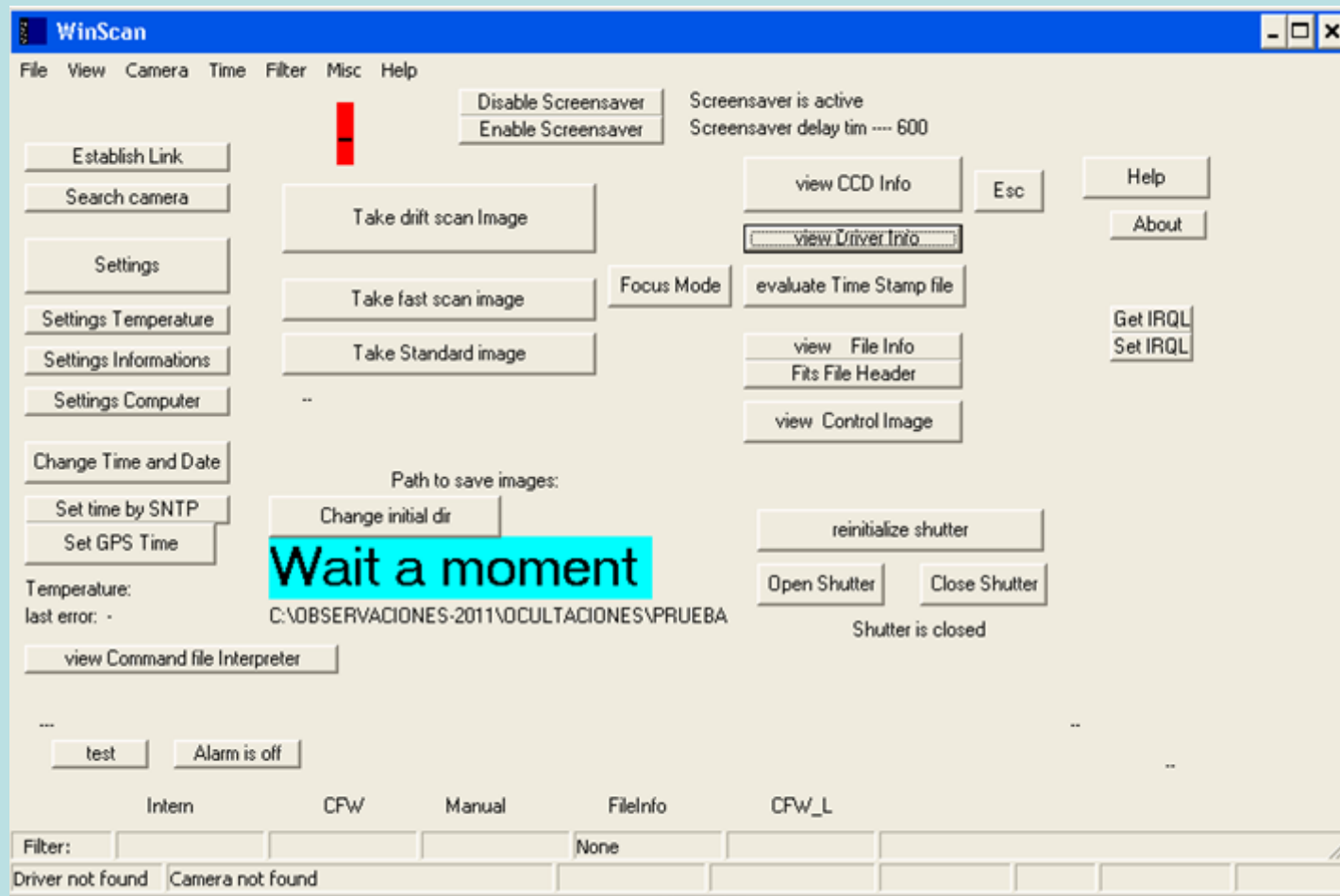


Occultation of stars by asteroids



Ramon Naves
Obs. Montcabrer – MPC 213
Cabrils – Barcelona
<http://cometas.sytes.net>

WINSCAN



DRIFT SCAN

Settings [-] [□] [X]

File View: Help

Typ: 5 SBIG ST-8 3 CCD Camera [Hide]

Focal length mm: 1810 Declination: 40 Sideral rate: 1 [Help]

=inch: 71.259843 40.00745169

CCD: Imaging CCD Tracking CCD

Binning: 1 x 1 2 x 2 3 x 3 9 x 9

Binning: on Chip off Chip Vertical

Readout Mode: 0 3 6 1 4 7 2 5 8 9

Planetary Mode, columns: Yes No

Start: 0 Length: 1530

FOCUS (don't save)

| | | | |
|-------------|-----------|-----------|------------|
| Partial TDI | Sub Frame | -- | -- |
| Speckle | FastScan | FastFocus | FastSearch |
| Drift Scan | Standard | Sub Array | |

Time per line s: 0.0890232310393208 Fixed

Number of lines to read: 200000

Time for the whole image s: 17804.6462078

Exposure time (effective) s: 91.16

[Load Default] [Save as Default]

Differentiell trailing (North): 3.26606 Pixel

Store fist 1028 lines

Differentiell trailing (South): 3.24528 Pixel

+Read last 1028 lines

Image High: 198972 FastScan

[simulate trailing]

