

British Astronomical Association

Variable Star Section Circular

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VARIABLE STAR SECTION
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Editorial

Welcome to the new cheaper VSS Circular. This is one of several changes aimed at increasing the membership of the VSS. It is possible that, in the past, the relatively high cost of the Circulars has put some people off from joining. Also, I would like to be able to sell them at meetings for no more than 50p each without alienating the postal subscribers who would be paying more than twice that for their copies. The new subscription rates are given inside the front cover. Notice that they now differentiate between BAA members and non-members. Any outstanding subs which you paid at the old rates will be converted to the new rates and you will receive proportionately more circulars for your money.

Photoelectric Program

John Isles has offered to coordinate a photoelectric program for the Section. Initially this will concentrate on stars common to our visual program and the AAVSO photoelectric program. These are mostly 'binocular stars'. For an example of the results that the AAVSO program is producing see page 4 of this circular. I hope to get John to write about this in a future issue. Anyone who is very keen can write to him direct at 1016 Westfield Drive, Jackson, MI 49203-3630, USA.

Variable Star Meeting at Cambridge

As mentioned in VSSC 77, the Cambridge University Astronomical Society are hosting a meeting on Variable Stars. The following details were available at the time of going to press:

Date: Saturday, 19th February 1994

Times: Arrive 10-30 for 11am start, finish by about 5pm.

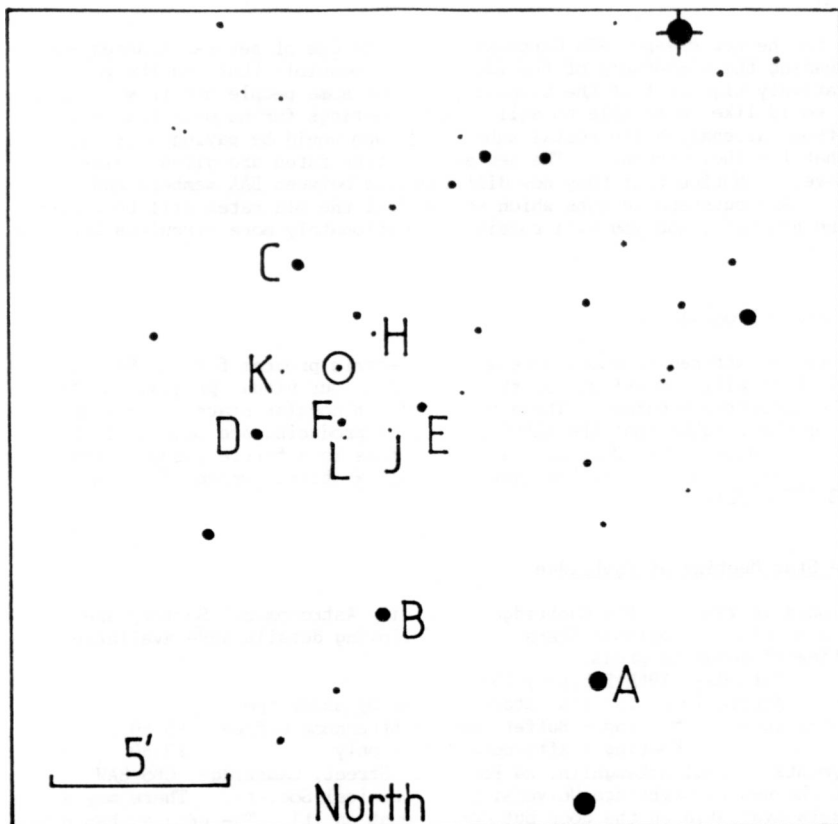
Ticket prices: Meeting + Buffet Lunch + Afternoon Coffee £5-50
Meeting + Afternoon Coffee only £3-50

Send payments to Paul McLaughlin, 24 Portugal Street, Cambridge, CB5 8AW. Make out cheques to Cambridge University Astronomical Society. There may a few tickets available on the door but don't count on it! The program has not yet been finalised but the VSS and JAS VSS directors have been asked to speak.

TAV 1836+11 - A New Mira Star in Ophiuchus

The October issue of The Astronomer (vol 30, no 354, p 139, 1993) reports the discovery by Mike Collins of a new variable star in northern Ophiuchus. The star is about 11.1 mag photovisual on a patrol photo taken on 1993 July 25 but is missing from a similar photo taken on 1989 February 14. A search of Mike's records showed that the star had probably risen to maximum at about mag 12 in the late summer of each of the years 1989-1992. The 1993 maximum may have been an unusually bright one. The star is probably a Mira star with a period of about one year. At present, the magnitude at minimum is unknown but Gary Poyner and John S Day recorded it at about mag 14 in early October. Further observations, especially early-morning ones over the next few months, are needed to define the minimum and to confirm the Mira-type classification. Send any results to Guy Hurst at the end of each month. The accompanying chart is based on that given in The Astronomer. Please quote the sequence reference number when submitting observations.

TAV 1836+11

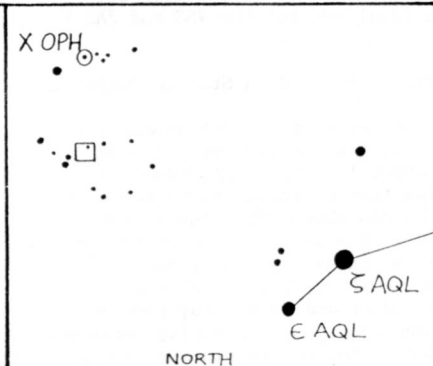


TAV 1836+11: 11.1 - <12.5 pv
Type = Mira? Period = 365d?

(1950) 18h 36.1m +11° 08'
(2000) 18 38.4 +11 11

Sequence (Ref: TA930930):

A = 10.1 F = 12.1
B = 10.7 H = 13.1
C = 11.1 J = 13.7
D = 11.4 K = 13.9
E = 11.8 L = 14.6



The Pulsations of R Coronae Borealis

When at maximum, R CrB shows semiregular variations with a period of about 45 days and an amplitude of about 0.2 magnitudes. These variations have been extensively studied photoelectrically by Fernie (eg: Publications of the Astronomical Society of the Pacific, vol 103, p 1091, 1991) but, apparently, they do not show up well in present-day VSS observations. This could be due to carelessness on the part the observers, who may only be interested in detecting major fades rather than slight fluctuations, or it could even be due to errors in comparison star magnitudes (star C, Upsilon CrB, in particular).

However, Ian Howarth (VSS Director 1977-1980) points out in a letter to The Observatory (vol 113, pp 211-212, 1993) that the pulsations of R CrB were almost certainly first detected in visual observations sixty years ago. The prolific Italian visual observer, Luigi Jacchia found semiregular variations with an amplitude of 0.4 magnitudes and a period of 89.8 days (L. Jacchia, Pubblicazioni dell'Osservatorio Astronomica della Università di Bologna, vol II, no 14, p 241, 1933). According to Howarth, Jacchia's light-curve indicates that this period is the 'double period' (as in RV Tauri stars). Halving the period gives 44.9 days which agrees very well with the 44.6-day period found photoelectrically by Fernie.

AN APPEAL FOR YOUR HELP FROM THE B.A.A. CAMPAIGN FOR DARK SKIES.

CfDS has received a copy of the new Department of the Environment draft consultative document "Planning and Crime Prevention".

The DoE invites comment from any interested parties on aspects of this, including security lighting.

CfDS has made great progress in its fight against light pollution where road lights and manufacturers' attitudes are concerned. Security lighting and floodlights however continue to be uncontrolled and if allowed to proliferate may well undo any good work so far.

If you would like to help us convince the DoE that control of the power and direction of private lighting is necessary to safeguard the night sky for our descendants, please write to this effect to:

Mr P. Goodwin
Room C13/11
DoE
2 Marsham St.
London SW1P 3EB.

Head your letter: "Draft Circular: Planning and Crime Prevention", and write briefly about the need for planning to include lighting and for security lighting to be controlled (not eradicated!) with your reasons. The deadline for arrival of letters at the DoE is DECEMBER 17th 1993, so please treat this as a matter of urgency.

