



National Aeronautics and
Space Administration

FY 2025 Budget Request

Advancing U.S. Leadership in Exploration and Discovery

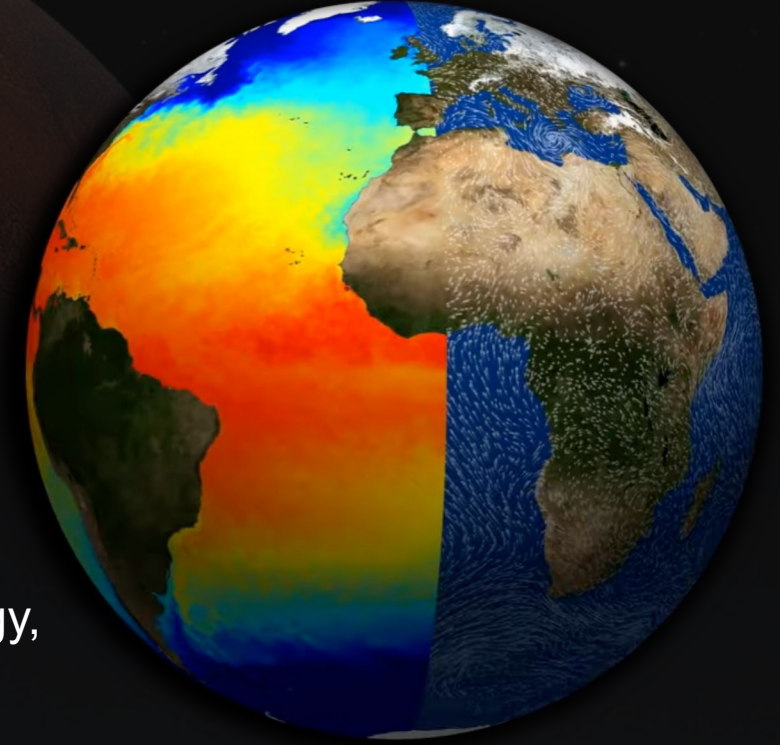
- The President's budget request for NASA is an investment in our nation's future; it promotes U.S. leadership in space exploration, improves our understanding of Earth and the universe, inspires the Artemis Generation, and develops new aviation and space technologies for the benefit of humanity
- Leads the world back to the Moon through the Artemis program, with the broadest space exploration coalition in history
- Advances science and research in low-Earth orbit on the International Space Station while partnering with U.S. industry to develop commercial destinations to further American presence in low Earth Orbit after the ISS is retired in 2030
- Invests in the civil space technology base by developing, demonstrating, and transferring revolutionary technologies that expand the commercial space economy and transform NASA missions



Advancing U.S. Leadership in Exploration and Discovery



- Drives scientific discovery through a balanced portfolio of space-based observatories performing fundamental research, exploring other bodies in the solar system, and gazing into the galaxy and beyond
- Strengthens NASA's global leadership in Earth science to enhance our understanding of the Earth system, response to natural hazards, and management of our natural resources
- Bolsters competitiveness of the U.S. aviation sector, with technologies that will transform commercial air travel, including a more efficient and greener future for aviation
- Engages students from diverse communities to pursue science, technology, engineering, and mathematics
- Invests in workforce, information technology, and infrastructure to enable mission success, and maintains a strong commitment to advancing diversity, equity, inclusion, and accessibility



NASA's FY 2025 Budget Request



Budget Authority (\$M)	FY 2023 Operating Plan ^{1/}	FY 2024 CR ^{2/}	FY 2025 Request	FY 2025 Request			
				FY 2026	FY 2027	FY 2028	FY 2029
Deep Space Exploration Systems	7,447.6	7,468.9	7,618.2	7,803.7	7,959.8	8,119.0	8,281.4
Moon to Mars Transportation System	4,716.6		4,213.0	4,254.0	4,267.3	3,880.9	3,713.6
Moon To Mars Lunar Systems Development	2,630.5		3,288.1	3,285.7	3,389.5	3,868.8	3,712.3
Human Exploration Requirements & Architecture	100.5		117.1	264.1	303.0	369.3	855.5
Space Operations	4,266.7	4,250.0	4,389.7	4,497.6	4,587.6	4,679.4	4,773.0
International Space Station	1,286.2		1,269.6	1,267.8	1,262.8	1,259.4	1,259.4
Space Transportation	1,759.6		1,862.1	1,876.2	1,840.9	1,895.7	1,804.1
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Commercial LEO Development	224.3		169.6	302.3	435.2	465.2	629.3
Exploration Operations	13.2		0.0	0.0	0.0	0.0	0.0
Space Technology	1,193.0	1,200.0	1,181.8	1,205.4	1,229.5	1,254.1	1,279.2
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Inspector General	47.6	47.6	50.5	51.5	52.5	53.6	54.7
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Moon to Mars Objectives

Elements included in FY 2025 - 2029 Budget Request



SCIENCE

- Commercial Lunar Payload Services (CLPS)
- Volatiles Investigating Polar Exploration Rover (VIPER)
- Lunar Trailblazer
- Artemis Crew Surface Instruments



LUNAR AND MARS INFRASTRUCTURE

- In Situ Resource Utilization (ISRU)
- Fission Surface Power
- Lunar Infrastructure Foundational Technologies (LIFT-1 and LIFT-2)
- Cryogenic Fluid Management (CFM)



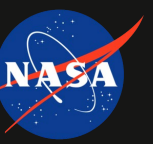
TRANSPORTATION AND HABITATION

- Orion
- Space Launch System (SLS)
- Exploration Ground System (EGS)
- Gateway
- Spacesuits
- Lunar Terrain Vehicle (LTV)
- Pressurized Rover
- Human Landing System (HLS)
- Nuclear Propulsion



OPERATIONS

- Space Communication and Navigation (SCaN)
- Deep Space Network
- Lunar Exploration Ground Segment (LEGS)
- Lunar Communication Navigation and Relay Service (LCNRS)
- Human Research Program (HRP)
- Flight Operations



FY 2025 President's Budget Request Moon to Mars Manifest

FY	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Exploration Systems Development Mission Directorate			Artemis II (Sep. 2025) Crewed Flight SLS Block 1/ Orion/ML1	Artemis III (Sep. 2026) Crewed Flight SLS Block 1/ Orion/ML1 HLS Crewed Lunar Demo xEVA Surface Suits HLS Uncrewed Lunar Demo Gateway PPE/HALO Launch	Gateway PPE/HALO Arrival in NRHO	Artemis IV (Sep. 2028) Crewed Flight SLS Block 1B/ Orion/ML2 I-Hab to Gateway Gateway Logistics Services Sustaining HLS Crewed Lunar Demo xEVA Surface Suits Sustaining HLS Uncrewed Lunar Demo		Artemis V (Mar. 2030) Crewed Flight SLS Block 1B/ Orion/ML2 ESPRIT to Gateway Sustaining HLS Uncrewed Lunar Demo xEVA Surface Suits LTV	Artemis VI (Mar. 2031) Crewed Flight SLS Block 1B/ Orion/ML2 Airlock to Gateway Gateway Logistics Services Gateway External Robotics System TBD Sustaining HLS Services xEVA Surface Suits	Artemis VII (Mar. 2032) Crewed Flight SLS Block 1B/ Orion/ML2 Gateway operations TBD Sustaining HLS Services xEVA Surface Suits Pressurized Rover
Space Operations Mission Directorate	DSN Upgrades (DLEU) Completed DSS-36 [Canberra]	Completed DSS-24 [Goldstone]	DSS-34 [Canberra] DSS-56 [Madrid]		Lunar Communications Relay and Navigation Services (LCRNS)–Increment Alpha	Lunar Exploration Ground Sites 1-3 DSS-54 [Madrid]	Ongoing Science, Human Research Program, and Technology Development in LEO (ISS transition to CLD)			
Science Mission Directorate	LRO CLPS Flights Outlined Mars 2020:	ESCAPEADE Attempted Completed TO 2-AB TO 2-IM TO 19D	TO 20A: VIPER HERMES ready for integration ESA Lunar Pathfinder delivered for launch AVATAR (Artemis II) TO PRIME-1 Lunar Trailblazer TO CP-11	Artemis III Surface Science Instruments MMX (MEGANE/P-Sampler) TO CS-3&4 TO CP-12	LRO continued ops TO CS-06 TO CP-21 TO CP-22	Artemis IV Surface Science Instruments TO CS-6 TO CP-31	Rosalind Franklin Mission (RFM) Launch, Landing TO CP-41 TO CP-42 TO CP-51 TO CP-52 TO CP-61 TO CP-62	Artemis V Surface Science Instruments Artemis LTV Science Instruments	Artemis VI Surface Science Instruments	Artemis VII Surface Science Instruments
Space Technology Mission Directorate	MOXIE; MEDA DSOC	CFM SpaceX TP Flight Demo	Surface Robotic Scouts (CADRE) TO PRIME-1: Drill; Nokia LTE/4G Comm; IM Deployable Hopper CFM ULA TP Flight Demo PPE SEP qual, environ. complete CFM Eta Space TP Flight Demo	CFM Lockheed Martin TP Flight Demo NEP Concept Design	DRACO Demonstration	TO LIFT-1: Lunar Surface Power Demo (i.e., RFC, VSAT, Wireless Charging); Lunar Surface Scaled Construction Demo 1; ISRU Pilot Excavator; ISRU Subscale Demo	SEP qual. complete			Fission Surface Power demo delivered for launch TO LIFT-2: Lunar Surface Scaled Construction Demo 2; Autonomous Robotics Demo; Deployable Hopper 2; ISRU Subscale Demo 2

