
National Aeronautics and
Space Administration
EXPLORE SCIENCE
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NASA Science Mission Directorate
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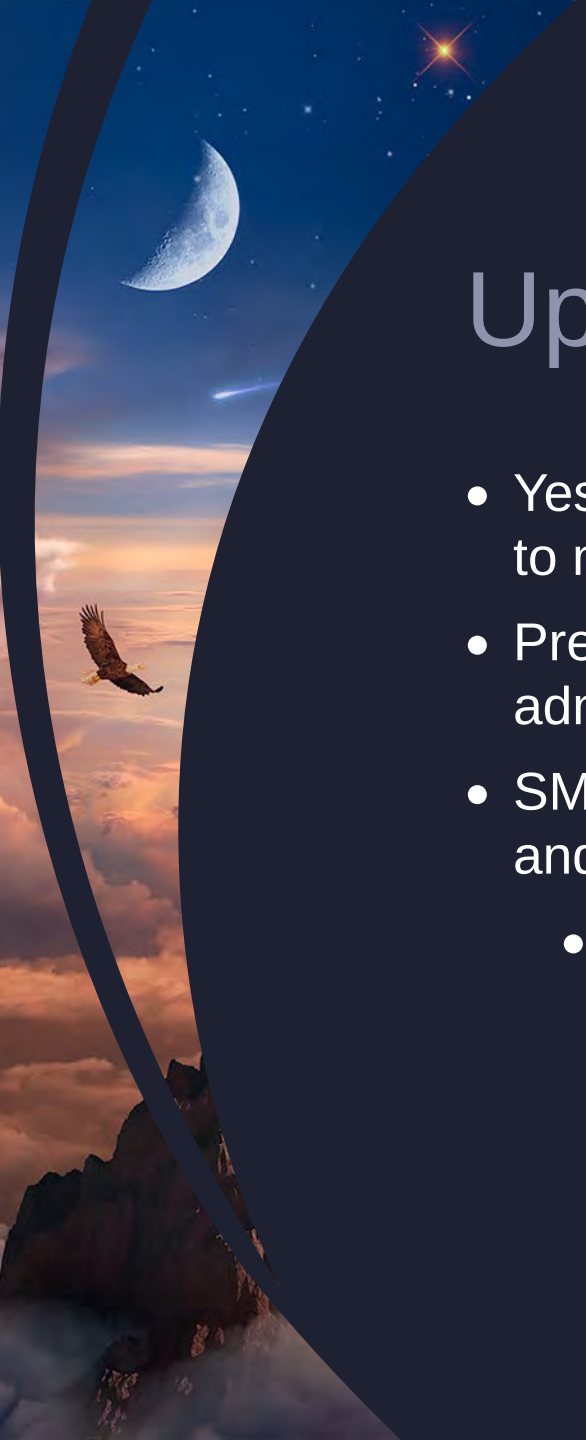
April 20, 2021



Updates

- Yesterday, NASA's Ingenuity Mars Helicopter became the first aircraft in history to make a powered, controlled flight on another planet
- President Biden nominated former U.S. Senator Bill Nelson as NASA administrator, and former NASA astronaut Pam Melroy as deputy administrator
- SMD-wide Program Scientist job announcement to open on USAJOBS May 7 and close May 11: announcement number "HQ-21-DE-11072486-ST"
  - Log into USAJOBS before May 7 to update your username, password, resume, etc.

SCIENCE WORKFORCE

PROGRAMS & RESEARCH

DIVISION HIGHLIGHTS

Study Objectives

- The SMD AA commissioned a study team to develop NASA science workforce strategies, specifically to:
  - Formalize the career paths available for NASA's science community
  - Identify systemic developmental gaps that may impede advancement or limit preparedness for key science positions and career paths
  - Identify developmental strategies for key positions that may broaden the scientist's knowledge, skills, and experiences to better prepare them for senior level roles and responsibilities
  - Clarify science leadership roles, accountability and authority and the optimal policy guidance needed for these key positions, especially for strategic level missions
- The first phase of the study included the data collection effort and the development of recommendations. The second phase will involve the implementation of those recommendations

