

National Aeronautics and
Space Administration



EXPLORE SCIENCE

Dr. Stephen A. Rinehart
Director, Planetary Research Programs
Planetary Science Division
R&A Town Hall

March 18, 2020



COVID-19 and PSD

Starting with the Elephant in the room (another, socially distant room): What impact will COVID-19 have on R&A? The full impact cannot yet be discerned, but for now:

- Review panels are all being done virtually.
 - We expect review panels to last longer, as panelists will have other responsibilities (e.g. childcare)
 - This is being done for all of SMD, and we are (both as a Directorate and as a Division) collecting lessons learned about how to best do this
- Effects on due dates:
 - Step-2 proposals being delayed by 2 weeks (only ICAR for now)
 - Step-1 proposals **may** be converted to mandatory NOIs
 - We are monitoring this as we go and may make more changes if needed
- Effects on selections:
 - **Right now**, we do not anticipate a significant delay in selections
- Effects on existing awards:
 - None

Why Does NASA have an R&A Program?

From the NASA Strategic Plan (2018):

- **Strategic Objective 1.1: Understand The Sun, Earth, Solar System, And Universe**

From the NASA Science Plan (2014):

- “Ascertain the content, origin, and evolution of the solar system and the potential for life elsewhere”
- “Competed research and analysis enables utilization of the data returned by planetary science missions. Discoveries and concepts generated by the Planetary Science Research and Analysis (R&A) Program are the genesis of scientific priorities, new mission concepts, and science instruments, and provide the crucial context within which mission data are interpreted.”

A circular portrait of Meagan Thompson, a woman with short dark curly hair and glasses, smiling. The background of the portrait is a blurred indoor setting.

Meagan
Thompson:
R&A Program
Executive, Juno
PE, PDS PE

A Quick Primer on Federal Budgets

There are many different budgets: all of them matter...

- NASA budget request
- President's proposed budget
- Budgets that come out of House and Senate committees
- Budgets that come out of the full House and Senate
- Final Budget, passed by both Chambers and signed by the President

Note that the numbers can vary substantially between these different budgets!



Sarah Noble:
VIPER PS,
Psyche PS,
SSERVI, PSTAR

Operating Plans

When we have a budget, NASA puts together the Operating Plan

- Details how NASA will use appropriated money
- The Op Plan goes to Office of Management and Budget and to Congress for approval (the process can take months!)
- Only once we have an approved Op Plan do we **really** know how much money we have to spend
- Although the total planetary appropriation is \$1.3M more than the President's Budget Request, after all the earmarked appropriations are accounted for, the FY20 appropriated budget is \$67.8M less than the President's Budget Request in the "all other planetary" category, which includes our core research programs

The proposed Op Plan restores a significant amount of R&A budget

- **You can help!** Asking for an Op Plan with additional money for R&A is met with skepticism when there is a lot of unspent money out there. **Spend your money or talk to your Program Officer about rephrasing it!**



Viet Nguyen:
HotTech,
PESTO

Budget Impact on Selections

Without knowing what our budget will be, how do we know how much to put in each program? (Answer: We don't, really). Continuing Resolutions also are a challenge.

- When the budget comes in, if it is less than we were planning to, programs with selections still to be made in that year take the brunt of it.
- If the budget comes in larger than we were expecting, then programs earlier in the year took a hit.
- Solution: Reduce selections in **all** programs throughout the year by making some proposals “selectable” (neither declined nor selected). When we have the Op Plan, make additional selections from the “selectable” pool of all programs as budget allows.
- **You can help!** Be aware of the budget context. Be patient.



