HPS Report to CSSP

Given by Mike Liemohn
Vice-Chair
NASA Heliophysics Subcommittee
March 29, 2016

Format of this talk

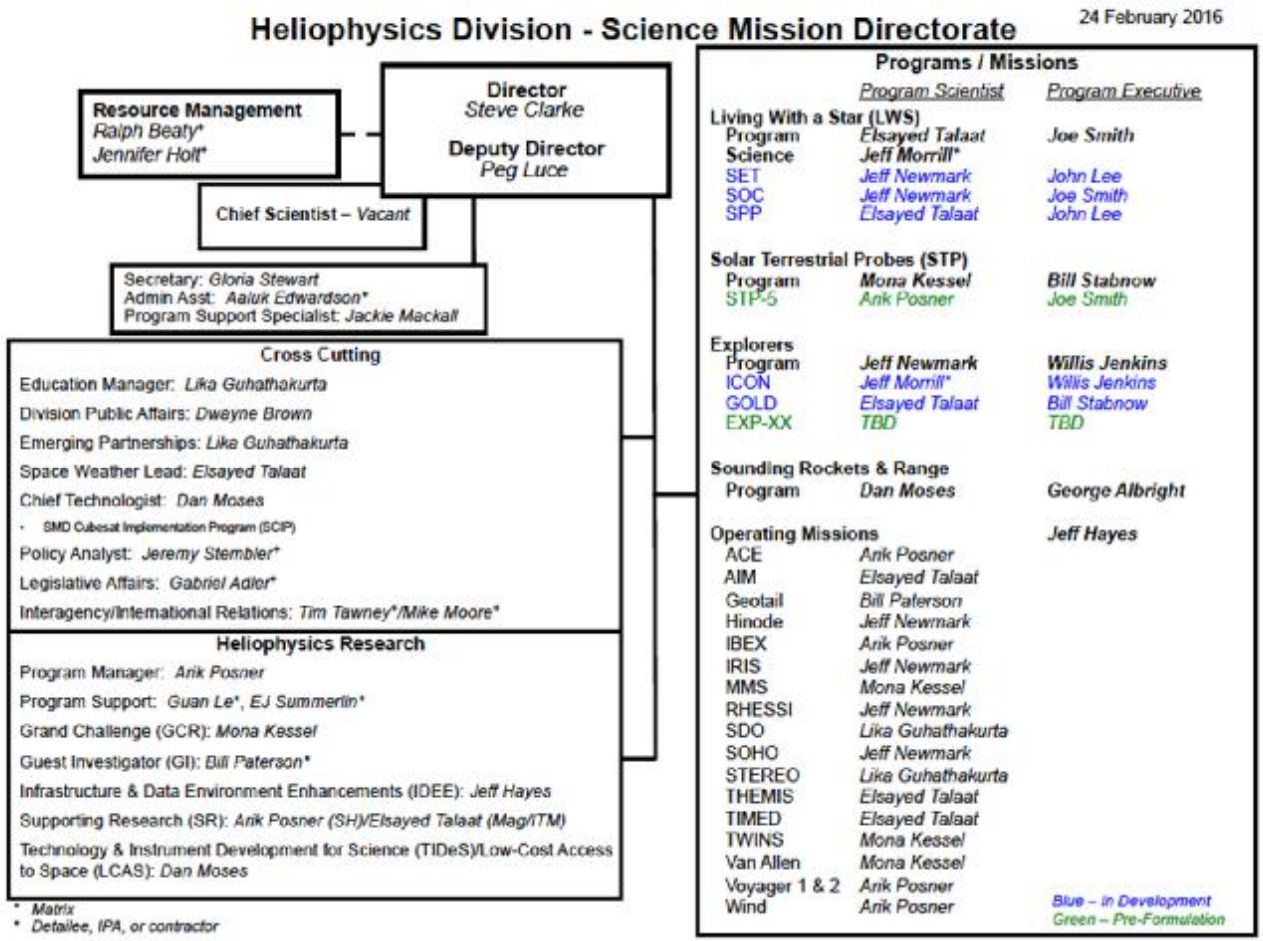
- Go through our report to the NASA Science Committee
- Steps through the agenda from our recent meeting
  - March 1-2, 2016 at NASA HQ
- Go through each of our comments, findings, and recommendations
- You might get some of this tomorrow from Steve Clarke
  - I see that he is on your agenda
  - This presentation is from the HPS perspective
  - He will give the NASA HQ perspective

Who are we?

