



National Aeronautics and
Space Administration

NASA SCIENCE

ExoPAG

Lori S. Glaze, Ph.D.

NASA Planetary Science Division Director

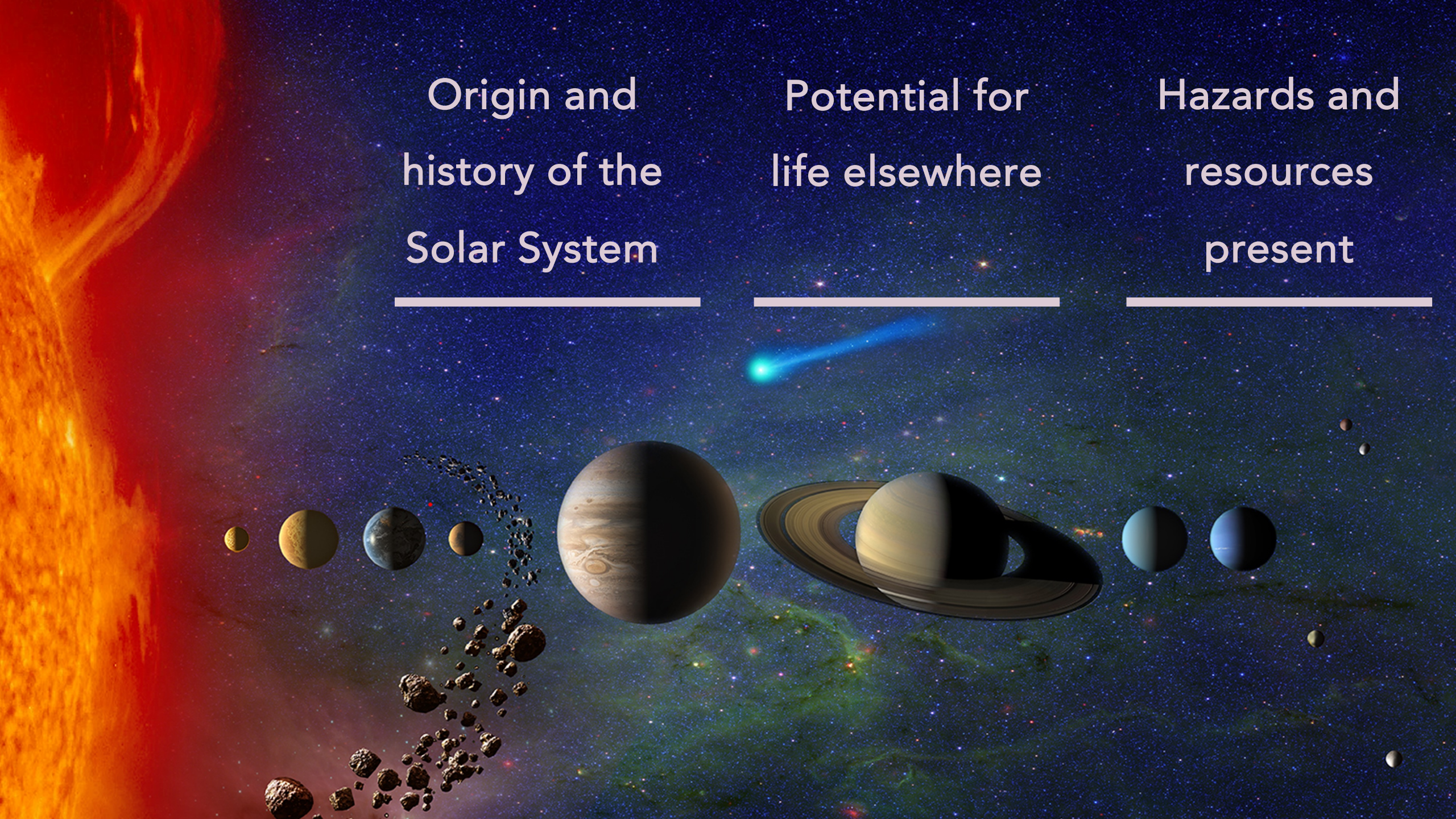
May 5, 2024



