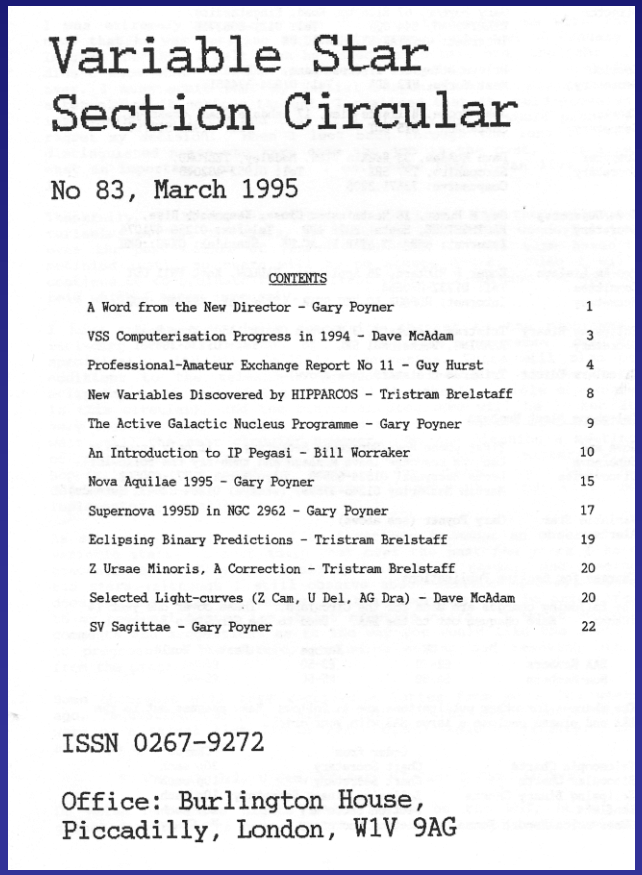
ICCE Update 11 years on….

Putting the 'New' back into the New Objects Programme

The ‘New’ Objects Programme

First proposed in March 1995 (VSSC 83)



Variable Star Section Circular

No 83, March 1995

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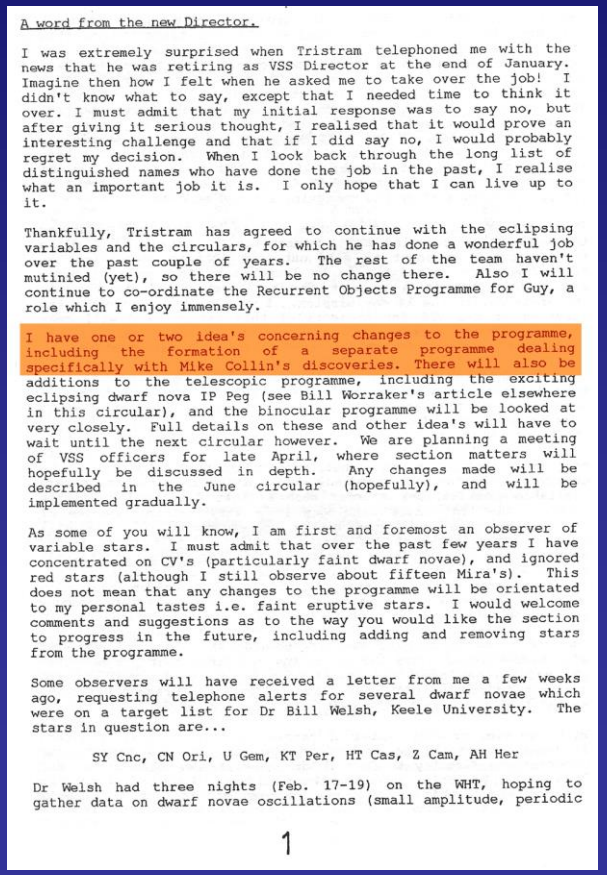

A word from the new Director.

I was extremely surprised when Tristram telephoned me with the news that he was retiring as VSS Director at the end of January. Imagine then how I felt when he asked me to take over the job! I didn't know what to say, except that I needed time to think it over. I must admit that my initial response was to say no, but after giving it serious thought, I realised that it would prove an interesting challenge and that if I did say no, I would probably regret my decision. When I look back through the long list of distinguished names who have done the job in the past, I realise what an important job it is. I only hope that I can live up to it.

Thankfully, Tristram has agreed to continue with the eclipsing variables and the circulars, for which he has done a wonderful job over the past couple of years. The rest of the team haven't mutinied (yet), so there will be no change there. Also I will continue to co-ordinate the Recurrent Objects Programme for Guy, a role which I enjoy immensely.

I have one or two idea's concerning changes to the programme, including the formation of a separate programme dealing specifically with Mike Collin's discoveries. There will also be additions to the telescopic programme, including the exciting eclipsing dwarf nova IP Peg (see Bill Worraker's article elsewhere in this circular), and the binocular programme will be looked at very closely. Full details on these and other idea's will have to wait until the next circular however. We are planning a meeting of VSS officers for late April, where section matters will hopefully be discussed in depth. Any changes made will be described in the June circular (hopefully), and will be implemented gradually.

As some of you will know, I am first and foremost an observer of variable stars. I must admit that over the past few years I have concentrated on CV's (particularly faint dwarf novae), and ignored red stars (although I still observe about fifteen Mira's). This does not mean that any changes to the programme will be orientated to my personal tastes i.e. faint eruptive stars. I would welcome comments and suggestions as to the way you would like the section to progress in the future, including adding and removing stars from the programme.

Some observers will have received a letter from me a few weeks ago, requesting telephone alerts for several dwarf novae which were on a target list for Dr Bill Welsh, Keele University. The stars in question are...

SY Cnc, CN Ori, U Gem, KT Per, HT Cas, Z Cam, AH Her

Dr Welsh had three nights (Feb. 17-19) on the WHT, hoping to gather data on dwarf novae oscillations (small amplitude, periodic

The ‘New’ Objects Programme

British Astronomical Association

Variable Star Section Circular

No 85, September 1995

ISSN 0267-9272

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Formally announced in September 1995 (VSSC 85)

Binocular Priority List

AQ And	Mu Cep	RX Lep
EG And	Omicron Cet	SS Lep
V Aql	R CrB	Y Lyn
UU Aur	W Cyg	SV Lyn
AB Aur	AF Cyg	U Mon
V Boo	CH Cyg	X Oph
RW Boo	U Del	BQ Ori
RX Boo	EU Del	AG Peg
U Cam	RY Dra	GO Peg
ST Cam	TX Dra	X Per
XX Cam	AH Dra	R Sct
X Cnc	NQ Gem	Y Tau
RS Cnc	X Her	W Tri
V CVn	SX Her	Z UMa
WZ Cas	UW Her	ST UMa
V465 Cas	AC Her	VY UMa
Gamma Cas	IQ Her	V UMi
Rho Cas	OP Her	SS Vir
W Cep	R Hya	SW Vir
AR Cep	RW Hya	

Mike Collins' Variables:

In VSSC 83, I mentioned that I had an idea to form a separate programme dedicated to the variables discovered by Mike Collins. Mike has provided details of his discoveries so that we may choose a short "hit list" of stars which we can follow. Mike's list contains 135 stars, and from this I have selected 21 objects for us to begin with. More stars can always be added at a later date if this observing programme proves to be a success.

The stars designated TASV are - at this time - only suspected of being variable. When enough evidence of variability is provided, they will then be designated TAV objects.

Observations should be made every 7-10d or so for the majority of the stars (which is usual with red variables), but the Be star TAV 0033+59 should be observed on every possible occasion (see Mike's comments below).

Reports should be sent to Melvyn in the usual way, or Dave McAdam if you report on diskette. In the case of the latter, remember to send Melvyn a short report summarising your observations at the end of each half year or year. Charts are available from John Toone.

I hope that VSS observers will add two or three (or more) of these variables to their programmes, as Mike's achievements in discovering the variability in these stars deserves to be followed up by a concerted effort to monitor them over a long period.

'New' Variable Star Programme

1950.0
2000.0

RA	Dec	desig	Range	notes	Chart
00 33.9	+59 24	TAV 0033+59	10.3-11.9	Be-type	TA901114
00 35.9	+59 40				
00 42.2	+53 10	TAV 0042+53	10.3-12.4	C-rich	TA900913
00 44.9	+53 26				
01 36.5	+60 39	TAV 0136+60	7.3-8.3		TA890714
01 39.5	+60 54				
02 16.9	+48 01	TAV 0216+48	9.5-11.4	C star	TA891126
02 19.4	+48 14				
03 46.7	+38 38	TAV 0346+38	10.3-11.6	C star	TA910222
03 49.4	+38 47				
05 59.1	+06 38	TAV 0559+06	10.5-11.6		TA910616
06 01.7	+06 38				
06 26.2	+34 44	TASV 0626+34	9.8-11.9		TA891010
06 29.4	+34 42				
07 14.4	+17 59	TAV 0714+17	10.5-11.9		TA910623
07 17.0	+17 54				
18 12.3	+40 25	TASV 1812+40	9.5-10.3	360d?	TA890908
18 13.7	+40 26				
18 31.6	+19 00	TAV 1831+19	10.7-(12.2		TA911025
18 33.3	+19 02				
19 33.1	+53 46	TAV 1933+53	10.3-11.4		TA910202
19 34.2	+53 53				
19 46.4	+00 22	TASV 1946+00	10.0-11.9?	330d?	TA890908
19 48.6	+00 30				
20 34.2	+61 38	TAV 2034+61	9.6-11.2		TA890628
20 34.9	+61 48				
22 04.8	+59 15	TASV 2204+59	10.1-11.5		TA891104
22 05.8	+59 30				
22 30.6	+58 21	TAV 2230+58	9.8-10.8	C star	TA901020
22 31.9	+58 36				

TAV Stars which are named in GCVS

1950.0
2000.0

RA	Dec	GCVS	Range	notes	TA desig.	Chart
03 29.1	+41 16	V513 Per	10.3-12.6	423d C*	TAV 0329+41	TA900121
03 32.4	+41 26					
04 51.8	+69 22	CC Cam	10.8-(12.3		TAV 0451+69	TA920510
04 56.5	+69 27					
18 36.1	+11 08	V2303 Oph	11.1-(15.2?		TAV 1836+11	TA930930
18 38.4	+11 11					
19 21.1	+24 24	V335 Vul	10.1-12.7	C star	TAV 1921+24	TA900827
19 23.1	+24 30					
19 41.7	+34 22	V1990 Cyg	9.8-13.0	C star	TAV 1941+34	TA891102
19 42.9	+34 29					
22 51.2	+61 00	V386 Cep	9.2-11.0	S star	TAV 2251+61	TA900125
22 53.0	+61 16					

Mike provides the following comments....

TAV 0033+59 No shell episode since late 1990/early 1991, could fade at any moment. Expect deep fade if mpg dips below 11

TAV 0042+53 Shows a 420d period but max. mag. has declined from 10.3 in late 1988 to 11.8 in mid 1994. Will it come up again?

TAV 0136+60 Since late 1992 has been oscillating 7.3-7.9. Not very spectacular.

TAV 0216+48 Poor coverage, sorry.

TAV 0346+38 Evidence for two periods: 250d amplitude 0.5 mag, and 12 yr? amplitude 0.6 mag. I am hoping to model this light curve, the longer period, if real would be most interesting!

TAV 0559+06 Poor coverage. May be around 10.5 with dips?

TAV 0714+17 Poor coverage and no obvious pattern I'm afraid.

TAV 1831+19 No obvious pattern.

TAV 1933+53 Ditto.

TAV 2034+61 Ditto.

TAV 2230+58 389d period is suggested by my data. The max is flatter than the min so a sinusoidal fit is not very good. This light curve asymmetry has been modelled recently in the literature as an IR feature caused by circumstellar dust shells.

TASV 0626+34 Shows large amplitude variations but no pattern. 9.7-11.9

TASV 1812+40 360d period?

TASV 1946+00 Evidence for large amplitude, may have 330d period, poor coverage lately I'm afraid.

TASV 2204+59 Obviously irregular but shows lovely slow, long-period variations.

Recent Papers on Variable Stars
Tristram Brelstaff

Periodic Outbursts in the Old Nova V446 Herculis (Honeycutt et al., Astrophys. J., 446, 838-841, 1995) - Photometry of this star (= Nova Her 1960) over the past 4 years shows regular 1.5-mag outbursts at a mean interval of 23.3 days. Spectroscopy suggests that these are due to mass transfer events rather than disk instabilities. The extreme range is 15.2 - 17.5V but minimum is normally about 17.0V.

Cataclysmic Variables from Origin to Outburst (Gordon-Graham, in Moore (ed), The 1995 Yearbook of Astronomy, 168-180, Macmillan, 1994) - A good, up-to-date semi-popular review of models of the structure and evolution of cataclysmic variables.

The revised ICCE programme 2005.

