Call for Membership in the NewAthena Science Re-definition Team

1 INTRODUCTION

Athena was selected in 2014 as the mission to implement the science theme "The Hot and Energetic Universe". During the study and definition phases of the mission it has become apparent that the complexity (and associated cost) of *Athena* was significantly greater than originally identified, such that the current mission concept is not affordable within the ESA Science Programme. The Director of Science and the Science Programme Committee wish to define an affordable, yet ambitious X-ray observatory mission in a similar timeframe as the one foreseen for Athena. Such a mission will hereby be referred to as *NewAthena*.

As part of the process that will lead to the definition of this new mission the Director of Science is convening a "Science Re-definition Team" to support the definition of the science objectives of NewAthena, and to provide expert advice during the study activities necessary to define the NewAthena mission concept.

The present Call solicits applications for members of the Science Re-definition Team for the NewAthena X-ray mission.

2 PURPOSE OF THE PRESENT CALL

Through the present Call, the Director of Science invites scientists to apply for membership of the Science Re-definition Team that will support the definition, where necessary, of revised science objectives for NewAthena. NewAthena will have to fit in clear cost constraints, significantly below the estimated cost of Athena. It is thus likely that the mission's specifications will need to be less ambitious than Athena's, and the Science Re-definition Team will be asked to support the study activities in the necessary trade-offs among performance specifications, etc., with the goal of defining an affordable X-ray mission that will still afford flagship science. The Science Re-definition Team will be also asked to propose possible new, fresh science goals for the NewAthena mission complementing the original science case for Athena, that might enhance the mission's scientific output in the face of the necessarily reduced mission specifications.

The NewAthena Science Re-definition Team will be independent of the two instrument consortia that were planning to supply instruments to the Athena mission (X-IFU and WFI).

Revised versions of both X-IFU and WFI are the baseline for the definition of NewAthena. The two consortia will be involved in the definition of the NewAthena concept through a separate channel. As a consequence, scientists with programmatic, scientific or technical management roles in WFI and X-IFU instrument consortia are not eligible to apply to the present Call.

The Science Re-definition Team will be asked to support the Agency in the feasibility studies needed to define the NewAthena concept. It is currently envisaged to achieve the definition of the NewAthena concept in approximately 18 months. The Science Re-definition Team will be asked to produce, at the end of the study, a final report advising the Director of Science about the scientific value of the NewAthena concept. The Team may also be asked to produce interim reports to support the ongoing work of the agency.

The NewAthena Science Re-definition Team will have approximately 15 members, and its activities will be supported by an ESA-appointed Executive Secretary. It will be appointed with a fixed term mandate, with the Terms of Reference spelled out in Section 2.1.

Early career scientists are specifically encouraged to apply.

NASA and JAXA are invited to appoint members to the NewAthena Science Re-definition Team through a separate channel – the current Call is therefore limited to scientists working in institutions located in ESA Member States.

Participation to the Science Re-Definition Team will not prejudice in any form later participation in any following calls concerning the mission selection.

2.1 *The NewAthena Science Re-definition Team Terms of Reference*

The NewAthena Science Re-definition Team will initially be requested to help to prioritize the scientific objectives of the Athena mission, in view of the definition of a cost-constrained X-ray mission that should deliver flagship-class science. The Team may also propose new or revised scientific objectives with respect to the ones originally defined for Athena. The cost and technical constraints of NewAthena will be defined by ESA.

ESA plans to carry out feasibility studies to define possible mission profiles addressing the high priority science objectives identified by the Science Re-definition Team, and will request the support of the Science Re-definition Team during such studies. In this context the Science Re-definition Team may be required to:

- Support the definition of scientific requirements addressing scientific objectives;
- Assess and advise on the scientific impact of mission requirements;
- Assist in making any trade-offs related to the scientific performance for the relevant mission;

- Assess the feasibility of the NewAthena mission concept to deliver the science objectives defined by the Science Re-definition Team.

Throughout the process, the Science Re-definition Team's activities will be guided by consideration of feasibility and affordability.

The selection of the Members of the Science Re-definition Team is expected to take place by October 2022, with the Team's activities starting shortly thereafter. The activities are expected to be conducted through a mixture of in-person and on-line meetings. For in-person meetings, the travel expenses of the Team's members would be reimbursed by the Agency.

3 FORMAT AND CONTENTS OF THE APPLICATION

Applications for membership of the Science Re-definition Team should consist of three parts:

1. A cover page (that should include the applicant's contact information);
2. A curriculum vitae (maximum 2 pages);
3. The actual application (maximum 5 pages).

The curriculum vitae should include all information about the applicant's career that the applicant considers relevant.

The application should explain why the applicant considers themselves suited for membership of the Science Re-definition Team, the applicants' areas of expertise relevant to the Team's activity, their potential contributions, etc. The application should not contain a list of publications, but it should explicitly list the applicant's five "notable achievements" that in the applicants' opinion make them particularly suited for consideration. These might be specific publications the applicant has authored, responsibility in the development of a scientific mission and/or instrument, responsibility in science policy, etc.

Details of the personal data protection measures that apply to this Call can be found in the privacy notice on the submission website.

3.1 *Submitting applications*

Applications will be accepted exclusively in PDF format, with a maximum file size of 10 MB, using the interface available at:

https://www.cosmos.esa.int/web/call-for-newathena-science-re-definition-team

The deadline for submission of applications in response to the present Call is

30 September 2022 at 12:00 (noon) CET.

Applications received after the deadline will not be considered. Applications that exceed the page limit or that do not respect the structure described above in Section 3 will not be considered.

4 FURTHER INFORMATION AND CONTACT POINTS

Requests for further information should be addressed to:

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