



National Aeronautics and
Space Administration

2023 NASA SCIENCE

SMD Community Town Hall

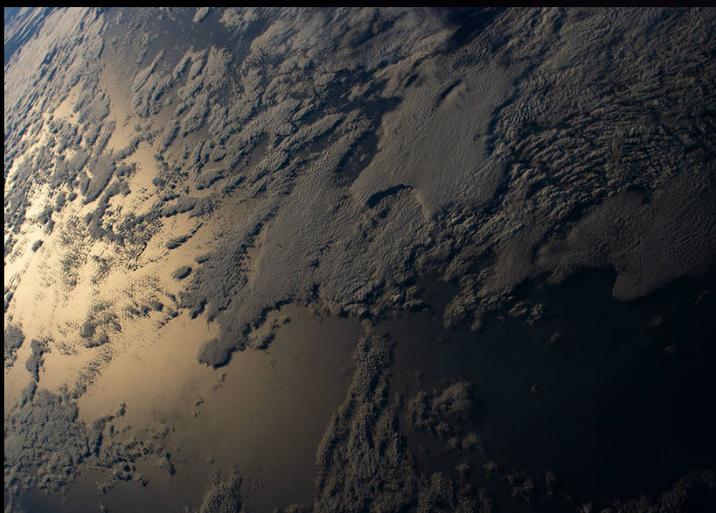
January 18, 2023

Sandra Connelly

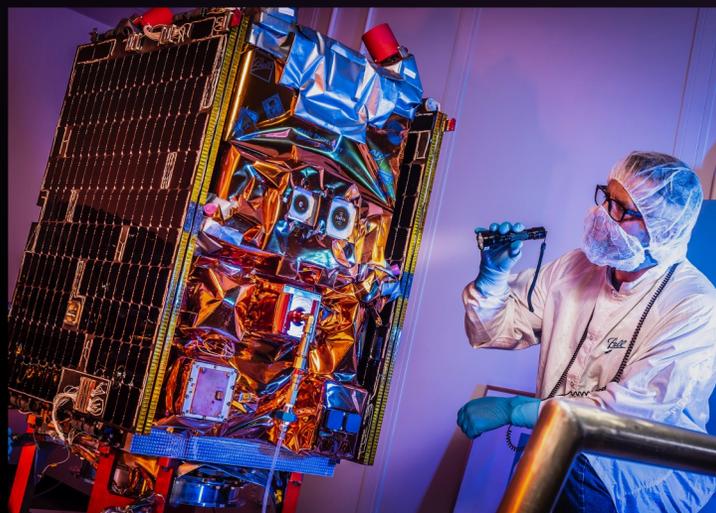
Associate Administrator, *Acting*

NASA Science Mission Directorate





NEWS & UPDATES



DIVISION HIGHLIGHTS



QUESTIONS & ANSWERS



Thomas H. Zurbuchen
Associate Administrator, Resigned
October 2016 – December 2022



Mr. Eric Ianson
Acting Deputy
Associate Administrator



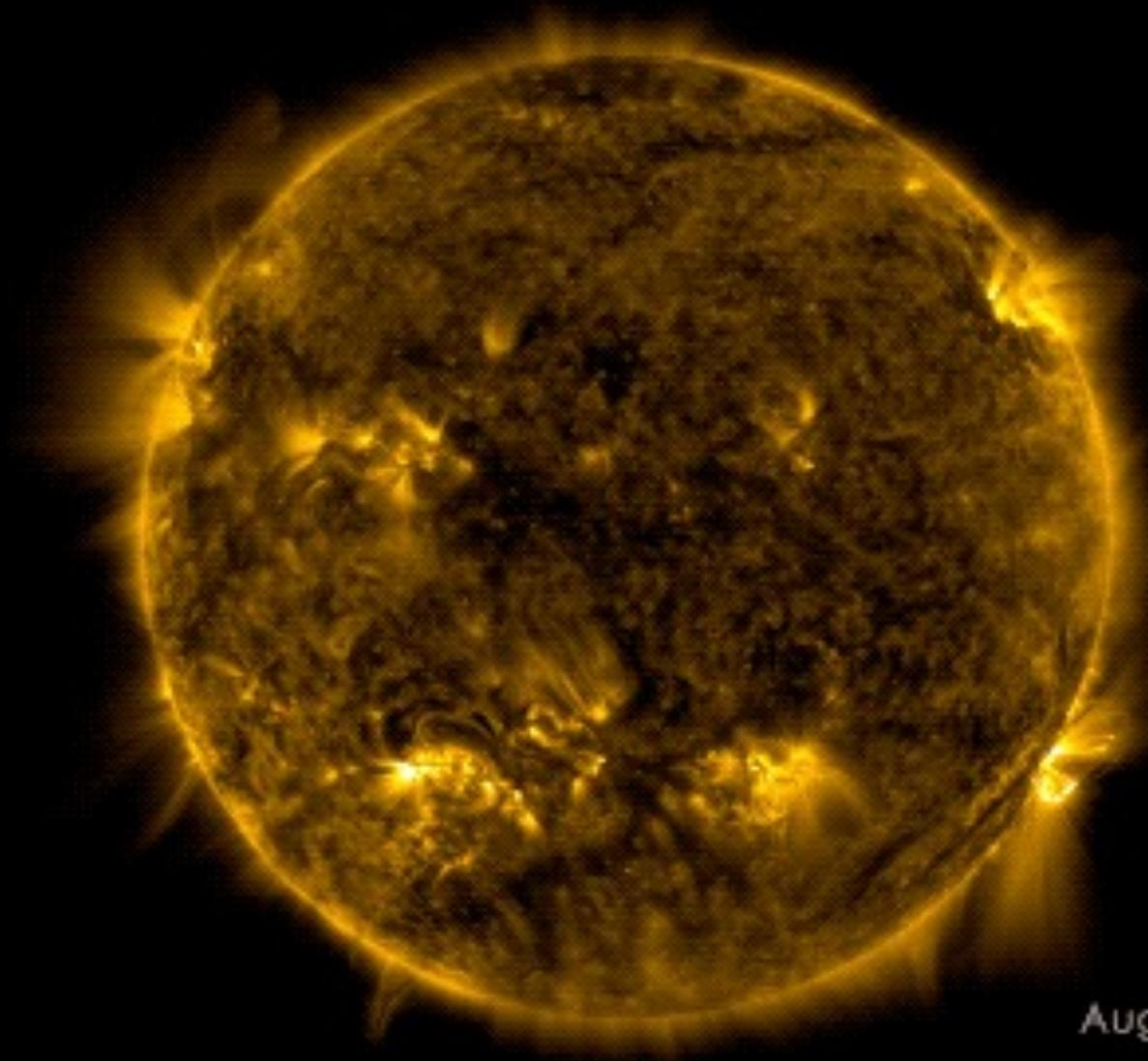
Ms. Shannon Fitzpatrick
Assistant Deputy Associate
Administrator of Programs



