

Science Evaluation

Astrophysics Explorers Program
2026 Small Explorer (SMEX)

Pre-Proposal Conference

June 30, 2026

APSMEX26 Science Team

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Evaluation Organization

Program Scientist
 Dan Moses
 Astrophysics Division, SMD, NASA Headquarters

<i>Astrophysics Division, SMD</i>	
Hannah Jang-Condell	Deputy Program Scientists
Doris Daou	
Amber Young	
Lucien Cox	Program Executive

<i>SOMA</i>	
Omar Torres	Acquisition Managers
Terry Nienaber	
Chauncey Wu	Backup Acquisition Managers
Bernie Luna	
Washito Sasamoto	

Science Panel (Forms A & B)
 Chair: Dan Moses
 Deputy Chair: Hannah Jang-Condell

TMC Panel (Form C)
 Chair: Omar Torres
 Co-chair: Terry Nienaber
 Backup: Chauncey Wu

Science Office for Mission Assessments (SOMA)

The NASA Science Mission Directorate (SMD) Science Office for Mission Assessments (SOMA) was established in 1996 to support the Discovery and Explorer Programs, the office now supports also the New Frontiers, Mars Scout, Earth System Science Pathfinder (ESSP), and others.

The TMC process is a standard process used by SOMA to support all SMD evaluations. Lessons learned from each evaluation are incorporated into the process for continuous improvement.

APSMEX26 Personnel:

- Omar Torres, Acquisition Manager
- Terry Nienaber, Acquisition Manager
- Chauncey Wu, Acquisition Manager
- Washito Sasamoto, Senior Advisor
- Elisabeth Morse, SOMA Director

NASA HQ Science Mission Directorate (SMD) Astrophysics Division (APD)

Astrophysics Division (APD)

Shawn Domagal-Goldman: Division Director (DD)

Peg Luce: Deputy DD

Tahani Amer: Associate Director for Flight Programs

APD Explorers Team

John Wisniewski: Explorers Lead Program Scientist

Mark Sistilli: Explorers Lead Program Executive (PE)