Doris Daou:
XRP Lead, SSO,
SIMPLEX,
Decadal/PMCS

Planetary Science Division - ROSES 19

ROSES 19 - Program Name	Step-1 Due Date	Step-2 Due Date	Panels Held	Selections/ Proposals	Selection Dates	Days from Step-2 to Select
Exoplanets (XRP)	Solicited through ROSES 18 Amendment					
Planetary Protection Research (PPR)	Not Solicited					
Emerging Worlds (EW)	04/16/2019	06/12/2019	Yes	20/100 (20%)	11/04	145
Development & Advance of Lunar Instruments (DALI)	04/16/2019	06/12/2019	Yes	5/44 (11%)	11/14	155
Solar System Obs. (SSO)	04/16/2019	06/12/2019	Yes	9/49 (18%)	1/21	223
MatISSE	Not Solicited					
Laboratory Analysis of Returned Sample (LARS)	04/24/2019	06/25/2019	Yes	7/23 (30%)	12/06	164
Planetary Data Archiving, Restoration, Tools (PDART)	05/09/2019	07/11/2019	Yes	17/112 (15%)	11/12	124
Exobiology (EXOB)	05/13/2019	06/12/2019	Yes	17/159 (11%)	11/25	166
Cassini Data Analysis (CDAP)	05/16/2019	07/18/2019	Yes	17/61 (28%)	11/15	120
New Frontiers Data Analysis Program (NFDAP)	05/30/2019	08/01/2019	Yes	11/27 (41%)	11/15	106
Planetary Science and Technology Through Analog Research (PSTAR)	07/25/2019	10/10/2019	Yes	XX/48	TBD	
Planetary Major Equipment/Facilities (PMEF)	08/20/2019	10/22/2019	No	TBD	TBD	
Mars Data Analysis (MDAP)	08/22/2019	10/24/2019	Yes	XX/101	TBD	
Discovery Data Analysis (DDAP)	08/29/2019	11/01/2019	Yes	XX/43	TBD	
PICASSO	09/20/2019	11/20/2019	Yes	XX/97	TBD	
Early Career Award (C.19)	N/A	12/02/2019	Yes	XX/35	TBD	
Habitable Worlds (HW)	11/15/2019	01/17/2020	No	XX/65	TBD	
Solar System Workings (SSW)	11/22/2019	02/06/2020	No	TBD	TBD	
Lunar Data Analysis (LDAP)	11/26/2019	02/27/2020	No	TBD	TBD	

PSD – ROSES 20

- Full list of appendices for ROSES20 available online on NSPIRES
 - Due dates for programs similar to last year
- Changes for ROSES20
 - C.21 Double Asteroid Redirection Test (DART) – PSP
 - C.22 Radioisotope Power Systems Enabling Missions with Research and Technology (REMBRandT)
 - C.24 Yearly Opportunities for Research in Planetary Defense (YORPD)
 - C.25 Mars Organic Molecule Analyser (MOMA) – PSP
 - E.7 Support for Open Source Tools, Frameworks, and Libraries
 - E.8 Supplemental Open Source Software Awards