- HPS Membership:
  - Vassilis Angelopoulos (University of California, Los Angeles)
  - Spiro Antiochos (NASA Goddard Space Flight Center)
  - Jill P. Dahlburg (Naval Research Laboratory, Chair)
  - Bart W. de Pontieu (Lockheed Martin Space Systems Corporation)
  - Mihir I. Desai (Southwest Research Institute)
  - Heather A. Elliott (Southwest Research Institute)
  - Michael W. Liemohn (University of Michigan, Vice-Chair)
  - Ralph L. McNutt, Jr. (The John Hopkins University)
  - Neil Murphy (Jet Propulsion Laboratory)
  - James M. Russell III (Hampton University)
  - Roger W. Smith (University of Alaska Fairbanks)
  - W. Kent Tobiska (Space Environment Technologies)

NASA HPD Assignments

- A bit of shuffling in the Program Scientist duties at NASA HQ



NASA Heliophysics Budget

- The Heliophysics budget is rising

Year	2015	2016	2017	2018	2019	2020	2021
Budget	$636M	$651M	$699M	$684M	$698M	$715M	$724M

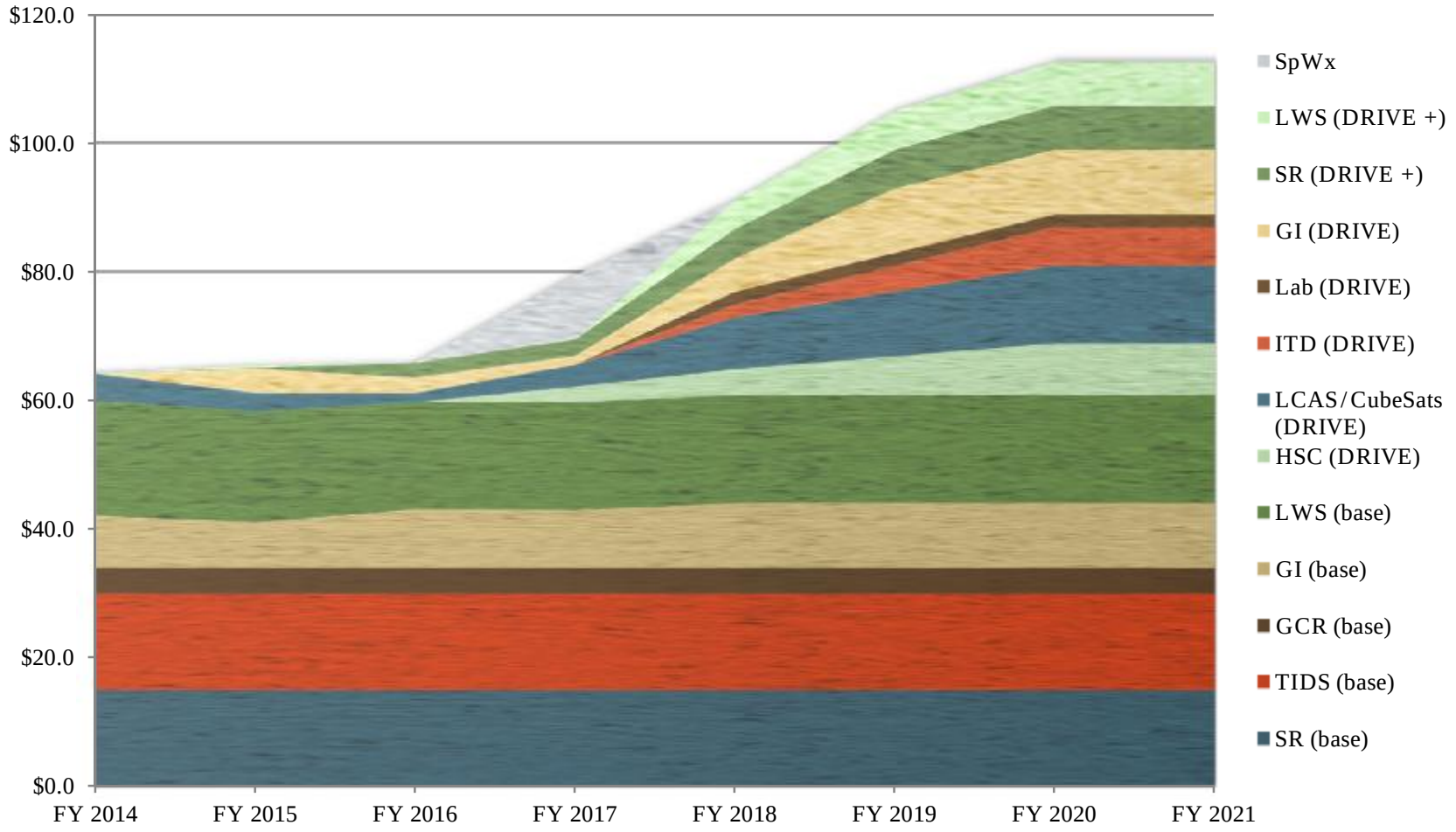
  - 2015 and 2016 are real, 2017 onward is the request
  - 2017 includes $25M in “mandatory spending”