APSMEX26 Program Personnel

Dan Moses: Lead Program Scientist

Elbert Lucian Cox: Lead Program Executive

Hannah Jang-Condell: Program Scientist

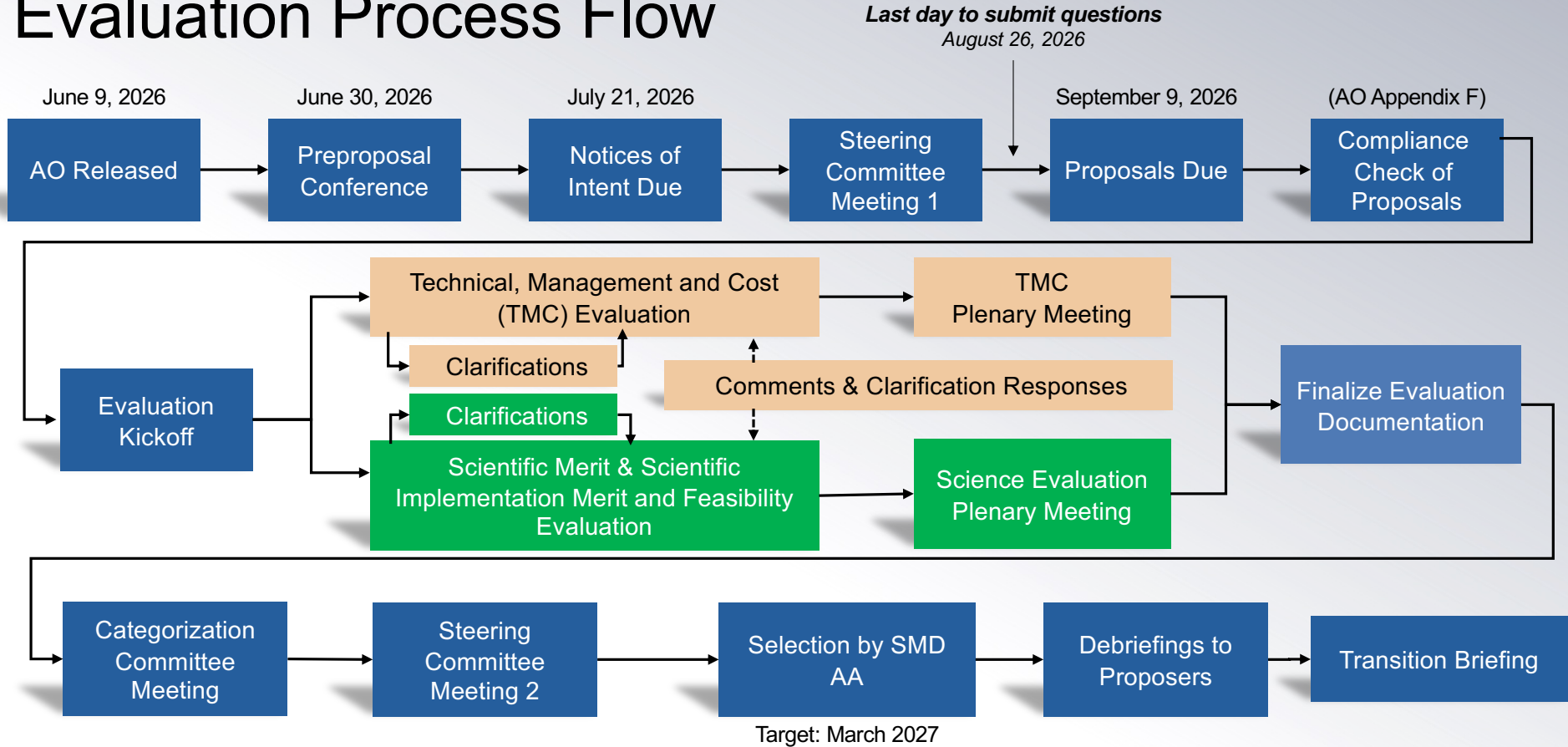
Doris Daou: Program Scientist

Amber Young: Program Scientist

The APD Explorers Program solicits astrophysics proposals for expanding human knowledge through spaceflight investigations addressing one or more NASA SMD astrophysics goals:

- How does the Universe work? Probe the origin and destiny of our universe, including the nature of black holes, dark energy, dark matter and gravity.
- How did we get here? Explore the origin and evolution of the galaxies, stars, and planets of our universe.
- Are we alone? Discover and study planets around other stars and explore whether they could harbor life.

Evaluation Process Flow



Proposal Evaluation and Selection Process (AO § 7.1)

Evaluation Criteria (AO § 7.2)

- ❖ **Criteria evaluated by 2 panels of Subject Matter Experts (SME)**
- ❖ **All panelists vetted to ensure freedom from Conflicts of Interest (COI)***
 - **Criteria A & B evaluated by Science Panel**
 - A. Science Merit of the Proposed Investigation (AO § 7.2.2)
 - B. Science Implementation Merit and Feasibility of Proposed Investigation (AO § 7.2.3)
 - **Criterion C evaluated by Technical, Management and Cost Panel**
 - C. TMC Feasibility of the Proposed Mission Implementation (AO § 7.2.4)
- ❖ **Criteria Weighting: Form A = 35%; Form B = 30%; Form C = 35%**

* See Evaluation Plan Backup Section

Evaluation Criteria (Form A) – Scientific Merit

Factor A-1. Compelling nature and scientific priority of the proposed investigation's science goals and objectives:

- the clarity of the goals and objectives;
- how well the goals and objectives reflect program, Agency, and national priorities;
- the potential scientific impact of the investigation on program, Agency, and national science objectives; and
- the potential for fundamental progress, as well as filling gaps in our knowledge relative to the current state of the art.

Factor A-2. Programmatic value of the proposed investigation:

- unique value of the investigation to make scientific progress in the context of ongoing and planned missions;
- relationship to the other elements of NASA's science programs;
- extent the investigation may synergistically support ongoing or planned missions by NASA and other agencies; and
- the necessity for a space mission to realize the goals and objectives.

Evaluation Criteria (Form A) – Scientific Merit

Factor A-3. Likelihood of scientific success:

- how well the anticipated measurements support the goals and objectives;
- the adequacy of the anticipated data to complete the investigation and meet the goals and objectives;
- and the appropriateness of the mission requirements for guiding development and ensuring scientific success.

Factor A-4. Scientific value of the Threshold Science Investigation:

- the scientific value of the Threshold Science Investigation using the standards in the first factor of this section and whether that value is sufficient to justify the proposed cost of the project.