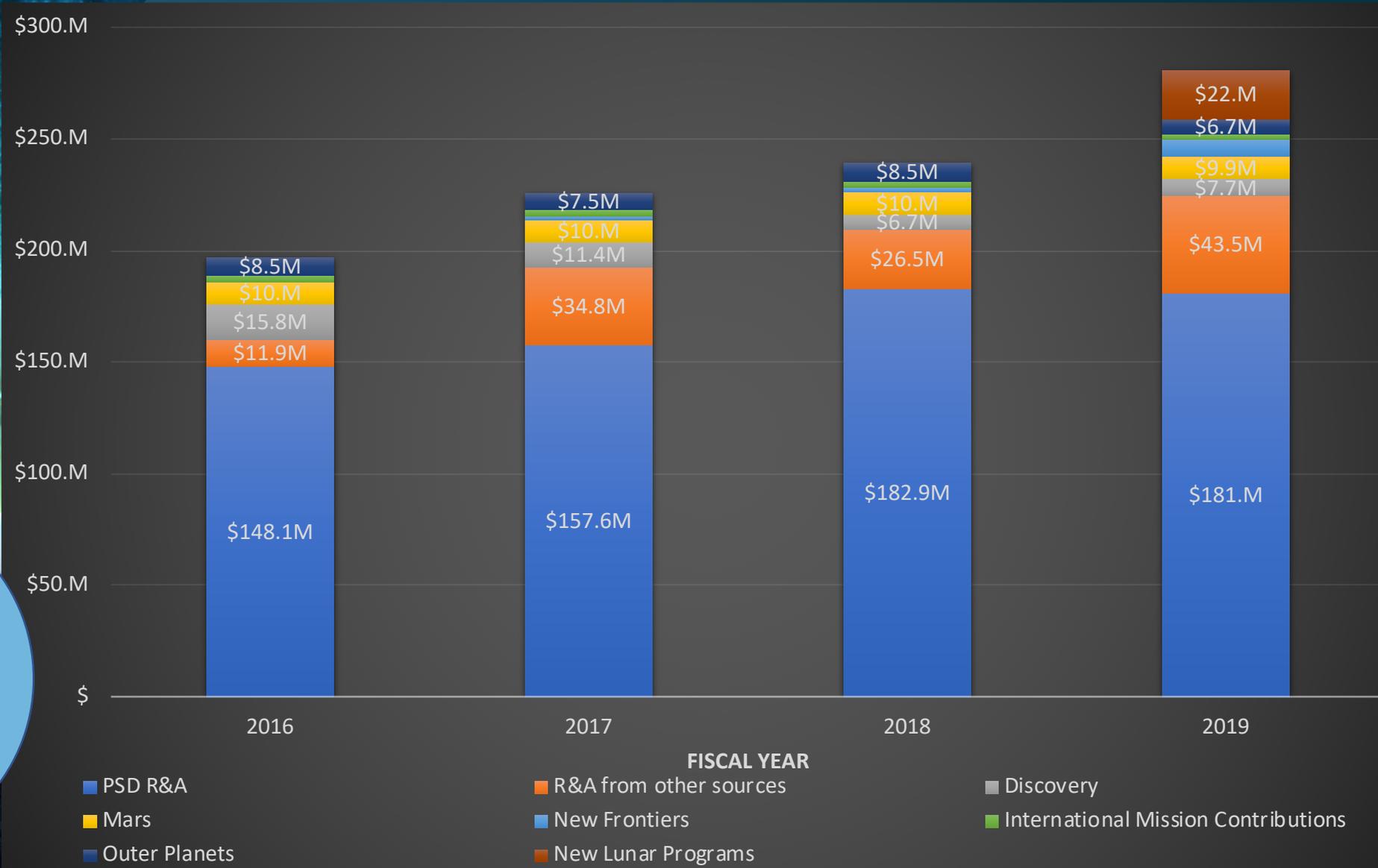


KC Hansen:
PDART (lead),
MAVEN PS,
New Horizons
PS

Overview of Research Programs Budgets – Story in Progress



Henry Throop:
NFDAP Lead,
CDAP Lead,
SSW



Facilities

NAS Report: “Strategic Investments in Instrumentation and Facilities for Extraterrestrial Sample Curation and Analysis” (2019)

- Valuable recommendations made, absent budgetary considerations
- Focused on a facilities needed for sample return
- We are exploring ways to provide support for PSD-relevant facilities and to respond to the NASEM report
 - Enable development and upgrades of valuable facilities
 - Ensure support for the community
 - Provide effective oversight

The Plan for Facilities (caveat: this is in development). Have two calls replacing PMEF:

- PME
- Planetary Facilities

PME:
Every year
\$1M/year
only with associated
awards.

Facilities:
Every other year
~\$5M for new awards --
community impact a
merit factor



Lucas Paganini:
SSO Lead, SSW,
Akatsuki

Facilities: Planetary Major Equipment

PME:
Every year
\$1M/year
only with associated
awards.

Planetary Major Equipment

- Much like the current PMEF program, but...
- 1-2 year efforts, total funding for all years of all awards of ~\$1M/year
- No hard cap on cost
 - Soft cap from the size of the program
- Only with associated awards; no augmentations



