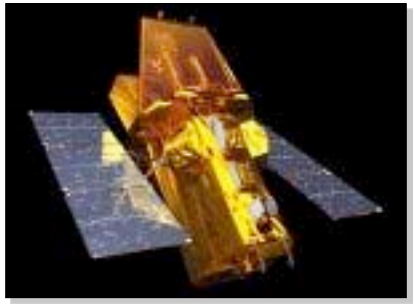
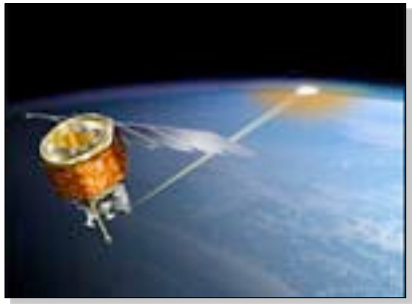
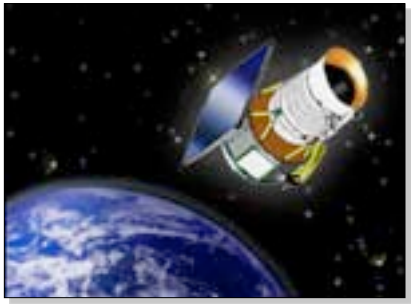
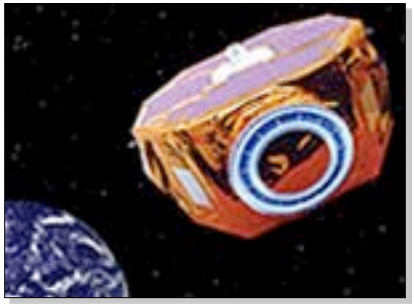
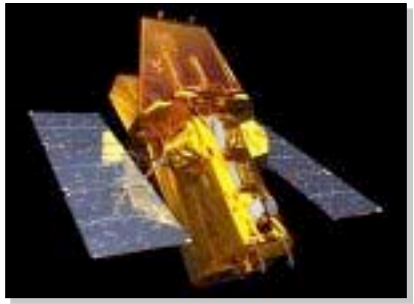
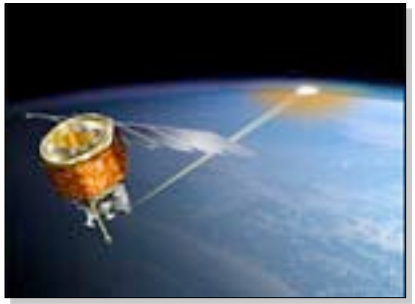
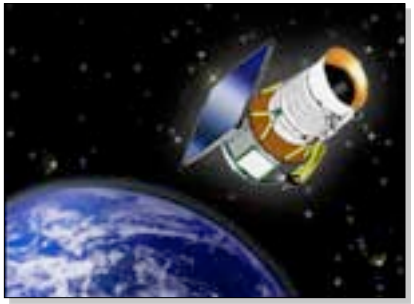





Explorer 2011 Solicitation Overview

Dr. Wilton Sanders

Explorer Program Scientist

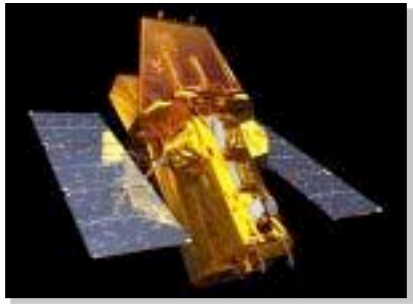
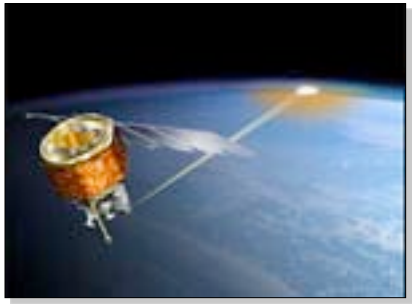
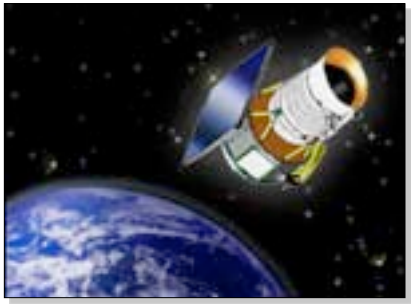
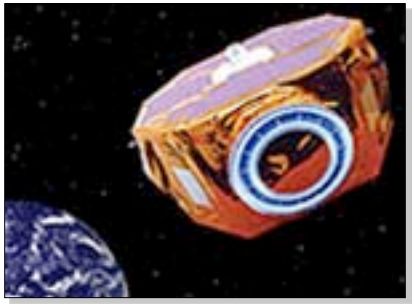
Science Mission Directorate


Outline

- Overview of the three solicitations
- EX 2011 AO highlights
- EX 2011 Science MO SALMON PEA highlights
- EX 2011 USPI ROSES PE highlights
- Programmatic Factors

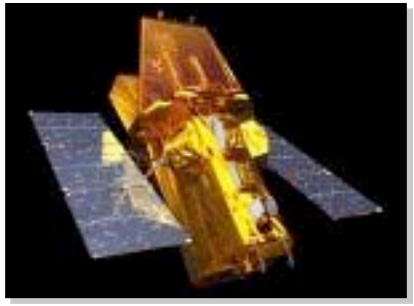
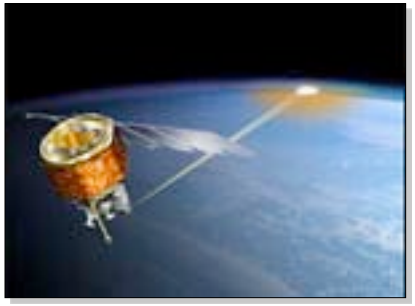
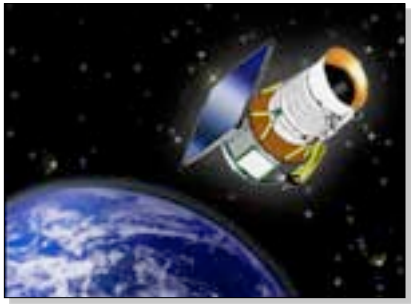
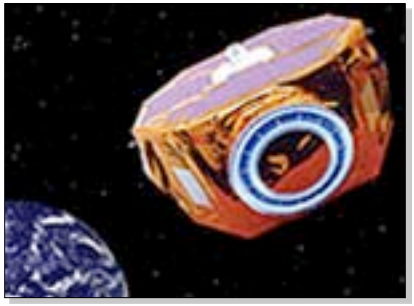
Important Note: These solicitations incorporate a large number of changes relative to the drafts and previous Explorer solicitations, including both policy changes and changes to proposal submission requirements. All proposers must read the solicitations carefully, and all proposals must comply with the requirements, constraints, and guidelines contained within.

The Explorer Program has released 3 solicitations:

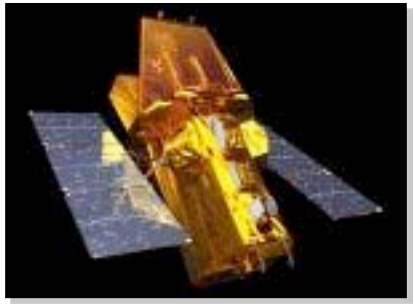
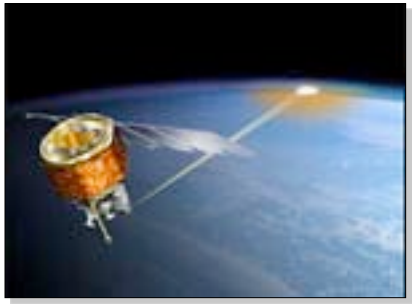
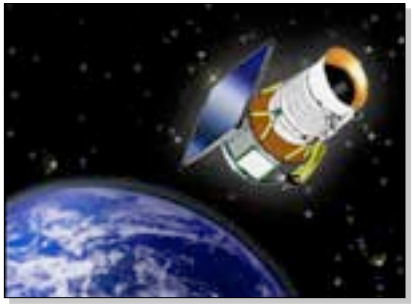
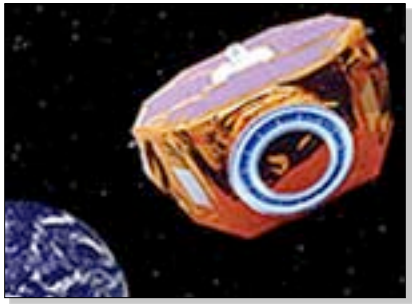
1. Explorer 2011 Announcement of Opportunity (EX2011 AO) – NNH11ZDA002O

for the purpose of soliciting proposals for investigations to be implemented through the Explorer Program. All investigations proposed in response to this solicitation must support the goals and objectives of the Explorer Program, must be implemented by Principal Investigator (PI) led investigation teams, and must be implemented through the provision of **complete spaceflight missions**.

