

X-RAY MULTI-MIRROR MISSION, ANNOUNCEMENT OF OPPORTUNITY: POLICIES AND PROCEDURES

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1 Purpose and Schedule

The X-ray Multi-mirror Mission (XMM) is the second cornerstone of ESA's Horizon 2000 Science Programme, providing an observatory-class X-ray facility. XMM will be launched by an Ariane 5 launcher on 21 January 2000, and it has an approved, funded, operational time of 2.25 years and a design lifetime of about ten years.

The observatory provides simultaneous non-dispersive spectroscopic imaging (European Photon Imaging Camera; EPIC), medium resolution dispersive spectroscopy (Reflection Grating Spectrometer; RGS) and optical/UV imaging and timing from a co-aligned telescope (Optical Monitor; OM).

In combination the three cameras of EPIC offer a large effective area over the energy range from 100 eV to 15 keV, up to 2500 cm² at 1 keV and \sim 1800 cm² at 5 keV. Each of the two modules of the RGS cover the energy range from 0.35 keV to 2.5 keV with an effective area of up to 75 cm² at 0.8 keV. Thus, XMM offers a unique opportunity for a wide variety of sensitive X-ray observations accompanied by simultaneous optical/UV measurements.

The majority of XMM's observing time is made available to the astronomical community by the traditional route of Announcements of Opportunity (AO), followed by peer reviews. These Announcements are open to the worldwide scientific community and are referred to as "Open Time". This first Announcement, AO-1, solicits proposals for observations to be carried out in the period between (approximately) May 2000 and May 2002.

Electronic submission of proposals will be required in response to this Announcement. For all matters relating to the proposal the Principle Investigator (PI) is the single point of contact with ESA. After peer review by the XMM Observing Time Allocation Committee (OTAC), every Principle Investigator will be informed of OTAC's decision.

The following schedule has been established:

Announcement of Opportunity	19 January 1999
Due date for Proposals	17 April 1999 (00:00 UT)
OTAC decisions	early September 1999

As soon as the technical details of successful proposals are confirmed by the Science Operations Team, the observations will be made available for scheduling. Thus, execution of observations resulting from the Announcement of Opportunity could start six months after launch (or in individual cases somewhat earlier, depending on target visibility), provided that in orbit-commissioning, calibration and performance verification have been completed.

2 Introduction

This document informs potential proposers about the policies adopted, the procedures to be followed for the AO and the interactions foreseen between proposers and the Science Operations Centre (SOC).

The organization of this document is as follows:

An overview of the different categories of observing time is presented in section 3. The proposal process is summarized in section 4.

Details of the proposal submission procedure and evaluation/selection processes are described in sections 5, 6 and 7, respectively.

Sections 8 and 9 contain information on data products, proprietary data rights and publication acknowledgment.

Proposers are advised to read all sections of this document carefully; special attention should be paid to sections 5 and 6.

3 Observing Time

A large percentage of XMM's observing time is made available via Announcements of Opportunity, which are open worldwide. In addition to this "Open Time", there is "Guaranteed Time" for those involved in preparing and operating the mission. Within the "Open Time" the "Targets of Opportunity" process allows for observations which could not have been foreseen at the time of the deadline of the Announcement, see section 3.2.2.

XMM is scheduled to be launched on 21 January 2000. The first month after launch is devoted to commissioning of the overall satellite. The following 2-3 months are devoted to "Calibration and Performance Verification", during which time a detailed assessment of the in-flight performance of the scientific instruments will be made, the calibrations established and most of the operating modes validated. In the following three months the observing time is reserved to carry out part of the Guaranteed Time observing program, see 3.1. During the second half of the first year, Open Time proposals will be interleaved with the Guaranteed Time observations such that, on average the time is split 50/50, with a linear run down of the Guaranteed Time from 75% at the beginning to 25% at the end of the period. Starting with the second year of operation the relative time allocation for the "Open Time" will remain constant at 75% of the total observing time. This corresponds to $\sim 19,850$ ksec of "open" time over XMM's approved lifetime (after taking into account an expected observing efficiency of $\sim 70\%$).