			J2000		Range			
Identity	**NSV**	**Const**	*RA*	*Dec*	*Max*	*Min*	**Notes**	**Chart**
TAV 0033 +53	15133	Cas	00 36	+59 40	10.3	11?	GCAS	TA
V720 Cas		Cas	00 45	+53 26	12.4??	13.6??	**CCD!** SR?	TA
TAV 0216 +48		And	02 19	+48 14	9.5	[13.5	Mira?	TA
TAV 0346 +38		Per	03 49	+38 47	10.3	12.2	C Star	TA
CC Cam		Cam	04 57	+69 27	10.8	[14.3		TA
NSV2249	2249	Tau	05 35	+23 53	10.5	[16	Mira?	Hendon
TAV 0559 +06		Ori	06 02	+06 38	10.9	12.9	SRa?	TA
TASV 0626 +34	16874	Aur	06 29	+34 42	9.8	11.9		TA
TAV 0714 +17		Gem	07 17	+17 54	10.5	12.2	**CCD!** SR?	TA
J0712 +296		Gem	07 12	+29 38	11.3	13.8	**CCD!** LB?	TA
TASV 1812 +40	24346	Her	18 14	+40 26	9.5	10.3	360d?	TA
NSV10836	10836	Her	18 28	+15 42	11	[15.0	Mira?	TA
Q1992/076		Her	18 29	+15 16	11.2	[16	Mira?	TA
V2303 Oph		Oph	18 38	+11 11	10.8	[16	Mira?	TA (BAA)
V335 Vul		Vul	19 23	+24 30	10.1	13.5	C Star	TA (BAA)
TAV 1933 +53		Cas	19 34	+53 53	10.3	12	**CCD!**	TA
TASV 1946 +00	24897	Aql	19 49	+00 30	10	[16	Mira 330d?	TA (BAA)
TAV 2034 +61	25186	Cep	20 35	+61 48	9.6	11.2		TA
NSV13806	13806	Cyg	21 36	+32 31	11.1	[16		TA
TASV 2204 +59	25835	Cep	22 06	+59 30	10.1	12.5	SR?	TA
NSV14687	14687	Cep	23 44	+71 46	11.9	[14		TA

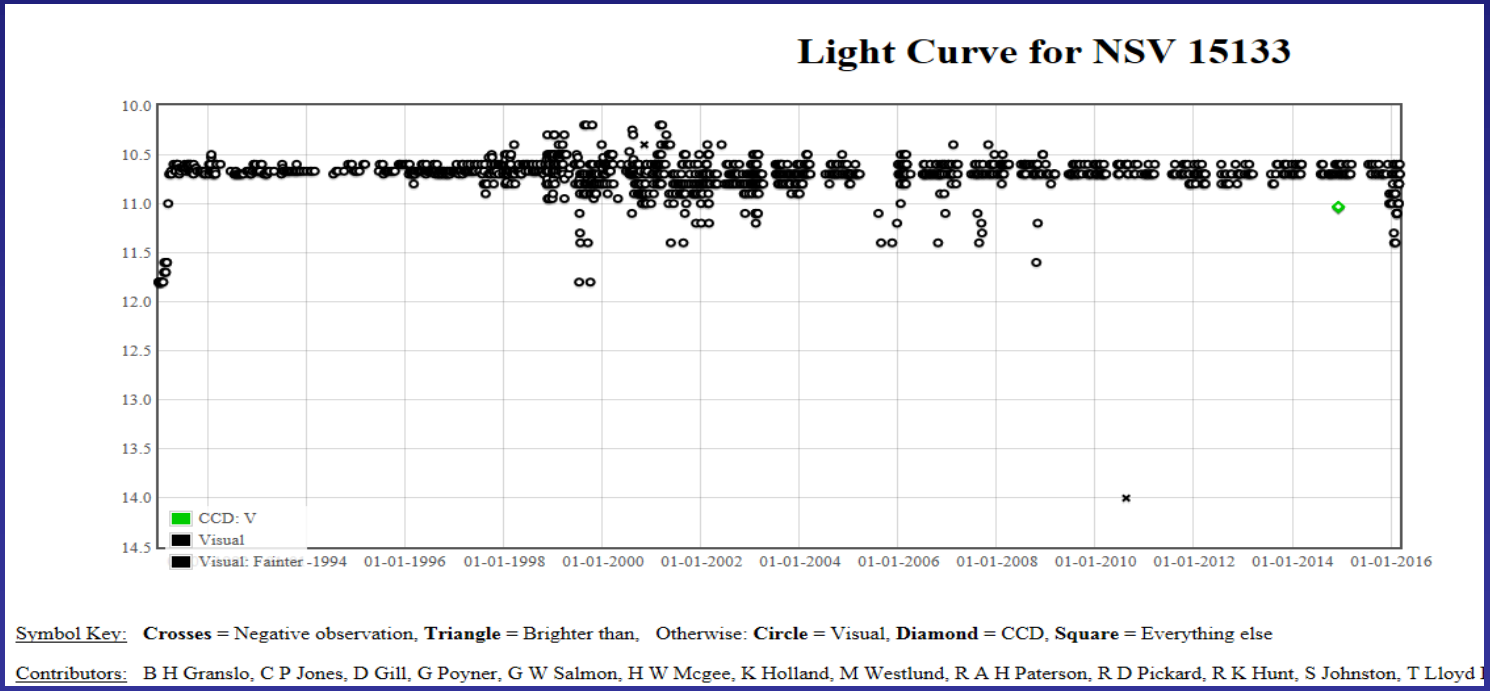
Charts and Sequences 2016

Identity	NSV	Const	Chart	Sequence Quality
TAV 0033 +53	15133	Cas	BAA 298.01	Good
V720 Cas		Cas	BAA 289.01	V Good
TAV 0216 +48	15486	And	Draft 2 Feb 08	Poor
TAV 0346 +38		Per	BAA 307.01	Good
CC Cam		Cam	BAA 299.01	Good
V1258 Tau	2249	Tau	Hendon	V Good
TAV 0559 +06		Ori	BAA 308.01	Good
TASV 0626 +34	16874	Aur	BAA 321.01	Good
TAV 0714 +17		Gem	BAA 319.01	Good
J0712 +296		Gem	BAA 318.01	Good
TASV 1812 +40	24346	Her	TA 001223	Poor
NSV10836	10836	Her	TA 900717	Poor
Q1992/076		Her	BAA 322.01 Draft 1Mar 2010	Fair
V2303 Oph		Oph	BAA 282.01	V Good
V335 Vul		Vul	BAA 280.01	Good
TAV 1933 +53		Cyg	TA 910202	Poor
V1717 Aql (TASV 1946 +00)	24987	Aql	BAA 281.01	V Good
TAV 2034 +61	25186	Cep	BAA 291.01	Good
NSV13806	13806	Cyg	CPJ draft 1 Feb 07	V Poor
TASV 2204 +59	25835	Cep	TA990418	Poor
NSV14687	14687	Cep	CPJ190202	V Poor

NSV 15133

Decent data set (thanks to Gary!) but with few obvious fading events of the GCas type.

Noticeable increase in scatter in proportion to the number of observers.