2. Explorer 2011 Science Missions of Opportunity Program Element Appendix for the Stand Alone Missions of Opportunity Notice (EX2011 MO SALMON PEA) – NNH08ZDA009-EXPMO11

for the purpose of soliciting proposals for **Mission of Opportunity (MO) science investigations**. All investigations proposed in response to this solicitation must support the goals and objectives of the Explorer Program, must be implemented by Principal Investigator (PI) led investigation teams, and must be implemented through the provision of space investigations

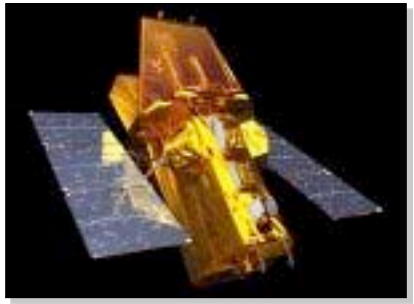
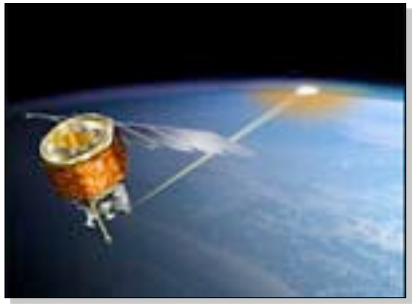
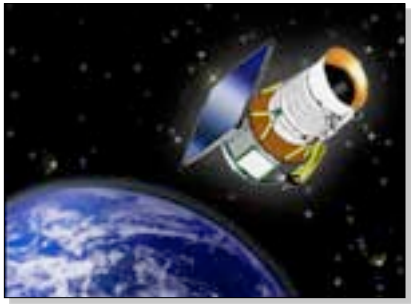





3. Explorer U.S. Participating Investigators Program Element for the Research Opportunities in Space and Earth Sciences 2010 NRA (EX2011 USPI ROSES PE) – NNH10ZDA001N-EXUSPI

for the purpose of soliciting potential Explorer Program Mission of Opportunity (MO) investigations in which **investigators participate as a Co-I for an instrument, experiment, or technology demonstration** that is being built and flown by a sponsor agency other than NASA. The provision of flight hardware is not solicited through this USPI solicitation.

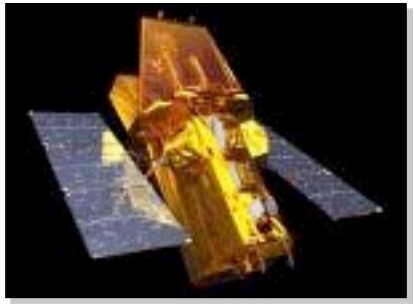
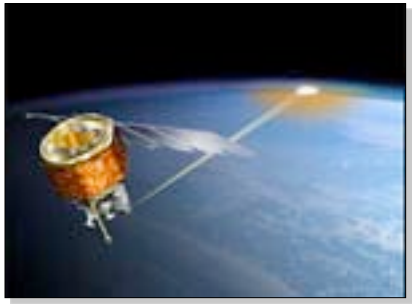
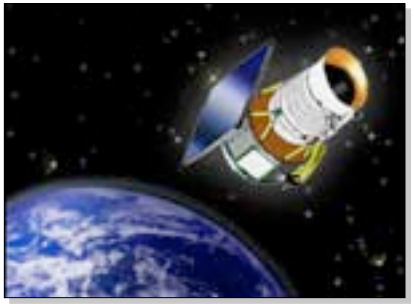
Proposal Opportunity Period and Schedule

Milestone	Target Date
Notice of Intent to Propose	December 9, 2010
Proposal Submission Deadline 4:30 pm Eastern Time (11:59 pm for ROSES USPI)	February 16, 2011
Letters of Commitment due (w/ proposal)	February 16, 2011
Step 1 Selections announced (target)	August, 2011
Initiate Phase A Concept Studies (target)	September, 2011
Phase A Concept Study Reports due (target)	August, 2012
Down-selection of investigation(s) for flight (target)	February, 2013
Launch Readiness Date for proposed mission	NLT December 31, 2018
Commitment need date for a Partner MO	December 31, 2013
Decision Date for New Missions using existing spacecraft	December 31, 2013
Launch Readiness for Small Complete Missions	NLT December 31, 2018

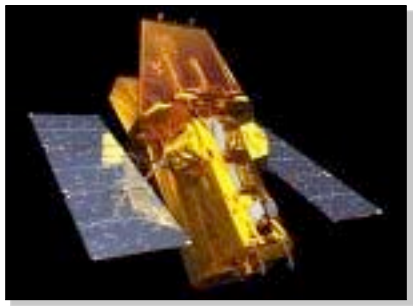




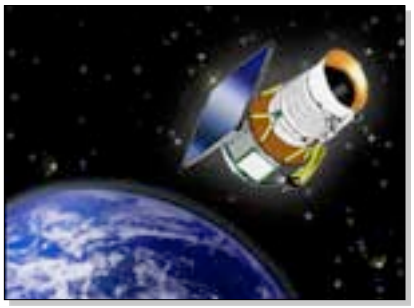

Explorer 2011 Announcement of Opportunity (EX2011 AO) – NNH11ZDA002O

Requirements and Highlights


- **Explorer 2011 AO is based on the SMD Standard AO template**.
- **Requirements** are identified, numbered, and specific.
  - o There are 85 requirements in the Explorer 2011 AO
  - o When Sections do not levy requirements they do not have numbered requirements.
- **Evaluation Factors** are identified, numbered, and specific.
  - o 4 for Science Merit
  - o 6 for Scientific Implementation Merit and Feasibility
  - o 5 for Feasibility of the Mission Implementation, Including Cost Risk
- Appendix B has numbered **requirements on Proposal Preparation**
  - o There are 69 specific requirements for the format and content of Step 1 proposals [70 total as requirement B-11 has two parts]

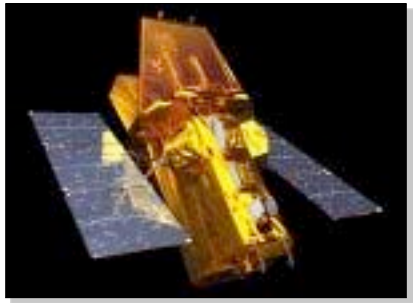
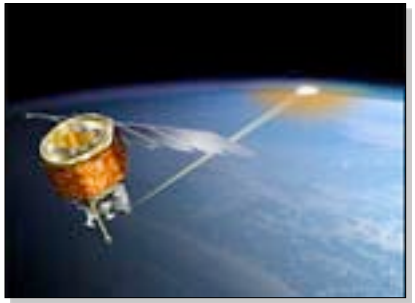
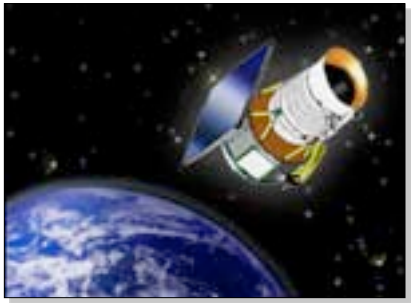





The PI Mission Cost cap for an Explorer (EX) mission is $200M in Fiscal Year (FY) 2011 dollars, not including the cost of the Expendable Launch Vehicle (ELV) or any contributions.

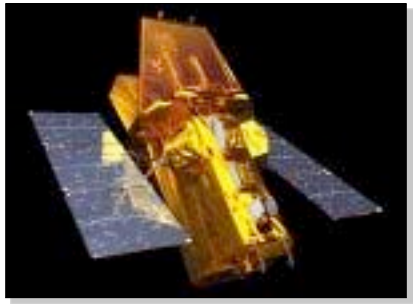
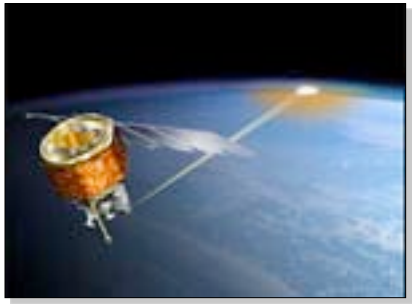
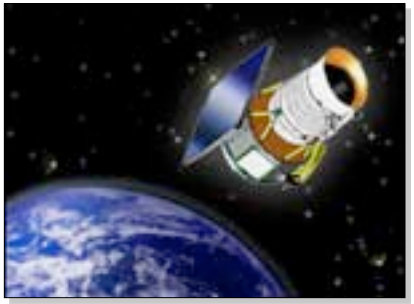
Any selected mission is intended **to launch no later than the end of calendar year 2018**.

Proposers selected through this AO will be awarded a contract to conduct a Phase A concept study with a duration of ~11 months. The **cost of the Phase A concept study is capped at $1M Real Year (RY) dollars**.


All proposals, U.S. and non-U.S., must be received before the proposal submittal deadline. Those received after the deadline will be treated in accordance with Appendix A, Section VII

Requirement 1: Proposals submitted in response to this solicitation shall be delivered no later than the Proposal Submittal Deadline. Proposals shall be delivered to the Address for Submittal of Proposals given in Section 6.2.3.