Icons are representative only, and may not reflect final configurations, not to scale | Icons represent the fiscal year in which an event occurs | Based on FY 2025 President's budget request

Moon to Mars Segments

 Denotes M2M element funded in FY25 Request

LEO AND EARTH ANALOGS



HUMAN LUNAR RETURN



GATEWAY

FOUNDATIONAL EXPLORATION

HUMANS TO MARS MODEST FIRST MISSION OF THE TRADE SPACE SHOWN

SLS BLOCK 2

TRANSIT HABITAT AND MARS TRANSIT

Increased Crew Size and Longer Durations in Microgravity

COMMUNICATIONS RELAYS

HUMAN LANDING SYSTEMS

SURFACE HABITAT

LOGISTICS LANDER

Fission Surface Power

Habitation Systems

MARS ASCENT VEHICLE

Partial Gravity Operations

PRESSURIZED ROVER

**Mobile Expedition Duration/
Mobile Exploration Range**

PRESSURIZED ROVER

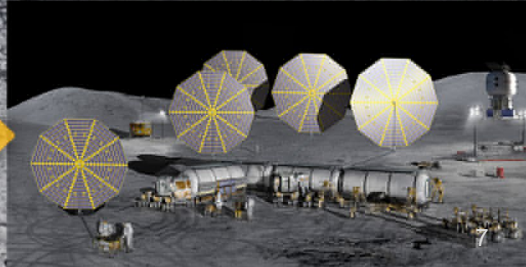
LUNAR TERRAIN VEHICLE

In-Situ Resource Utilization

Autonomous Robotics Systems and Contingency Crew Transportation

MARS TERRAIN VEHICLE

Sustained Lunar Evolution



Low-Earth Orbit Transition: ISS to Commercial Destinations

FY 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032

International Space Station (ISS) Operations

U.S. Deorbit Vehicle Development

Delivery

Deorbit

Commercial LEO Destinations (CLDs) Development

CLD Operations

Phase 1: Early Design Maturation

Phase 2: Certification & Services

Continue valuable science and research on ISS through end of life

Develop U.S. Deorbit Vehicle to safely deorbit ISS at end of useful life

Balancing 3 Priorities

Partner with U.S. commercial space industry to develop and deploy commercial destinations to ensure American access to LEO



Commitment to the Earth and Sustainability

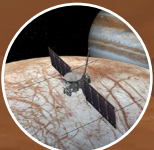
Invests over \$3.2 billion to observe, understand, and protect our home planet

- \$2.4 billion investment in Earth science and observations that enhance our understanding of the Earth system and make Earth science data available and actionable
- \$32 million for Advanced Capabilities for Emergency Response Operations and Wildland Fires
- \$522 million to reduce aviation's climate impact, including a Sustainable Flight National Partnership that will reduce fuel burn by as much as 30 percent
- \$252 million for OSIRIS-APEX, and NEO Surveyor which launches in 2028 to detect, track, and characterize asteroids and comets that could impact Earth
- \$41 million to better understand and mitigate the hazard of orbital debris



Investing in Scientific Discovery

Supports over **125** space science missions, including **54** that are currently preparing for launch and over **70** in operation; also funds U.S. scientists in universities, industry, and government labs through more than **4,000** openly competed research awards



Planetary Science

Explores new destinations in the solar system with exciting missions such as Europa Clipper, Dragonfly, and Rosalind Franklin Mars rover



Earth Science

Enhances understanding of Earth by supplementing Earth observing missions with new missions such as Landsat NEXT and GRACE-Continuity



Astrophysics

Continues to revolutionize understanding of the origins and evolution of galaxies with the development of the Nancy Grace Roman Space Telescope



Heliophysics

Studies the Sun and its influence throughout the solar system with multiple missions, including PUNCH, SunRISE, and IMAP that launch in 2025



Biological & Physical Science

Advances our understanding of how biological and physical systems work from the unique vantage point of space



Account Summaries

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Deep Space Exploration Systems: Moon to Mars Transportation System

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- Enables the Artemis goal of exploring the Moon for scientific discovery, technology advancement, and to learn how to live and work on another world as we prepare for human missions to Mars
- \$2,423M for Space Launch System, including successful completion of Artemis II and preparation for Artemis III and IV, and the Block 1B configuration
- \$1,031M for the Orion program to finalize assembling and testing the Artemis II crew vehicle, and to continue preparation for Artemis III and IV
- \$759M for Exploration Ground Systems to complete preparations for Artemis II; and develop the ground systems, such as the Mobile Launcher 2, required for assembly, test, and launch of SLS Block 1B on Artemis IV



Strategic Objective(s) Supported: Explore
 2.1 Explore the surface of the moon and deep space
 2.3 Develop capabilities and perform research to safeguard explorers
 2.4 Enhance space access and services

Deep Space Exploration Systems: Moon to Mars Lunar Systems Development

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- \$1,896M for the Human Landing System program to develop and deploy landing systems that will transport US and partner nation astronauts to the Moon to conduct lunar science, technology demonstrations, and logistics to enable an enduring presence
- \$818M for Gateway development to establish a multi-purpose outpost orbiting the moon to support deep space presence, human lunar landings, and surface activities
- \$434M for xEVA and Human Surface Mobility Program to develop the surface suits, pressurized rover, lunar terrain vehicle, and other systems for lunar exploration
- \$140M for Advanced Exploration Systems to develop technologies for long duration mission that have common needs for both lunar and Mars missions

Strategic Objective(s) Supported: Explore

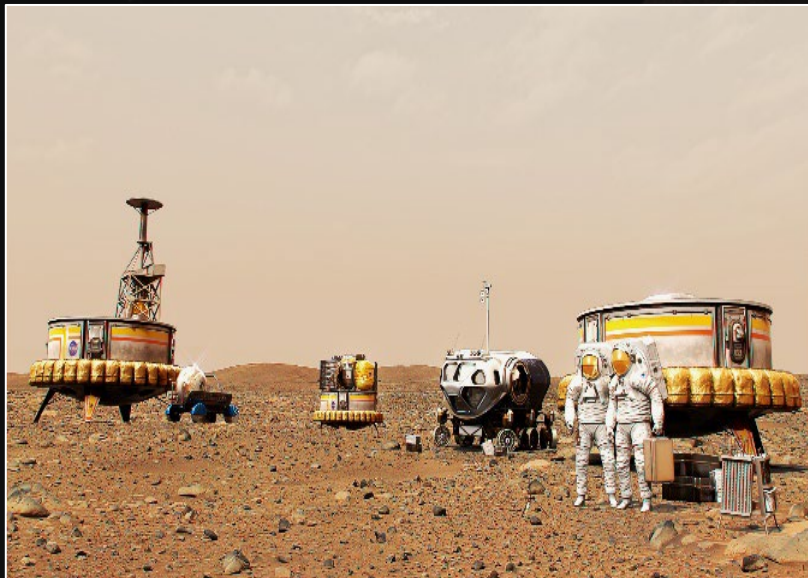
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Deep Space Exploration Systems: Human Exploration Requirements & Architecture

