
National Aeronautics and
Space Administration
EXPLORE
SCIENCE
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Associate Administrator
NASA Science Mission Directorate
@Dr_ThomasZ
July 9, 2020

Bottom Line Up-Front

- New guidance and policies have been developed regarding R&A due to COVID-19
- Presidential Proclamations and visa policies related to COVID-19
  - NASA is in regular contact with the State Department and Department of Homeland Security to better understand these policies, and the potential impacts of these policies to our collaborative projects and programs
  - We will update the community as we learn more
- Missions are continuing to make progress; we are assessing cost and schedule impacts
- Mars 2020 Perseverance launch NET July 30, with launch window extended to August 15
- In response to the COVID-19 pandemic, NASA, ESA (European Space Agency), and JAXA (Japan Aerospace Exploration Agency) created the joint COVID-19 Earth Observation Dashboard (www.eodashboard.org)
- Received congressional approval for Biological and Physical Sciences Division (formerly SLPSRA) to join SMD; effective date July 19, 2020

Opportunities in SMD

- Thank you to those who applied for our recent Program Scientist (PS) and Program Executive (PE) announcements
- Announcement for Assistant Deputy Associate Administrator for Research (ADAAR) opens July 20 and closes on July 27
- Forthcoming announcement for Program Analyst positions in the Resource Management Division
- Forthcoming announcement for Program Executive position in the Office of the Deputy Associate Administrator for Programs focusing on Enterprise Protection and Cybersecurity
- **All upcoming announcements expected later this summer and will be released on www.usajobs.gov**

Welcome to the Team

Holly Degn

Director of the Resource Management Division

Jeff Gramling

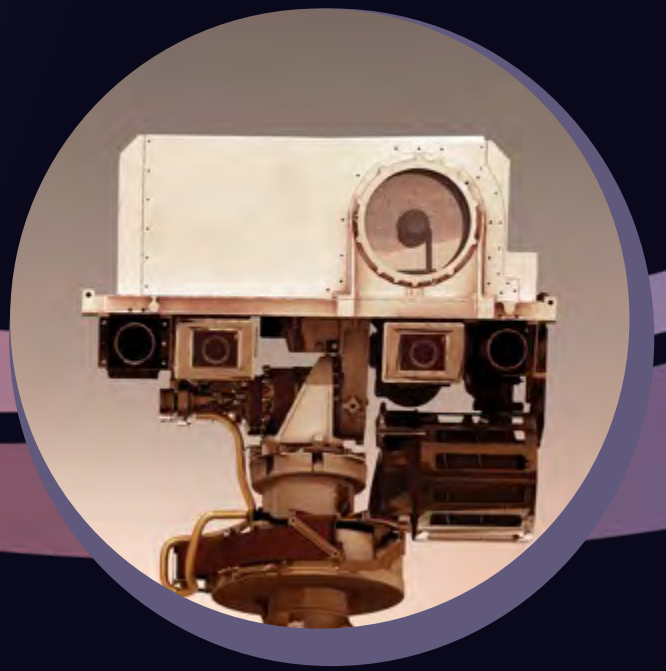
Mars Sample Return Program Director

Kirsten Petree

Executive Officer to SMD AA

R&A UPDATES

MISSION IMPACTS



DIVISION HIGHLIGHTS

R&A Grant Extensions

- SMD does not want the COVID-19 epidemic to massively derail the careers of future leaders; as such we continue to focus on mitigating the impacts of the epidemic
- Pursuing a three-pronged strategy for early career researchers
  - SPD-36: Current grantees may request funded extensions starting on October 1, 2020
    - Highest priority for funding is to support graduate students and postdocs
    - Next highest priority is for funding to support soft-money, early-career researchers
  - Temporary expansion of the NASA Postdoctoral Program (NPP) to more than the 124 Fellows funded by HQ
    - Size of expansion estimated by approx. 50%, but still under discussion as we learn more
  - Working with Centers to support/fund additional term CS hires focused on additional training and career growth (2-6 years)
- Since all three of these actions must be funded from the R&A Program, size of commitment TBD
- Please direct questions to Dr. Michael New, Deputy Associate Administrator for Research at michael.h.new@nasa.gov