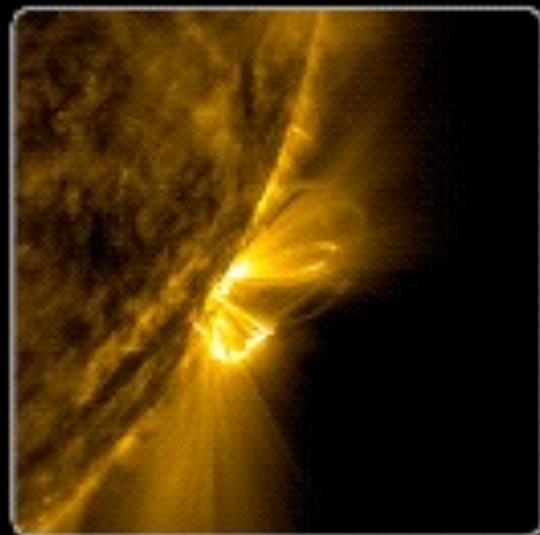
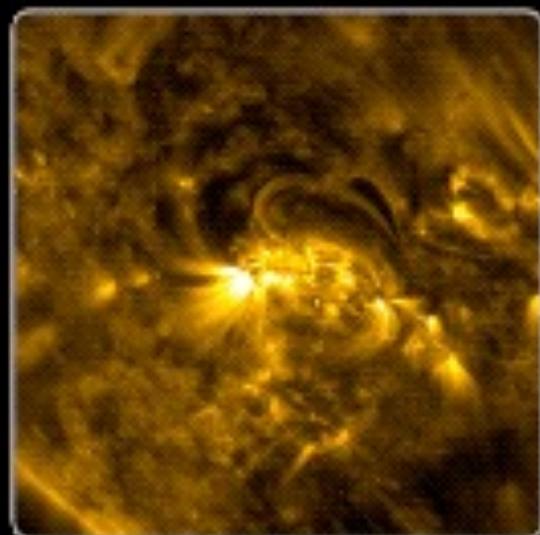
Dr. Travis Blake
Space Traffic Coordination
Program Officer



Ms. Lauri Newman
Conjunction Assessment
Program Officer

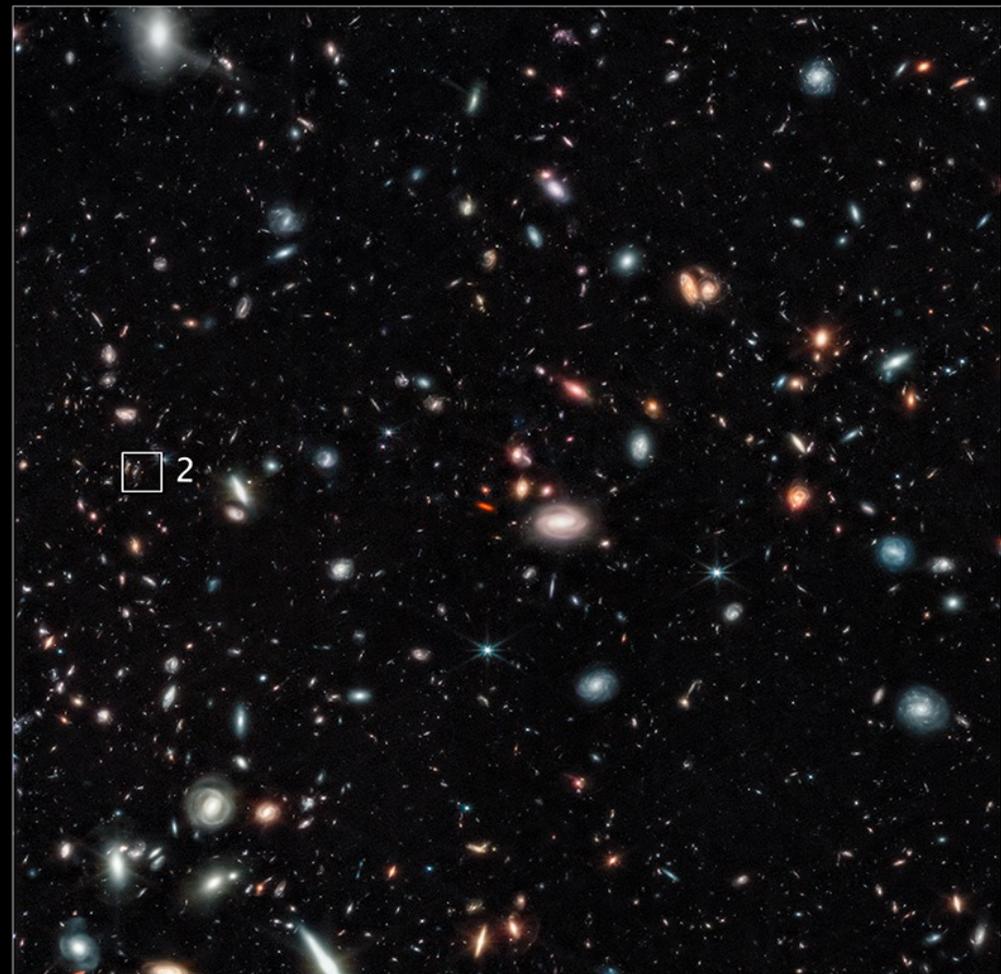
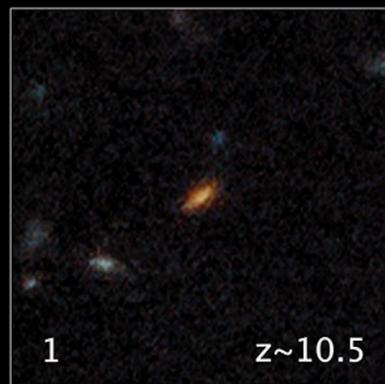