90.8036956601073

Pixel height um: 9 FOV height arc min: 17.4356438

Pixel height arc s: 1.0256261

Pixel width um: 9 FOV width arc min: 26.1534657

Pixel width arc s: 1.02562610

light or dark frame: light frame dark frame

CCD lines (height): 1020

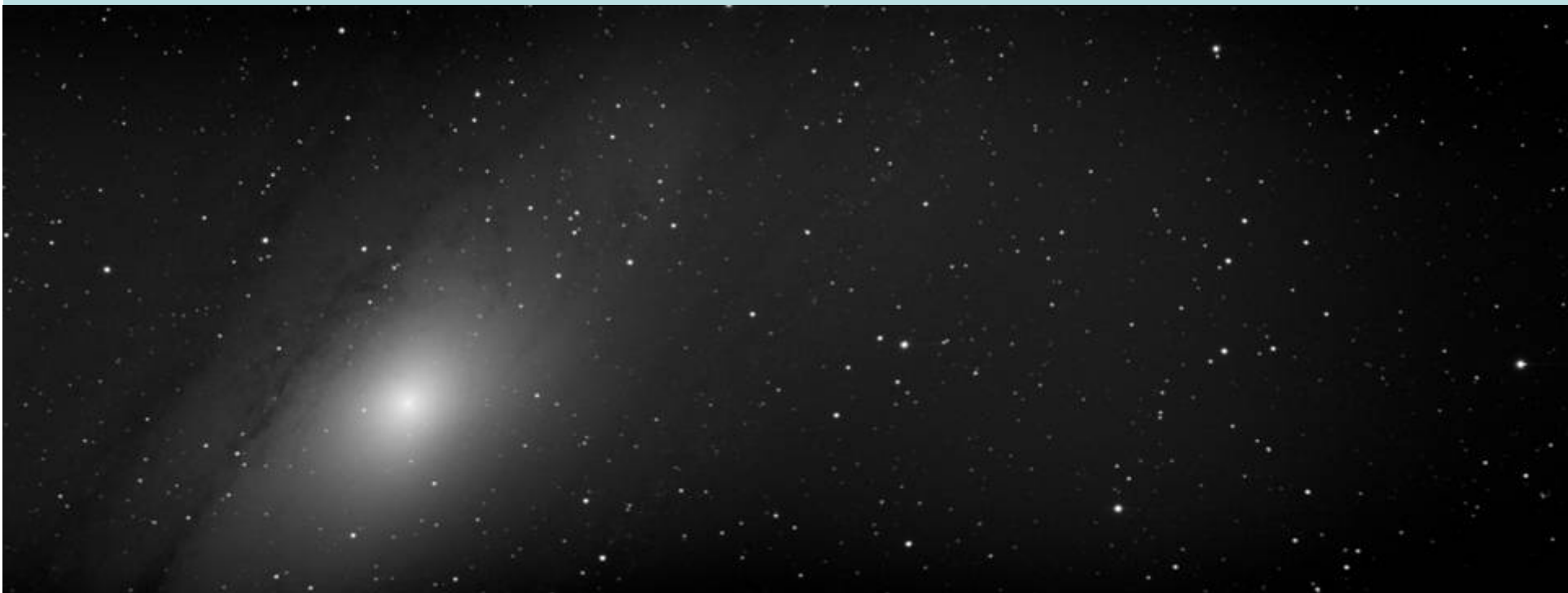
CCD columns (width): 1530

Auto Grab, number of images: 1

freeze cooler regulation for readout

Brake(ESC) while taking an image: enable

enabled



FAST SCAN

Settings

File View: Help

Typ: 4 SBIG ST-7 Dual CCD Camera (DUMMY) Hide

Focal length mm: 1810 Declination: 47 Sideral rate: 1 Help
 =inch: 71.259843 47.00744807

CCD
 Imaging CCD
 Tracking CCD

Binning
 1 x 50
 2 x 50
 3 x 50
 9 x 9

Binning
 on Chip
 off Chip
 Vertical

Readout Mode
 0 3 6
 1 4 7
 2 5 8 9

Planetary Mode, columns
 Yes No
 Start: 0
 Length: 765

Focus (don't save) Vertical Binning: 50

| | | | |
|-------------|-----------|-----------|------------|
| Partial TDI | Sub Frame | -- | -- |
| Drift Scan | Standard | Sub Array | |
| Speckle | FastScan | FastFocus | FastSearch |

Time per line s: 0.1 Load Default Save Default
 No error compensation Number of lines to read: 3000
 Time for the whole image s: 300.0000
 no break Start/Strobe ind. pulse: 0 0
 store first to memory(4.59MB) Set to defaults

Strobe readout time
 Strobe delay x* shiltime: 1 At LineNr: 10 Start delay x* shiltime: 1
 last line to strobe: 100 strobe again at: 2900

Pixel height um: 450 FOV height arc min: 8.54688406
 Pixel height arc s: 51.281304
 Pixel width um: 9 FOV width arc min: 13.0767328
 Pixel width arc s: 1.02562610

light or dark frame
 light frame CCD lines (height): 10
 dark frame CCD colums (width): 765

