

National Aeronautics and  
Space Administration



# 2024 NASA SCIENCE

**R&A Updates &  
Discussion**

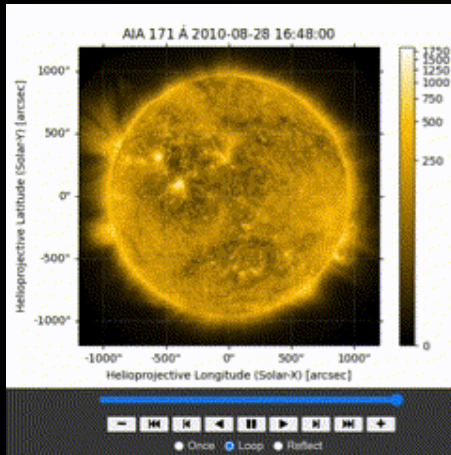
**Dr. Therese Jorgensen, Dr. Patrick Koehn**  
Research Program Director, Research Deputy

June 17, 2024

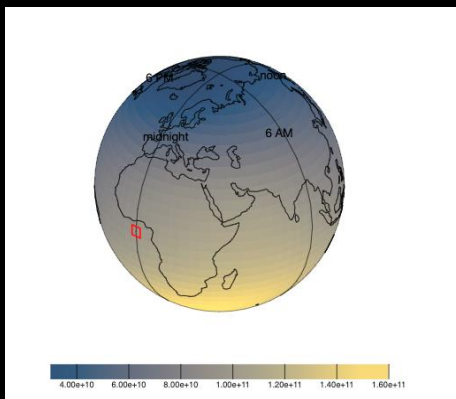
# ROSES 2023 Update

ROSES Element	# Proposals Received	# Proposals Selected	% Selected
H-TM	11	4	36%
HSR	161	24	14%
SWR202R	50	9	18%
HGIO	82	19	23%
HTIDS	26	6	23%
HFOS	6	1	16%
SOGI	38	7	18%
LWS Science	62	16	25%
H-LCAS	17	Pending	-
H-ARD	39	Pending	-
CSSFP	20	Pending	-
H-CS	20	Pending	-
FINESST	76	Pending	-
HITS	2	Pending	-

# New Element In ROSES 2024: Artificial Intelligence Applications in Heliophysics (AIAH)



- There is a growing demand for artificial intelligence (AI) tools that are **generalizable, trustworthy and easy to use.**
  - Tools developed for personal or group use in the processing of observational data and model output can be hard to use by others outside the group.
- The AI/ML community needs a program that will yield new tools, workflows and techniques; providing unique analytic capabilities, but also transforming these tools to be easily usable by researchers beyond the ones who developed them.