Origin and
history of the
Solar System

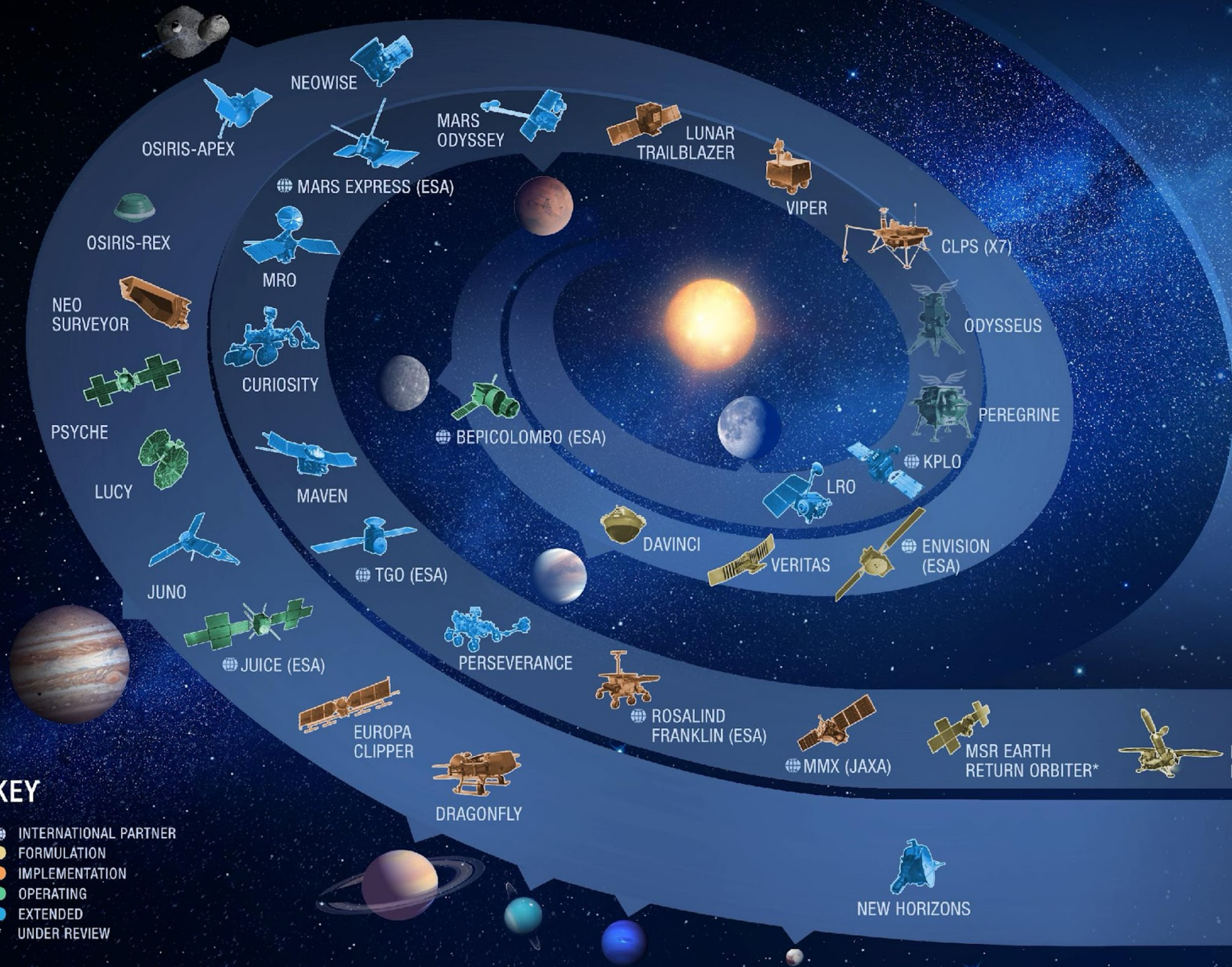
Potential for
life elsewhere

Hazards and
resources
present





PLANETARY FLEET



KEY

- INTERNATIONAL PARTNER
