OMC Calibration and Operations status

Albert Domingo

INTEGRAL User's Group meeting

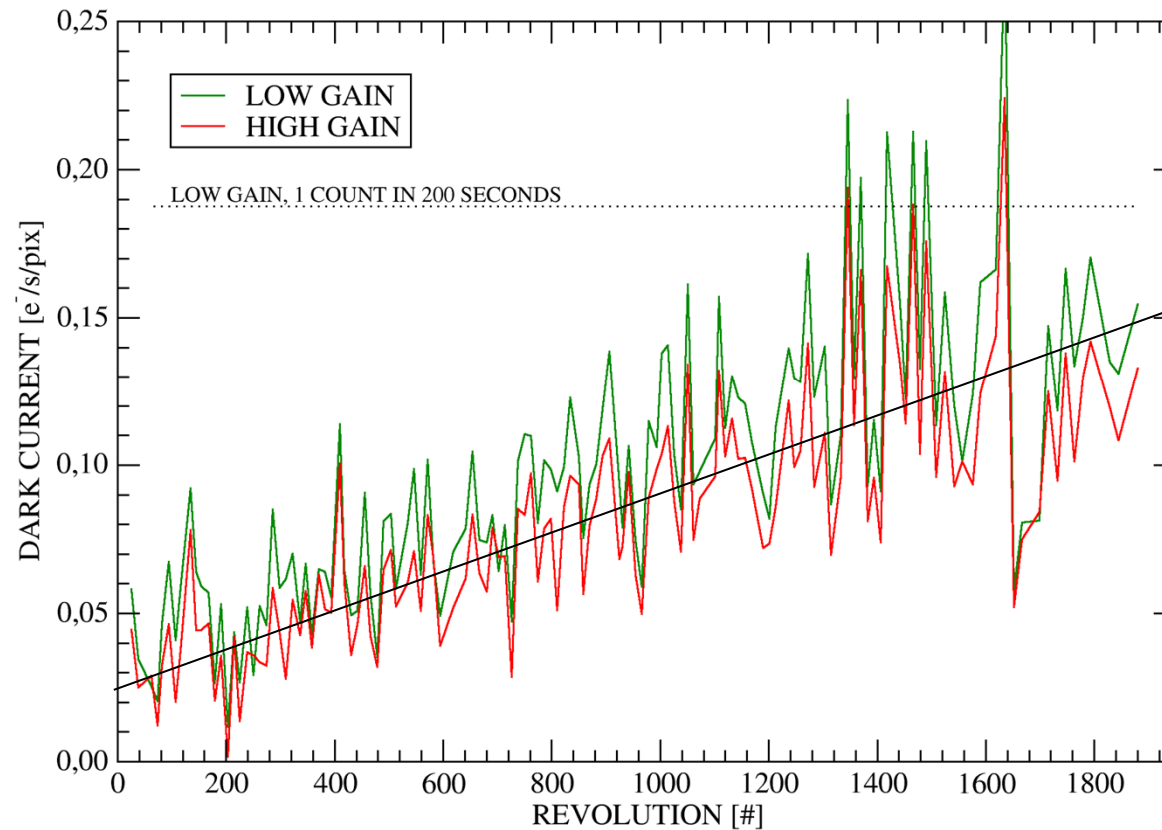*ESTEC, February 21-22, 2018*

OMC status: summary

- No anomalies
- System in good health
  - CCD surviving well
  - Sensitivity stable
- New Flat Field calibration strategy implemented with the help of ISOC

DARK CURRENT

- The dark current increases slowly, but remains still within acceptable limits.

- No temperature correction done on the plot.

  – It seems the temperature of the S/C has been lower in average in the last months.