Evaluation Criteria (Form B): Scientific Implementation Merit and Feasibility

Factor B-1. Merit of the instruments and mission design for addressing the science goals and objectives: the degree to which the proposed mission will address the goals and objectives;

- the appropriateness of the selected instruments and mission design for addressing the goals and objectives;
- the degree to which the proposed instruments and mission can provide the necessary data; and
- the sufficiency of the data gathered to complete the scientific investigation.

Factor B-2. Probability of technical success.

- the maturity and technical readiness of the instruments or demonstration of a clear path to achieve necessary maturity;
- the adequacy of the plan to develop the instruments within the proposed cost and schedule;
- the robustness of those plans, including recognition of risks and mitigation plans for retiring those risks;
- the likelihood of success in developing any new technology that represents an untested advance;
- the ability of the development team—both institutions and individuals—to successfully implement those plans;
- the likelihood of success for both the development and the operation of the instruments within the mission design

Scientific Implementation Merit and Feasibility (continued)

Factor B-3. Merit of the Open Science and Data Management Plan including data analysis, Data Management Plan, Software Management Plan, and Open Science Plan.

- **This factor includes the merit of plans for data analysis and data archiving**
 1. to meet the goals and objectives of the investigation;
 2. to result in the publication of science discoveries in the professional literature; and
 3. to preserve data and analysis of value to the science community.
- **Considerations in this factor include**
 1. assessment of planning and budget adequacy and evidence of plans for well-documented, high-level data products and software usable to the entire science community;
 2. assessment of adequate resources for physical interpretation of data;
 3. reporting scientific results in the professional literature (e.g., refereed journals); and
 4. assessment of the proposed plan for the timely release of the data to the public domain for enlarging its science impact.

Scientific Implementation Merit and Feasibility (continued)

Factor B-4. Science resiliency. This factor includes both developmental and operational resiliency.

- **Developmental resiliency** includes the approach to descoping the Baseline Science Investigation to the Threshold Science Investigation in the event that development problems force reductions in scope.
- **Operational resiliency** includes the ability to withstand adverse circumstances, the capability to degrade gracefully, and the potential to recover from anomalies in flight.

Factor B-5. Probability of science team success. This factor will be evaluated by assessing the experience, expertise, and organizational structure of the science team and the mission design in light of any proposed instruments.

- The scientific expertise of the PI will be evaluated but not their experience with NASA missions.
- The role of each Co-Investigator will be evaluated for necessary contributions to the proposed investigation; the inclusion of Co-Is who do not have a well-defined and appropriate role may be cause for downgrading during evaluation.
- Additionally, career development opportunities supporting the next generation of space science leaders will be evaluated as part of this Factor.

Scientific Implementation Merit and Feasibility (continued)

Factor B-6. Maturity of proposed Level 1 science requirements and driving Level 2* project requirements.

- This factor includes assessment of
 1. whether the Level 1 science requirements are mature enough to guide the achievement of the objectives of the Baseline Investigation and the Threshold Investigation, and
 2. whether the driving Level 2 requirements are consistent with the Level 1 requirements.
- The Level 1 requirements will be evaluated for whether they are stated in unambiguous, objective, quantifiable, and verifiable terms that do not conflict and for whether they are traceable to the science objectives.
- The driving Level 2 requirements will be evaluated for their utility for evaluating the capability of the mission profile, instruments and other systems to achieve the mission objectives.

*See Program Library document; “Guidance for the Driving Requirements Appendix.”

Science Evaluation Products: Findings

A Finding is an evaluation of the proposal merit with respect to each criterion factor

Finding Categories

As Expected: The proposal response to an evaluation factor is neither superior nor deficient

Major Strength: A facet of the implementation response that is judged to be of superior merit and can substantially contribute to the ability of the project to meet its scientific objectives.

Major Weakness: A deficiency or set of deficiencies taken together that are judged to substantially weaken the project's ability to meet its scientific objectives.

Minor Strength: An aspect of the proposal that is judged to contribute to the ability of the project to meet its scientific objectives.

Minor Weakness: A deficiency or set of deficiencies taken together that are judged to weaken the project's ability to meet its scientific objectives.

Form A and B Grade Definitions

Seven step scale for finer discrimination of competitive proposals.