Auto Grab, number of images: 1
 freeze cooler regulation for readout

Brake(ESC) while taking an image
 enable
 enabled

49.9985180639728

FAST SCAN

Time per line

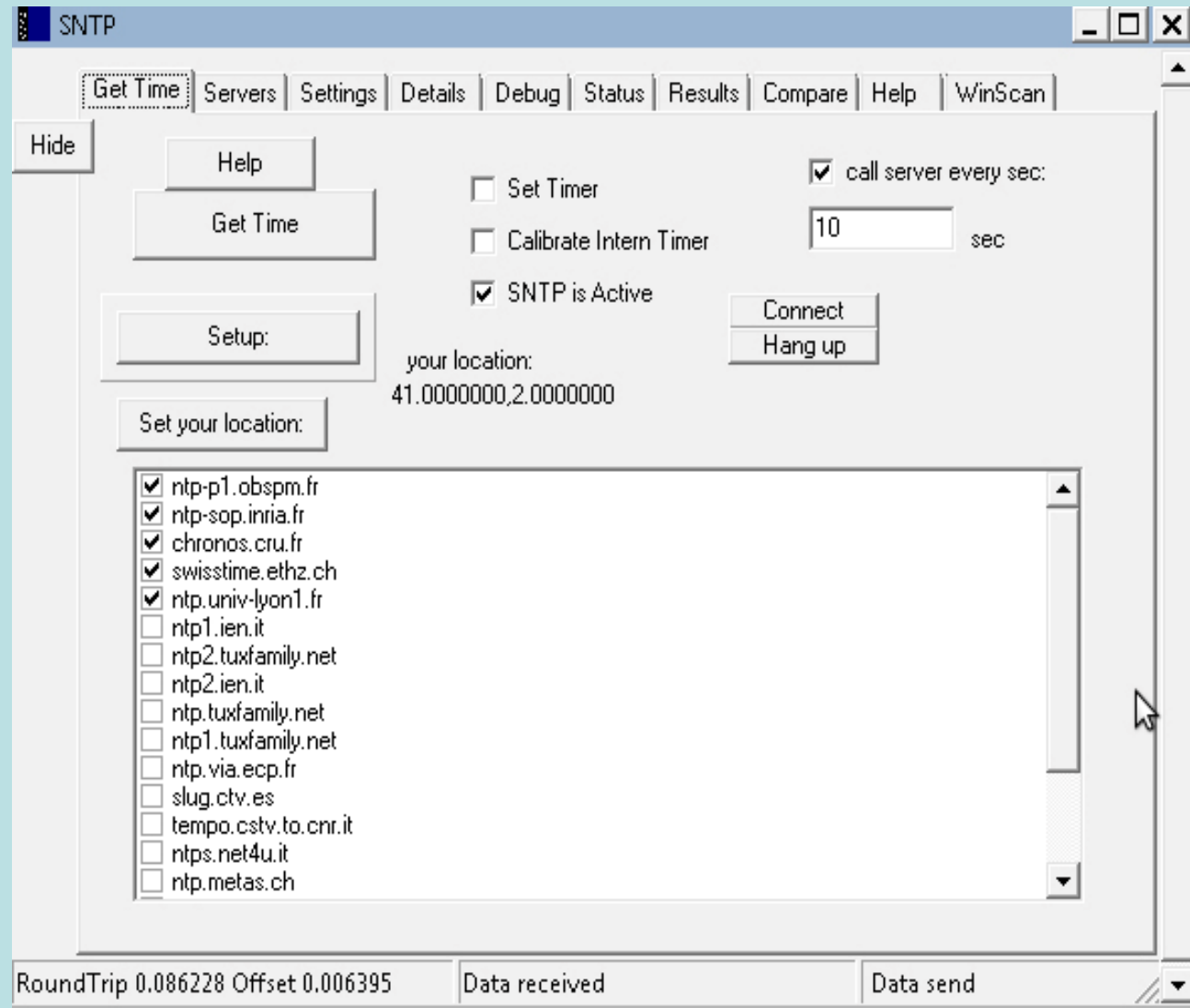
Vertical binning

Strobe

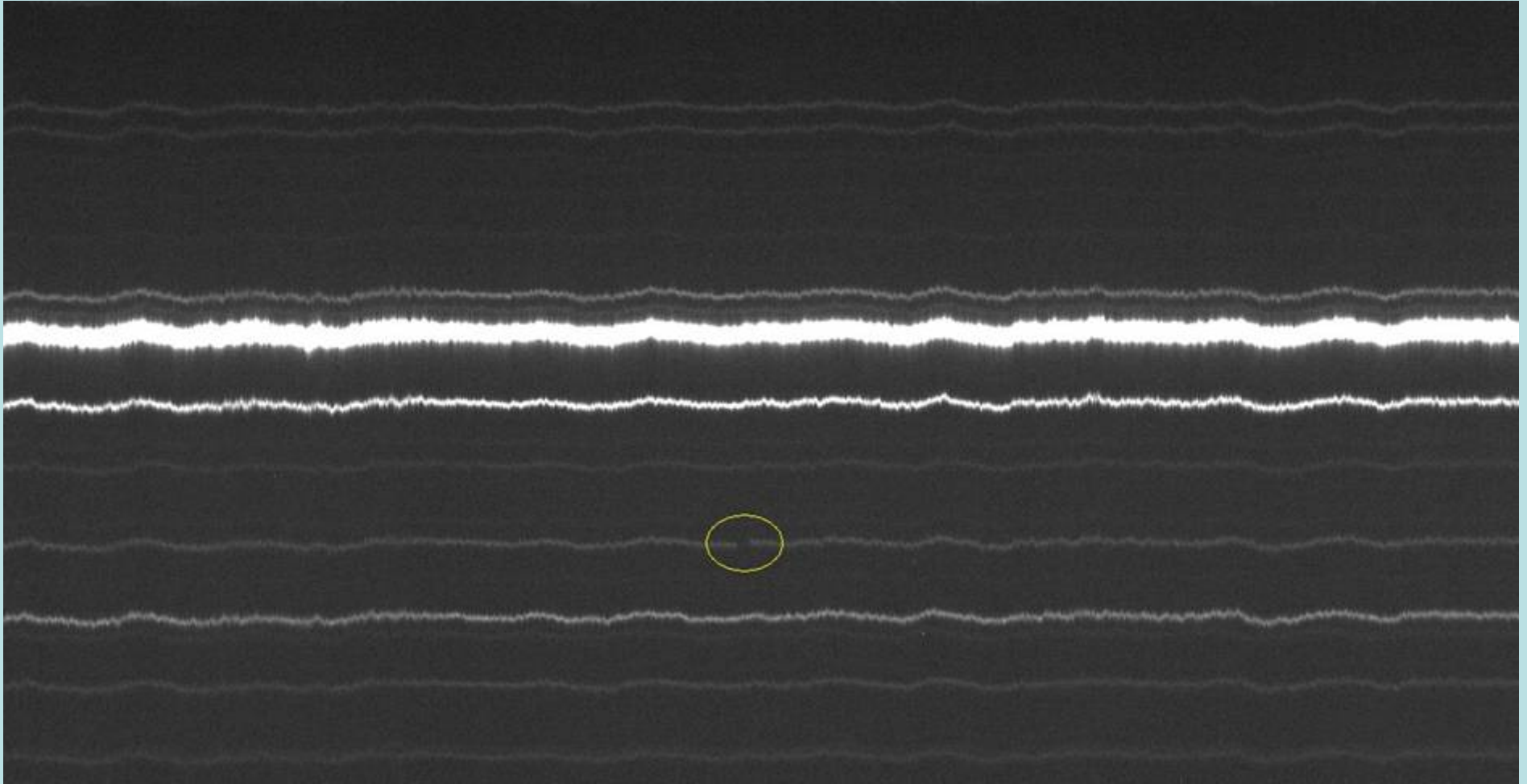
Planetary Mode

Set time by NSTP

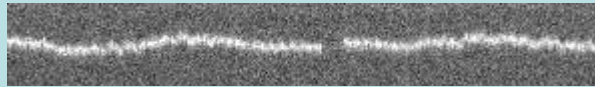
Set time by NTP



OCCULTATION



OCCULTATIONS



25 Phocacea

2012-04-16

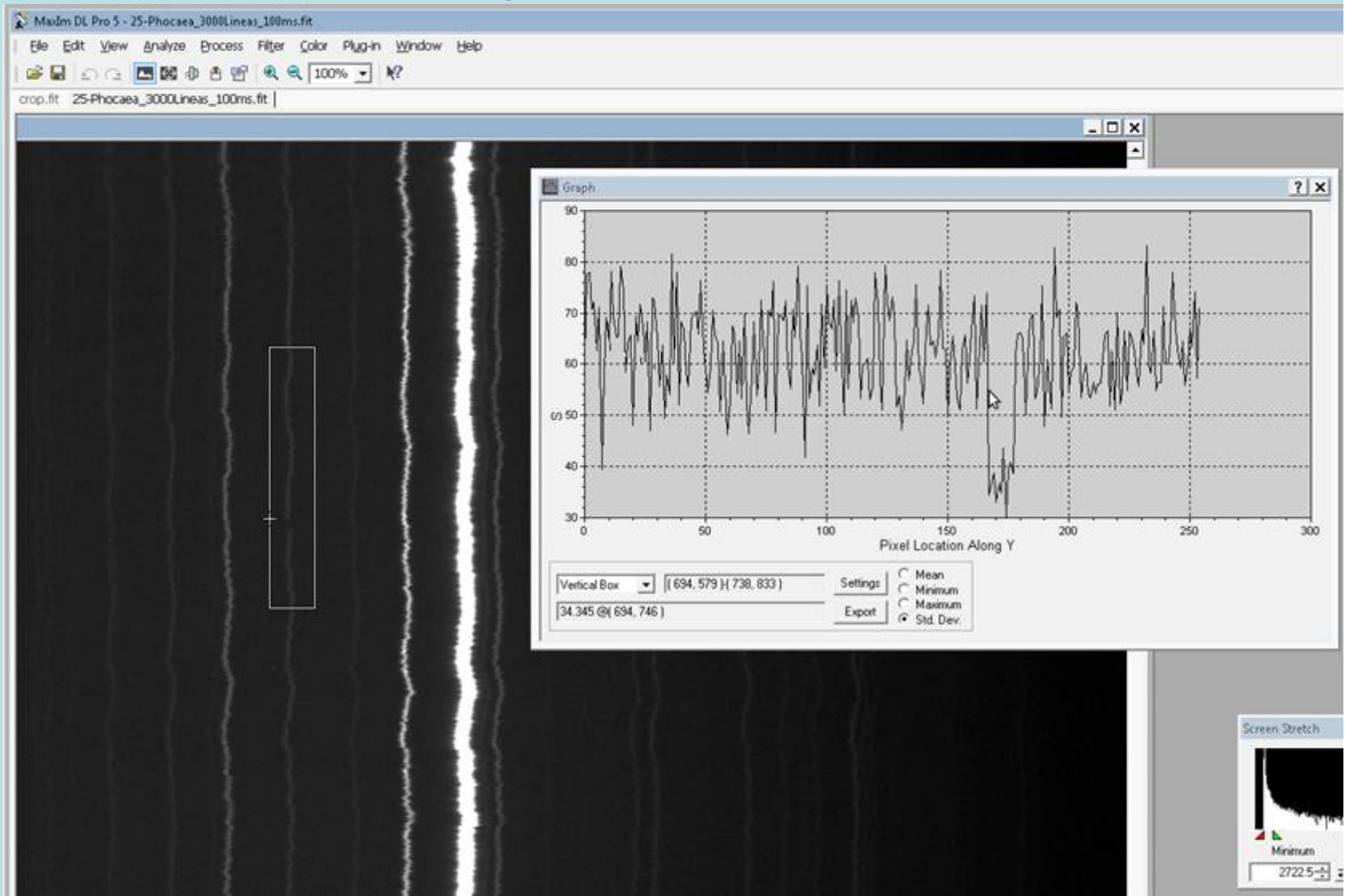


36997 2000 TK17 2012-03-24

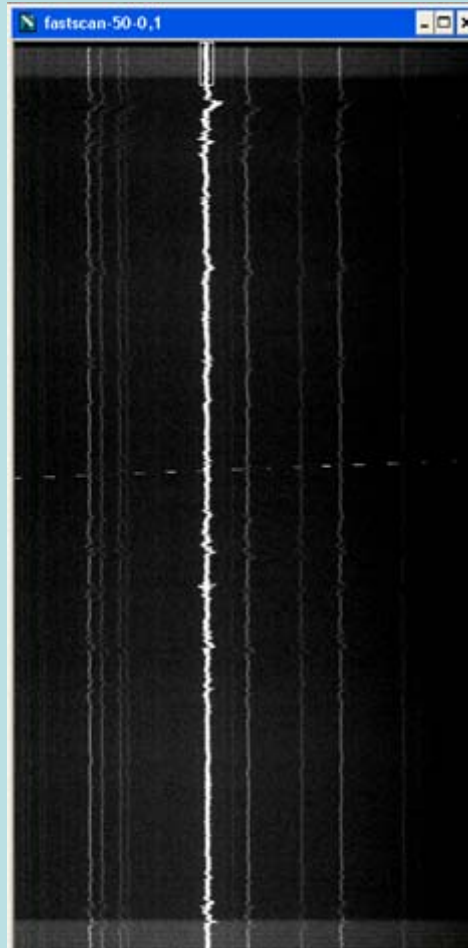


156 Xanthipe 2011-12-26

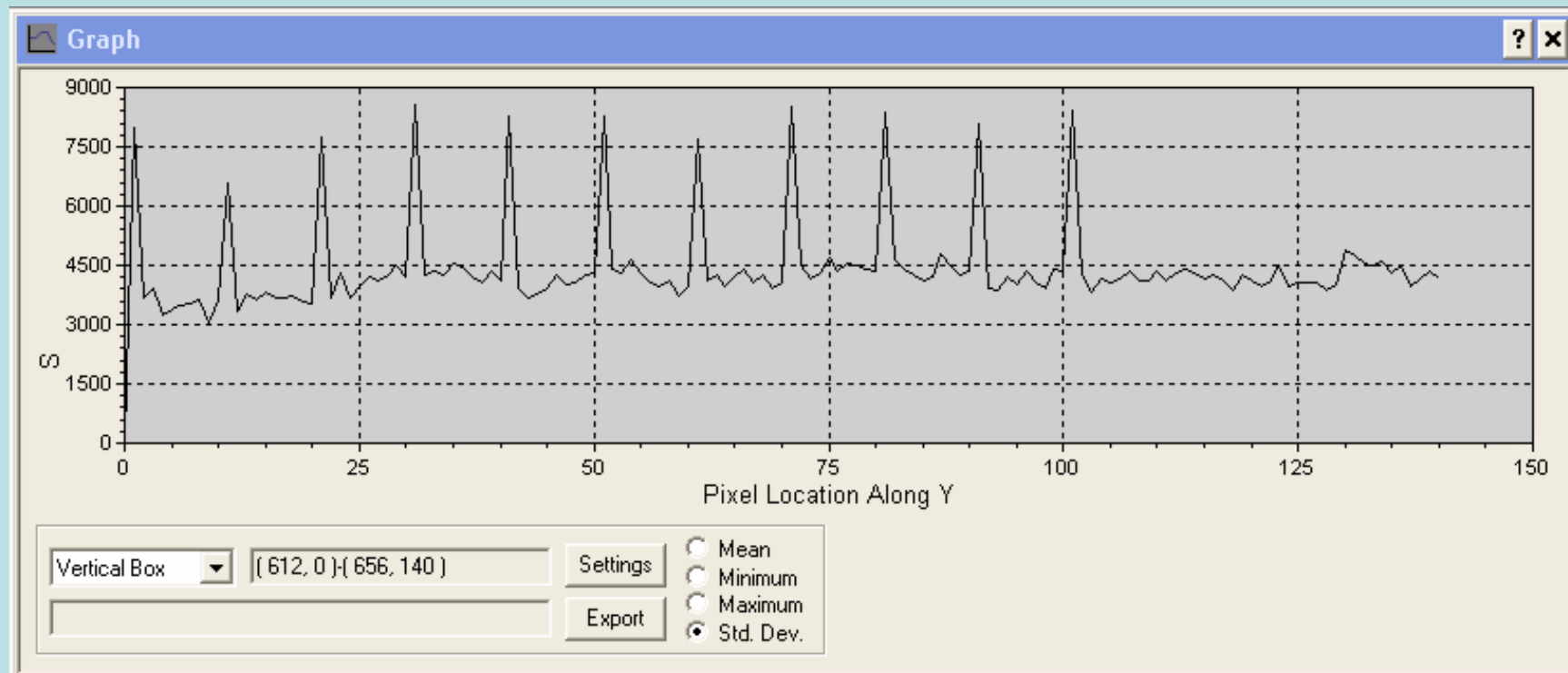
Fotometry. Maxim DL



STROBE



STROBE



Time Stamp File

TimeStampForm

File Show Clear Help

decimal separator (only ListBox) column separator (only ListBox) Scale s ms us Show Data Hide Calculate standard deviation Help

