# Minutes of User Group Meeting 5
# (2-3 June 2004)

Edited by María Santos-Lleó

Approved by voting members on 14 July 2004

## Meeting on June 2, 2004

**Participants:**
Jürgen Schmitt (chairman), Didier Barret (external) Phil Charles (external), Andrea Comastri (external), Miguel Mas Hesse (external), Richard Mushotzky (Mission Scientist), Roberto Pallavicini (Mission Scientist), Mike Denby (SSC-PI delegate), Simon Rosen (OM-PI delegate), Martin Turner (EPIC-PI), Fred Jansen (XMM-Newton Mission Manager), Norbert Schartel (XMM-Newton Project Scientist), María Santos-Lleó (User Group secretary).
Leo Metcalfe (Science Support Manager), Ramon Muñoz (Instrument Operations Manager), and interested staff from Vilspa

**Welcome:**
J. Schmitt (Chairman) opened the meeting at 14:00. He introduced the two new members of the User Group (UG), who are Didier Barret and Miguel Mas Hesse and welcome all the participants. J. Schmitt also made clear that each UG member represents the whole X-ray community and not a particular subset of it.

**Adoption of the agenda:**
The agenda was adjusted to allow most relevant presentations from the Mission Manager point of view to be performed on the first day, because Fred Jansen had another commitment on June 3 and had to leave at the end of the afternoon.

**Presentations:** The following presentations were performed:

3. Overall mission status (F. Jansen; 14:10-14:35)
7. EPIC calibration status (M. Kirsch; 12:35-15:20)
8. RGS calibration status (A. Pollock; 15:20-15:55)
9. OM calibration status (A. Talavera; 15:55-16:25)
10. Cross calibration status (B. Altieri; 16:45-17:40)
11. SAS status and outlook (C. Gabriel; 17:40-18:35)
12. Report of the Project Scientist (N. Schartel; 18:35-19:10)

The viewgraphs of the presentations are available on the XMM-Newton public web site, under 'User Support' and 'XMM-Newton Users Group'.

**Discussions:** During the presentations, the speakers were frequently interrupted with questions and short discussions, in particular:

3. Fred Jansen clarified the new management structure: Mission Manager has the overall executive responsibility for the mission and the full ground segment, Project Scientist advises the mission manager on all scientific matters regarding the mission. The Project Scientist is responsible for (amongst others) approving targets-of-opportunity and discretionary time requests, setting up the observing time allocation committee and organizing the relevant reviews and settling all data rights issues. The Project

Scientist is the prime interface to the science community and is advised by the UG. The Project Scientist, Instrument Operations Manager and Science Support Manager all report directly to the Mission Manager. Up to now, the new management setup is working perfectly.

M. Mas Hesse inquired about the expected impact on the XMM-Newton team of the INTEGRAL SOC coming to Vilspa; the impact should be minimal.

R.Mushotzky and J.Schmitt asked about the impact of the 'graceful degradation' of the XMM-Newton team due to long term budget restrictions. There is no expected impact for the XMM-Newton users before end 2007.

J.Schmitt stressed the need of the 2XMM catalog to be issued before the next XMM-Newton review (end of 2005).

R. Pallaviccini asked when the proceedings of the ESTEC conference will be issued. F. Jansen said that an electronic version will be on the web very soon and that no printed copy of the proceedings will be produced.

7. In the EPIC presentation, R.Mushotzky asked for precise information on how to correct for the silicon and gold instrumental edges shown by M.K. The Au edge is understood and correction will be made available in few weeks to users. The Si edge is not yet understood and will take more time. Information will be provided in the documentation on the calibration web site.

   J.Schmitt asked whether OM could be used to improve EPIC position accuracy. This point was further discussed later on, in the OM presentation.

   R. M. asked about background models to be used with observations of extended sources. It was decided to return to this point at the general discussion in the following day.

8. In the RGS presentation R.Mushotzky asked about the quantum efficiency update for low wavelengths. A. Pollock answered that last correction is simply a fudge and that the 6-7Å regime is just at the very end of the RGS range and it cannot be done better.

