



## NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

### Funding Highlights:

- Provides \$17.7 billion in discretionary funding for the National Aeronautics and Space Administration (NASA), a decrease of 0.3 percent, or about \$50 million, below the 2012 enacted level. While making tough choices, the Budget reinforces the agency's current balanced portfolio of aeronautics and space technology development, Earth and space science, the development of rockets and capsules to carry explorers deeper into space, and the use of innovative commercial partnerships for crew and cargo transport to the International Space Station.
- Includes funding needed to develop a Commercial Crew capability, with the intent of supporting a new industry that regains the capability to send American astronauts into space from U.S. soil and ends the need to pay foreign providers to transport American astronauts to the International Space Station.
- Increases investment in space technologies, such as advanced in-space propulsion and space propellant storage, which are necessary to increase America's capabilities in space, bring the cost of space exploration down, and pave the way for other Federal Government and commercial space activities.
- Fully funds the Space Launch System heavy-lift rocket and Orion Multi-Purpose Crew Vehicle, two key elements for pushing the boundaries of human space exploration. This funding level will enable a flight test of Orion in 2014 and the Space Launch System in 2017.
- Keeps development of the James Webb Space Telescope, the more powerful successor to the Hubble Space Telescope, on track for a 2018 launch.
- Provides over \$1.8 billion for Earth Science to revamp the Landsat program, develop climate sensors for the Joint Polar Satellite System, and conduct numerous other satellite and research efforts.
- Begins work on a mission to rendezvous with—and then move—a small asteroid. Astronauts would later visit the asteroid and return samples to Earth, achieving one of the agency's major goals in a more cost-effective manner.
- Continues the agency's important role in the Nation's aeronautics research and development portfolio, including a new initiative to make lighter composite materials more easily useable in aviation.

- Funds research on the International Space Station, while identifying efficiencies in operations and space flight support.
- Consolidates \$47.5 million of small science, technology, engineering, and mathematics (STEM) education programs from across NASA into larger programs at other agencies to achieve the best return on investment, while attaining tangible Government-wide STEM education goals. The Budget preserves \$67.5 million for the Space Grant and Global Learning and Observations to Benefit the Environment programs at NASA, as well as key minority-serving education programs, and refocuses an additional \$26.8 million from other NASA education and outreach programs to facilitate the wider application of its best education assets in close coordination with the National Science Foundation, the Department of Education, and the Smithsonian Institution.

The National Aeronautics and Space Administration (NASA) develops aeronautics and space technologies, studies the Earth from space, and pioneers the exploration of space. The Budget provides \$17.7 billion for NASA to support investments that will ensure continued U.S. leadership in space, while helping to create new industries and capabilities. It supports research and development to drive advances in our space capabilities and strengthens NASA's ability to answer increasingly important scientific questions about the Earth.

### *Leads the World in Space Exploration*

**Invests in American Private Aerospace Enterprises.** In order to reduce our reliance on foreign providers for transporting our astronauts to and from the International Space Station, the Budget invests in the innovative energies of U.S. industry to create transport capabilities at a lower cost than previous systems. Building on a successful commercial cargo program, the Commercial Crew Program is a uniquely American partnership aimed at introducing new efficiencies in space exploration that will strengthen U.S. leadership in space, help produce a more globally-competitive U.S. space industry, and enable the Nation to more fully benefit from the International Space Station's research capabilities.

**Sustains Investment in Space Technologies.** Advanced technology investments will increase the affordability, safety, and feasibility of NASA and other Federal Government and commercial space activities to ultimately enable travel to and exploration of destinations never before visited. From laboratory experiments to technology demonstrations onboard the International Space Station to future in-space missions, the Budget funds the testing and development of technologies that will be crucial to NASA's missions and will help to further develop a competitive U.S. aerospace sector.

**Advances Human Exploration of the Solar System.** The Budget fully funds the continued development of new systems that will support crewed missions to deep space. The Space Launch System heavy-lift rocket will eventually be the world's largest rocket since the Apollo-era Saturn V, and remains on track for its first test flight in 2017. The Orion Multi-Purpose Crew Vehicle will carry crews past the Moon and is scheduled for its first uncrewed flight test next year. Both programs leverage NASA's skilled workforce and contractor teams and builds upon existing capabilities to push the reach of humans farther into the solar system, with an initial goal of visiting an asteroid in the next decade, followed eventually by a human mission to Mars.

**Unlocks Mysteries of the Universe.** The Budget fully funds the James Webb Space Telescope, a 100-times more capable successor to the Hubble Telescope, to keep it on track for launch in 2018. Within the current constrained funding environment, the Budget funds high-priority planetary science missions, including a robotic sample return mission from an asteroid, and multiple missions focused on Mars exploration, including a new large rover to be launched in 2020.

**Pursues Innovative Approach to Visiting an Asteroid.** The Budget includes \$78 million for NASA to develop needed technologies and study alternative approaches for a robotic mission to rendezvous with a small asteroid—one that would be harmless to Earth—and move it to a stable location outside the Moon’s orbit. This mission would develop the technologies and capabilities required if in the future there is a need to move a hazardous asteroid. Eventually, astronauts would visit the retrieved asteroid using rockets and capsules NASA is already developing, fulfilling the President’s goal of sending humans to an asteroid by 2025 in a more cost-effective manner and allowing the recovery and return to Earth samples of the asteroid’s rocks. In addition, NASA will accelerate its efforts to detect and characterize potentially hazardous Earth asteroids, to both address the threat and clarify the opportunities these objects represent.

### *Discovers More About Our Home Planet*

**Supports a Robust Fleet of Earth Monitoring Spacecraft.** NASA has unique expertise in satellite and sensor development, and the Budget makes best use of that expertise, providing over \$1.8 billion to the Earth Science program, including funds to revamp the Landsat program. To minimize the risk of a gap in our Nation’s climate monitoring data, NASA will develop climate sensors for the Joint Polar Satellite System program, as well as support other earth science and climate change research and development efforts.

### *Maximizes Resources*

**Consolidates STEM Education Programs.** The President places a high priority on STEM education and has set ambitious goals of generating 100,000 new effective STEM teachers and one million more STEM graduates. In order to improve STEM education outcomes and achieve these goals, the Budget includes a bold reorganization of Federal STEM programs that uses existing resources more effectively and in a more streamlined, consolidated way. The Budget redirects \$47.5 million of funding from small NASA education programs throughout the agency to other agencies where these funds will be consolidated with similar resources from across the Federal Government. NASA retains \$67.5 million for high-performing existing programs, and an additional \$26.8 million from other education and outreach programs previously distributed throughout the agency’s mission directorates. NASA’s assets will be used more effectively through coordination with the National Science Foundation, the Department of Education, and the Smithsonian Institution to achieve the Administration’s wider STEM education goals.

**Boosts Sustainability and Energy Efficiency of NASA Facilities.** The Budget supports a number of initiatives to help NASA facilities operate in a more efficient and sustainable manner. Today, over 80 percent of NASA buildings are beyond their design life. The Budget continues to enable NASA to replace or modernize inefficient buildings, providing jobs to local communities and leading to increasingly efficient use of taxpayer dollars. For example, the Budget supports a building renovation at Langley Research Center in Virginia and a number of cost-savings investments across NASA that will reduce the footprint, co-locate personnel, consolidate data centers, increase energy efficiency, and improve sustainability.