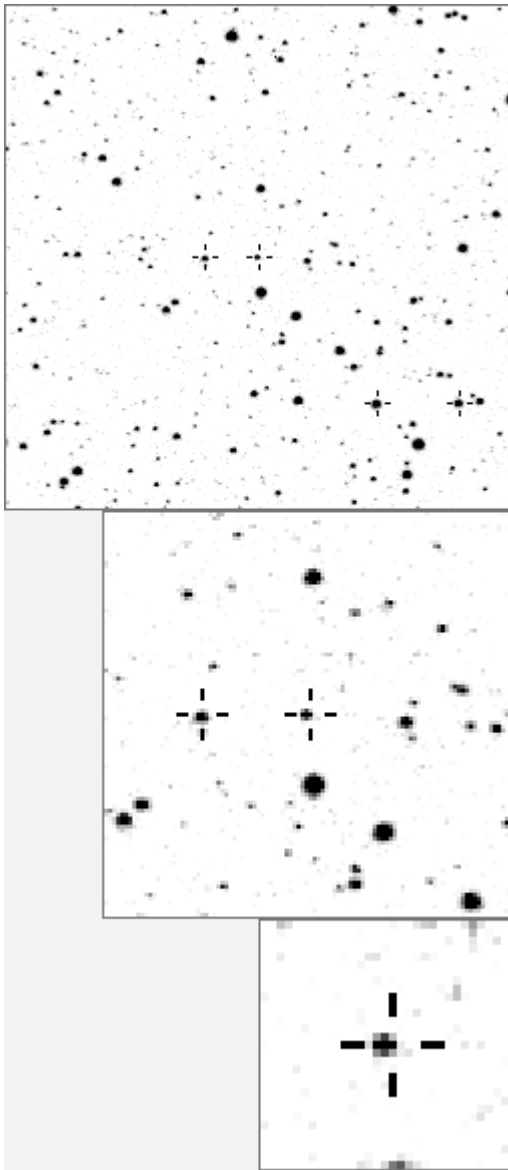


a13603



variable and brighter stars	
. . . . . b . . . . . m . . .	O 13603 v
. . . . . . . . . . . . . . .	a 904
. . . . . . . . . . . . . . .	b 1091
. . . . . . . . . . . . . . .	c 1486
. . . . . . . . . . . . . . .	d 2401
. . . k . . . . . . . . . . .	e 2405
. . . . . . . . . . . . . . .	f 2447
. . . . . n . O . . . . . g .	g 2734
. . . . . . . . . . . . . . .	h 2985
. . . . . . . . . . . . . . .	i 3115 v
. . . . . . . . . . . . . . .	j 3222
. . . . . . . . . . . h . i . l .	k 3774
. . . . . . . . . . . . . . .	l 4368 v
. . f . . . . . . . . . . . e a . .	m 4486
. . . . . . . . . . . . . . .	n 9898 v
-----	
. . . . . . . . . . . . . . .	O 13603 v
. . . . . . . . . . . . . . .	a 1486
. . . . . . . . . . . d . . . . .	b 2401
. . . . . l . . . . . . . . . . .	c 3222
. . . . . . . . . . . . . . . m . .	d 4775
. . . . . . . . . . . . . . . . .	e 7137
. . . . . . . . . . . . . . . j .	f 9898 v
. . . f . . . . O . . . . h . . . .	g 10233
. . . . . . . . . . . . . . . n k	h 10650
. . . . . . . . . . . . . . . . .	i 12770
. . . g . . . . . a . . . . . . . . .	j 18626
e . . . . . . . . . . . . . . . b . . . .	k 18655
. . . . . . . . . . . . . . . . .	l 19801
. . . . . . . . . . . . . . . . i . . . .	m 20535
. . . . . . . . . . . . . . . . . c .	n 25131

Bitmap sizes are 251, 101 and 31 pixels square, South up. The keys to the right refer to the 1<sup>st</sup> two bitmaps. The numbers in the key are those in my catalogue 'starlistA'. Stars marked with a cross have been found to be variable.

