

NASA FY 2023 BUDGET REQUEST

(\$ in Billions)	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
NASA Budget	23.3	24.8	26.0	26.5	27.0	27.6	28.1

FY 2021 reflects funding amounts specified in Public Law 116-260, Consolidated Appropriations Act, 2021, as adjusted by NASA's FY 2021 Operating Plan, December 2021.

Full-year appropriations for FY 2022 were not enacted at the time this budget was prepared. Therefore, the FY 2022 column reflects the FY 2022 President's Budget Request.

With the \$26.0 billion provided in the FY 2023 Budget request (4.7% increase over FY 2022 President's request and 8.0% increase over FY 2022 enacted) NASA will:

- Enable Moon to Mars exploration and bolster United States leadership in human spaceflight with \$7.478 billion (a \$687 million increase over FY 2022 enacted) to advance the Artemis mission and the return of American astronauts to the Moon as early as 2025.
- Address the global climate crisis with \$2.4 billion in Earth science and observations to make detailed climate data freely available to scientists and policymakers and over \$500 million to reduce the climate impact of aviation. This includes funding to prototype capabilities for a greenhouse gas monitoring and information system as part of an Earth Information Center that is responsive to the needs of Federal, State, and local governments and other users and is implemented in collaboration with other agencies and partners.
- Support continued human presence in low-Earth orbit (LEO) with operations of the International Space Station (ISS) through 2030 and \$224 million to collaborate with U.S. industry on commercial space stations, initiating transition from ISS when these new space stations become available in the late 2020s.
- Advance robotic exploration of the Moon and Mars, including \$486 million for lunar science missions and \$822 million for Mars Sample Return.
- Spur research and development in Space Technology that advances mission capabilities and grows the commercial space industry, with a \$338 million increase, including \$270 million for industry partnerships, \$45 million for space nuclear power and propulsion, and \$15 million for early-stage orbital debris research and technology development.
- Broaden and diversify student participation in Science, Technology, Engineering, and Mathematics (STEM) with \$150 million for the Office of STEM Engagement to inspire and develop the next generation of scientists, engineers, and explorers.

Deep Space Exploration Systems - \$7.478 billion (10.8% increase over FY 2022 President's request and 10.1% increase over FY 2022 enacted)

- \$4.668 billion for Common Exploration Systems Development to support lunar missions. This includes funding to build the Orion, the Space Launch System (SLS, including development of the Block 1B), and Exploration Ground Systems (EGS, including Mobile Launcher-2) to support lunar missions.
- \$2.600 billion for Artemis Campaign Development to advance lunar exploration capabilities. This includes \$1.486 billion to support the competitively-procured Human Landing System, \$779 million for the Gateway, \$60 million for Advanced Cislunar and Surface Capabilities, and \$276 million for space suits and Surface Mobility.
- \$161 million for Mars Campaign Development to develop future exploration capabilities, which includes \$121 million for Habitation Systems and \$26 million for Human Support & Enabling Capabilities.
- \$48 million for Human Exploration Requirements & Architecture to support Moon and Mars strategy and architecture development.

Space Operations - \$4.266 billion (2.9% increase over FY 2022 President's request and 5.6% increase over FY 2022 enacted)

- \$1.760 billion for Space Transportation to continue NASA's partnership with the United States commercial space industry to operate safe, reliable, and affordable systems to transport crew and cargo to and from the ISS.
- \$1.308 billion for ISS operations and research to continue leveraging the multi-national space platform to conduct research, identify risks to human health, test exploration technologies, and support the growth of a commercial economy in LEO.
- \$975 million for Space and Flight Support to enable safe, reliable, and productive human space exploration. This includes funding to provide mission-critical space communications; launch and test services; and conduct astronaut training and research into the health of humans living and working in space.
- \$224 million for Commercial LEO Development to partner with the United States commercial space industry on future commercial space stations in LEO.

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Space Technology - \$1.438 billion (0.9% increase over FY 2022 President's request and 30.7% increase over FY 2022 enacted)

- \$525 million for Technology Demonstration for ground and flight testing including: launch and flight demonstration of Deep Space Optical Communications, Low-Earth Orbit Flight Test of an Inflatable Decelerator, and Cislunar Autonomous Positioning System Technology Operations and Navigation Experiment; completing the Solar Electric Propulsion first qualification thruster; and development of Cryogenic Fluid Management, and On-orbit Servicing, Assembly, and Manufacturing-1 (OSAM-1) and OSAM-2.
- \$472 million to advance disruptive space technologies including delivery of Lunar Surface Innovative Initiative payloads (Polar Resources Ice Mining Experiment, Nokia 4G, Hopper, and Cooperative Autonomous Distributed Robotic Exploration) to the lunar surface and the Industry & Commerce Innovation Opportunity to pursue technologies needed by commercial space stakeholders.
- \$156 million for Early-Stage Innovation and Partnerships that source ideas from a broad, diverse base of innovators, and transfer space technology into the space economy.
- \$285 million for Small Business Innovation Research and Small Business Technology Transfer to develop new technologies, drive investments in small businesses, and spur economic growth.

