EPIC operations status 2017

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Garching
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Routine Operations

- Science observations
  - See the Quarterly Reports at the XMM SOC web
  - http://www.cosmos.esa.int/web/xmm-newton/quarterly-status-report

- Calibration observations
  - See the rest of presentations of this meeting ;-) 

- Routine maintenance
  - RBI clocks resync on 7th May and 18th November. All nominal wrap-around.
  - ODB update to version 6.29. Mostly for PN bad pixel table (v5).
PN Bad Pixel Tables updated

- Operational since revolution 3061 (25\textsuperscript{th} Aug 2016)
- Now it is at version 5

Changes:
Modification of the uploaded Bad Pixel table for CCD 11 column 64 (all coordinates in $\text{RAWX}=[1..64], \text{RAWY}=[1..200]$):

- Currently uploaded pixels for this CCD: $\text{RAWY} = 2-12, 18-42$
- The new BPT contain the currently uploaded pixels and in addition the following 20 pixel segment: $\text{RAWY} = 43..62$

✓ They can be identified into the TLM as follow:
  - $F1629 = 0$ BPT for Image mode
  - $F1629 = 1$ BPT for Masked (image) mode
  - $F1629 = 2$ BPT for Fast mode
  - $F1630 = n$ Version number (now = 5)
Eclipses

- A lot of eclipses since the last meeting:
  - 22 eclipses after perigee on 2016 Spring
  - 2 lunar eclipses in 4th June and 4th July
  - 28 eclipses before perigee on 2016 Autumn
  - 27 eclipses after perigee in 2017 Winter/Spring

- But no changes in operations nor eclipse related impacts
  - For mention something, MOC have automated most of the previously manual operations for eclipse, without change the operations
  - A slightly reduction of the electronic boxes pre-eclipse boost heating is in the queue for the next season...
Eclipses (cont.)

- But with so much eclipses some events end happening around eclipses
  
  - On 19\textsuperscript{th} April 2016 a conjunction of problems lead to manually switch on both MOS1 A & B (backup and nominal). Solved in a few minutes.
  
  - The PN configuration after eclipse, interrupted two times due to ground station problem, lead to start it again from the beginning. One of the times PN was even powered OFF/ON again.
  
  - On 16 March 2017 the spacecraft entered into ESAM (Emergency Sun Acquisition Mode) about 8 hours before eclipse. As the instruments were set in Safe-Standby, the pre-eclipse thermal control operations were started earlier. The eclipse itself was softer than others, as the unusual pointing reduced the heating up of the radiators. Later we have time for a calibration observation (~8 hours).
Events

- Nothing big, almost routine...

- False current limiter activations (NCR#133) on 21-May-2016 and 14-Dec-2016.
- PN crash in NCR#138 stile on 9\textsuperscript{th} June 2016.

- SEUs
  - MOS 2 lost the sync reading the central CCD on 21\textsuperscript{st} Oct. Solved by itself at the next observation.
  - PN HK TLM became mad on 27\textsuperscript{th} Oct. Solved partially by itself, partially by the next eclipse switch OFF/ON

- PN quadrant 1 autoreboot on 1\textsuperscript{st} Feb 2017. It was only the third time in the full mission that the dedicated recovery procedure need to be used.

- A possible micrometeorite flash on 23\textsuperscript{rd} March was see by MOS 2 only. No damage found on the CCD (see details from Martin St).
Developments

- MOS CCD temps on perigee
  - MOS 1&2 radiators are heated up by Earth albedo on every perigee.
  - The pointing is in this way for save fuel and extend the mission live -> no way to change
  - The combination of a large thermal inertia and short perigee pass cause that the CCD temperature is still returning to nominal by the time of start the scientific observing.
  - For more details see Martin Stuhlinger presentations

- Changes in operations due to “merge with Gaia”
  - Up to now XMM-Newton and Integral share the spacecraft operators (spacon), and the MOC (ESOC) teams are mixed.
  - Now Gaia MOC team is added to the group.
  - This require adjust in the operations.
  - Refer to Marcus Kirsch or Maria Santos.
This is the end (for now)