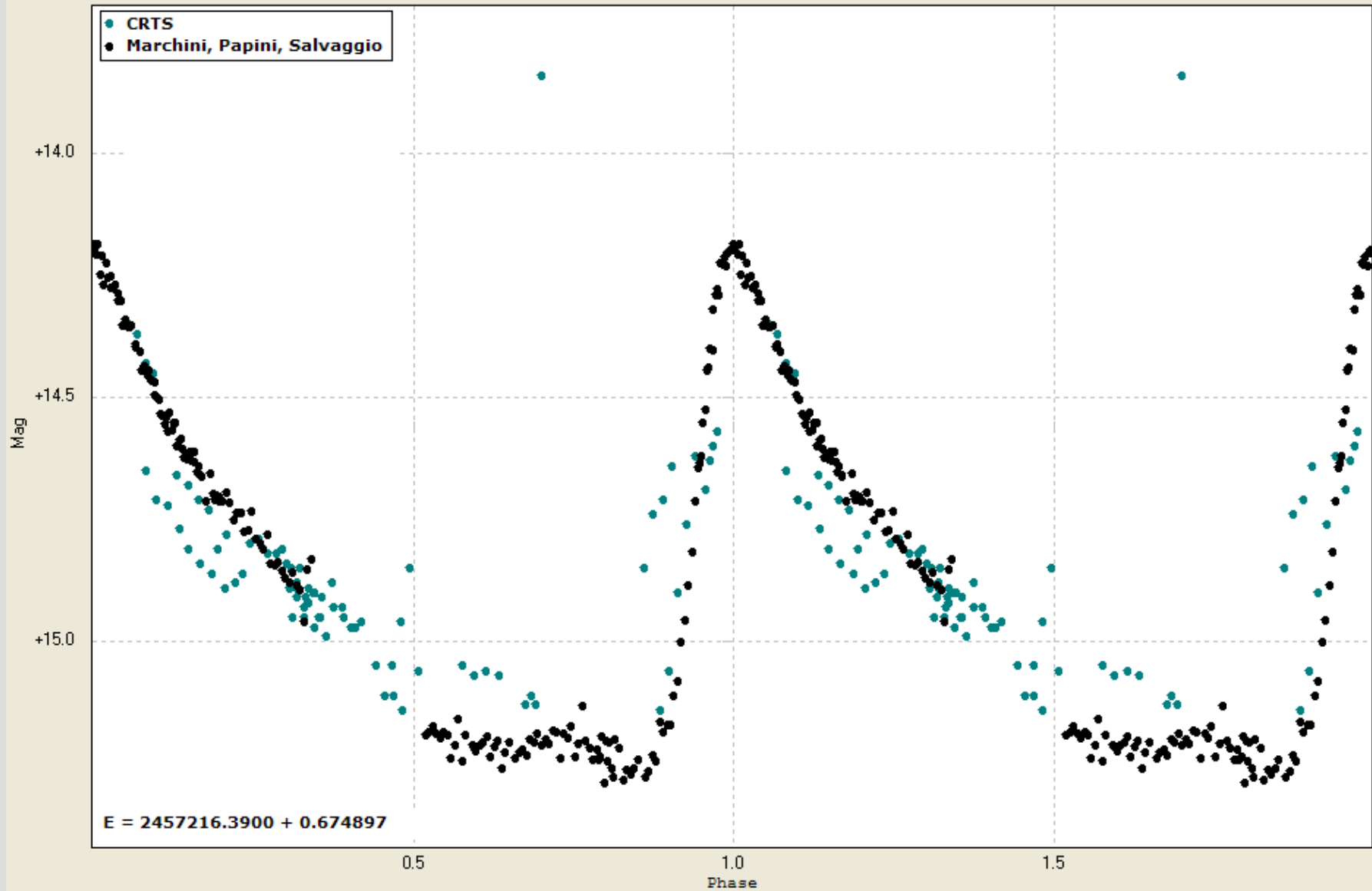


# Scoperta, caratterizzazione e censimento di nuove stelle variabili.

Fabio Salvaggio - GAC-UAI-SSV



## Sommario:

- Scansione del campo
- Individuazione delle stelle sospette
- Fotometria più precisa
- Controllo dell'esistenza sul VSX
- Ricerca dati storici nelle Surveys
- Ricerca del periodo (se periodica)
- Inserimento nel database VSX

## Software utilizzato:

- MPO Canopus
- Astrometrica
- Muniwin
- Maxim DL
- Foglio di calcolo (OpenOffice o MS Office)
- Peranso

