CENTRO DE ASTROBIOLOGÍA

OMC Status

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IUG #1

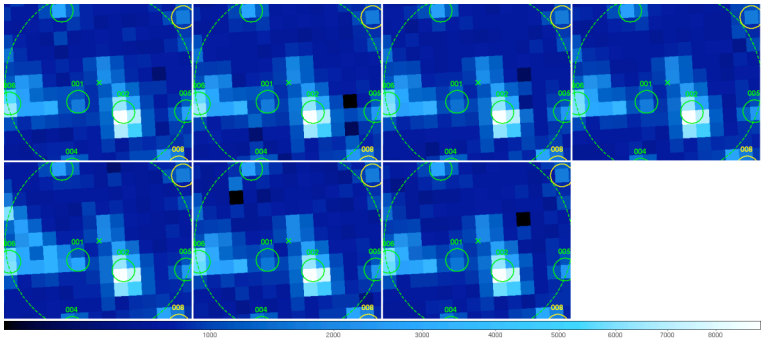
ESAC, June 11-12, 2008

OMC status and operations

- No operational anomalies
  - Trigger mode tested
- OMC Status
  - CCD Temperature evolution
  - Flatfield stabilized

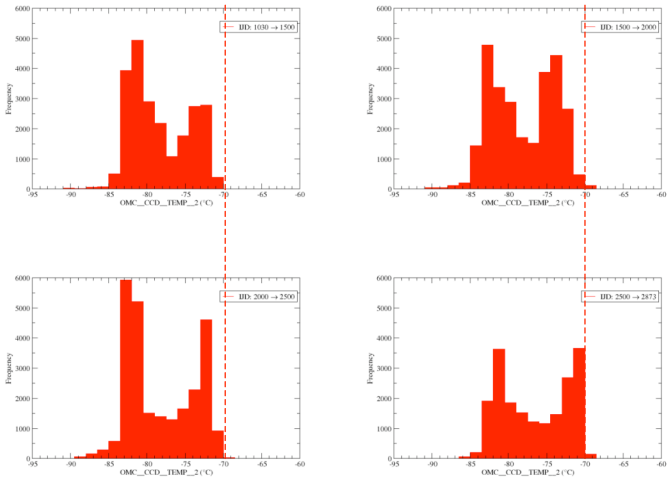
OMC operations: trigger mode

- On April 14th OMC entered trigger mode due to a false GRB alarm (it resulted to be a flaring known IGR source).
- OMC started imaging the field 20.5 seconds after the flare was detected automatically at ISDC.



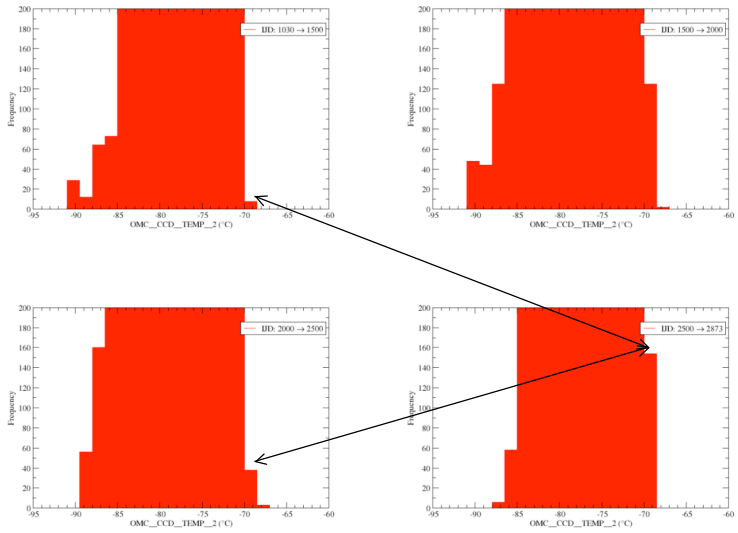
→ *No GRB yet within the OMC FoV, last one (GRB080603) just on the edge - cosmic fatality??), but we are ready!*

OMC CCD temperature evolution



The temperature seems to have increased slightly (1-2 C) in the hot case during last year.