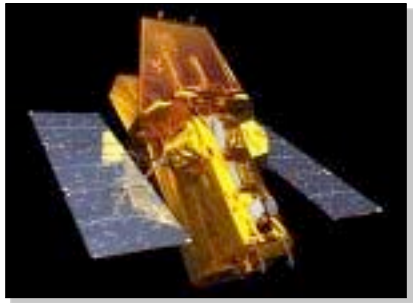
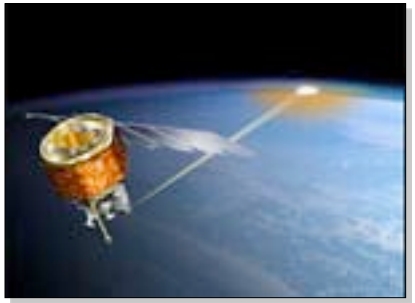
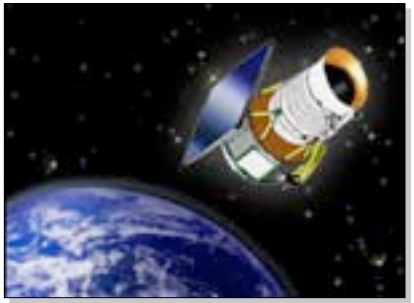

This is a new delivery address:

NASA Research and Education Support Services (NRESS)
Suite 500
2345 Crystal Drive
Arlington, VA 22202

Phone for commercial delivery: 202-479-9030

NASA will notify proposers that their proposals have been received.

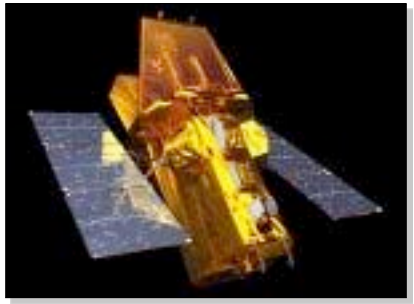
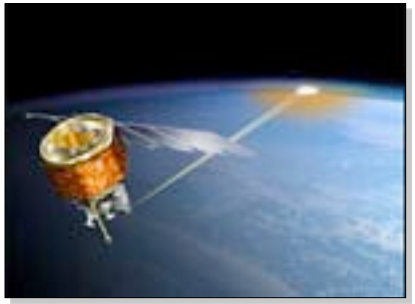
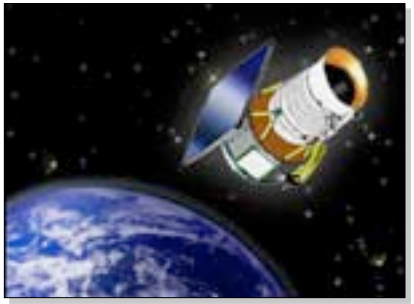
(See Requirement 82)


Requirement 4: Proposals shall describe a science investigation with goals and objectives that address the program science objectives described in Section 2.

While the National Research Council has recently released the 2010 Astronomy and Astrophysics Decadal Survey report, NASA has not fully absorbed this report into its program planning.

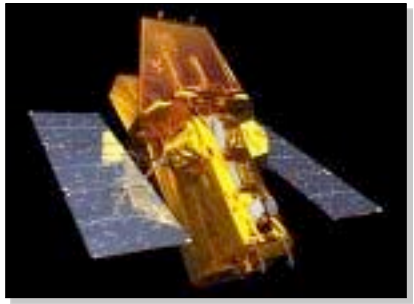
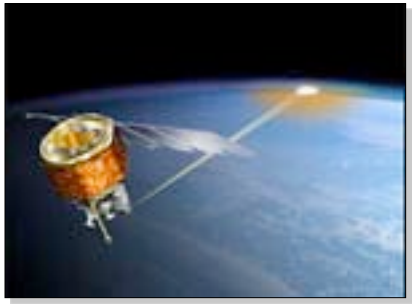
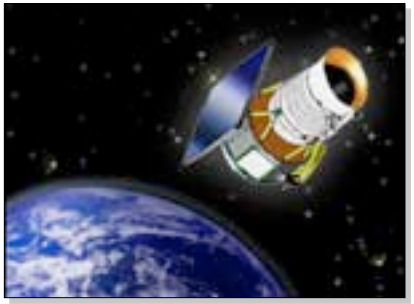
For the purposes of this solicitation, investigations proposing to address the goals and objectives of astrophysics programs will be reviewed in the context of the *2010 Science Plan for NASA's Science Mission Directorate* only.


Explorer 2011 Science Missions of Opportunity Program Element Appendix for the Stand Alone Missions of Opportunity Notice (EX2011 MO SALMON PEA) – NNH08ZDA009O Appendix H7

Requirements and Highlights

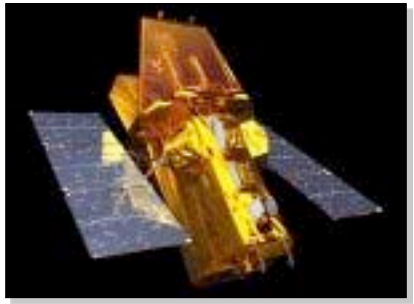
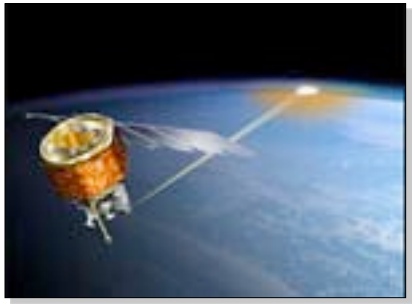
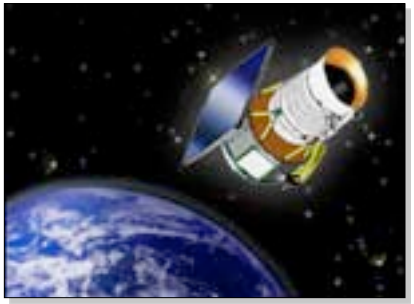
Important Note: PEA H7 incorporates a large number of changes relative to the main body of the SALMON AO. PEA H7 takes precedence over the SALMON AO.


Introduction

MO investigations traditionally have been solicited in conjunction with NASA Science Mission Directorate's (SMD) AOs for Principal Investigator (PI) led missions [e.g., Discovery, Explorer, Earth System Science Pathfinder (ESSP), Mars Scout, and New Frontiers].

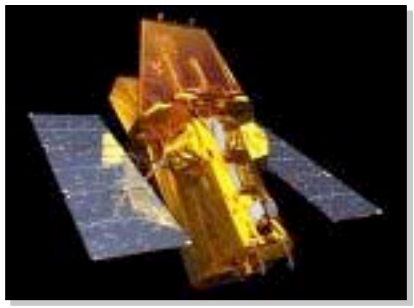
SALMON, a five-year omnibus AO, incorporates PEAs for general MO proposal opportunities, as well as focused proposal opportunities for specific flight opportunities. The AO includes U.S. and non-U.S.-led mission opportunities.

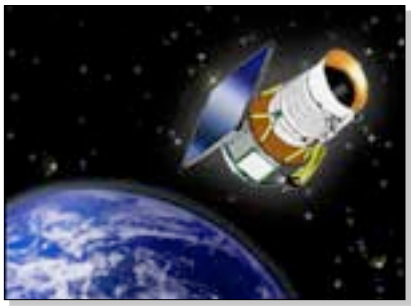





SALMON is intended to provide more frequent opportunities for science and technology investigations on space flight missions that advance the high priority science, technology, and exploration objectives of NASA's Mission Directorates.

Each PEA is a separate and independent solicitation, has its own solicitation number in NSPIRES, its own proposal due date, and its own funding available for selected investigations.

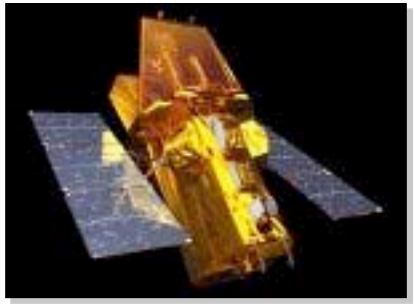
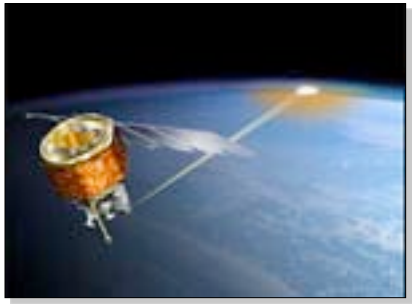
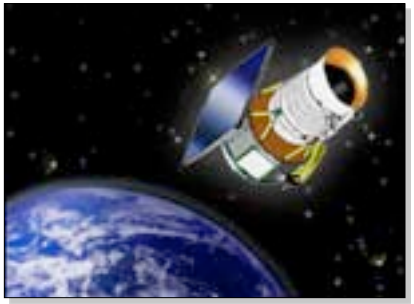
e.g., NNH08ZDA009O Appendix H7, is the EX2011 MO SALMON PEA. Investigations are funded from the Explorer Future Missions budget line.