This first Announcement solicits proposals to be carried out in the period May 2000 to May 2002. In total 70% of the available "Open Time" of this period is distributed via this call, which results in $\sim 13,890$ ksec. The remaining 30% (corrected for the achieved observing efficiency) will be made available through a second Announcement, which allows the scientists to take into consideration results of XMM observations already performed.

Open time observations resulting from this Call for Proposals will be interleaved into the observing schedule, together with the Guaranteed Time observations.

3.1 Guaranteed Time

Various scientists responsible for the preparation and operation of the XMM mission receive guaranteed observing time. These guaranteed time holders are: the Principal Investigators of the science instruments, the Telescope, the Mission, the Project and the Survey Scientists. Guaranteed Time holders are also able to apply for Open Time.

The Guaranteed Time program was drawn up by the Guaranteed Time holders and

their teams. It is presented to the community as part of the XMM Users' Handbook in order to avoid duplication (see section 5.3). All observations currently planned for the Guaranteed Time program, as well as the observations planned for performance verification and calibration, will be tabulated in the "Lists of Calibration, Performance Verification and Guaranteed Time Targets". These appendices of the XMM Users' Handbook are available at the time of the opening of AO-1 (19 January 1999).

3.2 Open Time

3.2.1 Scope and Restrictions of Open Time

XMM is operated in a pre-planned manner without any significant routine real-time interaction. Observers are not expected to be present for the execution of their observations (however, the XMM observatory reserves the right to ask an observer for consultation during preparation and/or observation, if the complexity of the observation requires her/his presence). Thus, all observations must be specified in full detail by the proposers in the proposal submission process via the XMM Remote Proposal Submission (XRPS).

Open Time proposers may apply to use any of the spacecraft and instrument modes described in the XMM Users' Handbook. The Observing Time Allocation Committee will consider each proposal on its scientific merits without any, a priori, preference for programs of any specific size. There are no restrictions on the duration nor the size of the programs except those set by the technical constraints of the mission, like e.g., sky visibility and the orbit.

Proposers for Open Time are not allowed to duplicate any of the observations in the Guaranteed Time program. See section 5.3 for the exact definition and further discussion of duplication issues. Checks for duplications will be performed by the SOC during the processing of proposals.

3.2.2 Targets of Opportunity

Targets of Opportunity (TOO) are astronomical events observable by XMM, which cannot be predicted and scheduled on the time scale of a year, yet are scientifically sufficiently important to justify interrupting the overall XMM program. Consequently, TOOs cannot be proposed for in any XMM AO.

Because these events often need rapid reaction times, the overall responsibility lies with the Project Scientist, who coordinates with the chairman of the Observation Time Allocation Committee, if time permits. The Project Scientist or his deputy,

makes the decision for an interruption on the basis of guidelines to be agreed by the Observing Time Allocation Committee.

The possibility to submit Target of Opportunity proposals is open to all astronomers worldwide. Astronomers who detect a suitable event are strongly encouraged to send a TOO proposal via email. Receipt of a TOO proposal immediately initiates the process of technical review, the decision of interrupting the XMM program and (if accepted) the observation of the proposed target. Therefore, a TOO proposal can only be accepted if it provides the necessary information to allow these decisions. The minimum information required are the type of event, coordinates and the date of the underlying observation. More details on how to propose potential TOOs will be made available on the XMM SOC WWW site:

<http://astro.estec.esa.nl/XMM>

To allow the shortest possible reaction times the XMM SOC checks frequently relevant web addresses, such as, IAU circulars, Batse, SAX etc. Further it is planned to establish on-call connections with other satellites and monitoring programs which have the potential to detect suitable events (for example Integral).

