







1907.3

1906

**Prism**  
Used to disperse light into a spectrum.  
To discover more about these objects you can use the accession number to search on the computer or in the bound files, or have a look at a book.

1105



3156

3158

3153

3147



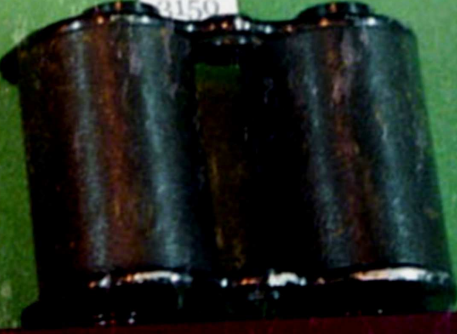
3154



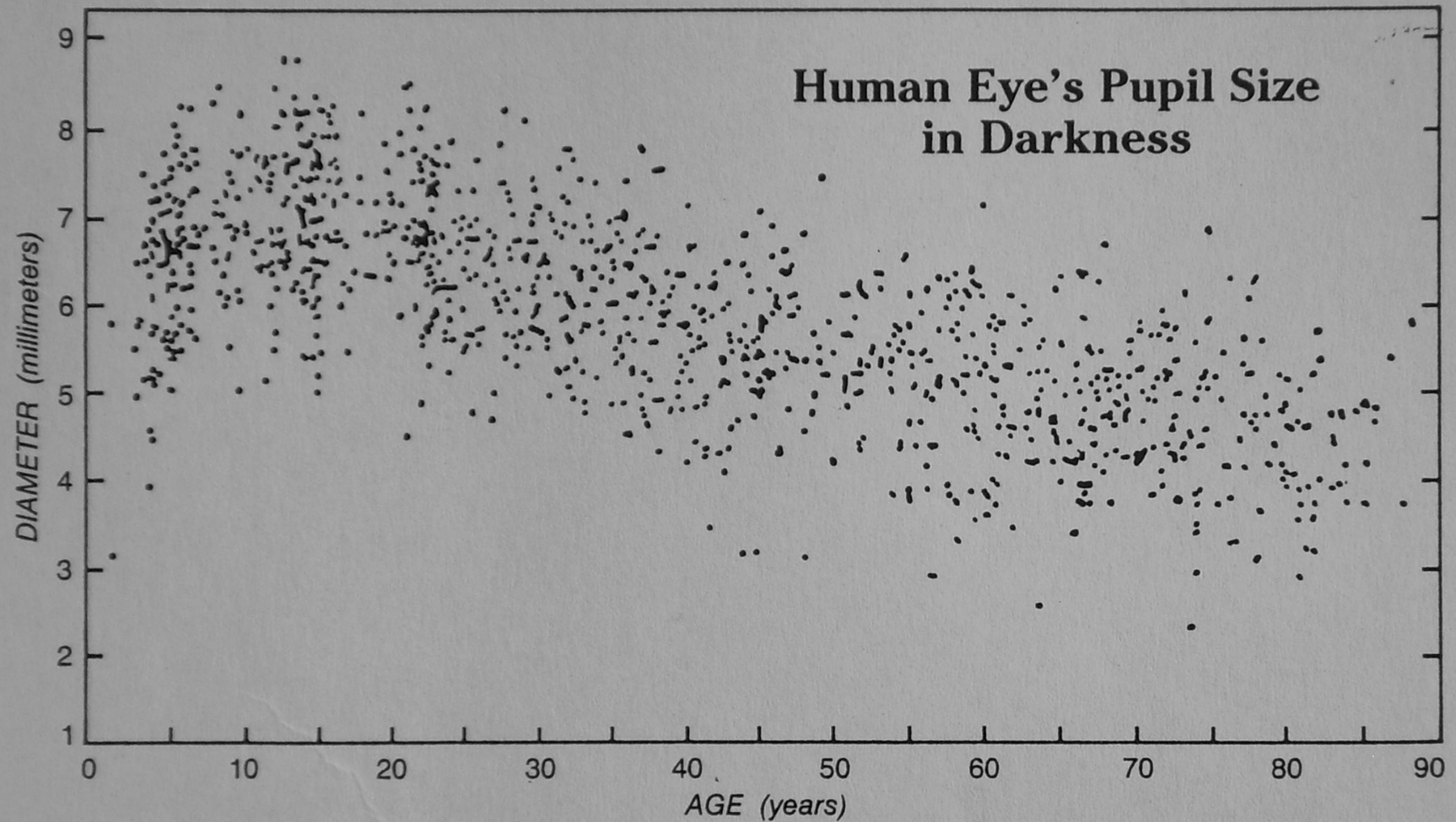
3155



3159







Over 1,200 people had their eyes measured to create this graph of pupil diameter versus age. Clearly, the conventional wisdom that the human eye opens to 7 millimeters in darkness is only a very rough average even for young people. Over age 50, a more realistic average is 5 mm. Which of these points would represent you? From a study by I. E. Loewenfeld published in *Night Vision* (National Academy Press, 1987).

## APERTURE (D)

mm &

**LIMITING Mag .**

mv

mv =

$$2 + 5 \log.D$$

mag.

at 90%

efficiency

**30mm**

**9.4**

**8.5**

**50mm**

**10.5**

**9.4**

**70mm**

**11.2**

**10.1**

**80mm**

**11.5**

**10.3**

**100mm**

**12.0**

**10.8**

**125mm**

**12.5**

**11.2**


**152mm**

**12.9**

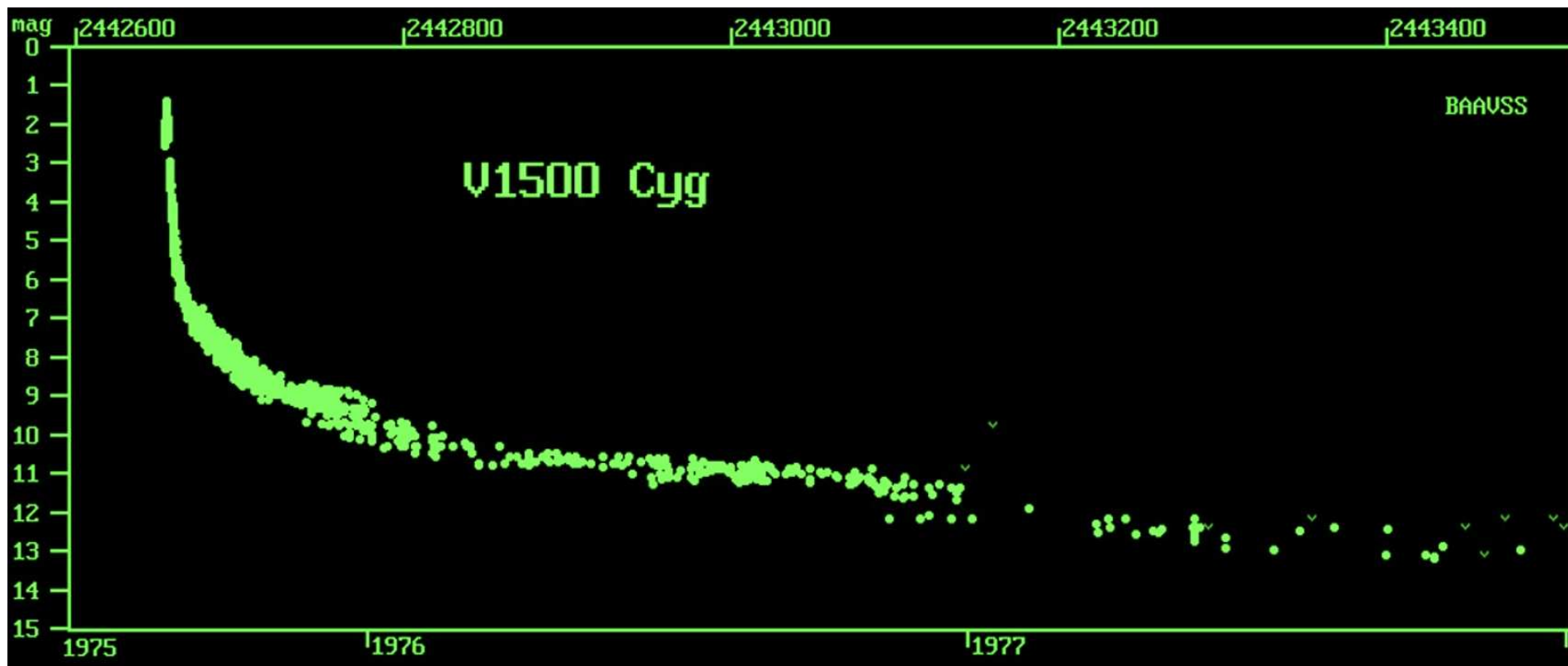
**11.6**







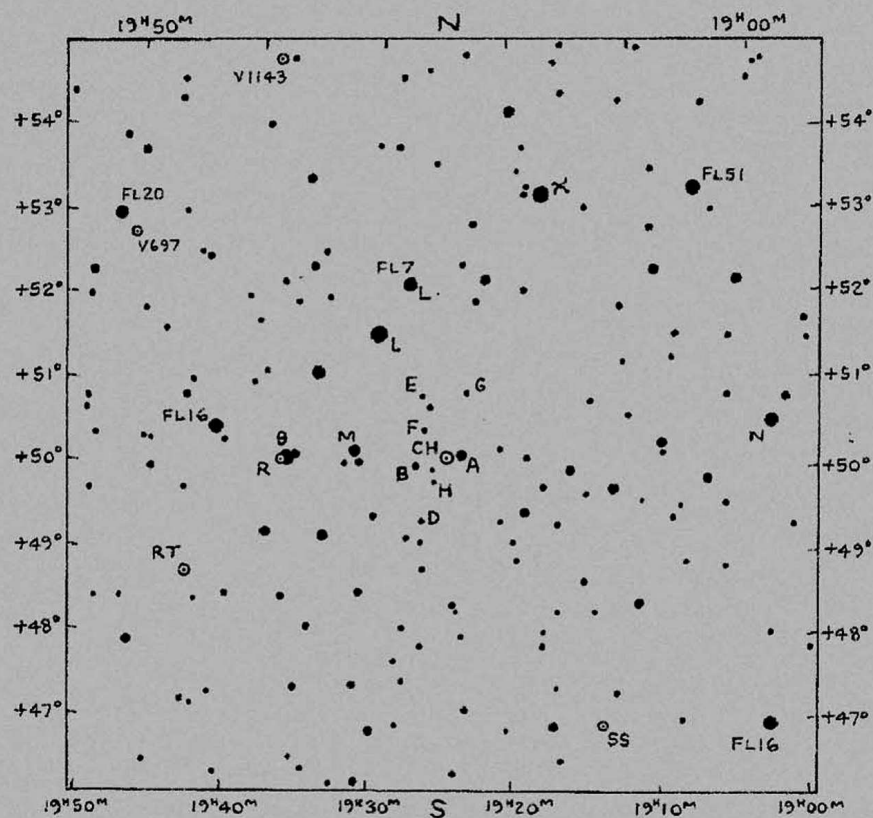
John Harrison  
the inventor of the  
marine chronometer which  
first allowed the location of  
longitude at sea by  
mechanical means, was  
baptised in Wragby parish  
in 1693 and spent his  
childhood here in Foulby.  
He died in 1776.





089.02

9° FIELD DIRECT

CH CYGNI 19<sup>h</sup> 24<sup>m</sup> 33<sup>s</sup> +50° 14.5' (2000)

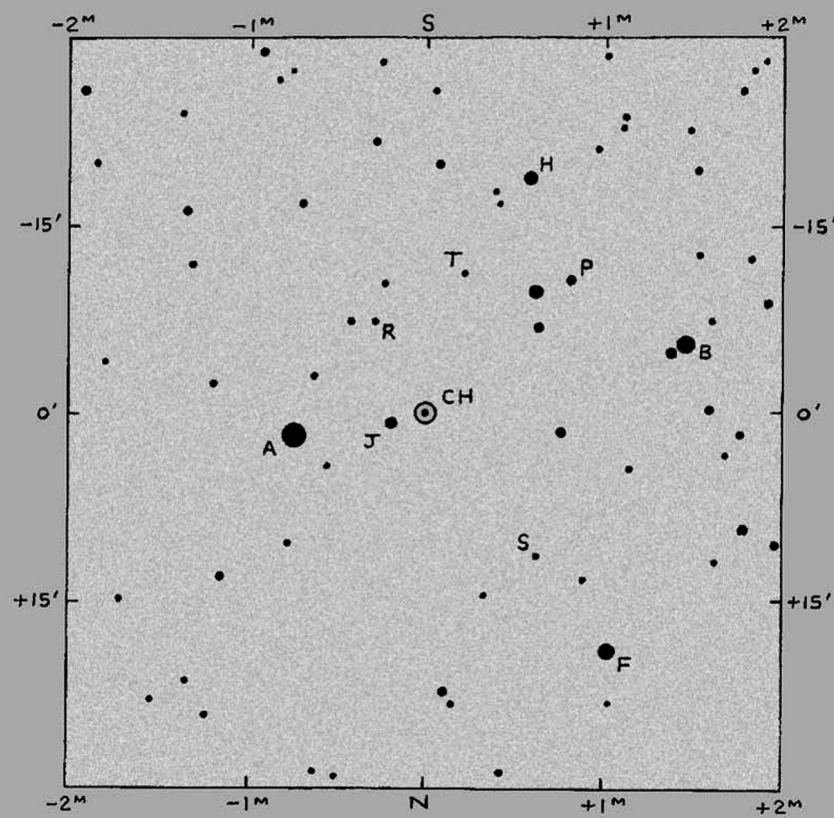
SEQUENCE: N, M, L  
 SKY CATALOGUE 2000.  
 A-H AAVSO CIRCULAR  
 24.  
 CHART: BOREALIS.