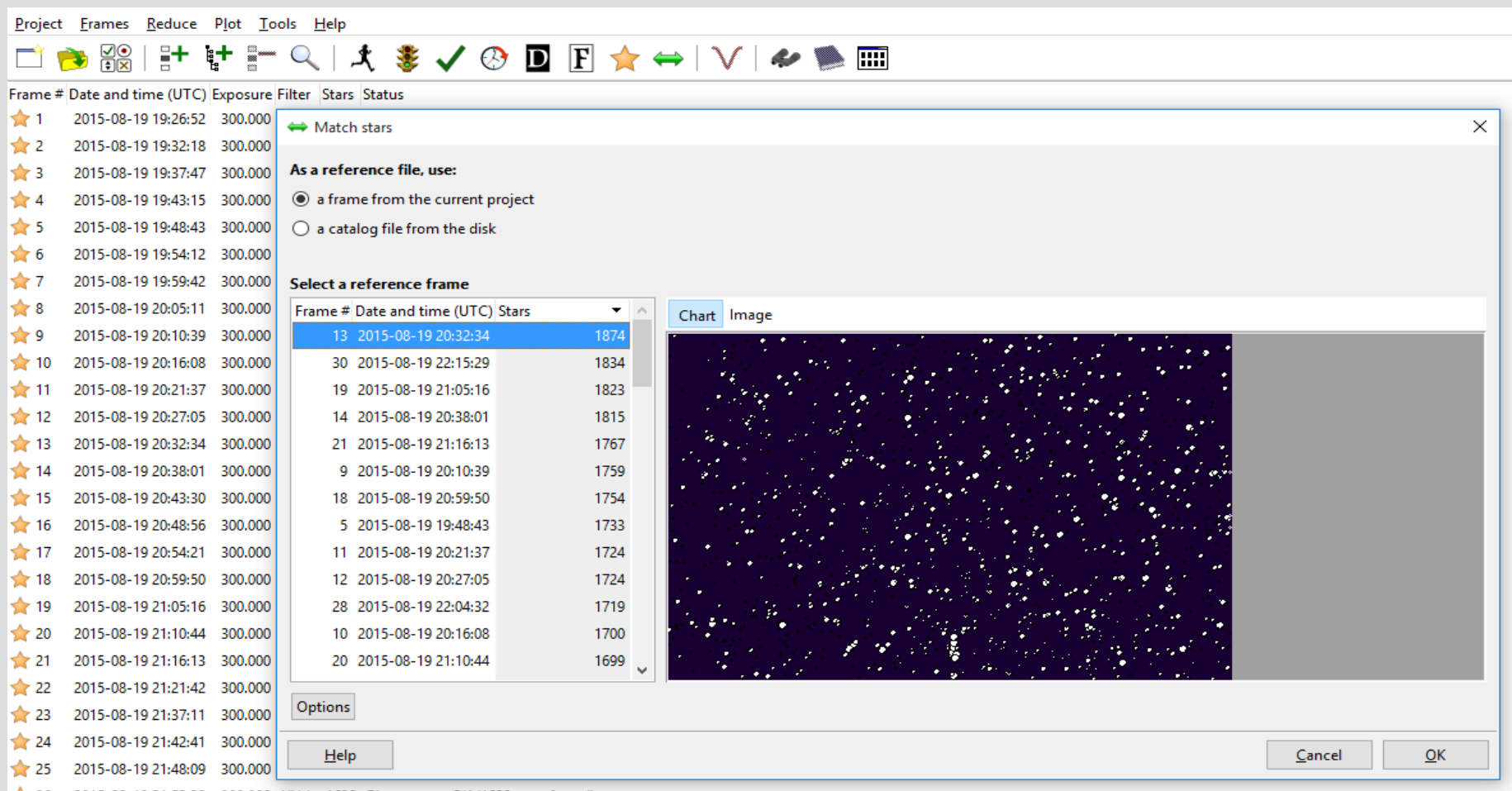
## Scansione del campo:

E' possibile utilizzare sia Muniwin che MPO Canopus VSS. In generale, ho personalmente sperimentato che Muniwin offre una migliore versatilità.

Ci sono un po' di accorgimenti per far rendere al meglio la qualità della fotometria offerta dal programma. Prima di tutto, ma questo vale per entrambi i software, conviene sempre **scartare i frames di dubbia o pessima qualità.**

# Scansione del campo:

Fondamentale è trovare tra i frames quello che restituisce il maggiore numero di match con gli altri...



Project Frames Reduce Plot Tools Help

Frame # Date and time (UTC) Exposure Filter Stars Status

★ 1 2015-08-19 19:26:52 300.000  
★ 2 2015-08-19 19:32:18 300.000  
★ 3 2015-08-19 19:37:47 300.000  
★ 4 2015-08-19 19:43:15 300.000  
★ 5 2015-08-19 19:48:43 300.000  
★ 6 2015-08-19 19:54:12 300.000  
★ 7 2015-08-19 19:59:42 300.000  
★ 8 2015-08-19 20:05:11 300.000  
★ 9 2015-08-19 20:10:39 300.000  
★ 10 2015-08-19 20:16:08 300.000  
★ 11 2015-08-19 20:21:37 300.000  
★ 12 2015-08-19 20:27:05 300.000  
★ 13 2015-08-19 20:32:34 300.000  
★ 14 2015-08-19 20:38:01 300.000  
★ 15 2015-08-19 20:43:30 300.000  
★ 16 2015-08-19 20:48:56 300.000  
★ 17 2015-08-19 20:54:21 300.000  
★ 18 2015-08-19 20:59:50 300.000  
★ 19 2015-08-19 21:05:16 300.000  
★ 20 2015-08-19 21:10:44 300.000  
★ 21 2015-08-19 21:16:13 300.000  
★ 22 2015-08-19 21:21:42 300.000  
★ 23 2015-08-19 21:27:11 300.000  
★ 24 2015-08-19 21:32:40 300.000  
★ 25 2015-08-19 21:38:09 300.000

Match stars

As a reference file, use:

a frame from the current project  
 a catalog file from the disk

Select a reference frame

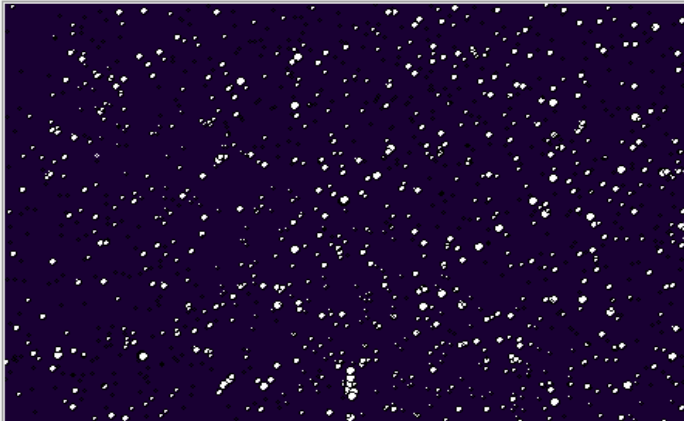
Frame #	Date and time (UTC)	Stars
13	2015-08-19 20:32:34	1874
30	2015-08-19 22:15:29	1834
19	2015-08-19 21:05:16	1823
14	2015-08-19 20:38:01	1815
21	2015-08-19 21:16:13	1767
9	2015-08-19 20:10:39	1759
18	2015-08-19 20:59:50	1754
5	2015-08-19 19:48:43	1733
11	2015-08-19 20:21:37	1724
12	2015-08-19 20:27:05	1724
28	2015-08-19 22:04:32	1719
10	2015-08-19 20:16:08	1700
20	2015-08-19 21:10:44	1699