- Heliophysics division (HPD) budget is steadily increasing for the next 5 years (notionally)

HPS Comments

- The HPS wishes to congratulate the HPD on how well the Division fared in the NASA FY17 budget request and we are looking forward to the future with the National Space Weather Action Plan “front and center”
- The HPS would like to express its sincere thanks to Steve Clarke for taking care to ensure that attention continues to be focused on the important Decadal Survey DRIVE initiative.

Heliophysics ROSES Program

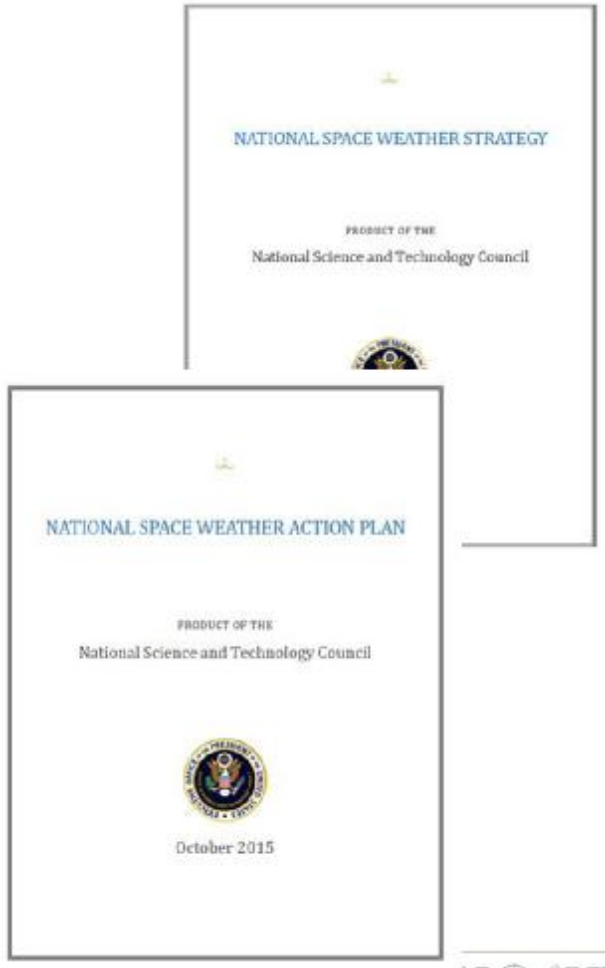


HPS Comments

- The HPS commends the HPD for taking a proactive stance to utilize funds unleashed due to the success of current projects in development, or new funds that are becoming available, for the betterment of DRIVE.
- The HPS is pleased to see the diversified nature of the HPD allocations, in science centers, grants, instrument development, and small satellites.