R&A Program Updates

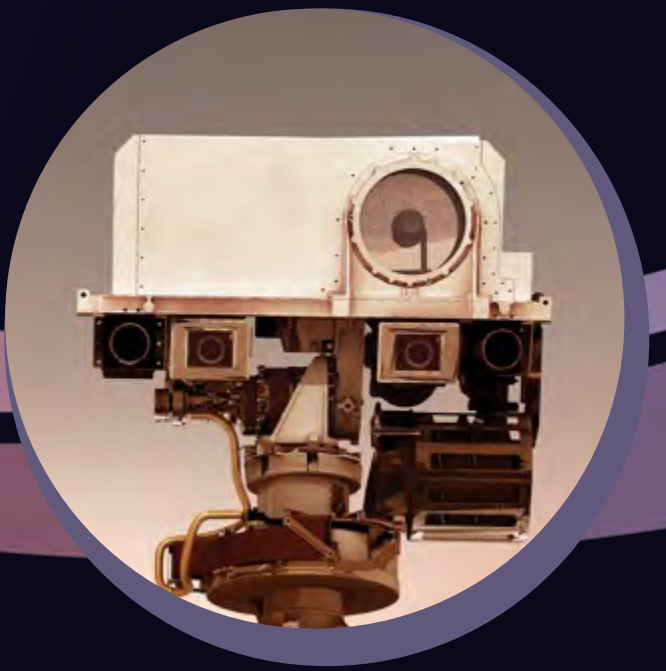
- Continuing to adjust proposal processes
  - Since March 13th, 18 Step-2 due dates have been delayed (one twice) and 2 solicitations have been canceled (MOMAPSP, Eclipse)
  - All review panels will be virtual until at least *September*. Extension of this policy to be decided in mid-Summer
  - Dual-anonymous Peer Review pilot program progressing as planned
- Adjustments to the NPP policy have been made
  - Remote on-boarding instituted
  - Project realignments (if needed) encouraged
  - For more, see https://npp.usra.edu/policies-procedures/index.shtml#notification
- Keeping track of changes to availability of J-1 (Research Scholar) visas
  - Likely to impact current and next rounds of NPP selections

Virtual Panel Reviews

- By all accounts, virtual review panels for ROSES solicitations are going well
- NASA Research and Education Support Services (NRESS) has stepped up to the challenge and has provided an effective set of tools
  - There are still kinks to work out for secret ballots
- Recruiting panelists for all-virtual review panels seems to be no harder than for in-person panel meetings and in many cases seems to be easier
- Lessons learned:
  - Practice sessions with panelists and Program Officers well before the start of the meeting are important
  - Group work time seems limited to about 4 hours/day
  - More short breaks are needed during working hours
- All-virtual review panels for ROSES programs will continue until at least September and it's likely they will continue until the end of the year
- We are thinking about continuing the practice, at least in part, even after in-person meetings cease to pose a health hazard