- **Excellent:** A comprehensive, thorough, and compelling proposal of exceptional merit that fully responds to the objectives of the AO as documented by numerous and/or significant strengths and having no major weaknesses.
- **Excellent/Very Good:** A comprehensive, thorough, and compelling proposal of exceptional merit that fully responds to the objectives of the AO as documented by numerous and/or significant strengths, and whose strengths fully outbalance any weaknesses.
- **Very Good:** A fully competent proposal of very high merit that fully responds to the objectives of the AO, whose strengths fully outbalance any weaknesses.
- **Very Good/Good:** A competent proposal of high merit that fully responds to the objectives of the AO, whose strengths outbalance any weaknesses.
- **Good:** A competent proposal that represents a credible response to the AO, having neither significant strengths nor weaknesses and/or whose strengths and weaknesses essentially balance.
- **Fair:** A proposal that provides a nominal response to the AO, but whose weaknesses outweigh any perceived strengths.
- **Poor:** A seriously flawed proposal having one or more major weaknesses (e.g., an inadequate or flawed plan of research or lack of focus on the objectives of the AO).

Clarifications of Potential Major Weaknesses (PMW)

The objective of the clarification process is to ensure understanding of issues identified by proposal findings, so the evaluation can fully represent the proposed investigation's merits

Categorization of Proposals

The categorization advisory subcommittee considers the peer review results and, based on the evaluations, will categorize each proposal according to procedures required by NFS 1872.403-1(e). The categories are defined as:

Category I -- Well conceived and scientifically and technically sound investigations pertinent to the goals of the program and the AO's objectives and offered by a competent investigator from an institution capable of supplying the necessary support to ensure that any essential flight hardware or other support can be delivered on time and that data can be properly reduced, analyzed, interpreted, and published in a reasonable time. Investigations in Category I are recommended for acceptance and normally will be displaced only by other Category I investigations.

Category II -- Well conceived and scientifically or technically sound investigations which are recommended for acceptance, but at a lower priority than Category I.

Category III -- Scientifically or technically sound investigations which require further development. Category III investigations may be funded for development and may be reconsidered at a later time for the same or other opportunities.

Category IV -- Proposed investigations which are recommended for rejection for the particular opportunity under consideration, whatever the reason.

Clarifications of Potential Major Weaknesses (PMW)

As stated in Section 7.3 of the AO, the Selection Official may take into account a wide range of programmatic factors in deciding whether or not to select any proposals and in selecting among selectable proposals, including, but not limited to, planning and policy considerations, available funding, programmatic merit and risk of any proposed partnerships, and maintaining a programmatic balance across the mission directorate(s).

Schedule Summary

Event	Date
AO Release Date	9-Jun-26
Pre-Proposal Conference	30-Jun-26
Mandatory Notice of Intent to Propose Deadline	21-Jul-26 @ 11:59 p.m. Eastern Time
Electronic Proposal Submittal Deadline	9-Sep-26 @ 11:59 p.m. Eastern Time
Letters of Commitment Due (with Proposal)	9-Sep-26
Deadline for Augmented Submission	14-Sep-26 @ 4:30 p.m. Eastern Time
Selection Announcement	8-Mar-27 (target depending on # submissions)
AO-Required Launch Readiness Date	NLT December 5, 2031

Backup Slides Evaluation Plan



Conflicts of Interest (COI) Prevention and Mitigation Requirements (1/2)

- The non-Civil Servant Science and TMC Panel members are hired as contractors through the NASA Science Office for Mission Assessments (SOMA)'s Evaluations, Assessments, Studies, Services, and Support (EASSS) contractor.
- The EASSS contractor cross-checks all contracted Panel members against the lists of personnel and organizations identified in each proposal to determine whether any organizational COI exists.
- All contracted evaluators must divulge any financial, professional, or personal potential COIs, and whether they work for a profit-making company that directly competes with any profit-making proposing organization.
- All Civil Servant (CS) and Intergovernmental Personnel Act (IPA) evaluators must self-certify their COI status by reviewing a combined listing of individuals and organizations associated with the APSMEX26 proposals.
- The TMC evaluators must notify the SOMA Acquisition Manager in case of a potential COI.
- The Science evaluators must notify the Program Scientist in case of a potential COI.