- FORMULATION
- IMPLEMENTATION
- OPERATING
- EXTENDED
- UNDER REVIEW

MOON & MARS

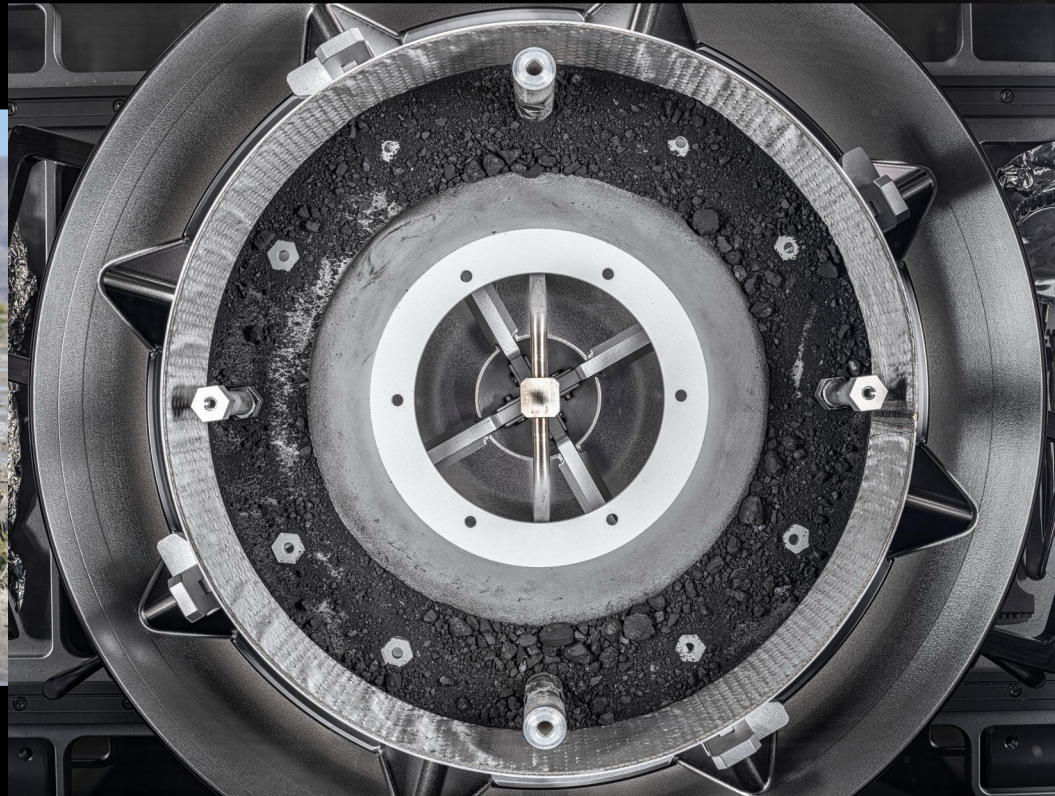
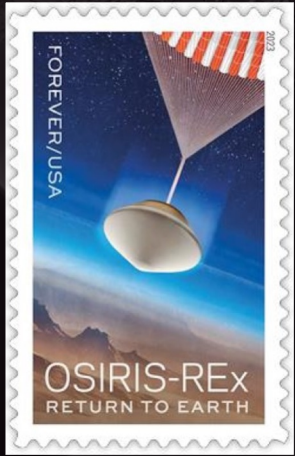
SOLAR SYSTEM