In order to maximize XMM's scientific return for every performed TOO observation, the Project Scientist will set up a small, dedicated team (3-4 members in total) responsible for acquisition and analysis (the original TOO proposer will specifically be considered as a candidate member of this team). Astronomers interested to work in such a team will eventually find information on how to participate on the XMM SOC WWW site. It is expected that the details of these TOO procedures will be known by the end of 1999, and be announced on the XMM SOC WWW site.

Each selected team will contain, ex officio, one or more SOC astronomers. These may either already be included in the original proposal by the PI or will be added by the Project Scientist. The roles of these SOC staff include co-ordination during definition and responsibility for preparation and obtaining the appropriate observations.

There is a proprietary period of four months during which the data will only be distributed to the members of the TOO team.

4 Overview of Proposal Preparation, Submission and Selection

The proposal process in response to this Announcement of Opportunity is very similar to that of previous X-ray missions and, in summary, is as follows. Proposers send proposals to ESA by the deadline (17 April 1999 00:00 UT). These proposals contain the scientific justification and details such as coordinates, instrument, mode(s), filter(s), and total required observing time. The XMM Remote Proposal Submission system (XRPS) is to be used for preparation of AO-1 proposals. The Observing Time Allocation Committee (OTAC) reviews these proposals and recommends priorities.

For AO-1, users must perform the following tasks:

- Download the documentation for the Call either via the WWW or via ftp.
- Prepare a concise scientific justification for the proposal (postscript file) and a feasibility study of the observations. Note that figures can be included in the postscript file.
- Fill in the XMM Remote Proposal Submission (XRPS) forms, according to the instructions provided in section 5.7 and using exposure times calculated with the methods described in the XMM Users' Handbook.
- Run the proposal through the XRPS. This will
 - (a) validate the format of the proposal (completeness, syntax, limit checking), and
 - (b) if validation succeeds, produce a file suitable for printing;
- Submit the proposal through XRPS to ESA before the deadline (17 April 1999 00:00 UT) with the attached postscript file containing the scientific justification.

On receipt of the proposals, the SOC will forward them to the OTAC for scientific review, while performing some technical assessments and preparing overall statistics on the response, in parallel. The OTAC will assign priorities to each proposal (and, as needed, grade individual observations within a proposal). For details see section 7.2.2.

One of the parameters, used by the scientific scheduling software to plan which observations will be carried out during a particular orbit, is the priority of the observations as allocated by the OTAC. The higher the priority an observation or proposal receives, the greater the probability that it will be carried out. However,

for operational reasons, no guarantees can be given that any particular observation will, in fact, be executed, regardless of its grade.

5 Specific Call Issues

5.1 Targets of Opportunity-like Observations

There are many established (or expected) X-ray sources with known coordinates for which the emission is characterized by unpredictable TOO-like events, for example novae, cataclysmic variables, etc. Often such events are discovered by general monitoring programs of these sources.

Proposals to observe such events with XMM are permitted and must be submitted as Fixed-Time Proposals, see section 5.5. Associated with these proposals there should be a clear indication on what should trigger the actual observation to be performed, and how this will be communicated to the SOC.

Given the nature of such an event, rescheduling of the XMM observing sequence, update of exposure times and instrument modes is likely to be necessary. Consequently, the observing parameters should be provided on a best guess basis.

To avoid any conflict with a “genuine” TOO proposal, the PI is responsible for providing all necessary information and updates of the observing parameters immediately when the specified event occurs. In case of a conflict between a TOO and a TOO-like proposal, the Project Scientist, in coordination with the Chairman of OTAC, will make the decision. The basis of the decision is the information provided, as well as the time at which the information arrived at the SOC.

5.2 Planned Targets of Opportunity

It is not allowed to propose unpredictable TOOs only by target category (e.g. γ -ray bursts, supernovae etc.). Potential proposers who can identify suitable candidate objects by the deadline of the Announcement (which means that target coordinates can be provided) are recommended to study section 5.1 (above) in detail. Potential proposers who can **not** provide coordinates by the deadline of the Announcement are asked to study section 3.2.2 (regarding TOOs) with great care.

