates suggesting that the recent maximum of T Cas might have been the brightest ever recorded. In response to the appeal in the last Circular, observations have been received from Messrs. Broadbent, Hawkins, Jobson, Knox and Munford, showing a maximum of 7.3, on 1972 Jun 10. This equals the extreme maximum, according to the GCVS.

T Cas is an interesting star to observe because of the pronounced hump which is generally present on the rising branch. An account of this variable, with a light-curve, appeared in Sky and Telescope 1969 Dec. Reversals in its curve are the subject of papers by F.M. Holborn in the Journal, 48(8) and 50(3).

R Andromedae. The Acting Director would be most grateful if all members who have observed this star this year would communicate their results to him as soon as possible.

1971 GCVS Supplement. The First Supplement to the third edition of the General Catalogue of Variable Stars contains revised data on certain VSS stars. The 1969 GCVS details were summarised in the list of stars on our programme enclosed with the last Circular. The following notes summarise the more significant changes.

Z Cam: This star is no longer considered to be an eclipsing binary, so the star is simply classified as type "Z Cam". The editors remark: "Spectroscopic binary with p = 0.289840^d. Light-curve has many details repeating with this period. Besides major outbursts, rapid irregular light fluctuations with amplitude from some hundredths to some tenths of a magnitude are observed."

AF Cam: Photographic range given as 13.4 - 17.6, period as (16.5^d).

HT Cas: Photographic range given as 13.4 - 16.8, period ($30\pm d$), compared with (107^d) in the 1969 catalogue.

W Cyg: Fundamental period amended to 126.26^d.

SS Cyg: Period amended to (50.2^d).

HR Del: Photographic range given as 3.5 - 12.7.

U Gem: Range increased to 8.2 - 14.9. At minimum the star is an eclipsing binary with period about 4^h 16^m; the depth of eclipse is given as about 0.7m.

Minor...

Minor corrections are made to the magnitude ranges and periods of other stars; they will be incorporated with the VSS programme list for 1973 which will be included in a future Circular.

Chart and sequence errors. Observers should note carefully the following corrections and addenda to charts issued by the Section.

T Cas: Star 5 = BV 328 = CSV 100022 is to be rejected from the sequence, as it is an eclipsing binary of amplitude 0.4m, according to Stroheimer (see Sky and Telescope, 1963 Nov). Star 4 is incorrectly identified on the 9° chart. It should be 45 mm from the left hand and 108 mm from the bottom frame lines, i.e. about half-way between star 1 and T itself.

SS Her: Fl 28 is incorrectly represented as Fl 23 on the 3° chart.

T UMa: Stars Q, b, c and d are not identified on the 9° chart. In fact they are identical with stars 1, 2, 5 and 3 respectively of S UMa, but the magnitudes to be used for three of them differ for the two variables. Although this anomalous situation is regretted, it is not intended to change either sequence at present.

Binocular Group: As announced in BAA Circular 543, S.J. Anderson has been appointed Co-ordinator of the Group, in succession to Brian Morell who has resigned for domestic reasons. Steve Anderson will on request supply charts and report forms to members of the Group, and collect observations, which should be submitted monthly in the case of eclipsing binaries, and annually for other stars.

Eclipsing binary project: The predictions enclosed with this Circular use revised elements for eight variables, from the GCVS Supplement. For further details, interested members are referred to Circulars 21 and 22 of the Binocular Sky Society. The details given in the supplement to VSS Circular 12 should be amended as follows:

V822 Aql Min II = 7.4 Period = 5.30d
Add: IQ Per 7.5 8.0 - EA 1.74 5

Long period variable project: As announced in Circular 12, the Binocular Group's programme is to include the observation near maximum of the Mira stars on the main programme reaching 7.0m or brighter at an average maximum. The charts for the stars concerned have been prepared by M.D. Taylor, and copies are now available from the Co-ordinator. They are as follows:

B1	R And	9° chart	B7	R Hya	30° chart
B2	R Aql	9° chart	B8	R Hya	9° chart
B3	T Cep	9° chart	B9	R Leo	9° chart
B4	o Cet	30° chart	B10	R Ser	9° chart
B5	o Cet	9° chart	B11	S Vir	9° chart
B6	Chi Cyg	9° chart			

The 30° charts are for naked-eye use; the 9° binocular charts show stars to about 9.5m. Enclosed with this Circular are predictions of when these nine stars are expected to be brighter that the faintest comparison marked on the binocular charts; there is little point observing these stars outside the dates indicated. Observers who are unable to reach 9.5m with binoculars will of course be restricted to shorter intervals of worthwhile observation.

The Programme: Michael Poxon writes:- "At the present time, our programme consists mainly of LPV's, the difficulties of observation of these stars being well known. It is partly for this reason that I think a few stars of this type should be dropped to make way for a few more interesting and important stars. There are myriads of nebular variables which are surely not all observed by the AAVSO and I think it would be a good idea to gradually include some of the brighter

members...

members of this type in the programme. The advantages of observing these stars are:-

(i) Being essentially "white" stars the Purkinje effect is lessened, with the result that more accurate and thus more useful observations are made. Even the T Tau stars of types G, K and M appear white as they are all relatively faint objects and the cones of the retina do not register colour as the light intensity is too low.

(ii) Being also stars in low galactic latitudes, the northerly associations (Cep, Per, Tau, Aur and Ori) are best observed in late Autumn when there are usually a lot of clear nights on the trot.

(iii) In my opinion, LPV's are quite boring stars to observe when compared with the more irregular stars and I, for one, find myself more enthusiastic when observing eruptives than LPV's. Whether this has a psychological effect on accuracy remains to be seen. I must stress that this is only my opinion and probably 99.9% of other observers may disagree.

Therefore I propose that the following stars be dropped to be replaced by:

Gamma Cas	dropped	replaced by	EQ Cas	11.9 - 13.6	RV Tau
Rho Cas	"	"	EP Lyr	10.2 - 11.6	RV Tau
W Cyg	"	"	CO Ori	10.0 - 13.0	RW Aur
U Mon	"	"	SU Aur	9.0 - 9.6	T Tau
R Sct	"	"	GW Ori	10.1 - 11.5	T Tau
V Boo	"	"	BG Cep	13.4 - 14.2	R CrB

I don't think many stars should be ADDED as I think it best that we progress at a steady, leisurly rate."

Members' comments are invited.

STOP PRESS

Eclipsing binary project. To reduce the labour involved in producing the Circulars, it has been decided that the eclipsing binary predictions will in future be distributed in the form of photocopies of the computer print-out. Because of the expense of this process, and the small proportion of members who will use the predictions, they will no longer be enclosed with the Circulars. Instead, interested observers may obtain the predictions for 1972 Oct-Dec by sending a long SAE to J.C. Smith, 36 Manor Road, Clifton on Teme, Worcester, WR6 6DP. Early receipt of future predictions may be secured by sending more than one SAE.

BAA VSS BINOCULAR GROUP

Long Period Variable Predictions, 1972 Oct - 1973 Dec

The diagram below indicates the dates between which long period variables are expected to be observable in binoculars using the charts which are available from the Co-ordinator. For example, R And reaches 9.7 (the magnitude of the faintest comparison on the chart) in early May 1973, rises to maximum (average brightness 6.9m) at the end of June, and falls past 9.7 again at the end of September. The predictions assume average behaviour, and are intended only to indicate when a star is worth looking for: large departures from the predictions may be expected, so observers should not allow this information to influence their observations.