Tom Statler:
Lucy PS, DART
PS, MMX PS,
DART PSP Lead

Facilities: Planetary Facilities

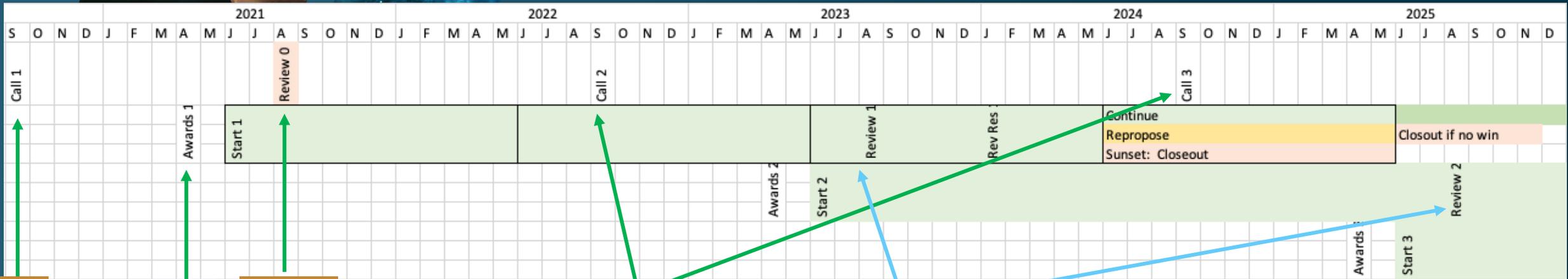
- Every 2 years, with ~\$5M available for year 1 of new awards.
- Supports proposals to either:
 - Operate/maintain/upgrade existing facilities
 - Establish and support new facilities
- Provide up to 4 years of support
- Cooperative agreements or NASA Centers only
- **Must** provide community access
 - Minimum 25% (TBD)
 - Peer review would evaluate plan for such access
- All funded facilities reviewed in year 3 of the effort
- Efforts are renewable for up to 4 more years, depending on feedback from the review.

Facilities:
Every other year
~\$5M for new awards --
community impact a
merit factor



Becky
Mccauley-Rench:
PDS,
Communication,
PPR Lead

Facilities: The Plan Forward



First call: 9/20

Awards made: 4/21

Review of existing Facilities (Review 0)

- Calls every 2 years; reviews every 2 years (~half way between calls)
- Reviews would be similar to a Senior Review
- Three outcomes from reviews:
 - Continue (renew for additional years)
 - Repropose (continue for fourth year while the team repropose; if unsuccessful with the proposal, provide closeout funding.
 - Sunset (closeout the effort during year 4)
- We anticipate that the program would ramp up to \$10M/year relatively quickly, perhaps growing as large as \$15M eventually.
- There are still **many** details to sort out

Lunar Samples: History

History:

- Gray area between EW and SSW for these proposals has made it hard to justify relevance
- Concerns about negative effect gray area had on research being proposed, for example, people being forced to split up projects or otherwise contort their research in order to make it fit in one call or the other
- Concerns about people repurposing proposals and submitting the same proposal to both calls
- Proposals in SSW have been sent to EW to take advantage of reviewers' expertise



Melissa Morris:
EW Lead, Orex
Deputy PS

Solution had been: Review all proposals together (in EW), and adjust funding levels accordingly in EW and SSW

Lunar Samples: Now

Recent History:

- SSW19 received a large enough number of proposals to ensure sufficient depth of reviewer expertise
- We have heard the community's concerns about reducing the number of proposing opportunities

Solution: Status Quo (almost)

- For now, we will abandon idea of sending all lunar sample proposals to EW
- Submit your proposal to the call you think is most appropriate and justify it. This will not affect your merit score.
- However, you will not be allowed to submit substantially similar proposals to both SSW and EW in the same ROSES year.



Delia Santiago-
Materese:
SSW Lead,
HW, DAPR

Gaps RFI (What We Received)

The NASA SMD is soliciting information on research that is aligned with the agency mission and SMD's Science Plan but falls in a gap between current solicitations, possibly because it is interdisciplinary or interdivisional.

104 responses submitted

~40% NASA Centers, ~25% universities, ~25% science centers/labs, ~10% private sector

Some themes:

- “Earth in context”: Earth / Sun interaction + upper atmosphere, Earth as one of the inner planets, Earth in an exoplanet context, and ancient Earth & habitability.
- Cross-divisional technology, or software & data analysis techniques, or lab-astro
- Interdisciplinary / cross-divisional research submitted previously and not funded



Tom Wagner:
Discovery PS,
DDAP Lead

Gaps RFI (What We Are Doing)

Next Steps:

- Each proposal (~40 of interest to PSD) being reviewed and categorized
 - How does research fit within the mission of division / directorate / agency?
 - Can it be submitted within current solicitation as written or does it require modification of language?
 - Are there barriers to acceptance?
- Will present a thorough analysis and recommendations to SMD in a few months.