Living With a Star

- Dr. Elsayed Talaat (NASA HQ) is the new LWS Program Scientist
- The big news: NSWS and SWAP
  - There is now a US Government space weather strategy and action plan
  - NASA HPD hopes to play a key role in implementing this
- Including $10M in mandatory spending in the FY17 request



HPS Recommendation

- Recommendation to the HPD: The HPD should investigate developing a broad community program by which the HPD would effectively provide the science research and analysis required for the success of SWORM
  - SWORM: Space Weather Operations, Research, and Mitigation
    - Intergovernmental initiative to implement NSWS/SWAP

Heliophysics Communications

- Karen Fox (NASA GSFC and HQ) talked to us about HPD communications
- Old style of issuing press releases doesn't cut it anymore
  - Even the "new style" of having a social media presence to direct traffic to your website doesn't cut it anymore
  - The latest thing: people don't click the link that much anymore; the 140-character Twitter post is *all* that they read
  - Even communicating with the press is done through Twitter and Facebook
- NASA has 6 big communication campaigns
  - Heliophysics is not directly mentioned, but ~fits all of them

HPS Recommendation

- Recommendation to the HPD: The visibility of heliophysics programs and activities in NASA communication campaign should be elevated as poart of the ongoing, coordinated HPD communications strategy by defining a new campaign focused on the National's rapidly increasing space-based assets.
  - The adage "out of sight, out of mind" comes to mind
  - At the very least, use a logo to provide commonality to HPD-related communications

Fueled Payload Adapter Fittings

- Dr. Dan Moses (NASA HQ) provided an update on fueled Payload Adapter Fittings (PAFs)
- We asked for this presentation because the the use of fueled PAFs was rather vague in mission Announcements of Opportunity
  - The vagueness means that TMC panels would view this as possibly high risk, even though they are proven

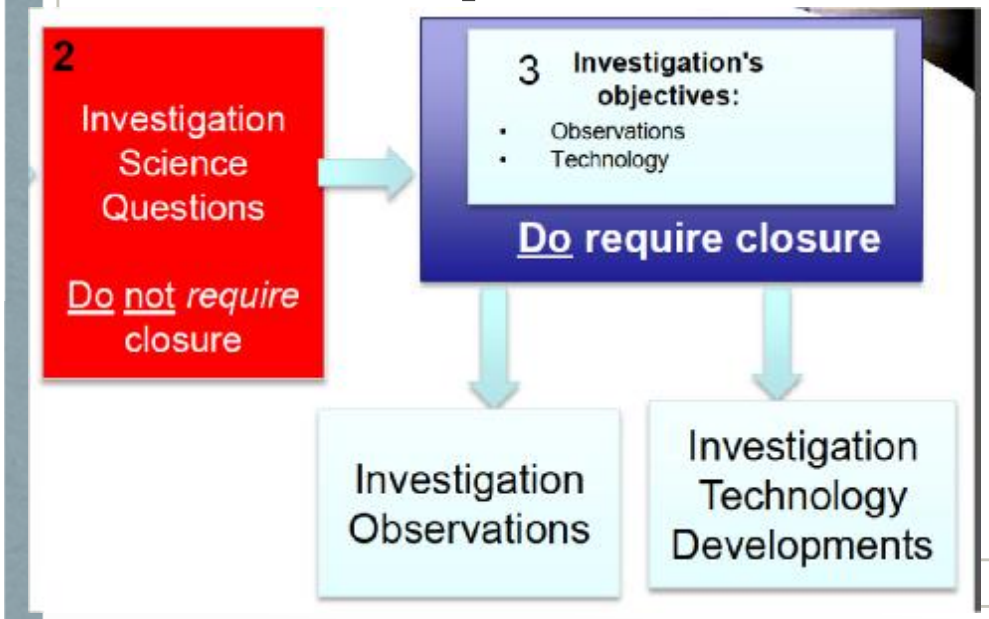
LCROSS and Centaur Upper Stage

HPS Comment

- Congratulations to the HPD for their investigation and positive findings on the use of fueled PAFs. These PAFs will enable a wider range of Small Explorer mission orbits to be attained, provide deployment sequence flexibility and allow upper stage restart capability at reduced costs to NASA. A system carrying a 0.4 m^3, 180 kg payload was demonstrated in 2009 on the LCROSS (Lunar Crater Observation and Sensing Satellite). PAFs with propulsion are currently available from a number of vendors.