5.3 Duplication and Reserved Observations

The general policy of the XMM Observatory is to avoid repeating the same observation, i.e. to avoid duplication.

In general, a duplication is determined by consideration of the coordinates and of the main observing parameters (especially: the instrument(s) and the observing mode). A proposed observation duplicates another if the expected science data are essentially the same or of lower quality. It is, for example, allowed to observe the same target with the same instrument configuration several times for variability

studies. On the other hand, observations of hard X-ray sources with EPIC using different filters only (which mainly affects the soft energy response) may be classified as a duplication.

The responsibility for defining and resolving cases of duplication rests with OTAC, consulting with the Project Scientist as needed. Within a single observing cycle duplications are strictly forbidden. The OTAC can allow duplications between a proposed observation and an observation of a previous cycle. These should be restricted to proposals which provide convincing evidence that additional data are of scientific relevance and, especially, that the scientific case cannot be fulfilled with the data already taken.

The guaranteed time, calibration and performance verification observations, as planned pre-launch, are published in the XMM Users' Handbook (see section 3.1). Open Time proposals in response to the AO-1 call are not permitted to duplicate these observations.

After the end of the Performance Verification phase, Guaranteed and Open Time observations may be updated to take best advantage of the in-flight performance of XMM and its instruments. Such updates could cause previously unforeseen duplications. The responsibility to resolve such conflicts rests with the Project Scientist. Within target categories, priorities assigned by the OTAC will be taken into account.

5.4 Concatenated and Linked Observations

The XMM Users' Handbook explains that the XMM mission planning system allows users the possibility of forcing two or more observations to be scheduled "back-to-back" (concatenation) and of carrying out a "test observation" during one orbit and the main observation during the same, or in a later, orbit (linked).

Concatenation reduces the flexibility available to the mission planning system for the scheduling of observations and can lead to larger than nominal slew overheads to programs. It is expected that the mission planning system will be very good at scheduling observations reasonably close in time when they are close on the sky. Thus, all proposers are reminded that concatenation must only be used when there is a very strong scientific requirement for the observations to be scheduled contiguously in time. This justification must be made explicitly in the proposal.

It is expected that little use will be made of the linked-observation facility. Proposals requesting linking are discouraged. Should a proposer feel that linked observations are essential to his/her program, a very strong scientific justification is required.

5.5 Fixed-Time Proposals

Fixed-Time observations reduce the flexibility available to the mission planning system for scheduling of observations and can lead to larger than nominal slew overheads to programs. Thus, all proposers are reminded that Fixed-Time observations must only be used when there is a special scientific requirement. This justification must be made explicitly in the proposal. In addition, the observation constraints should be described in detail in a separate chapter entitled “Feasibility of observation” at the end of the scientific justification.

The “Fixed-Time Proposals” category is also used to specify observations which require any kind of XMM SOC involvement in their preparation. Thus, every proposed observation which cannot be fully specified at the time of proposal submission (especially with respect to: the instrument, the observing mode used, details of the observation parameters and the exposure time) must be classified as Fixed-Time proposals.

Given this definition a wide range of observations have to be classified as Fixed-Time Proposals, for example:

- TOO-like Observations (see section 5.1)
- Concatenated and Linked Observations, (see section 5.4)
- Observations for which the observer can specify the calendar date, or relative date through, e.g., an orbital ephemeris
- Observations which require a specific satellite roll angle
- Observations which must be conducted more than once with a pre-determined time lag

Note that non-default configurations of the Optical Monitor require special SOC assistance and must therefore be submitted as requiring SOC enhancement.

Most of the listed categories simply constrain the scheduling process. However, there are several categories which may need rapid reaction time and/or a rescheduling of the observing sequence. It is in the responsibility of the Principal Investigator to provide the necessary information in time. Although the full SOC is only manned during normal working hours, a reasonable number of such “critical” observations can be performed, if the Principal Investigator ensures a rapid information flow.