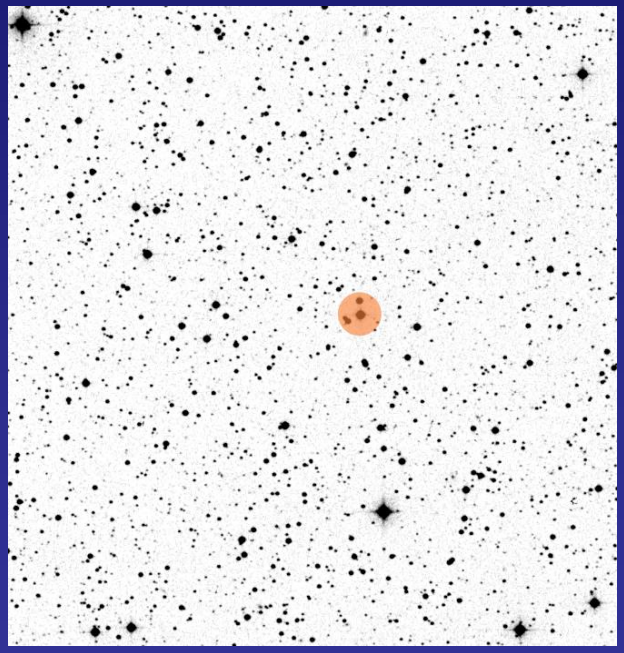
V720 Cas

Identity query resolved, V720 Cas is GSC 3655.1254

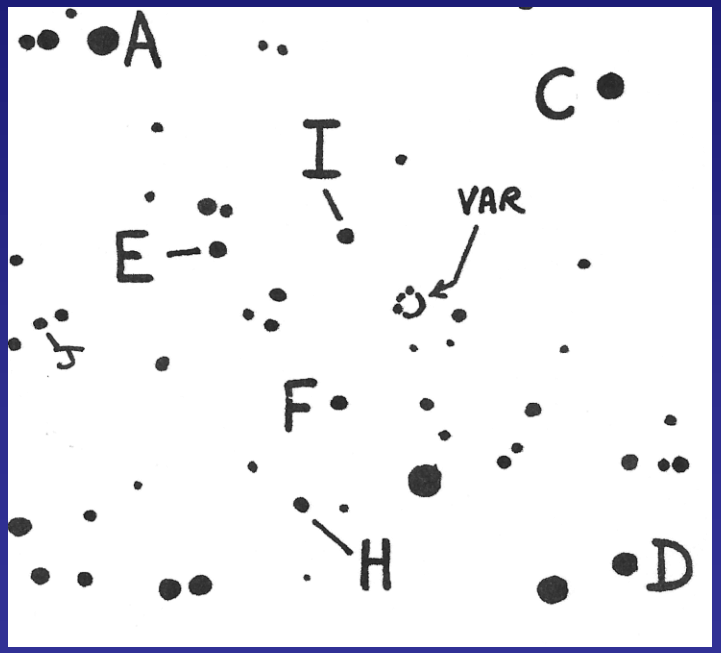
Programme objectives - Identification

V720 Cas

DSS V band image



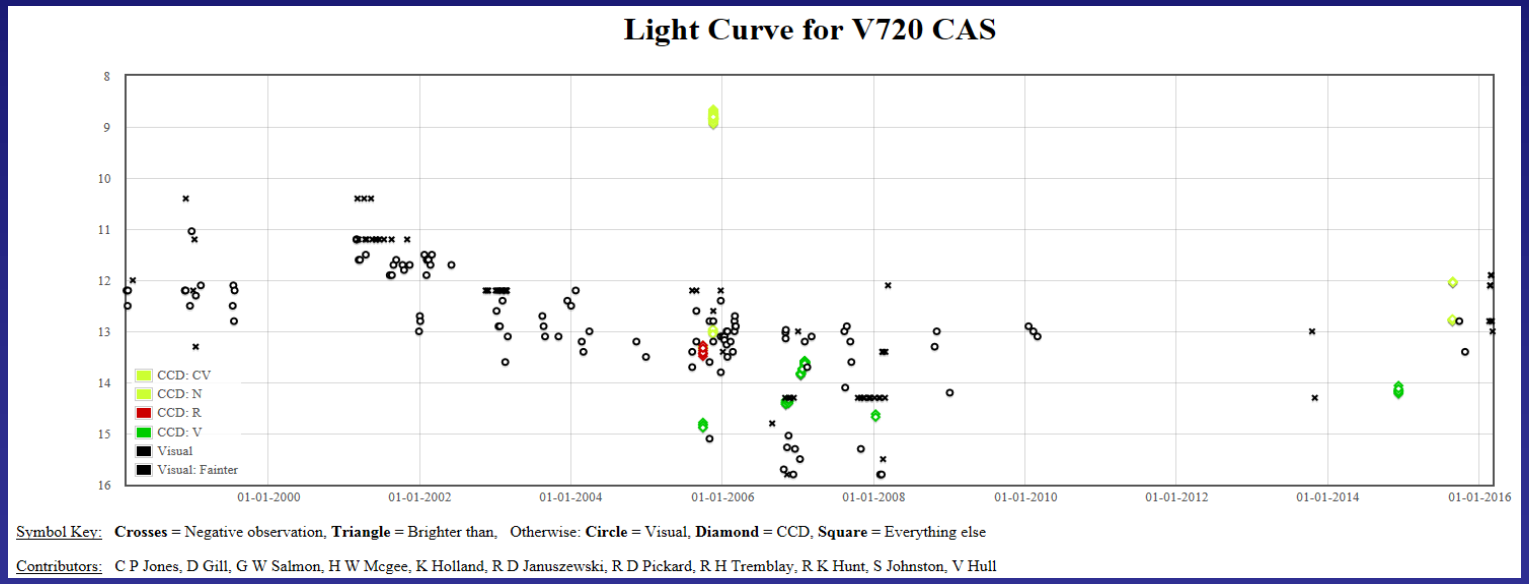
TA Chart



GSC 3655.1254 = V720 CAS

V720 Cas

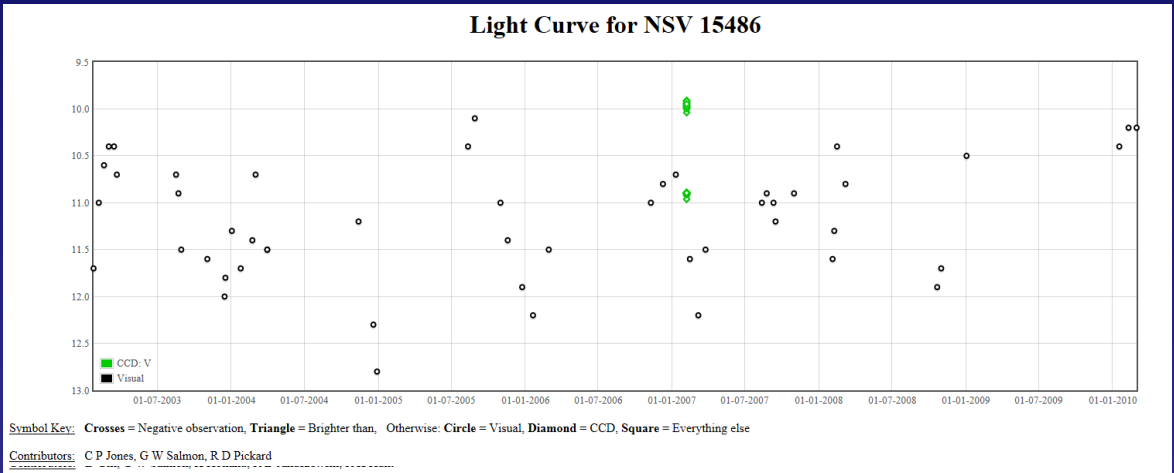
Identity query resolved, V720 Cas is GSC 3655.1254
Current VSX/GCVS entry is SR, 9.6 to 12.5 (no period given).



The extreme range 11.0 to [15.8 likely to be a Mira with a short(ish) period.

NSV 15486 = TAV 0216+48

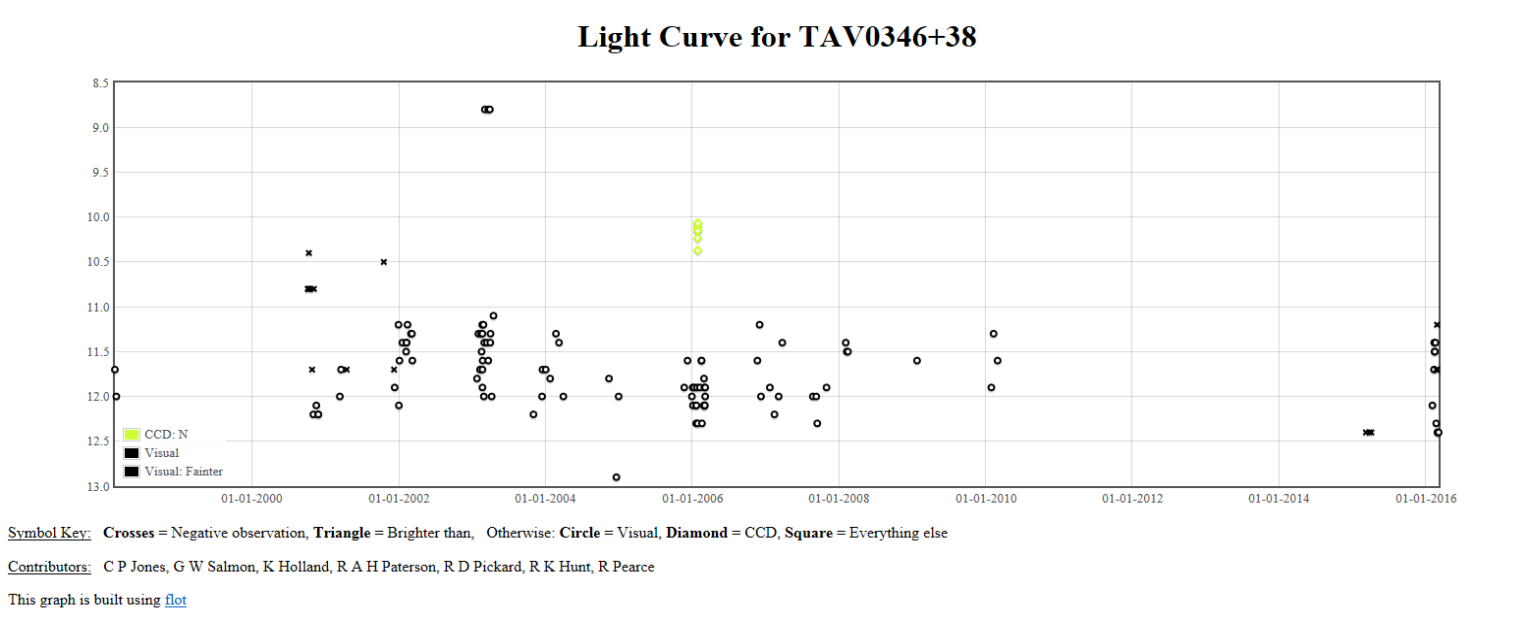
Current VSX entry is LB, 9.5 to 10.5, period 368d.



BAA data range 8.5 to 12.7 not enough data to get a reliable period.

TAV 0346+38 Per

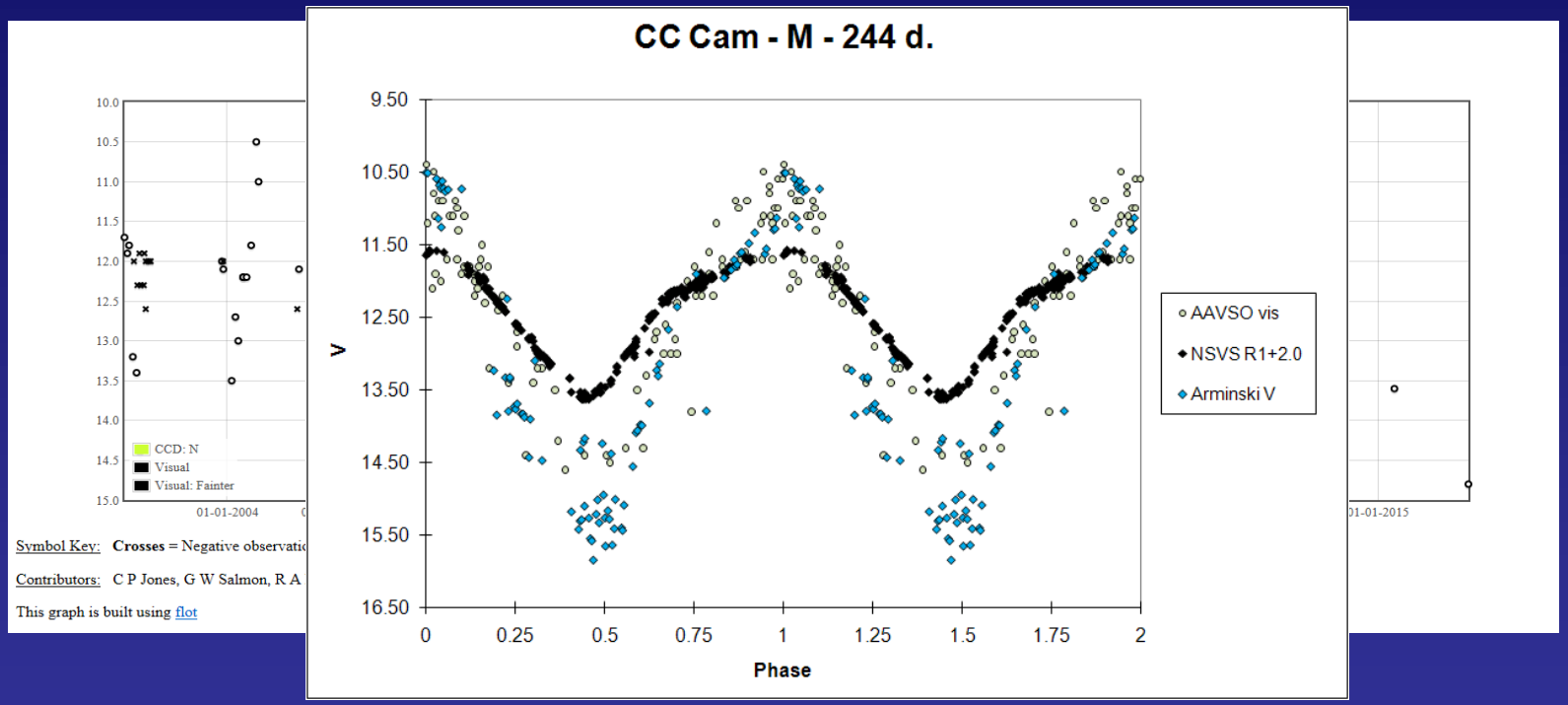
Not currently listed in the VSX, the nearest listed variable is 20 arc min away and an EA type



