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# **2016 Heliophysics Small Explorer (SMEX) & Mission of Opportunity (MO) Solicitations**

## **Pre-Proposal Conference**

### **Heliophysics Explorers Mission of Opportunity US Participating Investigator**

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# Solicitation Components



## NASA Announcement of Opportunity (AO)

NNH16ZDA0050

Heliophysics  
Small Explorers  
(H-SMEX)

NNH12ZDA0060

Stand Alone Missions Of  
Opportunity Notice #2  
(SALMON-2)

Program Element  
Appendix Q (PEA-Q):  
Heliophysics Explorers Mission  
Of Opportunity

Small Complete  
Missions (SCM)

Partner Missions of  
Opportunity (PMO)

1. ISS
2. Hosted Payload
3. CubeSat

- Sub-orbital Class
1. Balloon
  2. Suborbital Reusable Launch Vehicle

## NASA Research Announcement (NRA)

ROSES-16  
Appendix B.10

Heliophysics US  
Participating Investigator  
(H-USPI)



# 2016 Heliophysics USPI



- The purpose of the H-USPI is to solicit potential Heliophysics Explorer 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.
- Proposal requirements are provided in ROSES-2016 NRA and the H-USPI program element appendix B.10.
  - *SALMON-2 requirements are **not** applicable*
  - *In particular, a ROSES Step1 proposal is required instead of the optional SALMON-2 Notice of Intent (NOI)*
- The H-USPI, H-SMEX and Heliophysics SALMON-2 PEA Q will be reviewed at the same time.
- NASA anticipates selecting 2 HUSPI investigations



# HUSPI Science Requirements



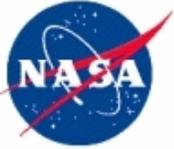
- All investigations proposed in response to this solicitation must support the goals and objectives of the Heliophysics Explorers Program
- The NASA strategic objective addressed by the Heliophysics Explorer Program is to understand the Sun and its interactions with Earth and the solar system, including space weather.
- The NASA Science Mission Directorate (SMD) Heliophysics Division (HPD) is addressing this strategic objective by conducting Heliophysics investigations designed to address the following science goals:
  - Explore the physical processes in the space environment from the Sun to the Earth and throughout the solar system
  - Advance our understanding of the connections that link the Sun, the Earth, planetary space environments, and the outer reaches of our solar system
  - Develop the knowledge and capability to detect and predict extreme conditions in space to protect life and society and to safeguard human and robotic explorers beyond Earth.



# 2016 Heliophysics USPI



- **HUSPI investigation on a non-NASA space mission may be as a Co-I for an instrument, experiment, or technology demonstration.**
- **The Co-I role can include, but is not limited to,**
  - instrument design,
  - modeling and simulation of the instrument's operation and measurement performance,
  - calibration of the instrument,
  - scientific analysis and/or research of the data returned,
  - development of innovative data analysis techniques
- **A USPI investigation can include participation in a non-NASA space mission team, including but not limited to:**
  - mission planning,
  - mission operations,
  - data processing,
  - data analysis, and
  - data archiving.



# 2016 Heliophysics USPI



- A HUSPI investigation must
  - conduct a heliophysics science or technology investigation
  - include some meaningful data analysis component, archiving of the complete data set, and the publication of science results in the peer reviewed literature
  - enhance the science output of the mission
  - benefit the US science community
  - enables US community access to valuable science data
- A HUSPI investigation can span any portion of a spaceflight mission that satisfies the above criteria. E.g.
  - Start in the prime science mission or
  - Start in the post confirmation development phase



# 2016 Heliophysics USPI



- Provision of flight hardware is **not** an appropriate HUSPI activity
- HUSPI investigations must be **new** investigations
  - Extending or supplementing an existing investigation already funded for an approved space flight mission (or other research program) is **not** appropriate for this program



# HUSPI Proposal Submission



- HUSPI uses a two-step proposal submission process
  - See ROSES 2016 *Summary of Solicitation Section IV. (b) vii*
- Step 1 proposals are required and are due August 19, 2016
- Step 1 proposals are reviewed for compliance only.
- Step 1 proposals must contain the following elements
  - Title
  - Principal Investigator
  - Team
  - Proposal of one page containing:
    1. A description of the science goals and objectives to be addressed by the proposal.
    2. A brief description of the methodology to be used to address the science goals and objectives.
- Step 2 proposal can only be submitted following acceptance of Step 1
- Step 2 Title, Principal Investigator and Team must be identical to Step 1
- Step-2 proposal must contain the same scientific goals proposed in the Step-1 proposal.



# HUSPI Evaluation



- Evaluation criteria are those specified in section C.2 of the *NASA Guidebook for Proposers*:
  - intrinsic scientific and technical merit,
  - relevance to NASA's objectives, and
  - cost realism/reasonableness
  
- Proposals are evaluated for scientific and technical merit based on:
  1. Compelling nature and scientific priority of the proposed investigation's science goals and objectives, including:
    1. the importance of the problem within the broad field of Heliophysics;
    2. the unique value of the investigation to make scientific or technological progress in the context of current understanding in the field, and
    3. the importance of carrying out the investigation now.
  2. Appropriateness and feasibility of the methodology, including the appropriateness of the selected data, models, facilities, instrumentation, and flight systems for ensuring scientific success.



# Additional HUSPI Evaluation Elements



- Proposed HUSPI investigations must also provide:
  1. the formal relationship with the sponsoring agency's mission (e.g., selected participant, invited participant, or proposed participant);
  2. the status of the mission within the sponsoring agency including the level of commitment that the sponsoring agency has made to complete development;
  3. a description of the type and the characteristics of the data from this investigation that will be archived and a description of the arrangements and resources to ensure the timely delivery of the data; and
  4. a detailed explanation of how the heliophysics science community benefits from this participation.