Conflicts of Interest (COI) Prevention and Mitigation Requirements (2/2)

- Community standards for conflicts of interest will be applied to all evaluators as directed in SMD Policy Document SPD-01A, Handling Conflicts-of-Interest for Peer Reviews. Under certain restricted situations, a waiver for SPD-01A, Section 2(b)(v) may be requested. Standards for financial conflicts of interest as specified in 18 U.S.C. § 208 will be applied to Civil Servant and IPA evaluators. The HQ Office of General Counsel will be consulted as necessary.
- All known potential COI issues are documented, and a COI Mitigation Plan is developed to minimize the likelihood that an issue will arise in the evaluation process. Any potential COI issue is discussed with the Program Scientist and the SMD Deputy Associate Administrator for Research and documented in the COI Mitigation Plan. All determinations regarding possible COIs that arise will be logged as an appendix to the COI Mitigation Plan.
- If any previously unknown potential COI arises during the evaluation, the conflicted member(s) will be notified to stop evaluating proposals immediately, and the Panel Chair will be notified immediately. If a COI is confirmed, the conflicted member(s) will be immediately removed from the evaluation process, and steps will be taken to expeditiously remove, mitigate, or accept any actual or potential bias imposed by the conflicted member(s). The steps will be documented in the COI Mitigation Plan.
- Members of the Science and TMC panels are prohibited from contacting anyone outside their panel for scientific/technical input, or consultation, without the prior approval of the Program Scientist. If authorized by the Program Scientist, the DAAR will be notified.

Handling of Proprietary Data ^(1/2)

- All proposal and evaluation materials are considered, and treated as, proprietary.
- Viewing of proposal materials is only on a need-to-know basis.
- Each evaluator who is not a CS or IPA will sign a Non-Disclosure Agreement (NDA) that must be on file with the EASSS contractor prior to any proposals being distributed to that evaluator.
- CS and IPA evaluators are under statutory obligations and are not required to sign an NDA.
- A record will be kept of the materials that are provided to each evaluator.
- Evaluators will be briefed at a Kickoff meeting on handling proposal materials. Evaluators will be briefed that they are not allowed to discuss proposals with anyone outside the Evaluation Panels ever, unless authorized by NASA. Evaluators will be briefed to refrain from contacting anyone outside of the Evaluation Panels to gain insight on any proposal related matter without authorization from the Lead Program Scientist (Dr. Dan Moses).
- Any Observers at Review Panel discussions will not be given access to proposals or evaluation materials.

Handling of Proprietary Data (2/2)

- During the Evaluation, all proprietary information that needs to be exchanged between evaluators will be transferred securely via the Remote Evaluation System (RES) website maintained by SOMA, via the NASA Solicitation and Proposal Integrated Review and Evaluation System (NSPIRES), via NASA SharePoint system (including MS Teams), via controlled Webex, via NASA's Box, or via encrypted email, parcel post, fax, or regular mail. Proprietary information will not be sent via unencrypted email.
- Web conferences or teleconferences among evaluators will be conducted via controlled Web conference and teleconference lines. Virtual meeting information is confidential. The meeting numbers and pass codes are posted in a file on the RES or on NASA's Box. Participants will be briefed to not provide this information to anyone or distribute this information via unencrypted email or text messages.
- When the evaluation process is complete, evaluators will be directed to delete and/or destroy proposal and evaluation materials. Archive copies will be maintained at NASA HQ and SOMA. Also, all proposal material from the selected project(s) will be provided to the Explorers Program Office at NASA Goddard Spaceflight Center (GSFC). All other proposal materials will be destroyed.

Principles for Evaluation

- All proposals are to be treated fairly and equally.
- Merit and Risk are to be assessed on the basis of the material provided in the proposal and through the clarification process.
- Evaluation Ratings shall reflect the written strengths and weaknesses.
- Everyone involved in the evaluation process is expected to act in an unbiased, objective manner; advocacy for particular proposals is not appropriate.

Backup Slides Form C



Evaluation Element (Form C) Technical, Management & Cost (TMC) Feasibility (Slide 1/6)

Factor C-1. Adequacy and robustness of the instrument implementation plan.

- The maturity and technical readiness of the instrument complement will be assessed, as will the ability of the instruments to meet investigation requirements. This factor includes assessment of:
 1. the instrument design, accommodation, interface, heritage, and technology readiness.
 2. the instrument hardware and software designs, heritage, and margins.
 3. the processes, products, and activities required to accomplish development and integration of the instrument complement, including where applicable the approach to multiple builds.
 4. in the case of multiple builds - the ability to build, test, and integrate the required number of instrument flight units with repeatable quality and performance standards and the system design's impact on the repeat manufacturability.
 5. adequacy of the plans for instrument systems engineering and for dealing with environmental concerns.
 6. plans for the development and use of new instrument technology and plans for advanced engineering developments to mature systems within the proposed cost and schedule when systems having a TRL less than 6 are proposed.