N 5.4 D 8.0  
 M 5.5 E 8.1  
 L 5.8 F 8.5  
 A 6.5 G 8.5  
 B 7.4 H 9.2

BAA VSS  
 EPOCH: 2000  
 DRAWN: JT 11-8-96  
 APPROVED: G. POYNER

089.02

1° FIELD INVERTED

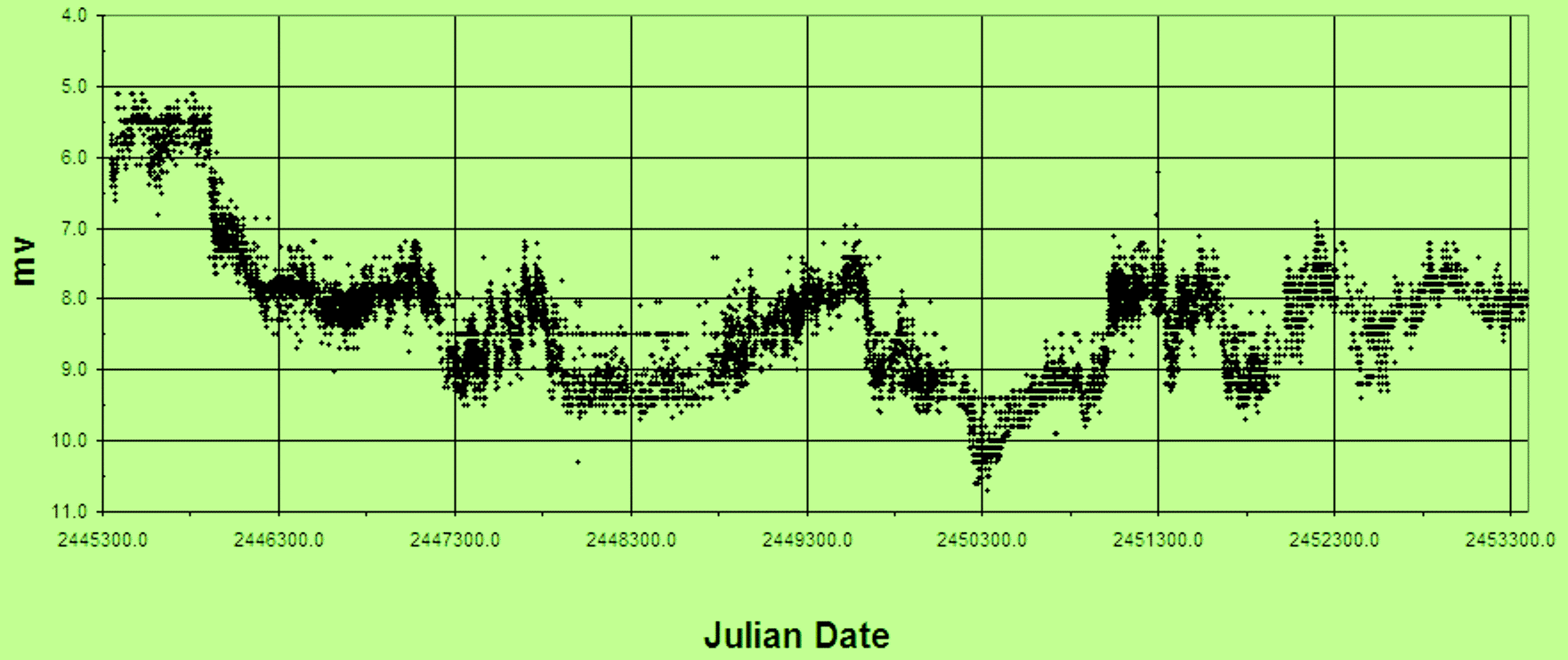
CH CYGNI 19<sup>h</sup> 24<sup>m</sup> 33<sup>s</sup> +50° 14.5' (2000)

SEQUENCE: A, B, F, H  
 AAVSO CIRCULAR 24.  
 J, P, R, S, T B. SKIFF.  
 CHART: STELLARUM.

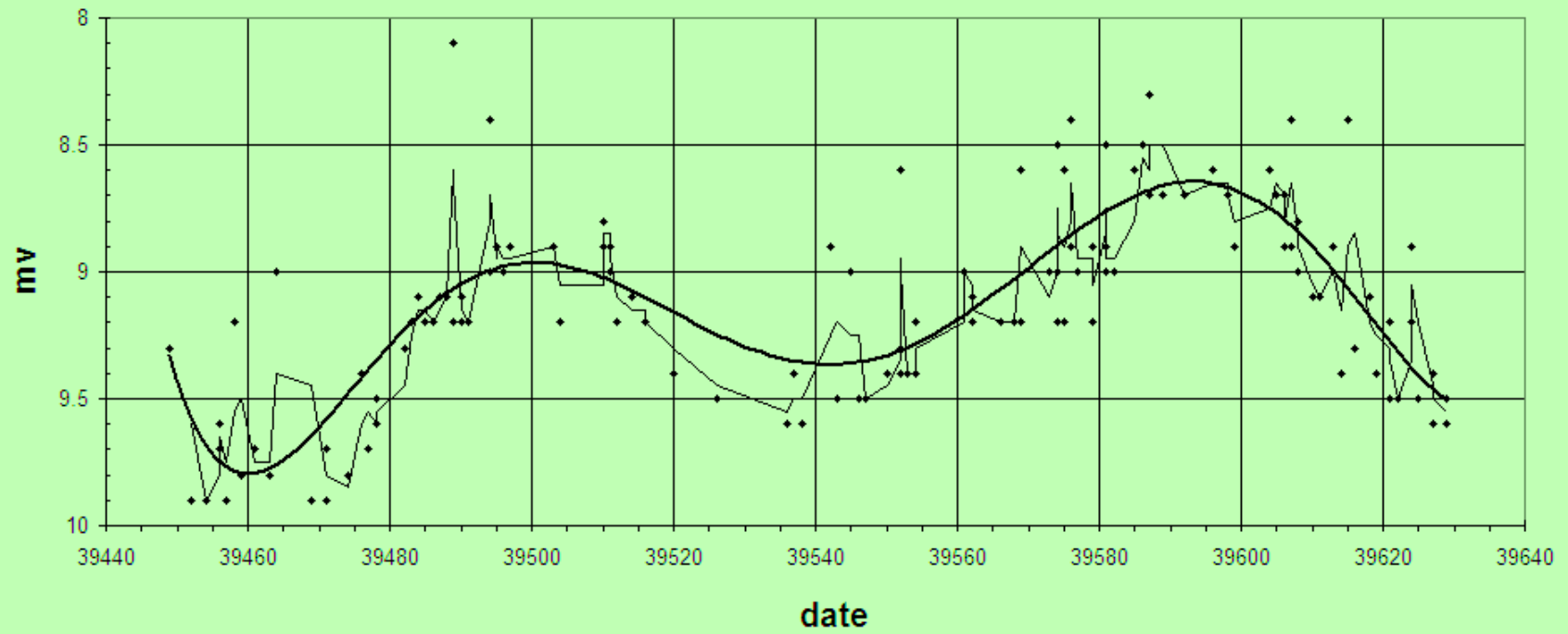
A 6.5 P 10.1  
 B 7.4 R 10.8  
 F 8.5 S 11.0  
 H 9.2 T 11.7  
 J 9.4

BAA VSS  
 EPOCH: 2000  
 DRAWN: JT 11-8-96  
 APPROVED: G. POYNER

# CH Cygni (1982 to 2004) BAAVSS



CH Cyg 2008a VSS P=93:d



# ***The BINOCULAR PROGRAMME***

## ***Variable Star types / nos.***

<b><i>SR (all types)</i></b>	<b><i>84</i></b>	<b><i>(SR 8, SRA 5, SRB 58, SRC 8, SRD 5)</i></b>
<b><i>L</i></b>	<b><i>16</i></b>	
<b><i>LC+E</i></b>	<b><i>1</i></b>	
<b><i>M</i></b>	<b><i>1</i></b>	
<b><i>RV</i></b>	<b><i>3</i></b>	
<b><i>ZAND</i></b>	<b><i>1</i></b>	
<b><i>INA</i></b>	<b><i>1</i></b>	
<b><i>GCAS</i></b>	<b><i>2</i></b>	
<b><i>ZAND+SR</i></b>	<b><i>2</i></b>	
<b><i>SDOR</i></b>	<b><i>1</i></b>	
<b><i>GCAS+X</i></b>	<b><i>1</i></b>	
<b><i>NC</i></b>	<b><i>1</i></b>	



<i>star</i>	<i>RA (2000)Dec</i>		<i>Type</i>	<i>Range</i>	<i>Period(d)</i>	<i>Chart</i>
<i>XX Cam</i>	<i>04 09</i>	<i>+53 22</i>	<i>RCB</i>	<i>7.3-9.7</i>		<i>068.01</i>
<i>V CVn</i>	<i>13 20</i>	<i>+45 32</i>	<i>SRA</i>	<i>6.5-8.6</i>	<i>192</i>	<i>214.01</i>
<i>rho Cas</i>	<i>23 54</i>	<i>+57 29</i>	<i>SRD</i>	<i>4.1-6.2</i>	<i>320</i>	<i>064.01</i>
<i>TT Cyg</i>	<i>19 41</i>	<i>+32 37</i>	<i>SRB</i>	<i>7.4-8.7</i>	<i>118</i>	<i>227.01</i>
<i>P Cyg</i>	<i>20 18</i>	<i>+38 02</i>	<i>SDOR</i>	<i>3 - 6</i>		<i>1972Jul29</i>
<i>UW Dra</i>	<i>17 58</i>	<i>+54 40</i>	<i>LB</i>	<i>7 - 8.2</i>		<i>1974Jul27</i>
<i>SX Her</i>	<i>16 08</i>	<i>+24 55</i>	<i>SRD</i>	<i>8 - 9.2</i>	<i>103</i>	<i>113.01</i>
<i>AC Her</i>	<i>18 30</i>	<i>+21 52</i>	<i>RVA</i>	<i>6.8-9.0</i>	<i>75</i>	<i>048.03</i>
<i>g Her</i>	<i>16 29</i>	<i>+41 53</i>	<i>SRB</i>	<i>4.3-6.3</i>	<i>89</i>	<i>224.01</i>
<i>X Oph</i>	<i>18 38</i>	<i>+08 50</i>	<i>M</i>	<i>5.7-7.9</i>	<i>91</i>	<i>029.03</i>
<i>AG Peg</i>	<i>21 51</i>	<i>+12 38</i>	<i>NC</i>	<i>6.0-9.4</i>		<i>094.01</i>

## **TESTS for BINOCULARS**

**MECHANICAL:** hinge movement, barrel rattling, smooth focussing (central or eyepiece), position of mounting thread.

**CONDITION:** dirt, mildew. Strap: discard plastic carrying strap.

**COATINGS:** check if coloured reflections and not white on objectives and eyepieces, if 'filmy' or grey

**EXIT PUPILS:** check if round with no grey edges, and if no internal parts visible

**DISTORTIONS:** check star 'shape' when moved to near edge of field; 'line' distortions – if straight, strongly bent or coloured.