R&A UPDATES

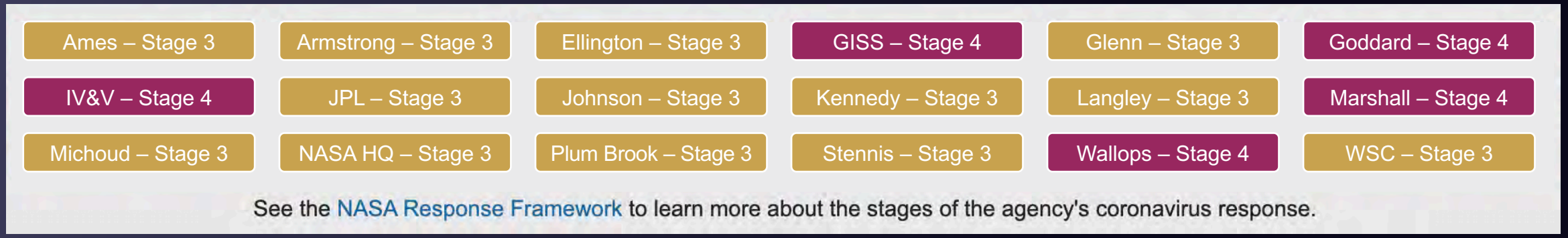
MISSION IMPACTS



DIVISION HIGHLIGHTS

NASA COVID-19 Response

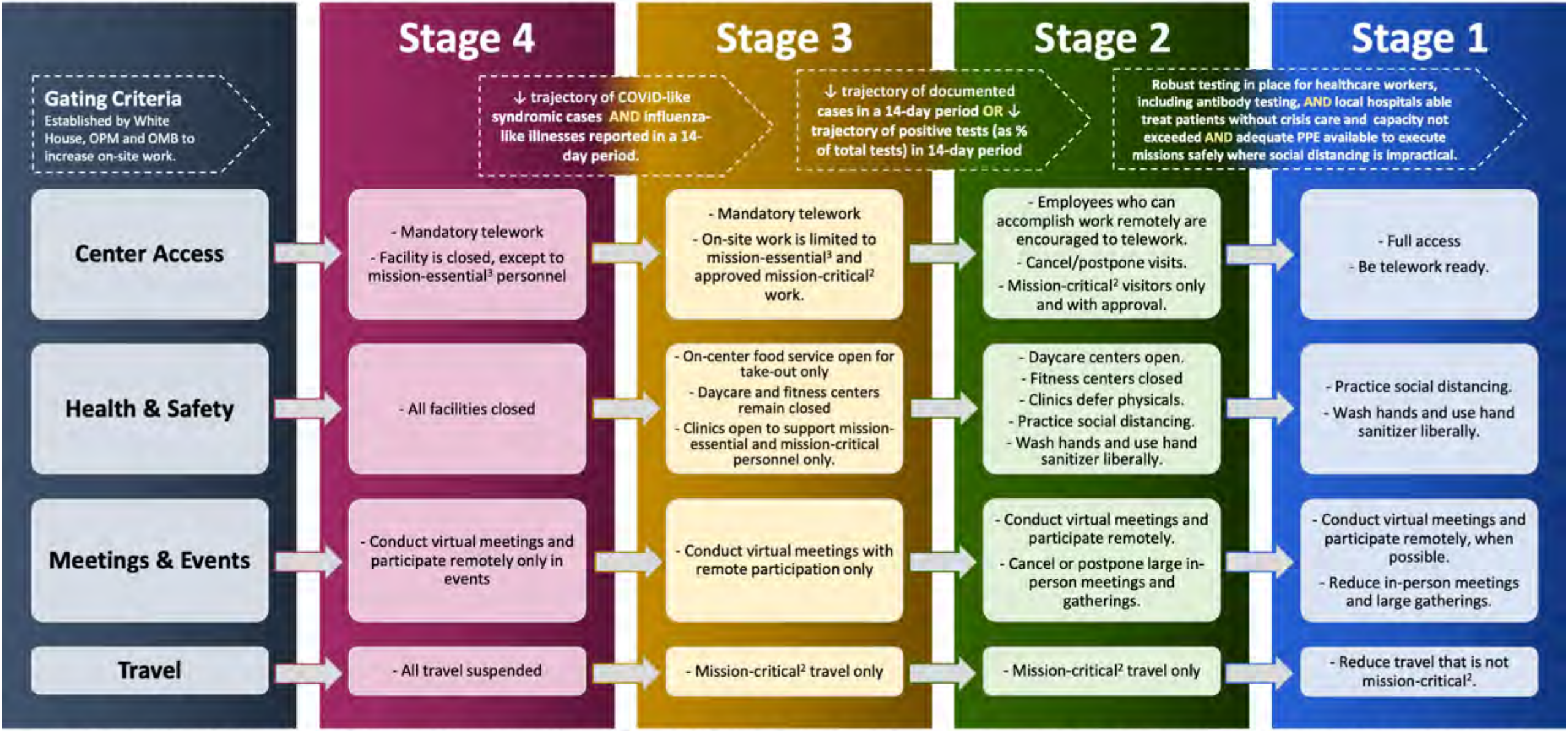
- All NASA Facilities Status as of July 9, 2020



- NASA leadership has developed agency wide guidance that takes into account guidelines provided by the White House and the Offices of Personnel Management and Management and Budget, and calls for a controlled, methodical and flexible return to on-site work

NASA Framework for Return to On-Site Work *(as of 3 May 2020)*

* This guidance applies to NASA civil servants. Contractor employees should reach out to their management.



1. All travel to or from centers at Stage 3 or higher, or to countries at Level 3 or higher, requires an approved Request for Travel Exception form. The Request for Travel Exception form is available on the NASA People website. For the latest CDC international travel information, go to https://www.cdc.gov/coronavirus/2019-ncov/travelers/index.html.