**Data and comments on star a13603**

SWid: a13603 / **USNO id: 1363 405176 / other id:**

Co-ordinates, x,y in image z1051: 2580.5 1902.7

**J2000 sky co-ordinates: 21 10 25.5 +46 23 37.6**

CMC r'magnitude and 2MASS J, H, K magnitudes: 13.869 11.391 10.702 10.496

USNO B1.0 magnitudes, B1, R1, B2, R2, I2: 16.23 13.48 16.15 13.53 13.59

Misc comments :

new osc found July 2008 from ssc, period about 60d, amp varies up to 0.25 mag.. Best ref prob 904.

Period 2707 to 2889 is 60.7d. To 904 magm is 13.46, magr 0.260. This star moves least in y1,

more in y2, less again in y4 and most in y5. The jiggle on the down slope of the triangular waveform is persistent and probably real. The period seems similar in y2 to what it is in y5, or a little less. From 1754 to 2889 could be 19 cycles of 59.7. The double peaks at 57.2 and 59.8 in the periodogram is curious but there are two noisy phase plots there and not in between.

Comparison reference star(s) co-ordinates:

**a00904: 21 10 44.16 +46 27 19.15**

Reminder: **All dates, JD and HJD are from Jan 1<sup>st</sup> 2000**

season 1: dates 1316 to 1553 is 9/8/2003 to 3/4/2004 **(a)**

season 2: dates 1696 to 1838 is 23/8/2004 to 12/01/2005 **(z)**

season 3: dates 2085 to 2177 is 16/9/2005 to 17/12/2005 **(y)**

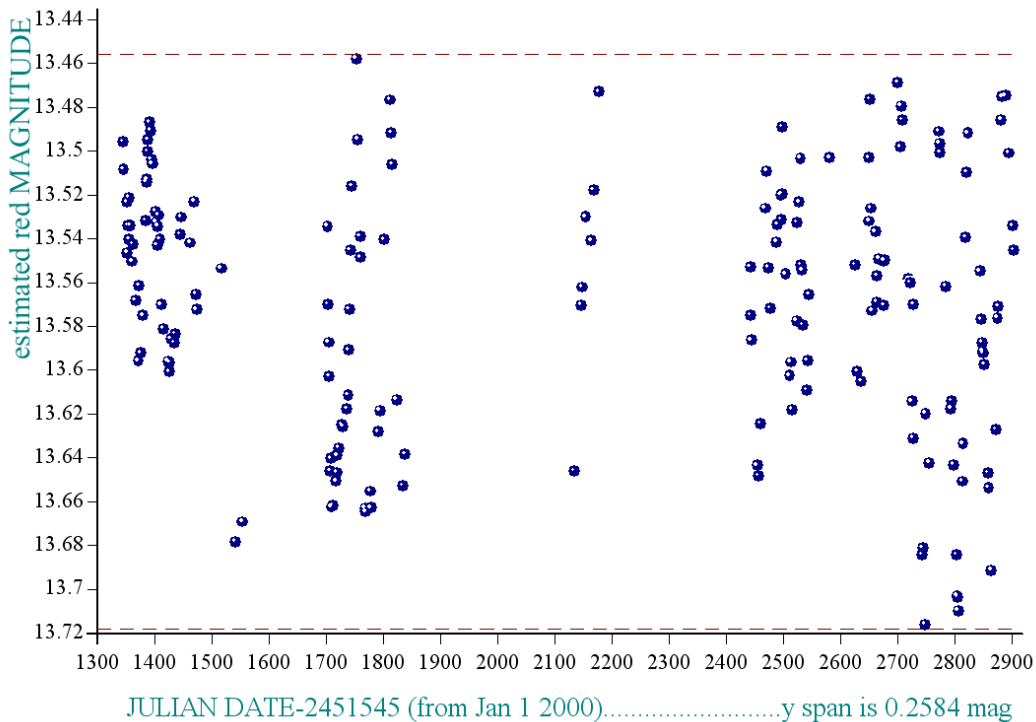
season 4: dates 2442 to 2755 is 8/9/2006 to 19/7/2007 **(w)**