The range 10.5 to 12.6. Big gap in the data, no period discernible to Peranso

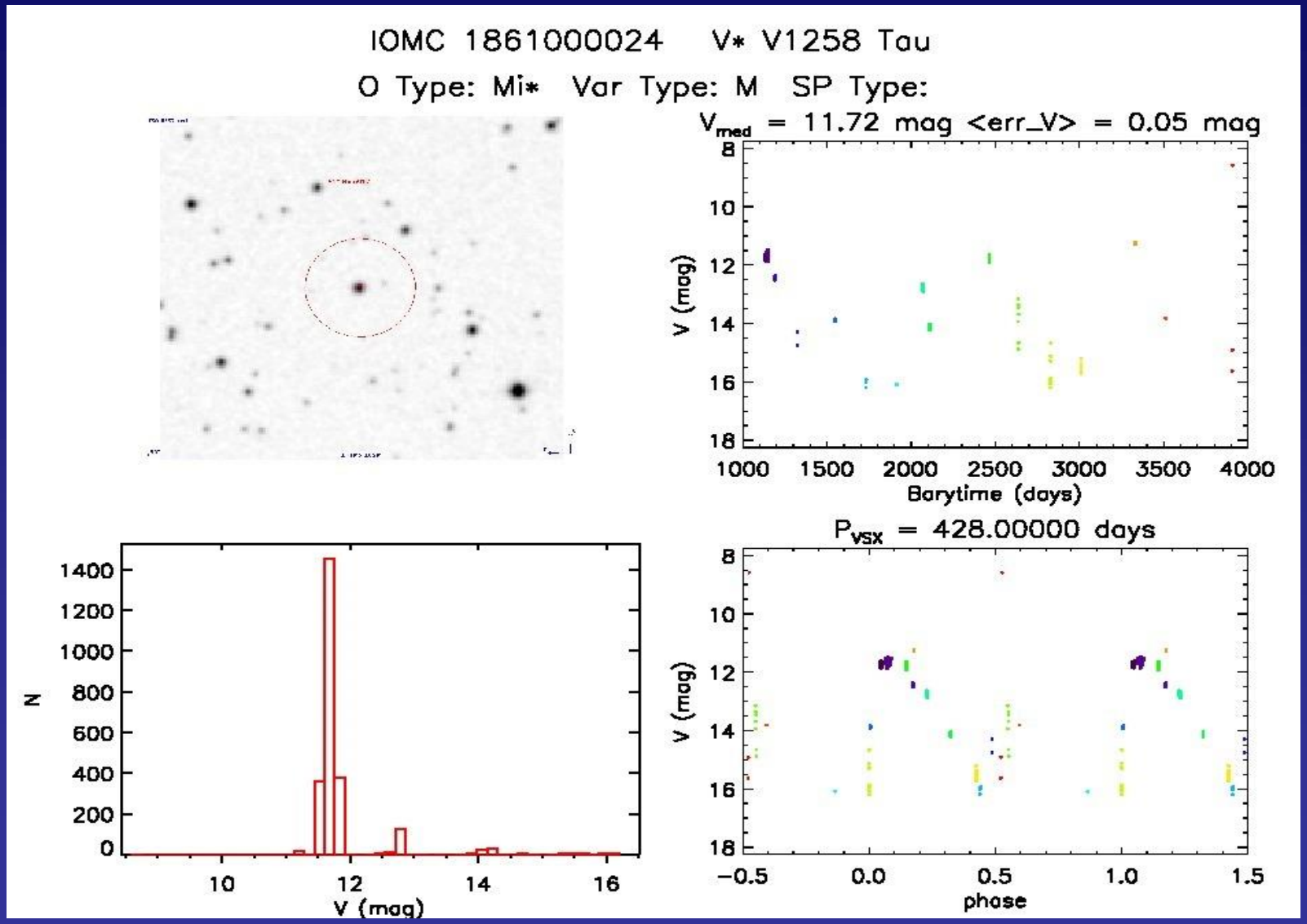
CC Cam

VSX updates the GCVS entry to Mira 10.5-15.8, period 244d



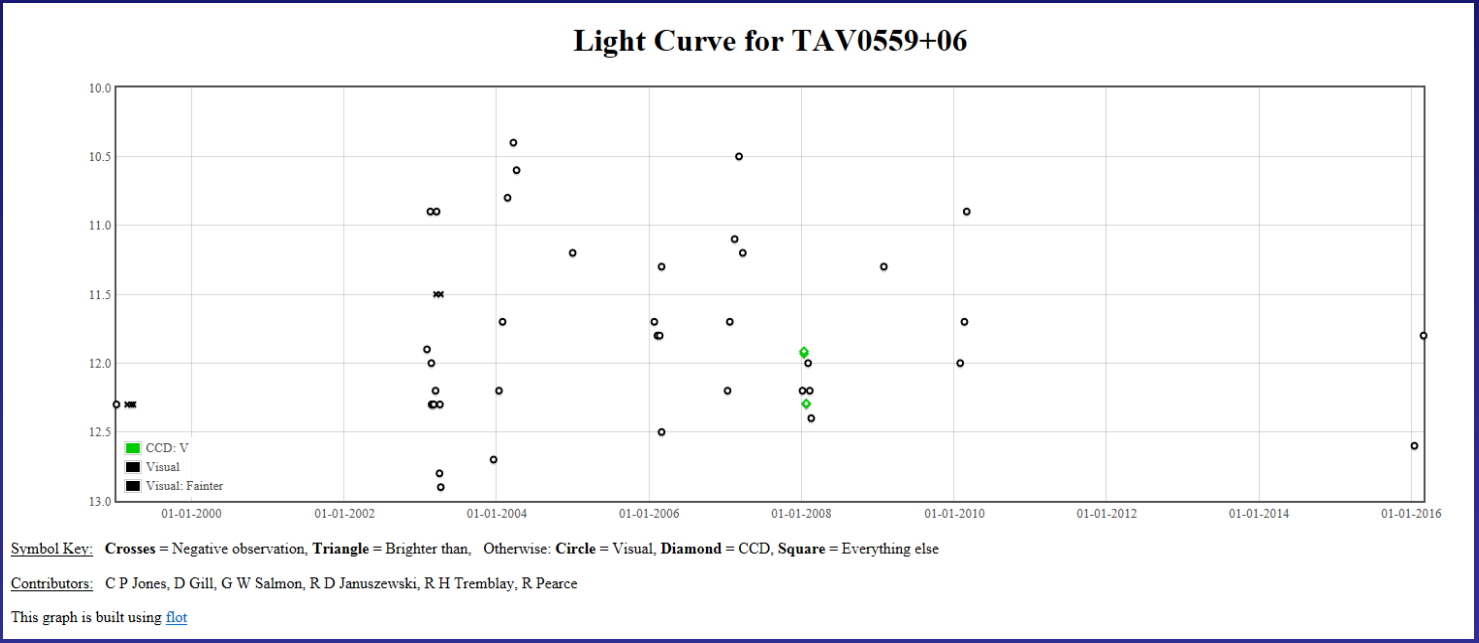
Peranso finds a weak period of 246d in the BAAVSS dataset

V1258 Tau = NSV2249



TAV 0559+06

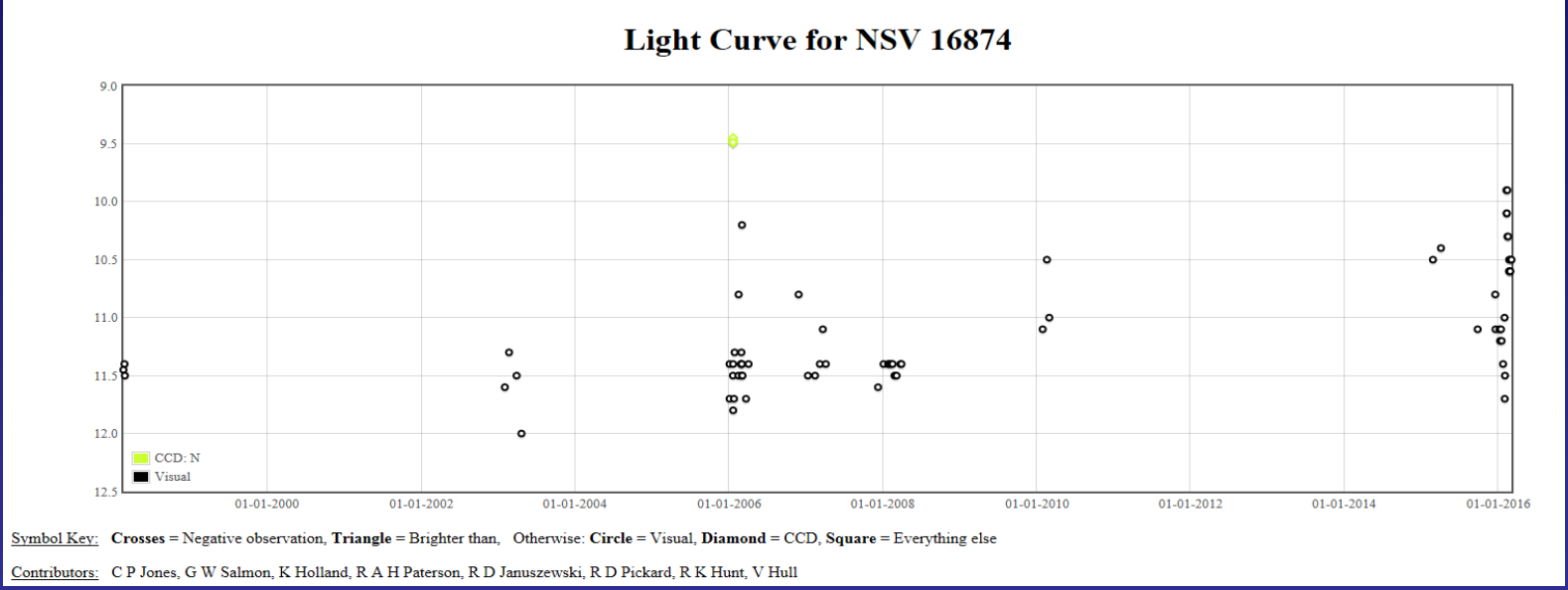
VSX has SRA 10.3-12.5, period 228d. Close 15th mag companion is noted.



The older observations are affected by a poor TVMSA sequence.

NSV 16874 = TASV 0626+34

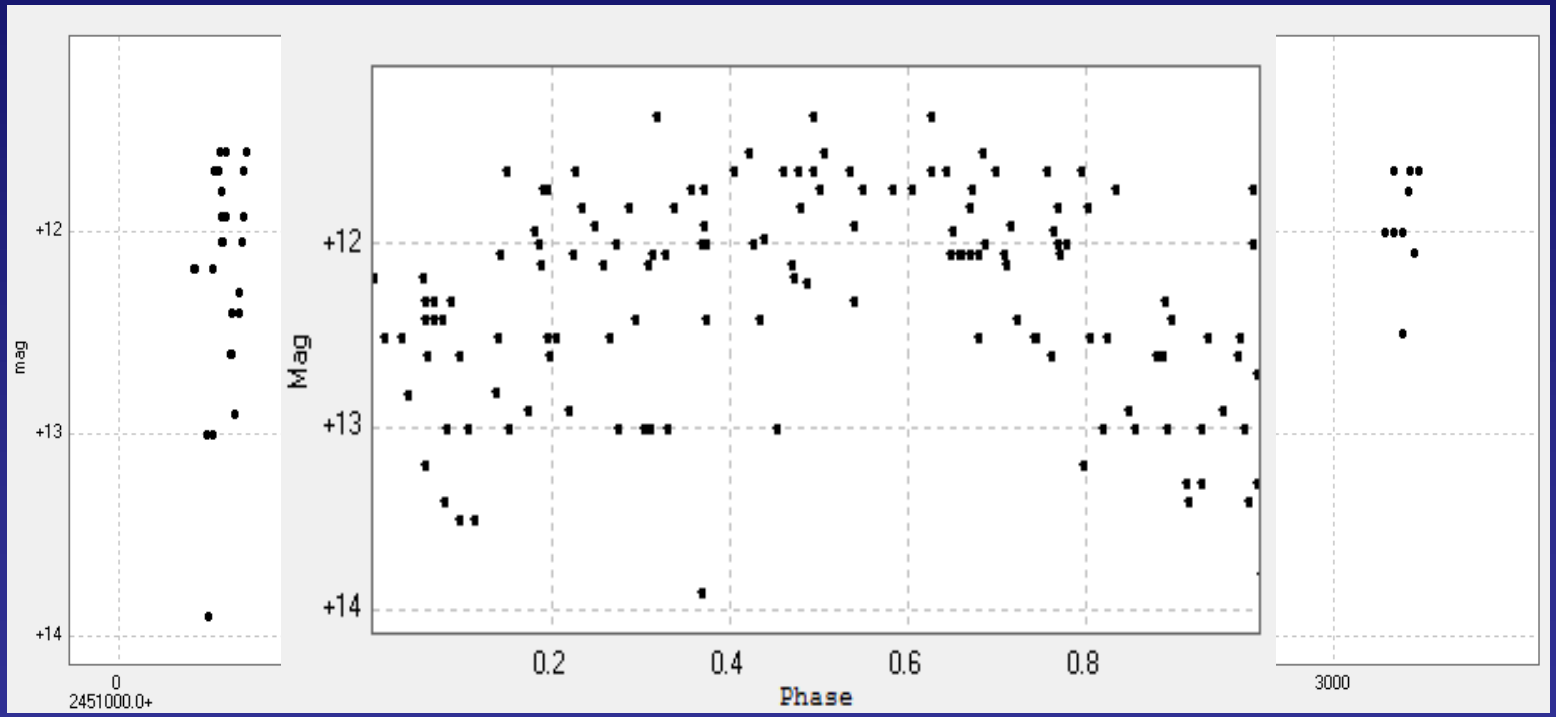
VSX has no information beyond the original TA announcement



The older observations are affected by a poor TVMSA sequence.

J0712 +296

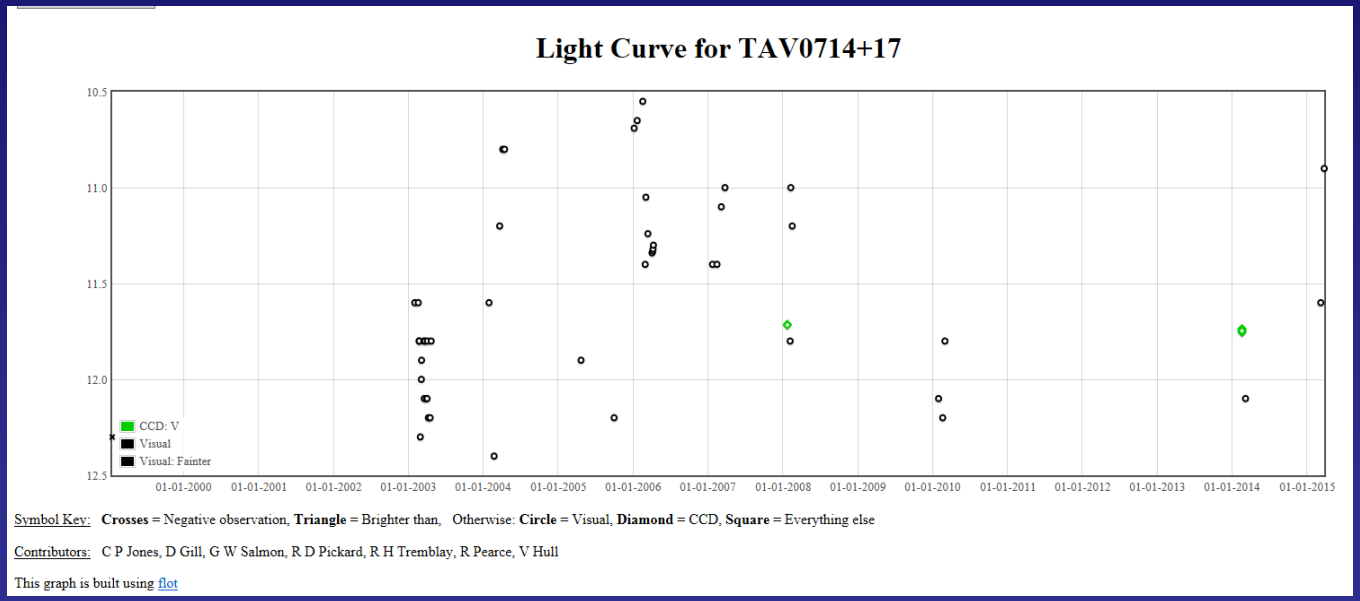
VSX has analysis by Otero of ASAS data type L, range 1.7 mag, period 109d