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- \$71M to collaborate with programs across NASA to design the roadmap for future long-term human exploration
- \$46M to conduct trade studies to reduce risk and identify required technologies to be utilized as part of the Artemis Campaign and act as precursor systems for future missions to Mars

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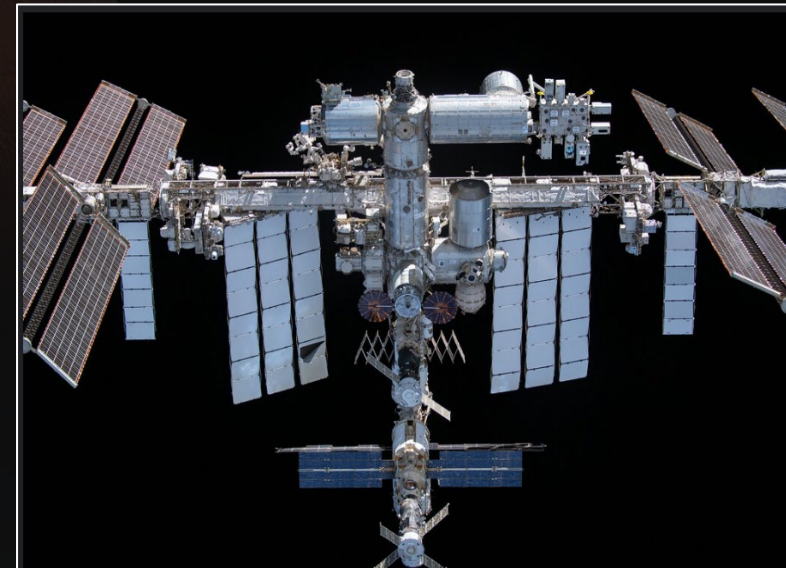
Space Operations: International Space Station

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- \$1,009M to provide continuous ISS operations, support extension until it is retired in 2030, and enable a transition to commercial LEO destinations as soon as they are available
- \$261M to support research and technology demonstrations, including:
 - Long-duration human deep space exploration research and demonstrations
 - Basic and Earth science research by NASA Science Mission Directorate, including projects to advance stem cell biology, optical fiber production, and crystal growth
 - ISS National Laboratory research by expanding the breadth of researchers and companies using ISS and enabling new public-private partnerships
 - Renewed focus on cancer research that supports the President's Cancer Moonshot
- Fosters commercial space industry in collaboration with Commercial LEO Development, Commercial Crew, and Crew Cargo



Strategic Objective(s) Supported: Explore

- 2.2 Develop a space economy enabled by a commercial market
- 2.3 Develop capabilities and perform research to safeguard explorers
- 2.4 Enhance space access and services

Space Operations: Space Transportation

Budget Authority (\$M)	FY 2023	FY 2024	FY 2025	FY 2025 Request			
	Operating Plan ^{1/}	CR ^{2/}	Request	FY 2026	FY 2027	FY 2028	FY 2029
Space Transportation	1,759.6		1,862.1	1,876.2	1,840.9	1,895.7	1,804.1

1/ - FY 2023 reflects funding amounts specified in Public Law 117-328, Consolidated Appropriations Act, 2023, as adjusted by NASA's FY 2023 Operating Plan, September 2023.

2/ - FY 2024 reflects annualized funding amounts based on funding specified in Public Law 117-328, Consolidated Appropriations Act, 2023.



- \$1,762M for the Crew and Cargo Program to provide for commercial crew rotations and cargo resupply missions to the ISS, contributing to the foundation of a more affordable and sustainable future for American human spaceflight
 - Includes \$109M to partner with industry to develop a U.S. deorbit capability for ISS
- \$101M for Commercial Crew Program to continue NASA's collaboration with the U.S. commercial space industry to certify and maintain insight into the vehicles that transport astronauts into space safely, reliably, and affordably from American soil
- The Budget gradually reduces research and other activities on board the ISS to provide the funding necessary for the de-orbit vehicle and commercial space stations

Strategic Objective(s) Supported: Explore

2.2 Develop a space economy enabled by a commercial market

2.4 Enhance space access and services

Space Operations: *Space and Flight Support*

Budget Authority (\$M)	FY 2023	FY 2024	FY 2025	FY 2025 Request			
	Operating Plan ^{1/}	CR ^{2/}	Request	FY 2026	FY 2027	FY 2028	FY 2029
Space and Flight Support	983.4		1,088.4	1,051.3	1,048.7	1,059.0	1,080.2

1/ - FY 2023 reflects funding amounts specified in Public Law 117-328, Consolidated Appropriations Act, 2023, as adjusted by NASA's FY 2023 Operating Plan, September 2023.

2/ - FY 2024 reflects annualized funding amounts based on funding specified in Public Law 117-328, Consolidated Appropriations Act, 2023.

- \$628M for Space Communications and Navigation to provide services for human exploration, science, and crew and cargo missions, including \$62M to support the development of the Lunar Exploration Ground Segment (LEGS) communications network
- \$143M for Human Research Program for continued research to mitigate risks to astronaut health during long-duration missions
- \$105M for Human Space Flight Operations to support crew training, readiness, and health for all NASA human space flight endeavors
- \$104M for Launch Services to provide safe, reliable, and cost-effective launch vehicle acquisition and advisory services for over 70 NASA spacecraft missions in various phases of development
- \$59M for Communications Services Program to demonstrate feasibility of commercially provided satellite communications services to support future NASA missions
- \$49M for Rocket Propulsion Test to provide NASA's rocket testing capability to meet U.S. rocket testing requirements



Strategic Objective(s) Supported: Explore, Advance

2.3 Develop capabilities and perform research to safeguard explorers

4.2 Transform mission support capabilities for the next era of aerospace

Space Operations: Commercial LEO Development

Budget Authority (\$M)	FY 2023	FY 2024	FY 2025	FY 2025 Request			
	Operating Plan ^{1/}	CR ^{2/}	Request	FY 2026	FY 2027	FY 2028	FY 2029
Commercial LEO Development	224.3		169.6	302.3	435.2	465.2	629.3

1/ - FY 2023 reflects funding amounts specified in Public Law 117-328, Consolidated Appropriations Act, 2023, as adjusted by NASA's FY 2023 Operating Plan, September 2023.

2/ - FY 2024 reflects annualized funding amounts based on funding specified in Public Law 117-328, Consolidated Appropriations Act, 2023.