<b>BIN LIST (mdt)</b>					
	<b>exit pupil (mm)</b>	<b>real field</b>	<b>2 + 5logD(mm)</b>	<b>at 85% effic.</b>	
		<b>degrees</b>	<b>limiting mag</b>	<b>limiting mag.</b>	
<b>8 x 21</b>	<b>2.6</b>	<b>7</b>	<b>8.6</b>	<b>7.3</b>	
<b>7 x 35</b>	<b>5</b>	<b>9.2</b>	<b>9.7</b>	<b>8.3</b>	
<b>8 x 40</b>	<b>5</b>	<b>6.5</b>	<b>10</b>	<b>8.5</b>	
<b>8 x 42</b>	<b>5.2</b>	<b>6.3</b>	<b>10.1</b>	<b>8.5</b>	
<b>10 x 50</b>	<b>5</b>	<b>6.5</b>	<b>10.5</b>	<b>8.9</b>	
<b>15 x 63</b>	<b>4.2</b>	<b>3.7</b>	<b>11</b>	<b>9.3</b>	
<b>16 x 70</b>	<b>4.3</b>	<b>5</b>	<b>11.2</b>	<b>9.5</b>	

## HOW TO IMPROVE VISUAL (VARIABLE STAR) OBSERVATIONS

### Avoid:

- CLOUDCOVER, MISIDENTIFICATION, DATE/TIME MISTAKES,
- TRANSCRIBING AN INCORRECT RECORD,
- BIAS (!),
- PRE-CONCEIVED VALUES OF COMPARISON STAR MAGNITUDES,
- VERY LOW ALTITUDE OBJECTS (EXCEPT E.G. NOVAE, SUPERNOVAE),
- STEPPING ON PETS, HEDGEHOG, 'LIVE' ELECTRICS, OPENING FRIDGE DOOR (UNLESS ASTRONOMY FRIENDLY LIT),
- DROPPING IMPORTANT THINGS (FLASK OF WARM SOUP, KENDAL MINT CAKE, CHOCOLATE)

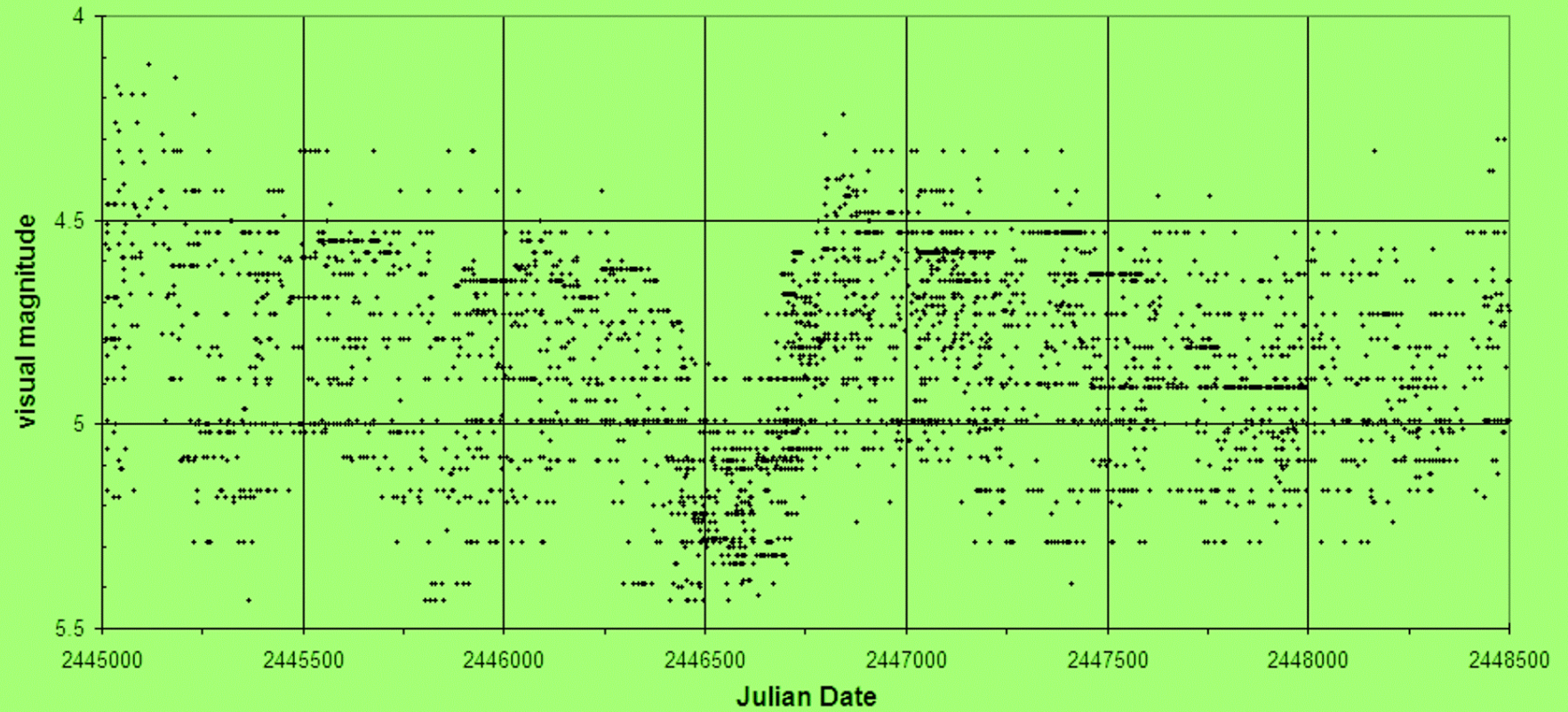
### Select and use: (IF POSSIBLE)

- BEST QUALITY AND STATE OF OPTICS
- SAME OPTICAL SYSTEM FOR THE PHASE OF THAT OBJECT
- OBJECTS NOT NEAR LIMIT OF OBSERVATION
- COMPARISONS OF SIMILAR COLOUR AND THOSE THAT ARE CLOSE TO VARIABLE IN DISTANCE ALSO A SMALL BRIGHTNESS DIFFERENCE BETWEEN THEM
- CHECK THE OPTIMUM LINE OF P.A. JOINING VARIABLE AND COMPARISON(S).
- A CONSISTENT METHOD OF LIGHT ESTIMATION
- AN AMOUNT OF TIME FOR DARK ADAPTATION
- A COMFORTABLE POSTURE AND WARM CLOTHING (OBVIOUS?)
- THE 'FRAME OF MIND': I.E. NO HURRYING, ENOUGH DOWN-TIME AFTER A TRAUMATIC DAY, USE ANGER-MANAGEMENT METHODS IN CASE OF LOCAL (NEIGHBOURHOOD) CIRCUMSTANCES. I.E. THEIR HOUSE AND GARDEN LIGHTING POLICY MAY WELL BE DIFFERENT FROM THE OBSERVER!

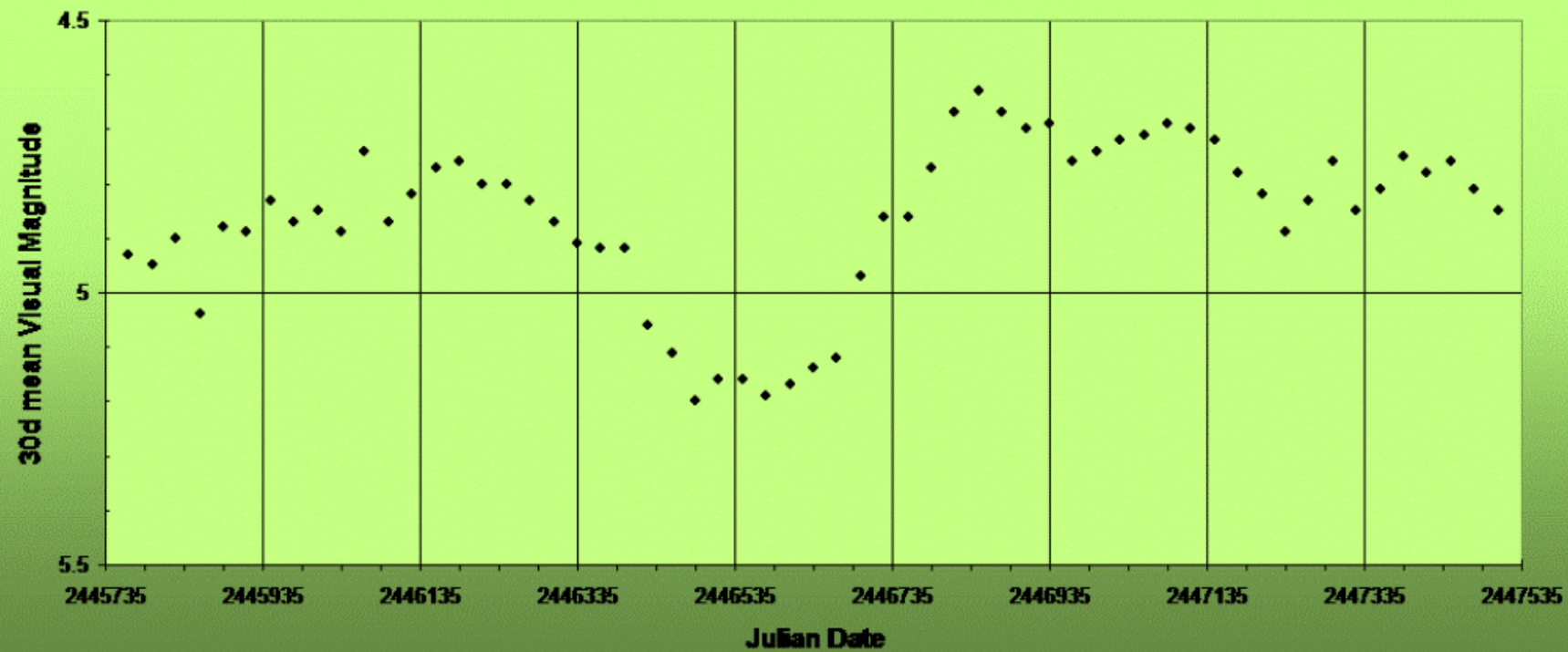


Now, if I can  
just find that  
20th mag quasar

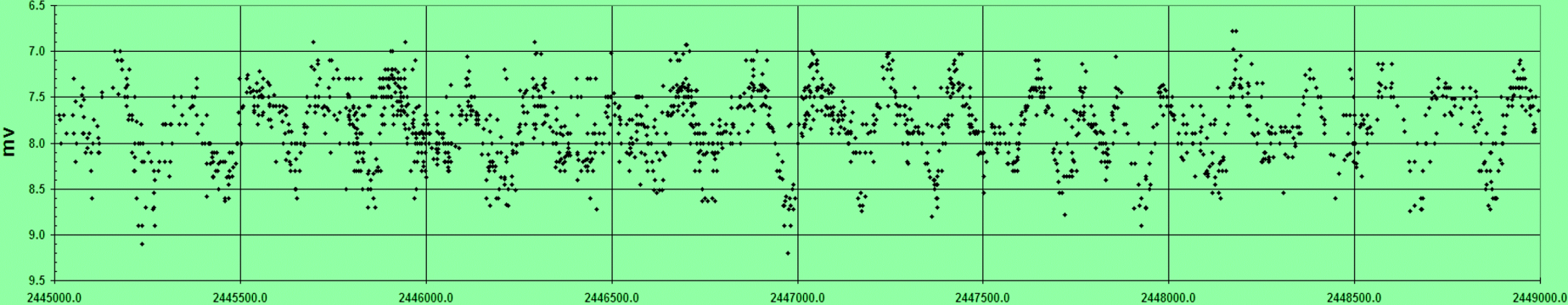
rho Cas BAAVSS 1982-1991



**rho Cas BAAVSS 1984 - 1989**



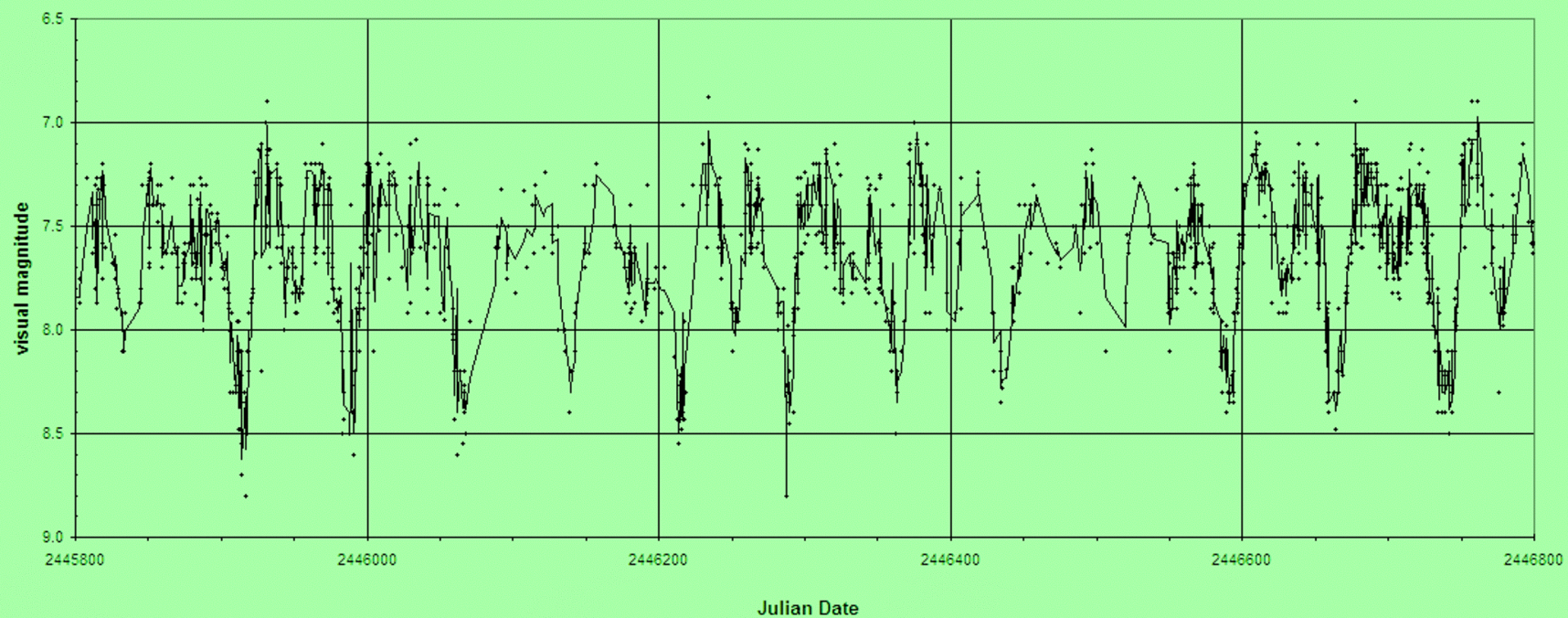
AH Draconis BAAVSS (1982- 1993)