| Line Nr | time | difference | error relative to mean | enW |
|---------|--------|------------|------------------------|--------|
| 0 | 0.0456 | 0.0456 | -0.0338 | 0.0356 |
| 1 | 0.0569 | 0.0113 | 0.0004 | 0.0369 |
| 2 | 0.0686 | 0.0117 | 0.0001 | 0.0386 |
| 3 | 0.0802 | 0.0116 | 0.0002 | 0.0402 |
| 4 | 0.0915 | 0.0113 | 0.0004 | 0.0415 |
| 5 | 0.1027 | 0.0112 | 0.0005 | 0.0427 |
| 6 | 0.1143 | 0.0116 | 0.0001 | 0.0443 |
| 7 | 0.1301 | 0.0157 | -0.0040 | 0.0501 |
| 8 | 0.1417 | 0.0116 | 0.0001 | 0.0517 |
| 9 | 0.1533 | 0.0116 | 0.0001 | 0.0533 |
| 10 | 0.1747 | 0.0214 | -0.0096 | 0.0647 |
| 11 | 0.1859 | 0.0113 | 0.0005 | 0.0659 |
| 12 | 0.1973 | 0.0113 | 0.0004 | 0.0673 |
| 13 | 0.2090 | 0.0117 | 0.0000 | 0.0690 |
| 14 | 0.2204 | 0.0114 | 0.0003 | 0.0704 |
| 15 | 0.2318 | 0.0114 | 0.0003 | 0.0718 |
| 16 | 0.2432 | 0.0114 | 0.0004 | 0.0732 |
| 17 | 0.2548 | 0.0116 | 0.0001 | 0.0748 |
| 18 | 0.2665 | 0.0116 | 0.0001 | 0.0765 |
| 19 | 0.2778 | 0.0113 | 0.0004 | 0.0778 |

mean + 3*sigma (in sec) (Calculate standard deviation) Time per line (should be)

0.014403377312 0.010000

File View Camera Time Filter Misc Help

Disable Screensaver Enable Screensaver Screensaver is active Screensaver delay tm --- 600

Establish Link Search camera Settings Settings Temperature Settings Informations Settings Computer Change Time and Date Set time by SNTP Set GPS Time view Command file Interpreter

Take diff scan image Take fast scan image Take Standard image

view CCD Info view Driver Info evaluate Time Stamp file view File Info Fits File Header view Control Image

Path to save images: Change initial dir Initial dir from last image reinitialize shutter