- Facilitates the development of safe, reliable, and cost effective privately-owned and operated commercial LEO destinations from which NASA, along with other customers, can purchase services
- Focuses on maintaining a sustained U.S. human presence in LEO after ISS retirement in 2030 and on providing a microgravity platform to meet NASA research and technology needs
- Currently partnered with U.S. space companies for design maturation and testing of Commercial LEO Destinations
- Stimulates growth of commercial activities in LEO and competitiveness of the US commercial space industry



Starlab, from Nanoracks, Voyager Space, and Lockheed Martin.
Credits: Nanoracks/Lockheed Martin/Voyager Space

Strategic Objective(s) Supported: Explore, Innovate

2.2 Develop a space economy enabled by a commercial market

3.1 Innovate and advance transformational space technologies

NASA's FY 2025 Budget Request



Budget Authority (\$M)	FY 2023 Operating Plan ^{1/}	FY 2024 CR ^{2/}	FY 2025 Request	FY 2025 Request			
				FY 2026	FY 2027	FY 2028	FY 2029
Deep Space Exploration Systems	7,447.6	7,468.9	7,618.2	7,803.7	7,959.8	8,119.0	8,281.4
Moon to Mars Transportation System	4,716.6		4,213.0	4,254.0	4,267.3	3,880.9	3,713.6
Moon To Mars Lunar Systems Development	2,630.5		3,288.1	3,285.7	3,389.5	3,868.8	3,712.3
Human Exploration Requirements & Architecture	100.5		117.1	264.1	303.0	369.3	855.5
Space Operations	4,266.7	4,250.0	4,389.7	4,497.6	4,587.6	4,679.4	4,773.0
International Space Station	1,286.2		1,269.6	1,267.8	1,262.8	1,259.4	1,259.4
Space Transportation	1,759.6		1,862.1	1,876.2	1,840.9	1,895.7	1,804.1
Space and Flight Support	983.4		1,088.4	1,051.3	1,048.7	1,059.0	1,080.2
Commercial LEO Development	224.3		169.6	302.3	435.2	465.2	629.3
Exploration Operations	13.2		0.0	0.0	0.0	0.0	0.0
Space Technology	1,193.0	1,200.0	1,181.8	1,205.4	1,229.5	1,254.1	1,279.2
Science	7,791.5	7,795.0	7,565.7	7,717.0	7,871.3	8,028.7	8,189.3
Earth Science	2,175.0		2,378.7	2,396.3	2,446.1	2,489.7	2,543.4
Planetary Science	3,216.5		2,731.5	2,850.5	2,911.6	2,976.8	3,042.5
Astrophysics	1,510.0		1,578.1	1,587.0	1,613.6	1,647.1	1,673.4
Heliophysics	805.0		786.7	791.9	807.0	820.3	833.4
Biological and Physical Sciences	85.0		90.8	91.3	93.0	94.8	96.6
Aeronautics	935.0	935.0	965.8	985.1	1,004.8	1,024.9	1,045.4
STEM Engagement	143.5	143.5	143.5	146.4	149.3	152.3	155.3
Safety, Security, and Mission Services	3,136.5	3,129.5	3,044.4	3,105.3	3,167.4	3,230.7	3,295.3
Mission Services & Capabilities	2,067.4		2,058.1	2,099.2	2,141.3	2,184.1	2,227.6
Engineering, Safety, & Operations	1,069.1		986.3	1,006.1	1,026.1	1,046.6	1,067.7
Construction and Environmental Compliance & Restoration	422.4	414.3	424.1	379.3	386.9	394.6	402.5
Construction of Facilities	346.2		344.7	298.3	304.3	310.4	316.6
Environmental Compliance and Restoration	76.2		79.4	81.0	82.6	84.2	85.9
Inspector General	47.6	47.6	50.5	51.5	52.5	53.6	54.7
NASA Total	25,383.7	25,383.7	25,383.7	25,891.3	26,409.1	26,937.3	27,476.1

1/ - FY 2023 reflects amounts in Public Law 117-328, Consolidated Appropriations Act, 2023, adjusted by NASA's September 2023 Operating Plan, plus \$8M for IT Modernization Working Capital Fund.

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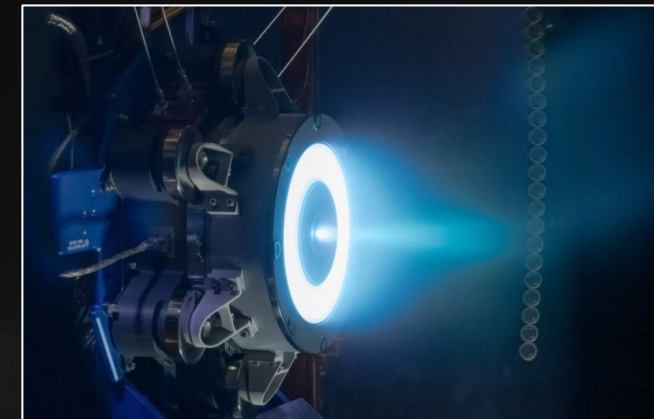
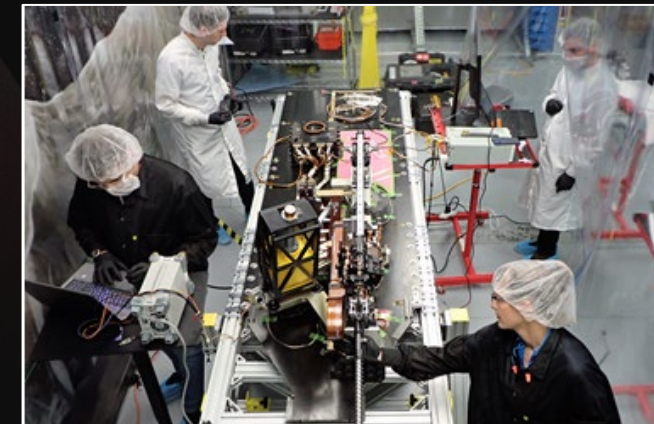
Space Technology

Budget Authority (\$M)	FY 2023 Operating Plan ^{1/}	FY 2024 CR ^{2/}	FY 2025 Request	FY 2025 Request			
				FY 2026	FY 2027	FY 2028	FY 2029
Space Technology	1,193.0	1,200.0	1,181.8	1,205.4	1,229.5	1,254.1	1,279.2

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- STMD is the Nation's technology base for civil space, developing, demonstrating, and transferring revolutionary, high payoff technologies that expand the commercial space economy and transform NASA Missions
- \$459M for Technology Demonstration to conduct ground-based testing and space flight technology demonstrations such as: Solar Electric Propulsion, Cryogenic Fluid Management, Fission Surface Power, Space Nuclear Propulsion, Flight Opportunities and Small Spacecraft Technologies, as well as close-out for the On-orbit Servicing, Assembly, and Manufacturing (OSAM-1) project, which is cancelled in FY 2024
- \$341M for Technology Maturation to advance revolutionary disruptive exploration technologies from proof of concept to demonstration, maturing transformational and foundational technologies such as In-Situ Resource Utilization for sustainable exploration, autonomous operations, space transportation, and Entry Descent and Landing technologies
- \$140M for Early-Stage Innovation and Partnerships to capitalize on innovation by sourcing ideas from a broad, diverse base of innovators including our brightest minds in academia and transferring space technology into the space economy
- \$242M for Small Business Innovation Research and Technology Transfer to leverage the Nation's innovative small business community to conduct research and development in support of NASA



Strategic Objective(s) Supported: Innovate, Advance
 3.1 Innovate and advance transformational space technologies
 4.1 Attract and develop a talented and diverse workforce

NASA's FY 2025 Budget Request



Budget Authority (\$M)	FY 2023	FY 2024	FY 2025 Request	FY 2025 Request			
	Operating Plan ^{1/}	CR ^{2/}		FY 2026	FY 2027	FY 2028	FY 2029
Deep Space Exploration Systems	7,447.6	7,468.9	7,618.2	7,803.7	7,959.8	8,119.0	8,281.4
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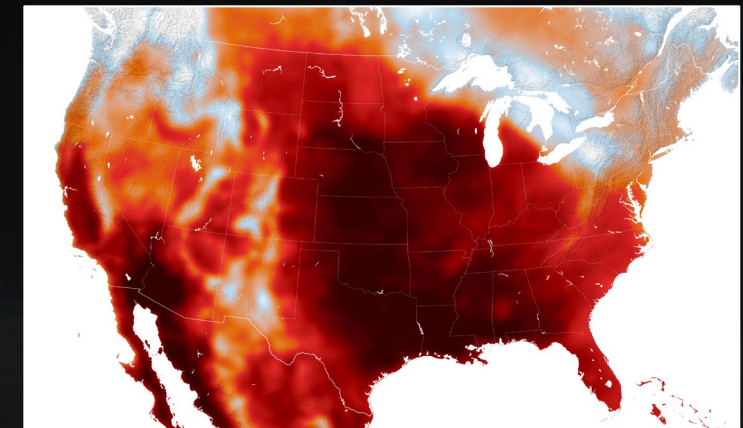
Science: Earth Science