Options

Help

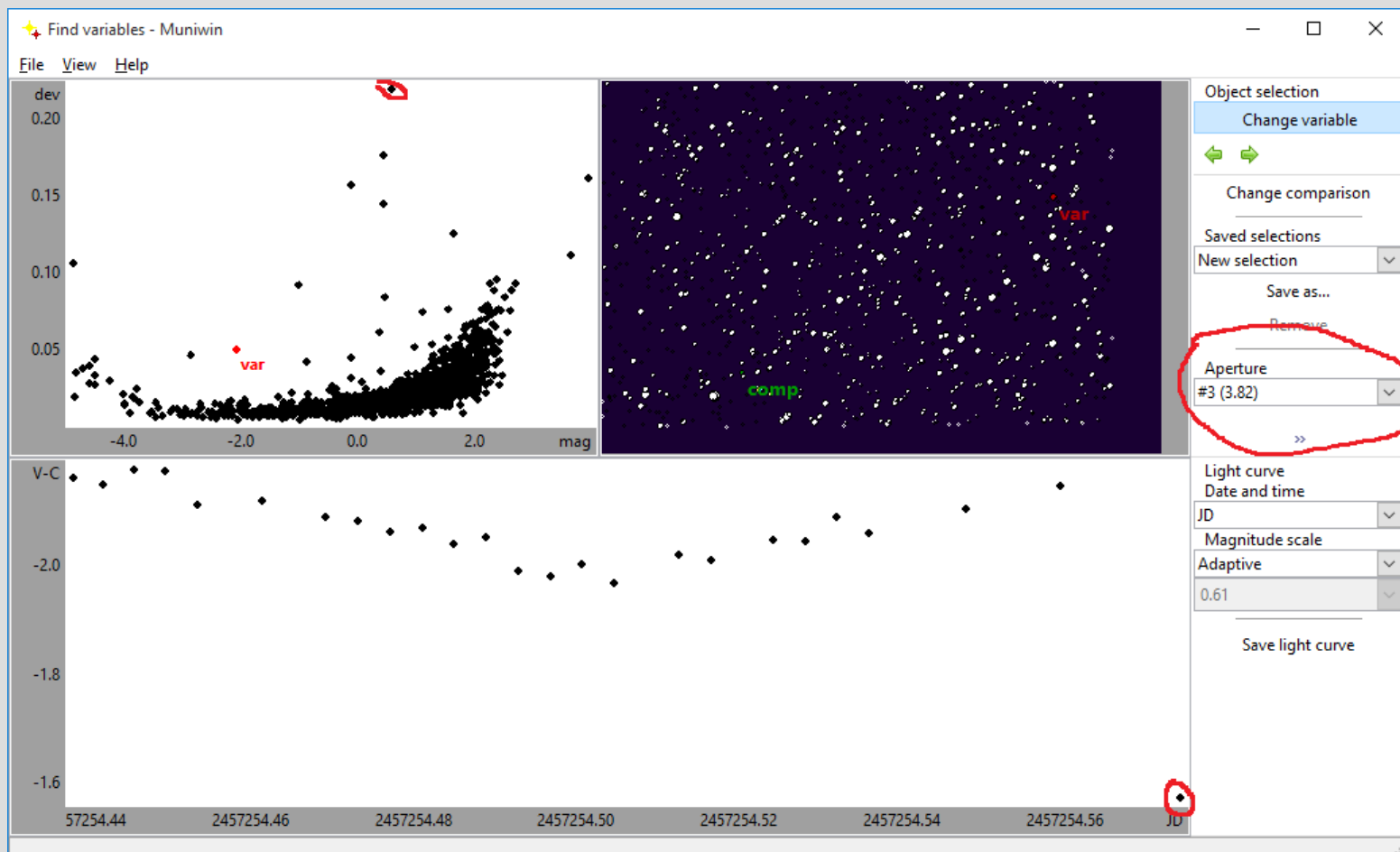
Cancel OK

Chart Image



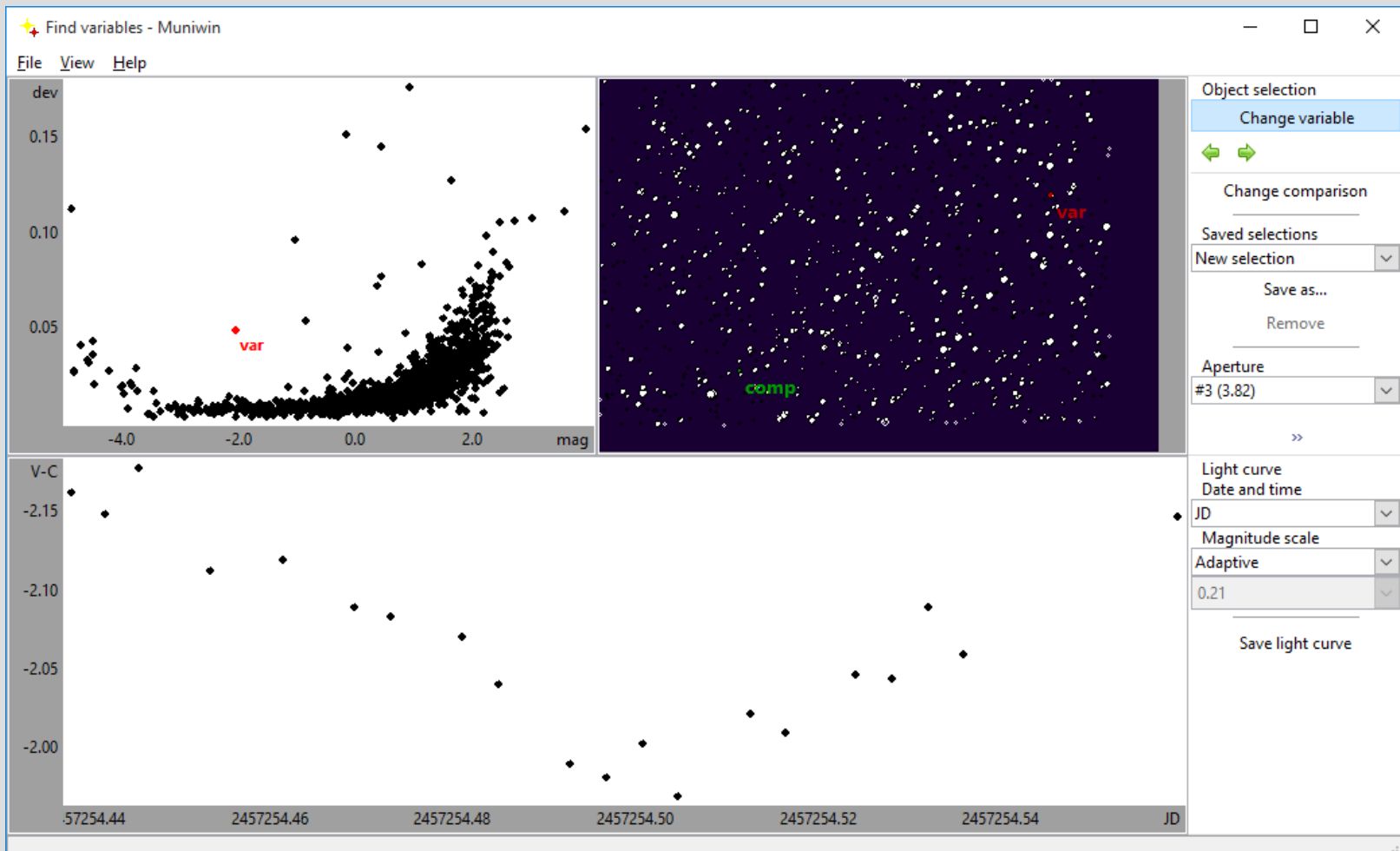
# Scansione del campo:

Pulire la curva da oggetti