Peranso analysis of the BAA data suggests a period of 105.8d, Range 11.3 -13.8 Type.. L/SRa/M

TAV 0714+17

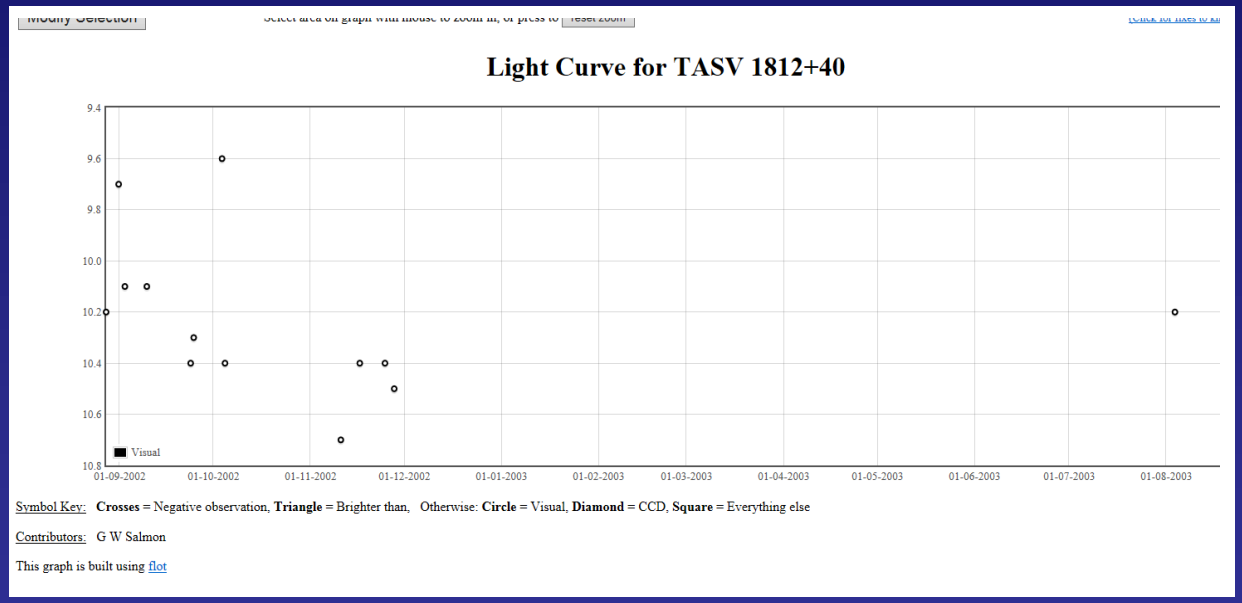
VSX has analysis by Otero (2008) SRB, 10.3-12.1 periods 96d (dominant), 73d, 173d, 328d



Persano suggests a period of 305d but the other periods are lost for lack of data.

NSV 24346 = TASV 1812+40

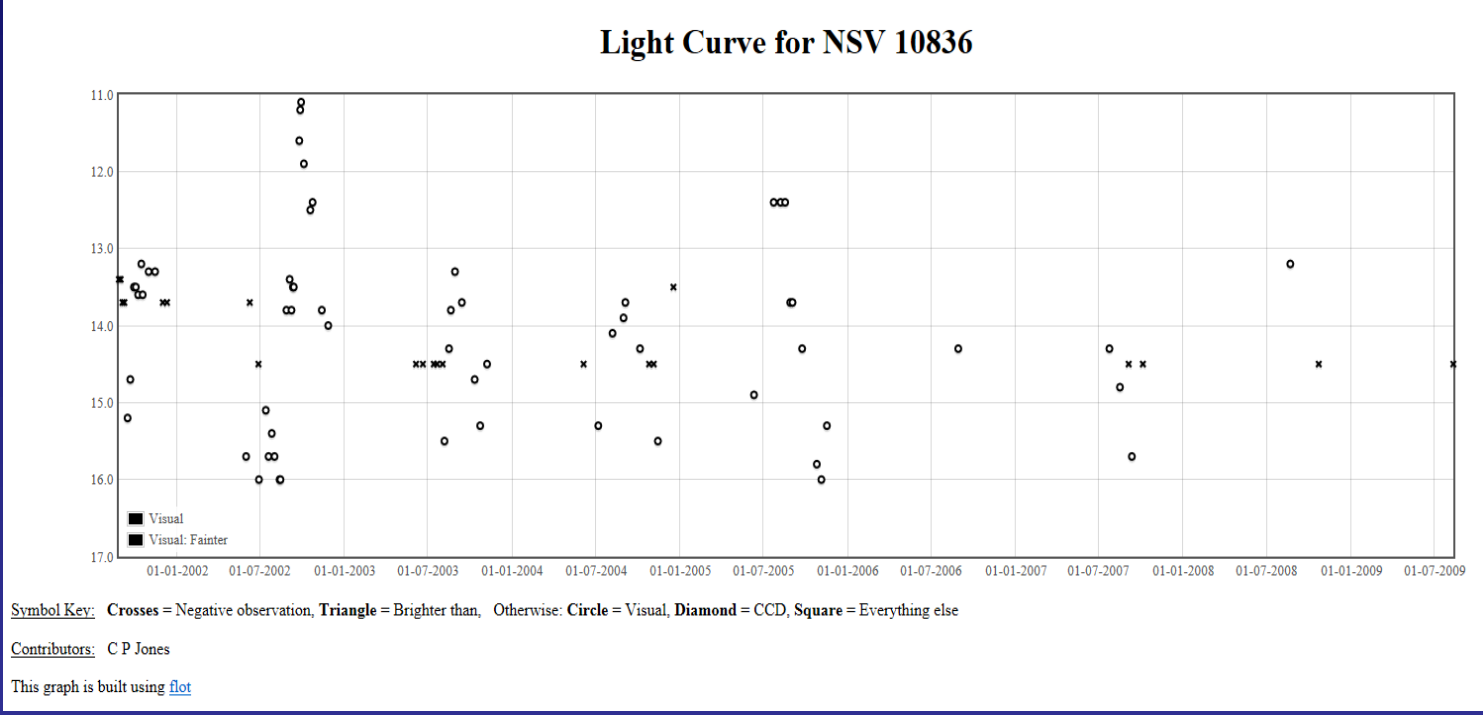
VSX has LB: 9.6-10.3p based on initial TA report and Wozniak (2004)



More observations needed!

NSV 10836

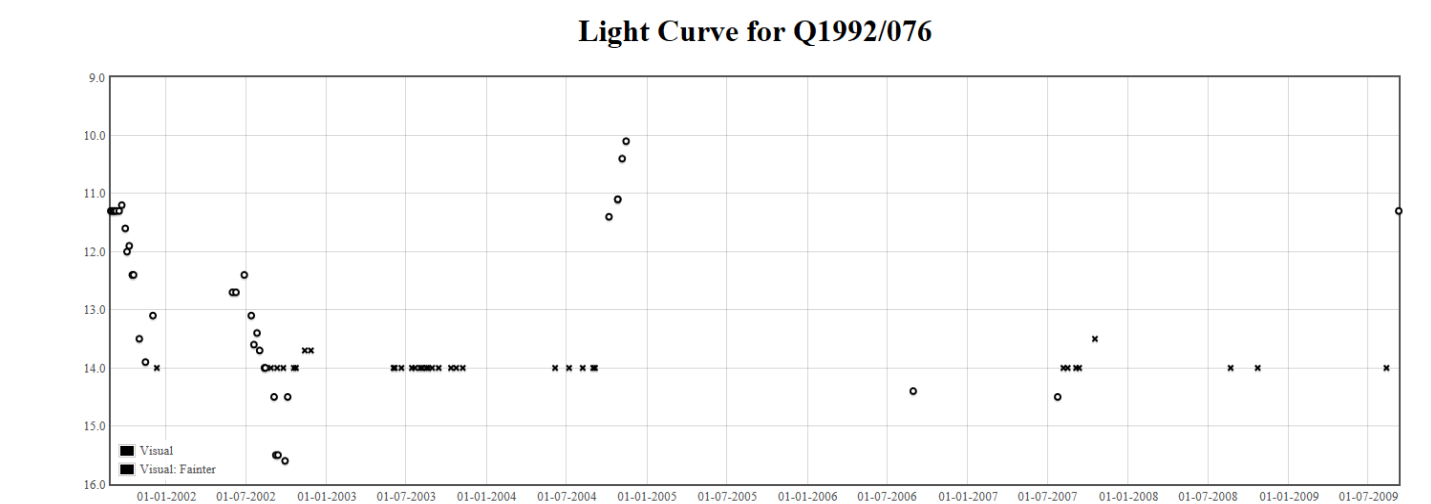
VSX has SRa: 11.6-14.6, period 129d (Wozniak (2004))



There range is almost certainly wrong and Peranso finds no trace of the 129d period claimed. More data and better sequence needed.

Q1992/076

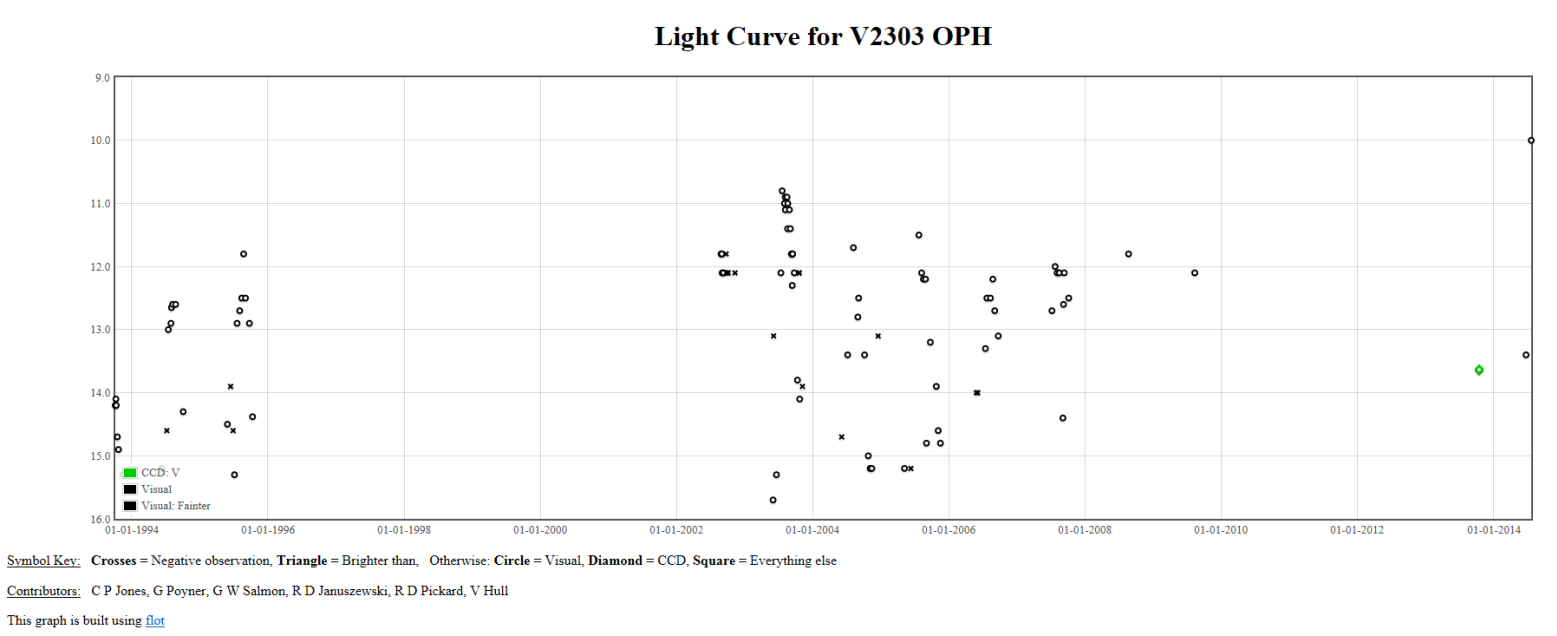
VSX has M range10 -<15.9 period 329d (Wozniak (2004))



Peranso suggests a period of 327d. A better sequence, chart and more data would assist.