5.6 Feasibility of observations

For AO-1 proposals, the duration of each requested observation has to be estimated and entered into XRPS by the proposer. XRPS does not calculate the observing

times. Instructions for calculating observing times are contained in the XMM Users' Handbook; in some cases the use of software tools (SciSim, XMM visibility checker, PIMMS) might be required. The XMM SOC recommends that proposers base their estimation of observing time on previous X-ray measurements whenever possible. The ROSAT All Sky Survey provides X-ray measurements for the majority of likely targets. After correction for the different energy bands and effective areas (for example with PIMMS), these give reasonable approximations of the time that the observation will take. It is mandatory that observers describe in their proposals how they calculated the observing times. A realistic estimate of the observing time is a major selection criterion for the OTAC.

The main simulation tool for XMM is SciSim. It is a complete XMM simulator which allows detailed simulation of observations and produces output files in the same format as the actual XMM science data. SciSim is available for Solaris and Linux from:

<http://astro.estec.esa.nl/XMM/scisim/scisim.html>

In addition to the above, PIMMS (Portable, Interactive, Multi-Mission Simulator) allows users to estimate the count rate, hence the exposure time necessary to achieve the scientific objectives, of a source based on the count rate measured with another instrument, or a theoretically calculated flux, and an approximate spectral shape. Although it cannot be a substitute for a full spectral or timing simulation with SciSim for data analysis, PIMMS nevertheless provides a useful first-order estimate of the count rate when a proposal is being considered. "First-order estimate" in this context means that the uncertainties of the PIMMS estimates are often (though not always) dominated by the scientific uncertainties regarding the source.

PIMMS for XMM is officially supported by NASA and is available from HEASARC in command-line version and via the WWW. More information is available from:

<http://heasarc.gsfc.nasa.gov/docs/software/tools/pimms.html>

Observations with XMM are only possible under a number of constraints, for example: Solar Avoidance, Earth Limb Avoidance, Moon Avoidance. As a consequence not every source is visible at all times. Therefore, it is mandatory that observers check the visibility of a target, in particular if the target should be observed on a certain date ("Fixed-Time Observations"; see section 5.5). The XMM SOC provides a web-based tool which allows an online visibility check for given coordinates, the "XMM Visibility Checker". For details see:

http://astro.estec.esa.nl/XMM/user/vis/vis_top.html

5.7 Proposal Length and Figures

The OTAC encourages all proposers to be as concise as possible in their proposals. Use of graphical material (figures, diagrams, examples of data, etc.) is encouraged whenever it will help the OTAC to draw conclusions on the scientific merit of the proposal. The scientific justification must be prepared as a postscript file. In total four pages are allowed for the scientific justification, including all accompanying material, i.e., the graphical material, a section on the feasibility of the proposed observations (section 5.6), tables and references. The minimum allowed font size is 10 pt. Non-compliance with these instructions will lead to the rejection of the proposal on formal grounds.

The XRPS Users' Manual provides further details on how to attach the scientific justification (postscript file) during proposal submission.

6 Proposal Submission Procedure

6.1 Proposers

This XMM Announcement of Opportunity is not restricted to proposers in member states of the European Space Agency. Proposers from all over the world are welcome to participate.

6.1.1 US Proposers

Proposers at institutions in the United States may respond to this AO either as Principal Investigators or as co-Investigators on foreign-PI proposals. Funding will be made available by NASA to accepted US investigators through a separate solicitation. Details regarding the timing and mechanism of this solicitation will be announced at a later date.

6.2 Submission of Open Time Proposals

XMM proposals must be prepared using a special software tool provided by ESA: the XMM Remote Proposal Submission software - XRPS. This tool makes checks for formal correctness of the proposer's entries. It produces formatted text output in electronic form. Proposals in **any** other format will not be accepted.

For technical details and advice, please see the XRPS Users' Manual:

http://astro.estec.esa.nl/XMM/news/AO/ao1_top.html

It gives a line-by-line description of the details to be included in a proposal.