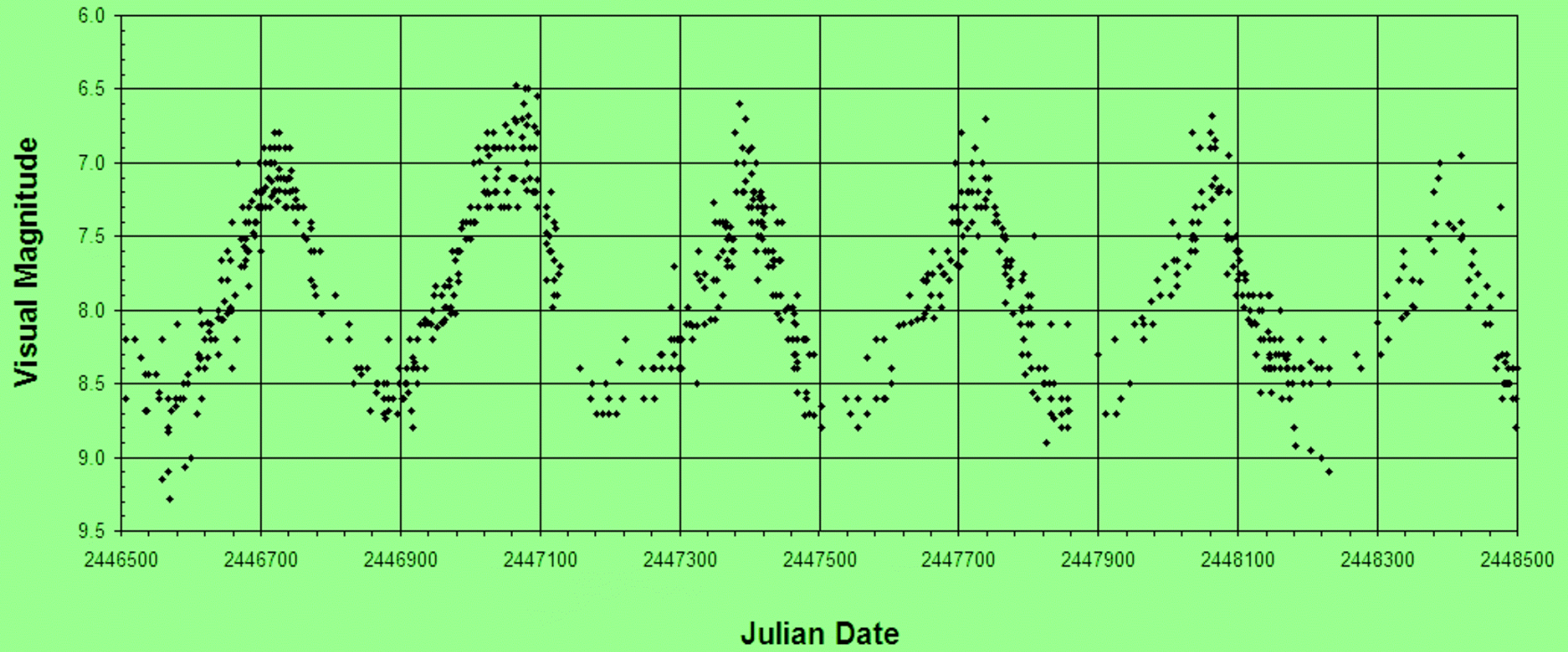
Julian Date

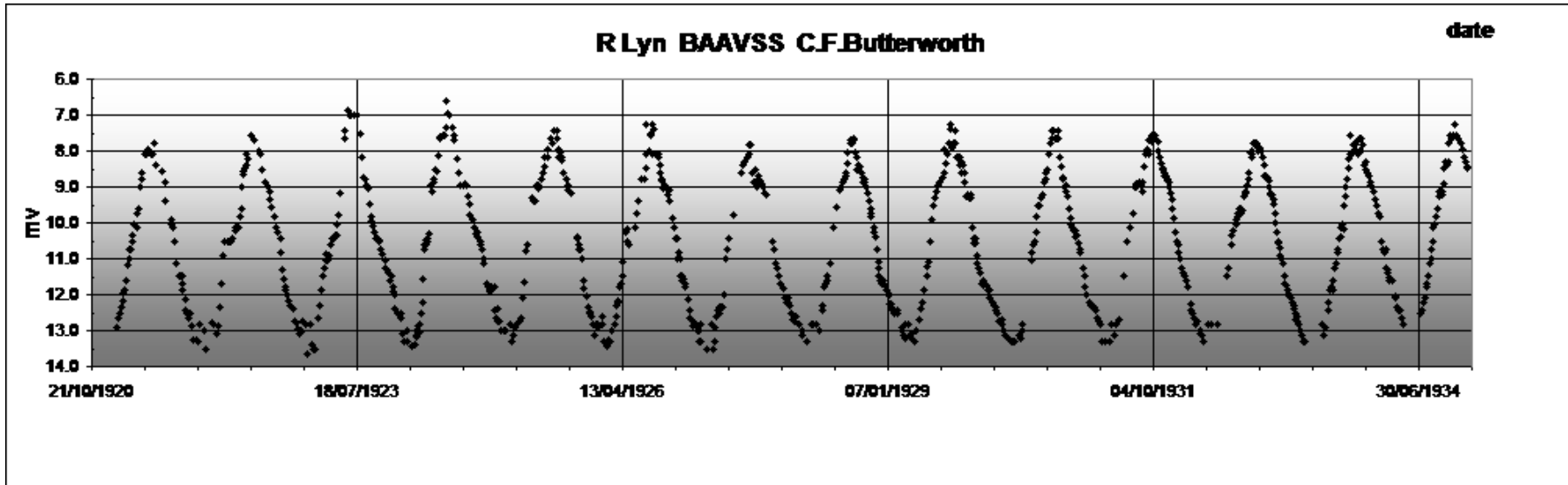


AC Herculis BAAVSS (1984-1987)