V2303 Oph

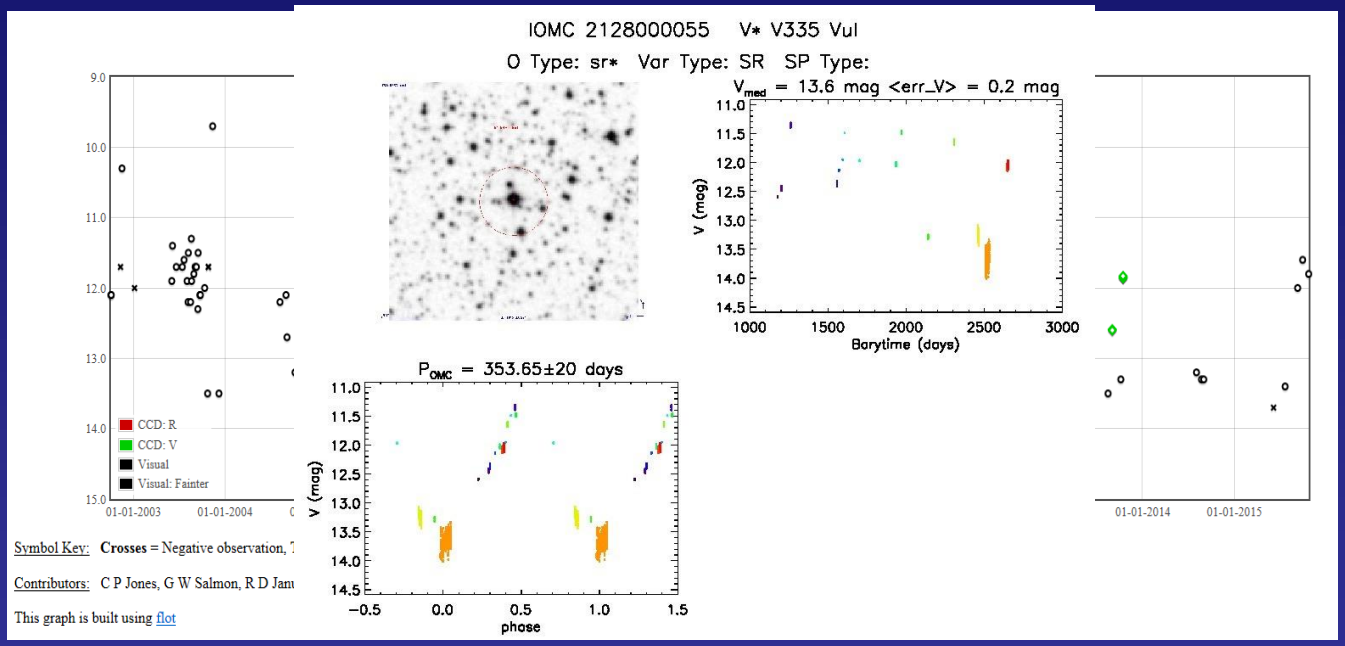
GCVS has SR range11.1-12.5



A Peranso analysis does not reveal any strong period candidates.

V335 Vul

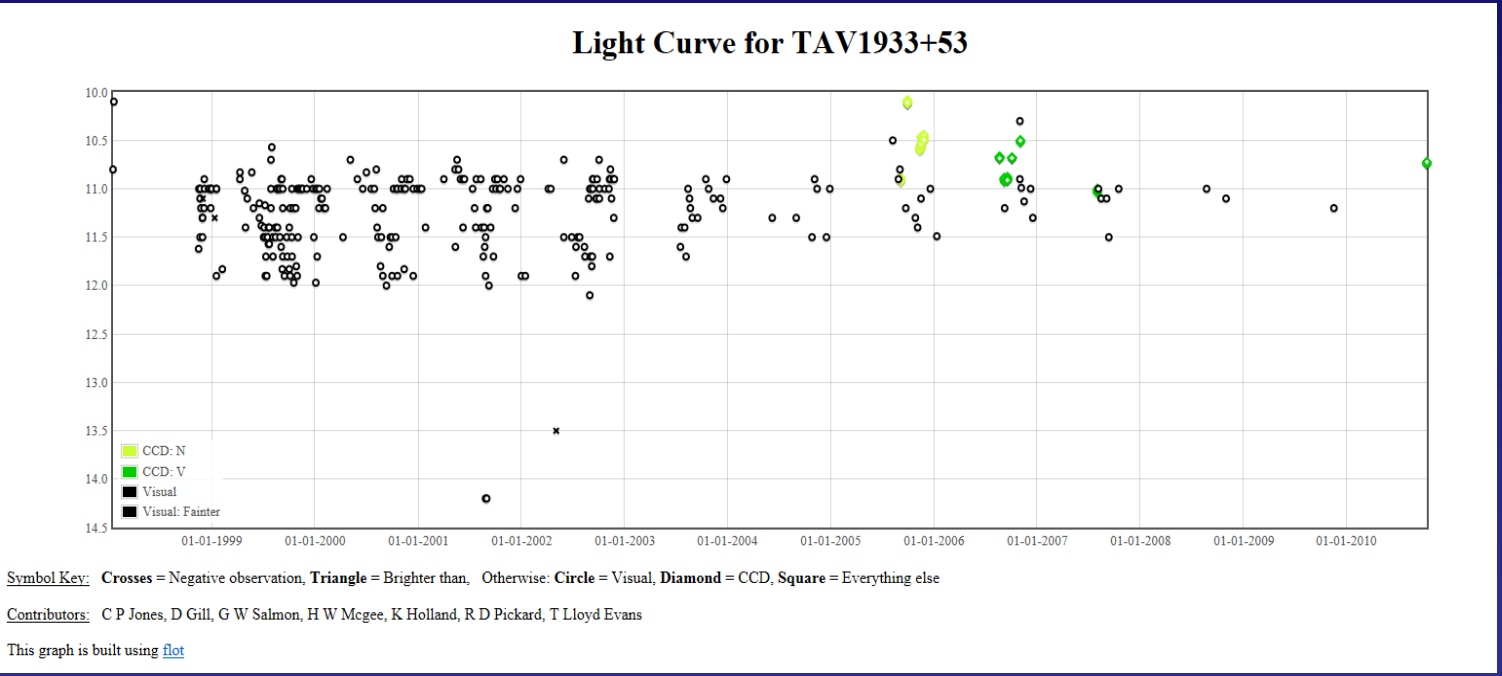
The INTEGRAL-OMC catalog (Alfonso-Garzon et al, 2012) proposes Mira range 11.9 – 13.9 period 353d



A Peranso analysis of BAAVSS data also indicates a 353d period with a slightly larger extreme range.

TAV 1933+53

Not in VSX and no candidate within 20 arcmins



The TVMSA sequence isn't helpful and needs to be replaced. No periods found by Peranso.

V1717 Aql = NSV 24897

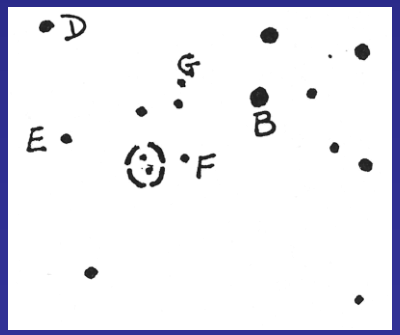
GCVS entry corrects the NSV designation and correctly identifies it as “SW component of close pair”

Programme objectives - Identification

Resolution of the true identity of the variable where it is not uniquely known.

TAV1946+00 = NSV 24897

GSC 480.1824 = NSV 24897

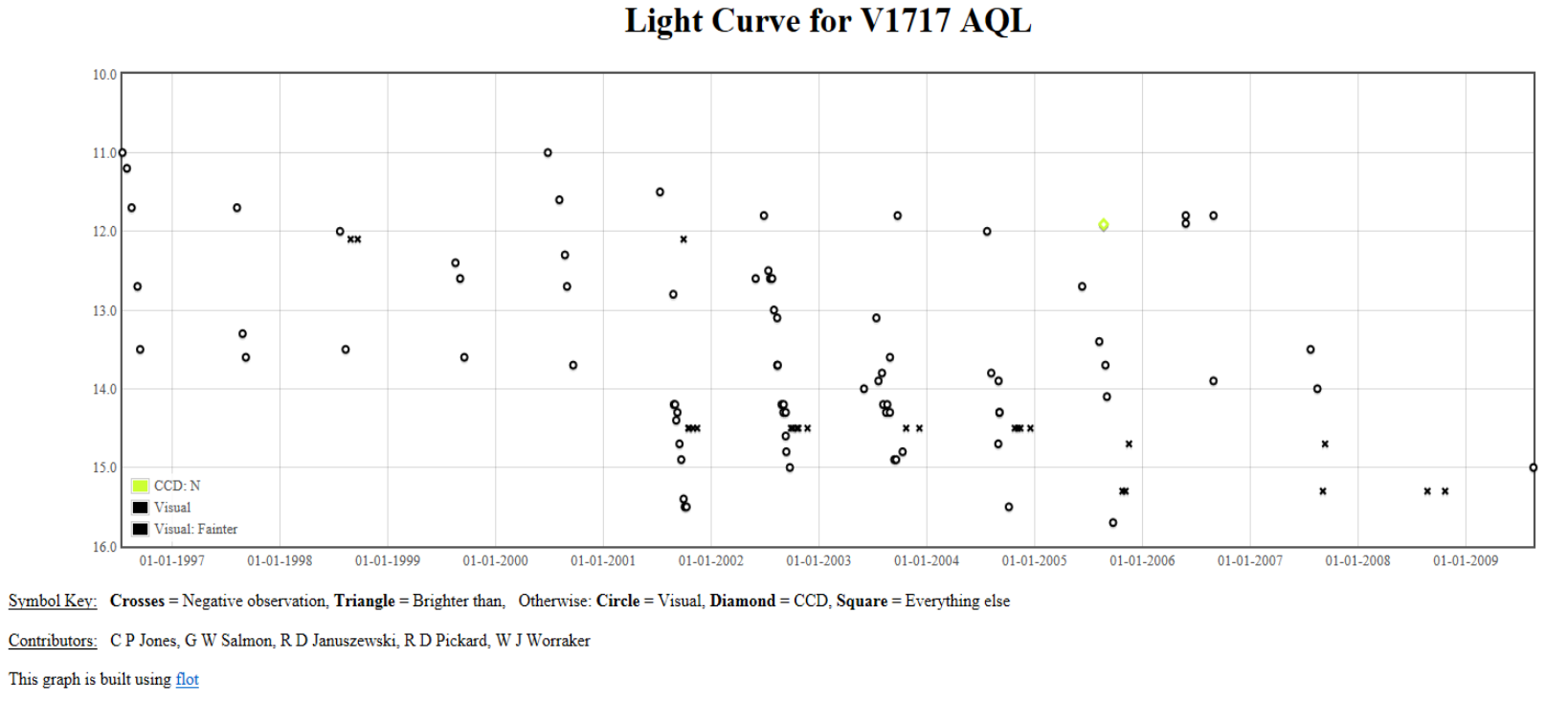


Actually it is GSC 480.1811
44 arcseconds north.

Image – Roger Pickard

V1717 Aql = NSV 24897

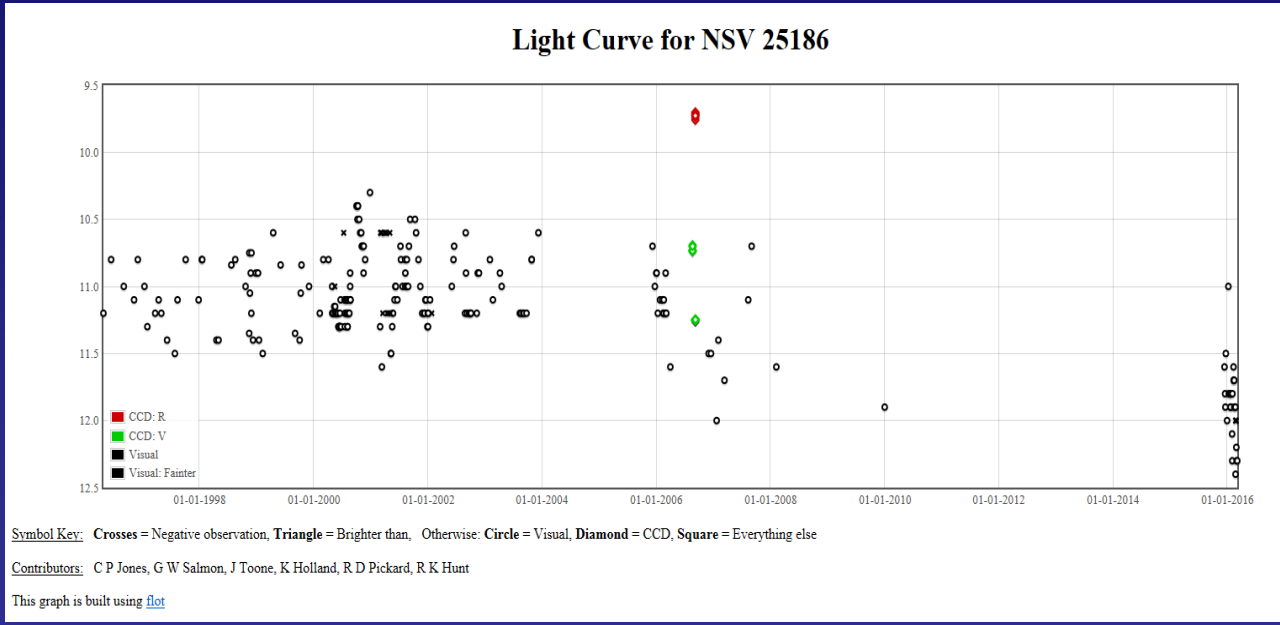
GCVS/VSX type M, range 11.3 to <16.3 period 361d



Analysis of the BAAVSS data gives a period of 348d.