2. Mission critical: work that must be performed to minimize the impact on mission/project operations and/or schedules and cannot be performed remotely or virtually.

3. Mission essential functions: As described in the COOP, during an emergency, NASA's Primary and Mission Essential Functions (P/MEFs) must be continued with minimum interruption and are focused on protecting life and property as well as insuring agency leadership and control of the agency.

Astrophysics	Earth	Planetary	JASD
JWST	Landsat-9	**Mars 2020**	GOES-T
WFIRST	PACE	DART (APL)	GOES-U
WFIRST Coronagraph	NISAR	Lucy	JPSS-2
GUSTO	SWOT	Psyche	JPSS-3 and 4
IXPE	Sentinel-6 Michael Freilich	JUICE	SWFO-L1
Euclid	TEMPO	MMX MEGANE and P-Sampler	
SPHEREx	GeoCarb	Europa Clipper	**Helio**
ARIEL	EMIT	VIPER	HERMES
XRISM	MAIA	Dragonfly	IMAP
Balloons	CLARREO-PF	Luna-H Map	PUNCH
Athena, LISA	TROPICS	MOMA-MS	AWE
SOFIA	PREFIRE	Lunar Trailblazer	TRACERS
ESSIO	GLIMR	JANUS	EscaPADE
NPLP	TSIS-2		Sounding Rockets
CLPS - Astrobotics, Intuitive Machines, Masten Space Systems	Libera		
LSITP	Airborne Science		

Missions in Development: Return to Site Status

Status as of: 7/7/20

- Red: Work at Stage 4
- Green: Approved to work on site
- Yellow: Expected to Submit for Approval
- Grey: Not yet requested to work on site

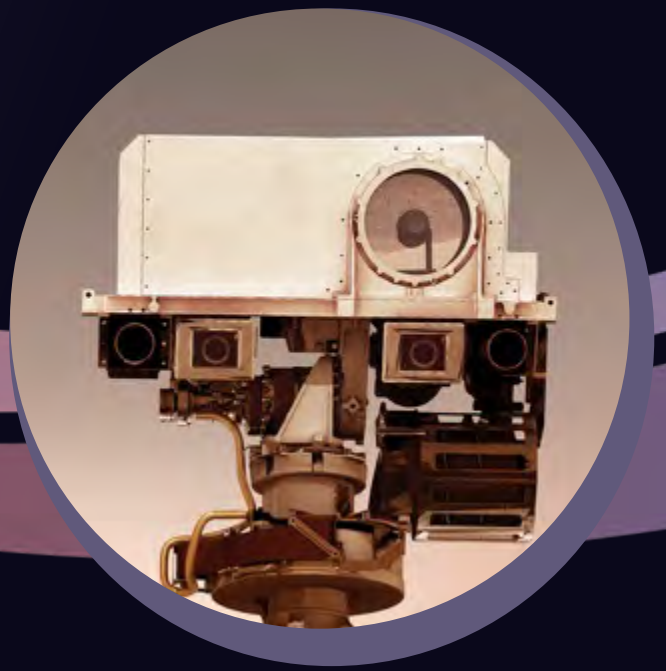

NASA
MARS
2020

SMD COVID-19 Impacts to Date

- SMD projects reported the following overall COVID-19 impacts:
  - Disruptions due to travel constraints, both domestic and international
  - Impacts to supply chain from both domestic and international vendors
  - Disruptions to on-site work at NASA centers affecting cost and schedule
  - Family care needs affecting efficiency
- These issues will continue to be challenging for re-start
- SMD continues to meet frequently with Center Directors to evolve the process as we ramp work back up
- Some of these cost and schedule impacts will be absorbed within the Agency Baseline Commitment (ABC), using HQ reserves (known as MD UFE) and schedule reserve or via descopes, so not all missions in Phase C/D will exceed their ABCs
  - All missions are expected to experience some increases to what otherwise would have been spent, delaying future missions unless funding relief is provided
  - Still assessing the impacts and will continue to refine before commitments or alterations to MA/ABC can be made, this needs to be addressed at portfolio level
  - Most Phase A-D cost growth will occur beyond FY20
- Life Cycle Reviews (LCR) and some Key Decision Points (KDPs) have continued to virtually report
  - It is expected that LCR's will continue unimpeded via virtual environment