Life & Its Origins

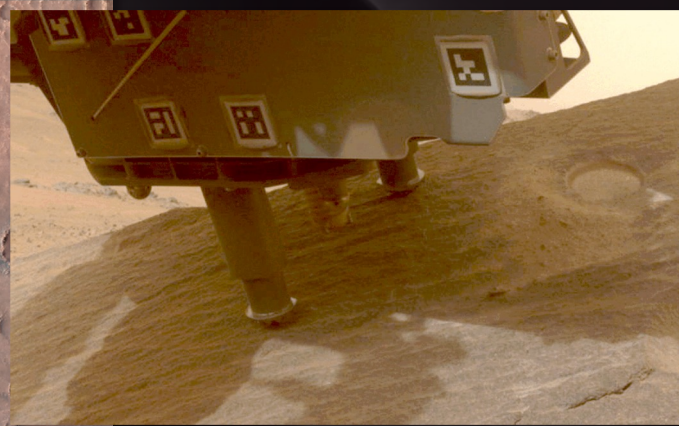
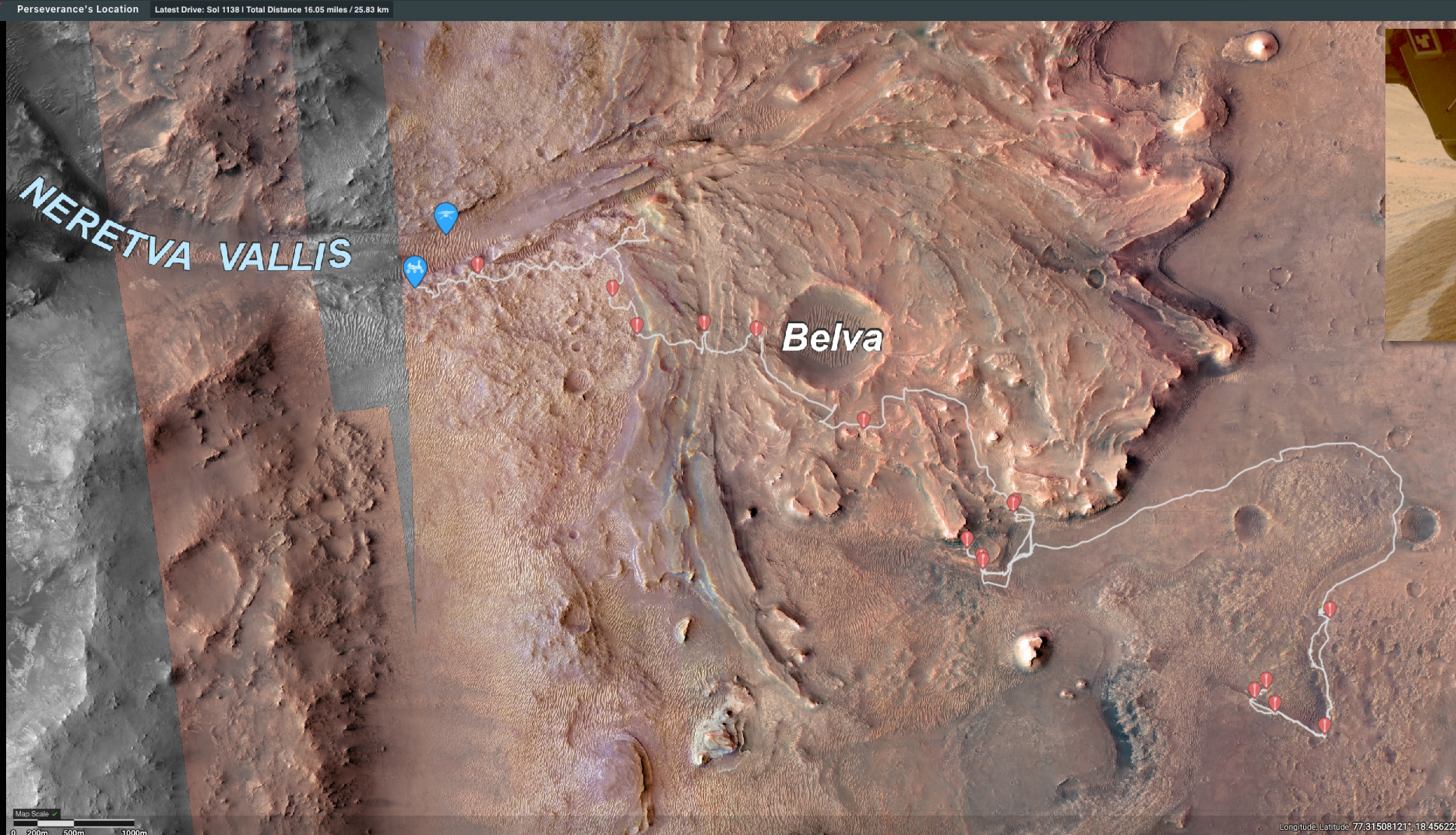


OSIRIS-REx: To Bennu – and Back!





Perseverance: More than 3 years on Mars!