TMC Feasibility (continued - slide 2/6)

Factor C-2. Adequacy and robustness of the mission design and plan for mission operations. This factor includes an assessment of

- the overall mission design and mission architecture,
- the spacecraft design and design margins (including margins for launch mass, delta-v, and propellant),
- the concept for mission operations (including communication and, if applicable, constellation management), and
- the plans for launch services.

This factor also includes mission resiliency—the flexibility to recover from problems during both development and operations without impact to the Baseline Science Investigation— including assessment of:

- the technical resource reserves and margins,
- system and subsystem redundancy, and
- reductions and other changes

TMC Feasibility (continued – slide 3/6)

Factor C-3. Adequacy and robustness of the flight systems. This factor includes an assessment of

- the flight hardware and software designs, heritage, and margins.
- the plans, products, and activities required to accomplish maturation, development, integration, and verification of all elements of the flight system, including the approach to multiple builds if applicable.
 - If multiple builds are proposed, this factor includes the ability to build, test, and integrate the required number of flight system flight units with repeatable quality and performance standards and the system design's impact on the repeat manufacturability.

This factor includes an assessment of

- the adequacy of all elements of flight system resiliency, including flight software/hardware fault management, system and subsystem redundancy, and hardware reliability.
- the adequacy of the plans for mission assurance.
- the plans for the development and use of new technology, plans for advanced engineering developments, and the adequacy of those plans to ensure success of the investigation when systems having a TRL less than 6 are proposed. The maturity and technical readiness of the spacecraft and subsystems will be assessed.

TMC Feasibility (continued – slide 4/6)

Factor C-4. Adequacy and robustness of the management approach and schedule, including the capability of the management team. This factor includes:

- the adequacy of the proposed organizational structure;
- the management approach including the roles;
- the commitment, qualifications, and
- experience of any named Key Management Team members, the implementing organization, and the known partners;
- the expected commitment, qualifications and experience of the Key Management Team members not named;
- the spaceflight experience of any named Key Management Team members (PI excepted); t
- he implementing organization and known partners against the needs of the investigation; t
- he prior working relationships of the implementing organization and known partners;
- the commitments of partners and contributors; and the scope of work covering all elements of the project, including contributions.

Factor C-4. continued. (5/6)

Also evaluated under this factor:

- the approach to managing commercial suppliers that will use their own S&MA practices.
- the adequacy of the proposed risk management approach, including
- any risk mitigation plans for new technologies,
- any long-lead items, and
- the adequacy and availability of any required manufacturing, test, or other facilities.
- if multiple builds are proposed, this factor includes
 - the proposer's management of any subcontracted manufacturer, and
 - the ability to capture and apply lessons learned for the effective production of subsequent units.
- the management of the risk of contributed critical goods and services, including
 - the plans for any international participation,
 - the commitment of partners and contributors, as documented in Letters of Commitment, and
 - the technical adequacy of contingency plans, where they exist, for coping with the failure of a proposed cooperative arrangement or contribution.
- the relationship of the work to the project schedule,
- the project element interdependencies including
 - the resiliency of the production and test schedule to problems appearing in multiple-unit builds if applicable,
 - the associated schedule margins, and
 - an assessment of the likelihood of meeting the proposed launch readiness date
- the proposed project and schedule management tools to be used on the project.

TMC Feasibility (continued - slide 6/6)

Factor C-5. Adequacy and robustness of the cost plan, including cost feasibility and cost risk.

- This factor includes elements such as cost, cost risk, cost realism, and cost completeness including
 - assessment of the basis of estimate,
 - the adequacy of the approach used to develop the estimated cost (including how multiple unit builds are costed),
 - the discussion of cost risks,
 - the adequacy and allocation of cost reserves by phase, and
 - the scope of work.
- The adequacy of the cost reserves and understanding of the cost risks will be assessed.
- This factor also includes an assessment of the proposed cost relative to estimates generated by the evaluation team using parametric models and analogies.

SMD Leadership

Nicola Fox: Associate Administrator(AA)

Mark Clampin: Deputy AA

Michael New: Deputy Associate Administrator for Research

Astrophysics Division (APD)

Shawn Domagal-Goldman: Division Director (DD)

Peg Luce: Deputy DD

Tahani Amer: Associate Director for Flight Programs