spuri da frames che falsano il risultato. Per migliorare l'RMS, provare con aperture diverse.

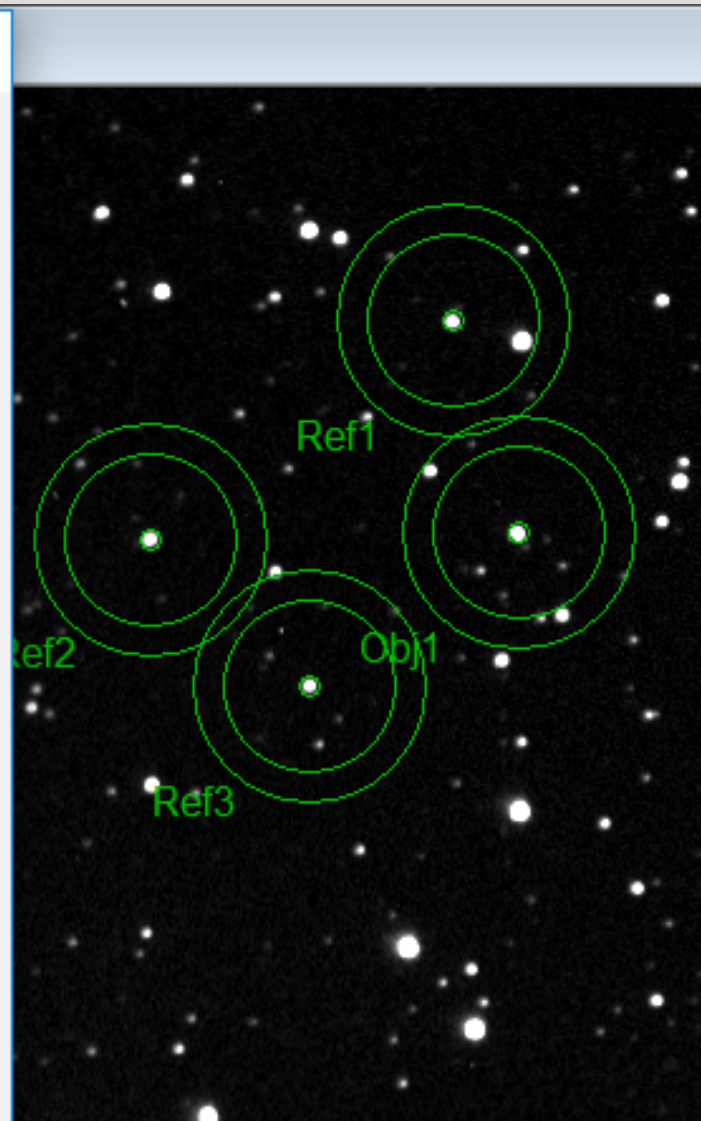
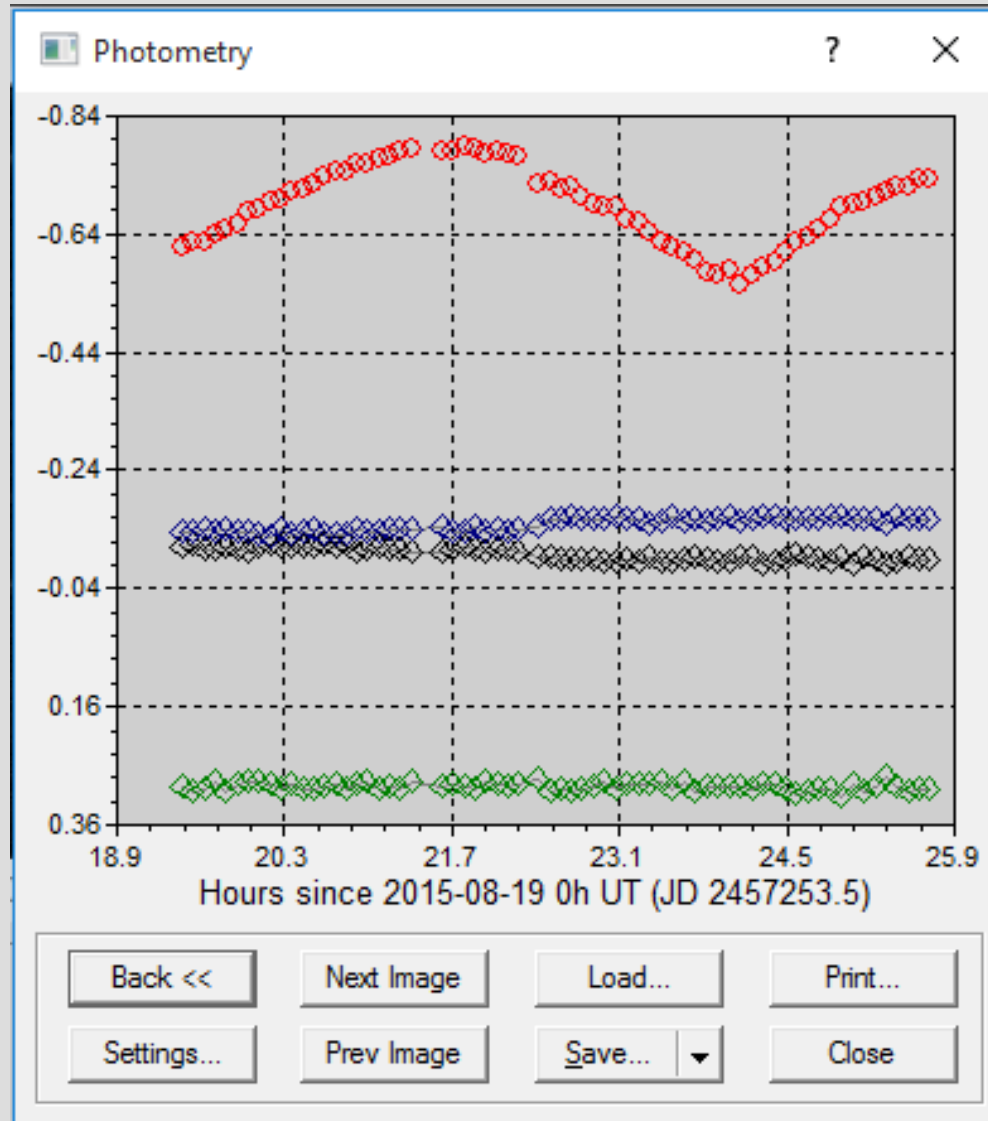