Collection of silica/carbonate sample from 'Bunsen Peak' on March 11, 2024— the 21st rock core collected by Perseverance



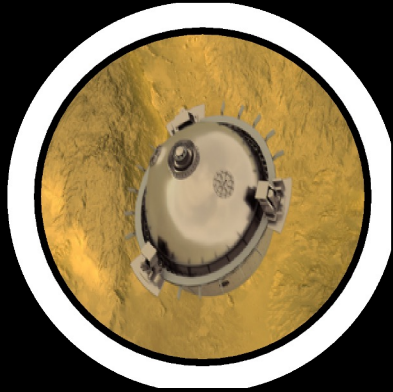
Location as of May 3, 2024



Launching 2028



Back to Venus



DAVINCI (2031/2032)

Deep Atmosphere Venus Investigation of Noble Gases, Chemistry, and Imaging



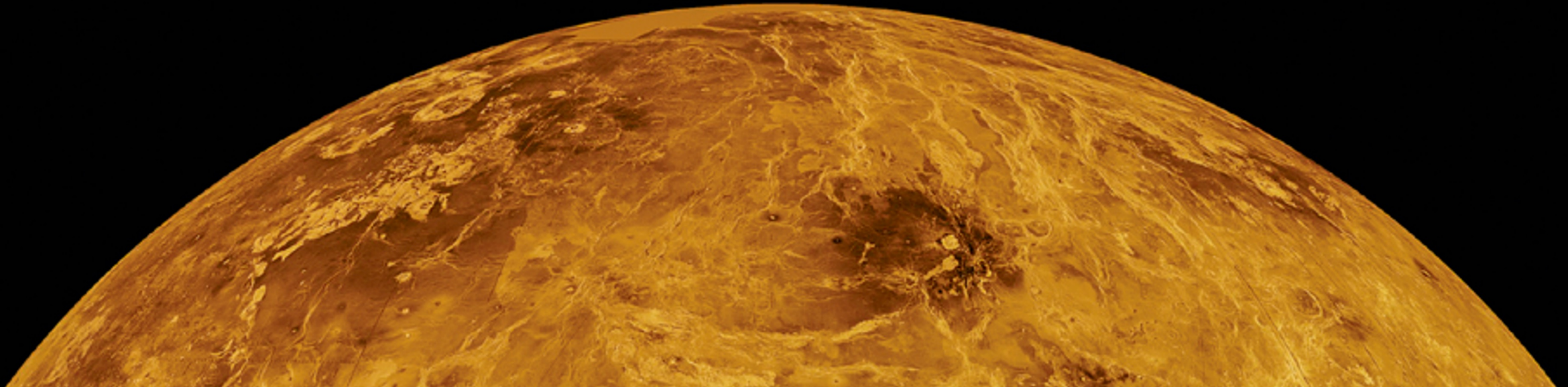
EnVision (2031)

*ESA Medium-Class Mission
NASA contribution includes VenSAR
(Synthetic Aperture Radar)*



VERITAS (2031/2032)

*Venus Emissivity, Radio Science,
InSAR, Topography, &
Spectroscopy*





Budget

FY 2024 Budget: NASA & SMD

NASA's budget for FY2024 was included in the minibus bill passed by Congress and signed into law by the President on March 9, 2024

(\$M)	FY23 Enacted	FY24 PBR	FY24 Minibus Bill	Delta from PBR	Delta from FY23
Science	7,795.0	8,260.8	7,334.2	-926.6	-460.8
Earth	2,195.0	2,472.8	2,195.0	-277.8	0.0
Planetary	3,200.0	3,383.2	2,716.7	-666.5	-483.3
Astrophysics	1,510.0	1,557.4	1,530.0	-27.4	20.0
Heliophysics	805.0	750.9	805.0	54.1	0.0
Biological & Physical Sciences	85.0	96.5	87.5	-9.0	2.5

FY 2024 Budget: PSD

- NASA's FY 2024 Appropriations for PSD: \$2.7B
 - \$483M lower than FY 2023 (15% reduction of FY2023 budget)
 - \$666.6M (~20%) lower than FY 2024 President's Budget Request (PBR)
- Reduction is mostly accounted for by reduced support for Mars Sample Return
 - MSR to be funded at \$300M (or more)
 - Although appropriation allows up to the President's FY24 request (\$949.3M) for MSR, portfolio balance and Decadal Survey guidelines within the fixed top line are a high priority
- Specific language:
 - ~\$210M for NEO Surveyor
 - Up to FY 2023 level (~488M) for New Frontiers, including not less than \$360M for Dragonfly
- Operating plan will be worked over the coming months

(\$M)	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24
PSD	1,342.3	1,446.7	1,628.0	1,827.5	2,217.9	2,746.7	2,712.6	2,693.2	3,120.4	3,200.0	2,716.7