Next Steps – Implementation

- Recruited Scientists and Human Capital professionals from the NASA Centers and Lab to support three implementation teams:
  - Career Path Team – Will work with our contractor to develop on-line career path tool based on five defined career tracks. This team will influence the design, format and content of the tool
    - POC: Lori Simmons at Lori.A.Simmons@nasa.gov
  - Career Development Team – Will create a comprehensive strategy for developing science leaders at multiple career stages to increase awareness of and preparedness for future opportunities
    - POC: Ellen Gertsen at Ellen.Gertsen@nasa.gov
  - Project Scientist Team – Will codify the role and authority of the project scientist. Further, this team will help create development strategies for future Project Scientists
    - POC: Michael New at Michael.H.New@nasa.gov

- For more information, visit https://science.nasa.gov/researchers/nasa-science-workforce-study

SCIENCE WORKFORCE

PROGRAMS & RESEARCH

DIVISION HIGHLIGHTS

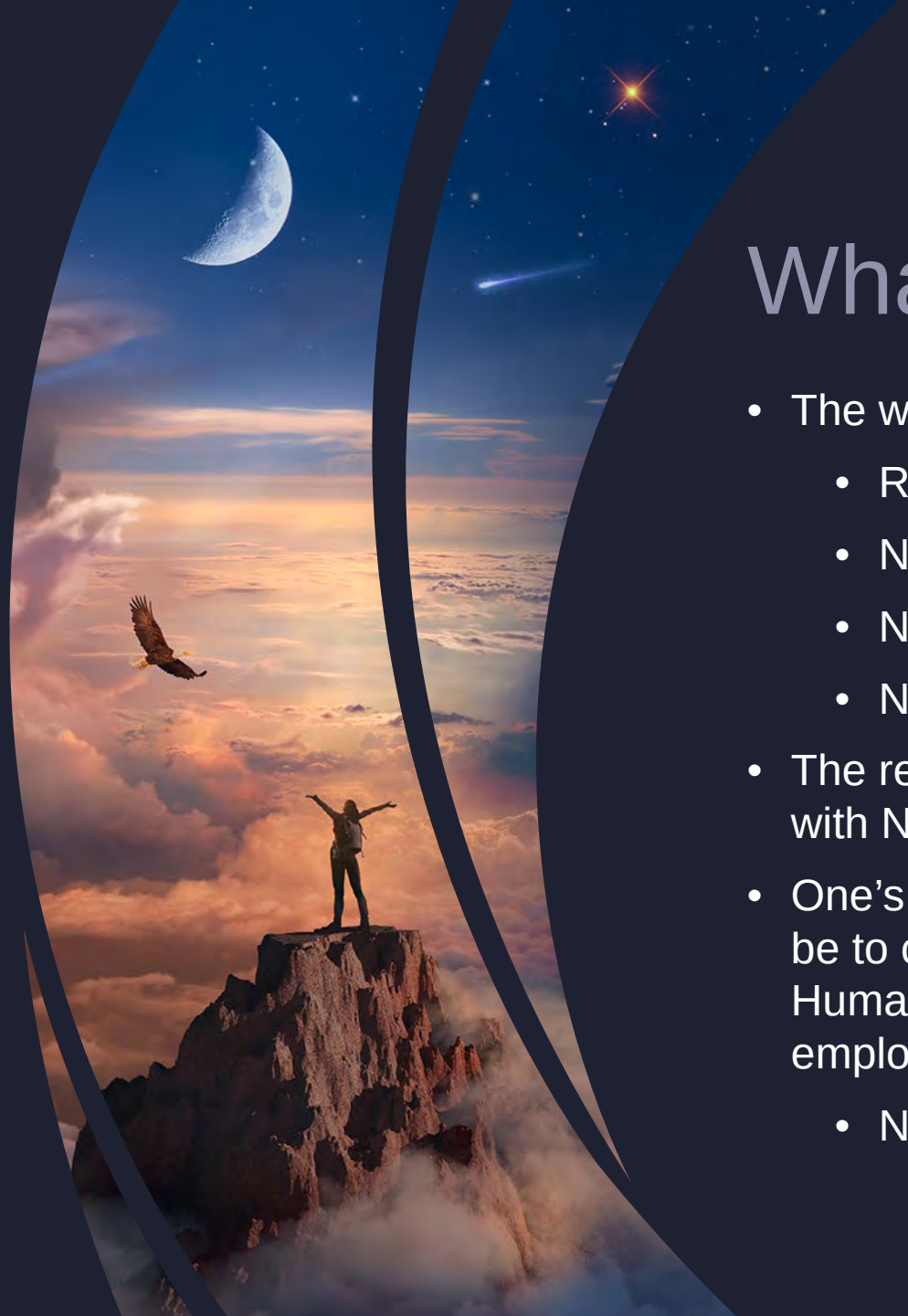
Status of SMD Programs

- COVID Impacts and lessons learned:
  - NASA has been in a mandatory telework posture due to COVID-19 for over one year now
  - SMD continues to work with projects to response to changes due to COVID that affect our missions
  - SMD is working with the Centers in the planning for ramping up onsite activities
  - SMD COVID assumptions have been updated, which allows our missions to more effectively plan for operating over the next 12 months

- How this affects the community:
  - As vaccinations increase within the community, we will be able to enact more with our project teams, partners, and vendors by increasing travel
  - We are looking forward to the multiple launches scheduled for the fall and winter of this year, which include JWST, Lucy, Landsat-9, DART, IXPE, and GOES-T

Supporting Work-Life Balance

- SMD recognizes the importance of balancing one's work with the requirements of one's family, friends and personal physical and mental health