NSV 25186

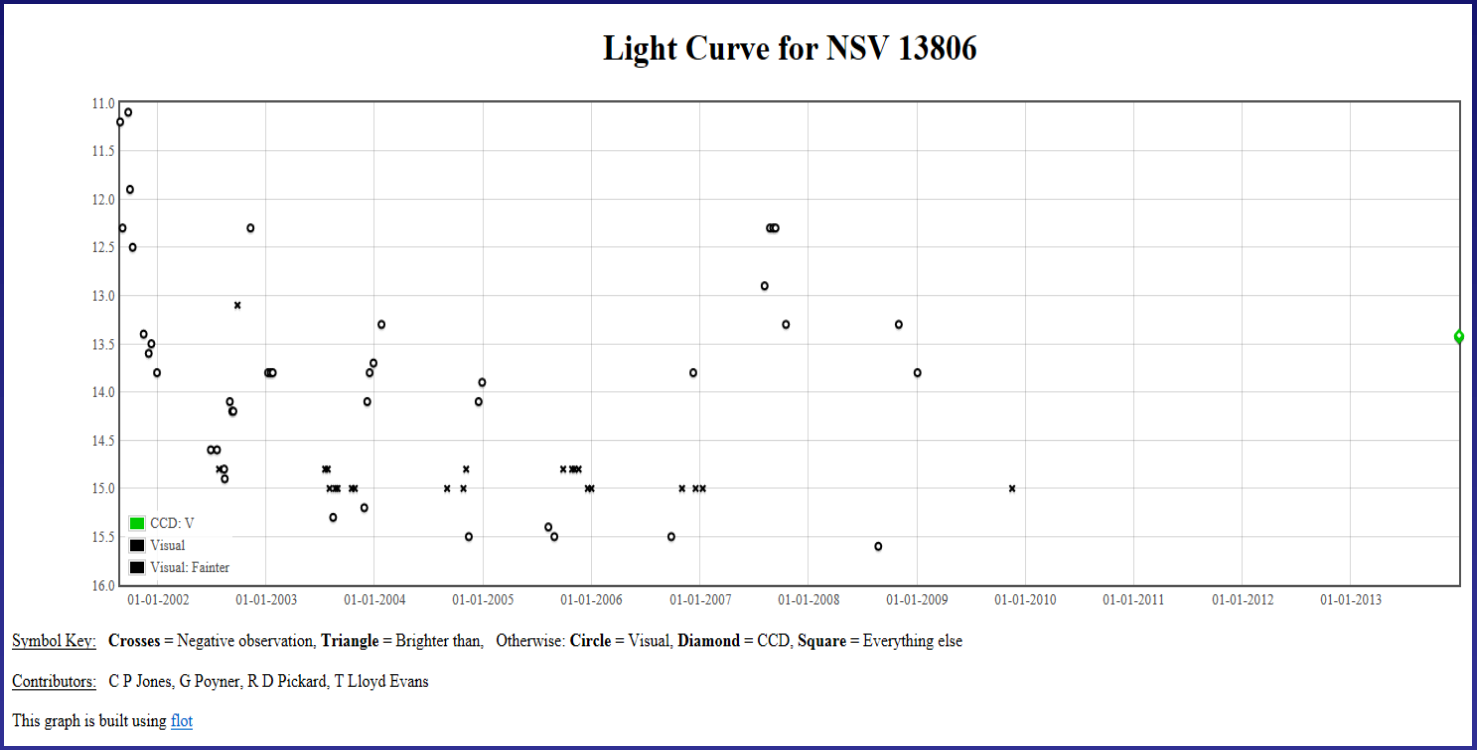
Otero (2012) based on analysis of ASAS and AAVSO data suggests type SRB, range 10.6 to 12.0 periods 250d and 300d



Contrast between observations pre 2015 and most recent needs to be investigated. Scatter in the older observations.

NSV 13806

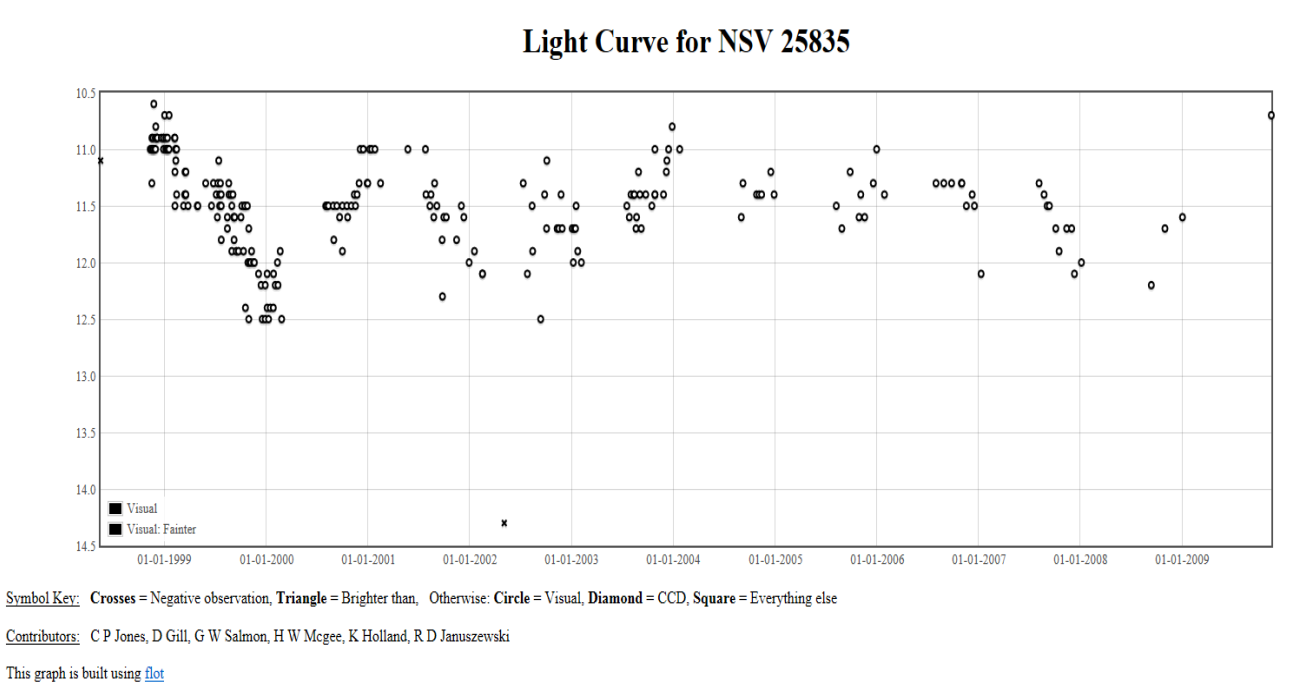
VSX information limited to TA announcement report



Poor GCVS based chart. Suggestions of a 430d period but the phase plot is far from convincing. Needs everything!

NSV 25835 = TASV 2204 +59

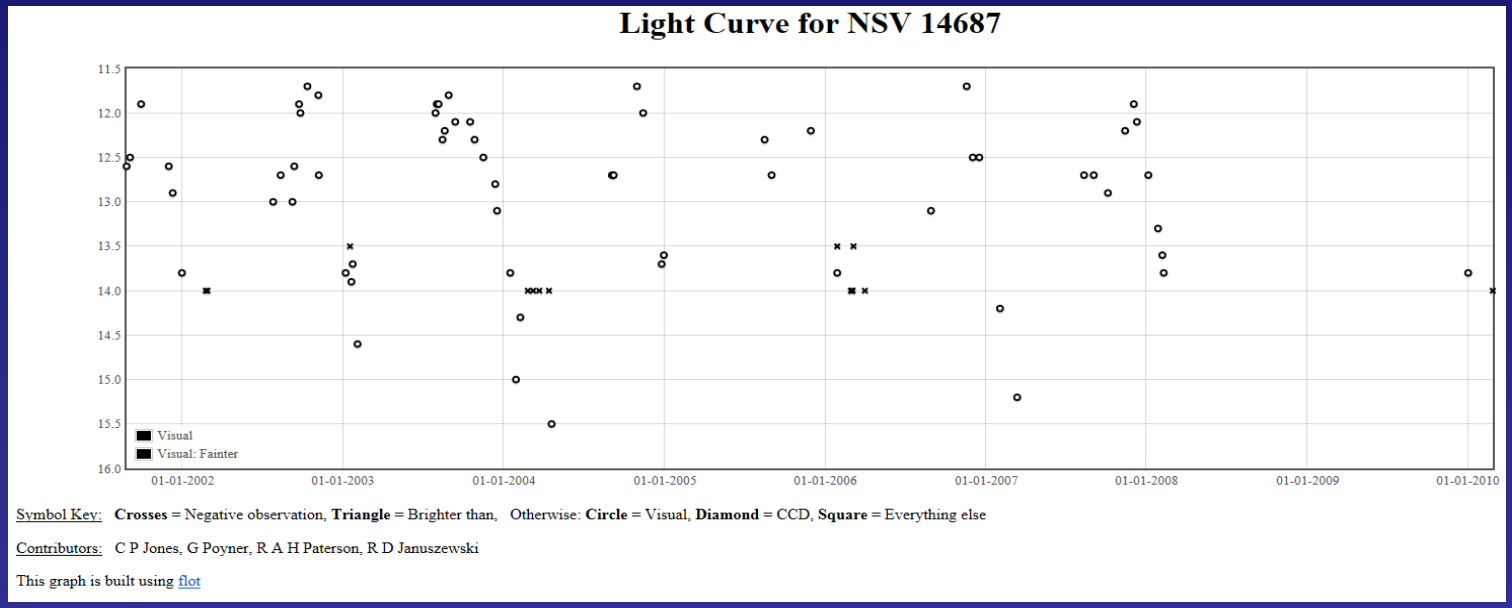
VSX information limited to TA announcement report



Poor GCVS based chart. Suggestions of 1000d period and SRB type behaviour. Needs a better sequence and further analysis.

NSV 14687

Wozniak et al (2004) propose Mira, range 11.2 to 15.5, period 700d. Based on the vis data Otero(2013) suggests 369 days.



Analysis in 2008 and 2011 of the BAAVSS data was indicating a period of 371d and a similar range. Sequence is very poor based upon the GSC.

What can I do?

CCD equipped observers.

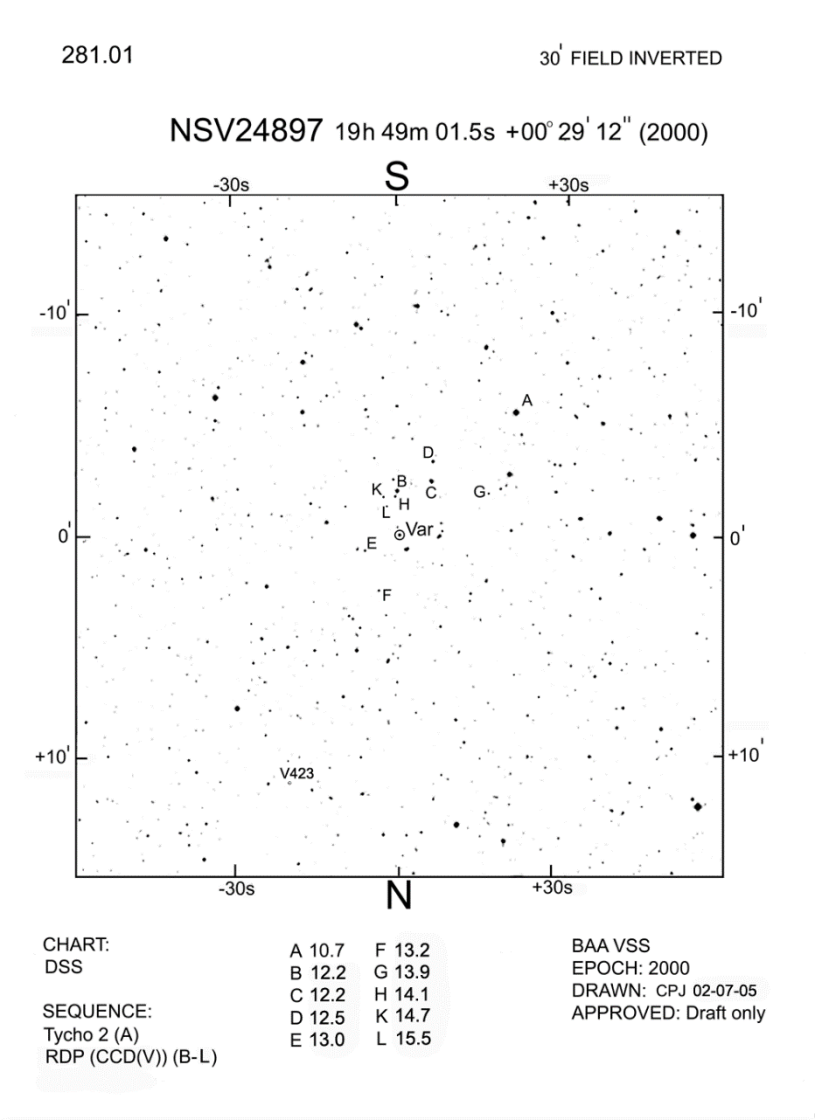
Photometry to assist with the preparing sequences and hence charts.

