

## Astrophysics Explorers AO Community Announcement (Revised)

Second notice for Community Announcement for the 2019 Astrophysics SMEX and MO (NNH18ZDA014L)

Changes to the original announcement NNH18ZDA014L released on June 13, 2018 are:

- Clarifying language regarding MOs, including Partner MOs, Small Complete Missions, and Cubesats or suborbital-class missions;
- Removal of the option for New Missions using Existing Spacecraft;
- Inclusion of language about U.S. Participating Investigator (USPI) investigations;
- Clarification of the dates in the schedule for the solicitation.

The National Aeronautics and Space Administration (NASA) Science Mission Directorate (SMD) is releasing this Community Announcement concerning its intention to solicit investigations for the Astrophysics Explorers Program. The Astrophysics Explorers Program conducts Principal Investigator (PI)-led space science investigations to advance NASA's strategic goals in astrophysics, which are to discover the origin, structure, evolution, and destiny of the Universe and search for Earth-like planets. Additional information concerning these areas of investigation is provided through appropriate links found on the SMD homepage at <https://science.nasa.gov/>.

The current state of planning calls for NASA SMD to release an Announcement of Opportunity (AO) in the spring of 2019 that will solicit proposals for Small Explorer (SMEX) missions to accomplish Astrophysics Explorer Program science objectives. NASA also plans to release simultaneously a solicitation for Astrophysics Explorer Missions of Opportunity (MO) through the NASA Announcement of Opportunity NNH17ZDA0040, Third Stand Alone Missions of Opportunity Notice (SALMON-3). A draft SMEX AO and draft SALMON-3 Program Element Appendix (PEA) are expected to be ready for release for comment in late Calendar Year (CY) 2018.

The PI-managed mission cost cap for an Astrophysics SMEX mission is expected to be no greater than \$195M in Fiscal Year (FY) 2020 dollars, including launch but not including any contributions. Standard launch services on an expendable launch vehicle (ELV) for SMEX missions may be proposed to be provided by NASA at a charge of \$50M in FY2020 dollars against the PI-managed mission cost cap. Alternative (to NASA-provided) access to space may be proposed within the PI-managed mission cost cap.

NASA expects to solicit MO science investigations that are defined in the SALMON-3 AO as (1) Partner Missions of Opportunity (PMOs) and (2) Small Complete Missions (SCMs). SCMs may include investigations on the International Space Station (ISS), investigations on the Lunar Orbital Platform – Gateway (LOP-G), commercial hosted payloads, SmallSats, CubeSats or suborbital-class missions (an investigation requiring flight on a high-altitude scientific balloon platform e.g. Super Pressure Balloon or Long-Duration Balloon). The PI-managed mission cost cap for MOs other than SmallSats, CubeSats and suborbital-class missions is expected to be no greater than \$75M in FY2020 dollars. Suborbital/SmallSat-class MOs, including missions on

ultra-long duration balloons, CubeSats, and SmallSats, will have a PI-managed mission cost cap expected to be no greater than \$35M in FY2020 dollars. NASA will provide access to space for SmallSats that can be accommodated on a standard ESPA (EELV Secondary Payload Adapter) ring.

SMEX missions are expected to be managed as Class D missions; Partner MOs are expected to be managed at a risk class consistent with the parent mission's risk class; and Small Complete Mission MOs are expected to be managed as streamlined Class D missions.

The currently approved Astrophysics Explorer Program planning budget is sufficient to select and execute one SMEX mission and one or two MOs, depending on cost.

The current planning is for the selection process to be done in two stages. In Step 1, it is anticipated that two or three SMEX mission proposals and one to three MO mission proposals may be selected for nine-month Phase A concept studies. Each SMEX concept study would be funded up to \$2M in real year dollars, and each MO concept study would be funded up to \$500K in real year dollars. For Step 2, NASA will conduct a detailed review of the Phase A concept study reports. As a result of this second evaluation, NASA expects to select one SMEX mission and one or two MO missions to proceed into Phase B and subsequent mission phases. NASA desires to launch the SMEX mission before May 2025.

Proposals for U.S. Participating Investigator (USPI) investigations on a space mission to be built and flown by a sponsor agency other than NASA, that address NASA's astrophysics objectives, will be solicited in a call released after the Step-1 MO selection. Note that NASA does not plan to select both a partner MO and a USPI team for the same mission.

Proposals in response to this AO will be due no earlier than 90 days after its formal release. Participation will be open to all categories of U.S. and non-U.S. organizations, including educational institutions, industry, not-for-profit organizations, Federally Funded Research and Development Centers, NASA Centers, and other Government agencies.

The schedule for the solicitation is intended to be:

Release of draft AO:	Late CY 2018 (target)
Release of final AO:	Spring CY 2019 (target)
Preproposal conference:	~ 3 weeks after final AO release
Proposals due:	90 days after AO release
Selection for competitive Phase A studies:	Q1 CY 2020 (target)
Concept study reports due:	Fall 2020 (target)
Down-selection:	Summer 2021 (target)

The Astrophysics Explorer Program SMEX AO and SALMON-3 PEA may contain provisions that differ substantially from this preliminary notice, in which case the provisions in the AO and SALMON-3 PEA will take precedence. The Astrophysics Explorer AO will be based on the Standard PI-led Mission AO Template available at [http://soma.larc.nasa.gov/standardao/sao\\_templates.html](http://soma.larc.nasa.gov/standardao/sao_templates.html). Proposers should read the Draft Astrophysics SMEX AO and SALMON-3 PEA carefully when they are released.

NASA has not approved the issuance of the Astrophysics SMEX AO or SALMON-3 PEA and this notification does not obligate NASA to issue the announcements and solicit proposals. Any costs incurred by prospective investigators in preparing submissions in response to this announcement are incurred completely at the submitter's own risk.

Further information will be posted on the Explorer Program Acquisition website at <https://explorers.larc.nasa.gov/2019APSMEX/> as that information becomes available. Questions or comments about this revised community announcement may be addressed by email to the Astrophysics Explorers Program Scientist: Dr. Linda S. Sparke at [linda.s.sparke@nasa.gov](mailto:linda.s.sparke@nasa.gov) (subject line to read "Astrophysics SMEX AO"). Responses to all inquiries will be posted at the Frequently Asked Questions (FAQ) location of the Explorer Program Acquisition website; anonymity of persons/institutions who submit questions will be preserved.