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| Meeting place | **MPE** | | chairman | A. Read |
| *lieu de la réunion* | | | *présidant* | |

| Minutes' date | 09.12. 2005 | **Participants** |
| *dates de minute* | | |

Participants

Andy Read (AMR): scientific chair, MOS (Leicester)
Wolfgang Pietsch (WNP), pn (MPE)
Michael Freyberg (MJF), pn (MPE)
Jenny Carter (JC), SAS development (Leicester)
Steve Snowden (SS), XMM US-Guest observers facility (Goddard)
Marcus Kirsch (MK), ESA coordination (for 2005) (ESAC)
Matthias Ehle (ME), ESA coordination (as of 2006) (ESAC)

guests: Michael Bauer, Ulrich Briel, Paulo Mendes (MPE)

This minutes plus related documents are all available on the web:
http://www.src.le.ac.uk/projects/xmm/technical/

Subject/*objet*	Minutes of meeting EPIC Background Working Group 2	copy/*copi*	Minutes by Marcus Kirsch
		M. Turner	
		S. Sembay	
		L.. Metcalfe	

ESA

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Minutes_of_Meeting_EPIC_BG
_WG_05_11_24_MPE

M E E T I N G

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1 Progress Reports

1.1   Overview, Meetings, Apologies, Web Pages, BG Components Synopsis Table (AMR)

1.2   BG Blank Sky Data Analysis (JAC)
- Aim: creation of long exposure blank sky BG event files
- Achieved:
  - Script1+2: using PPS, creating masks for bright sources and exposure map
  - Script3: merging of files
  - Investigations in filling source regions by extrapolating flux from surrounding rings

1.3   pn BG Modelling/Subtraction at MPE (MJF)
- Clusters: 2 different methods (Alexis, Saclay double BG method)
- Galaxies 2 different methods (mosaics cleaned and smoothed images, RGS analysis of extended sources)
- LISM: x-ray shadowing, screening closed filter files
- Solar system
- Especially the double BG subtraction method is seen to be important to integrate on the BG web page

1.4   Updates to previous MJF presentation (MJF)
- Closed filter files: one file per mode + summary page + explanatory notes
- Low energy BG: linear correlation between frame time and noise rate (CAMEX noise)
- - out-of-FOV (or out-of-window) X-rays (single reflections, LW mode)

1.5   Web pages - ESAC (MK)
- Web page is available at the ESAC internal pages waiting for release
- Will be updated when new information is available
- Web page should be linked from main XMM page on a sub page with information of RGS and OM BG

1.6   Solar wind charge exchange (SS)
- Solar wind charge exchange from interaction in the near earth environment strongly spatial dependent
- SWCX emission contamination need to be detectable from light curve of observation
- effect is clearly identifiable with strong emission from CVI OVii and OVIII, NEIX and MgXI,
- Purely geometrical effect
- Contamination probability could be given by accessing orbital data base with OBSID
- Oviii and Mgxi are the strongest diagnostics
- effect is visible over whole FOV (these points have been added to the synopsis table).

1.7   The temporal evolution of the MOS particle background (SS)
- Study of corner spectra from public data

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- Changed through out mission in QPB (magnitude and spectrum)
- MOS 2 CHIP 5 and 2 low energy increase effect also seen
- High energy patch in the above 5 keV energy range when plotting ratios between low
  energy proton effected data and not effected data of an observation

1.8   Soft Proton filtering task (SS)

- Perl script screens MOS data using the out-of-FOV (corner) areas for proton flare detection
- Producing qdp plots of light curves
- Produces images of flare screened fields
- Flexibility in user energy-band choice will be available in the SP screening tool.

2 New Items/Tools:

2.1   Other BG Tools (AMR)

- Much BG proficient research now makes use of not only high energy light curves, but light curves over the whole spectrum
- Pratt: 3 sigma clipping using high/full/high/full)
- Nevalainen: hard and soft
- Pradas: multi band analysis

2.2   Others (AMR)

- Script to find observation that is close by in space (l,b) to own observation
- Closed (particle) event files also exist
- We will provide all the closed merged files at the SOC, keeping only one version (the newest/best one) for each mode
- If statistics allow, we may subdivide the blank-sky event lists further into smaller event lists, based on e.g. count rate thresholds and/or galactic latitude.
- It would be good to add RA/Dec to blank-sky event lists.