- We have created a web page to inform SMD-funded researchers about NASA-provided wellness resources and leave options that may be available
- https://science.nasa.gov/researchers/work-life-balance
- Please help us improve this webpage by sending suggestions, questions and feedback to sara@nasa.gov



What's on the Web Page?

- The web page discusses resources and flexibilities for
  - Recipients of NASA grants and cooperative agreements
  - NASA Civil Servant Scientists
  - NASA on-site contractors
  - NASA Postdoctoral Program Fellows
- The resources that one may access depend on one's relationship with NASA (above) and one's institution's policies
- One's first step, regardless of your relationship to NASA, should be to contact your institution's Office of Sponsored Programs, Human Resources or Human Capital Office to determine your employer's policies
  - NPP Fellows should contact their NPP Center Representative

SCIENCE WORKFORCE

PROGRAMS & RESEARCH

DIVISION HIGHLIGHTS

Exploration Science and Division Updates

- Exploration Science Strategy and Integration (ESSIO) – Joel Kearns
- Astrophysics – Paul Hertz, Greg Robinson (Webb)
- Biological and Physical Sciences (BPS) – Craig Kundrot
- Earth Science Division – Karen St. Germain
- Heliophysics – Nicky Fox
- Planetary Science – Lori Glaze, Jeff Gramling (Mars Sample Return)

ESSIO Highlights

- 2021 Lunar Deliveries:
  - CLPS Task Order 2 - Astrobotic: 4Q 2021 (Lacus Mortis)
  - CLPS Task Order 2/20C - Intuitive Machines: November 2021 (Oceanus Procellarum)
- 11 out of 14 *NASA Provided Lunar Payloads* (NPLPs) have been completed
- 8 out of 12 *Lunar Surface Instrument and Technology Payloads* (LSITPs) have completed design
- Proposal evaluations are in process for 2021 *Payloads and Research Investigations on the Surface of the Moon* (PRISM); selectees will fly to Reiner Gamma in 2023 and Schrödinger Basin in 2024
- CLPS Task Order 19D awarded to Firefly Aerospace: 2023 (Mare Crisium)
- Dr. Ryan Watkins joined ESSIO as its newest Program Scientist

TO2 | 2021
Astrobotic
Peregrine

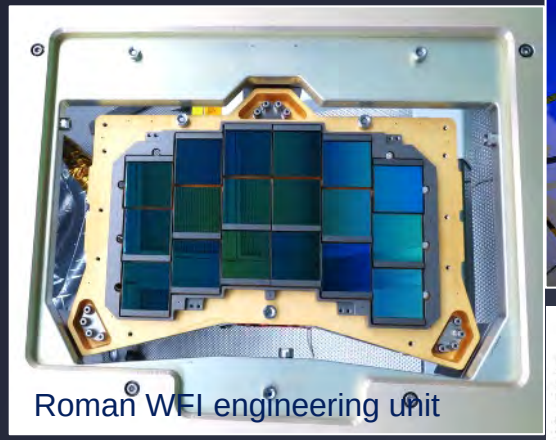
TO2/20C | 2021
Intuitive Machines
NOVA-C