Kelly Fast:
Planetary
Defense,
YORPD Lead

Dual-Anonymous Peer Review

- SMD is strongly committed to ensuring that the review of proposals is performed in an equitable and fair manner that reduces the impacts of any unconscious biases.
- Motivated by, and modeled upon, a successful study conducted for the Hubble Space Telescope, SMD is conducting a pilot program in ROSES-2020 to evaluate proposals using dual-anonymous peer review (DAPR).
- In PSD: Habitable Worlds (E.4, Step-1 due 11/17/20)
- More information at:

<https://science.nasa.gov/researchers/dual-anonymous-peer-review>

- References:

<https://arxiv.org/pdf/1907.05261.pdf>

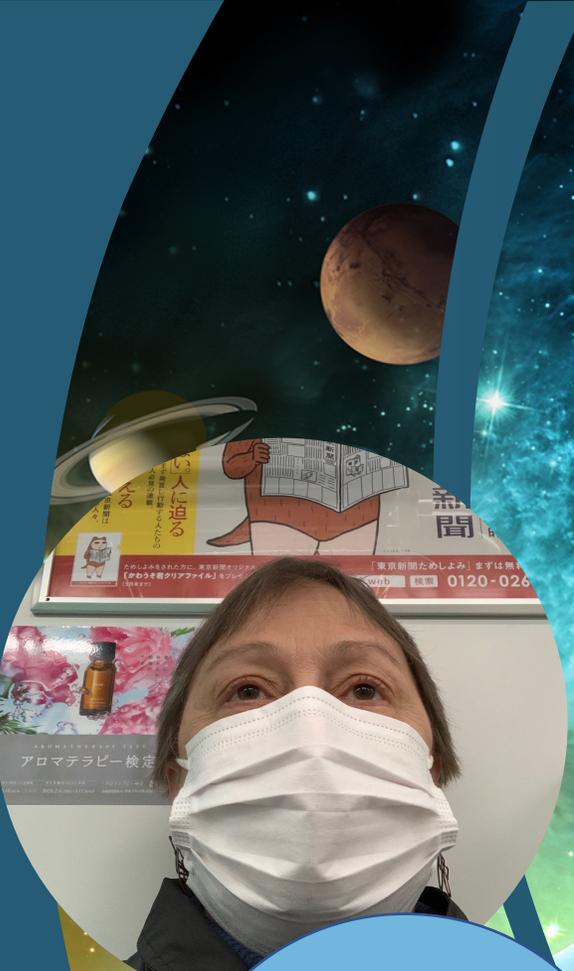
<https://physicstoday.scitation.org/doi/10.1063/PT.6.3.20190301a/full/>



Adrian Brown:
SSW, PDART,
MDAP

Dual-Anonymous Peer Review

- In dual-anonymous peer review, not only are proposers unaware of the identity of the members on the review panel, but the reviewers do not have explicit knowledge of the identities of the proposing team during the scientific evaluation of the proposal.
- Detailed instructions will be posted on the homepage of the program element in NSPIRES on how to anonymize their proposals.
- SMD will hold a series of webinars on the process well in advance of proposal due dates. (We anticipate another webinar prior to the HW Step-1 due date).
- After proposals are evaluated on scientific merit, reviewers will have access to a team qualifications document, in order to provide a final check on the qualifications of the proposing team to carry out the proposed scientific investigation.



Mary Voytek:
Senior Scientist
for Astrobiology,
HW lead,
PSTAR lead,
ICAR lead

Dual-Anonymous Peer Review (Feedback)

- *“There was a noticeable shift in the depth of discussions as well. It was clear that reviewers had read the proposals very diligently, and that without the distraction of names and institutions, there was no recourse but to focus on the proposed science.” (P. Natarajan, chair of the Cycle 26 TAC)*
- *“Discussions at both the panel level and TAC level focused predominantly on whether the science was novel, impactful, and feasible with HST, and not on whether the proposers had the expertise to carry out the proposals.”*
- *“Several TAC members noted that they felt that the discussions at both the panel and TAC level seemed more collegial and less emotionally charged than previous TACs, perhaps because either positive or negative feelings about the people involved in the proposal were largely removed.” (R. Somerville, chair of Cycle 27 TAC)*



Shoshana
Weider:
LDAP Lead,
SSW, Exec
Scientist...