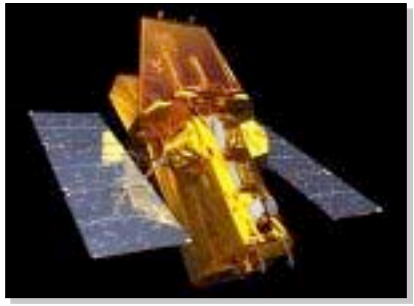
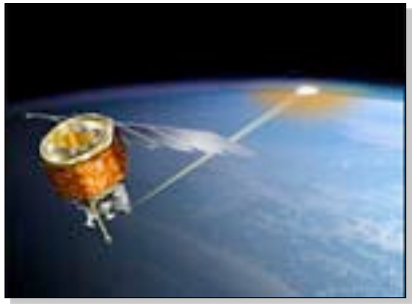
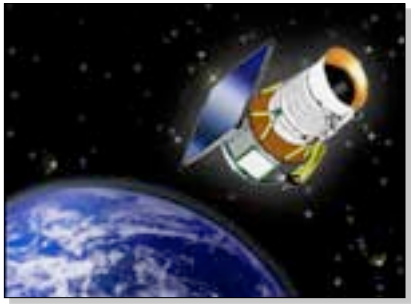
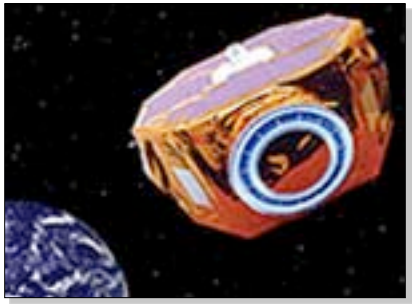

Three Mission of Opportunity types may be proposed in response to this EX2011 MO SALMON PEA

- **Partner Missions of Opportunity**
- **New Science Missions using Existing Spacecraft**
- **Small Complete Missions** including:
  - Investigations requiring flight on high altitude scientific balloon platforms
  - Investigations on the International Space Station
  - Investigations launched as secondary payloads or launched as hosted payloads

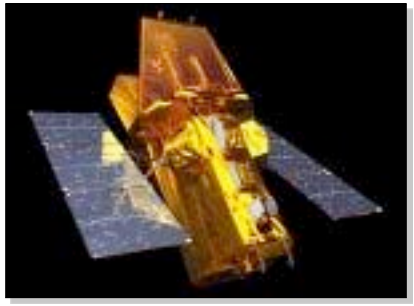
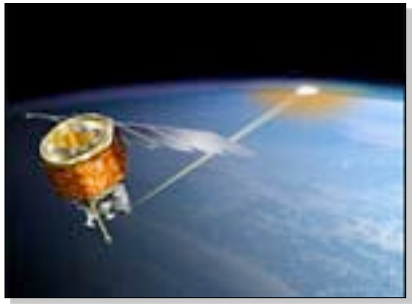
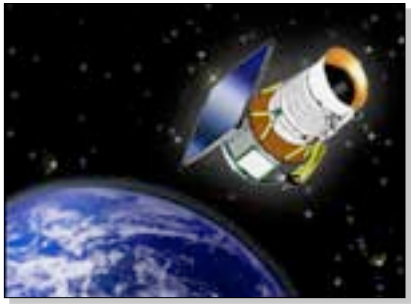
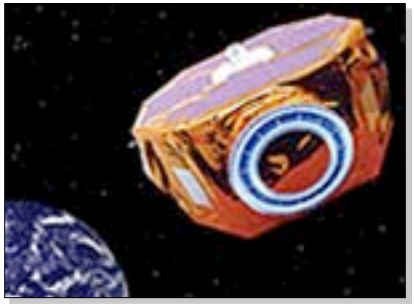





Cost and Schedule Constraints

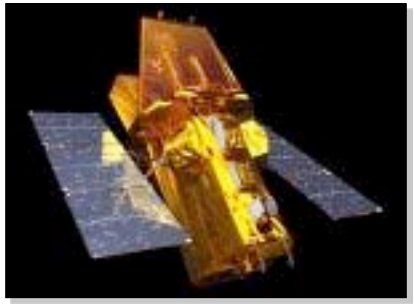
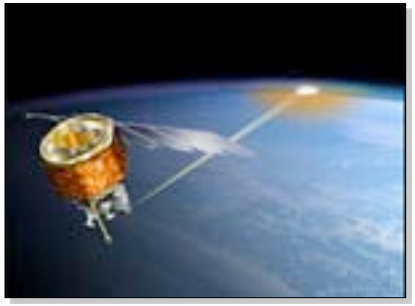
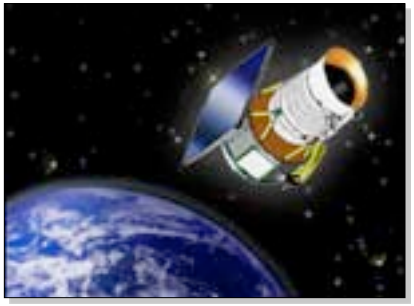
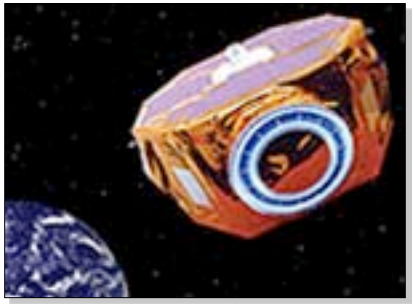
- $55M cap in Fiscal Year 2011 dollars
- Phase A Studies, ~11 mo. duration, capped at $250K RY
- PI must provide evidence of sponsoring organization funding primary host mission
- For small complete missions launch date is NLT December 31, 2018.

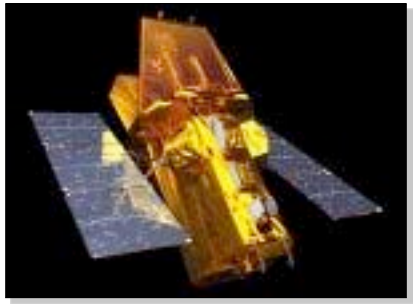
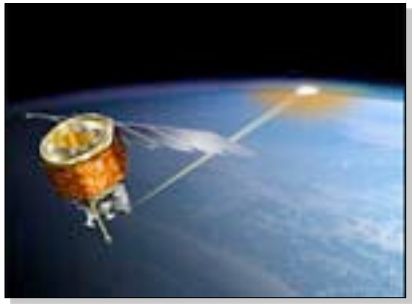
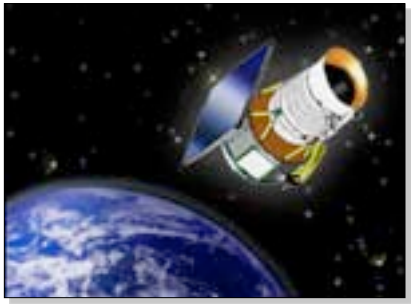
- Partner MOs may be proposed for participation in **nonstrategic** NASA missions. ESA Cosmic Vision M-class missions are considered strategic missions.
- Such a proposal must satisfy the following requirements: (i) The PI of the host mission provides a Letter of Commitment endorsing the partnership and (ii) the feasibility assessment of the host mission, i.e., the TMC evaluation in Step 1 and Step 2, includes the accommodations for the partner MO instrument .

- Investigations intended to be flown on the European Space Agency (ESA) Euclid and PLATO mission candidates are not solicited in this PEA.
- NASA and ESA are continuing to discuss the potential for a strategic collaboration on the Euclid mission candidate. U.S. science opportunities would be offered by NASA to all proposers via a separate solicitation.
- ESA has requested that NASA not solicit mission of opportunity investigations for the PLATO mission candidate at this time.

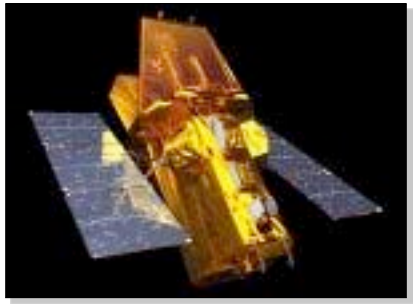
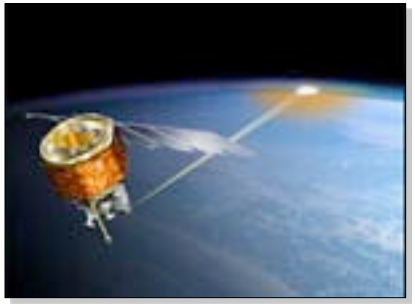
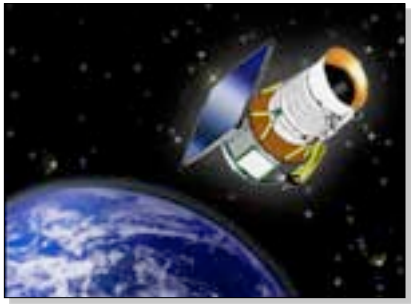
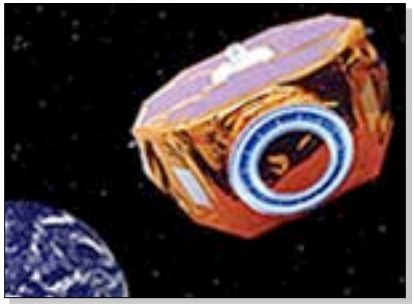
- **Question81:** I am participating in an ESA Cosmic Vision (CV) proposal. Do I need to submit an Explorer MO or USPI proposal to NASA for support of the US collaborators during the ESA study phase, assuming that ESA selects the proposal that I am participating in for study?
- **Answer81**: No, NASA does not require or expect that ESA Cosmic Vision study phase proposals be submitted in response to the Explorer MO or USPI call. After ESA makes selections, the Heliophysics and Astrophysics Divisions may choose to discuss the potential for a strategic collaboration with ESA for one or more missions; they may then choose to fund US collaborators through a funding mechanism appropriate to the form of that collaboration.


In addition to the requirements given in the SALMON AO, all proposed partner MO investigations must also demonstrate:

(1)their formal relationship with the sponsoring agency's host mission (e.g., already selected contribution, invited contribution, or proposed contribution); and

(2)the status of the host mission within the sponsoring agency (i.e., Pre-Phase A, Phase A, or Phase B), including the level of commitment that the sponsoring agency has made to complete the mission.