Temperature: last error: No error C:\OBSERVACIONES 2012\OCULTACIONES

Open Shutter Close Shutter Shutter is closed

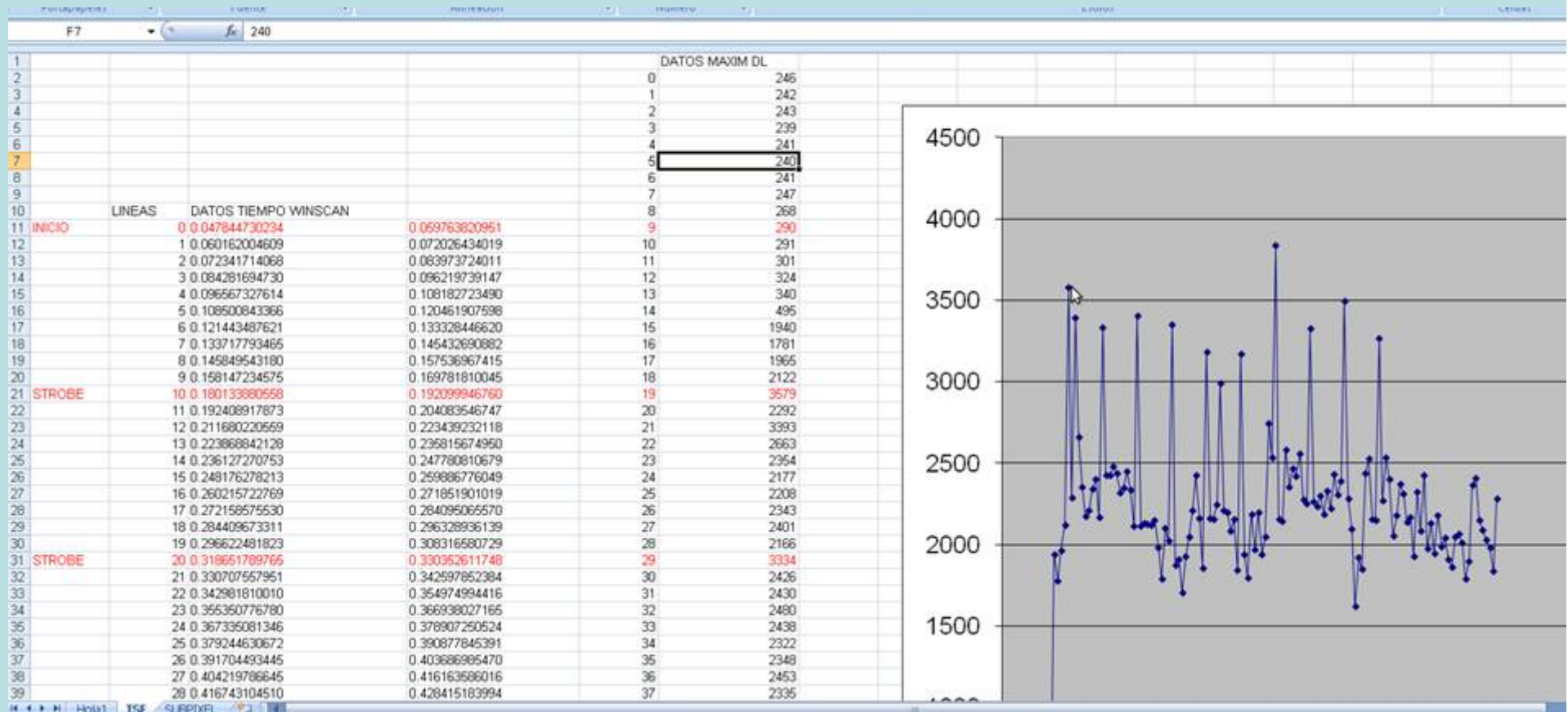
FIFO Disabled