# Scansione del campo:

L'andamento di questa curva di luce sembra suggerire qualcosa. Ma la dispersione è ancora alta...



# MAXIM-DL!!!



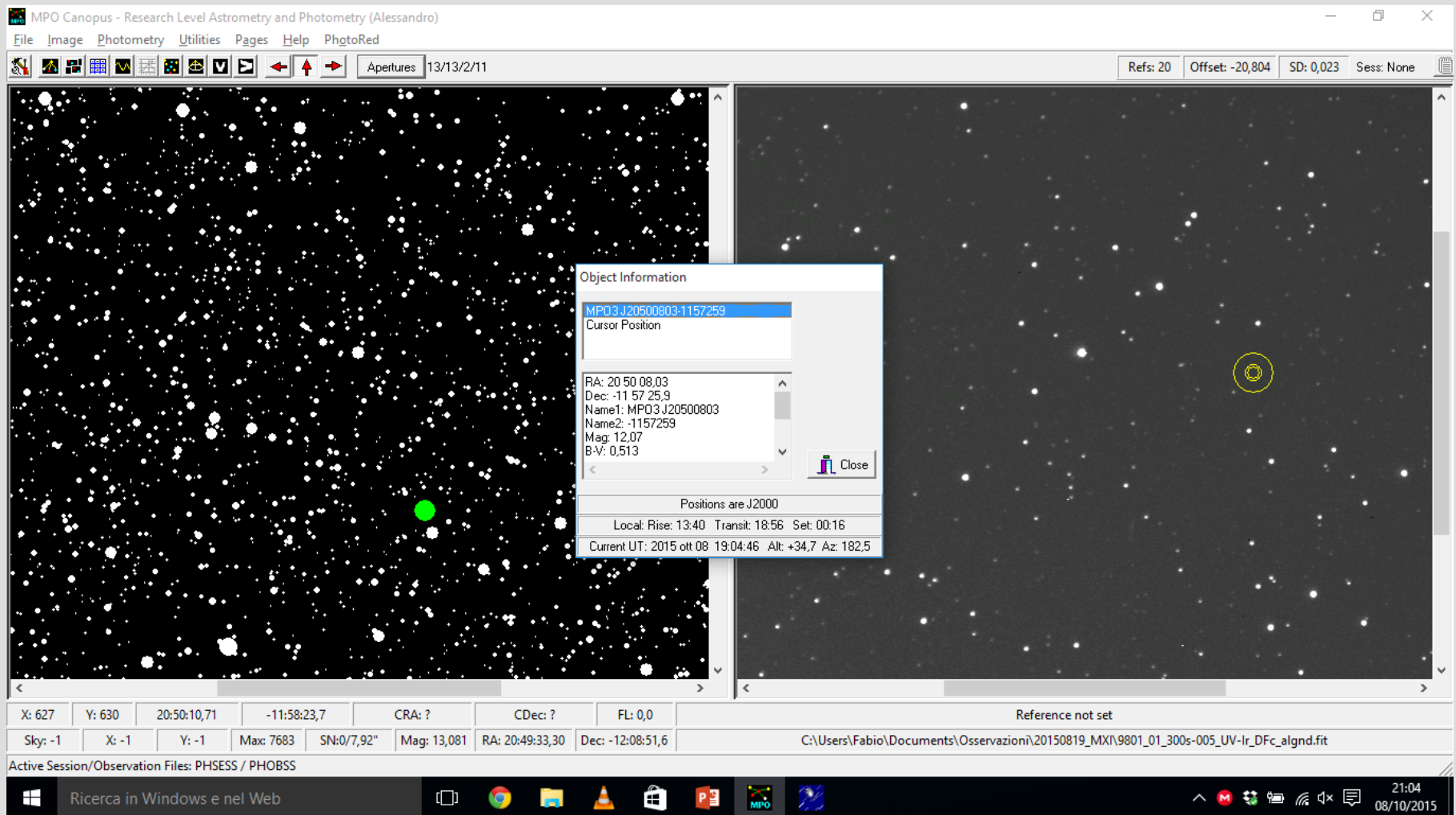


# Coordinate: MPO Canopus o Astrometrica

MPO Canopus - Research Level Astrometry and Photometry (Alessandro)

File Image Photometry Utilities Pages Help PhotoRed

Apertures 13/13/2/11 Refs: 20 Offset: -20,804 SD: 0,023 Sess: None



**Object Information**

MPO3.J20500803-1157259  
Cursor Position

RA: 20 50 08,03  
Dec: -11 57 25,9  
Name1: MPO3.J20500803  
Name2: -1157259  
Mag: 12,07  
B-V: 0,513

Close

Positions are J2000

Local: Rise: 13:40 Transit: 18:56 Set: 00:16  
Current UT: 2015 ott 08 19:04:46 Alt: +34,7 Az: 182,5

X: 627 Y: 630 20:50:10,71 -11:58:23,7 CRA: ? CDec: ? FL: 0,0 Reference not set

Sky: -1 X: -1 Y: -1 Max: 7683 SN:0/7,92" Mag: 13,081 RA: 20:49:33,30 Dec: -12:08:51,6 C:\Users\Fabio\Documents\Osservazioni\20150819\_MXI\9801\_01\_300s-005\_UV-Ir\_DFc\_algnd.fit



Active Session/Observation Files: PHSESS / PHOBSS

Ricerca in Windows e nel Web

21:04  
08/10/2015