Budget Authority (\$M)	FY 2023	FY 2024	FY 2025	FY 2025 Request			
	Operating Plan ^{1/}	CR ^{2/}	Request	FY 2026	FY 2027	FY 2028	FY 2029
Earth Science	2,175.0		2,378.7	2,396.3	2,446.1	2,489.7	2,543.4

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- \$854M for Earth Systematic Missions which includes \$171M to continue support of Earth System Observatory missions, to observe and enhance understanding of Earth systems and climate change. Additionally, supports 23 missions in operation including drifting orbit science activities for Terra, Aqua, and Aura
- \$606M for the Earth Science Research Program to address complex interdisciplinary Earth science questions in pursuit of a comprehensive understanding of the Earth system
- \$220M supports competitive missions within the Explorer and Venture class lines, providing a regular cadence of opportunities for Principal Investigator-led missions conducting innovative science investigations
- \$168M for the new Responsive Science Initiatives program, which consolidates and expands current activities within Earth Science to increase the impact of NASA's observations, Earth system science, and applied science by aligning, scaling, and connecting with user needs
- \$150M continues support for the Landsat Next mission, which will ensure continuity of the longest space-based record of Earth's land surface and will provide new capabilities for the next generation of Landsat users
- Leverages common infrastructure to provide science information that is responsive to needs across federal government partners



Strategic Objective(s) Supported: Discover, Advance

- 1.1 Understand the Earth system and its climate
- 1.2 Understand the sun, solar system, and universe
- 1.3 Ensure NASA's science data are accessible to all and produce practical benefits to society
- 4.3 Build the next generation of explorers

Science:

Planetary Science

Budget Authority (\$M)	FY 2023	FY 2024	FY 2025	FY 2025 Request			
	Operating Plan ^{1/}	CR ^{2/}	Request	FY 2026	FY 2027	FY 2028	FY 2029
Planetary Science – <i>Pending finalization</i>	3,216.5		2,731.5	2,850.5	2,911.6	2,976.8	3,042.5

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Given that the Mars Sample Return mission is a major part of NASA's planetary science budget, the budget enables NASA's internal assessment of mission architecture options to be completed to address mission cost overruns before providing final details for the \$2.7 billion planetary science budget. Based on this ongoing assessment, the funding levels for Planetary Science missions and the content below are subject to change.

This budget maintains a balanced portfolio of scientific discovery investing in a variety of missions

- \$612M to develop of innovative missions including Dragonfly, a rotorcraft lander mission to study Titan, the largest moon of Saturn, Venus Deep Atmosphere Venus Investigation of Noble gases, Chemistry, and Imaging (DAVINCI), Venus Emissivity, Radio Science, InSAR, Topography, and Spectroscopy (VERITAS), and Europa Clipper, launching in FY25
- \$458M for Lunar Discovery and Exploration that includes at least two CLPS deliveries of science instrument suites per year for innovative investigations to enhance lunar exploration and lunar science objectives
- \$390M for planetary research and analysis funding including open-source science to inform future missions and maximize the return of existing missions
- \$252M to continue development of the Near-Earth Object Surveyor mission for launch in 2028, a planetary defense mission that will detect, track, and characterize impact hazards from asteroids and comets and funds OSIRIS-APEX studying physical changes to Apophis during its close encounter with Earth in 2029
- \$112M to continue support of key international partnerships: European Space Agency's EnVision, Rosalind Franklin, and JUICE missions, JAXA Martian Moons eXploration (MMX) mission



Strategic Objective(s) Supported: Discover, Advance

1.2 Understand the sun, solar system, and universe

1.3 Ensure NASA's science data are accessible to all and produce practical benefits to society

4.3 Build the next generation of explorers

Science: Astrophysics

Budget Authority (\$M)	FY 2023	FY 2024	FY 2025	FY 2025 Request			
	Operating Plan ^{1/}	CR ^{2/}	Request	FY 2026	FY 2027	FY 2028	FY 2029
Astrophysics	1,510.0		1,578.1	1,587.0	1,613.6	1,647.1	1,673.4

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- \$384M for continued development of the Nancy Grace Roman Space telescope for launch in 2027, to analyze dark matter, search for exoplanets, and explore infrared astrophysics
- \$317M supports the operation of Great Observatories including the James Webb Space Telescope, Hubble, and Chandra
- \$269M supports a competed Explorer program with new selections approximately every three years and the launch of SPHEREx in FY25
- \$50M to expand investments in precursor science, mission, and technology maturation efforts as a prerequisite for design of the Habitable Worlds Observatory (HWO), a Decadal Survey recommendation
- Supports initial Astrophysics Probe mission selections, consistent with Decadal Survey recommendation for competed missions intended to fill the gap between large flagship missions and smaller Explorer-class spacecraft

Strategic Objective(s) Supported: Discover, Advance

- 1.2 Understand the sun, solar system, and universe
- 1.3 Ensure NASA's science data are accessible to all and produce practical benefits to society
- 4.3 Build the next generation of explorers

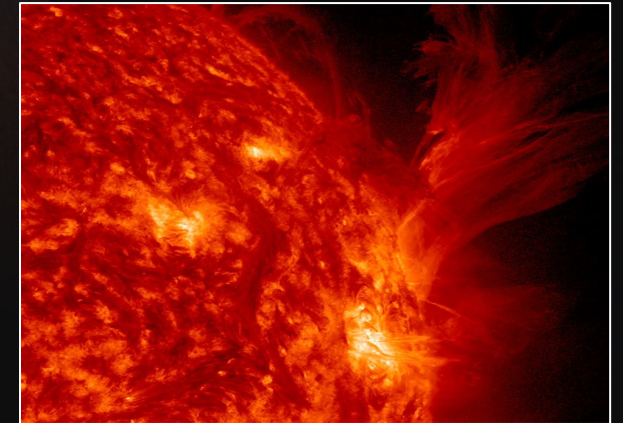
Science: Heliophysics

Budget Authority (\$M)	FY 2023	FY 2024	FY 2025	FY 2025 Request			
	Operating Plan ^{1/}	CR ^{2/}	Request	FY 2026	FY 2027	FY 2028	FY 2029
Heliophysics	805.0		786.7	791.9	807.0	820.3	833.4

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- \$252M for the Heliophysics Research program, including support for the Heliophysics DRIVE Science Centers and a robust portfolio of sounding rocket investigations
- \$237M to support a competitive Explorer program with a robust cadence of future mission launches, including the newly selected missions Multi-slit Solar Explorer (MUSE) and HelioSwarm
- \$64M supports continued development of the Interstellar Mapping and Acceleration Probe (IMAP) for launch in 2025, to help researchers better understand the boundary of the heliosphere
- \$48M for Space Weather investigations and research to better protect technology, national infrastructure, and astronauts from space weather, includes the HERMES instrument, a space weather payload on the Gateway and investments in orbital debris research and technology
- Supports the development and launch of Polarimeter to Unify the Corona and Heliosphere (PUNCH) and The Sun Radio Interferometer Space Experiment (SunRISE) in FY25



Strategic Objective(s) Supported: Discover, Advance

1.2 Understand the sun, solar system, and universe

1.3 Ensure NASA's science data are accessible to all and produce practical benefits to society

4.3 Build the next generation of explorers

Science:

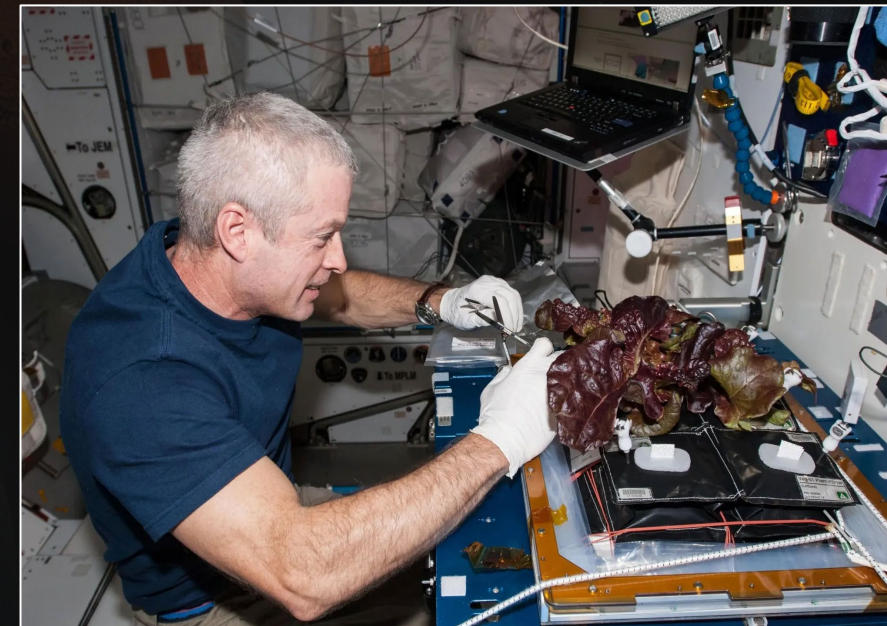
Biological and Physical Sciences

Budget Authority (\$M)	FY 2023	FY 2024	FY 2025	FY 2025 Request			
	Operating Plan ^{1/}	CR ^{2/}	Request	FY 2026	FY 2027	FY 2028	FY 2029
Biological and Physical Sciences	85.0		90.8	91.3	93.0	94.8	96.6

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- Supports compelling research in space to obtain critical insights into how biological and physical systems function in ways not possible on Earth
- Continued annual solicitations for transformative research in Space Biology (\$31M) and Physical Sciences (\$40M), including emphasis areas in Thriving in Deep Space and Quantum Science
- \$10M to develop transformative research capabilities with commercial space industry to dramatically increase pace of research



Strategic Objective(s) Supported: Discover, Explore, Advance

- 1.3 Ensure NASA's science data are accessible to all and produce practical benefits to society
- 2.3 Develop capabilities and perform research to safeguard explorers
- 4.1 Attract and develop a talented and diverse workforce

NASA's FY 2025 Budget Request



Budget Authority (\$M)	FY 2023 Operating Plan ^{1/}	FY 2024 CR ^{2/}	FY 2025 Request	FY 2025 Request			
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2/ - FY 2024 reflects annualized funding amounts based on funding specified in Public Law 117-328, Consolidated Appropriations Act, 2023.

Aeronautics

Budget Authority (\$M)	FY 2023	FY 2024	FY 2025	FY 2025 Request			
	Operating Plan ^{1/}	CR ^{2/}	Request	FY 2026	FY 2027	FY 2028	FY 2029
Aeronautics	935.0	935.0	965.8	985.1	1,004.8	1,024.9	1,045.4

1/ - FY 2023 reflects funding amounts specified in Public Law 117-328, Consolidated Appropriations Act, 2023, as adjusted by NASA's FY 2023 Operating Plan, September 2023.

2/ - FY 2024 reflects annualized funding amounts based on funding specified in Public Law 117-328, Consolidated Appropriations Act, 2023.

- \$279M for Advanced Air Vehicles to conduct research to meet the Nation's growing civil aviation needs for more efficient aircraft and propulsion technologies to improve efficiency (e.g., Hi-rate Composite Aircraft Manufacturing and Hybrid Thermally Efficient Core) and reduce carbon emissions as well as to advance long-term opportunities for supersonic and hypersonic flight
- \$264M for Integrated Aviation Systems to demonstrate transformational in-flight technologies for improved efficiency and reduced noise and emissions, including the X-59 Low Boom Flight Demonstrator, Electrified Powertrain Flight Demonstrations, and the X-66 Sustainable Flight Demonstrator
- \$155M for Transformative Aeronautics Concepts to support revolutionary aviation concepts and university research, including research on zero-emissions aviation
- \$151M for Airspace Operations and Safety to work with the Federal Aviation Administration to transform and modernize the national air traffic management system to enable new advanced air mobility market
- \$116M for Aerosciences Evaluation and Test Capabilities to support critical national ground test infrastructure of twelve large wind tunnels



X-59 Low Boom Flight Demonstrator Credit: Lockheed Martin



Sustainable Flight Demonstrator Credit: Boeing

Strategic Objective(s) Supported: Innovate, Advance

3.2 Drive efficient and sustainable aviation

4.2 Transform mission support capabilities for the next era of aerospace

NASA's FY 2025 Budget Request



Budget Authority (\$M)	FY 2023 Operating Plan ^{1/}	FY 2024 CR ^{2/}	FY 2025 Request	FY 2025 Request			
				FY 2026	FY 2027	FY 2028	FY 2029
Deep Space Exploration Systems	7,447.6	7,468.9	7,618.2	7,803.7	7,959.8	8,119.0	8,281.4
Moon to Mars Transportation System	4,716.6		4,213.0	4,254.0	4,267.3	3,880.9	3,713.6
Moon To Mars Lunar Systems Development	2,630.5		3,288.1	3,285.7	3,389.5	3,868.8	3,712.3
Human Exploration Requirements & Architecture	100.5		117.1	264.1	303.0	369.3	855.5
Space Operations	4,266.7	4,250.0	4,389.7	4,497.6	4,587.6	4,679.4	4,773.0
International Space Station	1,286.2		1,269.6	1,267.8	1,262.8	1,259.4	1,259.4
Space Transportation	1,759.6		1,862.1	1,876.2	1,840.9	1,895.7	1,804.1
Space and Flight Support	983.4		1,088.4	1,051.3	1,048.7	1,059.0	1,080.2
Commercial LEO Development	224.3		169.6	302.3	435.2	465.2	629.3
Exploration Operations	13.2		0.0	0.0	0.0	0.0	0.0
Space Technology	1,193.0	1,200.0	1,181.8	1,205.4	1,229.5	1,254.1	1,279.2
Science	7,791.5	7,795.0	7,565.7	7,717.0	7,871.3	8,028.7	8,189.3
Earth Science	2,175.0		2,378.7	2,396.3	2,446.1	2,489.7	2,543.4
Planetary Science	3,216.5		2,731.5	2,850.5	2,911.6	2,976.8	3,042.5
Astrophysics	1,510.0		1,578.1	1,587.0	1,613.6	1,647.1	1,673.4
Heliophysics	805.0		786.7	791.9	807.0	820.3	833.4
Biological and Physical Sciences	85.0		90.8	91.3	93.0	94.8	96.6
Aeronautics	935.0	935.0	965.8	985.1	1,004.8	1,024.9	1,045.4
STEM Engagement	143.5	143.5	143.5	146.4	149.3	152.3	155.3
Safety, Security, and Mission Services	3,136.5	3,129.5	3,044.4	3,105.3	3,167.4	3,230.7	3,295.3
Mission Services & Capabilities	2,067.4		2,058.1	2,099.2	2,141.3	2,184.1	2,227.6
Engineering, Safety, & Operations	1,069.1		986.3	1,006.1	1,026.1	1,046.6	1,067.7
Construction and Environmental Compliance & Restoration	422.4	414.3	424.1	379.3	386.9	394.6	402.5
Construction of Facilities	346.2		344.7	298.3	304.3	310.4	316.6
Environmental Compliance and Restoration	76.2		79.4	81.0	82.6	84.2	85.9
Inspector General	47.6	47.6	50.5	51.5	52.5	53.6	54.7
NASA Total	25,383.7	25,383.7	25,383.7	25,891.3	26,409.1	26,937.3	27,476.1

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2/ - FY 2024 reflects annualized funding amounts based on funding specified in Public Law 117-328, Consolidated Appropriations Act, 2023.

STEM Engagement

Budget Authority (\$M)	FY 2023	FY 2024	FY 2025	FY 2025 Request			
	Operating Plan ^{1/}	CR ^{2/}	Request	FY 2026	FY 2027	FY 2028	FY 2029
STEM Engagement	143.5	143.5	143.5	146.4	149.3	152.3	155.3

1/ - FY 2023 reflects funding amounts specified in Public Law 117-328, Consolidated Appropriations Act, 2023, as adjusted by NASA's FY 2023 Operating Plan, September 2023.