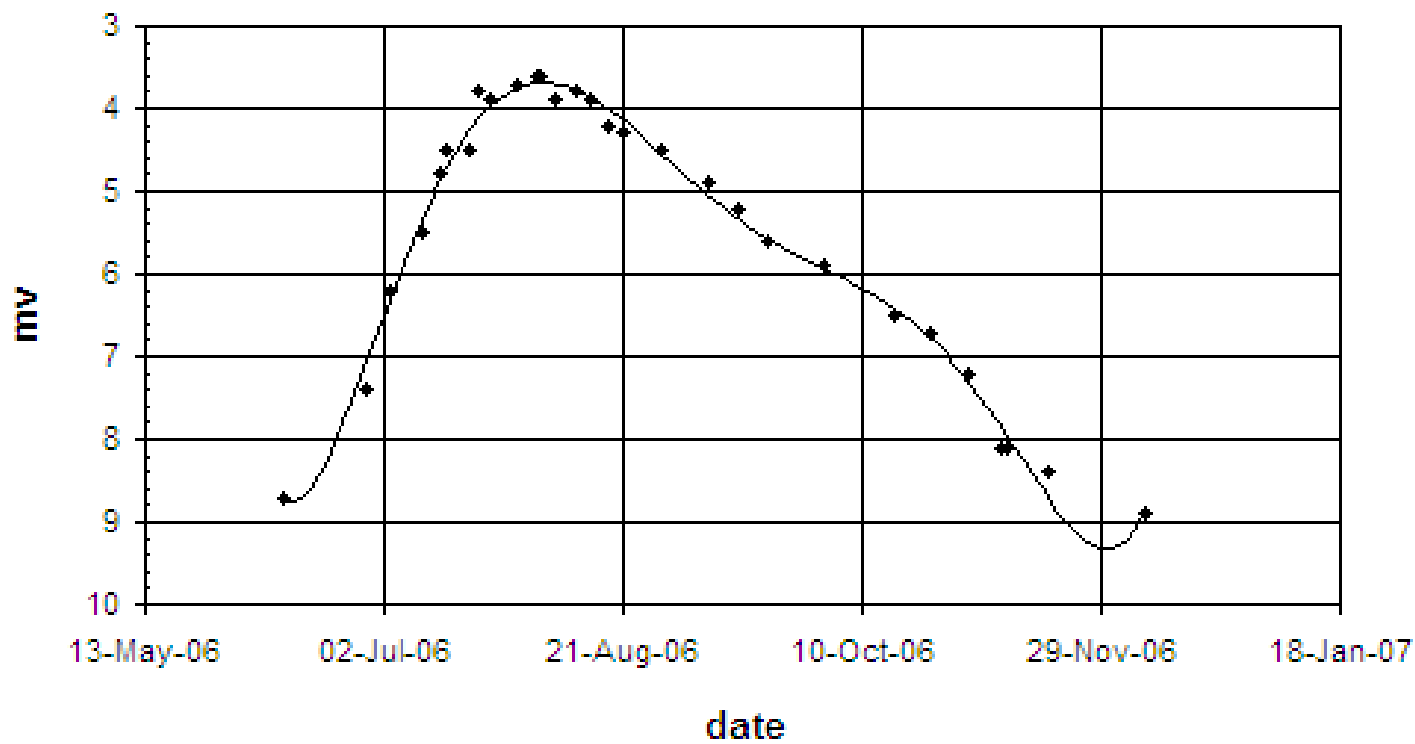


X Ophiuchi BAAVSS 1986-1991





### chi Cyg 2006 mdt

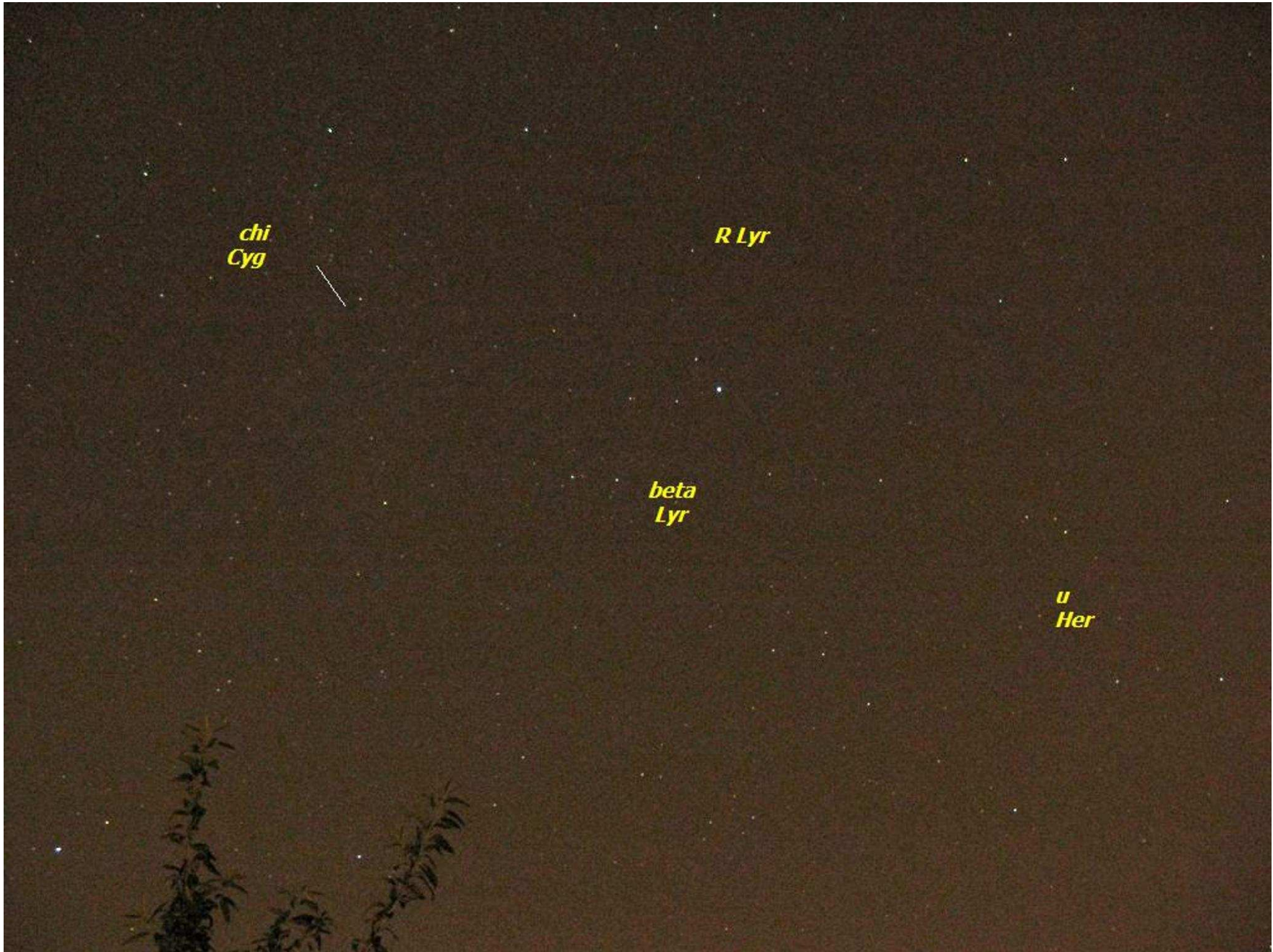


*chi*  
*Cyg*

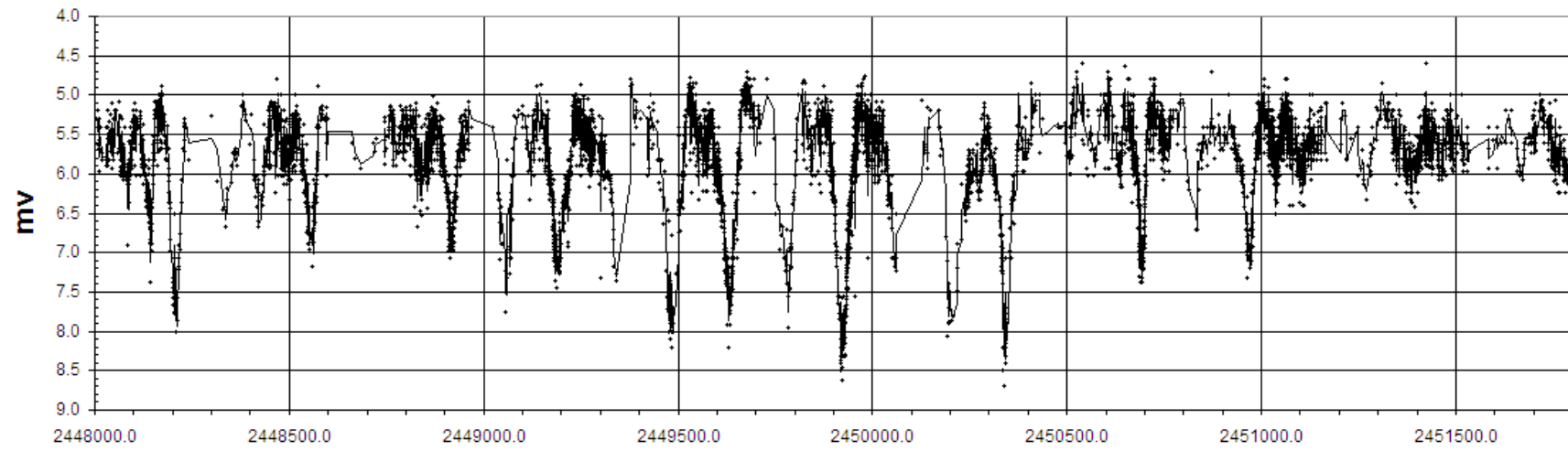
*R Lyr*

*beta*  
*Lyr*

*u*  
*Her*

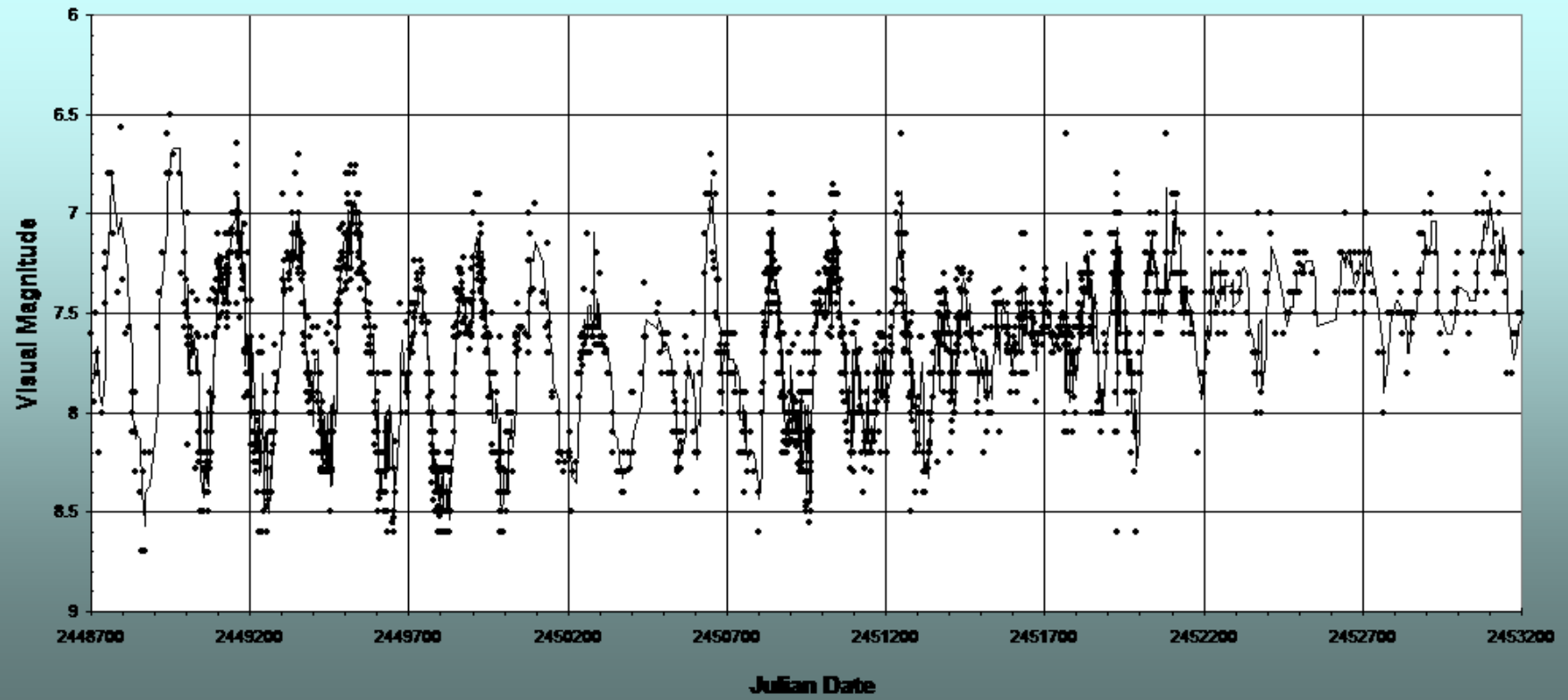


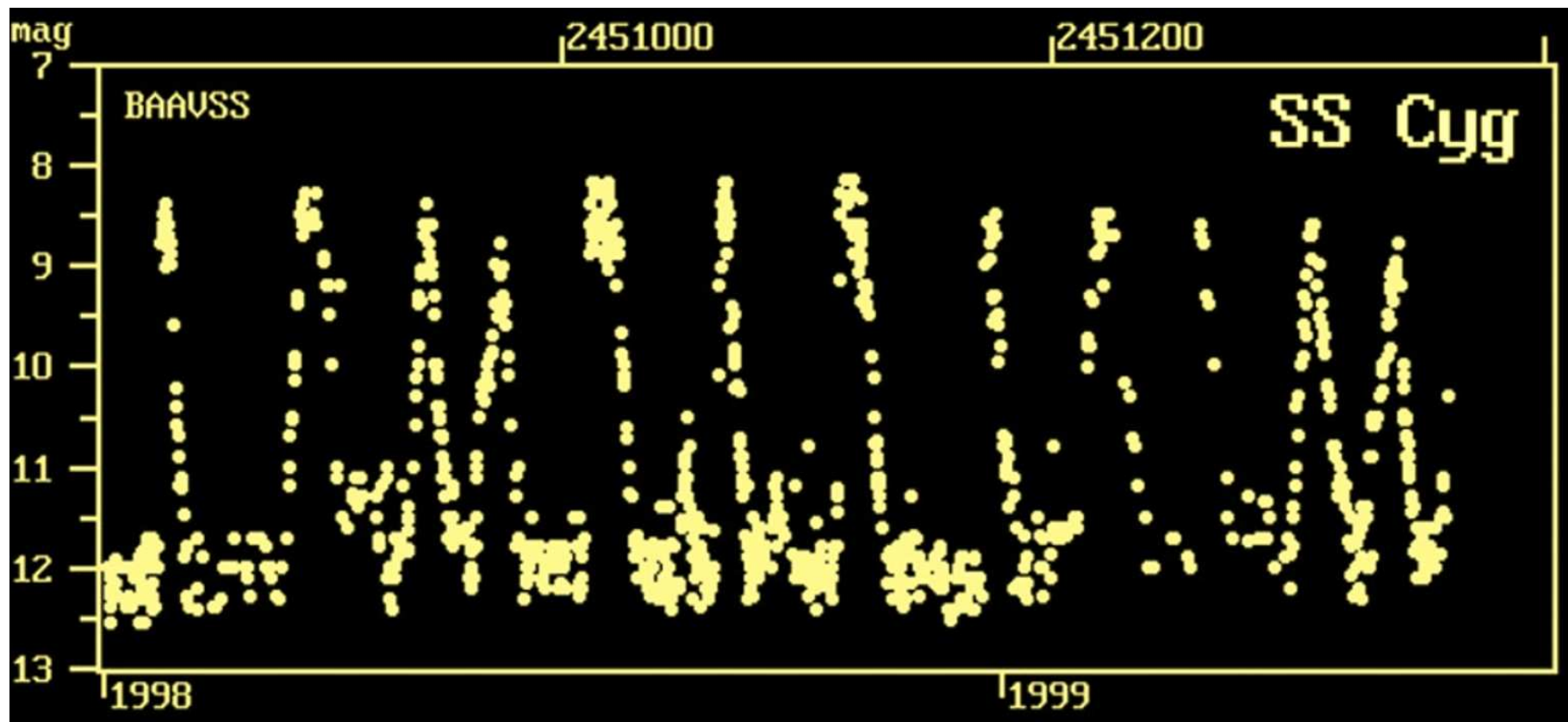
### R Sct BAAVSS



Julian Date

V CVn BAAVSS 1991-2005

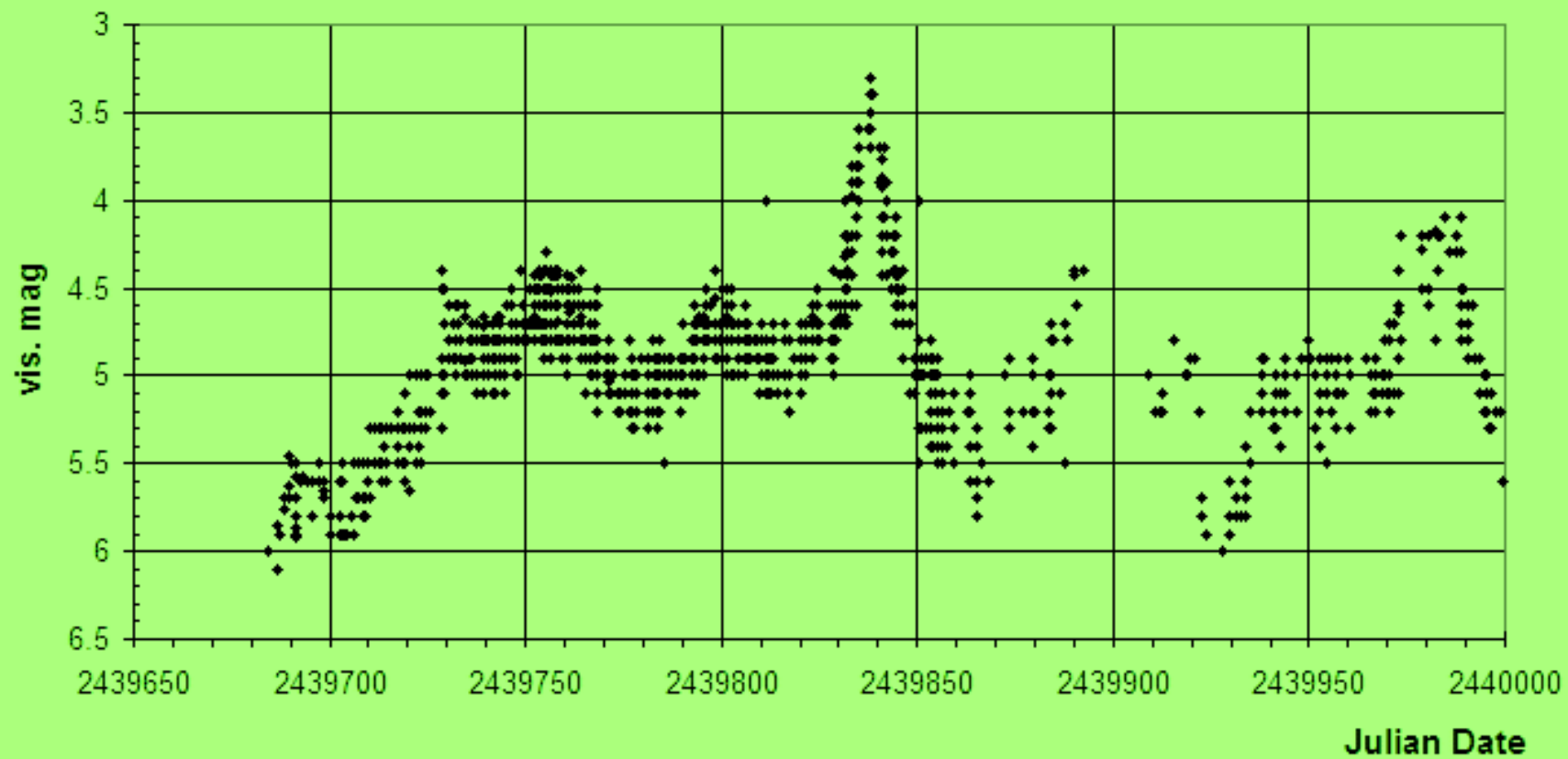