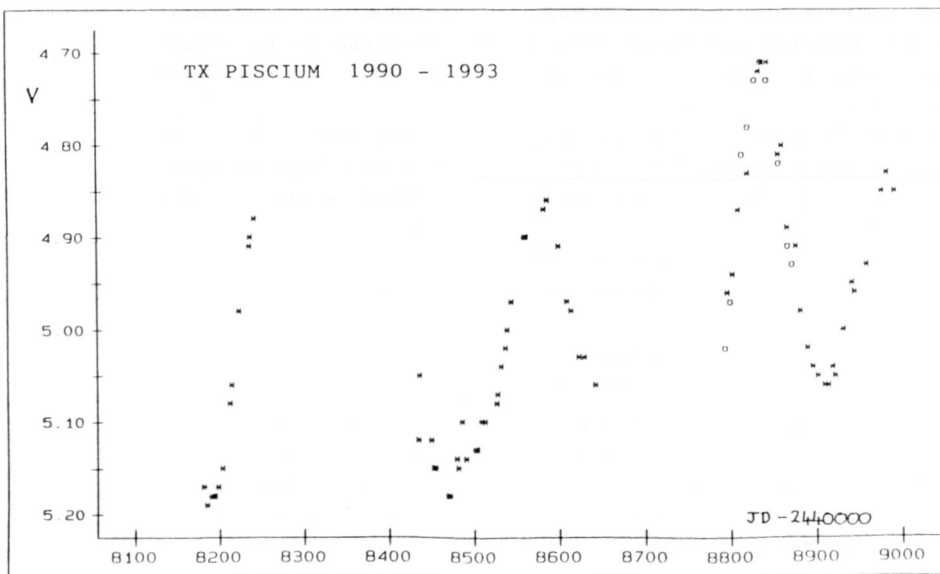
BOB MIZON
Coordinator CfDS.

Photoelectric Photometry of TX Piscium

In IBVS 3912, Rick Watasonic, of the IUE Observatory in Maryland, USA, presents 71 photoelectric V measures of the carbon star TX Piscium. These were made as part of the AAVSO Small-Amplitude Red Variable (SARV) Program. They start in October 1990 and end in January 1993. It so happens that John Isles was also observing this star photoelectrically for part of that time. In the accompanying light-curve Watasonic's observations are represented by asterisks and Isles' by squares. The agreement between the two sets of observations is quite good considering the extreme red colour of the star.

Although the General Catalogue of Variable Stars lists TX as an Lb-type (ie: a red irregular) variable, the light-curve shows clear semiregular variations. Watasonic suggests that it should be reclassified as SRa (semiregular with a relatively stable period) but the differences between the various cycles would seem to indicate that SRb (semiregular with poorly expressed periodicity) would be more appropriate. However, this point is not really worth laboring as the Lb, SRb and SRa types tend to merge into one another. Stars initially assigned to the Lb and SRa classes are often reclassified as SRb when more observations become available.

Watasonic also points out that the V-range found by him is markedly brighter than the visual range of 5.3 to 5.8 reported by Mitton and McRobert (Sky and Telescope, 77, 180, 1989). He seems to suggest that the star might therefore have brightened over the past few years. However, it is quite usual for visual estimates of red stars to be a few tenths of a magnitude fainter than corresponding V-measures. This is simply a result of the average dark-adapted eye being slightly less red-sensitive than a photometer equipped with a V-band filter. For a star as red as TX, the difference could easily be half a magnitude or more.



Summaries of Information Bulletins on Variable Stars Nos 3902 to 3926

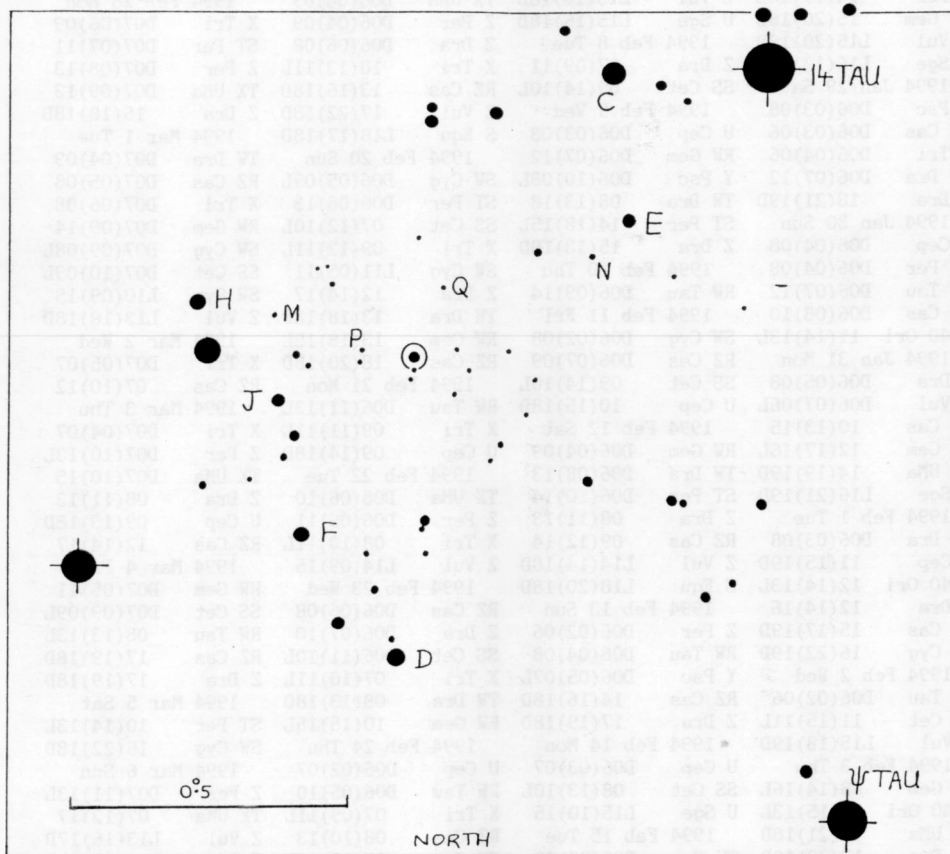
- 3902 *The Four Body System Y Cam?* (Mossakovskaya, 1993) - 11th mag eclipsing binary. Suggests O-C variations can be explained by 3rd and 4th bodies orbiting the eclipsing pair with periods of 39 and 86 years.
- 3903 *Times of Minimum of Eclipsing Binaries with Non-Circular Orbits* (Diethelm, 1993) - 6 stars including EK Cep (mag 8) and BW Boo (6.5)
- 3904 *Spectrum of the Envelope around Primary in RX Cas* (Todorova, 1993) - Mag 9, long period (32d), Beta Lyrae type eclipsing binary.
- 3905 *BV Photoelectric Photometry of SN 1993J in NGC 3031 = M81* (Munari et al, 1993)
- 3906 *Strömgren b,y Photometry of Stars in the Field of Messier 81* (= NGC 3031) (Skiff, 1993) - PEP of 12 of comparison stars for SN 1993J. Guide Star Catalogue mags show large (0.5 mag) systematic errors.
- 3907 *Identification of NSV Stars in the Hubble Space Telescope Guide Star Catalogue. II* (Lopez, 1993) - 58 southern hemisphere stars.
- 3908 *Identification of Variable Stars in the Hubble Space Telescope Guide Star Catalogue* (Lopez & Lepez, 1993) - 43 southern stars.
- 3909 *On the Cross-Identification of V377 CrA and V607 CrA* (Lopez, 1993) - NSV 10726 = V755 CrA and NSV 10829 = V607 CrA.
- 3910 *Nova V360 Herculis (1892) Identified* (Webbink, 1993) - Probably not a nova but the result of accidental superimposition of images in the Astrographic Catalogue.
- 3911 *New Spectroscopic Elements for RX Cas* (Todorova, 1993)
- 3912 *Photoelectric Photometry of the Carbon Star TX Piscium* (Wasatonic, 1993) - See article elsewhere in this circular.
- 3913 *Differential UVB Photometry of the CP3 Star HD 89822* (Zboril & Budaj, 1993) - Microvariable.
- 3914 *Period and BV Light Curves of a new W UMa Variable GSC 4383.0384* (Mikulasek & Hanzl, 1993) - Was the 10.80 mag comparison star for SN 1993J (see IBVS 3879). Period = 0.528904d, range = 10.99 - 11.38V.
- 3915 *Photoelectric Photometry of the Eclipsing Binary Star EG Cephei* (Erdem et al, 1993) - Mag 9, short period (0.54d) Beta Lyrae type star.
- 3916 *BD +16°2766 is not an EW-Type Star* (Walas et al, 1993) - Alias NSV 7028. 562 visual and 13 PEP observations suggest it is constant at 10.21V
- 3917 *Flare Star Search in the Alpha Persei Cluster* (Semkov et al, 1993) - Two new ones found, reaching mag 12.7 and 14.1 in the U-band.
- 3918 *CCD Observations of a New T Tauri Star in Cepheus* (Semkov, 1993) - CCD imaging of cometary nebula around 14th mag star (see IBVS 3870).
- 3919 *The Variability of HD 126246 = ADS 9251* (Skiff, 1993) - Range of about 0.03 mags found over 9 years, probably due to star spots.
- 3920 *Is K1098 in M15 a Short Period Red Variable Star?* (Yao Bao-An et al, 1993) - Mag 16. In globular cluster.
- 3921 *Observations of Eruptions of the True AK Cancrī* (Wenzel, 1993) - Has been some confusion over identification but Wenzel confirms it is a dwarf nova with B range of 12.8 - 19. 5 historical outbursts found.
- 3922 *Pleione: A New Be Phase* (Guo Yulian, 1993) - Spectroscopic changes indicate shell phase has ended and a new Be phase has started.
- 3923 *Discovery of Southern Variables* (Morel & Camilleri, 1993) - Charts and details for 10 new or rediscovered variables found during Camilleri's photographic nova search. All are southern and mag 9 or fainter. See *The Astronomer*, 30, No 352, 89-94 (1993) for more details of Camilleri's search technique.
- 3924 *Discovery of the Nature of the Variation of HD 191706* (Burke et al, 1993) - Mag 8, small amp (0.1 mag) eclipsing binary. Period = 1.04d.
- 3925 *Red Flares at the Primary Minimum of the Eclipsing Binary FF Orionis* (Zakirov, 1993) - Mag 11 star showed 0.1 mag 'bump' in min.
- 3926 *UBVR Photometry of the Active Eclipsing Binary DN Cephei* (Zakirov et al, 1993) - Algol-type, range 11.98 - 12.47V, period 3.3061560d.