R&A UPDATES

MISSION IMPACTS



DIVISION HIGHLIGHTS

SMD Division Updates

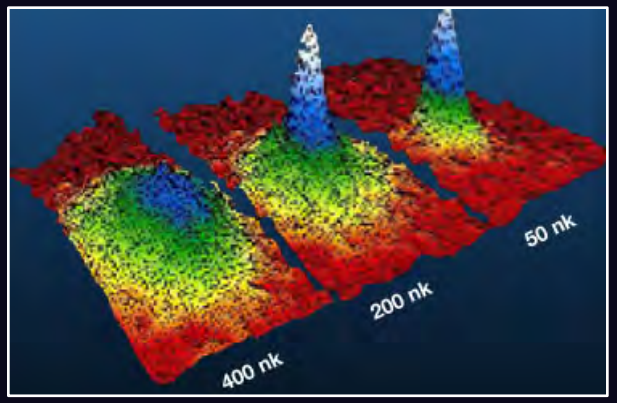
- Astrophysics – Dr. Paul Hertz
- Biological and Physical Sciences (BPS) – Dr. Craig Kundrot
- Earth Science Division – Dr. Karen St. Germain
- Exploration Science Strategy and Integration (ESSIO) – Dr. David Burns
- Heliophysics – Ms. Peg Luce
- Planetary Science – Dr. Lori Glaze

Astrophysics Division Highlights

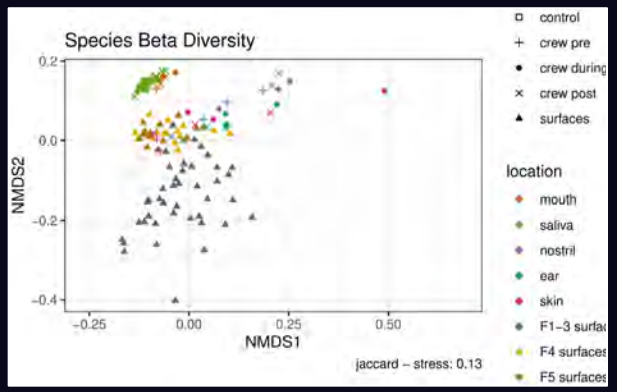
- Hubble Space Telescope successfully tested a hybrid gyro mode, provides robustness against potential gyro failure
- James Webb Space Telescope conducted a Pre-Environmental Review (PER), final environmental testing in August
- Nancy Grace Roman Space Telescope restarted work at NASA Centers, completed figuring and coating of primary mirror
- Imaging X-ray Polarimetry Explorer (IXPE) restarted mirror assembly integration and test at MSFC, conducted Spacecraft Integration Review (SIR) at Ball Aerospace
- Balloon Program assessing possibility of Fall campaign in Ft. Sumner NM in light of COVID situation; Winter campaign in Antarctica was cancelled due to COVID caused travel and logistics imitations
- Swift, XMM, and NuSTAR discovered Swift J1818.0-1607, a magnetar only 240 years old, magnetic field is 10^{14} Earth's magnetic field

BPS Division Highlights

- We are experimentalists using aspects of the spaceflight environment (e.g., reduced gravity, radiation) to probe biological and physical systems
  - We have a two-fold mission: pioneer scientific discovery and enable exploration
  - Space Biology: microbes, cells, tissues, plants, animals
  - Physical Sciences: fluids, combustion, materials, fundamental physics
  - Completing process of moving from HEOMD this month
- Decadal Survey: Finalizing BPS Statement of Task with NASEM
- The Cold Atom Laboratory, the first dual-species, multi-user facility for quantum gas research in space, has achieved the first-ever Bose-Einstein Condensate (BEC) in orbit on the ISS
  - Over 100,000 PI experiments performed on cooling to sub-nanoKelvin temperatures, atom lasers, and the first ever bubble geometry traps
  - Recent cover story in Nature (Volume 582 Issue 7811, 11 June 2020)
- We work toward understanding the microbiome of the built environment, including interactions between crew, plant and spacecraft microbiomes
  - Skin, nostril and ear microbes are more similar to the microbe populations found on ISS surfaces than mouth and saliva microbes
  - Crew microbiomes contribute to 42-55% of the ISS surface microbiome



Cold Atom Lab: *routinely achieving sub-nanoKelvin temperatures, using Rubidium (Rb) atoms, needed for Bose-Einstein Condensates*