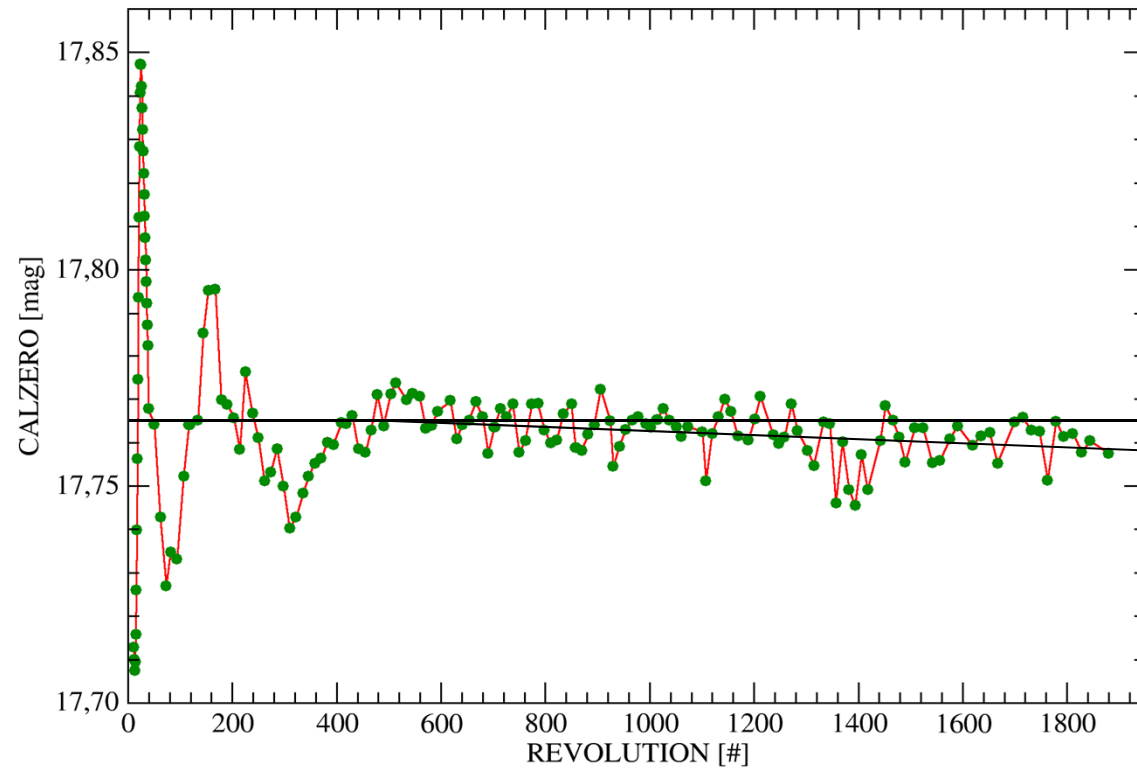# OMC photometric calibration

- The zero point of the calibration (a measure of the overall sensitivity) is very stable, with a small trend to decrease.

  – The darkening of the lenses is still not significant, but may be increasing very slowly
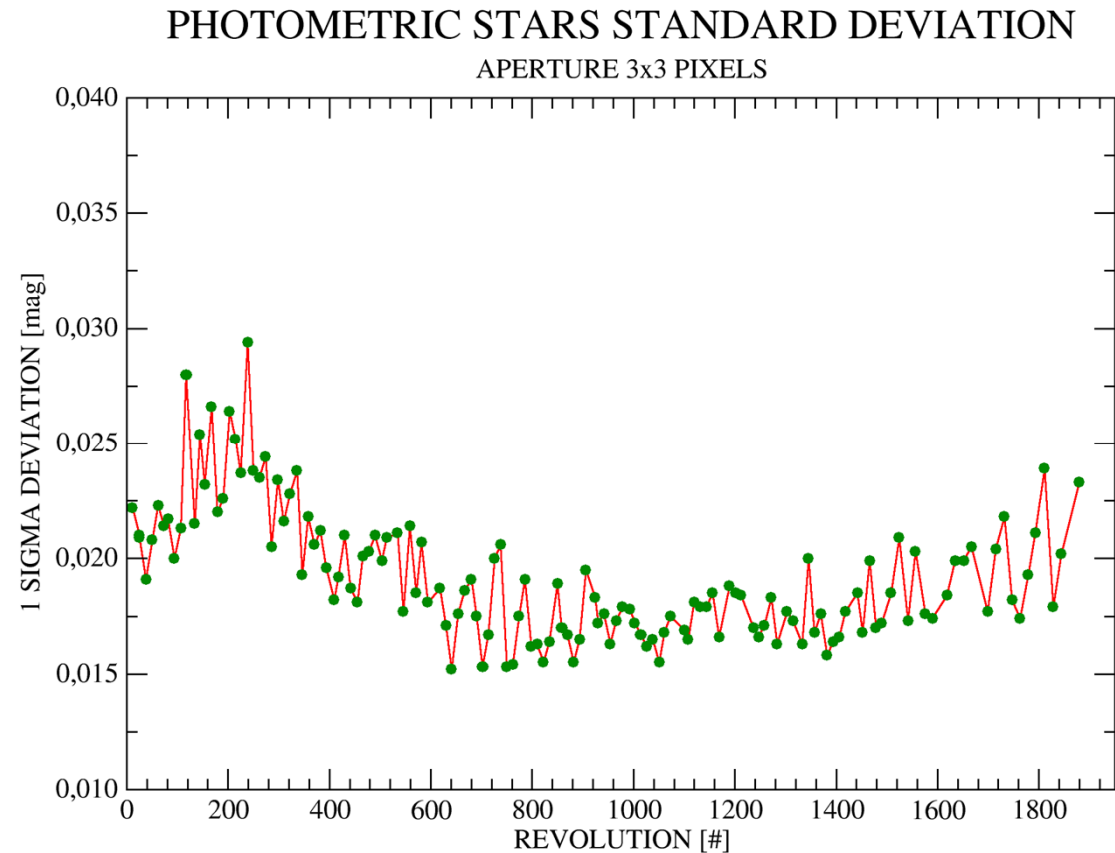
CALIBRATION ZERO POINT