Eclipsing Binary Predictions

The following predictions are calculated for an observer at 53 degrees north, 1.5 degrees west but should be usable for observers throughout the British Isles. The times of mid-eclipse appear in parentheses with the start and end times of visibility on either side. The times are hours GMAT, that is UT-12h. 'D' and 'L' are used to indicate where daylight and low altitude, respectively, prevent part of the eclipse from being visible. Charts for all of the stars included in these predictions (17 in all - see VSSC 75 for a list) are available from the Director at 10p each (please enclose a large SAE).

1994 Jan 1 Sat	RW Tau	D05(04)08	RZ Cas	17(19)19D	Z Vul	L16(11)17	
TW Dra	D05(06)11	U Sge	D05(05)07L	U Sge	18(24)19D	U Sge	L16(18)19D
Z Per	D05(07)12	V640 Ori	L07(08)11	1994 Jan 15 Sat	1994 Jan 22 Sat		
TX UMa	L05(04)09	RW Gem	14(19)18L	U Cep	D05(05)09	ST Per	D05(05)09
U Sge	05(11)07L	RZ Cas	17(20)19D	TW Dra	D05(06)11	X Tri	06(08)11
Z Dra	06(09)11	1994 Jan 9 Sun		X Tri	11(13)14L	V640 Ori	09(12)14L
RZ Cas	13(16)18	Z Vul	D05(05)07L	1994 Jan 16 Sun		TX UMa	10(15)19D
Z Vul	L17(20)19D	S Equ	06(11)07L	Z Dra	D05(07)10	U Cep	11(16)19D
1994 Jan 2 Sun		Z Dra	10(12)15	S Equ	D05(08)06L	Z Per	11(16)16L
V640 Ori	L07(07)09	TW Dra	11(16)19D	RW Tau	06(11)16L	1994 Jan 23 Sun	
RW Tau	10(15)17L	1994 Jan 10 Mon		TX UMa	07(12)16	RW Gem	D05(03)08
U Cep	13(17)19D	SW Cyg	D05(01)07	V640 Ori	08(10)13	RZ Cas	D05(04)06
Z Dra	15(17)19D	U Cep	D05(05)10	Z Per	09(14)16L	S Equ	D05(05)06L
RZ Cas	18(20)19D	Y Psc	D05(07)10L	X Tri	10(12)14L	X Tri	D05(08)10
1994 Jan 3 Mon		TX UMa	D05(08)13	Z Vul	L16(14)19D	TW Dra	11(16)19D
RW Gem	D05(01)06	Z Per	06(11)16	1994 Jan 17 Mon		SW Cyg	L13(19)19D
ST Per	12(16)17L	V640 Ori	L07(09)11	RZ Cas	D05(04)07	Z Vul	17(22)19D
1994 Jan 4 Tue		Z Dra	18(21)19D	RW Gem	D05(09)14	1994 Jan 24 Mon	
TW Dra	D05(01)06	1994 Jan 11 Tue		X Tri	09(12)14L	X Tri	D06(07)09
TX UMa	D05(05)10	RZ Cas	D05(05)07	U Cep	12(16)19D	RZ Cas	06(09)11
Z Vul	D05(07)08L	RW Gem	10(15)17L	Z Dra	13(16)18	Z Dra	08(11)13
Z Per	D05(08)13	ST Per	11(15)16L	1994 Jan 18 Tue		V640 Ori	10(12)13L
V640 Ori	L07(07)10	X Tri	13(16)14L	TW Dra	D05(02)07	RW Tau	14(18)15L
U Sge	L18(20)19D	Z Vul	L17(16)19D	U Sge	D05(09)06L	1994 Jan 25 Tue	
1994 Jan 5 Wed		U Sge	L17(14)19D	RZ Cas	07(09)12	U Cep	D06(04)09
U Cep	D05(05)10	1994 Jan 12 Wed		V640 Ori	08(11)13	X Tri	D06(06)09
RZ Cas	D05(06)08	Z Dra	D05(05)08	X Tri	09(11)13L	Y Psc	D06(09)09L
RW Tau	D05(09)14	TW Dra	06(11)16	1994 Jan 19 Wed		RZ Cas	11(13)16
SW Cyg	06(12)12L	V640 Ori	07(09)12	Z Vul	D05(01)06	TX UMa	11(16)19D
Z Dra	08(10)13	RZ Cas	07(10)12	SW Cyg	D05(05)11	Z Per	13(18)16L
SW Cyg	L14(12)18	U Cep	12(17)19D	RW Tau	D05(05)10	Z Dra	17(19)19D
RW Gem	17(22)18L	X Tri	13(15)14L	X Tri	08(10)13	1994 Jan 26 Wed	
1994 Jan 6 Thu		1994 Jan 13 Thu		TX UMa	08(13)18	X Tri	D06(06)08
S Equ	D05(01)06	TX UMa	05(10)15	ST Per	10(14)16L	Z Vul	D06(09)06L
ST Per	D05(08)12	Z Per	07(12)17L	Z Per	10(15)16L	TW Dra	07(12)17
V640 Ori	L07(08)10	Z Dra	12(14)16	RZ Cas	11(14)16	V640 Ori	10(13)13L
RZ Cas	08(10)13	RW Tau	12(17)16L	1994 Jan 20 Thu		RZ Cas	16(18)19D
Y Psc	08(13)10L	X Tri	12(14)14L	U Cep	D05(04)09	1994 Jan 27 Thu	
TW Dra	15(20)19D	RZ Cas	12(14)17	RW Gem	D05(06)11	Z Dra	D06(04)06
Z Dra	17(19)19D	1994 Jan 14 Fri		Z Dra	06(09)11	X Tri	D06(05)07
Z Vul	L17(18)19D	Y Psc	D05(02)06	X Tri	07(10)12	RW Tau	08(13)15L
1994 Jan 7 Fri		Z Vul	D05(03)07L	V640 Ori	09(11)14L	ST Per	08(12)15L
TX UMa	D05(07)12	ST Per	D05(07)11	RZ Cas	16(18)19D	U Cep	11(16)19D
Z Per	D05(09)14	V640 Ori	07(10)12	TW Dra	16(21)19D	1994 Jan 28 Fri	
U Cep	12(17)19D	RW Gem	07(12)17L	1994 Jan 21 Fri		X Tri	D06(04)07
RZ Cas	13(15)17	SW Cyg	09(15)11L	Z Vul	06(11)06L	SW Cyg	D06(08)11L
1994 Jan 8 Sat		X Tri	11(14)14L	X Tri	07(09)11	Z Dra	10(12)15
Z Dra	D05(04)06	SW Cyg	L13(15)19D	Z Dra	15(17)19D	V640 Ori	11(13)13L