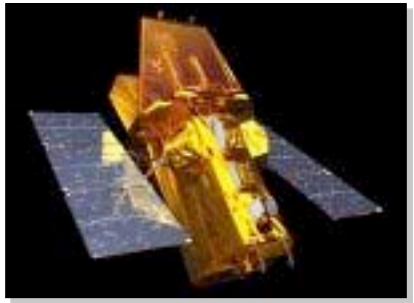
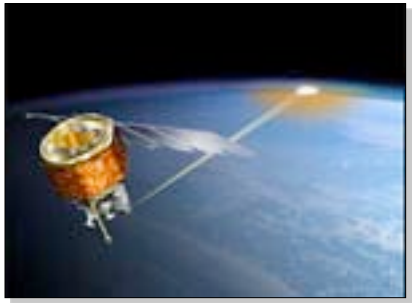
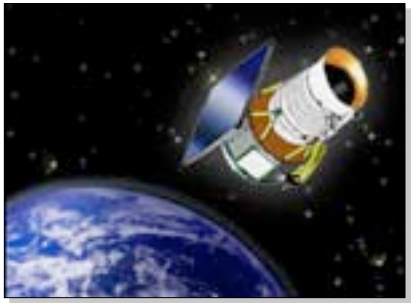





In addition to requirements given in SALMON, all partner MO requiring flight on the ISS must also provide a Letter of Acknowledgement from the Space Station Payload Office.

(1)a description of the formal relationship with the sponsoring agency's host mission for access and accommodation at the space station,

(2)identification of known challenges and/or conditional provisions for access or accommodation of the host mission, and

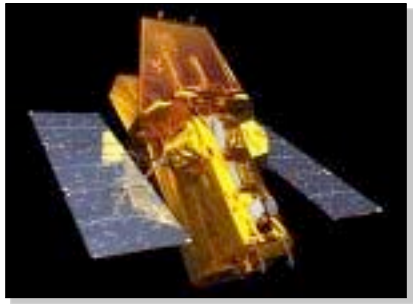
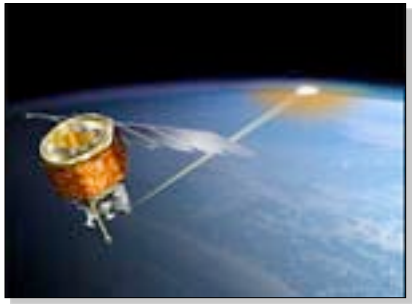
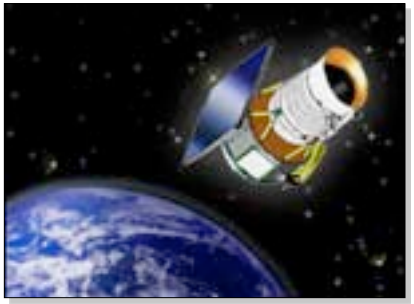
(3)a description of the level of technical interchange and negotiation required to mature the host mission's provisions for access and accommodation.


In addition to requirements given in SALMON, all proposed small complete missions, with the exception of ISS MO, must also provide a Letter of Commitment from the program or agency providing access to space.

(1)a detailed description of the proposed provisions for access to space, and

(2)the status of those proposed flight provisions within the sponsoring program or agency (i.e., conditional, confirmed, conceptual, etc.) including the level of commitment that the sponsoring program/agency has made to support that flight opportunity.

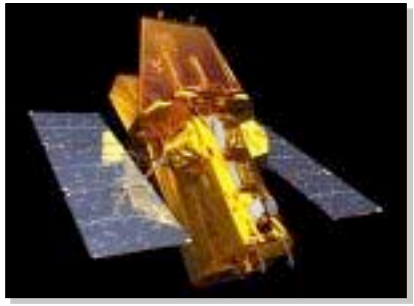
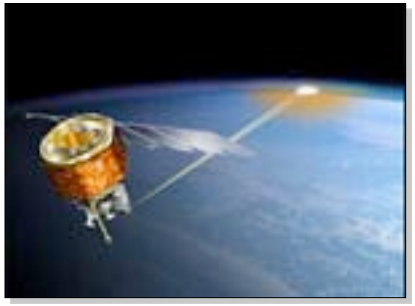
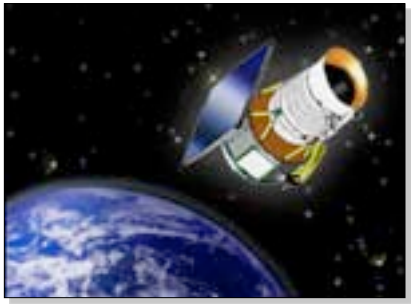
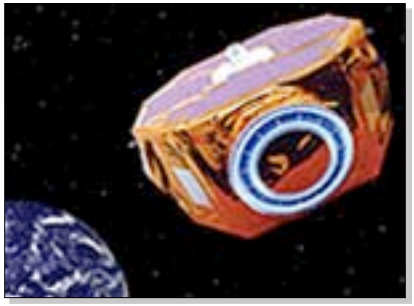





In addition to requirements given in SALMON, all small complete mission investigations requiring flight on the ISS must also provide a Letter of Feasibility from the Space Station Payload Office:

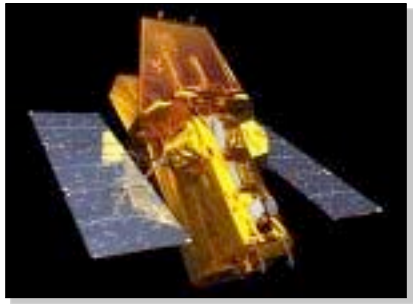
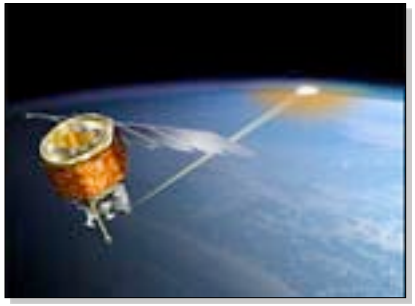
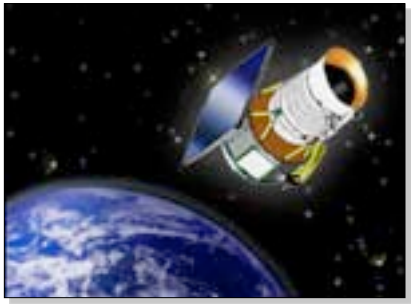
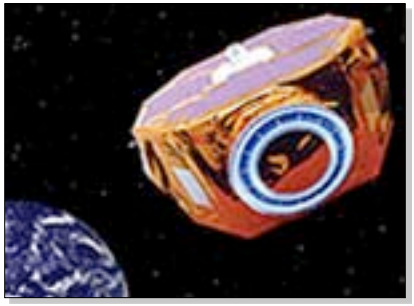
(1)a conceptual description of the feasibility for proposed provisions for access and accommodation,

(2)identification of known challenges and/or conditional provisions for access or accommodation, and

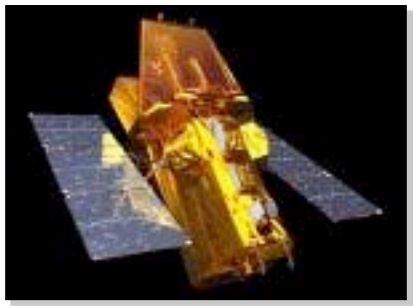
(3)a description of the level of technical interchange and negotiation required to mature the proposed provisions for access and accommodation.

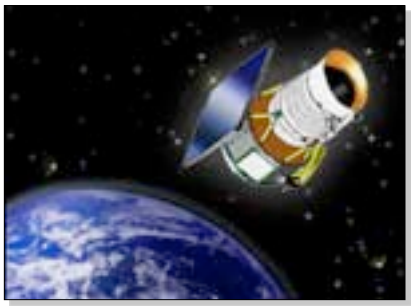





- The SALMON AO provides that a proposal may be selected for development without first completing a Phase A concept study. The proposal must make the case that it is not only necessary, but that it is also technically feasible.
- The proposer must recognize that NASA would only make such a decision if the proposal was especially compelling.
- Recall, for this AO, KDP-A is the selection of a Step-1 proposal for a Phase A concept study, KDP-B is the downselection of a mission to enter Phase B following evaluation of Concept Study Reports.