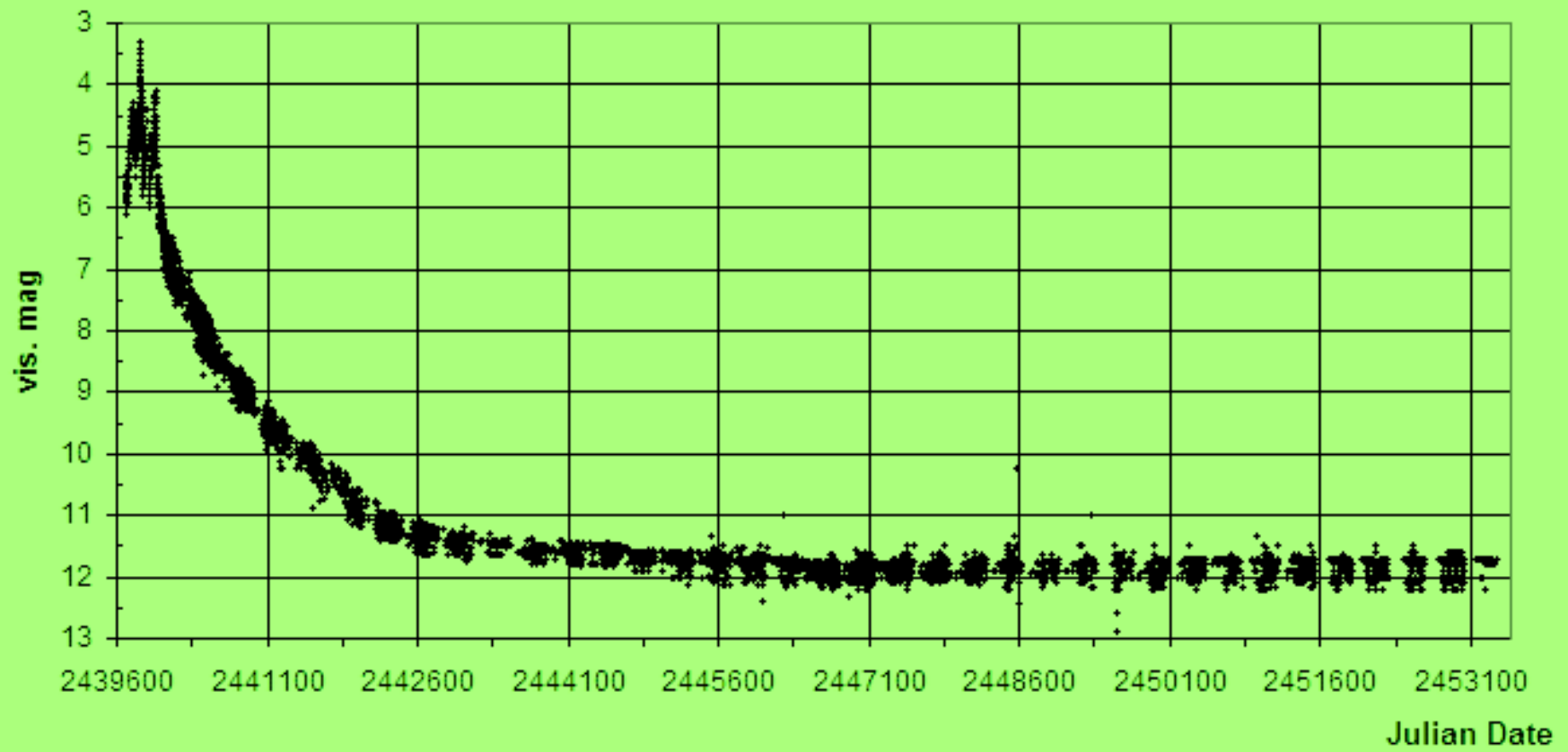




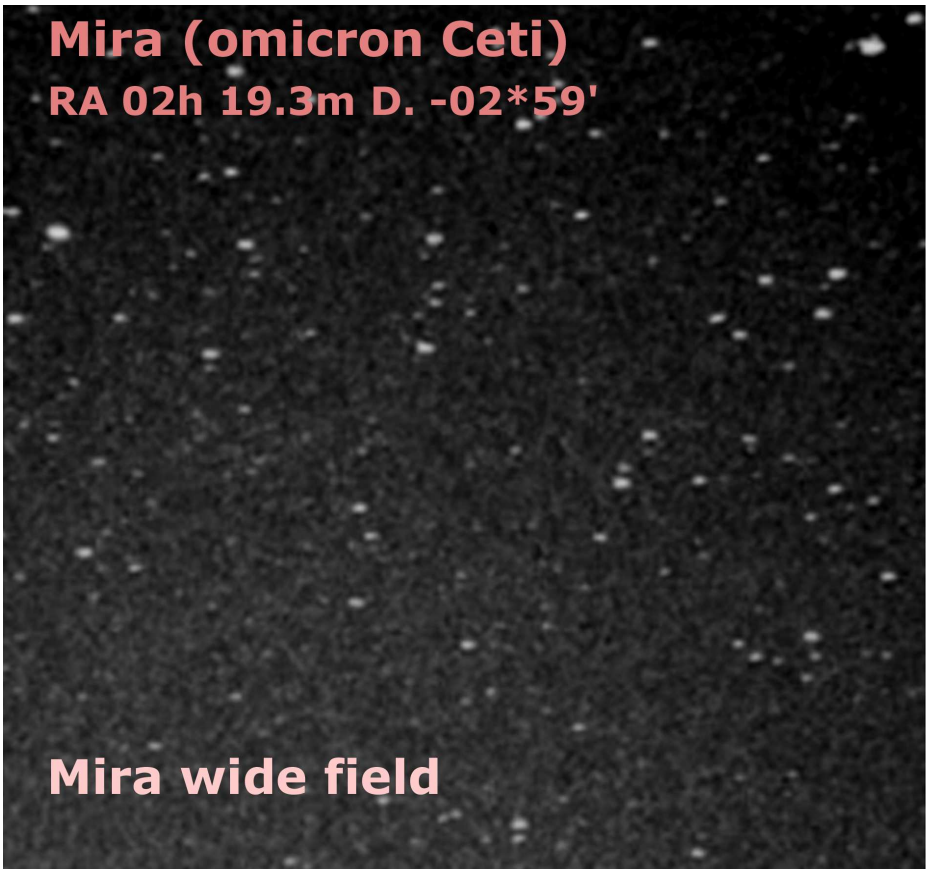
HR Delphini (Nova Delphini, 1967) BAAVSS 1967 Jul to 1968 May



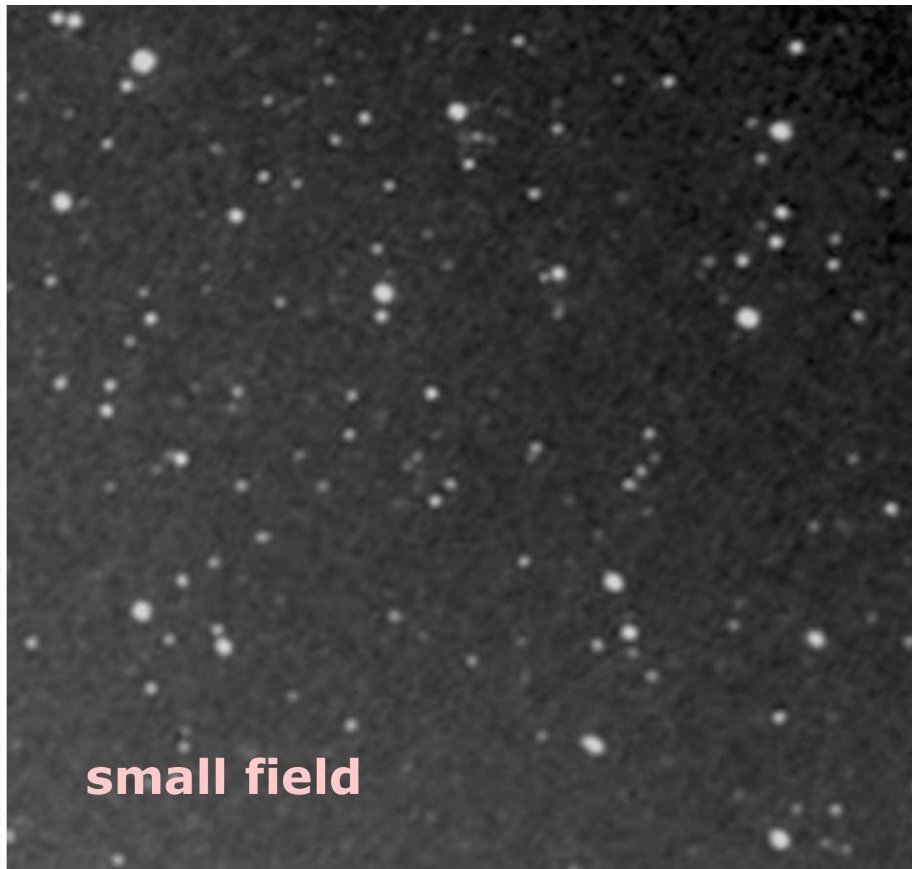
HR Delphini (Nova Delphini, 1967) BAA VSS



**Mira (omicron Ceti)**  
**RA 02h 19.3m D. -02\*59'**



**Mira wide field**



**small field**

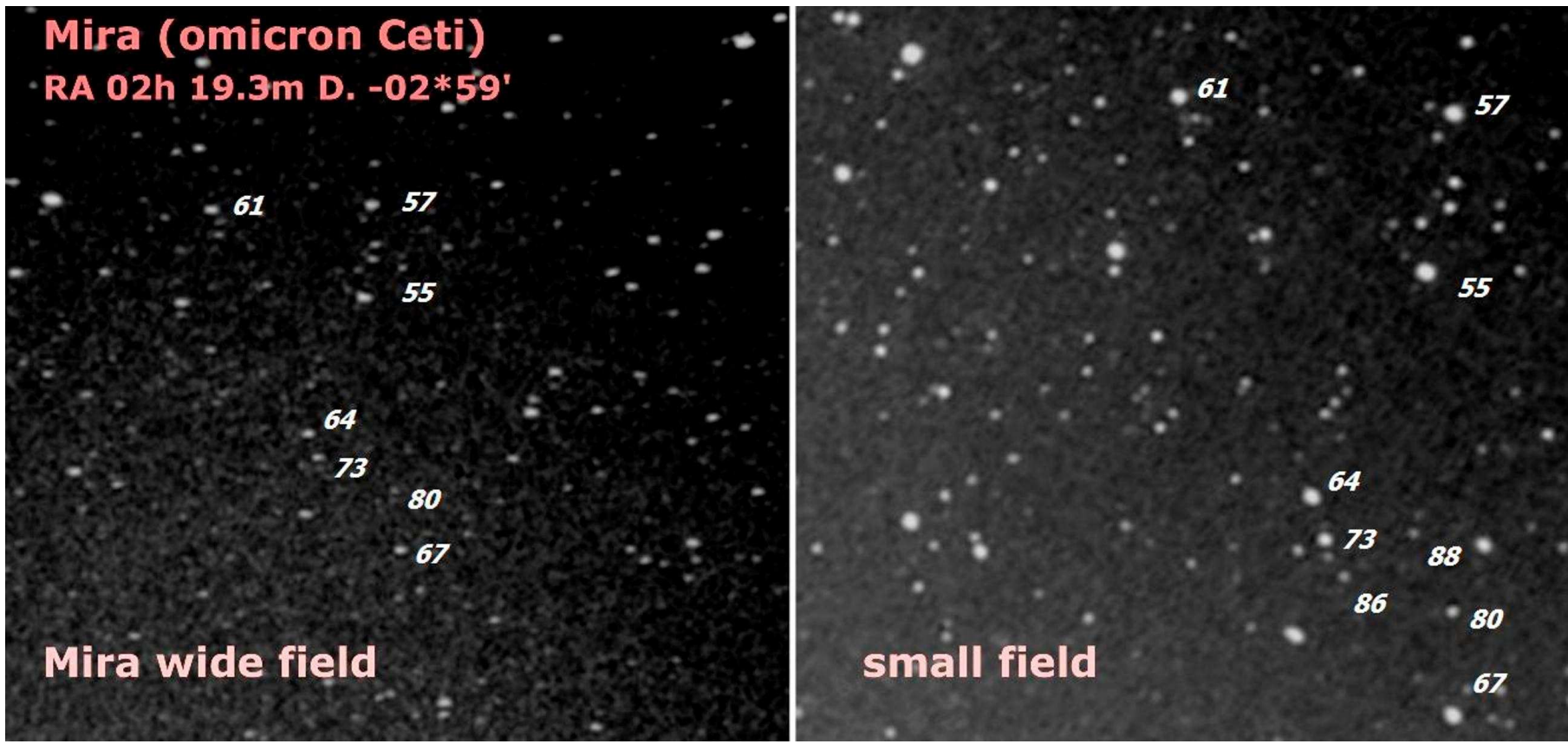
**Mira (omicron Ceti)**  
**RA 02h 19.3m D. -02°59'**