RW TAURI



RW Tau: 7.98 (8.09) 11.59V

EA D = 9.3h d = 1.3h

Min = 2446005.3903 +

2.768780xE (SAC 63)

(1950) 04h 00.6m +27° 59'

(2000) 04 03.9 +28 08

Preliminary Sequence:

C = 7.91 J = 10.0

D = 8.2 M = 10.5

E = 8.9 N = 10.7

F = 9.3 P = 11.1

H = 9.7 Q = 11.6

T. Brelstaff 1984 Dec 18

PLEIADES



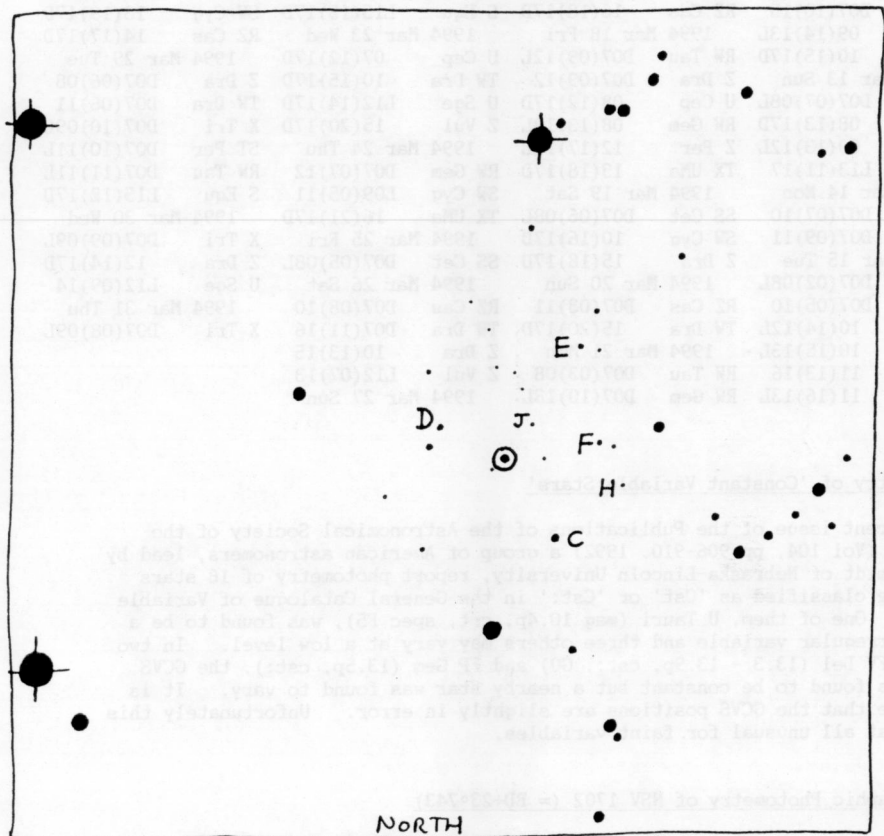
∅ TAU

Σ PER

NORTH

SW Cyg	L12(08)14	RW Tau	10(15)14L	1994 Feb 19 Sat	Z Dra	07(09)11	
TX UMa	13(18)19D	RZ Cas	14(17)18D	U Cep	D06(02)07	U Sge	17(22)18D
Z Per	14(19)16L	Z Vul	L15(16)18D	TX UMa	D06(04)09	1994 Feb 28 Mon	
RW Gem	15(20)16L	U Sge	L15(16)18D	Z Per	D06(04)09	X Tri	D07(06)09
Z Vul	L15(20)19D	1994 Feb 8 Tue		Z Dra	D06(06)08	ST Per	D07(07)11
U Sge	L16(12)18	Z Dra	07(09)11	X Tri	10(13)11L	Z Per	D07(08)13
1994 Jan 29 Sat		SS Cet	09(14)10L	RZ Cas	13(16)18D	TX UMa	D07(09)13
Y Psc	D06(03)08	1994 Feb 9 Wed		Z Vul	17(22)18D	Z Dra	15(18)18D
RZ Cas	D06(03)06	U Cep	D06(03)08	S Equ	L18(17)18D	1994 Mar 1 Tue	
X Tri	D06(04)06	RW Gem	D06(07)12	1994 Feb 20 Sun		TW Dra	D07(04)09
TW Dra	D06(07)12	Y Psc	D06(10)08L	SW Cyg	D06(05)09L	RZ Cas	D07(05)08
Z Dra	18(21)19D	TW Dra	08(13)18	ST Per	D06(08)13	X Tri	D07(06)08
1994 Jan 30 Sun		ST Per	14(18)15L	SS Cet	07(12)10L	RW Gem	D07(09)14
U Cep	D06(04)08	Z Dra	15(18)18D	X Tri	09(12)11L	SW Cyg	D07(09)08L
ST Per	D06(04)08	1994 Feb 10 Thu		SW Cyg	L11(05)11	SS Cet	D07(10)09L
RW Tau	D06(07)12	RW Tau	D06(09)14	Z Dra	12(14)17	SW Cyg	L10(09)15
RZ Cas	D06(08)10	1994 Feb 11 Fri		TW Dra	13(18)18D	Z Vul	L13(18)18D
V640 Ori	11(14)13L	SW Cyg	D06(02)08	RW Gem	13(18)15L	1994 Mar 2 Wed	
1994 Jan 31 Mon		RZ Cas	D06(07)09	RZ Cas	18(20)18D	X Tri	D07(05)07
Z Dra	D06(05)08	SS Cet	09(14)10L	1994 Feb 21 Mon		RZ Cas	07(10)12
Z Vul	D06(07)06L	U Cep	10(15)18D	RW Tau	D06(11)13L	1994 Mar 3 Thu	
RZ Cas	10(13)15	1994 Feb 12 Sat		X Tri	09(11)11L	X Tri	D07(04)07
RW Gem	12(17)16L	RW Gem	D06(04)09	U Cep	09(14)18D	Z Per	D07(10)13L
TX UMa	14(19)19D	TW Dra	D06(08)13	1994 Feb 22 Tue		TX UMa	D07(10)15
U Sge	L16(21)19D	ST Per	D06(10)14	TX UMa	D06(06)10	Z Dra	08(11)13
1994 Feb 1 Tue		Z Dra	08(11)13	Z Per	D06(06)11	U Cep	09(13)18D
TW Dra	D06(03)08	RZ Cas	09(12)14	X Tri	08(10)11L	RZ Cas	12(14)17
U Cep	11(15)19D	Z Vul	L14(14)18D	Z Vul	L14(09)15	1994 Mar 4 Fri	
V640 Ori	12(14)13L	S Equ	L18(20)18D	1994 Feb 23 Wed		RW Gem	D07(05)11
Z Dra	12(14)16	1994 Feb 13 Sun		RZ Cas	D06(06)08	SS Cet	D07(09)09L
RZ Cas	15(17)19D	Z Per	D06(02)06	Z Dra	D06(07)10	RW Tau	08(13)13L
SW Cyg	16(22)19D	RW Tau	D06(04)08	SS Cet	D06(11)10L	RZ Cas	17(19)18D
1994 Feb 2 Wed		Y Psc	D06(05)07L	X Tri	07(10)11L	Z Dra	17(19)18D
RW Tau	D06(02)06	RZ Cas	14(16)18D	TW Dra	08(13)18D	1994 Mar 5 Sat	
SS Cet	11(15)11L	Z Dra	17(19)18D	kW Gem	10(15)15L	ST Per	10(14)13L
Z Vul	L15(18)19D	1994 Feb 14 Mon		1994 Feb 24 Thu		SW Cyg	16(22)18D
1994 Feb 3 Thu		U Cep	D06(03)07	U Cep	D06(02)07	1994 Mar 6 Sun	
RW Gem	08(14)16L	SS Cet	08(13)10L	RW Tau	D06(05)10	Z Per	D07(11)13L
V640 Ori	12(15)13L	U Sge	L15(10)15	X Tri	07(09)11L	TX UMa	07(12)17
TX UMa	16(21)18D	1994 Feb 15 Tue		RZ Cas	08(10)13	Z Vul	L13(16)17D
TW Dra	17(22)18D	TW Dra	D06(03)08	SW Cyg	13(19)18D	U Sge	L14(17)17D
1994 Feb 4 Fri		Z Dra	D06(04)06	Z Dra	13(16)18D	TW Dra	14(19)17D
U Cep	D06(03)08	SW Cyg	L11(15)18D	U Sge	L14(13)18D	1994 Mar 7 Mon	
Z Dra	D06(07)10	1994 Feb 16 Wed		Z Vul	15(20)18D	RW Gem	D07(02)07
ST Per	07(11)15L	TX UMa	D06(03)07	1994 Feb 25 Fri		RZ Cas	D07(05)07
1994 Feb 5 Sat		Z Per	D06(03)08	Z Per	D06(07)12	RW Tau	D07(07)12
RZ Cas	D06(07)10	U Cep	10(14)18D	TX UMa	D06(07)12	SS Cet	D07(09)09L
SS Cet	10(15)11L	Z Dra	10(12)15	X Tri	D06(08)11	Z Dra	10(13)15
V640 Ori	13(15)13L	1994 Feb 17 Thu		ST Per	11(16)14L	1994 Mar 8 Tue	
Z Dra	13(16)18	RZ Cas	D06(06)09	RZ Cas	13(15)17	ST Per	D07(06)10
1994 Feb 6 Sun		SS Cet	08(12)10L	1994 Feb 26 Sat		RZ Cas	07(09)12
RW Gem	D06(10)16	X Tri	11(14)12L	X Tri	D06(08)10	U Cep	08(13)17D
SW Cyg	06(12)10L	ST Per	13(17)14L	TW Dra	D06(09)14	S Equ	L16(21)17D
RZ Cas	10(12)14	Z Vul	L14(12)17	SS Cet	D06(10)09L	1994 Mar 9 Wed	
U Cep	10(15)18D	U Sge	L15(19)18D	RW Gem	07(12)14L	Z Per	08(12)13L
SW Cyg	L12(12)18	TW Dra	18(23)18D	U Cep	09(14)18D	TX UMa	09(13)17D
TW Dra	12(17)18D	1994 Feb 18 Fri		S Equ	L17(14)18D	TW Dra	09(14)17D
TX UMa	17(22)18D	RZ Cas	09(11)13	RZ Cas	17(20)18D	RZ Cas	12(14)16
1994 Feb 7 Mon		X Tri	11(13)11L	1994 Feb 27 Sun		1994 Mar 10 Thu	
ST Per	D06(03)07	RW Tau	12(16)14L	X Tri	D06(07)10	Z Dra	D07(06)08