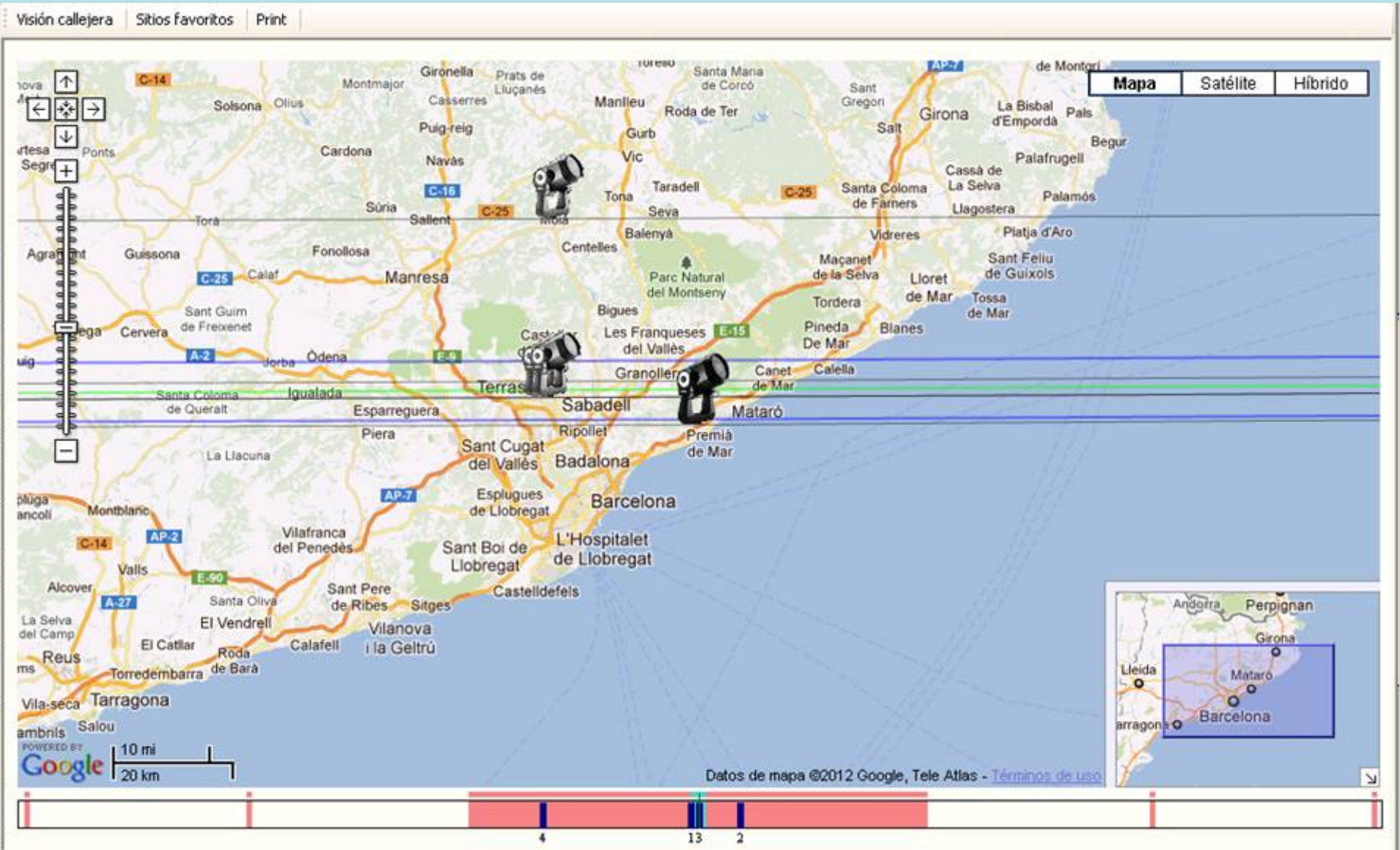
test Alarm is off

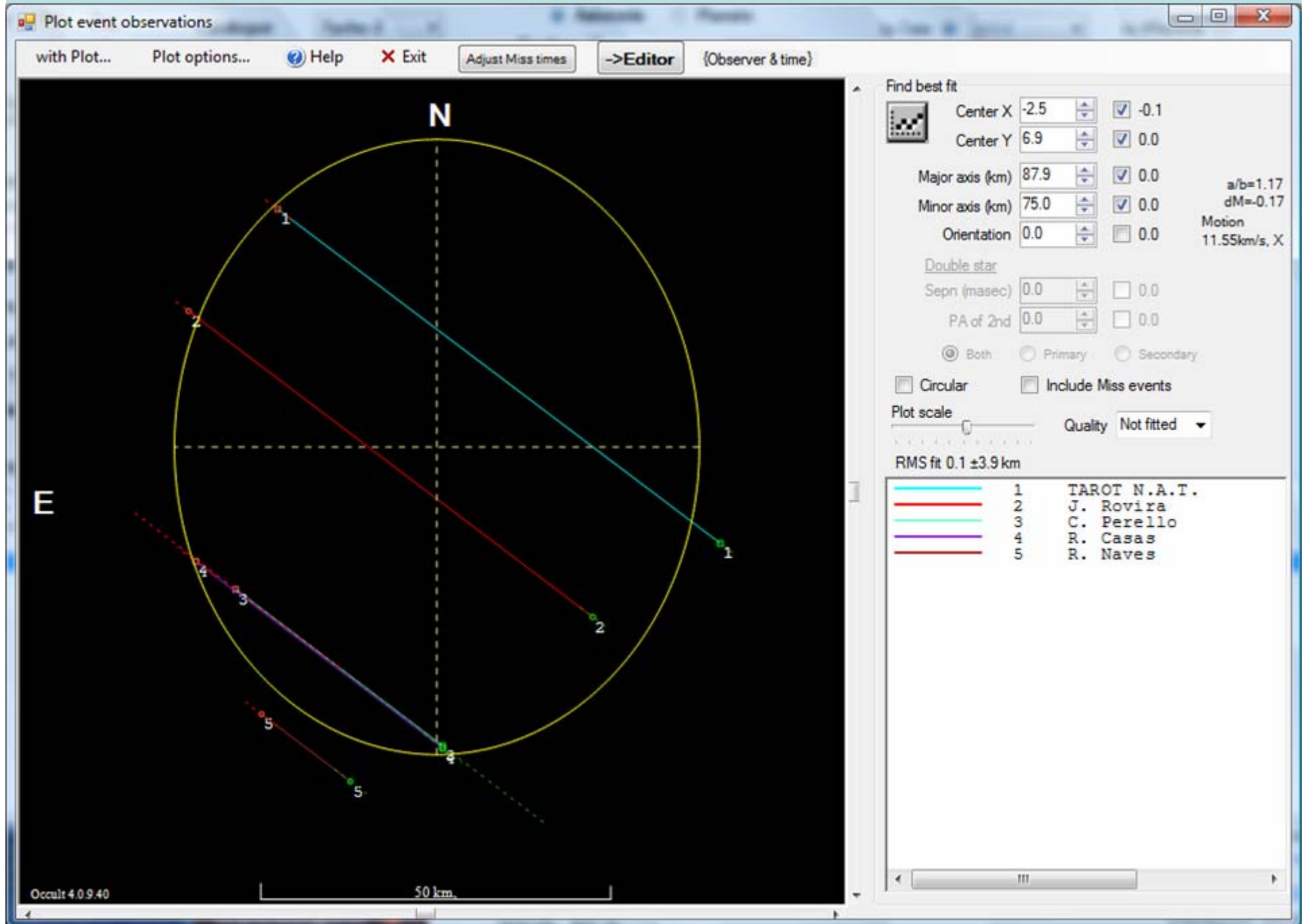
Intern CFW Manual FileInfo CFW_L

Filter: ??? ? No None Clear ?