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*From FY25 PBR

Planetary Science Budget Priorities

Explore/Innovate/Partner/Inspire

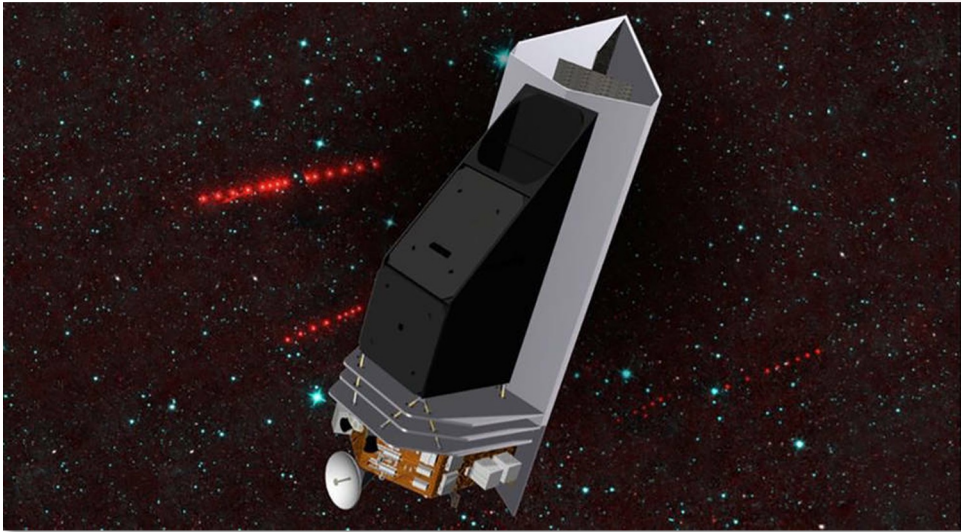
Successfully complete confirmed high-priority missions including **Europa Clipper, NEO Surveyor**

Support **international partnerships**: JUICE, MEGANE/MMX, Rosalind Franklin Mission, EnVision

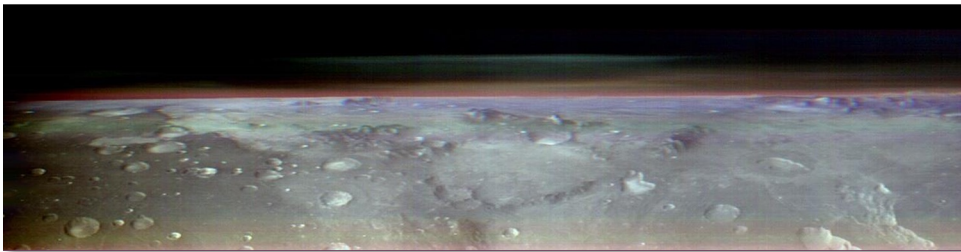
Ensure Decadal-recommended science investigations are included in **Artemis** campaign; support stable cadence of future CLPS deliveries to the lunar surface

Support Planetary Science **research** community to ensure continued scientific discovery from NASA mission data

Planetary Science Highlights



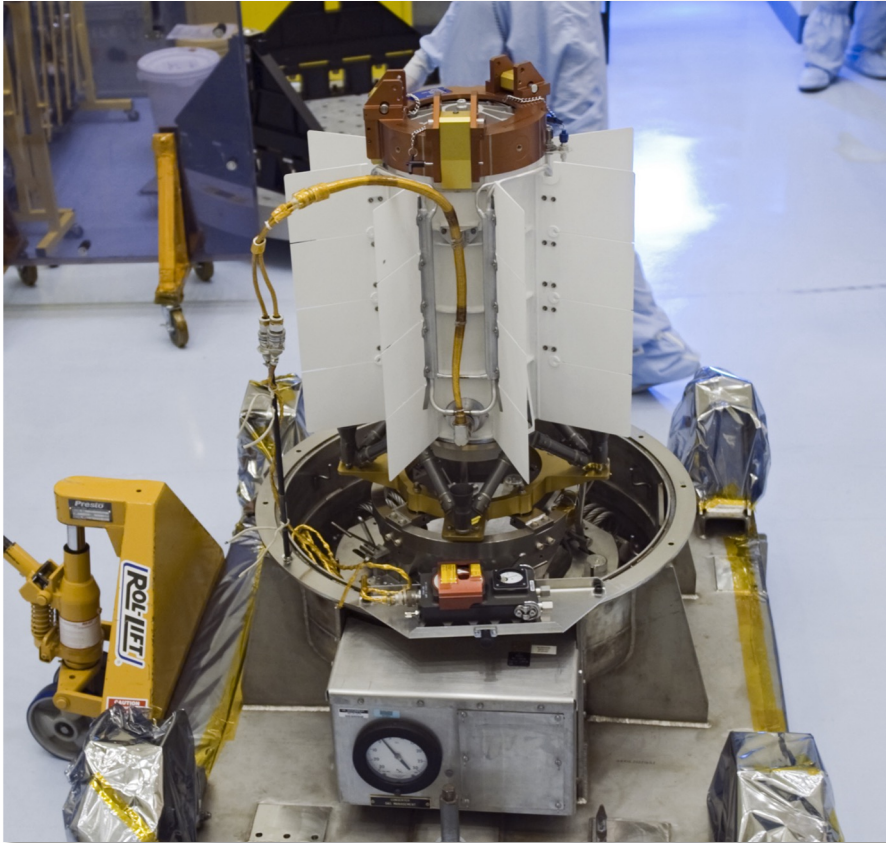
Artist conception of the NEO Surveyor spacecraft. Image credit: NASA/JPL-Caltech