V640 ORI



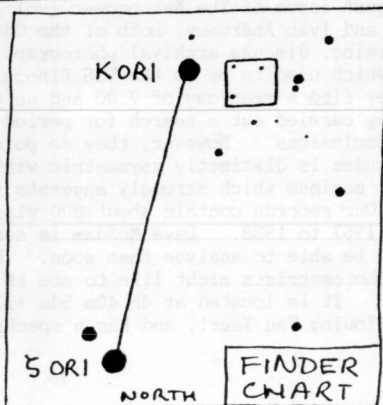
V640 Ori 11.2 - 13.5 p D = 5.3n EA
 (1950) 05h 52.6m -09° 23'
 (2000) 05 55.0 -09 22

Min I = 2442448.409 + 2.02074 E
 (SAC 58)

Preliminary sequence:

C = 11.3 D = 11.6 E = 12.1
 F = 12.5 H = 13.1 J = 13.6

JEI 1987 Nov



SS Cet	D07(08)09L	TX UMa	12(16)17D	ST Per	07(12)12L	RW Gem	D07(04)09
SW Cyg	D07(12)08L	Z Dra	14(16)17D	RZ Cas	10(13)15	X Tri	09(11)09L
SW Cyg	L10(12)17D	S Equ	L16(18)17D	Z Vul	L12(09)15	RZ Cas	10(12)15
RZ Cas	16(19)17D	1994 Mar 16 Wed	TX UMa	15(19)17D	Z Per	L17(21)17D	
1994 Mar 11 Fri	ST Per	D07(04)09	1994 Mar 22 Tue	1994 Mar 28 Mon			
Z Dra	12(14)17	SS Cet	D07(07)08L	SS Cet	D07(05)08L	U Cep	D07(12)17
Z Vul	L13(14)17D	Z Vul	L12(12)17	Z Dra	08(11)13	X Tri	08(11)09L
1994 Mar 12 Sat	U Sge	14(20)17D	RZ Cas	15(17)17D	Z Vul	13(18)17D	
TW Dra	D07(10)15	RZ Cas	16(18)17D	S Equ	L15(15)17D	SW Cyg	13(19)17D
Z Per	09(14)13L	1994 Mar 18 Fri	1994 Mar 23 Wed	1994 Mar 29 Tue			
TX UMa	10(15)17D	RW Tau	D07(09)12L	U Cep	07(12)17D	1994 Mar 29 Tue	
1994 Mar 13 Sun	Z Dra	D07(09)12	TW Dra	10(15)17D	Z Dra	D07(06)08	
SS Cet	D07(07)08L	U Cep	08(12)17D	U Sge	L12(14)17D	TW Dra	D07(06)11
U Cep	08(13)17D	RW Gem	08(13)13L	Z Vul	15(20)17D	X Tri	D07(10)09L
ST Per	09(13)12L	Z Per	12(17)12L	1994 Mar 24 Thu	ST Per	D07(10)11L	
U Sge	L13(11)17	TX UMa	13(18)17D	RW Gem	D07(07)12	RW Tau	D07(11)11L
1994 Mar 14 Mon	1994 Mar 19 Sat	SS Cet	D07(06)08L	SW Cyg	L09(05)11	S Equ	L15(12)17D
Z Dra	D07(07)10	SS Cet	D07(06)08L	TX UMa	16(21)17D	1994 Mar 30 Wed	
RZ Cas	D07(09)11	SW Cyg	10(16)17D	1994 Mar 25 Fri	X Tri	D07(09)09L	
1994 Mar 15 Tue	Z Dra	15(18)17D	SS Cet	D07(05)08L	Z Dra	12(14)17D	
SW Cyg	D07(02)08L	1994 Mar 20 Sun	1994 Mar 26 Sat	1994 Mar 31 Thu			
TW Dra	D07(05)10	RZ Cas	D07(08)11	RZ Cas	D07(08)10	U Sge	L12(09)14
RW Tau	10(14)12L	TW Dra	15(20)17D	TW Dra	D07(11)16	1994 Mar 31 Thu	
Z Per	10(15)13L	1994 Mar 21 Mon	Z Dra	10(13)15	X Tri	D07(08)09L	
RZ Cas	11(13)16	RW Tau	D07(03)08	Z Vul	L12(07)13		
RW Gem	11(16)13L	RW Gem	D07(10)13L	1994 Mar 27 Sun			

Photometry of 'Constant Variable Stars'

In a recent issue of the Publications of the Astronomical Society of the Pacific (Vol 104, pp 906-910, 1992) a group of American astronomers, lead by E.G.Schmidt of Nebraska-Lincoln University, report photometry of 16 stars that are classified as 'Cst' or 'Cst:' in the General Catalogue of Variable Stars. One of them, U Tauri (mag 10.4p, cst, spec F5), was found to be a rapid irregular variable and three others may vary at a low level. In two cases, FV Del (13.3 - 13.9p, cst:, G0) and FP Gem (13.5p, cst:), the GCVS star was found to be constant but a nearby star was found to vary. It is possible that the GCVS positions are slightly in error. Unfortunately this is not at all unusual for faint variables.