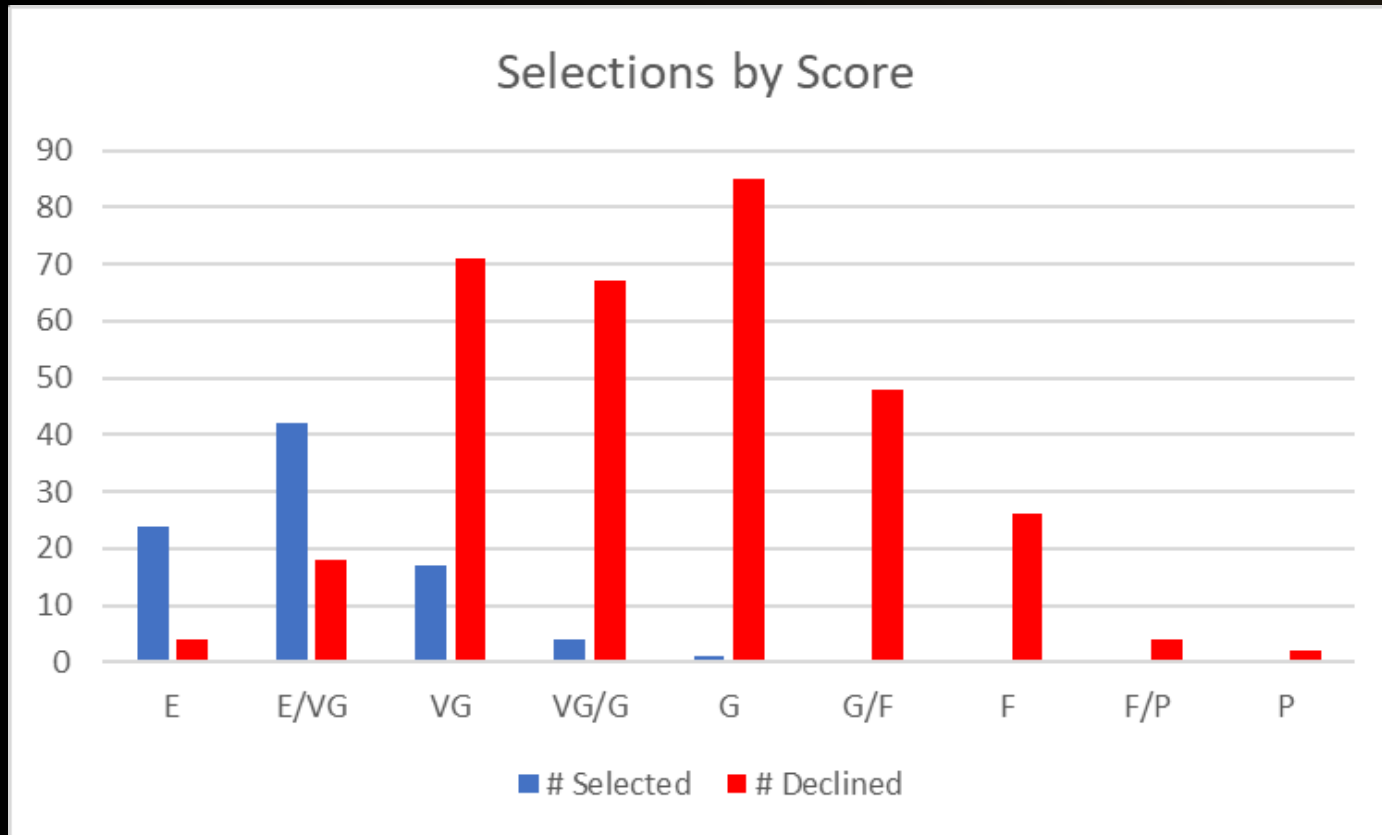


**AIAH** solicits proposals to fast-track AI/ML capabilities and capacity to advance research and tools for future heliophysics applications.

**AIAH** seeks innovative adaptations and applications of existing AI techniques, concepts, methodologies, etc. to demonstrate their feasibility and potential to increase science return, as well as to inform Heliophysics science research disciplines of promising techniques and capabilities.

**Better understanding** of the Sun-Earth **interaction** via thermospheric density prediction & SDO

# Declination of Highly Rated Proposals



Highly-rated proposals (E and E/VG) are declined for various reasons:

- High levels of uncosted funds
- Other recent awards
- Unable to meet time requirements (if applicable)
- Institutional Diversity
- Topical Diversity
- Career-level and other DEIA ideals
- Insufficient funds at the panel/program level

# Increased Proposal Pressure

Dramatic increase in the number of proposals received in HSR and HGIO:

- **HSR:**
  - 2021 = 120 proposals
  - 2023 = 161 proposals
  - 2024 = 243 proposals
- **HGIO:**
  - 2022 = 87 proposals
  - 2023 = 82 proposals
  - 2024 = 180 proposals
- **Reasons for increase are unclear.**
- **Potential actions:**
  - Competitive Step-1 phase (OGC issues, \*may\* bias towards established researchers)
  - No Due Date format
  - Triage (favors established researchers)
  - Targeted solicitations

# Metrics Needed

- Selection rate is a common metric used to define a healthy R&A program, but it is flawed.
  - Dependent on number of proposals received, which is fluctuating
  - Budget numbers fixed a year in advance, so we cannot respond easily to surges in proposal pressure
- We need better metrics!
- Potential additions:
  - Breadth of portfolio?
  - New initiatives?
  - Diversity of awardees (demographics)?
  - Scientific productivity?
  - Scientific excellence?

