

XMM-Newton Overall Mission Status

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UGM #18

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Overall management

- Mission Manager
 - Apologises for not being able to attend meeting in person – assumed new MM would be in place by now
 - My Div/H is available tomorrow if the UG wishes to get more detail on this topic
- Over 5000 papers in the refereed literature
 - One article every 30^H21^M !!
- Mission extension cycle
 - Cycle was split in two parts because of council at ministerial level Dec-2016
 - Confirmation of 2017-2018 was granted in Nov-2016 SPC meeting
 - Indicative extension for 2019-2020 will (TBC) be discussed at Jun-2017 SPC meeting
 - XMM-Newton continues to score very high !

Overall mission status

- Status of XMM-Newton is largely similar to UG #17. However:
 - First stage of fuel replenishment (fuel migration) to be executed end-June
 - Recently a Single Event Upset (SEU) of a Latching Current Limiter (LCL) led to switch-off of a reaction wheel → as XMM-Newton is on 4 wheel control this triggered a safe mode – quickly recovered – minimum loss of science
- Implementation of common XMM-Newton/INTEGRAL/Gaia SPACON team started
 - No risk to the missions guaranteed
 - Objective defined in UG Resolution 2016-06-08/01 unlikely to be met – and not required by agreed performance objectives
- No out of the ordinary instrument events
 - Exception might be that MOS 2 may have seen the flash of a micrometeorite impact in the telescope tube on 23rd March. No damage was spotted.

Payload calibration status

- Cross calibration : EPIC-PN <-> EPIC-MOS <-> NuStar & RGS1 <-> RGS2
 - Recalculation of 2D-PSF and encircled energy functions → nearly done (priority 1)
 - Recalculation of mirror effective areas → in progress (priority 1, linked to previous)
 - Time dependent relative RGS1 – RGS2 responses → done (priority 1)
 - Comparison of EPIC-pn and NuSTAR → in progress (priority 3)
- EPIC-PN
 - Quiescent background dependent shift gain correction → in progress, for next SAS (priority 2)
 - Timing & Burst mode calibration items → open (priority 4)
- RGS (see above)

Payload calibration status (cont)

- Routine monitoring and updates of time dependencies:
 - OM: time dependent sensitivity degradation → done
 - Variable boresight → done
 - EPIC and RGS: gain, CTI, bad pixels/columns → done
- The following should be noted
 - Team resources partially allocated to Post-Ops roadmap did impact on calibration progress

- Continued pressure on SOC tasks, essentially requiring more FTE than available
 - Temporarily fixed by 1 FTE increase
 - People coming up to retirement age over next few years
 - Additional SOC tasks keep coming, examples:
 - Implementation of Post-Operations and Post-Mission roadmap – examples: definition/creation of legacy archive products, SAS longevity strategy (VM's, RISA, open source) etc
 - Common SPACON team – examples: streamline, modify and automate instrument procedures, adapt science mission planning tools, redefine ToO procedures
- Personnel being used for non-XMM-Newton activities
 - Effectively 1-1.5 FTE permanently used to support other activities – now partly reimbursed to XMM-Newton

Conclusion



1. The scientific performance of XMM-Newton remains outstanding and continues to provide a very high scientific return
2. Implementation of three-party (Gaia, XMM-Newton, Integral) SPACON arrangement started
3. Roadmap document finished – next step: implementation
4. Essential mission elements are stable and trouble free with sufficient consumables and life-limited items to allow operation to 2028+