- The accuracy of the calibration remains stable, with a slow trend to worsen

  - Will be improved with the new calibration strategy.

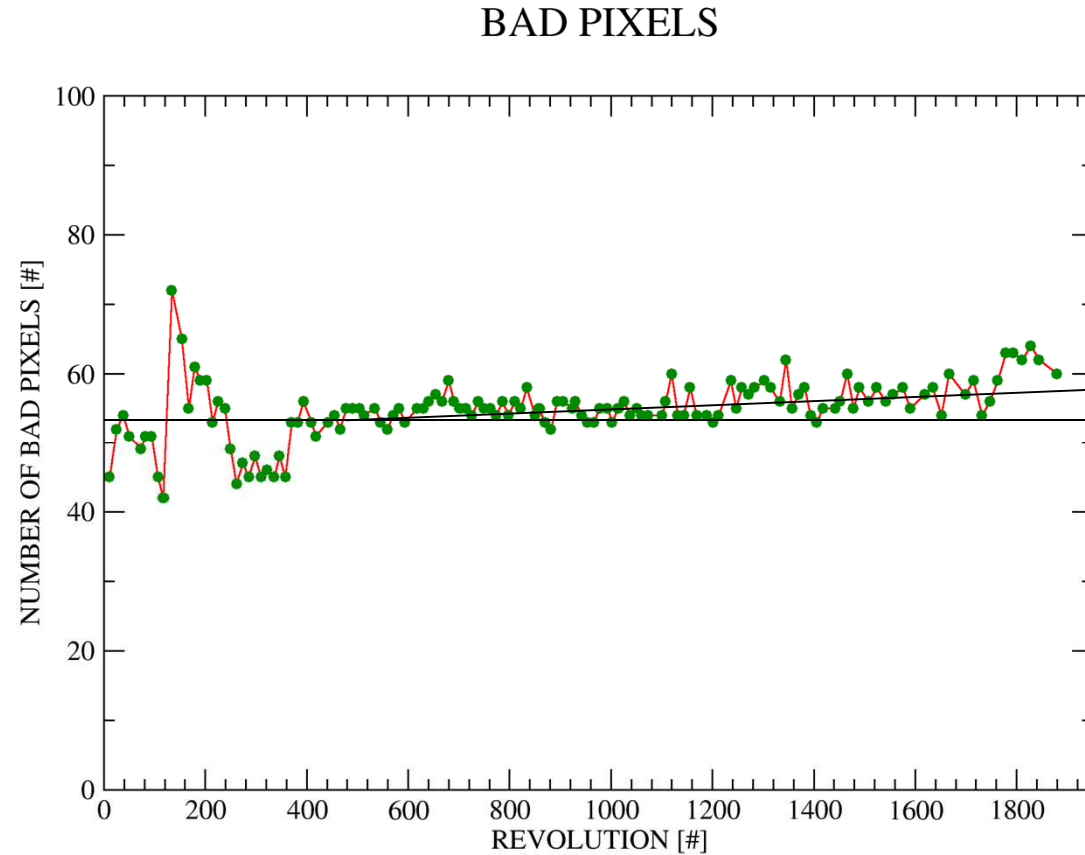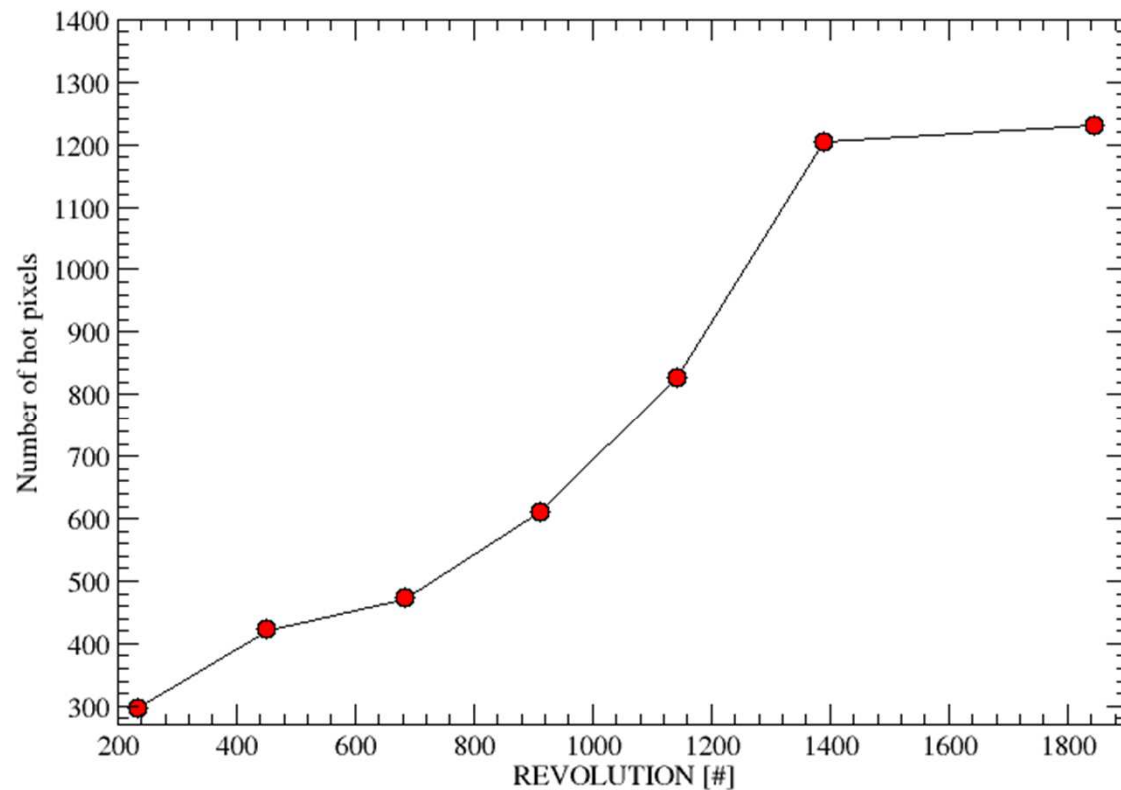PHOTOMETRIC STARS STANDARD DEVIATION
APERTURE 3x3 PIXELS

- The number of bad pixels (loss of sensitivity) increases very slowly.

BAD PIXELS

OMC photometric calibration

- The number of hot pixels (increased dark current or flickering pixels) increases continuously with time
  - Still < 0.1% of the pixels.

- A new flat-field calibration strategy was started in 2017.
- It consists on a narrow 3x3 dither (off-pointings in steps of 2 arcminutes) to facilitate the removal of sky objects in the long exposure sky images.