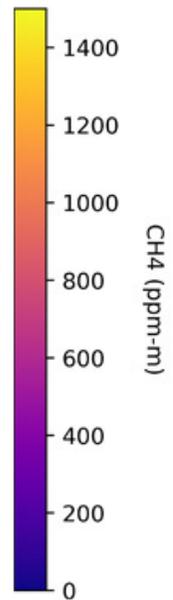
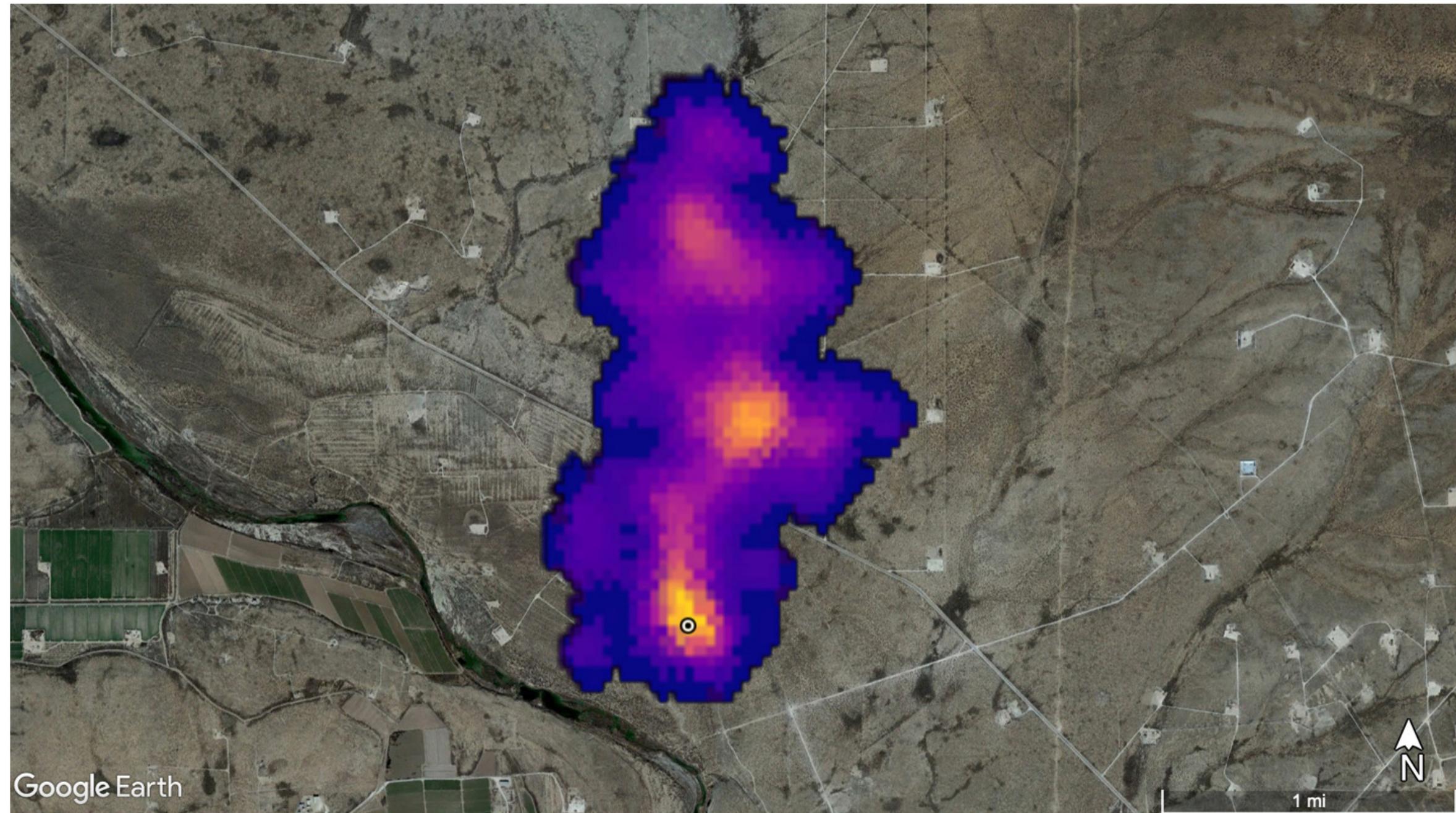
Aug 28, 2022