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# 2024 NASA SCIENCE

**Heliophysics Division: Internal  
Scientist Funding Model (ISFM)  
ISFM New Cal for Proposals Starting FY25**

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Program Scientist & ISFM Program Official  
June 17, 2024

# HPD ISFM Principles

Support long-term, strategic research and development that provides a necessary foundation for NASA's advancements on its major Heliophysics science goals. ISFM should foster collaboration rather than competition between NASA and community scientists on Heliophysics theory, modeling, data analysis and supporting activities.

**Projects are not restricted in the type of work efforts that they include. The primary requirement for ISFM projects is that they must be strategic:**

- *Utilize unique NASA facilities, capabilities, and/or skills; or are of a duration or scope that greatly benefits NASA by conducting them at Centers. Activities that jointly exploit specific Centers' capabilities are strongly encouraged.*
- *Require or benefit from long-term stability, especially for the long-term availability of some capability whose utilization may not be required at all times, but whose ongoing availability is required.*

**Encompass activities that are not well-suited to existing programs in ROSES.**

**All ISFM directed work packages must include at least one element that is Science Enabling:**

- *Providing a service or supporting research being done by the scientific community; i.e., other researchers depend/rely on the results of this work.*
- *Providing a capability to the nation (e.g., data, model or technology development).*

**Finally, all ISFM projects must be:**

- *Forward leaning and ambitious*
- *Substantial in scope (this does not apply to Small ISFM projects)*
- *Distinctive – not duplicative to existing DRIVE or SpWx Centers of Excellence*
- *Uniquely, or best, done by a NASA Center*



# Major Revision of the ISFM Program for FY 2025

The FY 2025 implementation of ISFM represents the first major revision of the HPD ISFM program.

***ISFM will focus on strategic aspects, on projects that are specifically suited to NASA Centers, and on projects which are ill-suited to funding programs such as NASA ROSES.***

Strategic aspects for HPD include:

- Relevance to forthcoming, and anticipated missions (Decadal Survey) and the need to maintain skill sets that will enable Civil Servant scientists to support these missions;
- Infrastructure building, including the provision of data sets, tools, and services that serve both the community and the nation;
- Provision of leadership and partnerships to the distributed Heliophysics community;
- The need for long development times to accomplish strategic objectives.

# New in FY 2025 Call

- The ISFM program will be solicited across all NASA Centers. Joint programs between Centers are strongly encouraged!
- Only Individual Civil Servants who are participating in successful Large ISFM Projects are prohibited from proposing (as PIs) to the HGIO and HSR programs
- The ISFM program will transition to yearly selections. To facilitate this transition, 1-year continuation requests for existing ISFM projects can be submitted.
- CS participating in winning ISFM projects will be required to participate in ROSES review panels.
- A new 3-tier structure of Large, Medium and Small projects, all solicited at HPD HQ and evaluated with HQ, Center and External participation.

# Evaluation Strategy

Step 1 proposals were only required for Large and Medium Projects.

Down select was based mainly on strategic considerations and was done in collaboration between HQ and Centers. We had one voting rep from each center (2 from GSFC) and 7 voting reps from NASA HQ.

- 29 Medium /Large Step-1 Received
- 14 "Encouraged"
- 7 "Discouraged" (but not disqualified from submitting Step 2)
- 8 "Declined" (Cannot submit Step 2)

Feedback was provided for each proposal based on reviewer comments.

37 Round 2 proposals received (Large, Medium, Small). Plans for three review panels in July (half external community, half Center / HQ reviewers). Final Selection by HQ/HPD (Joe Westlake).

24	NASA Goddard Space Flight Center	Large	7
2	NASA Glenn Research Center	Medium	14
1	NASA Johnson Space Center	Small	14
7	NASA Marshall Space Flight Center	Continuation	2
2	NASA Ames Research Center		37
1	NASA Langley Research Center		
37			