Photographic Photometry of NSV 1702 (= BD+23°743)

In the August issue of The Astronomer (vol 30, pp 85-86, 1993), Lidia Chinarova and Ivan Andronov, both of the Odessa State University Observatory in the Ukraine, discuss archival photographic observations of this suspected variable which used to be on the VSS Binocular Program. From 125 photovisual plates they find a mean mag of 7.00 and an extreme range of 6.87 - 7.29. Though they carried out a search for periodicities in the data they came to no firm conclusions. However, they do point out that the distribution of the magnitudes is distinctly asymmetric with the star more commonly being found near maximum which strongly suggests that the star may be an eclipsing binary. Our records contain about 800 visual estimates of this star made in the years 1967 to 1988. Dave McAdam is sorting them out for keying-in and we hope to be able to analyse them soon. Maybe some enterprising photo-electric photometrists might like to see if they can detect any variations in this star? It is located at 4h 40m 54s +22° 51.1' (1950), about half a degree following Tau Tauri, and has a spectral type of B9.

The Early History of Some Suspected Variable Stars

By Tony Markham

From time to time, stars that have previously being regarded as constant are reported by observers to be suspected of variability. In other cases, comparison stars may be reported to be noticeably brighter or fainter than their quoted magnitudes.

Sometimes such stars then attract observations for a short time, but are then forgotten. Some though become "recognised" suspected variables, possibly gaining a CSV or NSV designation or being labelled as var? on the chart of an established variable. Later observers may, however, be unaware of how such stars originally came to be suspected of variability.

The following notes cover some of the suspected variables and comparison star queries reported in "The Astronomer" magazine in the period 1970-85. The record is incomplete since I don't have a complete set of the magazine for this period. Further details of these stars may of course have been published elsewhere. Positions where given are for epoch 1950.0.

BD +37°443 And (= SAO 55157)

This star, at RA 01h55.6m, Dec +38°15', was reported in TA 230 (1983 Jun) to have shown a range in V of approx 8.4-9.4 during routine photometry according to recent astronomical literature. In TA 242 (1984 Jun), however, Tristram Brelstaff reported that 19 estimates between 1983 Sep and 1984 Mar showed no variation greater than 0.2 mag.

Suspect in Aquila

TA 134 (1975 Jun) noted that a possible nova/eruptive variable had been reported at mag 11 at RA 19h14m13s, Dec +04°39'10" on Jun 12. Subsequent photography by Ray Mewis and visual observation by Guy Hurst showed there to be a star of about mag 12 close to the reported position on Jun 13.

Gainsford's Suspect in Aries

In TA 71 (1970 Mar), Michael Gainsford reported that one of the comparison stars that he had been using when estimating the magnitude of Iapetus had appeared to vary. TA 81 (1971 Jan) included a chart which showed the position of this star to be approx RA 02h04.5m, Dec +10°16'. TA 82/3 (1971 Feb/Mar) included estimates by Walter Pennell for 1971 Jan which have a range of 10.5-10.7.

Lehto's Suspect in Auriga

In TA 205 (1981 May), Harry Lehto reported an observation of an 'extra' star within 2° of RA 06h50m, Dec $+50^\circ$ at approx 22h55m Ut on 1981 Mar 8. The star was seen through broken cloud for approx 15 sec and was about magnitude 2.5.

Rho Bootis

This star was reported to be a possible Cepheid variable with an amplitude of 0.4 mag by Colin Pither in 1979 Jun. TA 185 (1979 Sep) reported that 44 visual estimates for the period May 19 to Aug 27 had a mean magnitude of 3.63 and a sd of 0.12 mag. TA 196 (1980 Aug) reported that photoelectric photometry by AAVSO members on 25 nights had revealed no variation larger than 0.02 mag.

BD +49°2165 CVn

A chart showing the position of this star, which is at RA 12h47.3m, Dec $+49^\circ 19'$, appeared on the cover of TA 81 (1971 Jan). John Isles noted that D J Northwood had informed him in 1969 Nov that the star appeared to fade from time to time. John's own observations from 1970 had a range of 6.4-6.9.

Flare Object in Canis Major

TA 230 (1983 Jun) reported the discovery of a flare object at RA 06h43.1m, Dec $-16^\circ 45'$, with a range of 8.9-12.0. This star was noted to be comparison G for the recently discovered U Gem type variable 1E0643-1648 (now HL Cma).

Verdenet's Suspect in Cancer

The cover of TA 180 (1979 Apr) included a photograph of Jupiter and the Beehive, taken on 1978 Dec 27, which included an extra star at approx RA 08h38.5m, Dec $+18^\circ 40'$. TA 183 reported, however, that other photographs of the area, including one taken at a different time on the same night, had not recorded the object.

UV Cas comp 109

In TA 148 (1976 Aug), B Beesley reported possible irregular fluctuations (order of days) of comparison 109 on the TA 124 chart. He suggested a possible range of 10.7-11.2.

Tau Cas

TA 133 (1975 May) included a summary of the investigations into the possibility of variation of this star. The star had been suspected of variability by Colin Henshaw and Peter Hornby in 1971 and by P Quadt in 1972. Early estimates ranged from magnitude 4.3 to magnitude 5.7. Subsequent monitoring showed little convincing evidence of variation apart from a possible maximum of 5.0 in 1973 Oct. A period of 340 days had been suggested but this was suggestive of a PA effect.

BD +49°4129 Cas (now NSV 00021)

This star, which is at RA 00h02.8m, Dec +50°15', was reported by George Alcock in TA 77 (1970 Sep) to have been bright (about mag 7.0) on 1970 Aug 11 but to have returned to its normal magnitude of about 8.0 by Aug 20. Later issues of TA refer to the star as 'Alcock's Puzzle Star in Cassiopeia' and 'APSC'.

BD +60°2217 Cep (now NSV 13656)

Observations of this star in 1970 mostly referred to it as 'ACV' and had a magnitude range of 6.35-6.8.

'Nova Cep 1983'

A Stop Press announcement in TA 230 (1983 Jun) reported that Minoru Honda had recorded an object of mag 7.5 at RA 22h11m58.03s, Dec +56°46'19.9 on a single exposure on 1983 Jun 1. Further exposures on Jun 3, however, recorded no object brighter than mag 13.5. However, on Jun 4 and Jun 5, J Morgan recorded a stellar object of 10th magnitude near the reported position.

SAO 019521 Cep

In TA 194, Michel Verdenet reported that this star, at RA 21h34m30s, Dec +67°59'41", though catalogued as mag 7.5 in the SAOC, had been reported at 6.2 by J Renault and at 6.5/6.8 and 7.0 by himself.

Suspect (Branchett) in Cepheus

This star, at RA 22h17.3m, Dec +63°05', was reported bright by Dave Branchett in TA 151 (1976 Nov). On 1976 Sep 18 he estimated it to be at mag 7.8 and also noted a distinct nebulous haze. Further estimates were mag 8 on Sep 22, mag 9 on Oct 2, mag 10 on Oct 6 and mag 9.5 thereafter. The star appeared to be part of a cluster, although no such cluster was catalogued in the NGC/IC or in the Alter Card Index. A photograph showing the position of the star was included on the front cover.

W Cyg comp B

In TA 149 (1976 Sep), Jeremy Bullivant reported that this star was at mag 6.3 on 1976 Jly 20, whereas the magnitude quoted on the BAA VSS chart was 6.7. Further observations by himself and Guy Hurst over the next few weeks were in the range 6.3 to 6.5.

Zeta Cyg

In TA 76 (1970 Aug), K J England reported that this star was at mag 2.55 on 1970 Jly 4, compared with its listed magnitude of 3.6. He also noted it to be bright on Jly 7 and Jly 11. In TA 77, Peter Hornby reported it to be fainter than Beta (3.1) but brighter than mag 3.6 during August.