Abell 2744 GLASS
JWST/NIRCam

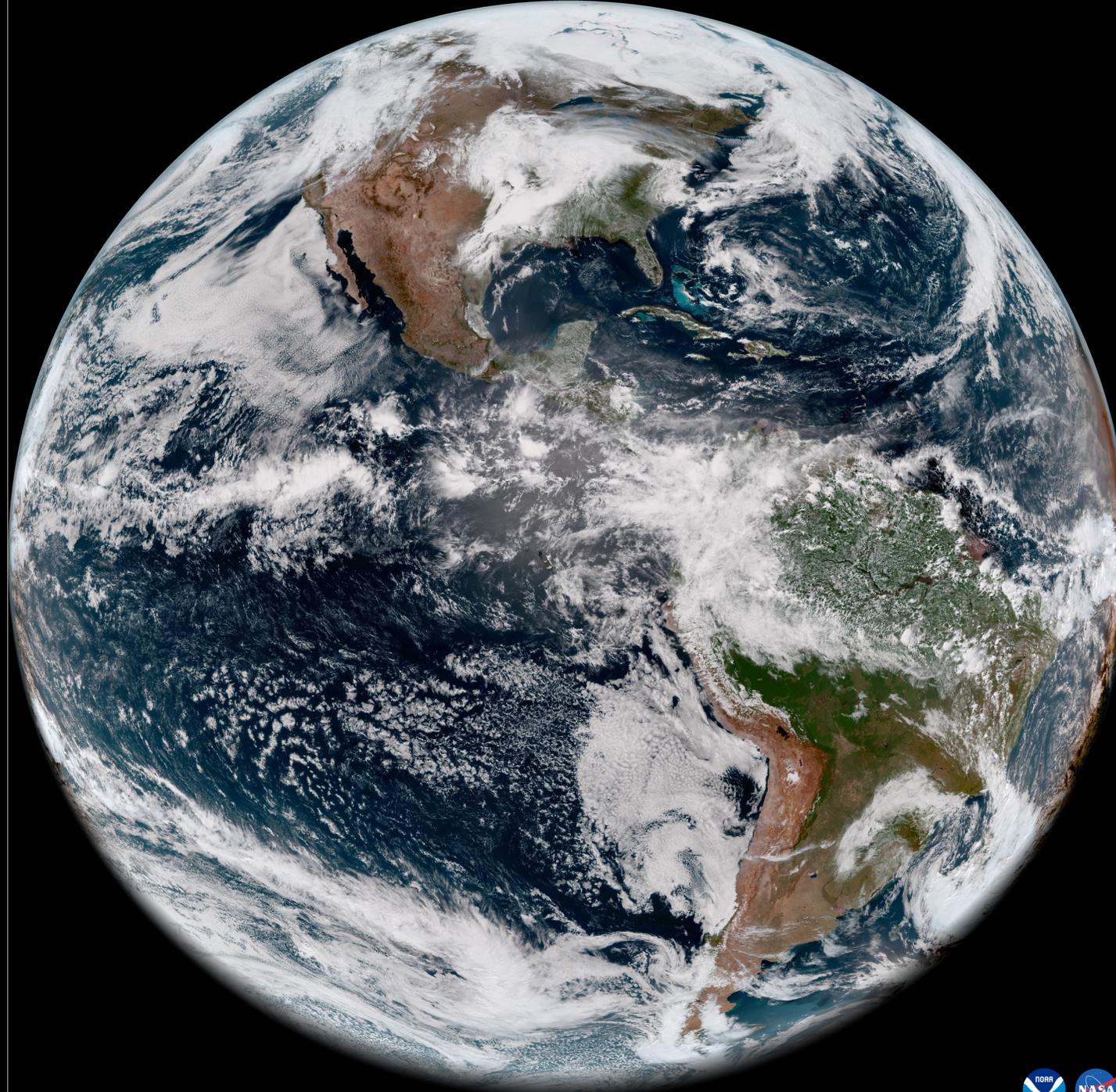


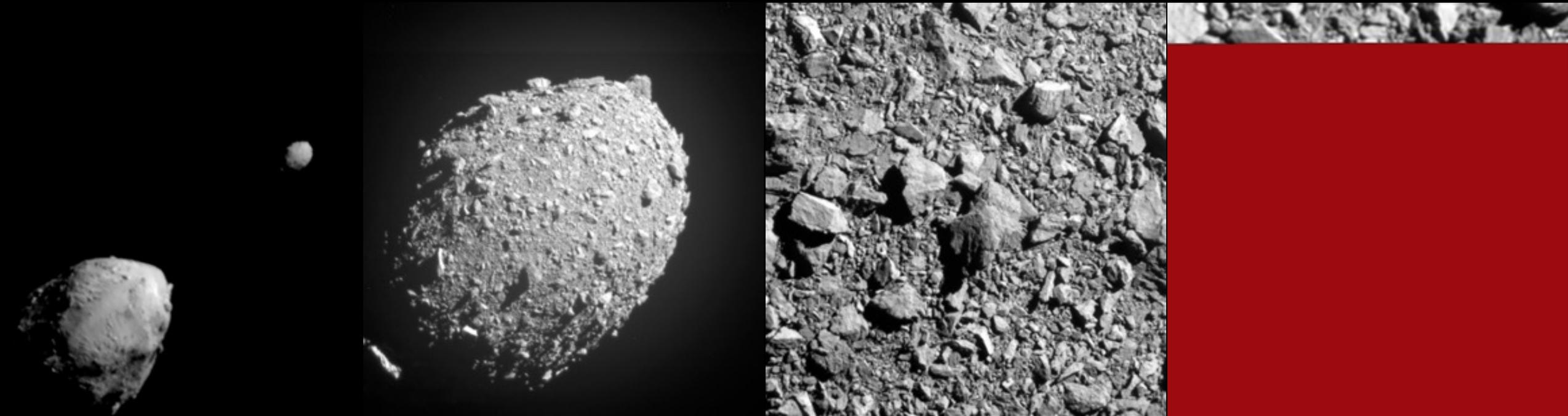


