

The Athena Science Study Team Working Groups – Terms of Reference

Background

ESA has appointed an Athena Science Study Team (ASST) to provide guidance on all scientific aspects during the Assessment Phase for the Athena mission, under the leadership of an Athena Lead Scientist (Kirpal Nandra knandra@mpe.mpg.de). The following tasks have been charged by ESA to the ASST:

1. Provide scientific oversight in the fields associated to the scientific theme “The hot and energetic Universe”, as described in the “Report of the Senior Survey Committee on the selection on science themes for the L2 and L3 missions in the Cosmic Vision programme” (available at the following link: <http://sci.esa.int/cosmic-vision/53261-report-on-sciencethemes-for-the-l2-and-l3-missions/#>)
2. Review and propose updates to the mission scientific requirements
3. Assess the scientific aspects of the mission performance
4. Assist in making any top-level trade-offs
5. Support the preparation of the observing plan and calibration strategy
6. Assist in setting-up scientific requirements on the Science Ground Segment
7. Advise on the preparation of the Science Management Plan
8. Produce the Definition Study report
9. Act as a focus for the interests of the broad scientific community

Although the ultimate responsibility of guiding ESA with these tasks rests with the ASST, it is clear that many of them require a huge amount of work and detailed expertise on many topics that it is impossible to have in a small group of people like the ASST. In addition, goal number 9 raises the specific goal for the ASST to channel the interests of the broad scientific community.

In order to successfully achieve all the above goals, the ASST decided to organise a Working Group structure, populated by people from both the ASST and the broad community. It is expected that an *Athena Science Team* will replace the ASST after payload selection, with an updated remit. It is envisaged that the Working Group structure proposed here will continue supporting the new team, with the needed updates.

Remit of the Working Groups

1. Each Working Group (WG) will deal with broad scientific or technical areas relevant to Athena, as decided by the ASST.
2. The WGs shall:
 - a. At the request of the ASST, conduct studies on scientific or technical aspects that are required in support of Athena
 - b. Advise the ASST in any necessary updates of the science requirements and all other relevant studies under the responsibility of the ASST

- c. Advise the ASST with respect to technical issues and trade-offs
- d. Promote Athena as a major astronomical observatory

Membership

3. Each WG shall be composed by a number of scientific and/or technically experienced members from the community. Appropriate nationality, field of expertise and gender balance shall be sought.
4. WG members shall be appointed by the ASST. In the case of scientists from USA institutions, they shall be encouraged to apply for WG membership to the ASST through NASA. Appointments shall be for a fixed period of time, depending on the phasing of the project, and may be renewed. It is foreseen that the WG membership will go through a staggered renewal process, where up to 1/3 of its membership will be renewed each time, making sure that knowledge and appropriate balances are kept at all times.
5. A WG chair shall be appointed among the ASST members by the Athena Lead Scientist, following agreement by the ASST, and for the same period (also renewable). WG co-chairs from the ASST or the community might be appointed following the same rules.
 - a. The WG chair shall be the primary interface between the WG and the ASST. She/he shall report to the ASST on the WG activities and will be the regular transmission channel of the ASST requests to the WG.
 - b. The WG chair and co-chairs shall call for WG meetings, lead the discussions, organise the WG structure, trigger and follow up the activities and prepare reports to be delivered to the ASST.
6. The term of any WG member can terminate at her/his own request at any stage, by simply writing to the Athena Lead Scientist lead and copied to the WG chair and co-chairs. By unanimous agreement, the ASST can terminate the term of a WG member, provided there are adequate reasons for it (e.g., putting the project at risk).

Organisation

7. Each WG could organise itself in sub-working groups, for example following those that prepared the successful Hot and Energetic Universe theme White Paper and Supporting Papers or “ad-hoc” activity groups.

- a. At the proposal by the WG chair and co-chairs, a sub-working group structure in a WG can be established, after it has been approved by the ASST. Coordinators of such sub-working groups will be proposed by the WG Chair and co-Chairs and be approved by the ASST before they are appointed by the corresponding WG chair.
- b. Temporary activity groups tasked with specific “ad-hoc” charges can be established at any time by the WG chair and co-chair without explicit concurrence by the ASST.

Intellectual property

8. Intellectual property of all material produced within the WGs, remains with its authors. In particular, material produced by the WGs, which does not make use of proprietary data within the Athena project, can be freely publicised by its authors.
9. Any such publication or presentation *on behalf of the Athena team* generated in a WG, needs prior authorisation from the corresponding WG chair and appropriate attribution.
10. WG members are obliged to deliver all relevant material produced within the remit of their activities (minutes, technical notes, presentations, other documents) in good faith to the ASST for its best use as part of the Athena project. This material can be freely accessed by all involved in the Athena project, in particular by the ASST, other WGs, instrument consortia etc.

Athena team membership

11. When delivering Athena-related presentations, WG members shall notify the WG chair of such presentations. As stipulated in point 9 above, speaking on behalf of Athena needs prior authorisation by the WG chair.
12. In recognition for their contribution to the WG, their members will have status of *Members of the Athena team*. As such they should be entitled to request funds to their national agencies to support these activities.