FY 2025 Budget Request

## FY 2024 Enacted Appropriations

## FY 2024 NASA Appropriations Conference Outcome

|  | FY 2023 Enacted | FY 2024 Request | $\begin{gathered} \text { FY } 2024 \text { HAC } \\ \text { CJS RCP } \\ \hline \end{gathered}$ | $\begin{gathered} \text { FY } 2024 \text { SAC } \\ \text { CJS Mark } \\ \hline \end{gathered}$ | FY 2024 Enacted | Delta from FY 2023 Enacted |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| NASA TOTAL | 25,383.7 | 27,185.0 | 25,366.5 | 25,000.0 | 24,875.0 | -508.7 |
| Science | 7,795.0 | 8,260.8 | 7,380.0 | 7,340.9 | 7,334.2 | -460.8 |
| Earth Science | 2,195.0 | 2,472.8 | 2,000.0 | 2,218.7 | 2,195.0 | 0.0 |
| Planetary | 3,200.0 | 3,383.2 | 3,100.0 | 2,683.3 | 2,716.7 | -483.3 |
| NEOS |  | 209.7 |  |  | 209.7 |  |
| Dragonfly |  | 327.7 |  |  | 360.0 |  |
| MSR | 822.3 | 949.3 | 949.3 | 300.0 | 300.0 | -522.3 |
| Astrophysics | 1,510.0 | 1,557.4 | 1,485.5 | 1,544.0 | 1,530.0 | 20.0 |
| Heliophysics | 805.0 | 750.9 | 710.0 | 805.0 | 805.0 | 0.0 |
| Biological and Physical Science | 85.0 | 96.5 | 85.0 | 90.0 | 87.5 | 2.5 |
| Aeronautics | 935.0 | 995.8 | 945.8 | 935.0 | 935.0 | 0.0 |
| Space Technology | 1,200.0 | 1,391.6 | 1,205.0 | 1,118.0 | 1,100.0 | -100.0 |
| OSAM-1 | 227.0 |  | 227.0 | 227.0 | 227.0 | 0.0 |
| NTP | 110.0 |  | 110.0 | 110.0 | 110.0 | 0.0 |
| Exploration | 7,468.9 | 7,971.1 | 7,971.1 | 7,736.3 | 7,666.2 | 197.3 |
| Common Exploration Systems Development | 4,737.9 | 4,525.4 |  |  |  |  |
| Orion | 1,338.7 | 1,225.0 | 1,225.0 | 1,225.0 | 1,338.7 | 0.0 |
| SLS | 2,600.0 | 2,506.1 | 2,506.1 | 2,506.1 | 2,600.0 | 0.0 |
| B1B/Enhanced Upper Stage | 600.00 | 462.2 | 600.0 | 600.0 | 600.0 | 0.0 |
| EGS | 799.2 | 794.2 | 794.2 | 794.0 |  |  |
| ML-2 | 330.6 | 273.2 | 273.2 | 273.2 |  |  |
| Artemis Campaign Development | 2,600.3 | 3,234.8 | 3,234.9 |  |  |  |
| HLS | 1,485.6 | 1,880.5 |  |  | 1,880.5 | 394.9 |
| xEVA/Human Surface Mobility Program |  | 379.9 |  |  | 379.9 |  |
| Space Operations | 4,250.0 | 4,534.6 | 4,344.6 | 4,200.0 | 4,220.0 | -30.0 |
| USDV | 10.0 | 180.0 |  |  |  |  |
| STEM Engagement | 143.5 | 157.8 | 89.0 | 143.5 | 143.0 | -0.5 |
| EPSCOR | 26.0 | 26.0 | 29.0 | 26.0 | 26.0 | 0.0 |
| Space Grant | 58.0 | 57.0 | 60.0 | 58.0 | 58.0 | 0.0 |
| Safety, Security and Mission Services | 3,129.5 | 3,369.4 | 3,135.5 | 3,100.0 | 3,129.0 | -0.5 |
| Earmarks | 30.7 |  | 36.3 | 21.0 | 56.7 |  |
| Construction \& Env Compliance \& Restoration | 414.3 | 453.7 | 247.9 | 379.0 | 300.0 | -114.3 |
| Office of the Inspector General | 47.6 | 20.2 | 47.6 | 47.6 | 47.6 | 0.0 |