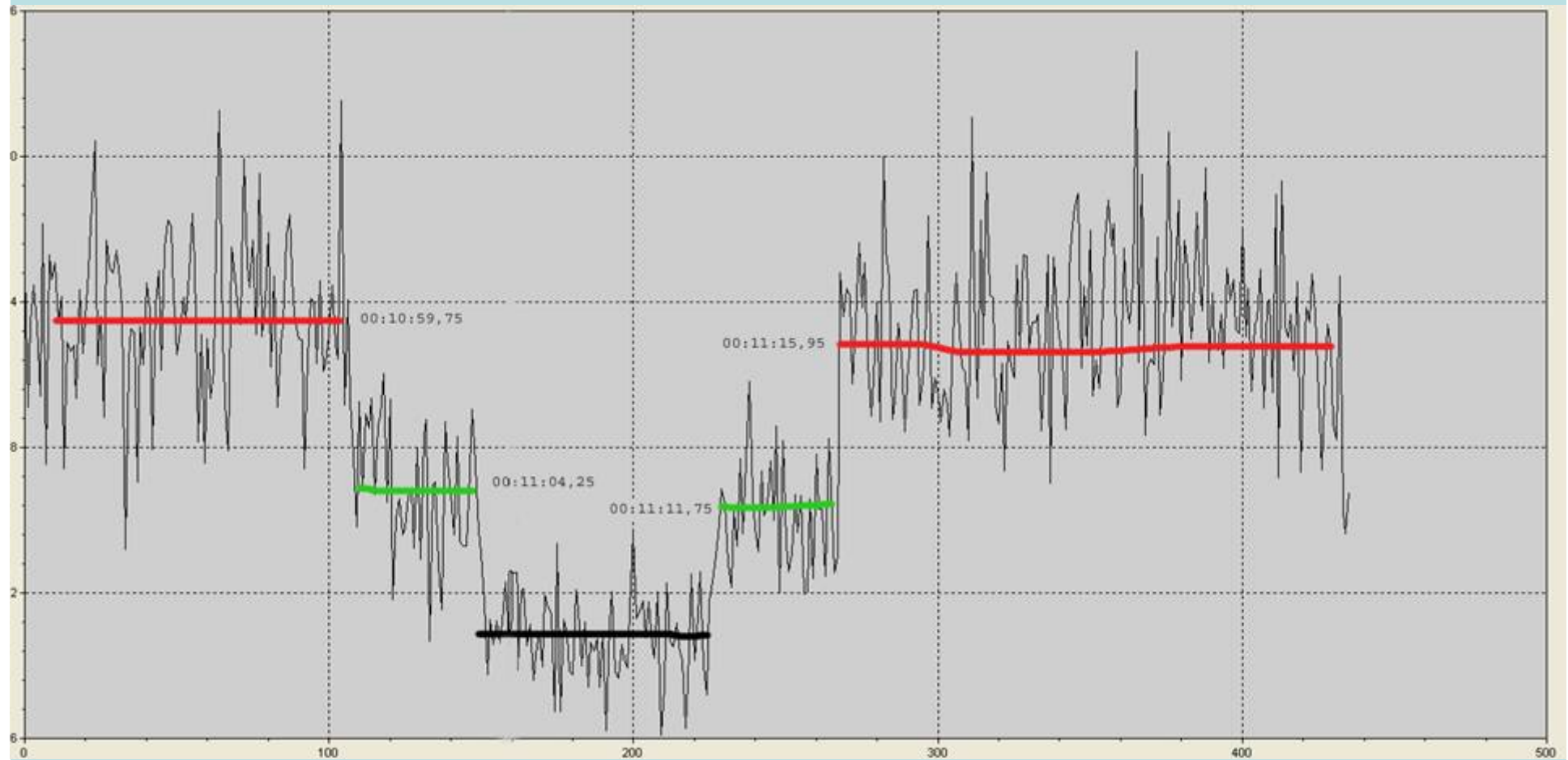
Excel





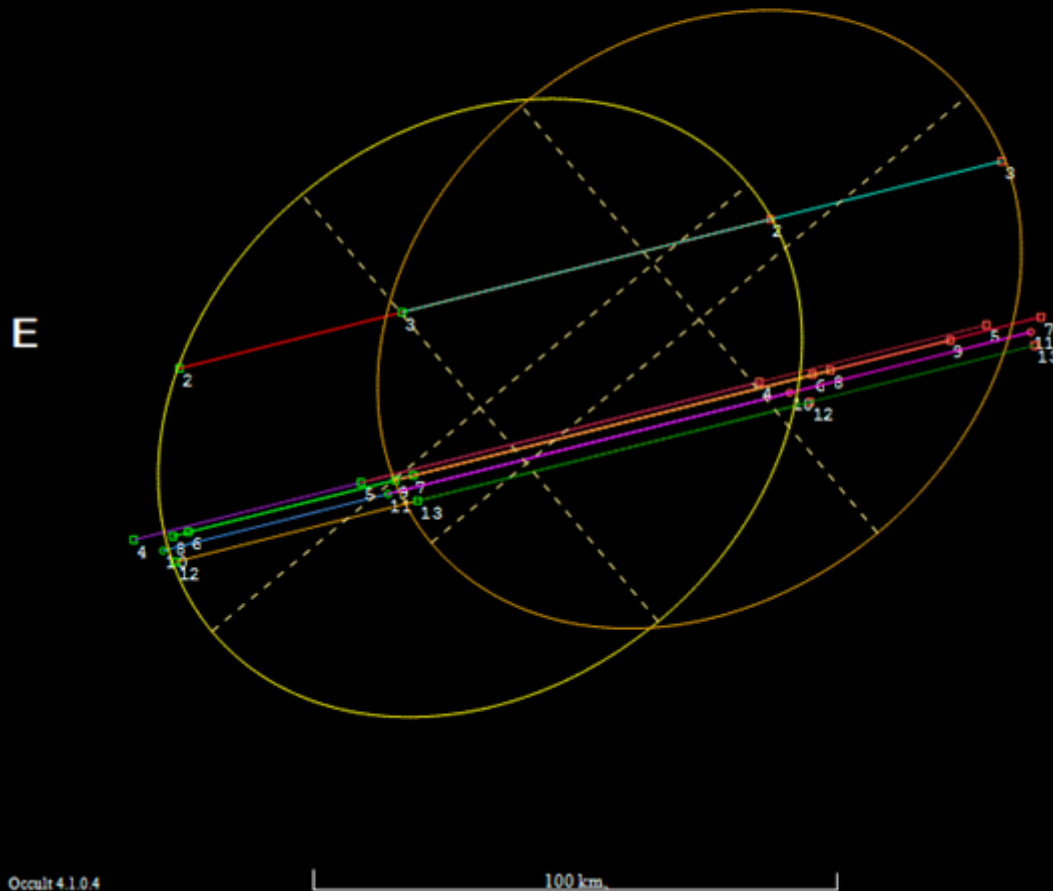


388 Charybdis UCAC2 4291352



388 Charybdis

(388) Charybdis 2012 Dec 3 133.3 ± 2.4 × 106.2 km, PA -50.2° ± 4.4°
 Geocentric X -1993.8 ± 0.6 Y 1284.0 ± 2.4 km
 Double : Sep 0.0281 ± 0.0008", PA 112.0° ± 3.4°



Find best fit

Center X 119.6 ✓ 0.0
 Center Y -66.7 ✓ 0.0

Major axis (km) 133.3 ✓ 0.0
 Minor axis (km) 106.2 ☐ 0.0
 Orientation -50.2 ✓ 0.0

a/b=1.26
 dM=-0.25
 Motion 10.22km/s, X

Double star
 Sepn (msec) 28.1 ✓ 0.0
 PA of 2nd 112.0 ✓ 0.0

Show: Both Primary Secondary
 A= 0.0 B= 0.0 PA= 0.0

Circular Include Miss events

Plot scale Quality Not fitted

RMS fit 0.0 ± 4.3 km

| | |
|-------|-------------------------|
| 1 (M) | E. Frappa/A. Klotz, FR |
| 2 | Joan Rovira, ES |
| 3 | Joan Rovira, ES |
| 4 | C. Perello/A. Selva, ES |
| 5 | C. Perello/A. Selva, ES |
| 6 | Jorge Juan, ES |
| 7 | Jorge Juan, ES |
| 8 | Ricard Casas, ES |
| 9 | Ricard Casas, ES |
| 10 | Ramon Naves, ES |
| 11 | Ramon Naves, ES |
| 12 | Carles Schnabel, ES |
| 13 | Carles Schnabel, ES |

THANKS