   J.Schmitt asked when the background accumulator will be made available to the community. A. Pollock answered that the plan is to have it incorporated in SAS7.0 (due February-March 2004). There was further discussion where J.Schmitt stressed the importance of this tool and pointed out that the community had been waiting long for it; he asked whether the IDL tool could be made public. SOC (F.Jansen, C.Gabriel) answered that the policy is that ESA cannot distribute software for which ESA does not provide support. Further discussion was delayed to the next day's general discussion.

   J.Schmitt asked about the *rgssuperfluxer* introduced by A. Pollock The idea is that it should allow combination of different exposures of the same instrument (e.g. RGS1 and RGS1, not RGS1 and RGS2) and generate a response matrix to be used with the result. The time scale for it is some months.

   There was some discussion about the need of more coordinated calibration with Chandra but it was decided to judge after the cross-calibration results are presented.

9. In the OM presentation, J.Schmitt asked to what extent OM data could improve the EPIC position determination. After some discussion it was agreed that current EPIC accuracy of $1''$ is good enough.

   P. Charles asked whether the observed OM degradation is as expected. A. Talavera answered that the value is as expected, though the reason is not completely clear.

10. After the cross-calibration presentation there was a common view that this is a very important issue. The community should be alerted about discrepancies between different instruments. B. Alteri said that a document is under preparation and it will be made public soon. Different origins for the discrepancies were explained by M. Turner, who also said that EPIC team is really focused on this issue, first trying to understand the physical reasons and that the MOS/pn low energy discrepancies will be fixed.

11. In the SAS presentation, J.Schmitt asked how many SAS Mac users are known. R.Mushotzky explained that the Mac community in the US is quite large and is also growing fast. He asked C. Gabriel to let him know how the XMM-Newton Guest Observer Facility (GOF) at Goddard could help. There was also some discussion about whether support for other platforms needs to be reduced, but there was no clear answer at the moment as the SOC was gathering statistics on user needs. C.Gabriel said that this is a dynamic process and we have to see how it evolves.

12. In the report from the Project Scientist, R.Mushotzky and J.Schmitt asked about the number of 'C' targets and whether it could be reduced to avoid too much false expectations from the community. N.Schartel explained that the C target fraction had dropped from nearly 50% of total Guest Observer time to about 40% from AO2 to AO3. In addition, N. Schartel explained that a buffer of targets is needed in the scheduling in case it runs out of A and B targets of a given duration or in a given position of the sky. This was understood by the UG members and no recommendation was considered necessary.

    In the context of the new XMM-VLT(I) coordinated program, M. Mas Hesse asked what is the ESO policy for observers not belonging to ESO member states. There were a few other questions regarding this program and N. Schartel said that everything will be explained in the XMM-Newton Policies and Procedures document, that will be issued together with the 4th call for proposals next August.

    N. Schartel explained that he plans to instruct users to request enough time for weak sources so that the exposure time estimate is robust against high background during the observation. J.Schmitt agreed, the proposers must be instructed and OTAC has to decide whether requested science is or not feasible.

No actions or recommendations were issued, rather it was decided to postpone them to the general discussion session.
The session ended at 19:30.

## Meeting on June 3, 2004

**Participants:**
Jürgen Schmitt (chairman), Didier Barret (external) Phil Charles (external), Andrea Comastri (external), Miguel Mas Hesse (external), Richard Mushotzky (Mission Scientist), Roberto Pallavicini (Mission Scientist), Mike Denby (SSC-PI delegate), Simon Rosen (OM-PI delegate), Martin Turner (EPIC-PI), Norbert Schartel (XMM-Newton Project Scientist), María Santos-Lleó (User Group secretary).

Leo Metcalfe (Science Support Manager), Ramon Muñoz (Instrument Operations Manager) and interested staff from Vilspa.

**Presentations:** The remaining presentations from the agenda were given:

5. Instrument Operations (R. Muñoz; 9:15-10:05)
6. Aspects of Science Support (L. Metcalfe; 10:05-10:40)
12. SSC status (M. Denby; 10:40-11:20)
13. Action items from last meeting (M.Santos-Lleó; 11:20-11:25)

**Discussions:** The following points were discussed during the presentations:

5. J.Schmitt asked why there is 'idle' time in the efficiency breakdown graphs from the quarterly reports of mission status and performance. N.Schartel explained that this is time where no activity could be scheduled. Such as: planned tests, maintenance or calibration of star tracker, fine Sun Sensor, thruster torque etc. Extra post-slew margins requested for a few special maneuvers. Problems with ground-station handovers. Special instrument tests that cannot be scheduled nominally, that is they have to be manually commanded, e.g. some tests of new instrument modes.