Google Earth

1 mi







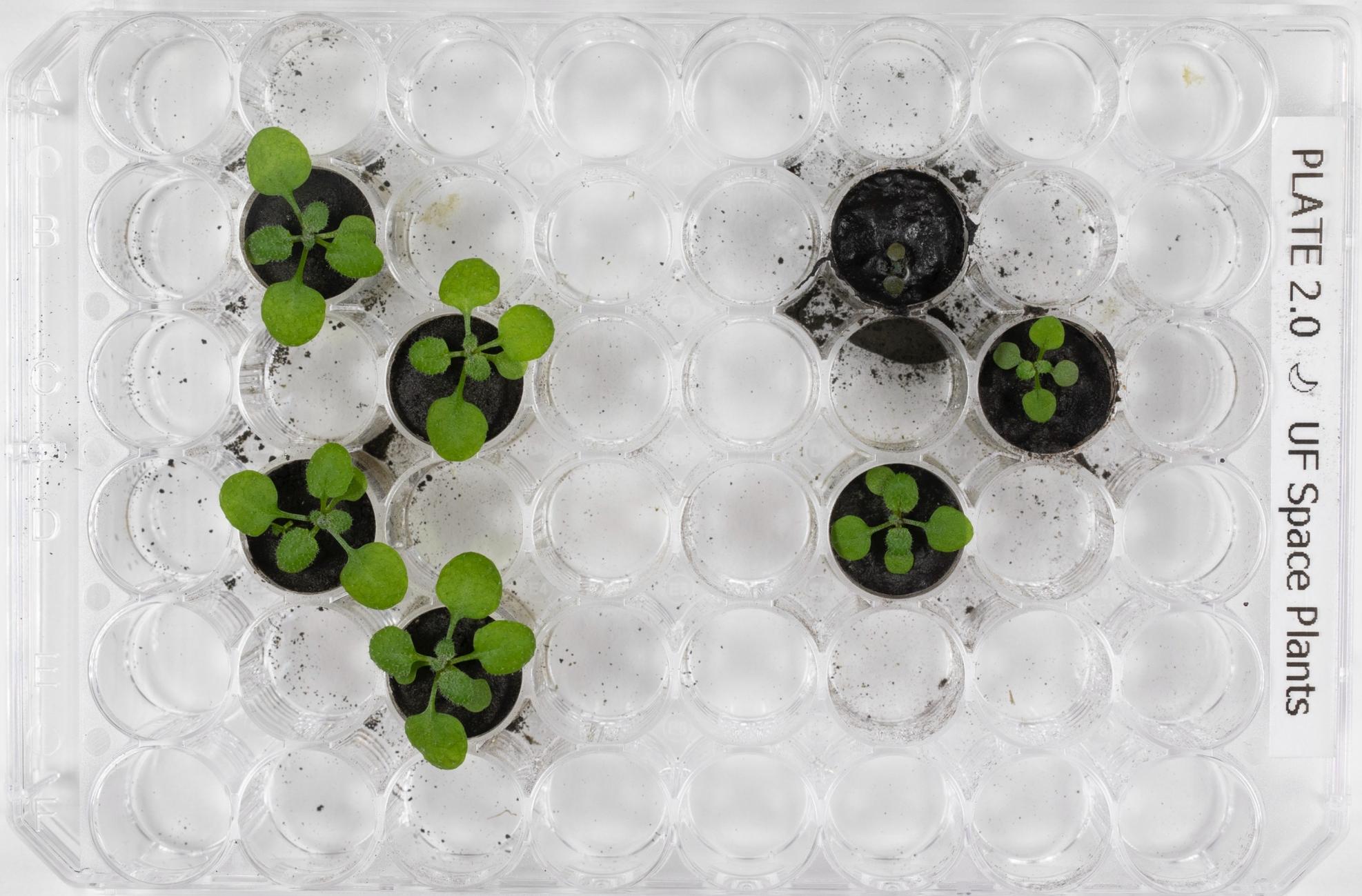
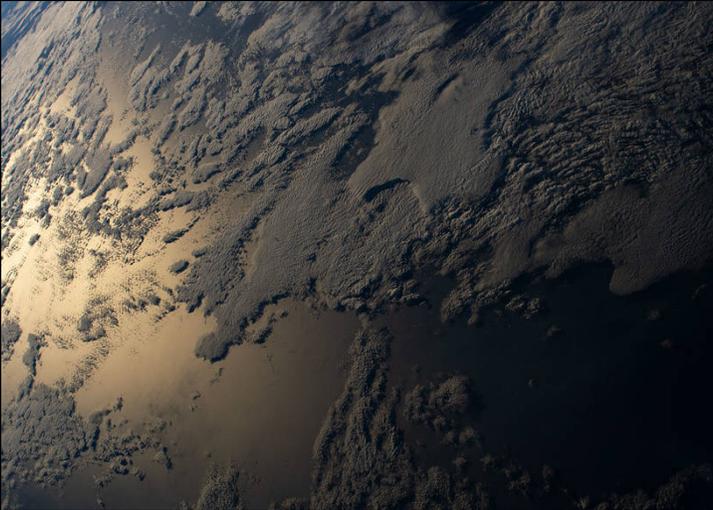