2/ - FY 2024 reflects annualized funding amounts based on funding specified in Public Law 117-328, Consolidated Appropriations Act, 2023.

- \$57M for NASA Space Grant to provide students across all 50 states, the District of Columbia, and Puerto Rico access to increase understanding of space and aeronautics and to execute the assessment, development, and utilization of resources to bolster the STEM pipeline for aerospace
- \$46M for Minority University Research and Education Project (MUREP) to allow for implementation of multiple competitive award opportunities, including the MUREP/Earth Science joint solicitation, while also executing a shift to place special emphasis on community colleges and other two-year institutions
- \$25M for Established Program to Stimulate Competitive Research (EPSCoR) to support substantive competitive research opportunities to eligible State/Territory (jurisdiction) institutions and increase focus on student participation in EPSCoR research awards
- \$15M for Next-Gen STEM for ongoing student engagement and educator support programs (NASA CONNECTS and NASA SPARX), while also developing and executing a pilot partnerships effort to expand networks and drive systemic change to broaden student participation and increase diversity and equity in STEM



Strategic Objective(s) Supported: Discover, Explore, Innovate, Advance

4.1 Attract and develop a talented and diverse workforce

4.3 Build the next generation of explorers

NASA's FY 2025 Budget Request



Budget Authority (\$M)	FY 2023 Operating Plan ^{1/}	FY 2024 CR ^{2/}	FY 2025 Request	FY 2025 Request			
				FY 2026	FY 2027	FY 2028	FY 2029
Deep Space Exploration Systems	7,447.6	7,468.9	7,618.2	7,803.7	7,959.8	8,119.0	8,281.4
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Commercial LEO Development	224.3		169.6	302.3	435.2	465.2	629.3
Exploration Operations	13.2		0.0	0.0	0.0	0.0	0.0
Space Technology	1,193.0	1,200.0	1,181.8	1,205.4	1,229.5	1,254.1	1,279.2
Science	7,791.5	7,795.0	7,565.7	7,717.0	7,871.3	8,028.7	8,189.3
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Safety, Security, and Mission Services	3,136.5	3,129.5	3,044.4	3,105.3	3,167.4	3,230.7	3,295.3
Mission Services & Capabilities	2,067.4		2,058.1	2,099.2	2,141.3	2,184.1	2,227.6
Engineering, Safety, & Operations	1,069.1		986.3	1,006.1	1,026.1	1,046.6	1,067.7
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Construction of Facilities	346.2		344.7	298.3	304.3	310.4	316.6
Environmental Compliance and Restoration	76.2		79.4	81.0	82.6	84.2	85.9
Inspector General	47.6	47.6	50.5	51.5	52.5	53.6	54.7
NASA Total	25,383.7	25,383.7	25,383.7	25,891.3	26,409.1	26,937.3	27,476.1

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2/ - FY 2024 reflects annualized funding amounts based on funding specified in Public Law 117-328, Consolidated Appropriations Act, 2023.



Safety, Security, and Mission Services

Budget Authority (\$M)	FY 2023 Operating Plan ^{1/}	FY 2024 CR ^{2/}	FY 2025 Request	FY 2025 Request			
				FY 2026	FY 2027	FY 2028	FY 2029
Safety, Security, and Mission Services	3,136.5	3,129.5	3,044.4	3,105.3	3,167.4	3,230.7	3,295.3
Mission Services & Capabilities	2,067.4		2,058.1	2,099.2	2,141.3	2,184.1	2,227.6
Engineering, Safety, & Operations	1,069.1		986.3	1,006.1	1,026.1	1,046.6	1,067.7

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- \$806M for NASA Centers' Engineering, Safety, and Operations providing for center operations, technical capabilities, and skilled workforce to meet mission-critical requirements
- \$733M for Mission Enabling Services, which provides an enterprise approach to managing NASA's business operations and mission support activities
 - \$22M for the Office of Diversity and Equal Opportunity to advance equity, civil rights, racial justice, and equal opportunity across NASA to include achieving the goals and objectives represented in NASA's Equity and DEIA Strategic Plan.
- \$697M to maintain NASA critical infrastructure and technical capabilities across all NASA centers
- \$629M for the Information Technology Program to modernize IT capabilities and provide strategic cybersecurity and Artificial Intelligence risk management
- \$180M for Agency Technical Authority to ensure safety and mission success by providing independent technical oversight for safety, health, quality, and engineering
- Enables NASA's missions by providing foundational support capabilities and services responsive to evolving mission needs

Strategic Objective(s) Supported: Advance

2.2 Develop a space economy enabled by a commercial market

4.1 Attract and develop a talented and diverse workforce

4.2 Transform mission support capabilities for the next era of aerospace

Construction & Environmental Compliance & Restoration

Budget Authority (\$M)	FY 2023 Operating Plan ^{1/}	FY 2024 CR ^{2/}	FY 2025 Request	FY 2025 Request			
				FY 2026	FY 2027	FY 2028	FY 2029
Construction and Environmental Compliance & Restoration	422.4	414.3	424.1	379.3	386.9	394.6	402.5
Construction of Facilities	346.2		344.7	298.3	304.3	310.4	316.6
Environmental Compliance and Restoration	76.2		79.4	81.0	82.6	84.2	85.9

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- \$293M to construct, repair, and revitalize institutional infrastructure that support capabilities across all centers
 - Funds Minor repair and construction at all NASA Centers
 - Funds 7 discrete projects at 4 Centers
- \$79M to maintain NASA's strategy commitment to environmental stewardship responsibilities
- \$33M for modifications to KSC launch infrastructure for SLS and for sustainment of EGS Infrastructure for Artemis
- \$20M to continue the Deep Space Network Aperture Enhancement Project (DAEP) Beam Waveguide (BWG) antennae projects at the Goldstone and Canberra Deep Space Communication Complexes
- NASA uses a risk management approach to balance maintenance, repair, and construction activities in context of a growing backlog of deferred maintenance

Category	Definition	Example
Repair	Fix something broken or degraded to restore function.	
Modernization	Revitalize existing and outdated infrastructure with upgrades/updates that improve outcomes and reduce risks.	
Renewal / Recapitalization	Renew degraded facilities and consolidate to new facilities, leading to demolition and footprint reduction.	

Strategic Objective(s) Supported: Advance
 4.2 Transform mission support capabilities for the next era of aerospace

