

NASA FY 2021 BUDGET REQUEST

<u>Actuals</u> <u>FY 2019¹</u>	<u>Enacted</u> <u>FY 2020²</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>
\$21.5B	\$22.6B	\$25.2B	\$27.2B	\$28.6B	\$28.1B	\$26.3B

With the resources provided in the Fiscal Year 2021 budget request, NASA will: partner with commercial industry to build a Human Landing System, keeping NASA on track to land the first woman and the next American man on the lunar surface in 2024; launch American astronauts from American soil on American rockets to the International Space Station; and embark on missions that will yield great scientific discoveries further advancing humanity's knowledge of the universe.

The Budget includes \$12,371 million for the Moon-to-Mars campaign that will send astronauts to the Moon and prepare for the exploration of Mars and beyond.

- Includes \$3,370 million for the development of lunar Human Landing System, the first directed funding for such a system since Apollo.
- Fully supports the Space Launch System (SLS) rocket, a heavy-lift expendable launch vehicle, and the Orion crew capsule; the systems needed for the first flights of Artemis to quickly and safely get to the Moon.
- Develops initial elements of the Gateway, an outpost orbiting the Moon, which will serve as a staging point for the exploration of the Moon.
- Enables regular, low-cost access to the lunar vicinity and surface through commercial launch capabilities.
- Invests in technologies for long-term utilization and exploration of the lunar surface as well as key research and technology needed for Mars.
- Funds Mars robotic exploration, including a Mars Sample Return mission and Mars Ice Mapper, as a precursor to human exploration.
- Includes investments in the required capabilities, workforce, and facilities needed to ensure safety and mission success.

Human Exploration and Operations - \$12,949 million

- Includes \$8,762 million for Deep Space Exploration Systems and \$4,187 million for LEO and Spaceflight Operations.
- Develops, in partnership with industry, a human lunar landing system,
- Develops the Gateway, supports flight missions to the Moon, and research for future missions.
- Builds the space transportation system made up of the Orion, SLS, and Exploration Ground Systems.
- Defers funding for SLS upgrades to focus on achieving successful early flights and establishing an annual flight cadence.
- Leverages the International Space Station (ISS) to identify risks to human health, develop countermeasures, and test technologies that protect astronauts, while supporting the growth of a commercial ecosystem in low Earth orbit and the development of commercial space station capabilities.
- Continues NASA's partnership with U.S. commercial space industry to develop and operate safe, reliable, and affordable systems to transport crew and cargo to and from the ISS, the Moon, and future commercial space stations in low-Earth orbit (LEO).

Exploration Technology - \$1,578 million

- Delivers critical research and technology required to support lunar landings and surface activities.
- Serves as a catalyst for enabling critical new lunar surface technologies required for humans to successfully operate on the lunar surface, such as In-Situ Resource Utilization, surface power, dust mitigation, and other exploration-related technologies including Solar Electric Propulsion and space nuclear technologies.
- Continues technology research and development spanning the Technology Readiness Level (TRL) spectrum that meets NASA human and robotic exploration needs and supports commercial expansion in space.

Science - \$6,306 million

- \$2,660 million for Planetary Science including Commercial Lunar Payload Services, the VIPER lunar rover, Discovery and New Frontiers missions (Lucy, Psyche, Dragonfly), and Planetary Defense (DART). Proposes to launch the Europa Clipper on a commercial launch vehicle to save over \$1.5 billion compared to using an SLS rocket.
- \$1,768 million for Earth Science, to support a robust Venture Class program; upcoming launches for Landsat-9, NISAR, SWOT, and Sentinel-6; and formulation of the first Designated Observable mission consistent with the Decadal Survey.
- \$831 million for Astrophysics to study the universe and search for Earth-like planets, including the IXPE, GUSTO, and SPHEREx missions.
- \$415 million to launch the James Webb Space Telescope in 2021.
- \$633 million for Heliophysics to study the Sun and its influence throughout the solar system, including the IMAP mission, the DRIVE initiative, and interagency space weather efforts.
- Supports approximately 35 missions currently preparing for launch, approximately 65 operating missions producing leading-edge science, and as many as 10,000 U.S. scientists in universities, industry, and government labs through more than 3,000 open-competitively research awards.
- Proposes termination of the WFIRST mission and SOFIA to focus on higher priorities including completion of the James Webb Space Telescope. The Budget also proposes termination of two Earth science missions (PACE and CLARREO-Pathfinder).

Aeronautics Research - \$819 million

- Advances aeronautics research that leads to transformational advances in the safety, capacity, and efficiency of the air transportation system and breakthroughs in the speed and efficiency of commercial transport aircraft.
- Completes fabrication and testing of the Low Boom Flight Demonstrator in anticipation of its first flight in 2022, which will demonstrate quiet supersonic flight and pave the way for eventual over-land commercial supersonic flight.
- Develops and delivers airspace management capabilities to enable Urban Air Mobility operations and airspace integration to support industry readiness to perform advanced safety and operations testing for emerging aeronautics markets.

Safety, Security and Mission Services and Construction and Environmental Remediation - \$3,549 million

- Funds critical Agency-wide capabilities, workforce, and facilities across the country that are essential to NASA meeting agency priorities, including the Moon-to-Mars campaign.
- Ensures NASA infrastructure and assets are safe, secure, environmentally sound, appropriately sized, and efficiently operated.

¹ FY 2019 reflects funding amounts specified in Public Law 116-006, Consolidated Appropriations Act, 2019, as adjusted by NASA's FY 2019 Operating Plan.

² FY 2020 reflects funding amounts specified in Public Law 116-93, Consolidated Appropriations Act, 2020, recinded \$70M in FY 2019 unobligated balances from the Science account. Per OMB Circular A-11, Appendix A, the recission is scored in the year it was enacted.

STEM Engagement - \$0.0

- Provides no funding for the Office of STEM Engagement, redirecting those funds to NASA's core mission of exploration. The Budget continues to support internships and activities funded in other accounts, including the Science Activation program within Science, which delivers science content and expertise through cooperative agreements with more than 25 organizations.

¹FY 2019 reflects funding amounts specified in Public Law 116-006, Consolidated Appropriations Act, 2019, as adjusted by NASA's FY 2019 Operating Plan.

²FY 2020 reflects funding amounts specified in Public Law 116-93, Consolidated Appropriations Act, 2020, rescinded \$70M in FY 2019 unobligated balances from the Science account. Per OMB Circular A-11, Appendix A, the rescission is scored in the year it was enacted.