PLATE 2.0  UF Space Plants



NEWS & UPDATES



DIVISION HIGHLIGHTS



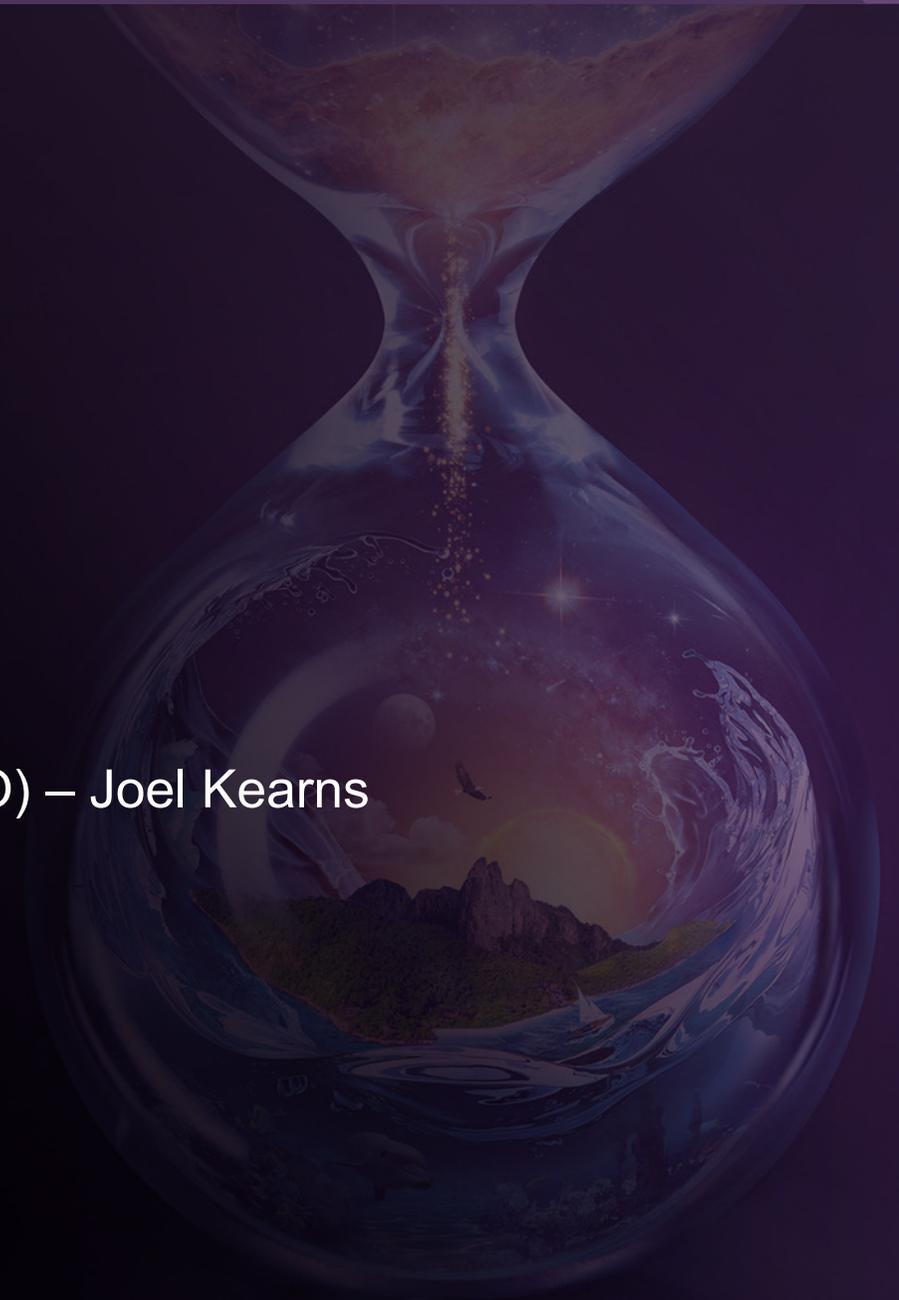
QUESTIONS & ANSWERS

Status of SMD Programs

- **The state and health of the SMD Flight Portfolio is Good**
- **SMD has a total of 144 missions:** 19-Formulation; 43-Implementation, 23-Primary Operations, 59-Extended Operations
- **Launch Status:**
 - Successful DART impact
 - JPSS-2, and SWOT successfully launched
- **Portfolio Management:**
 - Published an updated SMD Directorate Program Management Council Charter & Operations Directive
- **Areas of Concerns:** workforce concerns, impact of supply chain issues, inflation rate increases, and facility prioritization
 - Challenges across the board from electronics to heat pipes to getting parts machined
 - Seeing an increase of lead times across high-reliability electronic components, including power MOSFETs, DC/DC converters, and resistors, among others, due in part to labor or material shortages
- **Recently Completed Studies**
 - COVID-19 Impact
 - SMD Assessment Performance

Division Highlights

- Heliophysics – Peg Luce
- Biological and Physical Sciences (BPS) – Craig Kundrot
- Astrophysics – Mark Clampin
- Earth Science Division – Karen St. Germain
- Planetary Science – Lori Glaze
- Exploration Science Strategy and Integration Office (ESSIO) – Joel Kearns



Heliophysics

- All five GDC instruments have been selected
 - Newly selected:
 - **Thermal Plasma Sensor (TPS)**; PI: Phillip Anderson, University of Texas, Dallas
 - **Near Earth Magnetometer Instrument in a Small Integrated System (NEMISIS)**; PI: Mark Moldwin, University of Michigan
- Quarterly Heliophysics Community Town Halls in 2023
 - First town hall in Feb. 2023
- AWE Launch to ISS in Dec. 2023
- Heliophysics Big Year
 - Annular Eclipse on Oct. 14, 2023
- New NASA Space Weather Program driving space weather research to inform space weather operational capabilities
 - The Space Weather Grand Challenge: identify the next low-latency data stream to enable a significant advancement in space weather forecasting



Biological & Physical Sciences

Budget:

- FY23 Appropriation (\$85M) is less than the President's Budget Request (\$100M)
- BPS will not implement the Commercially Enabled Rapid Space Science initiative (CERISS)
- BPS will delay awards for new research investigations in Quantum Science and Thriving in Deep Space (including those targeted for the Artemis II mission)