This view of Mars was captured by NASA's Odyssey orbiter using its THEMIS camera. It combines three channels of infrared data that highlight water-ice clouds and dust in the atmosphere. Image credit: NASA/JPL-Caltech/ASU

- **Mars Sample Return** paused in FY24 while architecture studies are completed; FY25 budget request is \$200M
- Supports launches of **Europa Clipper** (Oct 2024) and **NEO Surveyor** (2028)
- Supports **Dragonfly** mission for 2028 LRD, confirmed on April 16
- Three missions to study Venus: **DAVINCI**, **VERITAS** (both to launch in 2031–32 timeframe) and contributions to ESA **EnVision**
- **Mars Exploration Program** supports ongoing operation of 5 missions at Mars, including Perseverance and MSL, and new investments in technology to enable future Mars missions
- Robust **Lunar Discovery and Exploration Program** which includes:
 - Two **CLPS** awards per year in most years
 - Annual **PRISM** calls for instruments
 - Artemis Science instruments, including handheld instruments for astronauts and the lunar terrain rover
 - Lunar Reconnaissance Orbiter operations
 - Support for **VIPER** and **Lunar Trailblazer** for planned launches in FY 2025

Planetary Science Highlights



An RPS MMRTG. This unit is currently installed and operating on the Curiosity Rover. Image Credit: NASA/DOE

- The next **New Frontiers, Discovery, and SIMPLEx** AOs expected to be released no earlier than 2026
- New **Planetary Technology** strategy and project, to provide integrated technology development for future planetary science missions
- Pre-formulation studies of the Decadal-Survey-recommended Uranus Orbiter and Probe mission will begin in the current budget horizon
- Investments in **Open Source Science** to enhance transparency, inclusivity, accessibility, and reproducibility in publicly funded scientific research.
 - This project also supports SMD's transition to cloud computing services
- **Radioisotope Power Systems** program investments in technology, to enable successful trips to distant solar system destinations with harsh environments; includes development of the Dragonfly MMRTG
- **Planetary Data System** data archives, which now span more than 50 years of NASA-funded research, and will expand to include ground-based observations of Near-Earth objects