NASA Risk Tolerance

- Dr. Jeff Newmark gave us an update on risk tolerance for NASA missions
  - Flight program governance: 7120.5E vs 7120.8
  - Tailoring risk for mission resource level
  - Risk posture in the H-TIDeS call



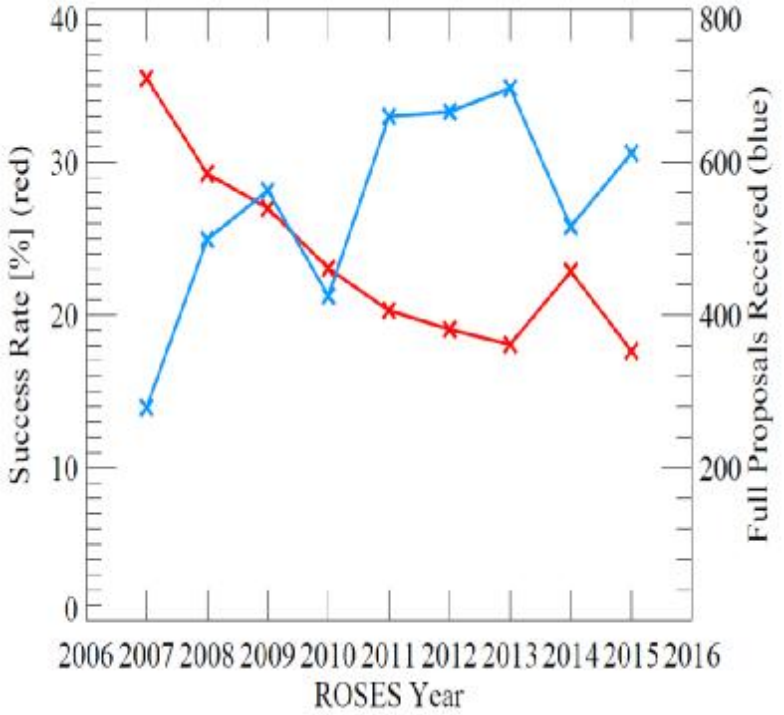
No Confusion !
Investigation science questions do *not* require closure!

HPS Comment

- The HPS wishes to thank Jeff Newmark for his very comprehensive and helpful briefing, and plans to take up this topic further at the HPS summer meeting, with an emphasis on CubeSats.
  - Why more talk after a “comprehensive briefing?”
  - Because NASA HPD is planning to require significant levels of reporting to HQ about the progress of LCAS missions, including an initial Project Plan, yearly Interim Reviews, a Confirmation Review, Annual Reviews, and Final Review.

More on ROSES

- Drs. Mona Kessel and Arik Posner (NASA HQ) briefed us on the 2015 ROSES results, 2016 call, and survey of panelists
- ROSES 2015 results: below 20% success rate
- ROSES 2015 survey: panelists feel they are highly qualified and did a great job
- ROSES 2016: several rather big changes, including new elements



HPS Comment

- The HPS was glad to hear that, for 2016:
  - The Guest Investigator (HGI) proposal length will be reduced to 10 pages from 15 pages;
  - The HPD canceled the Step-1 review, so there will be no 2016 “discouraged” proposals. (However, it is important to note that Step-1 proposals continue to be mandatory, and that Title, Team, and Topic cannot change after a Step-1 proposal submittal, from a perspective of development of proposal review teams.)
  - Supporting Research (HSR) award sizes will be increased to $200k/y.