Flat-field matrix

Sky image
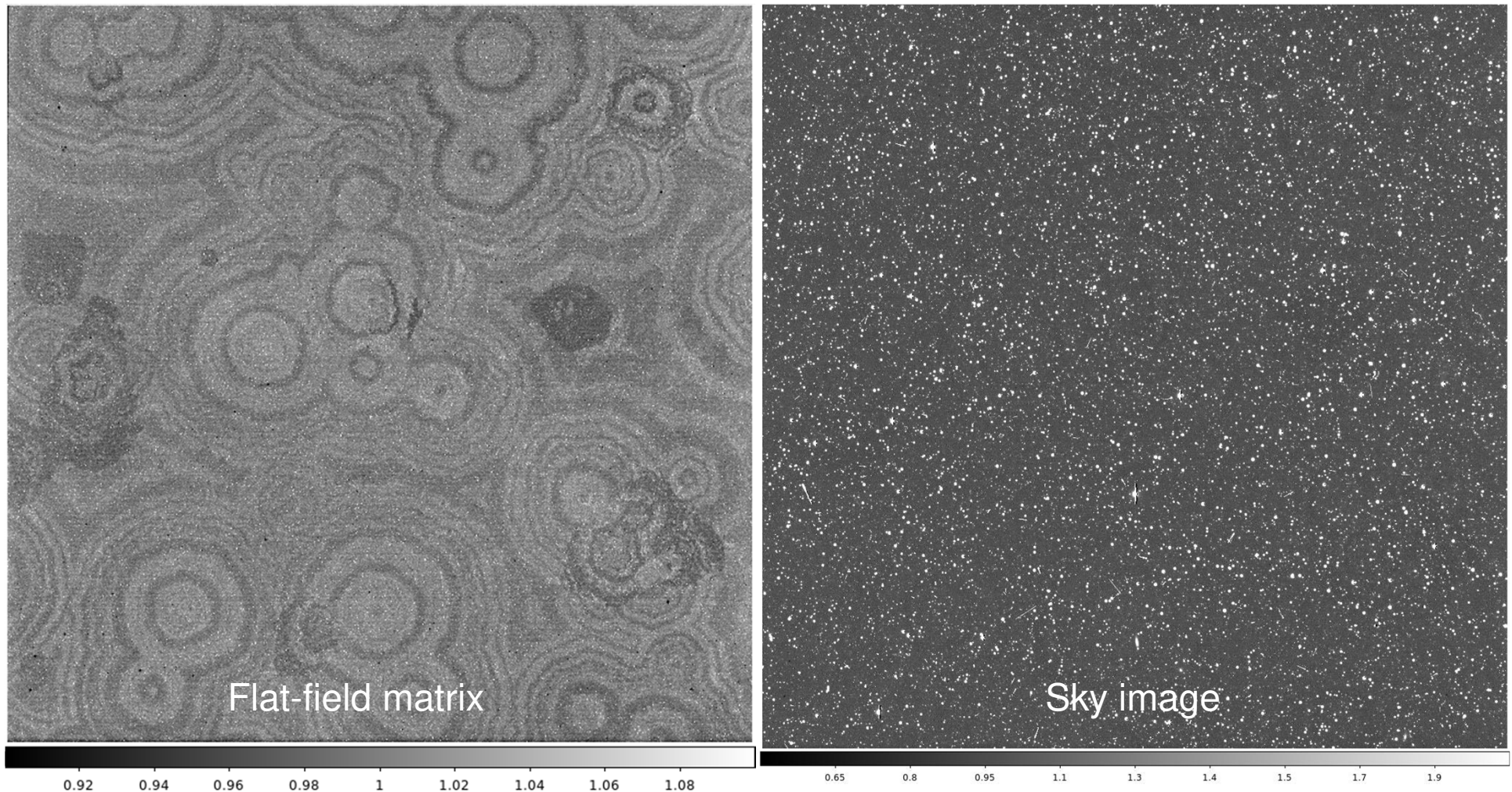
OMC photometric calibration

- Analysis and optimization of the flat-field matrix is ongoing.

    – 8 "new" calibration observations analysed.
    – Flat-field accuracy better than 1% averaging 4 calibration observations.
    – Evolution of hot and flickering pixels.

    – After optimization (~June 2018), the flat-field matrices will be created using the new method. In addition, old matrices (from ~beginning 2017) will be redelivered to ISDC.