Looking
Forward

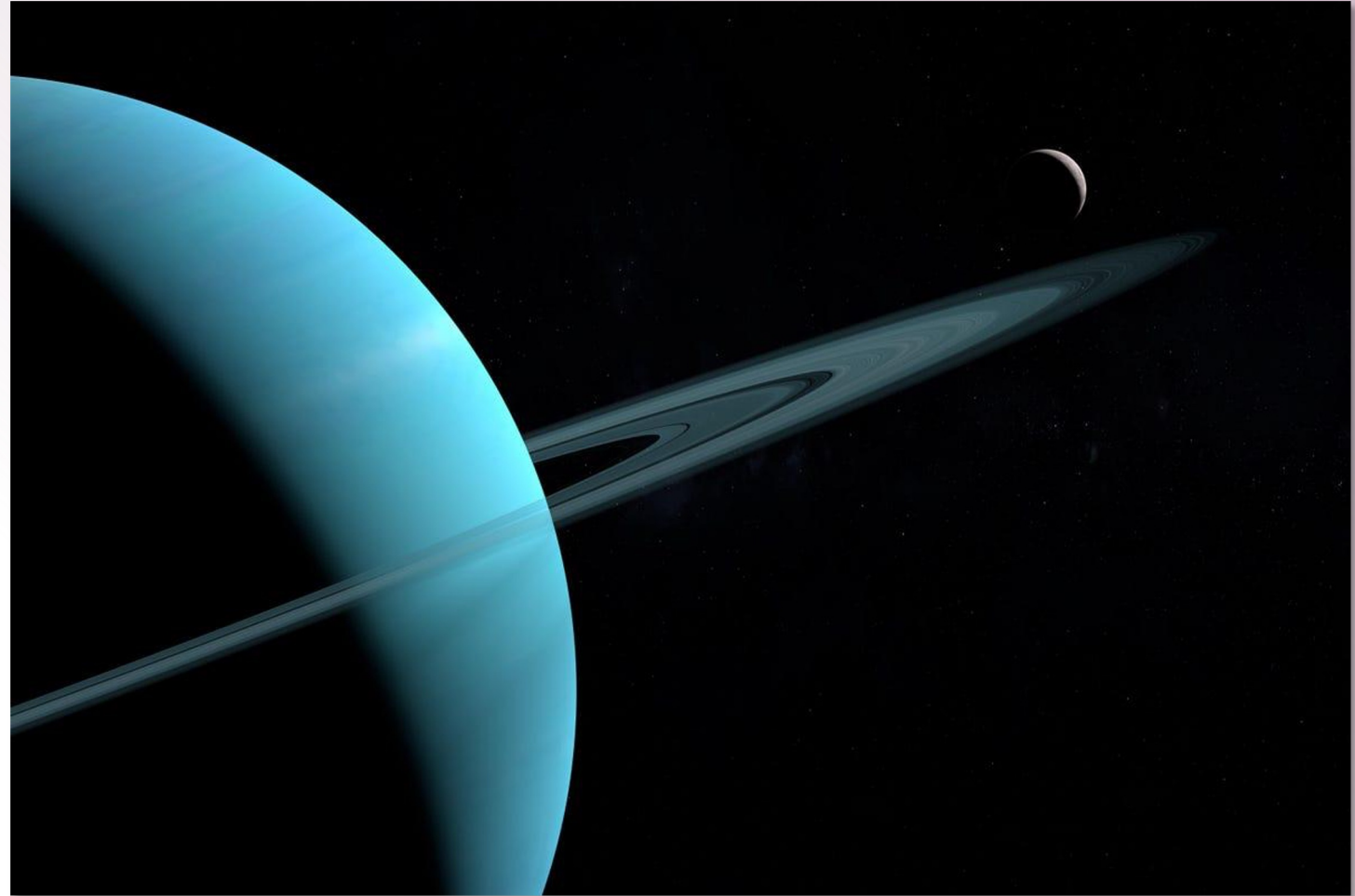
The National Academies of
SCIENCES • ENGINEERING • MEDICINE

ORIGINS, WORLDS, AND LIFE

A Decadal Strategy for Planetary Science & Astrobiology
2023–2032

Uranus Flagship Status

- Received input from three centers (JPL, APL, GSFC)
- Early-stage discussion with ESA (no commitments) about broad approaches for collaboration have happened
- Hope to competitively select a portion of the science team early (depending on available funding)
- Possibility for some focused studies in the out years
- Funding for meetings can be obtained via TWSC: happy to support workshop in Pasadena during summer 2023 and upcoming workshop at GSFC this spring
- **Any decisions on architecture, scope, partners, instruments, etc are still far off**





AbSciCon

Townhall	Time & Place
Habitable Worlds Observatory – an Astrobiology Facility	Monday, May 6 11.45 am to 12.45 pm Ballroom A
Getting with the Program: Updates from Astrobiology at NASA	Monday, May 6 6.15 pm to 7.15 pm Ballroom A
Across the RCNs: Current Views on Life’s Origins, Distribution, and Detection	Tuesday, May 7 11.45 am to 12.45 pm Ballroom A
Opportunities for Astrobiology Small Satellites and Payloads	Wednesday, May 8 11.45 am to 12.45 pm Ballroom B/C

Through the Eyes of NASA