## FY 2024 Appropriations Conference

## NASA Highlights

Science: \$461M below FY 2023 enacted

- Earth Science: equal to FY 2023 enacted
- Planetary: \$483M below FY 2023 enacted (MSR: not less than \$300M; Dragonfly, \$360M; NEOS, \$210M)
- Astrophysics: \$20M above FY 2023 enacted
- Heliophysics: equal to FY 2023 enacted

Aeronautics: $\$ 935 \mathrm{M}$, equal to FY 2023 enacted
Space Technology: \$1.1B, \$100M below FY 2023 enacted

- OSAM-1: equal to FY 2023 enacted, overriding NASA proposal to discontinue
- NTP: equal to FY 2023 enacted; cooperation with DARPA on DRACO supported
- NEP: supports commencement of technology development

Exploration: \$7.7B, \$197M above FY 2023 enacted, \$305M below request

- Orion: up to FY 2023 enacted (\$1.3B)
- SLS: up to FY 2023 enacted (\$2.6B)
- HLS: up to FY 2024 request level (\$1.9B)
- xEVA: up to FY 2024 request level (\$380M)


## FY 2024 Appropriations Conference (cont.)

## NASA Highlights

Space Operations: \$30M below FY 2023 enacted, and \$315M below request
STEM Engagement: \$0.5M below FY 2023 enacted, and \$15M below request
Safety, Security and Mission Services (SSMS): \$0.5M below FY 2023 enacted, and \$240M below request; Earmarks within this account total \$56.7M

Construction and Environmental Compliance and Restoration (CECR): \$114.3M below FY 2023 enacted, and $\$ 240 \mathrm{M}$ below request

## Significant Provisions:

- Extended availability of $\$ 436 \mathrm{M}$ in prior-year appropriations for liquidation of valid obligations for Commercial Crew
- Removal of appropriations funding "call-outs" in Exploration and Space Technology accounts
- General transfer authority increased


## FY 2025 President's Budget Request

NASA's FY 2024 Enacted and FY 2025 Budget Request

|  | FY 2023 Operating Plan ${ }^{1 /}$ | FY 2024 Enacted | FY 2025 Request |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Budget Authority (\$M) |  |  | FY 2025 <br> Request | FY 2026 | FY 2027 | FY 2028 | FY 2029 |
| Deep Space Exploration Systems | 7,447.6 | 7,666.2 | 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 | 4,220.0 | 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 | 1,100.0 | 1,181.8 | 1,205.4 | 1,229.5 | 1,254.1 | 1,279.2 |
| Science | 7,791.5 | 7,334.2 | 7,565.7 | 7,717.0 | 7,871.3 | 8,028.7 | 8,189.3 |
| Earth Science | 2,175.0 | 2,195.0 | 2,378.7 | 2,396.3 | 2,446.1 | 2,489.7 | 2,543.4 |
| Planetary Science | 3,216.5 | 2,716.7 | 2,731.5 | 2,850.5 | 2,911.6 | 2,976.8 | 3,042.5 |
| Astrophysics | 1,510.0 | 1,530.0 | 1,578.1 | 1,587.0 | 1,613.6 | 1,647.1 | 1,673.4 |
| Heliophysics | 805.0 | 805.0 | 786.7 | 791.9 | 807.0 | 820.3 | 833.4 |
| Biological and Physical Sciences | 85.0 | 87.5 | 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 | 143.0 | 143.5 | 146.4 | 149.3 | 152.3 | 155.3 |
| Safety, Security, and Mission Services | 3,136.5 | 3,129.0 | 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 | 300.0 | 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 | 24,875.0 | 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 Appropriat | adjusted by N | A's Septembe | 023 Operating | lan, plus \$8M | or IT Moder | ion Working | pital Fund. |