The Planetary Data System Customer Satisfaction Survey

This survey will be used to set the future priorities of the Planetary Data System (PDS). Tell us areas for improvement, what new services are needed, and ensure the needs of the scientific community are met both now and in the future.

You can help NASA in defining the next generation
of your PDS.

For more information:

<https://pds.nasa.gov>



Haris Riris:
MatISSE Lead,
PICASSO,
PESTO

Early Career Awards (ECAs)

- ECA first solicited in ROSES-2019
- Aim: to support the research and professional development of outstanding early-career scientists
- Basic eligibility:
 - PI on a ROSES grant from the previous two ROSES years (2017/18)
 - Within 10 years of receiving PhD (waivers are available for this criterion; see ROSES-20 solicitation for more information)
- This year:
 - 35 proposals
 - Overall quality of proposals was extremely high
- Proposals were evaluated on:
 - Merit of the proposed scientific and career development aspects of the work
 - Relevance to PSD
 - Cost reasonableness and realism
 - **Particular emphasis** was placed on the **potential impact of the award** for the PI's career in the planetary science community

Jeff Grossman:
LARS lead,
PME lead,
ORex PS

Mitch Schulte:
Mars2020 PS,
MDAP Lead,
MOMA PSP
Lead

ECAs: The First Selections!



Jessica Barnes
(University of Arizona)
Investigating the origins and evolution of volatiles in the inner solar system



Myriam Telus
(University of California, Santa Cruz)
Interdisciplinary laboratory for cosmochemistry and astrophysics

Mike Chaffin
(University of Colorado, Boulder)
Improving understanding of planetary volatile loss with atmospheric observations and models



Mohit Melwani Daswani
(JPL)
Experimental and computational thermodynamics, organics, and planetary structure modeling (ECTOPIaSM)



Alain Plattner
(University of Alabama, Tuscaloosa)
Source depth and spatial structure of Ganymede's magnetic core field from Galileo flyby data



Christine Hartzell
(University of Maryland, College Park)
JPL sabbatical and study of grains in rarefied flows

New Roles

Important changes for some of our folks in the past year:

- Tom Statler (CS: DDAP, EW)
- Lindsay Hays (CS: Exobiology, FINESST)
- KC Hansen (CS: New Horizons PS, OPAG)
- Meagan Thompson (CS: Program Executive for R&A)

We are still looking for more people to come help! If you're interested in coming to join us as an IPA, Detailee, or contractor, see our listings in the various newsletters (PEN, LPI, DPS) or email me.

We anticipate an advertisement for new Civil Servants coming later this year (next slide)



Lindsay Hays:
Exobiology
Lead, HW,
Astrobiology
program
deputy

Looking for More Good People!

A Direct Hire Authority (DHA) announcement will open on March 30 on USAJOBS for new Program Executives (search for HQ20H0010). **It will be open for 5 days, until April 3.**

The short period that the announcement is open is due to this new type of hiring authority, which streamlines the hiring process and assists with rapidly filling competitive positions when they arise.

After the announcement closes, the hiring certificate is valid for 6 months with this DHA recruitment.

We anticipate a similar announcement for Program Scientists later this year!

Your face
here?

New Faces

New people at HQ (in the last year)

- Lucas Paganini (IPA: SSO, SSW)
- Catherine Walker (NPMP: PICASSO)
- Haris Riris (detail from GSFC: MatISSE)
- Tom Wagner (CS from Earth Sciences: Discovery PS)
- Megan Ansdell (CS: exoplanet formation, machine learning)



Megan
Ansdell:
XRP, EW, SSW
(New)

Also: we're looking for people to self-nominate to be on the Planetary Science Advisory Committee. If you're interested and eligible, please apply!