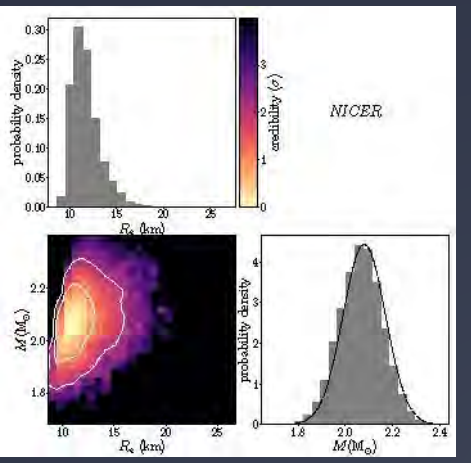
Near-InfraRed Volatile Spectrometer System (NIRVSS): Detects presence of H2O/OH as a function of illumination, surface temperature, and local time of day

TO19D | 2023
Firefly Aerospace
Blue Ghost

Astrophysics Division Highlights

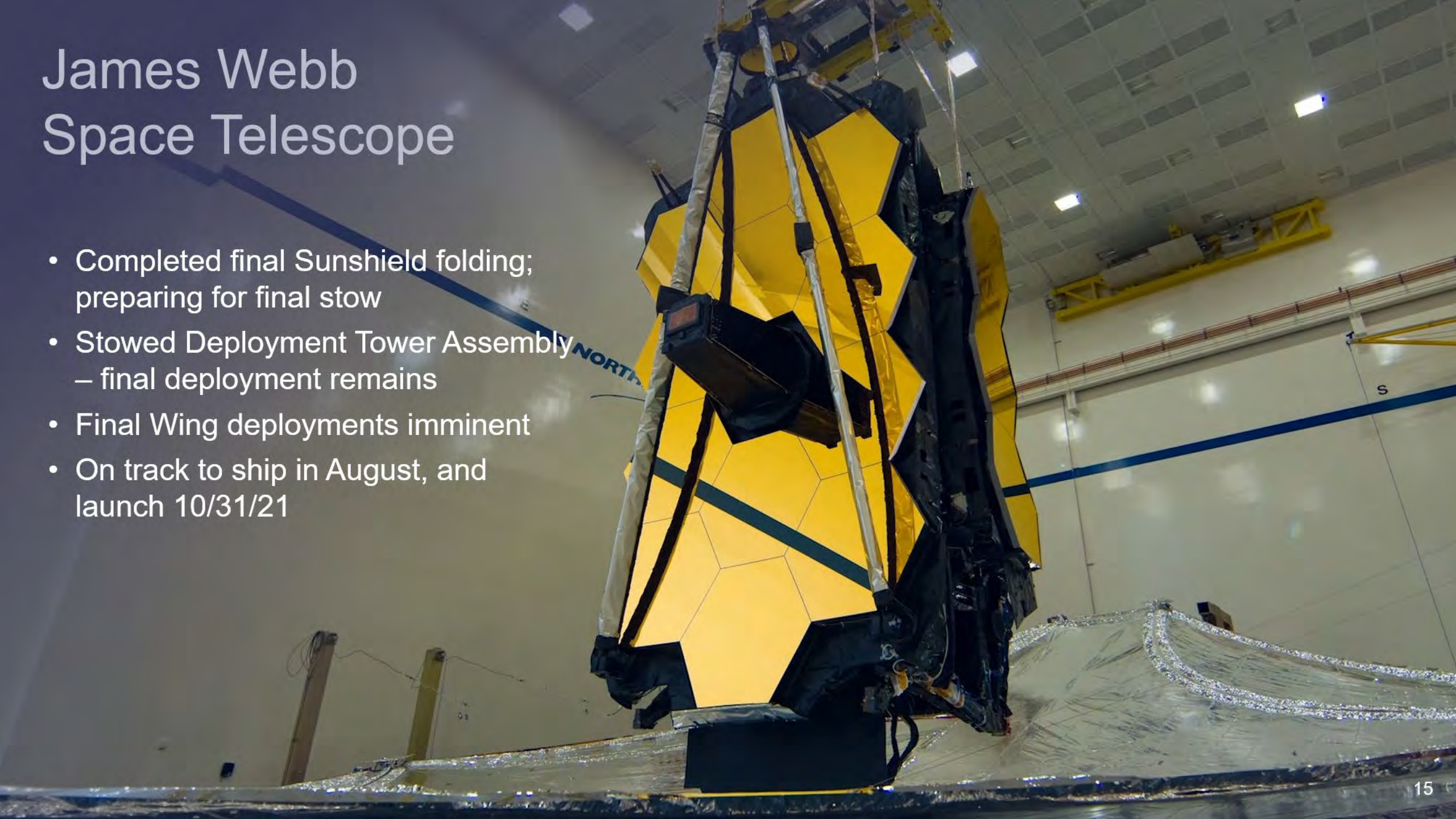
- The Imaging X-ray Polarimetry Explorer (IXPE), NASA's next SMEX, is fully assembled and has begun environmental testing, on track for launch in November
- The Nancy Grace Roman Space Telescope has all 18 of its flight detectors in hand for the Wide Field Instrument
- GUSTO launch delayed by one year due to COVID impacts on NSF's Antarctic Program
- Inclusion plans are required as part of proposals to the Astrophysics Theory Program; this is a pilot program for ensuring that NASA's core value of Inclusion is part of NASA-funded research investigations
- NICER observations of the heaviest known pulsar have determined the neutron star radius and further constrained the equation of state for nuclear matter
- The Astrophysics Division is hiring civil servants and visiting scientists this year