Observation of low visual amplitude very red objects (e.g. TAV 1933+53).

Occasional imaging of objects at max and min (e.g. V720 Cas, Q1992/076).

Detection of true minimum magnitude (e.g. V1258 Tau, NSV 24897).

Identifying objects with strong red excess (e.g NSV 14687).



What can I do?

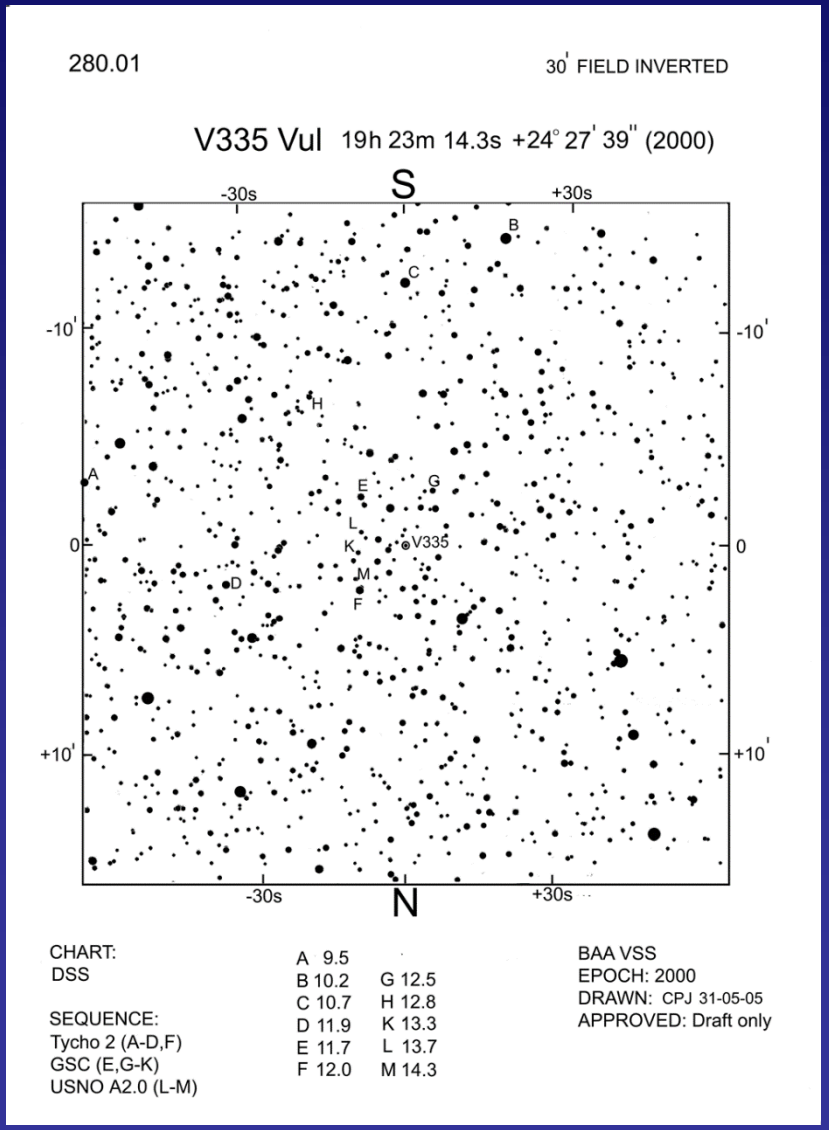
Visual observers.

Assist with the checking of sequences and charts.

Add one or two objects to your observing programme.

Analysts.

Reviewing the data, feedback to the observers and preparing papers.



What can I do?

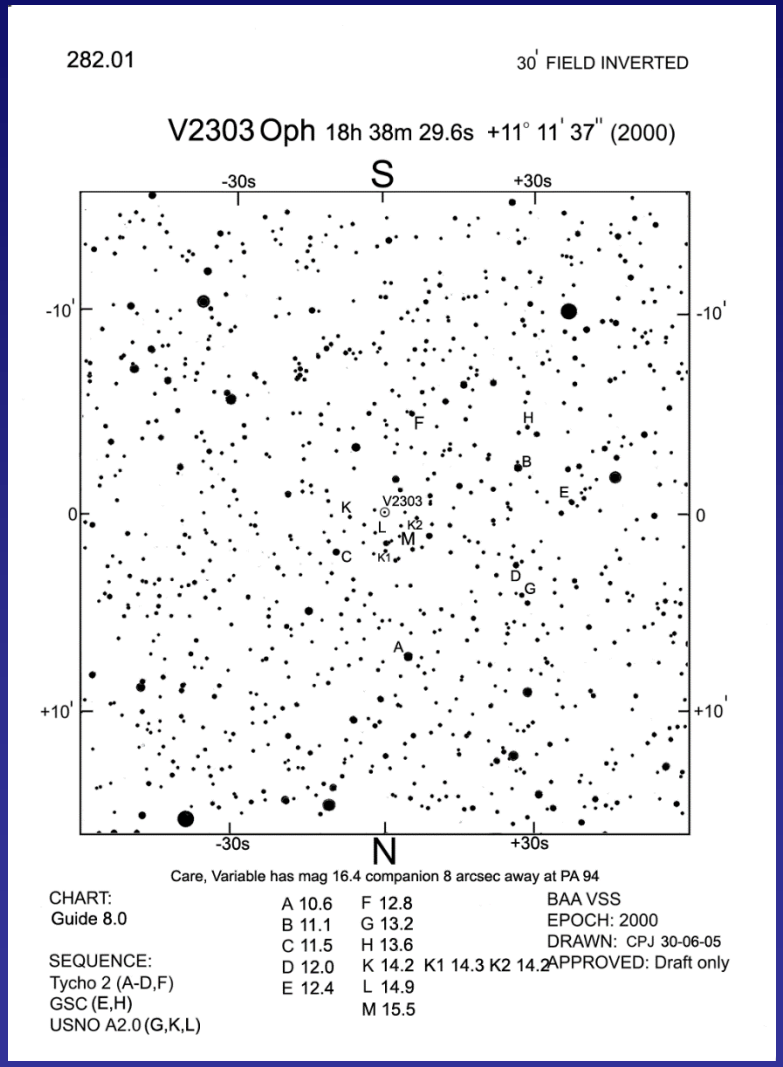
General comments.

Not necessary to observe intensively, but the longer you continue to observe them the better.

Please keep up to date with Charts and Sequences.

Let me know what you've added to your programme – cpj@cix.co.uk.

Copies of observational data in either TA format:
Date Magnitude Initials
Or BAA format by email would be appreciated.
BUT NOT HUGE IMAGES PLEASE!



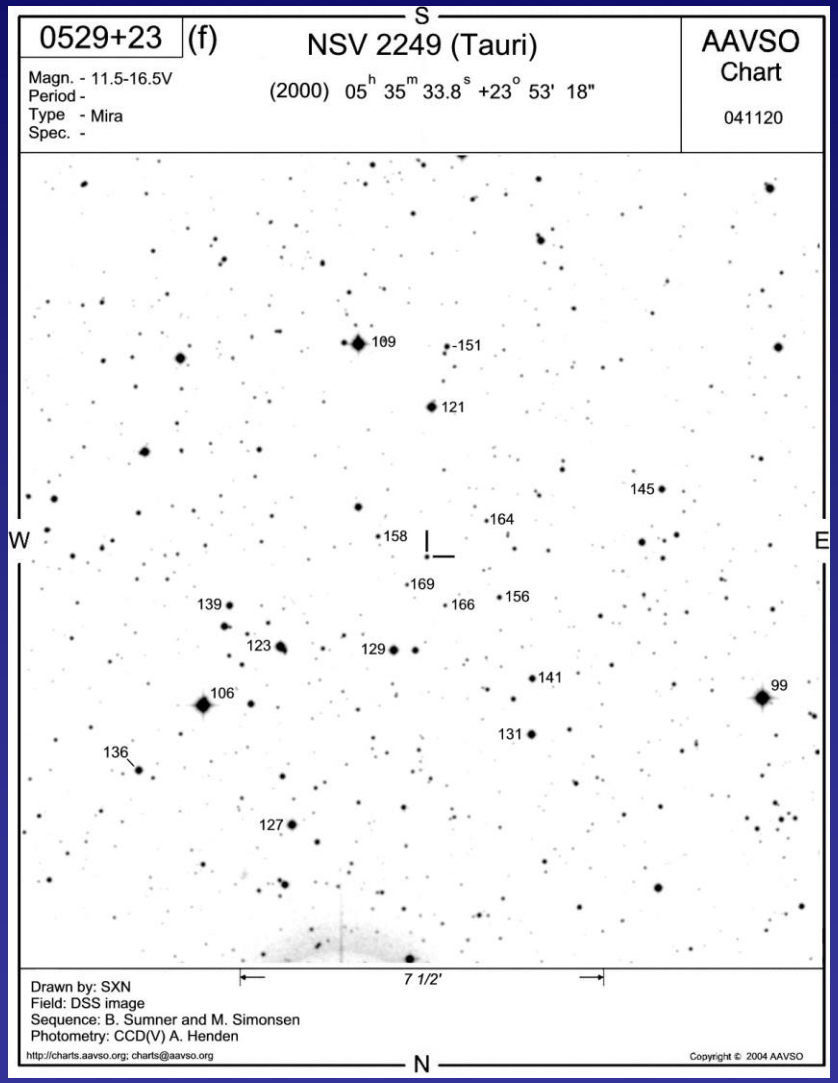
ICCE Programme 2016 -

And finally……..

The initial list of 21 targets is the tip of a very large ICCEberg.

TA lists over one hundred and fifty of Mike Collins's discoveries.
The vast majority need something done on them for a definitive GCVS entry.

Questions?
Queries?
Comments?



ICCE programme updated 2016.

Identity	NSV	Const	J2000 RA	J2000 Dec	Range Max	Range Min	Notes	Chart/seq quality
TAV 0033 +53	15133	Cas	00 36	+59 40	10.3	11?	GCAS	BAA 298.01
V720 Cas		Cas	00 45	+53 26	10.0?	<16?	Mira?	BAA 289.01
TAV 0216 +48	15486	And	02 19	+48 14	8.5	<13?	LB?	BAA Draft 2 Feb08
TAV 0346 +38		Per	03 49	+38 47	10.3	12.2	C Star	BAA 307.01
CC Cam		Cam	04 57	+69 27	10.5	15.8	Mira 244d	BAA 299.01
V1258 Tau	2249	Tau	05 35	+23 53	11.6	[16	Mira 428d??	Hendon
TAV 0559 +06		Ori	06 02	+06 38	10.3	12.5	SRa? 228d?	BAA 308.1
TASV 0626 +34	16874	Aur	06 29	+34 42	9.8	11.9		BAA 321.01
J0712 +296		Gem	07 12	+29 38	11.3	13.8	L? 109d??	BAA 318.01
TAV 0714 +17		Gem	07 17	+17 54	10.3	12.1	SRB? 96d??	BAA 319.01
TASV 1812 +40	24346	Her	18 14	+40 26	9.5	10.3	360d?	TA 001223
NSV10836	10836	Her	18 28	+15 42	11.6	14.6	SRa? 129d?	TA 900717
Q1992/076		Her	18 29	+15 16	10	[16	Mira 329d?	BAA 322.10 draft10
V2303 Oph		Oph	18 38	+11 11	10.8	[16	Mira?	BAA 282.01
V335 Vul		Vul	19 23	+24 30	11.9	13.9	C Star, Mira 353d	BAA 280.01
TAV 1933 +53		Cas	19 34	+53 53	10.3	12		TA 910202
V1717 Aql	24987	Aql	19 49	+00 30	11.3	[16.3	Mira 361d?	BAA 281.01
TAV 2034 +61	25186	Cep	20 35	+61 48	10.6	12	SRB? 250/300d??	BAA 291.01
NSV13806	13806	Cyg	21 36	+32 31	11.1	[16		CPJ Feb 07
TASV 2204 +59	25835	Cep	22 06	+59 30	10.1	12.5	SRB?	TA990418
NSV14687	14687	Cep	23 44	+71 46	11.2	15.5	Mira? 700d??	CPJ 190202