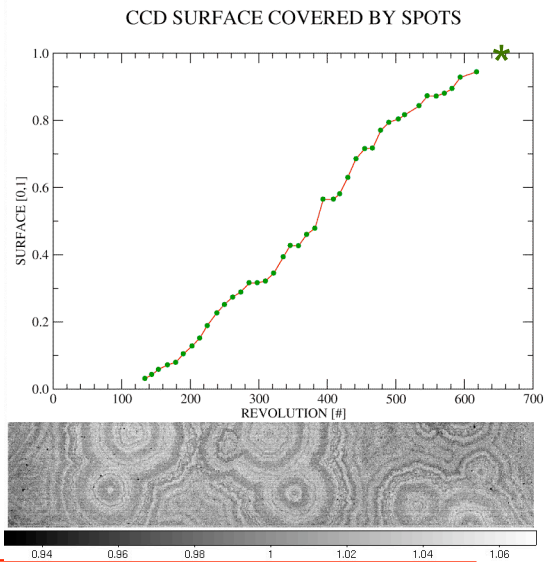
OMC CCD temperature evolution



OMC CCD status

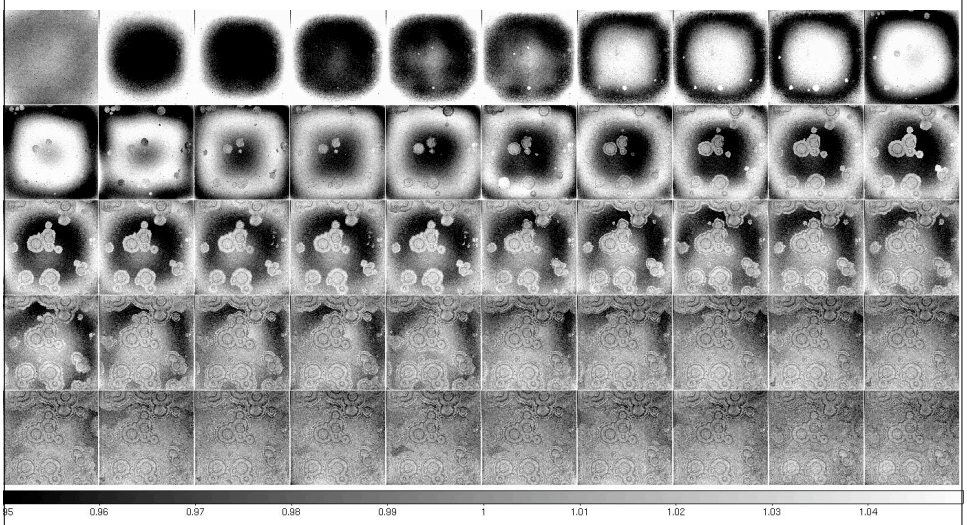
- CCD Flat field has already stabilized.
- The process that affected the antireflecting coating has now covered the whole surface.
- We don't expect significant evolution in the near future.

- To improve the pixel to pixel correction we would need to update the calibration strategy.



Rev. 654 FF

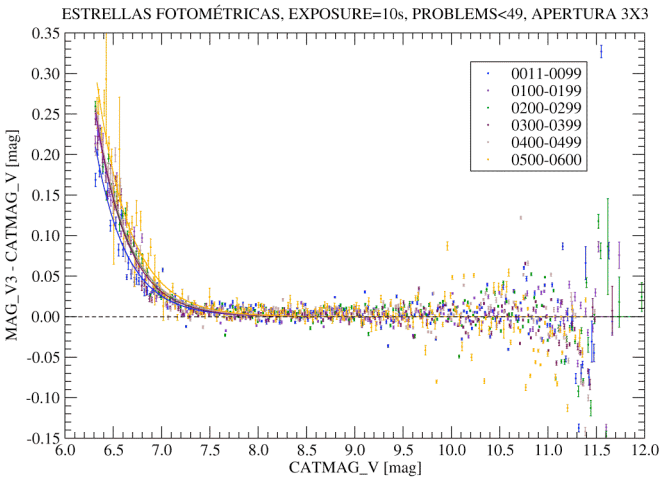
OMC CCD status



OMC Calibration

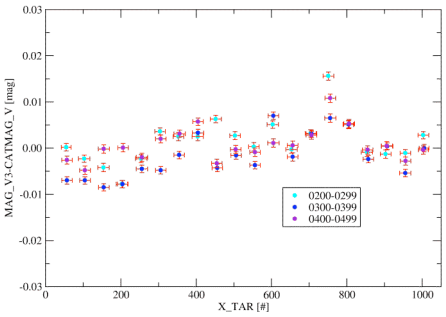
- We continue improving the CCD photometric calibration and extraction algorithms:
  - CCD linearity
  - CTE degradation
  - PSF 2D fitting