HPS Recommendation

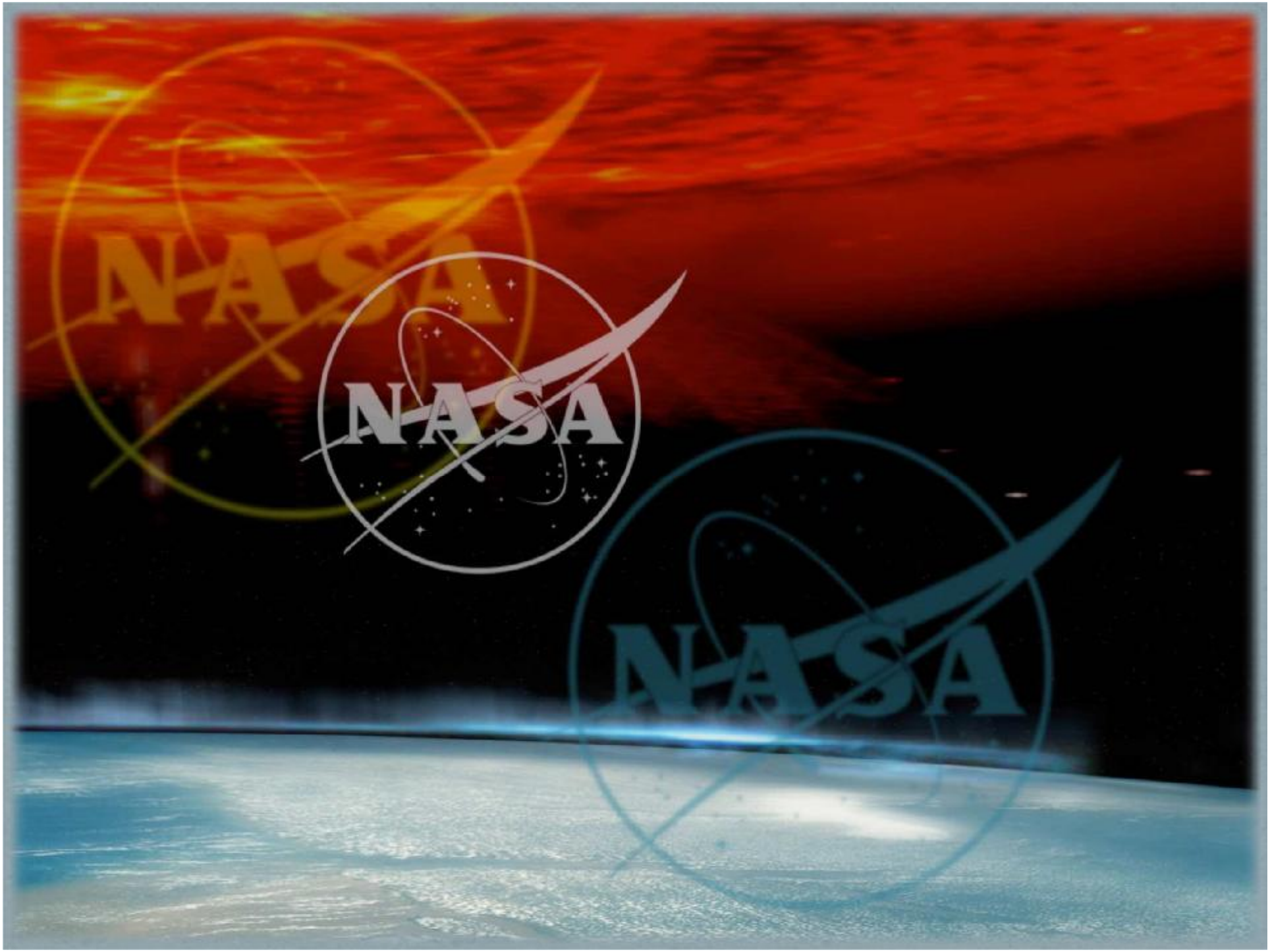
- Recommendation to the HPD: The HPD should assess the possibility of creating a new ROSES program element that exclusively supports early career researchers.
- Perhaps something akin to NSF CAREER grants, but not limited to tenure-track faculty.
  - We recommend something not so big that the researcher doesn't have to propose at all for the next 5 years, but large and long enough to foster a successful start for a young researcher
- We would welcome CSSP comment about this option.

HPS Recommendation

- Recommendation to the HPD: The HPD should define and provide an implementation plan and timeline for the Heliophysics Science Centers (HSCs) called for in the DRIVE initiative. Means of providing community input and concurrence with the approach advocated should be provided, e.g., via a “tiger team” of community researchers. Specifics should be presented to the HPS at its next meeting.
  - We would be interested in CSSP comment about the definition and scope of these Science Centers.