Roman WFI engineering unit



James Webb Space Telescope

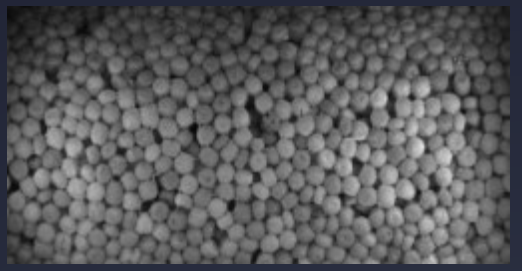
- Completed final Sunshield folding; preparing for final stow
- Stowed Deployment Tower Assembly – final deployment remains
- Final Wing deployments imminent
- On track to ship in August, and launch 10/31/21

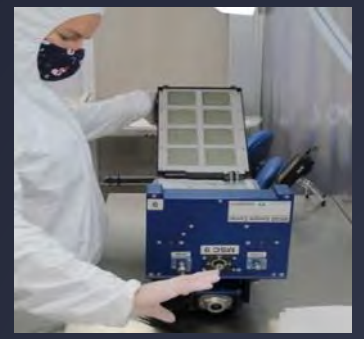


BPS Division Highlights

- Physical Sciences
  - Packed Bed Reactor Experiment (PBRE) collected data to characterize residual gas bubbles trapped in a microgravity flow to improve water recovery efficiency on ISS and in partial gravity
  - Four gaseous fuel combustion studies in Advanced Combustion via Microgravity Experiments (ACME) completed- one to go

- Space Biology
  - Micro-16 (worms - muscle loss) and Materials International Space Station Experiment – Seed (seeds – radiation exposure) experiments launched on NG-15, 2/20/21
  - Spaceflight Technologies, Application, and Research (STAR) Applications Opened: March 15, 2021; deadline May 28, 2021