3 AOB

- Off-axis PSF should be investigated
- arfgen should be improved to take contribution of off-axis sources affecting the on-axis position

4 Next meeting

- 02. May 2006 9-19h   MPE
- Back up 11.04. 9-19h Leicester

5 Action items

AI_EPIC_BG_WG_02_01: MK to ask RGS if RGS BG light curve could help EPIC screening

AI_EPIC_BG_WG_02_02: MK to change "mission BG history" information link (different name) and introduce new link for Background analysis linking to page with EPIC, RGS, OM BG information

AI_EPIC_BG_WG_02_03: ME to test and transfer WNPs script of 01_11 to SOC thread

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AI_EPIC_BG_WG_02_04: MK to organize providing of merged closed data files for all cameras at the SOC, these files will be mirrored at Goddard, (20 Gig) , pn files to be provided by MJF, MOS files by SS

AI_EPIC_BG_WG_02_05: MK to send SS information how to get CALCLOSED and CLOSED data and to include SS in the CALCLOSED and CLOSED mailing list

AI_EPIC_BG_WG_02_06: MK to change wording for "Files that you do need for your data analysis" to Files that you may need for your data analysis", and separate link of Response from BG files

AI_EPIC_BG_WG_02_07: AMR to ask GP to provide double background subtraction tool to BGWG with the final idea to provide it as an extra tool on the Background page if possible.

AI_EPIC_BG_WG_02_08: MJF to get numbers for out-of-FOV contribution (i.e. single reflections)

AI_EPIC_BG_WG_02_09: all to provide presentations to AMR

AI_EPIC_BG_WG_02_10: all to provide proposal to AMR to link relevant papers to the BG component table

AI_EPIC_BG_WG_02_11: ME to check with mission planning if criterion can be added for SWCX avoidance.

AI_EPIC_BG_WG_02_12: JAC, MJF, WNP to check if OOE can be flagged on an event basis

AI_EPIC_BG_WG_02_13: SS to provide task description of the Goddard BG tasks for BG page

6 Open old action items

AI_EPIC_BG_WG_01_01: SS to provide by October 2005 to SOC
  - Proton screening tool
  - Use of multiple light curves for screening
  - BG tool
  - Provide list of st. candles for BG analysis comparison with different tools

- Proton screening tool and multiple light curve prototype available, by end of December a SAS task version will be available for DT,, aiming release for SAS 7.0
- BG tool prototype is available for testing within BGWG, will not make it into SAS 7.0 but a non SAS version will be made available by end of March 2006
- list of BG candles is ongoing task

AI_EPIC_BG_WG_01_04: AMR to invite other BG experts to next meetings and to provide possibly scripts/tasks

AI_EPIC_BG_WG_01_05: MJF to provide link to processed pn closed event files for all modes to MK

AI_EPIC_BG_WG_01_12: MJF: Once any BG or Closed fits files had been obtained, the user can change their CCF_PATH etc. setup so that a new cifbuild would incorporate these extra files. This enables the BG/Closed events files (e.g. the ones used in SS's task) to be used in the SAS, without them having to be included in the CCF files.

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7 Closed old action items in period of last meeting to this meeting

AI_EPIC_BG_WG_01_02: AMR to provide SOC with scripts for blank sky data by end of August

AI_EPIC_BG_WG_01_03: MK to implement AMR scripts for blank sky data at SOC for standard processing after CAL updates

AI_EPIC_BG_WG_01_06: MK to provide prototype BG web page by End July

AI_EPIC_BG_WG_01_07: AMR to send up to date link to BG pages at Birmingham

AI_EPIC_BG_WG_01_08: AMR to provide table for BG components to SOC

AI_EPIC_BG_WG_01_09: MJF to summarize the work done currently at MPE on pn BG modelling/subtraction at next meeting

AI_EPIC_BG_WG_01_10: MK to put minutes and AMR to put presentations to Leicester page

AI_EPIC_BG_WG_01_11: WNP to provide SOC with script for "good" image to be turned to a SAS thread