season 5: dates 2772 to 2903 is 4/8/2007 to 13/12/2007 **(v)**

season 6: dates 2930 to 3266 is 9/1/2008 to 10/12/2008 **(u)**

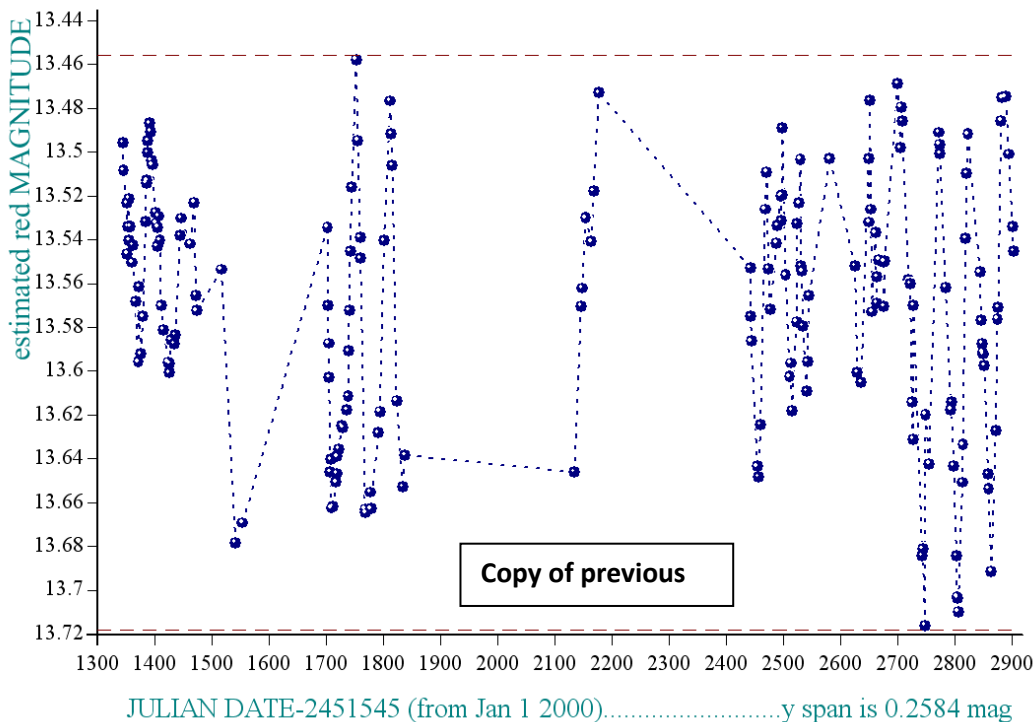
season 7: dates 3403 to 3539 is 26/4/2009 to 10/9/2009 **(t)**

*star a13603, refstar a00904 dia 8*



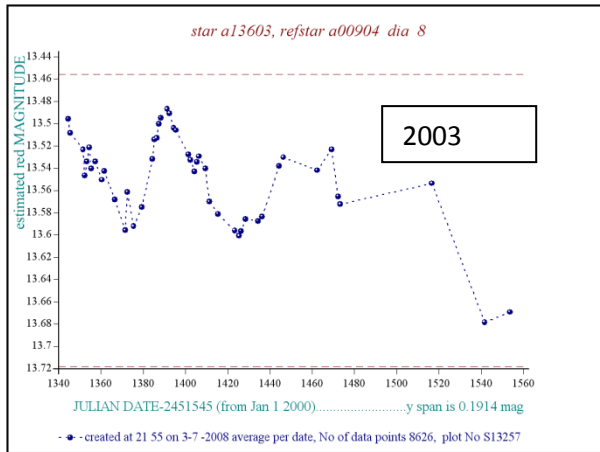
• created at 16 43 on 3-7 -2008 average per date, No of data points 46723, plot No S13200