- CCD flatfield with the cuts set to identify the hot pixels.
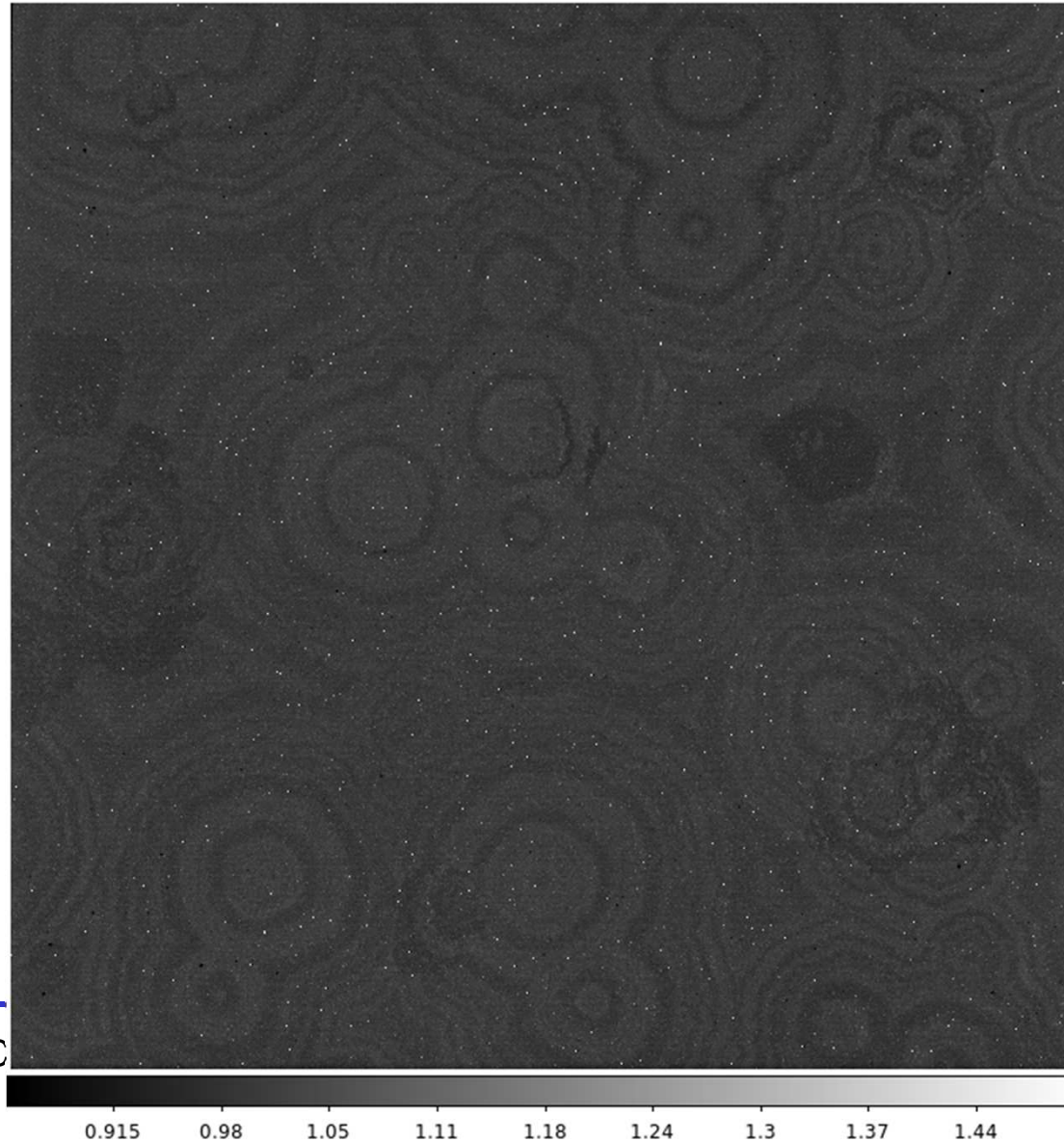
OMC operations: future support

- OMC operations continue to be funded by the Spanish funding agency.

- The compromise is to fund at least up to $T_{end} + \sim2$ years, to guarantee the final processing and archival of data.