BD +47°2801 Cyg

This star was reported as a suspected variable by George Alcock in TA 89 (1971 Sep). In TA 104 (1972 Dec), he reported a further brightening, with the star at magnitude 6.9 on 1972 Nov 21, but fading to 7.3 by the end of the month.

Flare Star (?) in Cygnus

In TA 184 (1979 Aug), Noel Poore reported seeing a star of about mag 0.5 at approx RA 21h50m, Dec +54° on 1979 Jly 19. After about 5 seconds it faded, dropping below naked eye visibility in about 10 seconds.

Scovill's Object in Cygnus

This was originally plotted on the AAVSO (d) chart for Honda's Variable (now V1760 Cyg), but was subsequently thought to have been a photographic flaw. In Variable star Circular No 3 (1982 Jan 6) and TA 213, it was reported that the object had been recorded again on 1981 Nov 29 at mag 12.8. The position was estimated to be RA 21h40.8m, Dec +31°20'.

Suspect (Hosty) in Cygnus

In TA 188 (1979 Dec), it was reported that John Hosty had recorded an object of mag 9.3pv at RA 21h27.6m, Dec +50°07' on 1979 Oct 31. The star was recorded on Borealis, but the dot size indicated about mag 11. It also appeared faint on Falkau.

BD +15°4264 Del

TA 201 (1981 Jan) reported that J C Ralph had reported in IAUC 3548 that this star, at RA 20h46m41s, Dec +16°02.6', had been at least one magnitude fainter than normal (mpg about 11.2) on two exposures taken around 1980 Sep 7.17UT.

BD +18°4586 Del (= SAO 106400, now NSV 13242)

This star, at RA 20h40.1m, Dec +19°13', was originally comparison k on the BAA chart for HR Del. Patrick Moore subsequently reported variability in the range 7.8-8.3. Numerous observations were reported in TA during 1970 and 1971. Estimates by Keith Sturdy had a range of 7.9-8.8 whereas, in TA 82/3 (1971 Feb/Mar), M J Ring reported a range of 8.0-8.3 since 1969 Sep and questioned its variability.

In TA 251 (1985 Mar), it was reported that Stephen Lubbock had observed this star at mag 7.1 on 1985 Mar 4. TA 253 reported estimates of 7.6/7.8 by Tony Markham in mid March and 8.0 by Luigi Rossi on Mar 26.

BD +18°4590 Del

TA 141 (1976 Jan) reported that P Tempesti had reported a range of 8.75-9.25 and period about 30 days for this star in IBVS 1050.

BD +20°4720 Del

Colin Henshaw reported in TA 72 (1970 Apr) that this star, at RA 20h46.1m, Dec +21°03', had varied by about 0.5 mag between two negatives taken in 1968. The range was estimated to be about 7.0-7.5.

RY Dra comp K

Bill Worraker reported in Variable Star Circular No 9 (1982 Nov 18) that this star, at RA 12h54.5m, Dec +66°16', which was mag 7.8 on the chart, was not visible in 7x50 binoculars on 1982 Nov 12. Guy Hurst could find no star in the position brighter than mag 8.5 but noted that Tristram Brelstaff had reported the comparison to be misplotted, suggesting that the star might be BD +67°767 (mag 8.8).

AB Dra comp M

In TA 186 (1979 Oct), Rodney Lyon noted that this star, which had a magnitude of 13.6 assigned on the chart, had been at mag 14.4 on Aug 15 and at 14.0/14.4 during Sep 13-23.

Pickup's Peculiar Star in Draco

TA 77 (1970 Sep) briefly mentions this star and refers to TA 66 (1969 Oct), which contained the original report, and BAA Circular 527.

TV Gem comp H (= SAO 78074, now NSV 02859)

John Isles reported in TA 69 (1970 Jan) that this comparison had been dropped by the BSS after one observer reported it at mag 7.0-7.2 while another observer reported it at mag 8.6 on the same date.

SAO 51657 Lac

J K Irving reported an apparent flare of this star, at RA 22h04m34s, Dec +45°09.5', in TA 191 (1980 Mar). The star is catalogued at mag 8.4, but at 2230 UT on 1979 Aug 27 it was seen at 6th magnitude. When checked again a minute later it had faded. The star is also ADS 15640A and has a companion of mag 14.

Theta Lyr

Colin Henshaw reported in TA 72 (1970 Apr) that Eta and Theta Lyr consistently differed by 0.3 mag despite both stars being listed at mag 4.46. In TA 73, however, he reported that a review of photographs suggested that actual variation of Theta had occurred between 1969 Apr and 1969 Jly, and suggested a range of 4.46-4.76.

Suspect near AY Lyr

In TA 175 (1978 Nov), Michel Verdenet reported rapid variations between mag 13-14v of a star near comparison C on the AAVSO (e) chart for AY Lyr. A chart showing the position of the star appeared on the back cover.

Chanal's Object in Orion (= NSV 2229)

In TA 238 (1984 Feb) and Variable Star Circular No 13 (1984 Feb 6) it was reported that Chanal had recorded an object of mag 13.0 on an exposure on 1983 Dec 29, whereas a photograph of the region taken with the Anglo-Australian Schmidt appeared to show an image of mag 18 in that position. The object appeared to be identical with NSV 2229 (RA 05h32m18s, Dec -05°35.6'), which was described as being of optical magnitude 18 in the NSV catalogue. Subsequent investigation of numerous old photographs suggested that it had varied considerably.

Parenago 1644

The cover of TA 202 (1981 Feb) included two photographs of M42 taken by Maurice Gavin on 1980 Nov 30/Dec 1 which show an object at approx RA 05h30.2m, Dec -06°03.8' fading from mag 12.4 to 13.5 in approx 30 min. It was also reported that photographs taken on 1981 Jan 4 showed the object rising by about 0.5 mag from 13.5 over a 4 minute timescale. The RGO identified the object as the star Parenago 1644

Suspected Variables (Kirby) in Orion

In TA 155 (1977 Mar), Geoff Kirby reported possible variability of the BAA VSS comparisons D, G and H for the Orion Nebula variables. In particular, he reported variations of comparison G by 0.5 mag over short timescales. The listed magnitude of comparison F was also queried.

TASV 030645 Per

This star, at RA 03h06m12s, Dec +45°45.3', was reported as a possible variable by Guy Hurst in TA 130 (1975 Feb). The star was first noticed on a photograph of Nova Per 1974 taken by Ray Mewis on 1974 Dec 4. An approximate magnitude of 10.9 was derived. The star was not present on Atlas Stellarum (lim mag 14.5), however, but this later proved to have been a printing error - the original plate showed two stars at about mag 14.5 in the correct position. The extreme redness of the star was noted. Further observations were reported in TA 143 (1976 Mar) with the magnitude being estimated at 11.1/11.5, and comments being made about the difficulties being caused by its red colour. A chart appeared on the cover of TA 150 (1976 Oct).

TASV 195819 Sge (= BD +19°4242 = SAO 105545)

In TA 148 (1976 Aug), it was reported that John Hosty had observed this star, which is at RA 19h58m39s, Dec +19°52', at magnitude 6.5 on 1976 Jly 16, whereas the SAOC gave the magnitude as 7.5. It was noted that George Alcock had previously suspected variability with a range of 7.0-7.3. A chart appeared on the cover of TA 160 (1977 Aug).

Branchett's Object in Scutum

This object, at RA 18h44.2m, Dec -05°00', was initially reported in Early Warning Circular No 48 (1981 Jan 20) and TA 202 (1981 Feb). It was seen by Dave Branchett at approx mag 8.0 on 1981 Jan 18, but no further positive observations were made. Curiously, Dave Branchett found that he had previously recorded a suspect star at a similar position on 1978 Feb 10 at magnitude 9 when originally preparing for Nova Patrol work in that area of sky, but had assumed it to be merely an atlas omission.

Nova Sct 1975 comp J

In TA 135 (1975 Jly), it was noted that whereas Walter Pennell had given the photovisual magnitude of this comparison as 10.7 and the AAVSO gave the magnitude as 10.9, visual estimates by Guy Hurst and Ian Howarth made it 9.8.