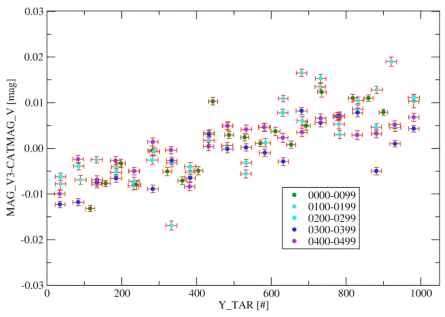
OMC Calibration



- Linearity start to degrade at V~7.2 for t_{int} = 10 s

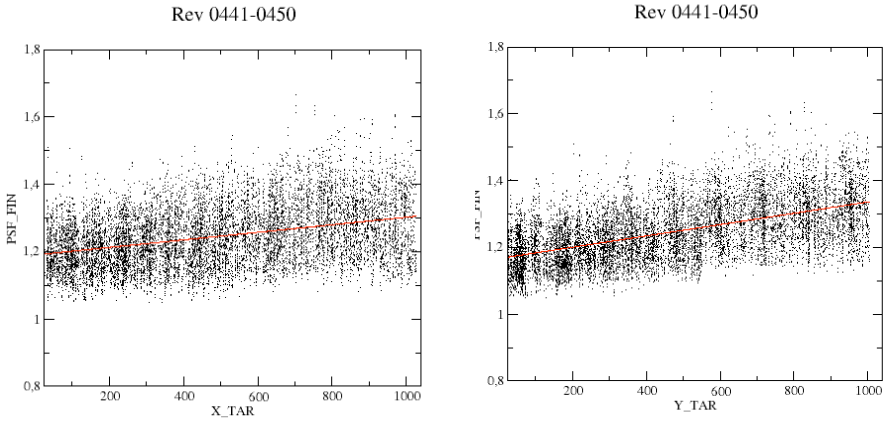
OMC Calibration





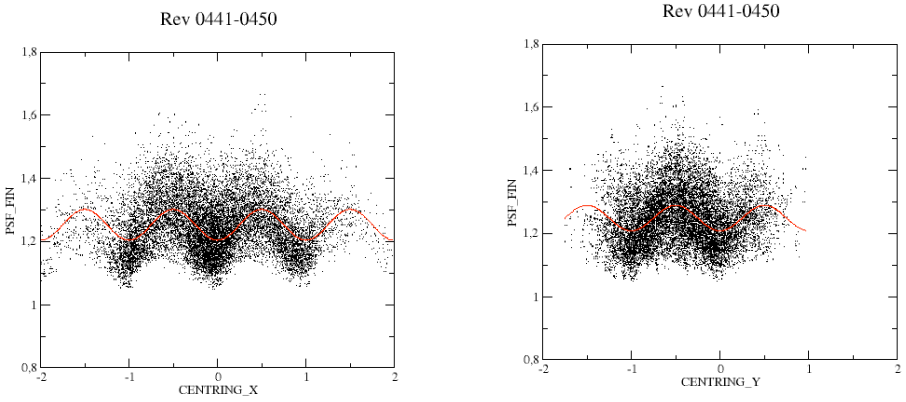
- Photometric accuracy degrades slightly the higher the CCD Y coordinate. The effect is smaller on X
  - CTE degradation?
  - Geometrical effect?
  - Or both?

OMC Calibration



- The PSF degrades also to high X and Y positions on the CCD. In principle, it is attributed to a slight inclination of the CCD.

OMC Calibration

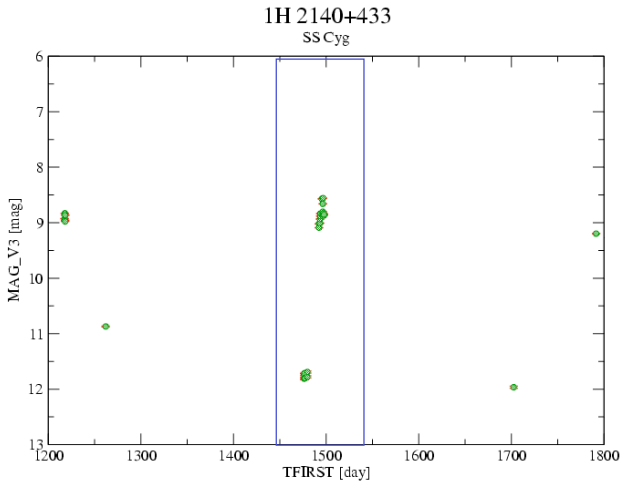


- There is an additional effect due to the undersampling of the PSF. The effective PSF depends slightly on the centring of the source on a pixel