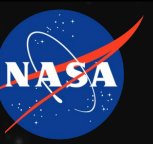
NASA's FY 2025 Budget Request



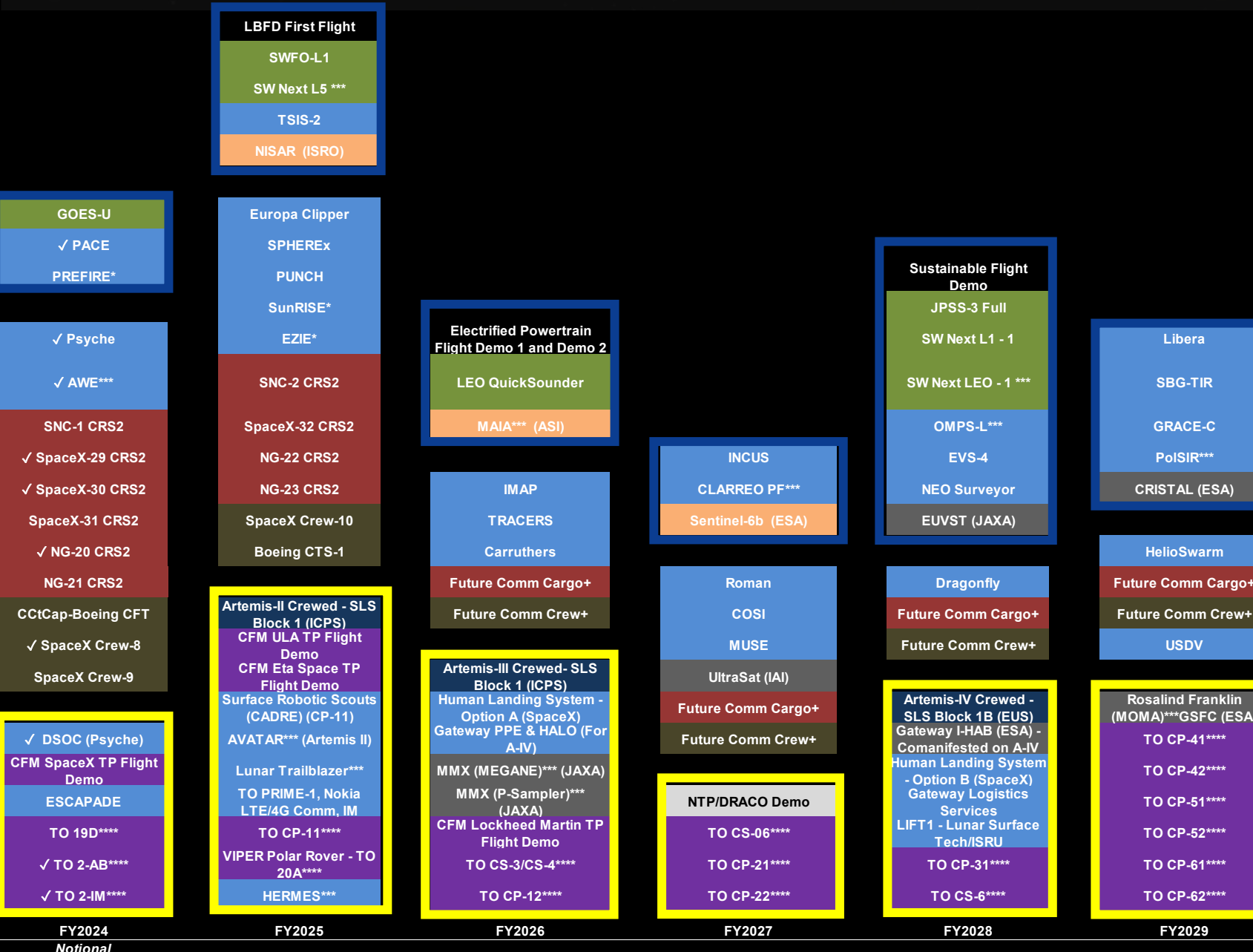
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NASA Mission Planning Manifest: FY 2024 – FY 2029



- NASA Mission on US Commercial Launch Vehicle
- Reimbursable Mission for NOAA
- Joint NASA-Int'l Partner Mission
- Int'l Mission with NASA contribution
- Joint NASA/Industry Collaboration
- Artemis Mission
- Commercial Crew Mission to ISS
- Comm Cargo Mission to ISS
- Interagency Partnerships
- Aeronautics Mission
- Protecting Our Planet
- Moon-Mars Missions

Human Landing System Missions include Surface Suits

* Cubesat Missions
 *** Instrument only
 **** NASA does not directly manage/control CLPS missions. LRDs reflected are current estimates
 + ISS Outyear Manifest still in work
 ✓ Mission successfully launched

With this budget, NASA will support 109 total missions: 12 crewed, 42 Moon-to-Mars, 65 Science, 27 Protecting Our Planet, 9 ISS Crew Rotation, 14 ISS Resupply, & 9 Technology Missions, Launches, Demonstrations, Instruments and Flights among other operations over the next 6 years

Dates reflect Agency Baseline Commitments or updated Agency schedules and may include schedule margin beyond any manifested launch dates

A large, reddish-orange planet, likely Mars, dominates the upper half of the frame. Below it, a smaller, grey, cratered planet, likely the Moon, is visible. The background is a dark, star-filled space. The foreground shows a flat, reddish-brown surface, possibly the ground of Mars. The word "Appendix" is written in a bold, white, sans-serif font, centered over the planets.

Appendix

Acronyms (1 of 4)

- AB – Astrobotic
- ACD – Artemis Campaign Development
- ACSC – Advanced Cislunar Capabilities
- ARC – Ames Research Center
- CALIPSO – Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observations
- CDISS – Commercial Destination on ISS
- CECR – Construction and Environmental Compliance and Restoration
- CESD – Common Exploration Systems Development
- CLARREO PF - Climate Absolute Radiance and Refractivity Observatory Pathfinder
- CLD – Commercial Lunar Destinations
- CLPS – Commercial Lunar Payload Services
- CP – CLPS Payload Task Order
- CS – CLPS Science Task Order
- CT – CLPS Tech Demo Task Order
- DART – Double Asteroid Redirect Test
- DAVINCI – Deep Atmospheric Venus Investigation of Noble gases, Chemistry, and Imaging
- DEIA – Diversity, Equity, Inclusion, and Accessibility
- DRACO – Demo Rocket for Agile Cislunar Inflatable Decelerator
- DRIVE – Diversify, Realize, Integrate, Venture, Educate
- DLEU – DSN Lunar Exploration Upgrades
- DSL – Deep Space Logistics
- DSN – Deep Space Network
- DDS – Deep Space Logistics

Acronyms (2 of 4)

- ECLSS – Environmental Control & Life Support Systems
- EGS – Exploration Ground Systems
- EOS – Earth Observation Systems
- EPSCoR – Established Program to Stimulate Competitive Research
- ESDMD – Exploration Systems Development Mission Directorate
- ESM – Earth Systematic Missions
- ESPRIT – European System Providing Refueling
- GDC – Geospace Dynamics Constellation
- GeoCarb - Geostationary Carbon Observatory
- GLOBE – Global Learning and Observations to Benefit the Environment
- GRC – Glenn Research Center
- HALO – Habitation and Logistics Outpost
- HBCU – Historically Black Colleges and Universities
- HERA – Human Exploration Requirements & Architecture
- HERMES – Helio Environmental & Radiation Measurement
- HLS – Human Landing System
- IM – Intuitive Machines
- IMAP – Interstellar Mapping and Accelerator Probe
- ISRU – In-Situ Resource Utilization
- ISS – International Space Station
- IT – Information Technology
- JAXA – Japan Aerospace Exploration Agency
- JUICE – JUperiter ICy moons Explorer

Acronyms (3 of 4)

- LaRC – Langley Research Center
- LCRNS – Lunar Comms Relay & Navigation System
- LEO – Low-Earth Orbit
- LRO – Lunar Reconnaissance Orbiter
- LOFTID – Low-Earth Orbit Flight Test of Inflatable Decelerator
- LSP – Launch Services Program
- LTV – Lunar Terrain Vehicle
- M&MA – Moon & Mars Architecture
- MCD – Mars Campaign Development
- MMX – Martian Moons eXploration
- MSD – Mission Support Directorate
- MSI – Minority-Serving Institution
- MSR – Mars Sample Return
- MUSE – Multi-slit Solar Explorer
- MUREP – Minority University Research and Education Project
- NET – No Earlier Than
- NISAR – NASA-ISRO Synthetic Aperture Radar
- NHRO – Near-Rectilinear Halo Orbit
- ODEO – Office of Diversity and Equal Opportunity
- PACE – Plankton, Aerosol, Cloud, ocean Ecosystem
- PAMs – Private Astronaut Missions
- PPE – Power and Propulsion Element
- PRIME – Polar Resources Ice Mining Experiment
- PSI – Plume Surface Interaction Mini Suite
- R&A – Research & Analysis

Acronyms (4 of 4)

- SCaN – Space Communications and Navigation
- SFS – Space and Flight Support
- SLS – Space Launch System
- SMD – Science Mission Directorate
- SOFIA – Stratospheric Observatory for Infrared Astronomy
- SPHEREx – Spectro-Photometer for the History of the Universe, Epoch of Reionization and Ices Explorer
- SSMS – Safety, Security, and Mission Services
- STEM – Science, Technology, Engineering, Mathematics
- STMD – Space Technology Mission Directorate
- SWOT – Surface Water and Ocean Topography
- TO – Task Order
- VERITAS – Venus Emissivity, Radio science, InSAR, Topography, and Spectroscopy
- VIPER – Volatiles Investigating Polar Exploration Rover
- VSAT – Vertical Solar Array Technology
- xEVA – Exploration Extravehicular Activity