Microbiome study: *data tracking the interplay between the microbial communities onboard the ISS and its crew*

Earth Science Division Highlights

- SpaceApps COVID-19 global virtual hackathon May 30-31 included 15,000+ registrants from 150 countries, who joined 2,000+ teams completing 1,400+ projects
  - Brazil, Egypt and the U.S. had the most participants
  - More than 220 experts from partner space agencies NASA, ESA, JAXA, CSA and CNES answered questions on 24 chat channels in six languages
- Testing for Sentinel-6 Michael Freilich continued virtually with support from NASA, working with Airbus, ESA and EUMETSAT, in preparation for launch later this year
- Several Airborne Science Program aircraft were kept in flyable status during COVID-19 stand down to meet Agency requirements while Operation IceBridge investigation concluded its final data collection campaign of its 10-year mission
- The Student Airborne Research Program (SARP) is ongoing as a virtual only program this year where students are collecting Whole Air Samples (WAS) each week from their homes

COUNTRIES INDICATORS MAP TABLE

All countries

AMERICA

United States of America

EUROPE

Belgium

Croatia

France

Germany

Italy

Slovenia

Spain

ASIA

Japan

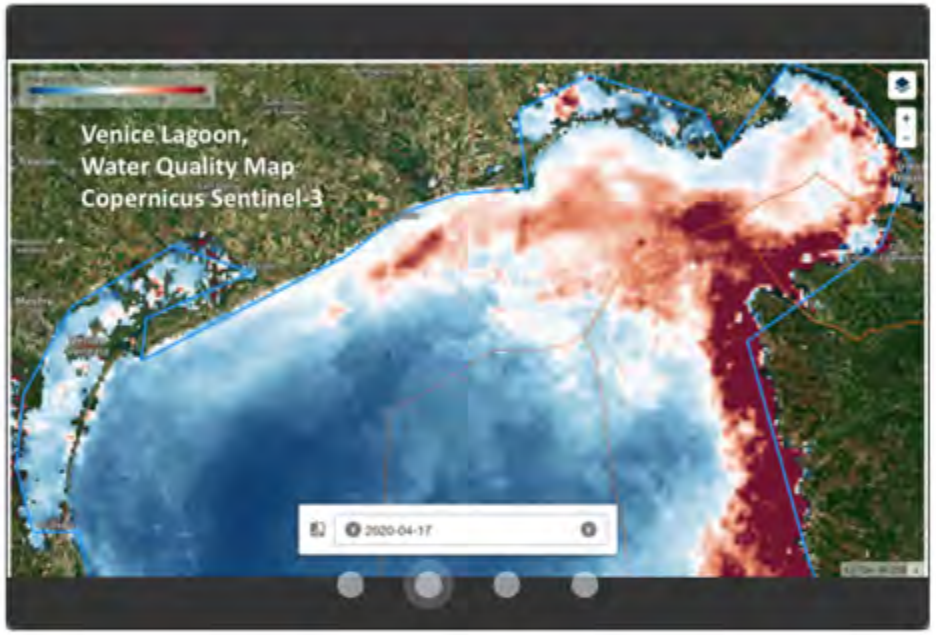
China

Singapore

Bangladesh

GLOBAL INDICATORS

COVID-19 Impact seen by Satellite



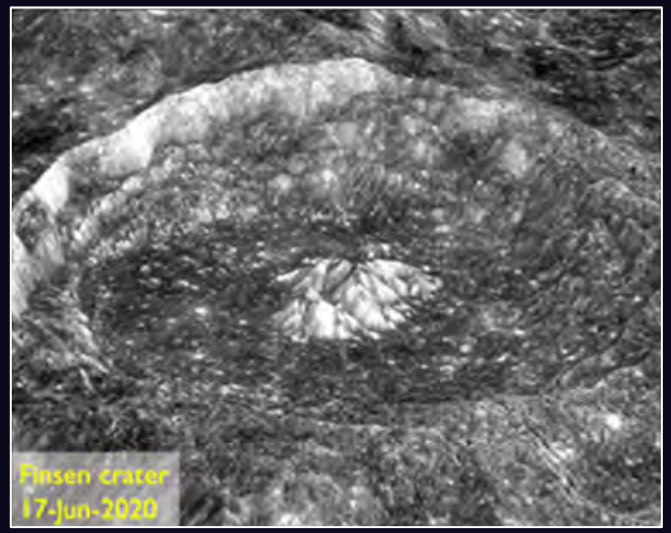
17
Economic Indicators

3
Agriculture Indicators

30
Environment Indicators

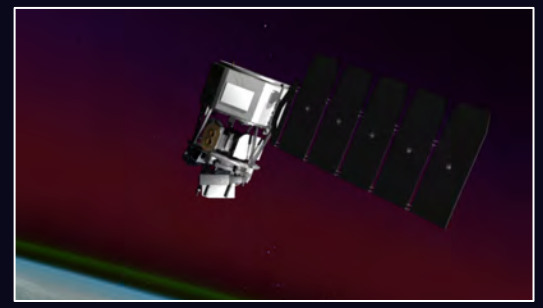
ESSIO Highlights

- Astrobotic selected to deliver VIPER to the Moon in late 2023
- Coordinating with STMD & HEOMD on flying payloads on future CLPS deliveries
- First Lunar Communications & Navigation Users Forum held
  - ESSIO's Angela Melito is serving as co-chair
- Identifying new technologies in the PRISM Stage 1 RFI responses
  - PRISM solicitation for instruments planned this summer
- LRO marked its 11th year in lunar orbit on June 23
  - Major QuickMap update offers new features, enhancements, and layers
  - Captured image of the Finsen Crater due to a new method of avoiding star tracker occultations during observation slews



Heliophysics Division Highlights