## 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


## Backup

# FY 2025 President's Budget Request Moon to Mars Manifest 

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline FY \& 2023 \& 2024 \& 2025 \& 2026 \& 2027 \& | 2028 \& 2029 \& 12030 \& 12031 \& 12032 \\
\hline \begin{tabular}{l}
Exploration \\
Systems \\
Development \\
Mission \\
Directorate
\end{tabular} \& \& \& \begin{tabular}{l}
Artemis II \\
(Sep. 2025) \\
Crewed Flight SLS Block 1 / Orion/ML1
\end{tabular} \& \begin{tabular}{l}
Artemis III \\
(Sep. 2026) \\
Crewed Flight SLS Block 1 / Orion/ML1
\end{tabular} \& \[
\left\{\begin{array}{l}
\text { Gatoway } \\
\text { PPE/HALO } \\
\text { Artival in NRHO }
\end{array}\right.
\] \& \begin{tabular}{l}
Artemis IV (Sep. 2028) Crewed Flight SLS Block 1B Orion/ML2
\[
\begin{aligned}
\& \text { 1-Hab to } \\
\& \text { Gateway }
\end{aligned}
\] \\
1. Gateway Logistics Services \\
Sustaining HLS Crewed Lunar Demo \\
15. xEVA Surface Suits Demo
\end{tabular} \& \& \begin{tabular}{l}
Artemis V \\
(Mar. 2030) \\
Crewed Flight SLS Block 1B Orion/ML2 \\
ESPRIT to Gateway \\
Sustaining HLS Uncrewed Lunar Demo
\end{tabular} \& \begin{tabular}{l}
Artemis VI \\
(Mar. 2031) \\
Crewed Flight SLS Block 1B/ Orion/ML2 \\
Airlock to Gateway \\
1. Gateway Logistics Services
Gateway Extemal
Robotics System
TBD Sustaining HLS Services

 \& 

Artemis VII <br>
(Mar. 2032) <br>
Crewed Flight SLS Block 1B Orion/ML2 operations
\end{tabular} <br>

\hline | Space |
| :--- |
| Operations |
| Mission |
| Directorate | \& - DSN Upgrades (DLEU) Completed DSS-36 [Canberra] \& Completed DSS-24 [Goldstone] \& | DSS-34 [Canberra] |
| :--- |
| DSS-56 [Madrid] | \& \& Lunar Communic Increment Alpha \& | Lunar Exploration Ground Sites 1-3 DSS-54 [Madrid] |
| :--- |
| ons Relay and Navigation S Increment Bravo | \& | Ongoing Science Technology De |
| :--- |
| vices (LCRNS)-Increment Increment Charlie | \& ce, Human Research Progr evelopment in LEO (ISS tran \& | and |
| :--- |
| on to CLD) | \&  <br>


\hline | Science |
| :--- |
| Mission |
| Directorate | \& \[

4 \stackrel{+}{6}

\] \& ESCAPADE \& | TO 20A: VIPER |
| :--- |
| HERMES ready for integration |
| ESA Lunar Pathfinder delivered for launch |
| AVATAR (Artemis II) |
| TO PRIME-1 |
| Lunar Trailblazer | \& | Artemis Ill Surface Science Instruments |
| :--- |
| MMX (MEGANE P-Sampler) | \& | LRO continued ops |
| :--- |
| TO CS-06 | \& E Artemis IV Surface \&  \& | 3 |
| :--- |
| Artemis V Surface Science Instruments Arternis LTV Science Instruments | \& Artemis VI Surface Science Instruments \& Artemis VII Surface 2 Science Instruments <br>

\hline \& Mars 20 \& TO 190 \& TO CP-11 \& TO CS-384 TO CP-12 \& TO CP-21 TO CP-22 \& TOCS-6 TOCP-31 \& TOCP-61 TOCP-62 \& Mars 2020 Sample Delivery \& \& <br>

\hline | Space |
| :--- |
| Technology |
| Mission |
| Directorate | \& | MOXIE: MEDA |
| :--- |
| DSOC | \& CFM SpaceX TP Flight Demo \& | Surface Robotic Scouts (CADRE) |
| :--- |
| TO PRIME-1: |
| Dril; Nokia LTE/4G Comm; IM Deployable Hopper |
| CFM ULA TP Flight Demo PPE SEP qual. environ. complete CFM Eta Space TP Fight 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 | \& (0) SEP qual. complete \& \& \& | Tission Surface |
| :--- |
| TO LIFT-2: |
| Lunar Surface Scaled Construction Demo 2; Autonomous Robotics Demo; Deployable Hopper 2; ISRU Subscale Demo 2 | <br>

\hline
\end{tabular}

## Moon to Mars Objectives

Elements included in FY 2025-2029 Budget Request


## Low-Earth Orbit Transition: ISS to Commercial Destinations

FY ..... $2020 \quad 2021$
$\begin{array}{lllll}2022 & 2023 & 2024 & 2025 & 2026\end{array}$ 2027 2028 2029 : 2030 ..... 2031

2032

## International Space Station (ISS) Operations



> U.S. Deorbit Vehicle Development

Delivery

## Commercial LEO Destinations (CLDs) Development

## CLD Operations



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

## 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
Explores new destinations in the solar system with exciting missions such as Europa Clipper,
Science
Earth
Enhances understanding of Earth by supplementing Earth observing missions with new missions such as Landsat NEXT and GRACE-Continuity
Science
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 \&

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

## 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