Science - \$7.988 billion (0.7% increase over FY 2022 President's request and 4.9% increase over FY 2022 enacted)

- \$2.412 billion for Earth Science to support the Earth System Observatory and investments in sustained climate observations; continue Earth System Explorers and Venture Class missions consistent with Decadal Survey recommendations; and develop Geostationary Carbon Observatory (GeoCarb), Plankton, Aerosol, Cloud, ocean Ecosystem (PACE), Climate Absolute Radiance and Refractivity Observatory (CLARREO)-Pathfinder, NASA Indian Space Research Organization Synthetic Aperture Radar (NISAR), and Surface Water and Ocean Topography (SWOT).
- \$3.160 billion for Planetary Science including a Mars Sample Return mission with international partnerships launching as early as FY 2028, as well as Europa Clipper, New Frontiers and Discovery missions, Planetary Defense (Double Asteroid Redirect Test [DART] and Near Earth Object [NEO] Surveyor), and the Volatiles Investigating Polar Exploration Rover (VIPER) lunar mission.
- \$1.556 billion for Astrophysics to build the Nancy Grace Roman Space Telescope and Explorers program missions such as the Spectro-Photometer for the History of the Universe, Epoch of Reionization and Ices Explorer (SPHEREx) and the recently selected Compton Spectrometer and Imager (COSI), and implementation of decadal survey diversity and inclusion recommendations in the research program. The Budget proposes closeout of the Stratospheric Observatory for Infrared Astronomy (SOFIA) mission, consistent with decadal survey findings regarding its low scientific productivity.
- \$760 million for Heliophysics to study the Sun and its influence throughout the solar system, including the Interstellar Mapping and Acceleration Probe (IMAP) and Geospace Dynamics Constellation (GDC) missions, Explorer selections such as Polarimeter to Unify the Corona and Heliosphere (PUNCH), and Tandem Reconnection and Cusp Electrodynamics Reconnaissance Satellites (TRACERS), and the newly selected missions Multi-slit Solar Explorer (MUSE) and HelioSwarm. The Budget supports interagency efforts to improve space weather forecasting, the Diversify, Realize, Integrate, Venture, Educate (DRIVE) initiative, and new orbital debris investments.
- \$100 million for Biological and Physical Science to better understand how biological and physical systems work from the unique vantage point of space.
- Supports over 100 leading-edge space science missions (including 46 currently preparing for launch and over 60 in operation) and 10,000 United States scientists in universities, industry, and Government labs through more than 4,000 openly-competed research awards.

Aeronautics Research - \$0.972 billion (6.2% increase over FY 2022 President's request and 10.3% increase over FY 2022 enacted)

- \$289 million for Integrated Aviation Systems to develop Electrified Powertrain Flight Demonstrations and a Sustainable Flight Demonstrator that will pave the way to reducing aviation emissions. Also supports the first flights of the X-59 Low-Boom Flight Demonstrator and X-57 all-electric aircraft.
- \$253 million for Advanced Air Vehicles to support advanced engine technology development, techniques for high-rate manufacturing of composite structures, advanced transonic truss-braced wing testing, advanced air mobility vertical lift vehicle designs, and supersonic boom data validation.
- \$156 million for Airspace Operations and Safety to work with the Federal Aviation Administration to safely increase operational efficiency at the vehicle, fleet, and system-wide levels and reduce environmental impacts. Also includes the Advanced Air Mobility project (transferred from Integrated Aviation Systems) and initiates a new wildfire management project.
- \$156 million for Transformative Aero Concepts to support revolutionary aviation concepts development with opportunities focused on zero-emissions aviation, new computational tools, and experimental capability advancement.
- \$117 million for Aerosciences Evaluation and Test Capabilities, supporting NASA's wind tunnel test infrastructure.

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Safety, Security & Mission Services (SSMS) and Construction and Environmental Compliance Restoration (CECR) - \$3.633 billion (5.6% increase over FY 2022 President's request and 5.9% increase over FY 2022 enacted)

- \$3.209 billion for SSMS to fund Agency-wide workforce, capabilities, technical oversight, and infrastructure maintenance that are essential to enable NASA's ambitious portfolio of missions and help maintain United States leadership in space, aviation, science, and technology.
- \$424 million for CECR to make sure the Agency's infrastructure, laboratories, and critical facilities are safe, secure, environmentally sound, appropriately sized, efficiently operated, and mission ready.

STEM Engagement - \$0.150 billion (2.1% increase over FY 2022 President's request and 9.6% increase over FY 2022 enacted)

- NASA's STEM engagement efforts will focus on broadening student participation, expanding K-12 student engagement in STEM pathways, and building partnerships and networks to magnify reach and impact. Projects include: Space Grant, Established Program to Stimulate Competitive Research (EPSCoR), Minority University Research and Education Project (MUREP), and Next Gen STEM.