# Sicuri sia una nuova Variabile? VSX!

**AAVSO Home**

 The International Variable Star Index  [Search](#) [Submit](#) [Register](#) [Log In](#) [Account](#) [About](#)

Current Time: 03 Oct 2015 13:13:02 UTC Welcome, Guest. You are not logged in.  
[» Log in](#)

## Search VSX ?

Special searches  [» Go](#)

Select a Special search above, or enter information in the fields below, then click **Search**.

? **Name**   
Examples: SS Cyg, V456 Sgr, NSV 1009  
%And, ASAS %+%, Mis V%  
Search by AUID also available

[» Capture coordinates for object to Position field](#)

**Const.**   
Filters search results by boundaries of selected constellation

---

? **Include**  **V** Variables  **S** Suspects  
 **N** Non-variables

---

? **Order by**   Descending

Click **More** for coordinate-based searches.

## Le Surveys utilizzate:

-CRTS:

-<http://nesssi.cacr.caltech.edu/DataRelease/>

-ASAS-3:

-<http://www.astrouw.edu.pl/asas/>

-NSVS:

-<http://skydot.lanl.gov/nsvs/nsvs.php>

# Gestire i dati delle Surveys

## **CRTS:**

- Aggiungere 2400000.5
- Applicare la correzione eliocentrica

## **ASAS-3:**

- Aggiungere 2450000

## **NSVS:**

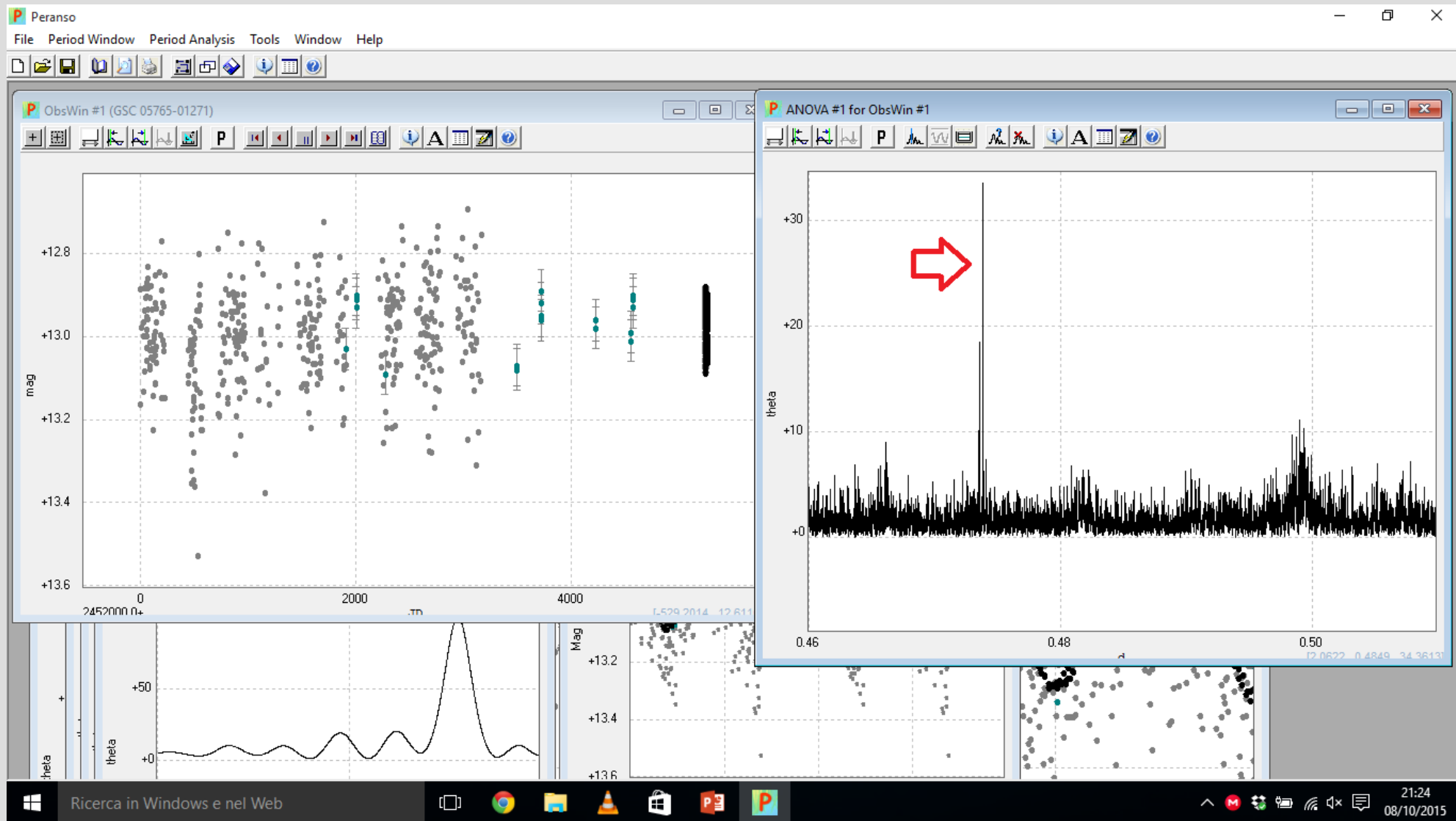
- Aggiungere 2400000.5
- Applicare la correzione eliocentrica