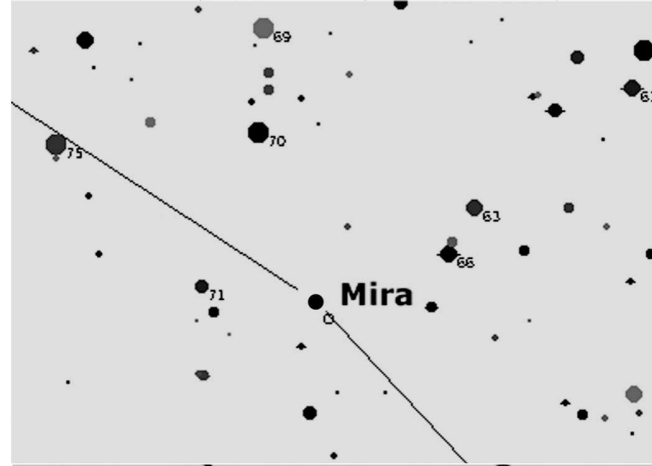
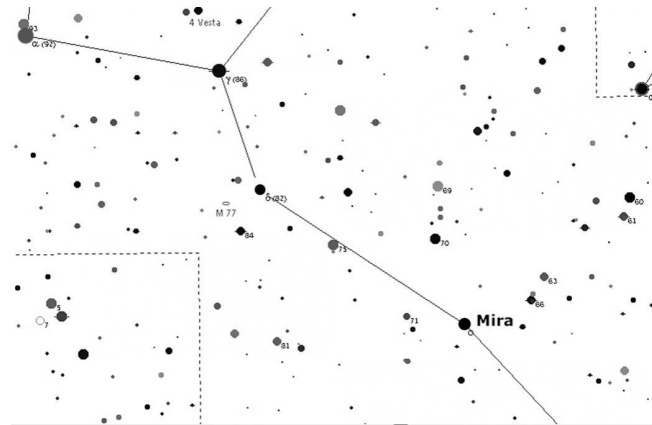
61 57  
55  
64  
73 80  
67

**Mira wide field**

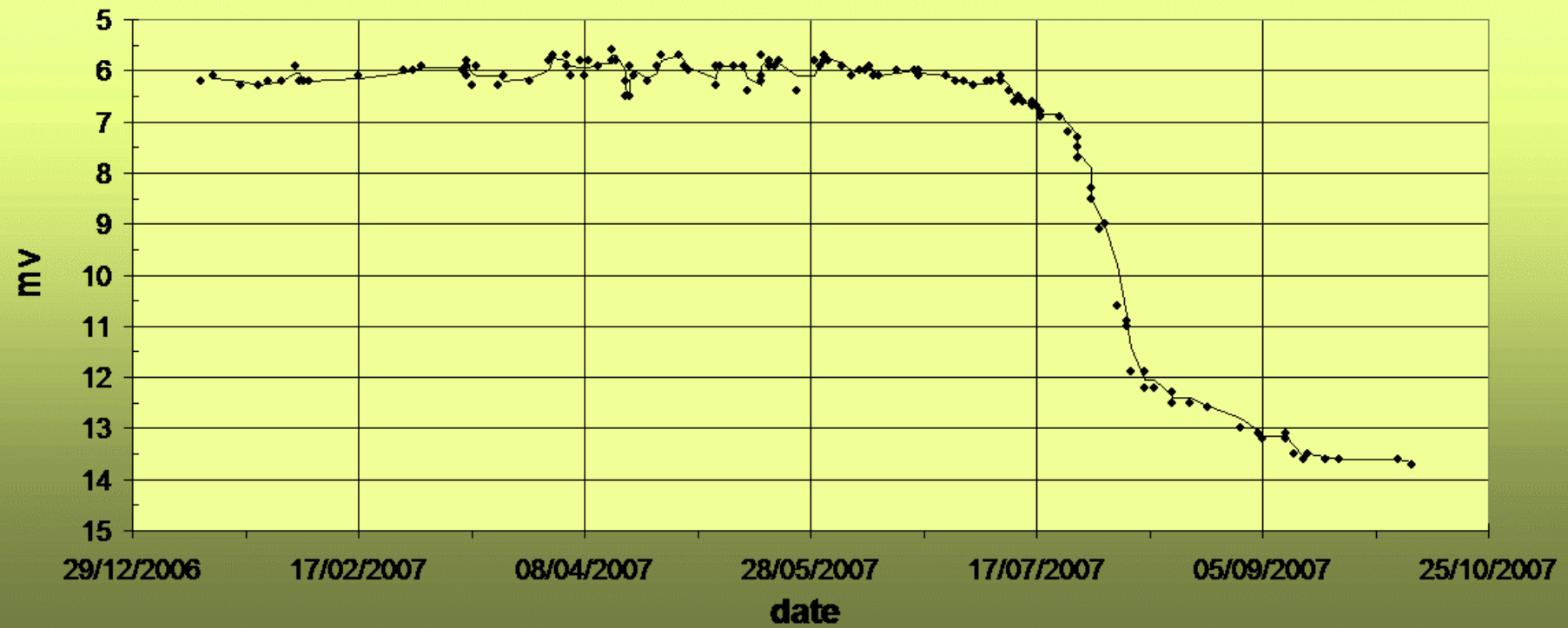
61 57  
55  
64  
73 88  
86 80  
67

**small field**





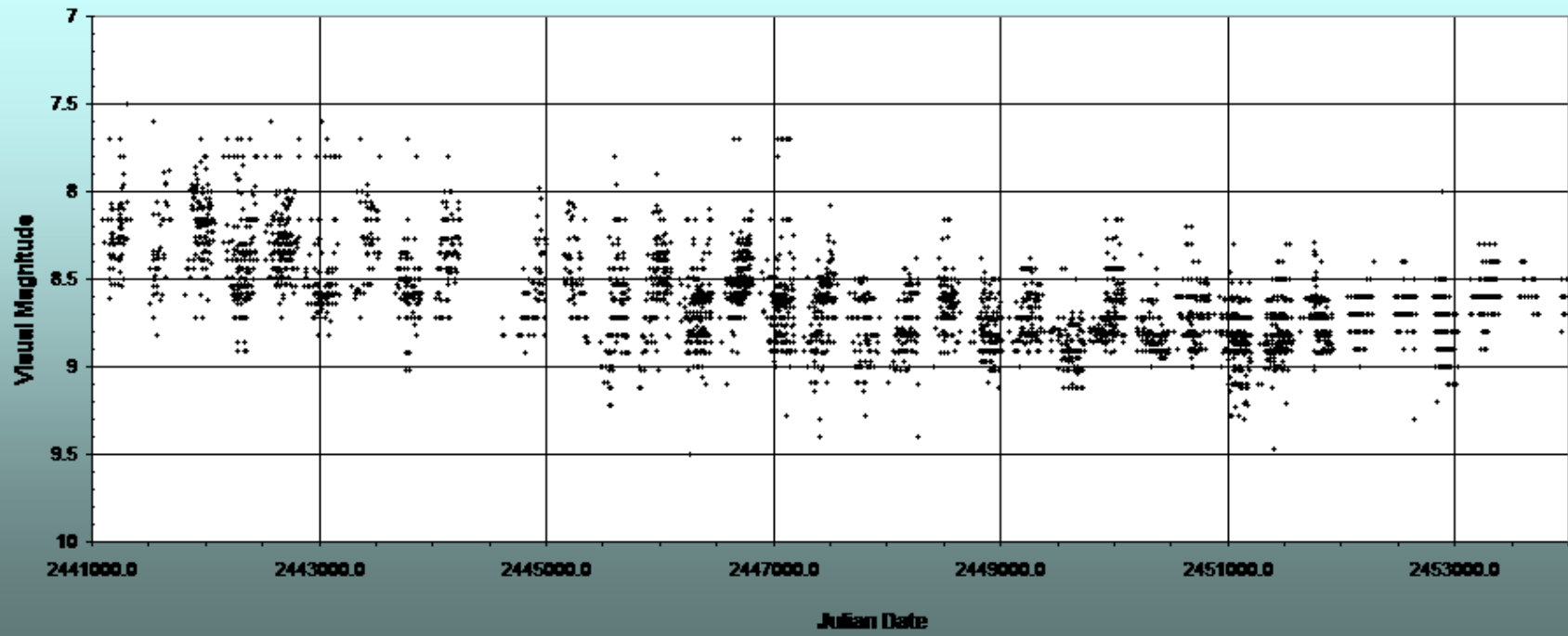
### R CrB 2007 BAAVSS





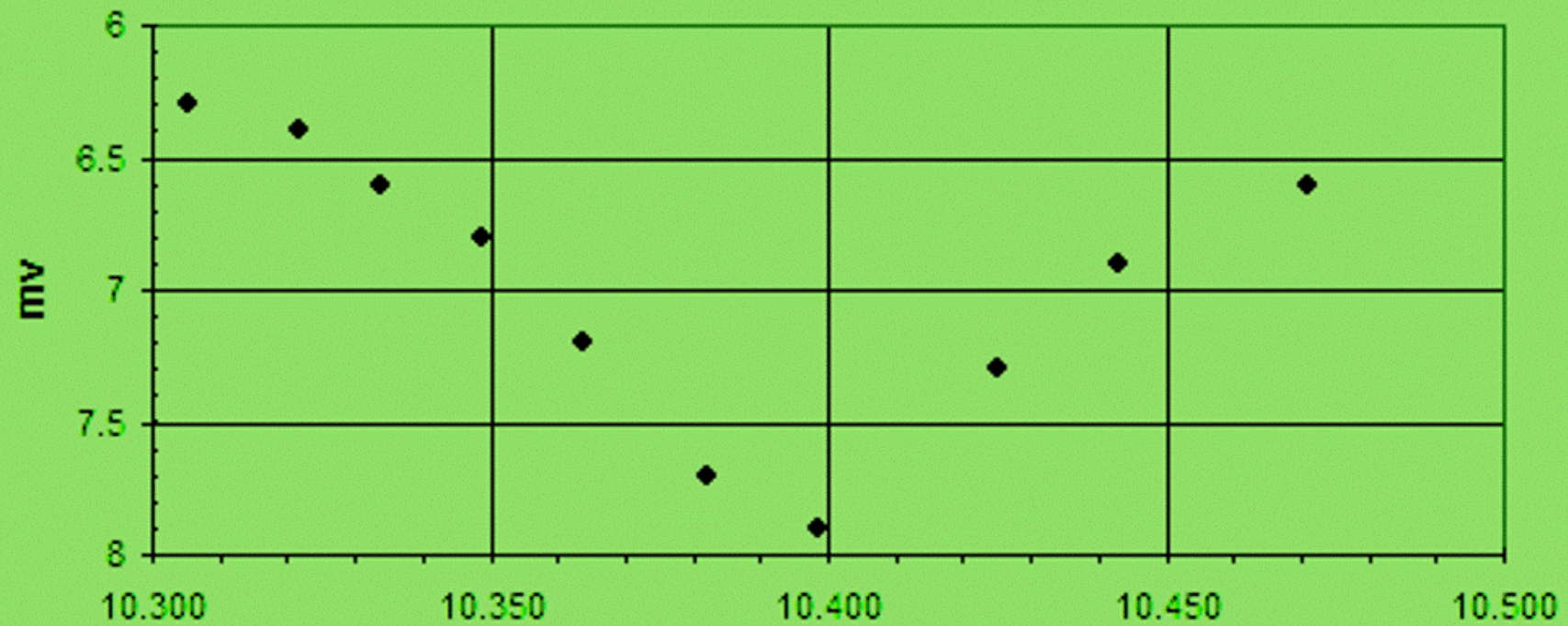


### AG Pegasi BAAVSS 1971-2006



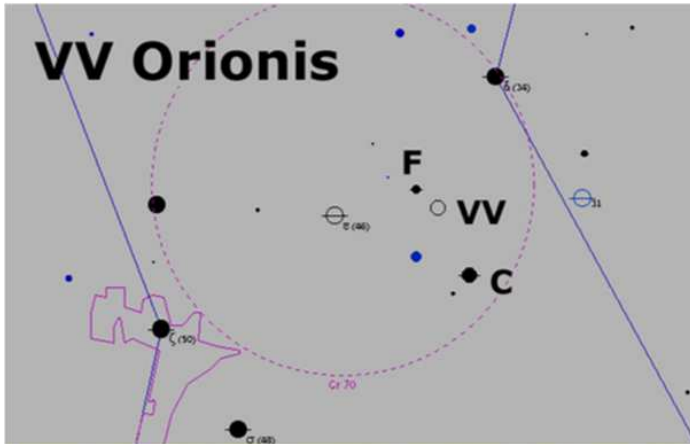


# RZ Cas 2008 Feb 10 (mdt,10x50)



Feb 10+ dec. (GMAT)