SAO 142593 Sct

Alan Pickup noted in TA 77 (1970 Sep) that this comparison for Nova Sct 1970, though listed as mag 8.0 in the SAOC, appeared closer to 8.5.

Hosty's Suspect in Serpens

TA 175 (1978 Nov) reported that John Hosty had recorded a trailed image at RA 18h33.8m, Dec +06°00' on twin negatives secured on 1978 Oct 17. The images were of about magnitude 8.5. A check by Guy Hurst on Oct 22 revealed no object brighter than mag 12.5 near the reported position.

Nova Ser 1970 comp N

This TA comparison (O on the BAA VSS chart) was reported to be appreciably brighter than comparison M by Walter Pennell in TA 72 (1970 Apr). He suggested that comparison N might have been incorrectly labelled on the chart. In TA 73, however, D S Brown, while noting that N was probably brighter than M, suggested that it was more likely that the catalogued magnitudes were incorrect.

BU Tau comp h

This star, 16 Tau, was reported as a possible variable by A MacKay in TA 94 (1972 Feb). In TA 102 (1972 Oct), Colin Henshaw reported that he had queried its listed magnitude in 1969.

Flare Object (?) in Ursa Major

This object was reported by Ron Arbour in TA 171 (1978 Jly). It was seen on 1978 Jun 30 within a 5° circle surrounding Alpha, Beta and R CVn(?) and was initially between mag 1.5 and mag 2.5, but then faded after about 10 seconds, dropping below naked eye visibility in 3-5 sec.

Suspect (Mezosi) in Ursa Major

This object, at RA 10h42.1m, Dec +69°46', was reported in TA 99 (1972 Jly). It was first noted on 1972 May 22 at mag 10.3 and later estimates were in the range 9.6-10.3. It was initially reported as a possible nova or U Gem star, but was subsequently revealed to be shown on the AAVSO (d) chart for R UMa.

CSV 101897 Vul

TA 198 (1980 Oct) reported that John Hosty had observed a star of magnitude 8.2 at RA 19h48.1m, Dec +24°48' on 1980 Sep 3. The star was not present on the SAO or Eclipticalis. Subsequent investigation suggested that the star might be identical with CSV 101897. A chart appeared on the cover of TA 199.

Nova Vul 1984 No 1 comp J

This comparison was originally listed as magnitude 8.7. TA 247 (1984 Nov) reported that its magnitude had been revised to 8.2.

SAO 88343 Vul (= BD +23°3293)

TA 196 (1980 Aug) reported that Dave Evans had recorded a star at RA 20h10m10s, Dec +23°56' on twin frames on 1980 Jly 21, but the star was not found on the True Visual Magnitude Photographic Star Atlas (equatorial) despite it having a magnitude limit of approx 13. The star was however subsequently found to be SAO 88343 which is listed at mag 8.6.

How many of the stars listed above are really variable remains to be seen. Some of the short lived objects could possibly have been very slow moving satellites. Other queries may simply be a case of the catalogued magnitudes for individual stars being incorrect or not actually being V magnitudes. Some of the smaller magnitude discrepancies could just be a consequence of the inevitable differences between V magnitudes and the actual visual magnitudes seen by individual observers. Almost certainly, however, some really are variable.

Hungarian Observations of AF Cygni

In the September issue of Meteor (vol 23, no 9 pp 39-43, 1993) Janos Gal and Karoly Szatmary analyse 5894 visual estimates of this semiregular variable made in the years 1967-1992 by the Variable Star Section of the Hungarian Astronomical Association. They find four periods: 13300, 168, 164 and 93 days. The first can be discounted as it is longer than the observing interval. The 93-day period seems to be present throughout the observations but becomes stronger towards the end. The 168 and 164-day periods may be two variants of the same periodicity and seem to only be present in the middle of the interval. The interaction of these periodicities means that the light-curve is quite varied: in some years it shows large, bold variations; in others it appears more-or-less constant.

A Letter from Gary Poyner

Thanks for the sending the circular. I would like to make one or two comments regarding Shaun Albrighton's remarks on the first page.

Firstly I do not think that Mike's red stars would make good targets for binocular observers, because as you rightly point out most of them are fainter than mag 8. I have been monitoring TAV0033+59, TAV1831+19, and the recently discovered TAV 1836+11. The one in Cassiopeia - 0033+59 - was discovered in 1991. It brightened from near mag 12 to 10.5 during that year, where it now remains. Any variations noticed are small, but you are never quite sure what it is going to do next. This is possibly the most interesting of Mike's stars. TAV1831+19 is a tricky star to observe because it is one of a close pair. The notes on the chart make remark to the fact that the identification of the variable is uncertain because of the closeness of the stars. Since 1991 I have established that the north component is variable, with a visible range between 11.0 and 12.0. The south star is pretty steady at mag 13.5. Finally TAV1836+11 is at present quite faint. My last observation on Oct 9 made it 14.3. Mike thinks this may be an IRAS source thus being very red in appearance. This has recently been justified by a photo taken by Nick James on Oct 8 with 2415, when he made the star mag 12.1pg. On the same night both John Day and myself had observations of 14.1 and 14.3 respectfully. This may be a large amplitude star, so is worth following for as long as possible.

I certainly think that there is a need to add some of Mike's stars to the programme. Perhaps a separate programme for suspects and newly discovered stars?

Secondly I don't think there is a shortage of dwarf novae in the Spring sky. Let me name a few which I observe at this time of year; SS Aur, UZ Boo, Z Cam, AF Cam, AK Cnc, SY Cnc, YZ Cnc, AL Com, GO Com, AB Dra, DO Dra, U Gem, AW Gem, IR Gem, AH Her, AM Her, T Leo, X Leo, RZ Leo, TU Leo, BH Lyn, BC UMa, BZ UMa, CH UMa, CY UMa, DV UMa, SU UMa, SW UMa, PG 0943+521 and SS UMi. All of these stars are visible at a reasonable time during the Spring months, and all (except one DV UMa) are within the range of an average amateur telescope - say 20cm - when in outburst. The PG star is most interesting. It 'goes off' about twice per month, and ranges between mag 12 and 15. Quite a few are on the recurrent objects programme. When you add this list to the ones which are visible in the eastern sky after midnight in Cyg, Lyr etc, and in the west during early evening in Per, Ori, And & Cas there is more than enough to keep you busy wouldn't you say? This is only a short list, there are many more to choose from. I can't comment on the lack of Mira's and SR stars, so I will leave that to those better suited.

I look forward to the February meeting. I wish our section could have more frequent gatherings.

Comments on the Observers' Questionnaire By Roger Pickard

As of 10th September 1993 46 Questionnaires had been returned and a brief summary of some of them follows.

Although a number of members already report their observations in machine readable form and/or help key in existing observations, more help is required. The response to question 19

was that 19 (well over a third) observers already help in this way or would be willing to do so (even if a few of them would also require the loan of a computer!).

Just as many members are interested in PEP, although not all would want to be involved in making the observations. However, 8 already have or have access to a photometer and most of these are contributing observations.

The Questionnaire did not specifically ask about interest in CCDs, but 10 members expressed an interest in this type of astronomy.

There was also a question asking for members comments and the main point here was "Why can't the VSS have an annual meeting like many of the other Sections? This is something we would all like to see and it is already planned to hold a Section meeting early in 1994 (see the note elsewhere in this Circular). However, several members also asked if it would be possible to have a meeting in the north. This is certainly possible, but it does really need somebody from the north to organise it, although they could expect a lot of support from the Section Officer's. Are there any offers - you have plenty of time as the next one wouldn't need to be held until 1995?!

Other interesting comments included: How about a letters page in the Circular? Could we have articles for beginners please? How about organising a training programme, under the guidance of a training officer? Should we be looking at ways to make visual observations more accurate? And final comment from our overworked Secretary: Is anybody interested in paperwork or generally helping out the Section?

All the points and others will be considered and a report on the Questionnaire will appear in a future edition of the Circulars.

Charts

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Telescopic	30p per star
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Eclipsing Binary Programme Handbook: 1988

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