# Gestire i dati delle Surveys

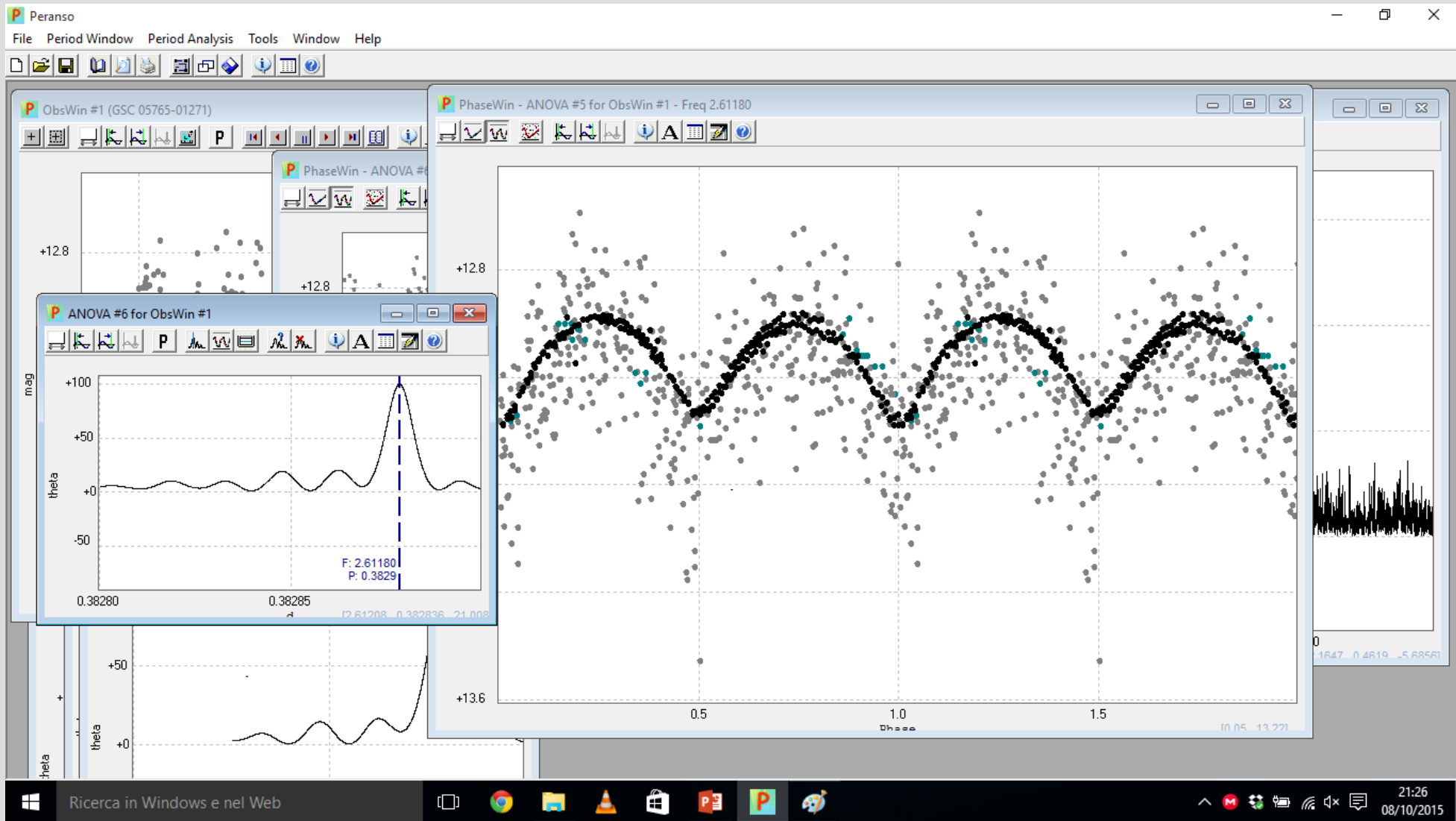
The image shows an Excel spreadsheet with the following data:

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	3,01315E+12	15,89	0,08	300,4455	-12,41785	53581,60289	0						
2	3,01315E+12	15,9	0,08	300,4455	-12,41786	53581,61177	0			2453582,102890	15,89	0,08	
3	3,01315E+12	15,88	0,08	300,4455	-12,41784	53581,62063	0			2453582,111770	15,9	0,08	
4	3,01315E+12	15,84	0,08	300,4455	-12,41781	53581,62949	0			2453582,120630	15,88	0,08	
5	3,01315E+12	15,57	0,09	300,4455	-12,41786	53920,61643	0			2453582,129490	15,84	0,08	
6	3,01315E+12	15,21	0,08	300,4455	-12,41784	53920,6264	0			2453921,116430	15,57	0,09	
7	3,01315E+12	14,9	0,08	300,4455	-12,41787	53920,63638	0			2453921,126400	15,21	0,08	
8	3,01315E+12	14,86	0,08	300,4455	-12,41788	53920,64634	0			2453921,136380	14,9	0,08	
9	3,01315E+12	15,51	0,09	300,4455	-12,41783	53819,77522	0			2453921,146340	14,86	0,08	
10	3,01315E+12	15,51	0,09	300,4455	-12,41786	53819,77917	0			2453820,275220	15,51	0,09	
11	3,01315E+12	15,49	0,09	300,4455	-12,41784	53819,78309	0			2453820,279170	15,51	0,09	
12	3,01315E+12	15,54	0,09	300,4455	-12,41788	53819,78698	0			2453820,283090	15,49	0,09	
13	3,01315E+12	15,86	0,07	300,4455	-12,41783	53883,70093	0			2453820,286980	15,54	0,09	
14	3,01315E+12	15,87	0,07	300,4455	-12,41785	53883,70641	0			2453884,200930	15,86	0,07	
15	3,01315E+12	15,84	0,07	300,4455	-12,41784	53883,71188	0			2453884,206410	15,87	0,07	
16	3,01315E+12	15,87	0,07	300,4455	-12,41783	53883,71735	0						

# Peranso: mettere in fase i dati.



# Peranso: mettere in fase i dati.



# I nomi della stella per la catalogazione:

Con Vizier (<http://vizier.u-strasbg.fr/viz-bin/VizieR>) è possibile, ad una data coordinata, risalire a praticamente tutti i nomi di catalogo per una data stella.

**Find catalogs among 14065 available**

Clear  Find...

Expand search

? *Catalog, author's name,  
word(s) from title, description, etc.  
e.g.: AGN, Veron, I/239, or bibcodes...*

Search for catalogs by column descriptions (UCD) ?

Search for catalogs containing additional data

---

**Search by Position across 14785 tables**

Target Name (resolved by [Sesame](#)) or Position: Clear  J2000 ▼ Target dimension: 2 arcsec ▼ Go!

Radius  Box size



# I nomi della stella per la catalogazione:

Le nomenclature maggiormente utilizzate e la loro importanza di comparizione:

-GSC

-2MASS

-UCAC4

-CMC15

... e dalle Survey:

-CSS (MLS, SSS)

-ASAS-3

-NSVS

# Submission to VSX AAVSO

### New Star Form ?

Red bar fields are required. Dependent on submission type, other fields may be required.

**ALWAYS CHECK FOR DUPLICATES!** Enter the position, then click **Spot check**

**IMPORTANT NOTE REGARDING CROWDED FIELDS:** Submission of new variable stars in crowded fields may require an accompanying CCD finding chart with sufficient scale to unambiguously identify the variable.

? Position (J2000.0)  **» Spot check**  
Examples: 21 42 42.84 +43 35 10.2  
07:04:04.22 -03:50:51.7  
34.83722 -2.97818

---

? Primary name  **» Check name**  
Other names   
One catalog designation per line.  
Examples: 2MASS J19595804-2258147  
USNO-B1.0 0910-0526709  
GSC 06892-01916

---

? Standard variable type  **» Variability types**  
Custom variable type   Uncertain  
Use accepted type abbreviations whenever possible.  
Spectral type   Uncertain  
Examples: G9.5V+K3V  
SC2-S4e  
M7e

? Maximum magnitude   Uncertain  
The magnitude measurement of the star at its brightest.

Max. mag. passband  **» Passbands**

Custom max. passband

Minimum magnitude   Uncertain  
The magnitude measurement of the star at its faintest.

Min. mag. passband  **» Passbands**

Custom min. passband

Minimum is amplitude

---

? Period  days  Uncertain

Epoch  HJD  Uncertain

Rise/eclipse duration  %  Uncertain

Outburst (nova) year   Uncertain

---

? Supporting file 1  Nessun file selezionato  
**Required for original unpublished stars.**  
Optional for previously published stars.  
Maximum file size: 1 MB

File title

File description

Mark as private

# Submission to VSX AAVSO

**?** Discoverer   
Used only for discovery credit on Detail Sheet.

---

**?** Reference name   
**Required for previously published stars.**  
Optional for original unpublished stars.  
Examples: The All Sky Automated Survey  
OEJV #43

Reference citation   
Examples: 2006AAS...208.4405P  
Astron. & Astrophys. 65, 363 (1978)

Reference link   
Leave empty if there is no on-line resource available.

---

**?** Additional remarks   
Appears in Additional Remarks section of Detail Sheet.

- NOTE**
- Please make certain all above details are correct before submitting this new star.
  - Input will be checked for errors and an opportunity will be given to correct any.
  - All submissions must be approved before appearing in the live database.
  - VSX moderators reserve the right to edit submissions for accuracy and clarity.
  - Your network address (5.88.35.71) and user information will be logged.
  - Supporting documentation is required for all original unpublished submissions.
  - Literature reference is required for all previously published submissions.
  - VSX is not a guaranteed permanent repository for uploaded documents.

Click **Submit New Star** only once. Buttons will auto-disable to prevent multiple clicks.

Cancel

Reset

Submit New Star