For each observation contained in the proposal, the estimated total time must be given. Procedures of how to estimate observing times for a given observing mode are described in detail in the XMM Users' Handbook. Note that in order to calculate times, it is necessary for proposers to consider all observing parameters.

Submission of a proposal is only complete if:

1. the validated XRPS file of the proposal (i.e., if XRPS does not report a formal error) is received before 17 April 1999 (00:00 UT) and
2. the scientific justification, including all attached materials, is included in the proposal during submission.

In view of possible network congestion close to the deadline, proposers are urged to make all attempts to submit their proposals in advance of the due date. Proposers will receive an acknowledgment confirming the receipt of their proposal(s).

6.3 Submission of Target of Opportunity Proposals

The submission of Target of Opportunity Proposals follows essentially the rules of Submission of Open Time Proposals, see 6.2. In order to allow rapid turnaround time, Target of Opportunity proposals are to be sent by e-mail or possibly fax. Details are given in section 3.2.2. It is recommended that proposers add a short section entitled “Expertise of Proposer(s)” to the scientific justification. Note however, that no TOOs can be proposed for any XMM Announcement of Opportunity.

7 Proposal Evaluation and Selection

7.1 Proposal Handling at the Science Operations Centre

The receipt of each incoming proposal will be automatically acknowledged. An immediate check will be made to verify that it is a valid XRPS input file.

The printout will then be sent out to the appropriate panel members of the Observing Time Allocation Committee for scientific assessment and review.

In parallel, the electronic versions will be ingested into a proposal data base for statistical analysis. Also, some checks will be made for, amongst others, duplication with the Guaranteed Time observations, conflicts with and/or duplication of other Open Time proposals, oversubscription in particular parts of the sky, technical feasibility and especially, estimated observation time.

7.2 Scientific Review

7.2.1 Observing Time Allocation Committee

All Open Time proposals will be reviewed by the Observing Time Allocation Committee (OTAC). This committee is appointed by the Director of ESA's Scientific Programme. It is headed by a Chairman and consists of six panels, one for each of the following scientific areas:

1. Stars, white dwarfs and the solar system
2. White dwarf binaries, neutron star binaries, cataclysmic variables and black holes
3. Supernovae, supernova remnants, diffuse (galactic) emission, interstellar medium and isolated neutron stars
4. X-ray background and all (deep, galactic etc.) surveys
5. Galaxies and Active Galactic Nuclei
6. Clusters and superclusters of galaxies

Each panel consists of 5 members (except for panel 5 which may have 7 members). During their work, the panels will be assisted by SOC staff.

7.2.2 Review Process and Selection Criteria

The Observing Time Allocation Committee will review the Open Time proposals and make recommendations on the observing program to be carried out by XMM. It is expected that the review will take place during the summer of 1999. The following items will be taken into account during the review process:

- scientific case and justification
- scientific merit and relevance of the proposed observation(s)
- contribution to overall scientific return from XMM
- technical feasibility and exposure time estimation
- the requested observing time

The recommendations on XMM's observing program are made via assigning three scientific priorities either to entire proposals or to individual observations: A, B and C (A being the highest ranking). In addition, the OTAC

- is responsible for defining and resolving cases of duplication
- has the right to recommend exposure times either for entire proposals or for individual observations
- decides about a possible split of data rights if two observations show a significant overlap, e.g. if the distance between two targets is less than 30 arcmin.

For efficient timelining of observations, the scientific scheduling software needs to work from a pool of observations which significantly overfills the time available. Thus, the recommendations mentioned above will take into account the provision of the necessary oversubscription in the data base of planned observations. Priority A and B targets are of major scientific importance and will be scheduled with highest priority. In addition it is planned that (without further review by the OTAC) A and B targets will be transferred to AO-2, if their observation should not be possible during AO-1. Fixed time proposals from AO-1 which are no longer technically feasible in AO-2 will not be carried forward. C priority targets that have not been observed by the end of AO-1 will not be transferred into AO-2 and therefore will be freely available for new proposals. However, it is emphasised that, for operational and technical reasons, no guarantees can be given that any particular observation will, in fact, be executed.