Personnel:

- Job applications for BPSD Director position due Mar. 3 www.usajobs.gov/job/697744100
- Feb. 1: Ms. Diane Malarik, Acting BPSD Director; Dr. DeVon Griffin, Acting Deputy Director

Launches:

- NG-18 (Nov. 7): multi-generational plant experiment (Plant Habitat-03)
- Artemis I (Nov. 16): BioExpt-01 (four investigations)
- SpX-26 (Nov. 26): materials science (FAMIS), bacteria (BRIC-26), plants (Veg-05)

Solicitations:

- ROSES 2022 E.8 Physical Sciences Informatics (PSI) proposals due by Jan. 10, 2023
- ROSES 2022 F.9 Citizen Science Seed Funding Program proposals due by Jan. 24, 2023
- ROSES 2022 E.9 Space Biology Research Studies Step-1 proposals are due Feb. 1, 2023
- Commercially-Enabled Rapid Space Science (CERISS) RFI closes Mar. 31, 2023



Diane Malarik



Dr. DeVon Griffin



Astrophysics

Upcoming Meetings/Conferences

- Astrophysics Advisory Committee (APAC) Spring meeting, NASA Headquarters – Mar. 29-30

Upcoming activities

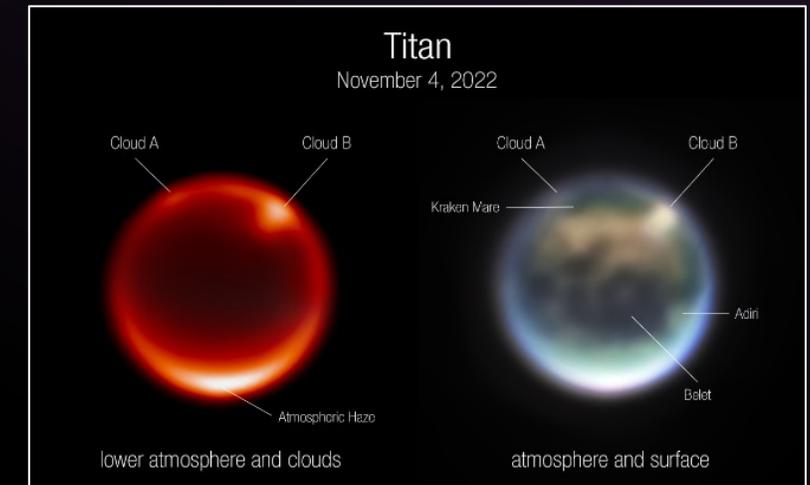
- Release of Probe Announcement of Opportunity – July 2023
- Ultrasat Launch Vehicle procurement – late Summer 2023

Upcoming launches for 2023:

- JAXA's X-Ray Imaging and Spectroscopy Mission (XRISM) launch – NET May 2023
- NASA's Galactic / Extragalactic ULDB Spectroscopic Terahertz Observatory (GUSTO) balloon launch ~Dec. 2023
- ESA's Euclid launch – NET Summer 2023
- BurstCube launch (PI: J Perkins) ~ Feb. 2023
- Sprite launch (PI: B Fleming) – NET Mar. 2023
- White Sands Sounding Rocket launch (PI: M Zemcov, RIT) ~Apr. 2023
- Star-Planet Activity Research CubeSat (SPARCS) Launch ~ Dec. 2023



Teams prepare to launch the SPIDER balloon payload in Antarctica on Dec. 21, 2022



Images of Saturn's moon Titan, captured by JWST's NIRCam instrument Nov. 4, 2022

Earth Science

SWOT: Launched Dec. 16, 2022

- Will deliver first-ever survey of nearly all Earth's surface water

HARP2 Readies to Fly on PACE Following HARP Demo

- Will measure cloud and aerosol properties for weather, climate, and air quality using ESTO-demonstrated technology

Unplanned EMIT Capability

- Mission to study dust also identifies methane super-emitters – critical to informing GHG-related decisions

Applications: SERVIR-backed Flood Warnings

- Cyclone-battered Malawi saves \$40 million

Research: Atmospheric River Drives Soil Moisture Anomalies in Western U.S.

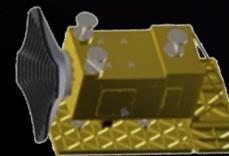
- GPM and SMAP data identify significant soil moisture anomalies driving large-scale flooding



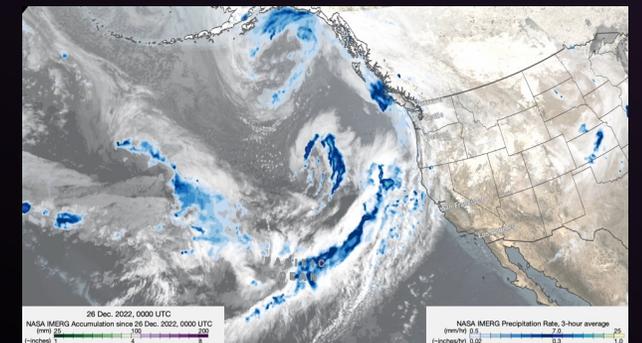
SWOT launches on a SpaceX Falcon9 rocket from Vandenberg Space Force Base



EMIT imagery of methane super-emitters, Kuwait, August 2022



Depiction of HARP2 instrument



Planetary Science

- **InSight:** Mission ended after four years on Mars, after solar-powered batteries ran out of energy
- **VERITAS:** Three-year launch delay announced November 2022
- **Perseverance:** depositing 10 sample tubes to form a scientifically return worthy initial sample cache at 'Three Forks' in Jezero crater (potential landing site for MSR Sample Retrieval Lander)
- **Mars Sample Return:** formally entered Phase B of formulation