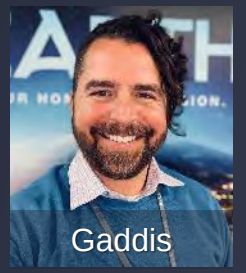


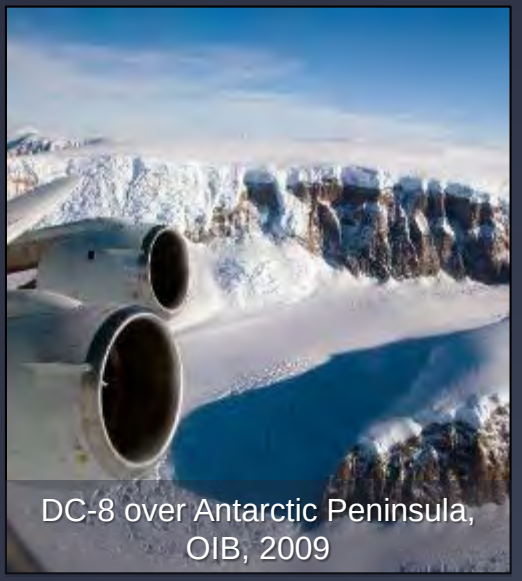
Earth Science Division Highlights

- Thanks to our project teams!
  - NASA-ISRO Synthetic Aperture Radar (NISAR) S-band SAR arrived JPL on March 19
  - Landsat 9 successfully completed thermal vacuum testing on April 3
  - SWOT payload will ship to CNES for spacecraft integration by July
- Airborne campaigns wrapping up
  - Operation Ice Bridge (OIB) campaign complete
    - >12 years, > 958 science flights, 668 publications, >9.3 million YouTube data vis views
- SnowEX observed water stored in snow and paved the way for NISAR
- New Leaders
  - Kevin Murphy named Chief Science Data Officer to lead SMD's Data Strategy and ESD Data Program
  - Keith Gaddis named Program Manager for Ecological Forecasting


Flight S-SAR with SAC team

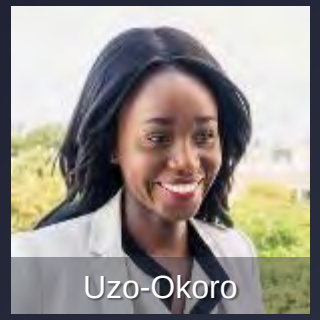

Murphy


Gaddis

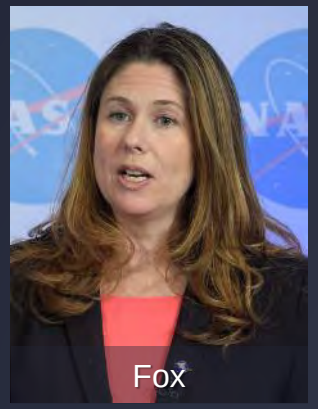

DC-8 over Antarctic Peninsula, OIB, 2009

Heliophysics Division Highlights

- Parker Solar Probe: Completed Venus flyby #4 on Feb. 20
  - Solar Encounter #8 begins April 24. Perihelion #8 will set of new solar orbit record of sixteen solar radii
- Solar Orbiter: Celebrated 1st anniversary of launch of Feb. 9
  - 2nd Perihelion on Feb. 10
- IMAP: UKSA commitment to IMAP magnetometer
- Staffing Update:
  - Welcome to Washito Sasamoto! (Program Executive)
  - Temporary farewell to Ezinne Uzo-Okoro (detail to OSTP) and Karen Fox (detail to SMD)!
- Heliophysics Inclusion, Diversity, Equity, and Accessibility (IDEA): Incorporating IDEA themes into our mission, vision, and strategy, resulting in a Division-wide commitment to lasting and specific IDEA goals and objectives
- Heliophysics 2050 Workshop (May 3-7, 2021):
  - Bringing the community together to explore the specific science investigations to advance and expand the field of solar and space physics
  - The registration deadline for Helio 2050 is April 26 – please join us!


Uzo-Okoro


Venus as seen by Wide-field Imager for Parker Solar Probe, July 2020.


