Astrophysics Strategic Mission Concept Studies
Frequently Asked Questions

NASA received the following questions concerning the ROSES 2007 amendment calling for Astrophysics Strategic Mission Concept Study proposals. Answers are provided for each question. As additional questions are received they are added to the end of the document along with the date of their addition.

1. How does this NRA for future mission concepts dovetail with the European Space Agency's (ESA's) Cosmic Visions call for proposals?

[A: ESA's Cosmic Visions call for proposals is a completely separate effort through which ESA will select concepts it wishes to study. NASA and ESA will coordinate their study activities in the cases where NASA funding is sought for participation in a Cosmic Vision study. Individuals who are listed as co-investigators or collaborators on Cosmic Visions proposals are eligible to submit proposals to this call, but not for the purpose of funding their Cosmic Visions participation.]

2. Can proposals be submitted by single PI investigators with no supporting NASA Center?

[A: Yes. However, Strategic missions generally require community consensus in order to be prioritized and implemented within the NASA Science Mission Directorate (SMD) Astrophysics Division program. Proposers should assess the likelihood that community consensus can form around ideas and concepts with no current community backing. In addition, selected proposals that do not identify a supporting or collaborating NASA center will be assigned one for the study by NASA headquarters.]

3. What are the approximate budget guidelines for a proposal?
[A: A typical study proposal budget should not exceed $1M over the 1-yr period of performance. The cost effectiveness of the proposed study will be one of the evaluation criteria as with other NASA solicitations.]

4. Why is NASA soliciting these mission concepts instead of waiting for the Decadal Survey to complete its work?

[A: NASA's science, mission and budget planning must proceed in parallel to any Decadal Survey study activities. NASA is ultimately responsible for setting priorities, implementing its mission portfolio, managing its

appropriated resources, and showing accountability to stakeholders in the Executive and Legislative branches. The Astrophysics Division is currently planning and executing according to existing Decadal Survey priorities and cannot sit idle for 2-3 years in future resource planning while the new Survey takes place.]

5. Is there a limit to the maximum cost of a large mission?

[A: No. But cost realism and the feasibility of the proposed work during the next decade will play a role the selection.]

6. Can industry be involved in the mission concept studies?

[A: Yes. However, future procurements for strategic missions will be commensurate with the NASA acquisition policies. Participation by an industry partner in a concept study is not a guarantee of future participation in a flight mission.]

7. Are Origins Probe or non-dark energy Einstein Probe concepts previously selected for study under previous solicitations automatically selected for the new studies?

[A: No. Those teams, if interested in obtaining additional study funding, should submit new proposals.]

8. Who do I contact at a NASA Center to arrange for support or collaboration?

[A: You may contact scientific and technical colleagues at NASA Centers to initiate the center discussions. You may also attend the supporting conferences (October 4-5, College Park, MD or October 10-11, Pasadena, CA) to learn more about what NASA Centers offer to the community for this concept study.]

9. Are science mission concepts not already listed in the 2001 Decadal Survey or in the 2007 NASA Science Plan eligible for support?

[A: Yes as long as the mission concept addresses NASA science goals as described in the 2007 NASA Science Plan. It is not necessary that the mission concept be listed in the 2001 Survey or the 2007 Science Plan to be eligible]

10. Are launch costs included in the costs of the missions?

[A: Yes. Cost numbers are for full life-cycle, including the value of contributions from sources other than NASA SMD.]

11. If the proposed mission seeks only technology funding in the next decade, and that technology development cost is less than the medium mission cost, but the ultimate mission cost is highly uncertain should one propose for a medium mission or large mission?

[A: NASA will classify these missions on the basis of life-cycle costs (including launch). Hence, if the final mission cost is likely to be significantly more than $600M the mission belongs in the large class regardless of the technology investments forecast in the next decade.

12. Are instrument contributions to foreign missions eligible for this opportunity?

[A: This call solicits only proposals for full US-led missions. These missions may have partnerships, but the full life-cycle costs of the mission must be considered (including the value of the other entity's contributions) when classifying the proposal for a medium or large class.

13. What happens if a proposal is submitted in good faith in the medium/moderate category (<~$600M) but the NASA evaluation kicks it over in to the large category, or vice versa? Would it be penalized or disqualified, or just treated as though it had been properly categorized originally and evaluated accordingly?

[A: The proposals will receive the same evaluation regardless of the classification. However, one of the elements of every evaluation given in section C.2 of the *NASA Guidebook for Proposers* is cost realism/reasonableness. Therefore proposals are evaluated on how well and thoroughly they estimate costs.

14. Are fundamental physics missions eligible for the ROSES call? Here, by fundamental we mean, for instance, flight experiments related to testing fundamental theories of gravity, the equivalence principle, and the like.

[A: Yes. Proposals that address astrophysics science discussed in the 2007 NASA Science Plan are eligible.]

15. All the major documents on Terrestrial Planet Finder [TPF] (*Astronomy and Astrophysics in the New Millennium*, Origins subcommittee, NASA

Science Plan) refer to a general-astrophysics instrument (in the case of TPF-Coronograph, a wide-field camera). The NRA stated:

> "If a proposed investigation can, without any additional cost or additions, address other science goals in the Science Plan, they may be briefly discussed as secondary science objectives".

Could you clarify whether the NRA is precluding a general astrophysics instrument on TPF because such an instrument would definitely add significant cost to TPF?

[A: The NRA does not preclude such a capability. However, because additional instrumentation, or additional modes of instrument operation usually add cost and complexity this will have to be addressed in the proposal. The realism of the additional costs will be evaluated. If one proposes a large mission, they should simply baseline the astrophysics science. However the science needs to be spelled out and justified, not just called "general astrophysics". Enough specificity should be in place to permit an assessment of the required technologies/capabilities.]

16. There are certain items like photon-counting detectors that are required by all optical TPF mission concepts. How do we ensure that these generic items are included in future solicitations for technology development if the winning mission concept has not identified detectors as a crucial item in its proposal?

[A: The proposal should clearly identify any critical technologies and include an assessment of their current state of development. Ideally, a comparison of where the technology is now vs. where it needs to be to achieve the science would be included. Once NASA has a clear slate of required technologies for the mission concepts it ultimately funds subsequent ROSES calls could add language highlighting those items. After any of these missions gets prioritized by the decadal survey NASA will have a set of mission priorities and technology needs it can use to tailor its investments.]

Questions added 9/4/2007

18. Appendix D.12 of ROSES2007 states that the anticipated cost of the rapid space system analysis and development of conceptual design is

$200K. Is this the amount to be budgeted by each proposal to pay for this analysis and design work?

[A: Yes. NASA will provide up to $200K per winning proposal to support that mission's study by a NASA mission design center. Proposals must explicitly include in their budgets how much funding they seek to support their mission's use of a design center.]

Q: Must the $200K identified in the NRA for NASA center mission design activity be spent entirely within the design center teams?

[A: Yes. NASA seeks to have the best understanding possible, at the time of the studies, of the mission level implications of the proposed science goals and implementation strategy. These implications include technical readiness and ultimate lifecycle costs.]