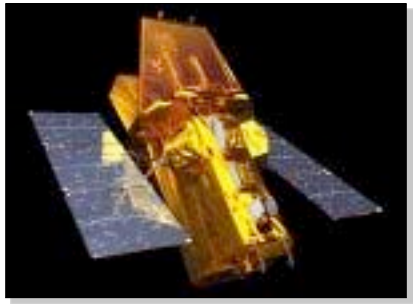
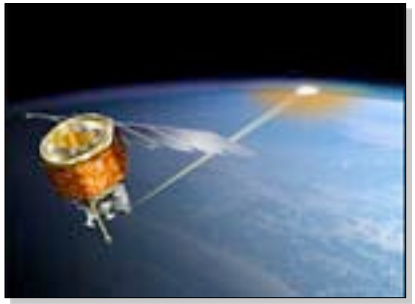
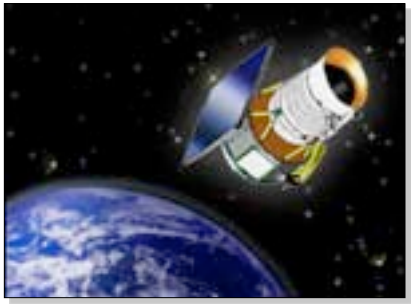
Additional Elements for Explorer 2011 AO and Salmon PEA investigations






Science Enhancement Options

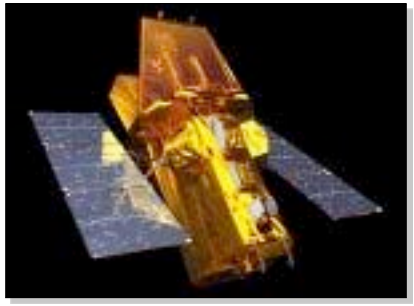
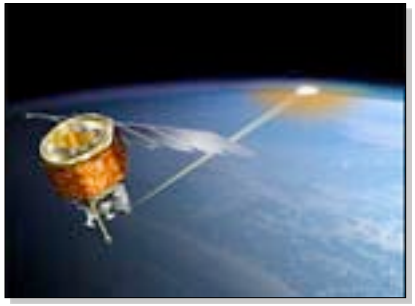
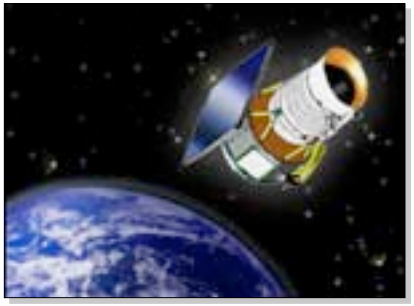
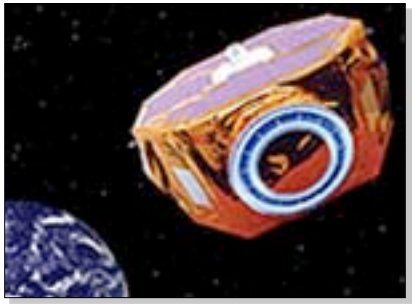
- Activities such as extended missions, guest investigator programs, general observer programs, participating scientist programs, interdisciplinary scientist programs, and/or archival data analysis programs, where appropriate, have the potential to broaden the scientific impact of investigations. Such optional activities may be proposed as Science Enhancement Options (SEOs).
- NASA considers any proposed SEO activities as optional.


Science Enhancement Options

- Costs for proposed SEO activities must be defined, but will not count against the PI-Managed Mission Cost cap. Funding requested for SEO activities prior to Phase E should be minimized.
- As these proposed activities are optional and are not included within the cost capped baseline investigation, the science enabled by SEO activities is **not considered as part of the scientific merit of the proposed investigation**.

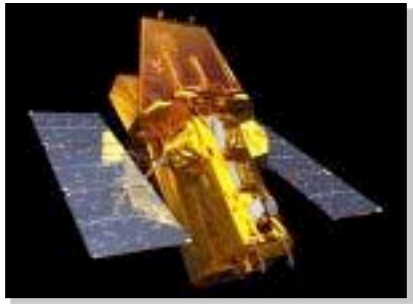
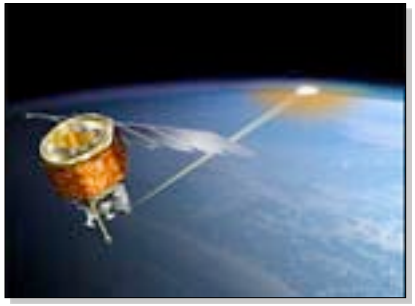
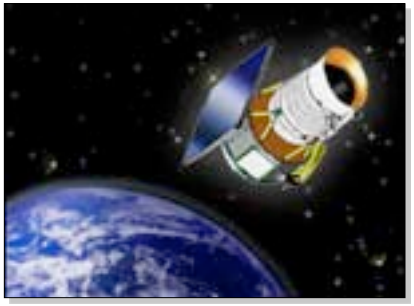
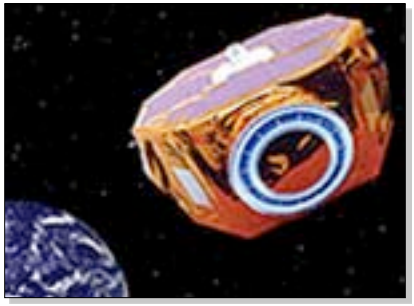
See Section 5.1.5, Requirements 11-13

Student Collaboration

Proposals may define a Student Collaboration (SC) that is a separate part of the proposed investigation.

The SC could be in the form of an instrument development, an investigation of scientific questions, analysis and display of data, development of supporting hardware or software, or other aspects of the investigation.

Student Collaborations

Student Collaboration proposals, if any, will be evaluated only for the impact they have on science implementation feasibility to the extent that they are not separable; student collaboration proposals will not be penalized in Step 1 for any inherent higher cost, schedule, or technical risk, as long as the student collaboration is shown to be clearly separable from the implementation of the Baseline Science Mission.

The intrinsic merit of student collaborations will not be evaluated at this time.

See Section 5.5.3, Requirements 48-49

Education and Public Outreach

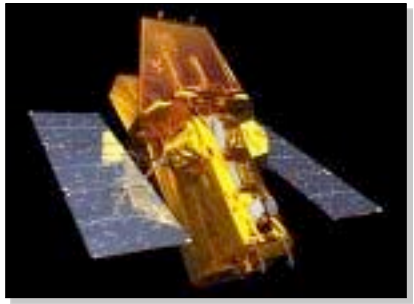
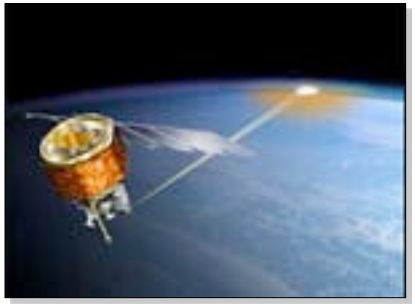
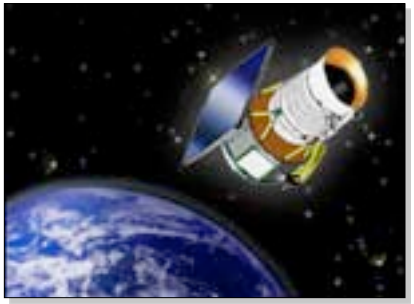
The quality of E/PO plans is not a consideration in the selection of Step 1 proposals for Phase A concept studies. Therefore, E/PO plans are not needed at this time.

Requirement 45: Proposals shall not designate an E/PO lead and proposals shall not include a plan for a core E/PO program.

Requirement 46: Proposals shall identify the funding set aside …

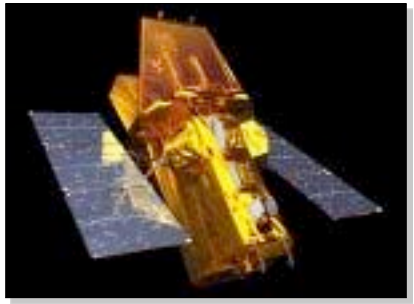
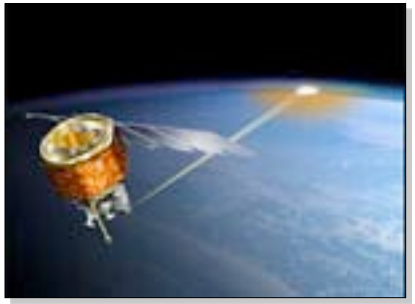
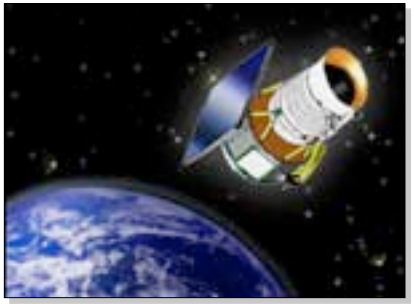
Requirement 47: Statement of commitment …

A plan for a core E/PO program will be developed during the Phase A concept study and will be included in the Concept Study Report.