Fox

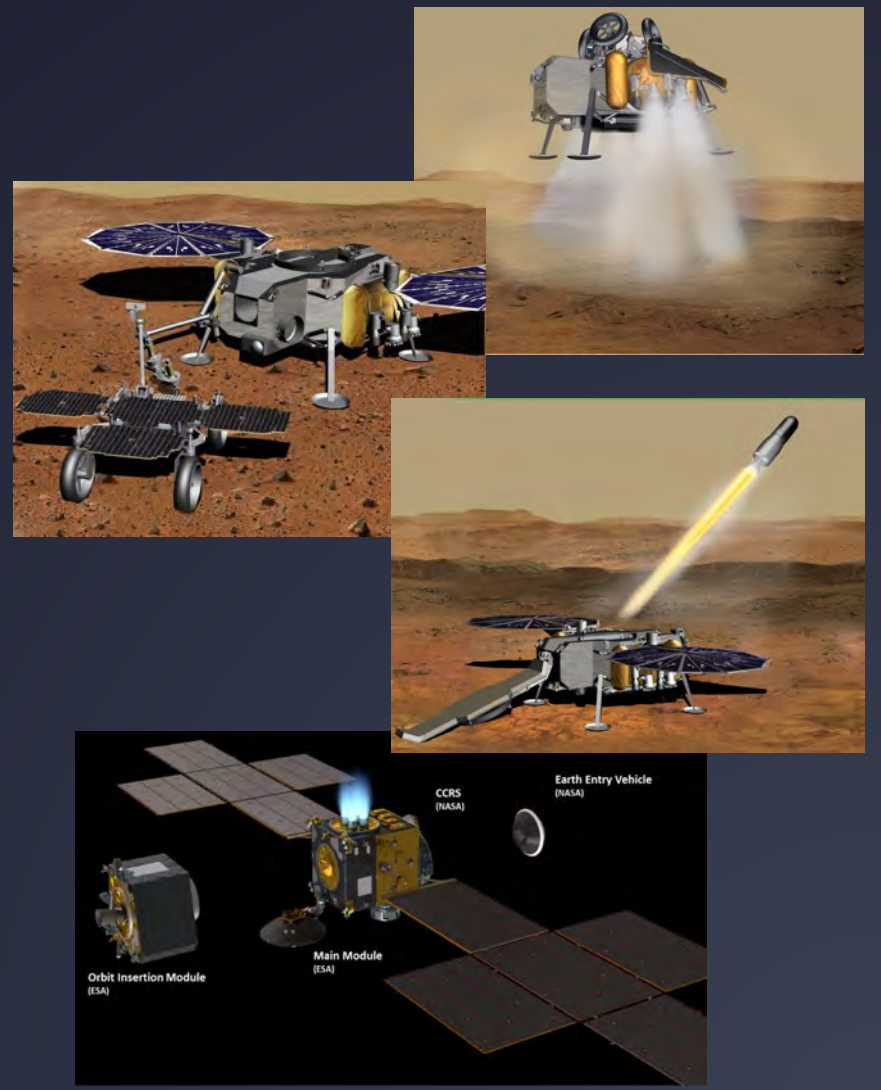
HELIOPHYSICS 2050 WORKSHOP

Planetary Science Division Highlights

- Mars2020/ Perseverance and Ingenuity:
  - Safely landed in Jezero Crater on Feb.18, with >4 million watching live
  - Rover is located at Van Zyl Overlook to observe Ingenuity flights
  - First Ingenuity flight was April 19; further flights upcoming during Month of Ingenuity
- OSIRIS-REx:
  - Final flyby of Bennu and imaging of Nightingale sample site completed April 7
  - Asteroid Departure Maneuver will be May 10
- Lucy and DART: ATLO activities continue to progress well; launch windows open in Oct and Nov, respectively
- Psyche: ATLO began March 16; SEP Chassis delivered to JPL March 27
- R&A Dual Anonymous Peer Review Townhall will be held on April 28: most relevant for all Data Analysis Programs and Exoplanets Research Program

Mars Sample Return Highlights

- MSR is currently in Phase A
- Mars Sample return is underway with the successful landing of Perseverance on Feb. 18
- Public presentations at the IEEE Aerospace Conference on March 12 and to the Lunar and Planetary Science Conference on March 18
- ESA Earth Return Orbiter (ERO) completed its PDR process successfully on April 15
- Capture, Containment, and Return System (CCRS) System Requirements Review, April 19 – 22
- Welcome to the MSR Team!
  - Joe Gasbarre selected as MSR Deputy Director-Technical
  - Dr. Meenakshi Wadhwa (Director and Professor in the School of Earth and Space Exploration at Arizona State University) appointed as JPL MSR Program Office Program Scientist
  - Dewayne Washington joins team as HQ MSR Communications Lead

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With Us