*star a13603, refstar a00904 dia 8*



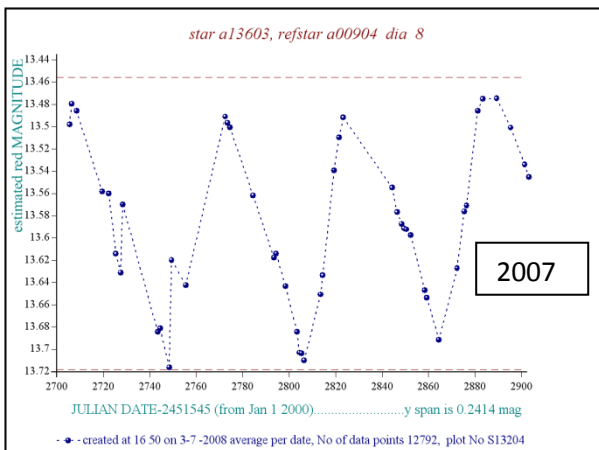
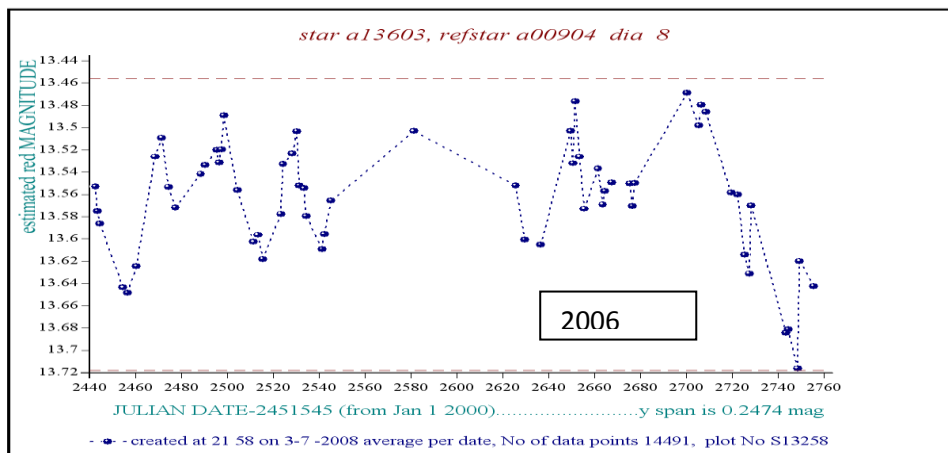
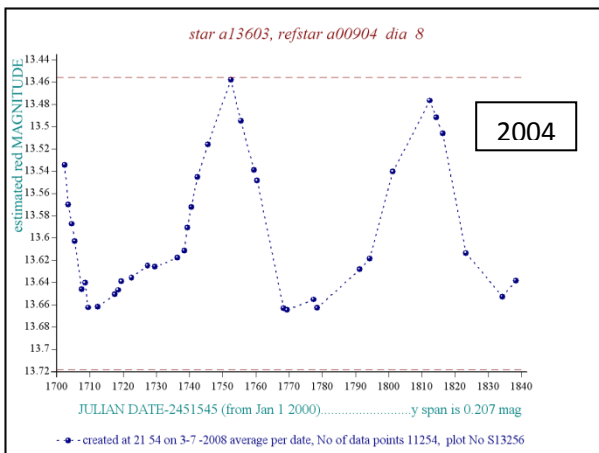
Copy of previous

-•- created at 16 57 on 3-7 -2008 average per date, No of data points 46723, plot No S13205



This star moves least in 2003, more in 2004, less again in 2006 and most in 2007. The waveform is different in each year. Looking at 2004 and 2007 in particular, it resembles the effect of another component slowly changing phase, changing the minimum from flattish (in 2004) to sharp (in 2007). The twin peaks in the periodogram may be connected to this. Two close frequencies beating would give an effect like this.

The x scale is not the same in each year.



The two peaks in the periodogram below (over 5 years) are at 57.2 and 59.8 days ( .0175 and .0167 cy per day). The inverse of their difference is 1316 days or 3.6 years. Could this account for the messed up pattern in 2003 and 2006 and neat (but different) waves in 2004 and 2007?

I calculate the temperature of this star to be 4030 dg K

*periodogram of star a13603 in dates 1344-2903, dia 8, ref a904*