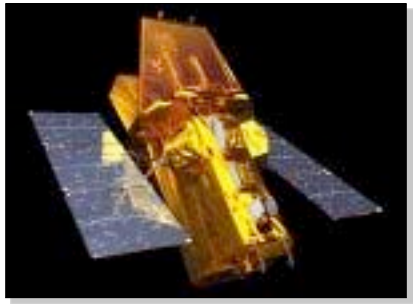
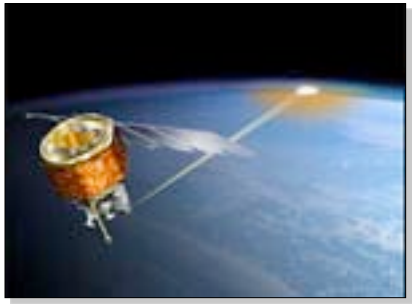
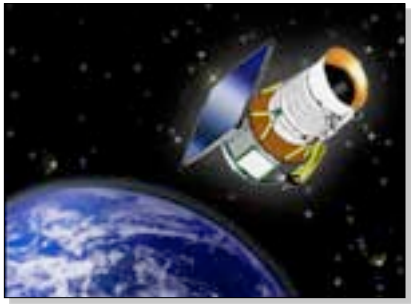
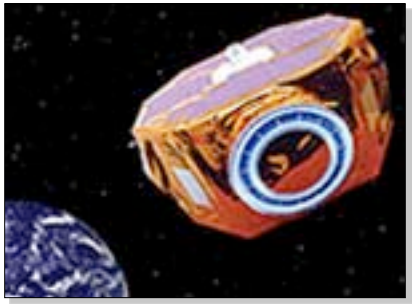





Explorer U.S. Participating Investigators
Program Element for the Research Opportunities in Space and Earth Sciences (EX2011 USPI ROSES PE) 2010 NRA – NNH10ZDA001N Appendix E.7

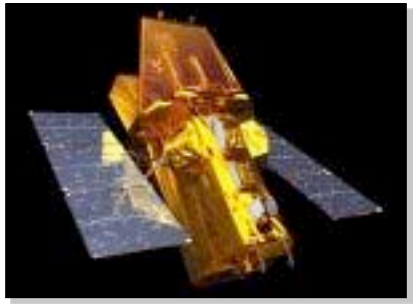
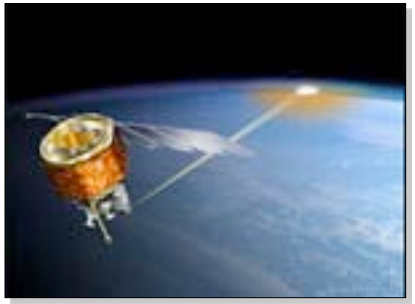
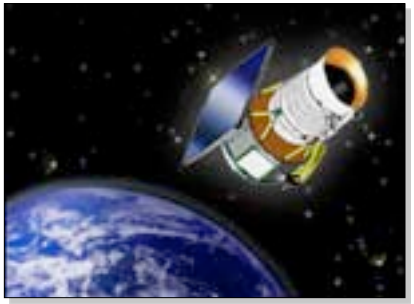
Requirements and Highlights

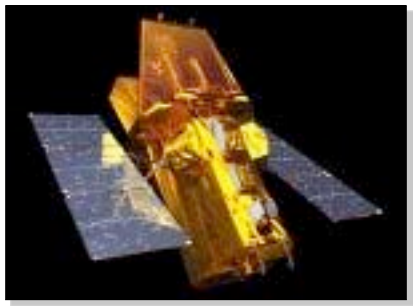
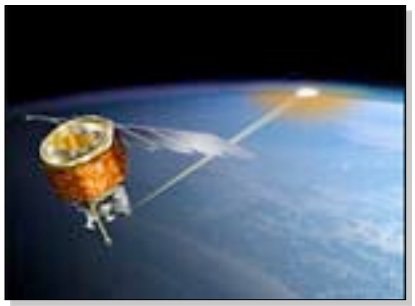
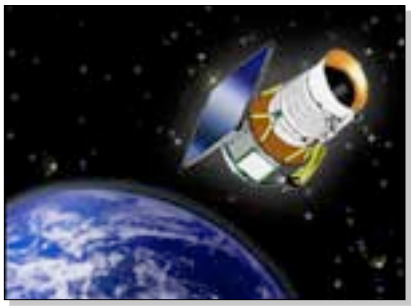

- The purpose is to solicit potential Explorer Program Mission of Opportunity (MO) investigations in which investigators participate as a **Co-I for an instrument, experiment, or technology demonstration** that is being built and flown by a sponsor agency other than NASA.
- Proposals submitted in response to the Explorer USPI ROSES PE must comply with the requirements in the ROSES-2010 NRA and in this Explorer USPI PE. Proposals submitted in response to this solicitation are not required to comply with the requirements in the SALMON AO.

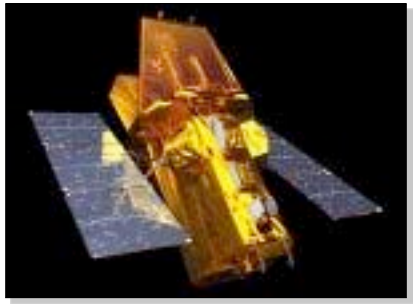
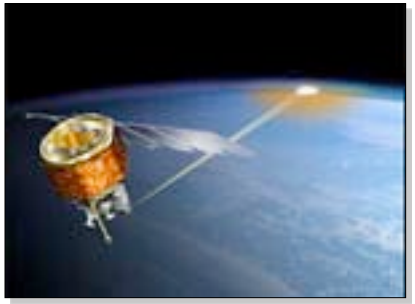
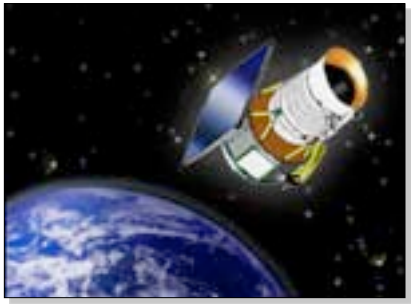
- Investigations requiring the provision of flight hardware are not solicited through this USPI solicitation.
- A proposed investigation as a USPI on a non-NASA mission or instrument may take any form that clearly and demonstrably enhances the scientific output of the mission, benefits the U.S. scientific community, and enables U.S. astrophysics and heliophysics science community access to a highly valued scientific data set.

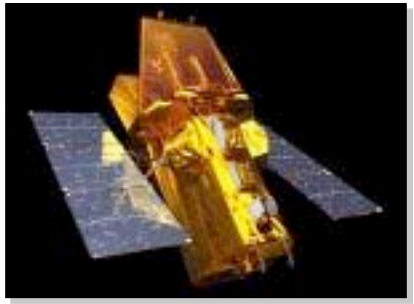
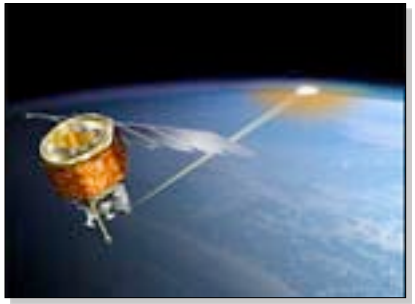
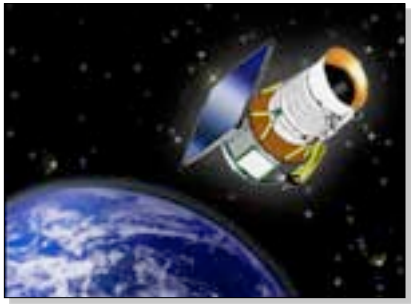

- The proposed investigations can vary in duration, to include just the prime science mission phase, or to begin at the post confirmation development phase (e.g., for calibration analysis) through the prime mission operational phase, depending on the science requirements of the investigation.
- All investigations shall include adequate time for data analysis and archiving following the conclusion of the prime mission phase.

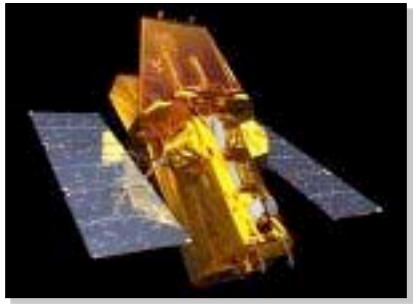
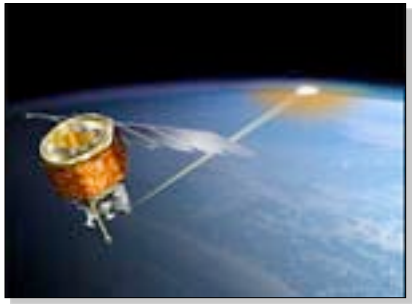
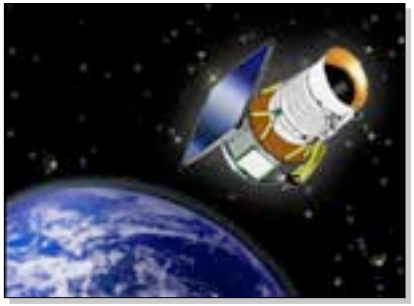
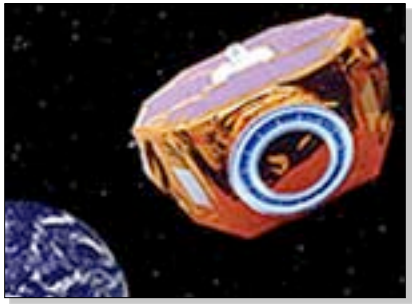

- This program element solicits new investigations only. Proposals whose intent or purpose is to extend or directly supplement existing investigations already funded for approved space flight missions or other NASA-supported research programs are not appropriate for this program element.
- Investigators who are members of the science teams of ongoing missions and who propose to use data from those missions must clearly demonstrate that the proposed research is distinct from their existing efforts.