It is expected that Principal Investigators will be informed of the outcome of the OTAC review by early September 1999.

8 Data Products

The data from each observation undergoes pipeline processing, which produces a set of standard data products for each observation. These products, plus the associated appropriate calibration and auxiliary files, are distributed via CD-ROM on a nominal timescale of a few weeks after the observation has been carried out. The CD-ROMs are sent to the Principal Investigator of the proposal. All products sent out will also be kept in the XMM archive for public access after expiry of the proprietary period (see section 9).

The data products distributed via CD-ROM reflect a best effort at the date of their production. However, particularly during the early stages of the XMM mission, subsequent improvements of the pipeline products and the corresponding calibration and auxiliary files are expected. In order to allow observers to participate immediately in the increasing understanding of the instruments, the source code of the pipeline and the improved calibration files will be made public.

Starting with the distribution of the CD-ROM, observers are responsible for further data processing as well as for the scientific analysis and interpretation of their observations.

9 Data Rights and Publication

For individual targets there is a proprietary period of 1 year during which, subject to the caveat below, the data from an observation (except Targets of Opportunity) will only be distributed to the Principal Investigator of that proposal. The proprietary period of Targets of Opportunity is four months. After this period, the data are available to the community. The proprietary period shall start at the time when the data are sent to the Principal Investigator of the proposal in a usable form, i.e. suitable calibration and appropriate data processing being available.

This is modified for proposals which consist of more than one observation, like e.g. more than one observation of a single target (for variability studies or where a very deep exposure is split into multiple actual observations) or more than one observation of different targets (for studies of a target sample). In such cases the proprietary period should start when the last (part) of the observations is sent to the Principal Investigator. Independent of the status of the entire proposal every observation performed in one observing cycle becomes available to the community at most one year after the end of that cycle, subject to suitable calibration data being available.

The Principal Investigator retains the proprietary rights to the whole field/dataset, if no other recommendation was given by the OTAC. Provision can be made on the proposal form to allow the serendipitous source content in the EPIC field of view for the followup/identification programme being conducted by the XMM Survey Science Centre (SSC) as part of its responsibilities to the XMM project, as described in more detail in the XRPS Proposers Guide (section 5.3) and the XMM Users Handbook (Appendix B). The overall goal of the SSC follow-up programme is to support the community's access to, and exploitation of, the serendipitous data from XMM, and as such all the results will be made public through the XMM science archive. Except where there are alternate plans to conduct a follow-up programme based on the serendipitous X-ray source content of their XMM fields, proposers are encouraged to consider agreeing to the SSC follow-up option.

Data taken during a slew of the spacecraft become directly available to the community, as long as existing data rights are not violated. Slew data which overlaps with data of either the previous or the next accepted pointed observation in sequence (i.e. during the start and end of a slew) become public after the proprietary period of the performed or accepted observation has expired.

In accordance with ESA's rules concerning information and data, ESA retains the right to use any data obtained by XMM for instrument evaluation, diagnostic and calibration purposes, while maintaining scientific confidentiality during the proprietary period. ESA also reserves the right to use any data for public relations pur-

poses; in this case, due acknowledgment shall be given to the Principal Investigator of the proposal and to the Principal Investigator of the consortium that built the instrument.

Any publication based on data from XMM observations shall be acknowledged by a footnote (if possible on the initial page) in the paper:

*“Based on observations obtained with XMM, an ESA science mission
with instruments and contributions directly funded by
ESA Member States and NASA”.*

In order to monitor the scientific return of XMM, users are expected to send a copy of any publication (and especially any reprint) based on XMM observations to:

Publications - Monitoring
XMM Science Operations Centre
Villafranca del Castillo
Apartado 50727
E-28080 Madrid
Spain

or electronically via email to: **pmo@xmm.vilspa.esa.es**