HPS Recommendation

- Recommendation to the HPD: the HPD should consider developing material for and regularly holding Proposal Writing Workshops to instruct researchers in the best practices of successful proposals.
  - Some comments from the panelists noted that some proposals were not focused and lacked elements that lead to success.
  - NASA should share these “best practices” with the community.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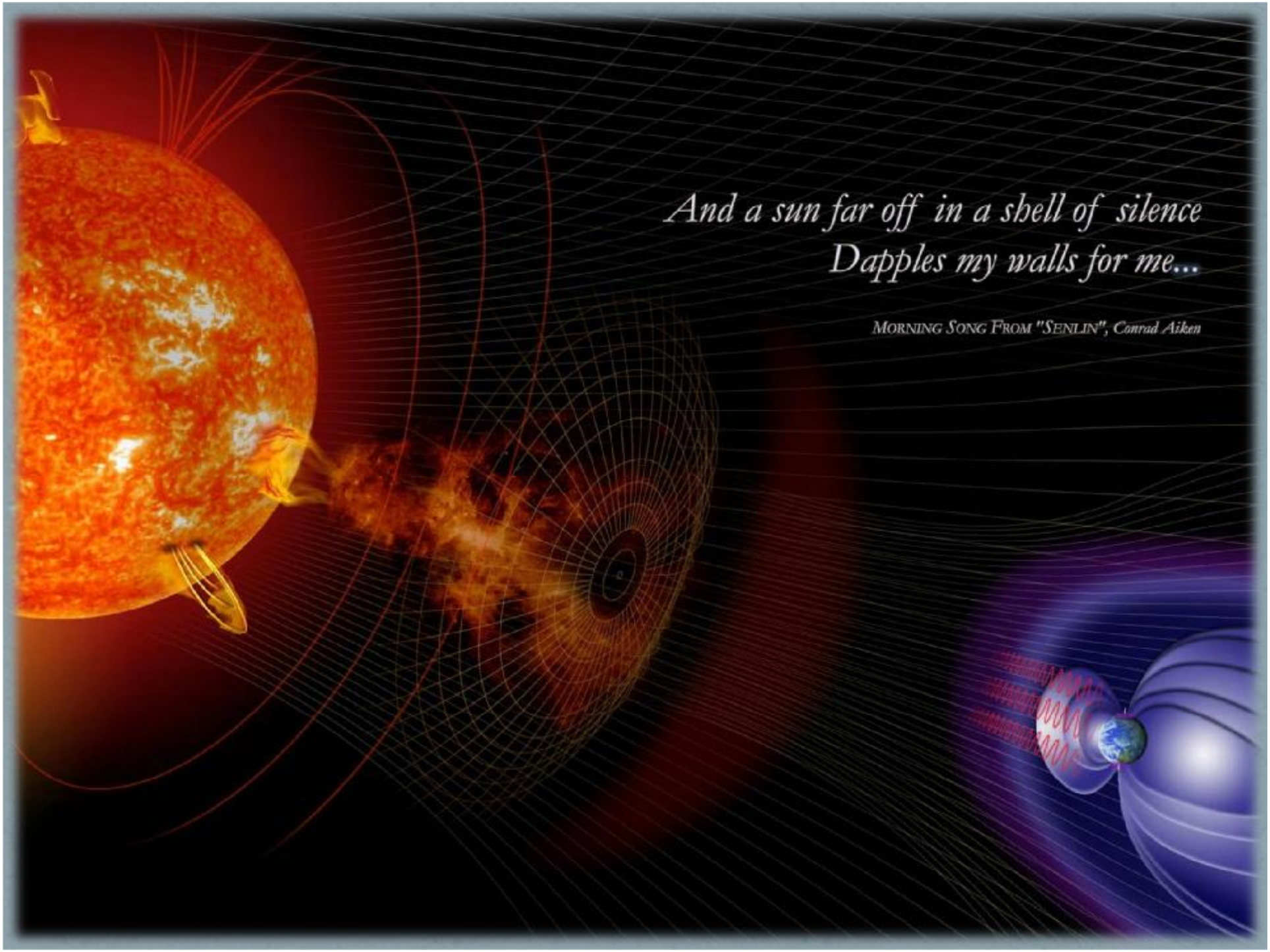
Heliophysics Subcommittee Report

NASA Heliophysics Subcommittee (HPS)

March 2016


And a sun far off in a shell of silence
Dapples my walls for me...
MORNING SONG FROM "SENLIN", Conrad Aiken