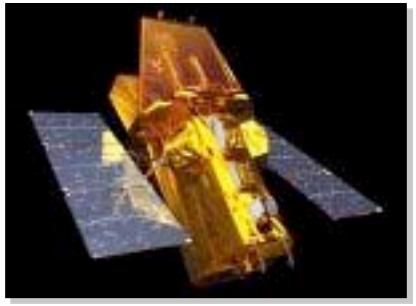
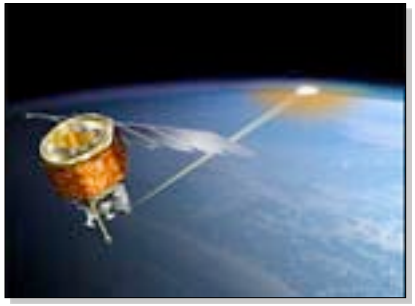
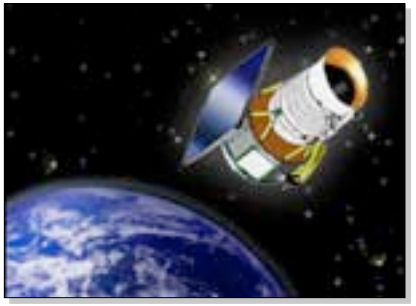
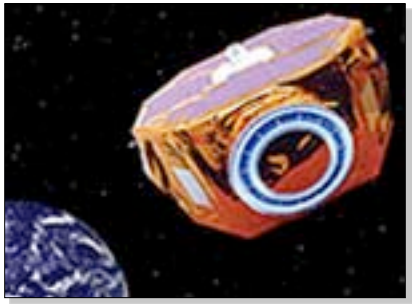

- For individual investigators, the cost for selected proposals is expected to be on the order of $125K per selected investigation per year through the prime science mission phase, plus one year for additional data analysis and archiving for the baseline scientific investigation.
- For a team of investigators, the cost is expected to be on the order of $125K per investigator per year, up to a maximum combined team total on the order of $1M per year, through the prime science mission phase plus one year for additional data analysis & archiving.

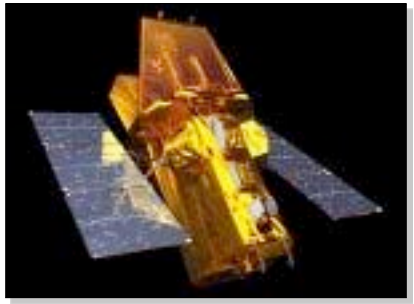
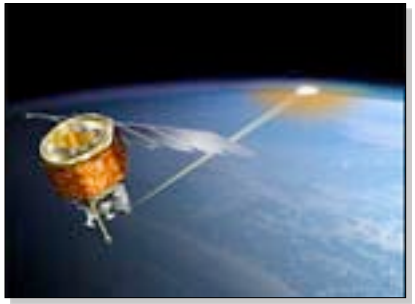
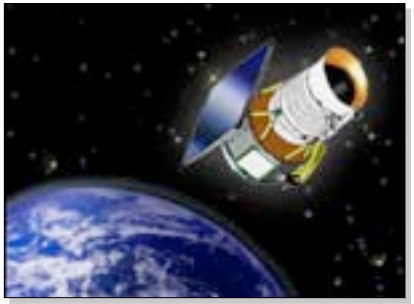

- Proposals should be for the entire duration of the proposed investigation. This may be no more than through the prime science mission, plus one year for additional data archiving for the baseline scientific investigation. The budget justification in the body of the proposal should cover this entire period.
- Awards will be for a maximum of five years.

- If the proposed investigation is for more than five years, then a continuation proposal may be submitted for a new award covering a period of up to five additional years. The progress and accomplishments of the initial five years of the investigation will be reviewed as part of the decision making process for the continuation award.

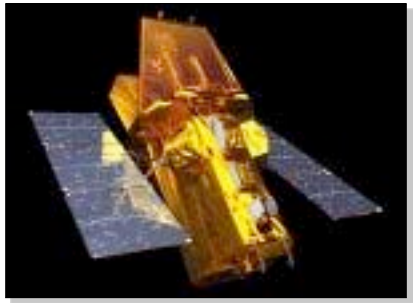
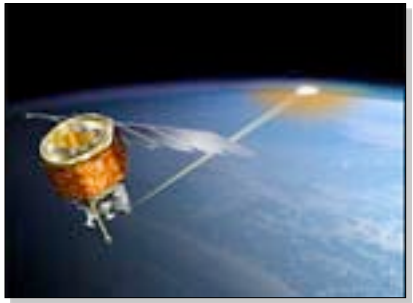
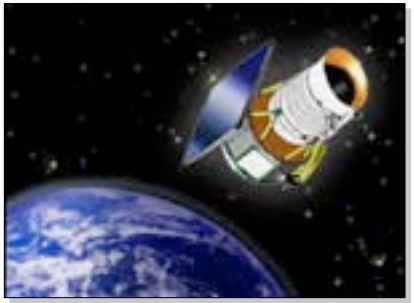
Programmatic Factors

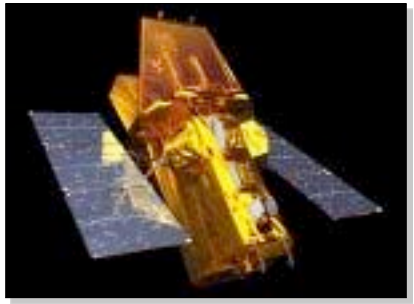
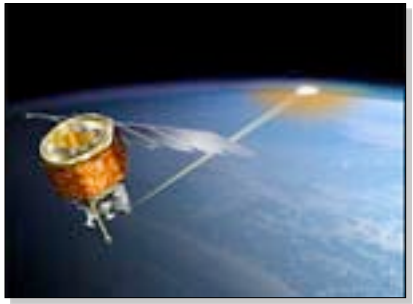
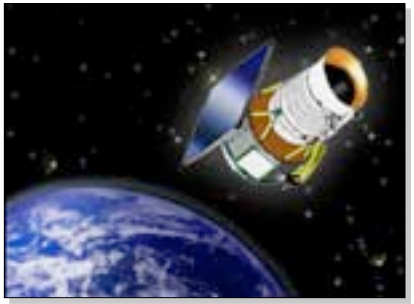

The currently approved Explorer Program planning budget is sufficient to select and execute at least one full Explorer mission to proceed into Phase B and subsequent mission phases.

Assuming sufficient Explorer Program budget authority, NASA intends to select and execute a second full Explorer mission or one or more Mission(s) of Opportunity.

NASA is fully prepared to select only one full mission (either astrophysics or heliophysics) if it receives mission of opportunity proposals that offer outstanding science opportunities.

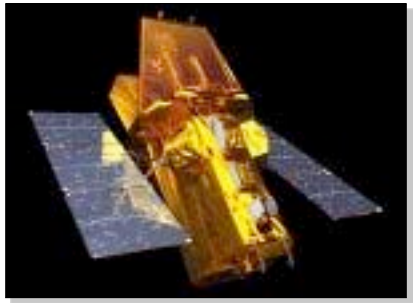
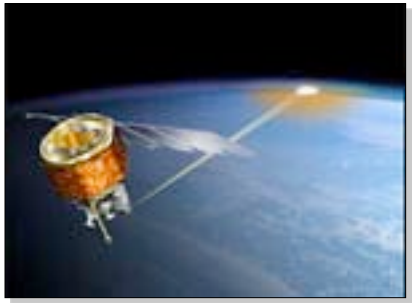
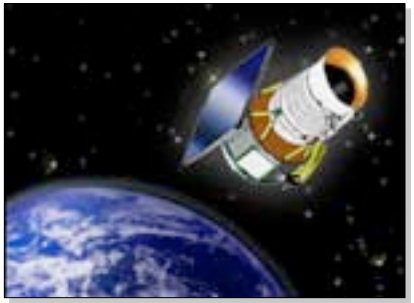





- The decision between these selection options will be based upon the proposals received in response to the Explorer 2011 AO, to the Explorer MO program element appendix of the SALMON AO, and to the Explorer USPI program element appendix of the ROSES NRA.
- The decision will incorporate the most recent budget planning information available at that time.

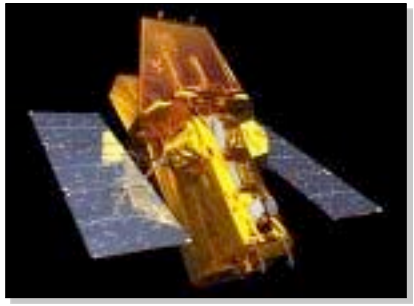
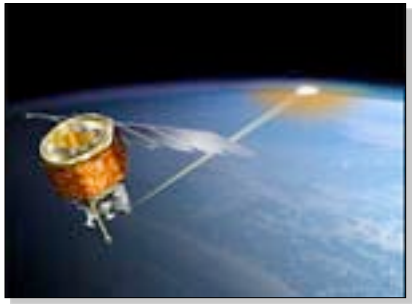
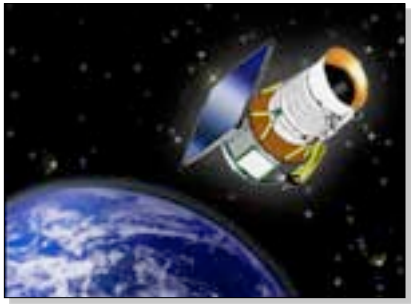
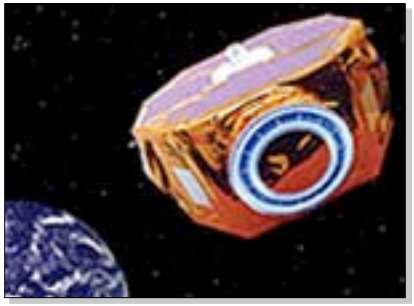

A single selection meeting will select proposals, and all Explorer selections will be funded from the same Explorer future mission budget;

- there is no separate budget for Explorer MOs
- there is no separate budget for USPIs.


In addition to the mission selections, NASA has set aside funding sufficient to select up to two Category III proposals for technology development.

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

Questions?