   J.Schmitt asked whether the slew time could be used for science and M.Kirsch and B. Altieri explained that slew exposures with the EPIC instruments are obtained systematically in all but the first and the last slews of every revolution. The data is currently under analysis and pending the result the policy will be kept or slew time will be used for calibration. M. Turner confirmed that this time can be used for both science and calibration. In any case, the data will be made available as soon as SAS is able to solve the attitude for these exposures.

6. UG considered very good news that after the last big Solar flare there is no sign of instrument degradation. It was discussed that the most likely reason was that the space-craft was in perigee during the maximum of the flare, indeed M.Casale explained that the flare was detected very early at the MOC because the star tracker lost a guide star and then the MOC decided to stop observations, put instruments in safe mode and go to perigee position.

   The usage of the XMM-Newton Science Archive, XSA, was considered very impressive.

   J.Schmitt asked when SciSim is expected to be supported again and C. Gabriel said toward the end of June, 2004. A. Comastri asked whether SciSim is a multi-mission simulator and C. Gabriel answered that no, it is only for XMM-Newton. He also mentioned that his team is preparing a clear description on what SciSim can do and cannot do.

   P.Charles asked about plans on how to react to GRB ToO alerts following the Swift launch, currently scheduled for September 2004. It was decided to postpone this point to the general discussion session.

12. J.Schmitt asked whether RGS products will be included in the 2XMM catalog. M. Denby answered that there are currently no plans to do so, nor to put links to the pipeline products in the XSA. R.Mushotzky asked about 'science oriented' catalogs. It was agreed to postpone this point to the general discussion session. A. Comastri asked whether it would be possible to include the historically 'standard' 2-10 keV band in the 2XMM catalog and M. Denby answered it is not currently planned.

13. Only four recommendations and one action were pending since last meeting. Their disposition was as follows:

    **Recommendation 2003-09-22/21** The data rights holder of TOO observations should be identified on the TOO details web page: **Closed**

    **Recommendation 2003-09-23/22** The PIs of large programs should be allowed to submit five pages scientific justification: **Closed**

    **Recommendation 2003-09-23/23** The decision to classify a program as large should be made by the principal investigator: **Closed**

    **Recommendation 2003-09-23/24** The scientific category for which targets were proposed should be provided in the list of accepted targets: To be followed when AO4 results are made public.

    **Action 2003-04-01/12** SOC to issue a recommendation about the feasibility of adding EPIC (MOS and pn) spectra: **Closed**. A. Comastri will discuss the subject with C.Gabriel.

**Input from the community and general discussion:**

The presentations were finished at 11:25 and the meeting resumed at 11:35 for the general discussion based on the inputs from Mission Scientists, UG external members and points collected through the previous discussions.
The following items were mentioned by the UG members as collected from the scientific community:

- R.Mushotzky reported on US XMM-Newton users. As the first point he mentioned complaints about phase II of proposal submission and requests to improve it via default settings for the instruments. After some discussion, the point of view of the Project Scientist was accepted by everybody. The main idea is that every observer has to decide which is the best choice for the particular science he or she wants to perform. Users would also like to have the optical loading tool estimator available, N.Schartel explained that it indeed is and was for AO3 as the 'technical evaluation' of the XRPS. Users find it difficult to realize where the main target is, especially in the EPIC-pn field of view: It was explained that there are figures in the Users Handbook that illustrate it and that it will be possible to use SciSim for this purpose as well. A second point was a request for a SAS bug list: N.Schartel explained that the main points are already listed and kept updated on the web and that a complete list is foreseen. A third point was a request on feedback from the proposal selection process: N.Schartel said that this will change in AO4 as agreed in a previous UG meeting. J.Schmitt stressed that UG were not able to formulate a clear recommendation as a whole in previous meeting.

- R.Pallavicini reported that the only complaint he collected was the need to work harder the public relations. (Note: public relations is not SOC responsibility within ESA)

- A. Comastri reported on one user complaint about the delay in the update of the ToO details web page. N.Schartel explained that this was due to a bug in our system and was correctly immediately after we realized it.