- Parker Solar Probe reached its fifth perihelion, on June 7, at a distance of 11.6 million miles from the Sun's surface; reaching a top speed of about 244,225 miles per hour and matching the spacecraft's own records for closest human-made object to the Sun and fastest human-made object
  - Spacecraft and instruments remain nominal
  - On track for the third **Venus flyby on July 11, 2020**
- Solar Orbiter reached it's first perihelion and transition to cruise phase on June 15
  - Heliospheric Imager (SoloHi) opened doors and achieved first light on June 5
  - Passed through the ion tail of Comet ATLAS on May 31 and through the remnants of the dust tail on June 6; four instruments were turned on ahead of schedule for the encounter
- Ionospheric Connection Explorer (ICON) team released scientific data collected during the first eight months in orbit to the public on June 22
- Sounding Rockets Program recently began instrument calibration activities and reopened their machine shop in preparation for restarting launch operations in the coming months
  - Six missions have been delayed or put on hold to date due to COVID-19, and the team meets weekly to make decisions regarding further impacts to the launch manifest
  - Collaboration with the Australian Space Agency has continued with launch facility construction progressing well to support the inaugural launch window of June/July 2021

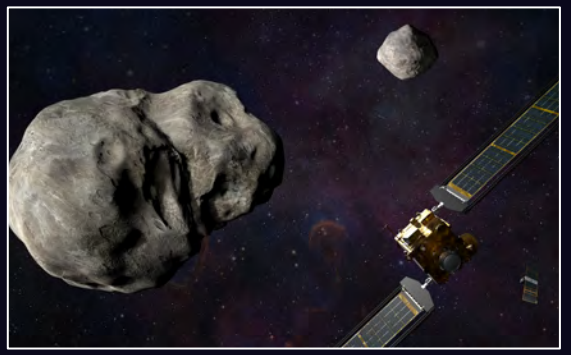


Planetary Science Division Highlights

- Mars2020/Perseverance: Launch no earlier than July 30
- Planetary Science & Astrobiology Decadal Survey White Paper deadlines:
  - July 15: Science papers
  - August 15: Mission concepts
  - September 15: All other papers (e.g., state of the profession)
- OSIRIS-Rex on track for matchpoint rehearsal (Aug.) & TAG (Oct.)
- Astrobotic selected as CLPS provider to deliver VIPER to Moon's surface
- DART's target moon officially named *Dimorphos*
- R&A:
  - DART PSP: mandatory NOI due Aug. 10, Step-2 due Sep. 24
  - Improved compliance checking: non-compliant proposals may be returned without review
  - Delayed due dates:

    DALI: July 10 (Step-2) MATISSE: July 17 (Step-2)

    PDART: July 24 (Step-2) NFDAP: Sep. 3 (Step-1)/Nov. 5 (Step-2)




QUESTIONS


EXPLORE
with us