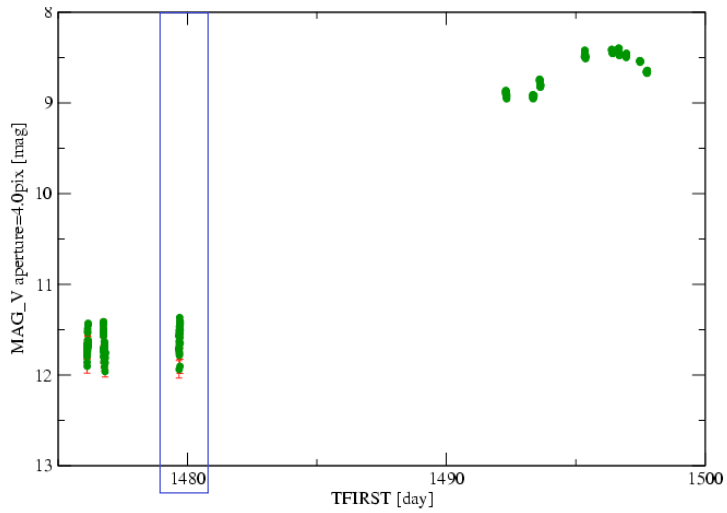
OMC Calibration

- All these effects are being evaluated and will be incorporated to the calibration for next reprocessing.

SS Cyg, cataclysmic variable



SS Cyg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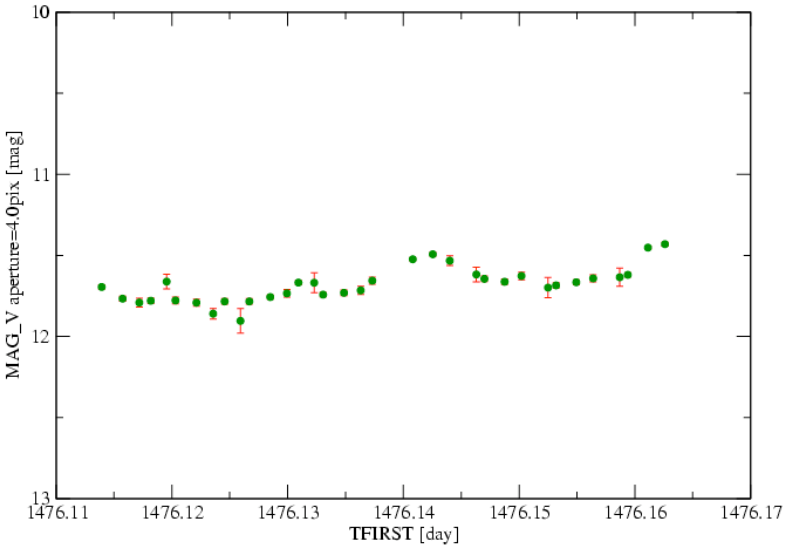
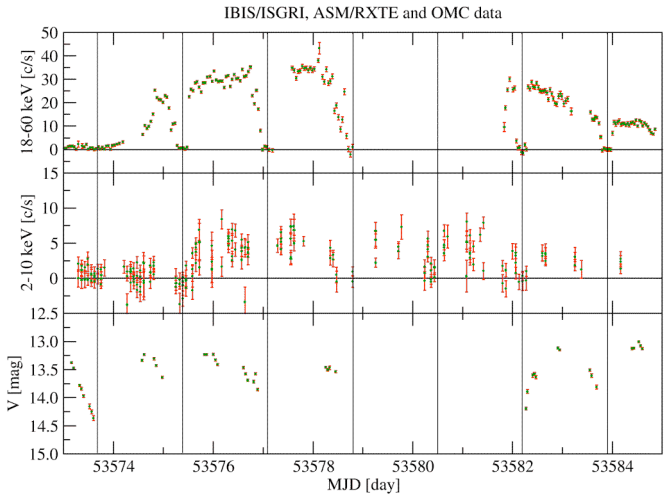
TFIRST [day]
8
9
10
11
12
13
1480
1490
1500

SS Cyg


MAG_V aperture=4.0pix [mag]
TFIRST [day]
10
11
12
13
1476.11
1476.12
1476.13
1476.14
1476.15
1476.16
1476.17

Herc X1: LMXB eclipsing system



Herc X1: LMXB eclipsing system