- M.Mas Hesse reported on the lack of coordinated a program between XMM-Newton and INTEGRAL. In particular, the next call for proposals will run in parallel for both missions, it will then be decoupled by half a year. If possible, both allocation committees should know about each other. For the future, M.Mas Hesse will ask the INTEGRAL team to prepare a science case to support a request or a recommendation to the XMM-Newton UG if they consider it necessary.

The following points which were collected during the presentations, were also discussed:

- XMM-Newton ToO policies and Swift: N.Schartel explained that XMM-Newton cannot observe all GRBs expected to be detected by Swift. As Swift will provide accurate positions for optical follow-up observations, XMM-Newton does not need to cover this aspect of GRB research in future and can concentrate on spectral and variability studies in the X-ray band. Consequently, the criteria for XMM-Newton observations will be: low Galactic column density, brightness of the burst and quick reaction time from the SOC possible. UG consider this a very sensible approach.

- Software improvements: J.Schmitt asked for a clear time-line to make new RGS software, i.e. background accumulator and *rgssuperfluxer*. The background accumulator was already shown in the previous UG meeting. UG would like to have it quickly implemented in SAS. With regard to EPIC background, M.Denby explained that a new method for calculating it is already in SAS 6.0. There was further discussion on whether background estimation tools developed by different science teams should also be incorporated to the SAS. Though it was considered an important issue, it was general agreement on that the cross-calibration has to have higher priority. The SOC stated that the implementation of the RGS background accumulator and RGS superfluxer were planned for SAS 7.0, and noted the schedule reasons for that, including the current priority focus of the instrument teams on improving the cross-calibration. The SOC would nevertheless consider ways to accelerate the availability of the RGS background accumulator to SAS 6.1 if at all possible.

- Cross-calibration between XMM-Newton X-ray instruments: the UG appreciated the large effort being invested in it by the SOC and in the instrument teams. It was generally agreed that it should have the top priority and over-rule any other calibration item.

  **Recommendation 2004-06-03/25** The UG recommends that the solution of the cross-calibration problem between the different XMM-Newton instruments should have top priority in the efforts of the instrument teams.

- Slew time usage:

  **Recommendation 2004-06-03/26** The UG recommends a study about the value of slew-time data for scientific purposes. Pending on the outcome of this study, the UG might make further recommendations

- XMM-Newton Conference:

  **Endorsement 2004-06-03/06** The UG fully endorses the proposal that the Project organize a big X-ray conference.

  The UG recommends the conference to take place in early autumn 2005, rather than spring 2006. This is expected to have a major and positive impact in the XMM-Newton evaluation by the ESA AWG at the end of 2005. The UG also recommends to issue written proceedings shortly after the conference.

- XMM-Newton scientific workshops:

  **Endorsement 2004-06-03/07** The UG endorses scientific workshops.

  Every UG member will suggest science topics and volunteers to help in the organization should their topic be accepted. UG members see the point from Project Scientist willing to organize the workshops in Spain, but offers help, in case of need, to organize them somewhere else. UG also points out to Project Scientist that organizing workshops via invitation is a valid option when the number of participants need to be restricted as is the case.

- XMM-Newton / VLT(I) coordinated program: UG realizes that XMM-Newton project has no control on the time ESO allocates on XMM and vice-versa. A clear recommendation should be made to each OTAC

  **Recommendation 2004-06-03/27** The UG endorses the XMM-Newton/VLT coordinated programs. The UG understands that the observations in this program should be observations that require simultaneous or nearly-simultaneous data from both observatories. A clear case for this must be made in the proposals and the time allocation committees should be alerted.

- Science oriented sub-catalogs: R.Mushotzky presented this concept, which would be extremely useful for scientist. It would need a dedicated scientist to design, for instance, a user friendly science oriented interface to the 2XMM catalog. It was decided to wait until 2XMM is released before making any recommendation.

- Support from GOF to SAS on Mac: C.Gabriel will provide a list with support issues needed from GOF.

The discussion ended at 13:35.

The UG chairman acknowledged P. Charles, who is leaving the UG, for his service and wished him good luck and success in his new position at SAAO. P. Charles thanked J.Schmitt and said that he enjoyed serving in the UG and wished all the best to everybody

**Date of next meeting May 19 and 20, 2005, starting at 10-11 am on May 19**