PSD Highlights for 2023

- **JUICE:** Launching April 2023; arrives at Jupiter in 2031 for a three-year mission
- **Psyche:** Launching October 2023
- **OSIRIS-REx:** Samples land Utah Test and Training Range, Sep 24, 2023
- **Discovery Program is 30!:** Celebratory symposium this fall, in D.C. More info coming soon

Position Openings:

- Senior Scientist for Astrobiology, Washington D.C. (HQ) : Review position description [HERE](#)



*Final image returned from InSight,
Dec 11, 2022*



*WATSON image of 'Malay' sample tube,
deposited Dec 21, 2022*

ESSIO

Updates from 2022 Ongoing Activities

- Solicitations:
 - PRISM3 step 2 proposals received December 20; selections in summer 2023
 - Artemis III Geology Team call release in January
- CLPS Deliveries in Q1 2023:
 - Intuitive Machines' Nova-C (IM-1) in I&T
 - Astrobotic's lander for Peregrine Mission-1 (PM-1) in environmental testing
 - PM-1 landing site officially named by IAU. The lunar feature is now called **Sinus Viscositatis** "Bay of Stickiness" (homage to viscous magmas that formed nearby Gruithuisen Domes)
- Presented outline / scope of Artemis Integrated Science Plan to the PAC in December

What to Expect in 2023

- NASA payloads to be delivered to the lunar surface on the first three CLPS deliveries by Intuitive Machines (x2) and Astrobotic
- Upcoming solicitations: Artemis III Deployed Instruments, Lunar Terrain Vehicle Instruments, and PRISM4
- Plan to define science objectives for Endurance A Mission (South Pole Aitken Basin)

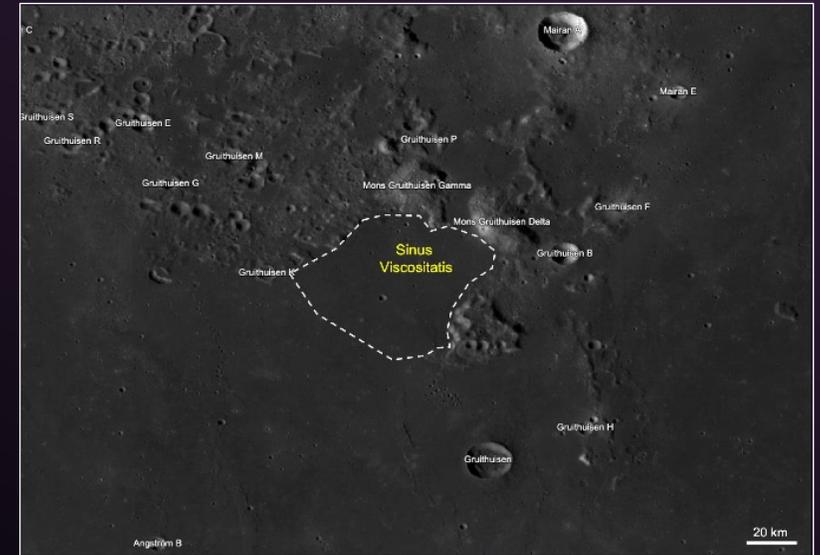
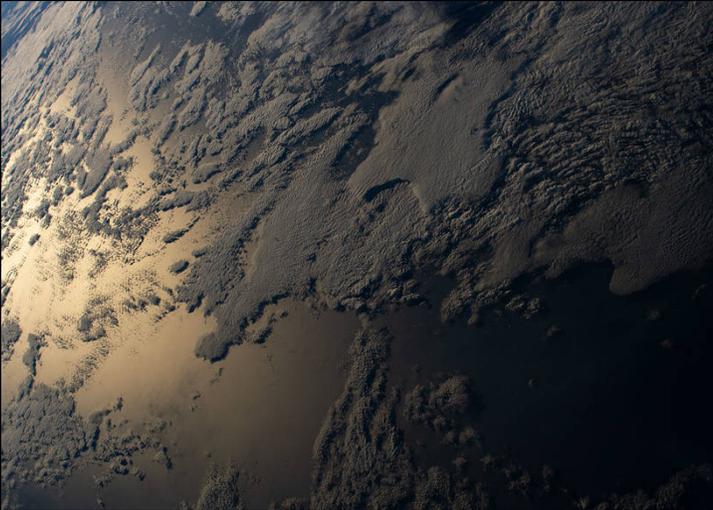


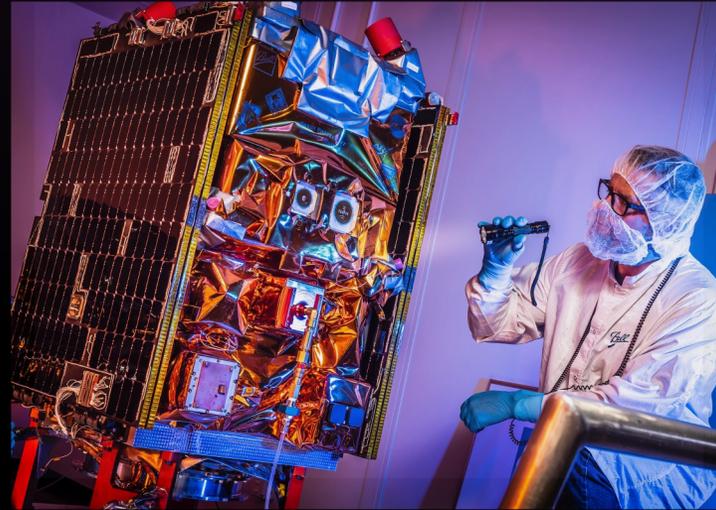
Image of Sinus Viscositatis – a newly named region of the Moon near Gruithuisen Domes



Astrobotic PM-1 lander, ready for TVAC



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EXPLORE

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