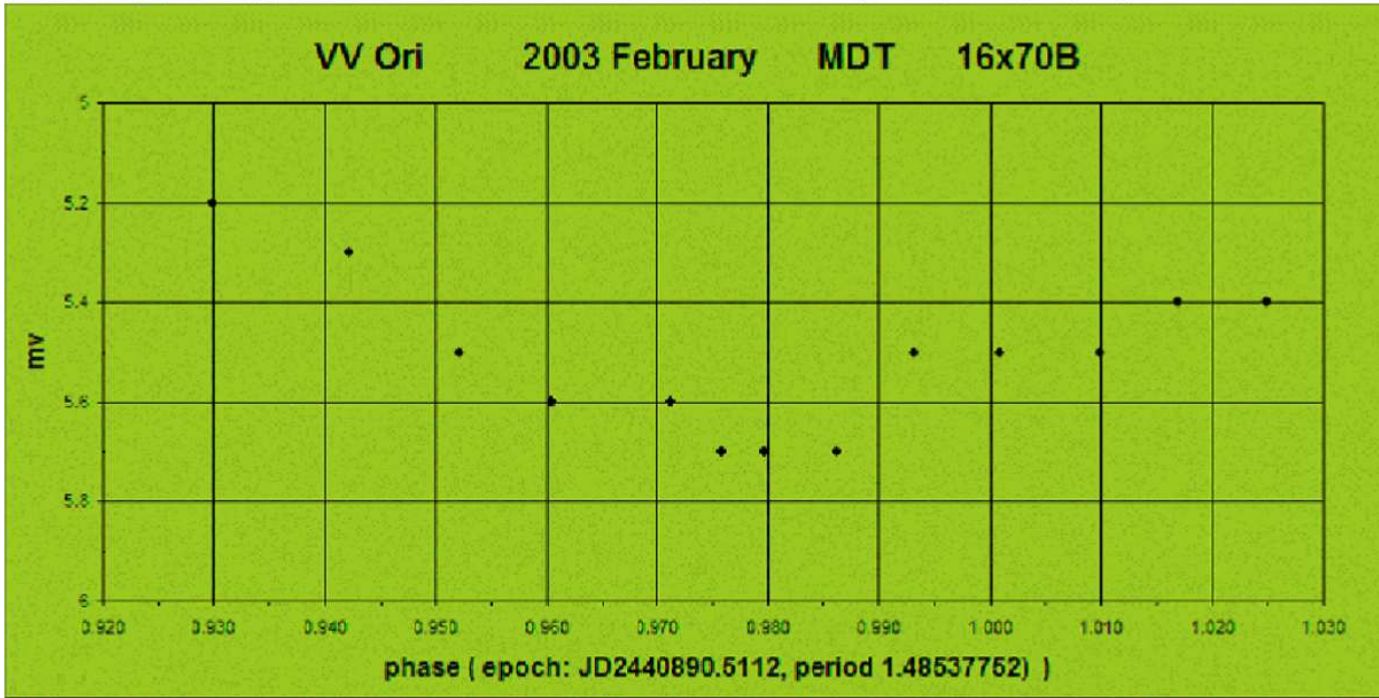
**VV Ori RA 05h33.5m D.-01\*09' (2000)  
 5.14-5.51-5.31p EB  
 2440890.5112, period 1.48537752d**



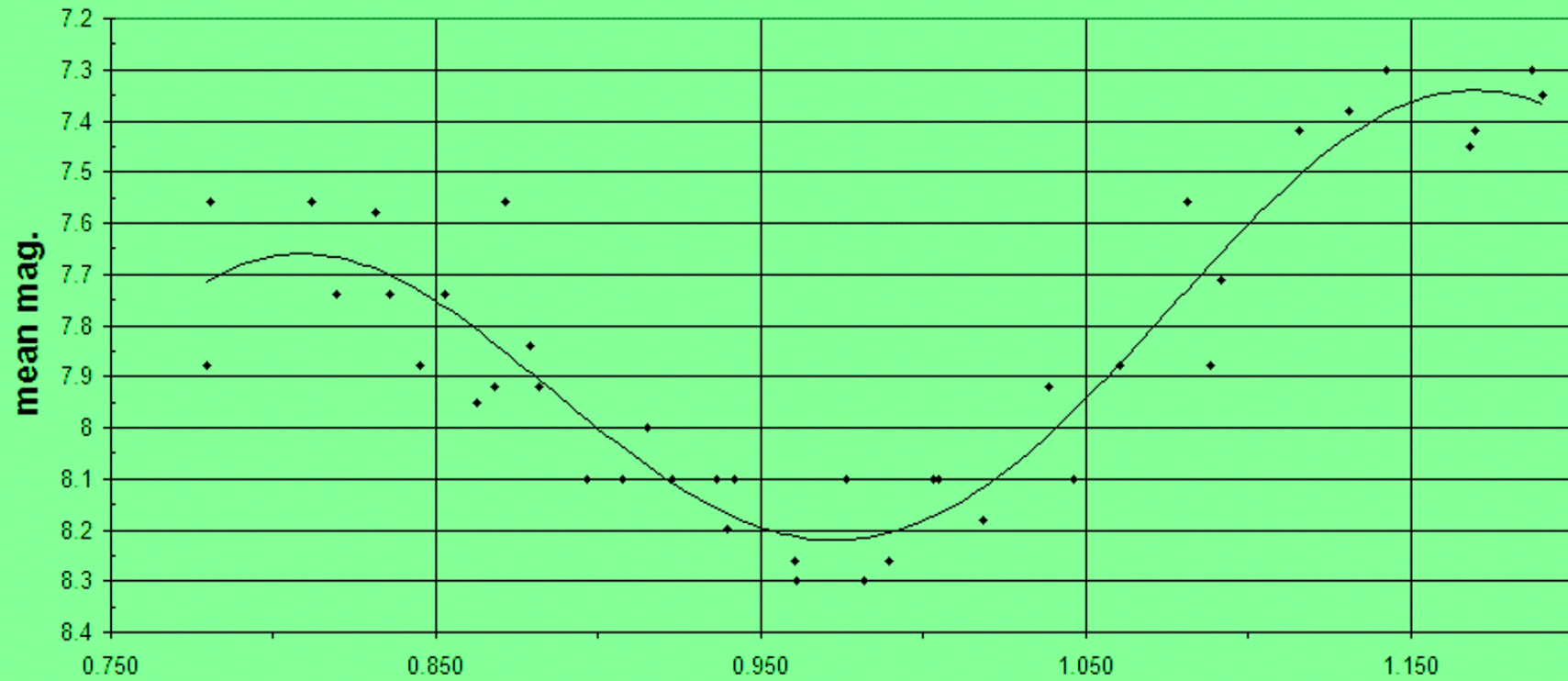
**VV Orionis  
 Instr 2 = B70x16  
 MDT chart;  
 C= 5.3; F = 6.18 (Coeli Cat.)  
 GMAT  
 2003**

**Feb 16,0637 / C+1 / 5.2 / 2 / 2 /  
 0703 / =C / 5.3 / 2 / 2 /  
 0724 / C-2 / 5.5 / 2 / 2 /  
 0742 / C-3 / 5.6 / 2 / 2 /  
 0815 / C-4 / 5.7 / 3 / 2 /**

**Feb 19,0723 / C(3)V(5)F / 5.6 / 2 / 2 /  
 0741 / C(3)V(4)F / 5.7 / 2 / 2 /  
 0755 / C(4)V(5)F / 5.7 / 2 / 2 /  
 0810 / C-2 / 5.5 / 2 / 2 /  
 0826 / C-2 / 5.5 / 2 / 2 /  
 0846 / C-2 / 5.5 / 2 / 2 /  
 0900 / C-1 / 5.4 / 2 / 2 /  
 0917 / C-1 / 5.4 / 2 / 2 /**



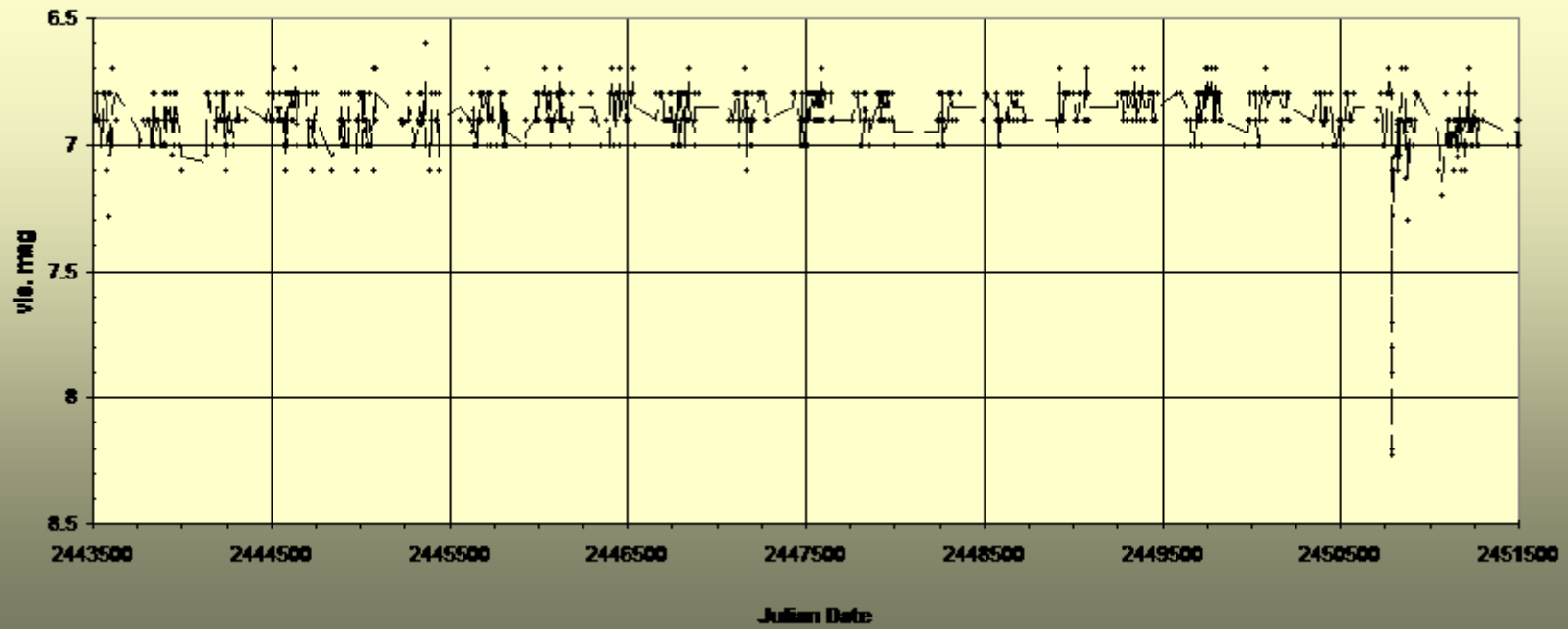
W UMa 2000 Feb-Mar MDT 60mm OG



Phase: [JD2449066.3955, period 0.33363574].

Min. observed at ph. 0.972d O-C= -0.028d

**AB Aurigae 1976-1991 (mdt, 8x40B, 16x70B, 1048 ests.)**



A night sky filled with stars, with a silhouette of a person on a tripod in the foreground. The sky is dark with many small, bright stars. The person is on the right side, looking towards the sky. The foreground is dark, with some faint lights visible on the horizon.

Thank You for listening,

please dust off those binoculars