NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Funding Highlights:

- Provides $17.5 billion in discretionary funding for the National Aeronautics and Space Administration (NASA) by prioritizing the research and development that lays the foundation for future long-term growth and exploration, as well as the key commercial partnerships that will enable the efficient long-term operations of the International Space Station. This includes:
  - Extending the life of the Space Station to 2024;
  - Allowing NASA and its international partners to continue the research and technology development work that holds promise to improve life on Earth, advance human capability to live and work in space, and allow long-term human exploration missions;
  - Partnering with the commercial space industry to regain the capability to send astronauts into space cost-effectively from U.S. soil;
  - Investing in space technologies, such as advanced in-space propulsion, which is 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;
  - Keeping the development of the James Webb Space Telescope, the more powerful successor to the Hubble Space Telescope, on track for a 2018 launch; and
  - Supporting robust development of NASA's longer-term human space exploration programs.

Opportunity, Growth, and Security Initiative:

- Through the Opportunity, Growth, and Security Initiative, supports:
  - The development of game-changing space technologies that will lower the cost and increase the capabilities of future space activities;
  - The ability of American companies to carry people to space;
  - Science missions and research that will enhance human understanding of the Earth and solar system; and
  - NASA's investment in a heavy lift rocket and crew capsule for deep space exploration.

Reforms:

- Contributes to the Government-wide effort to restructure and improve the effectiveness of science, technology, engineering, and mathematics education programs.
- Achieves savings by reducing funding for lower priority programs, such as the Stratospheric Observatory for Infrared Astronomy. These savings enable continued support for higher priority programs, including lower cost, competitive science missions, and extended operations for the Cassini Saturn mission.

The National Aeronautics and Space Administration's (NASA) mission is to drive advances in science, technology, and exploration to enhance knowledge, education, innovation, economic vitality, and stewardship of Earth. To achieve this mission, NASA develops aeronautics and space technologies, studies the Earth from space, and pioneers the exploration of space. The Budget provides $17.5 billion for NASA to support investments that will ensure continued U.S. leadership in space, while helping to create new industries and capabilities. The Budget supports research and development to drive advances in space capabilities and strengthens NASA's ability to answer increasingly important scientific questions about the Earth. The Budget also prioritizes the "seed corn" of technology development, as well as innovative commercial programs that promise to reduce costs and increase U.S. capabilities.

Leads the World in Space Exploration

Extends the Life of the International Space Station. The Budget extends the planned life of the International Space Station to 2024. The Space Station provides a unique environment for the research on human health and space operations necessary for future long-term human missions. In addition, the Space Station has served as a tool for promoting science, technology, engineering, and mathematics (STEM) education and inspiring the public. The Opportunity, Growth, and Security Initiative provides an additional $100 million to enable the Space Station's research facilities to be fully utilized.

Partners with American Commercial Space Enterprises. In order to reduce U.S. reliance on foreign providers for transporting U.S. astronauts to and from the International Space Station, the Budget invests in private industry-based solutions that will create competitive transport capabilities at a lower cost than previous systems. After the successful completion of the commercial cargo development program, NASA is now purchasing services from two U.S. providers who have successfully conducted cargo resupply missions to the Space Station. Building on the success of these efforts, 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. The Opportunity, Growth, and Security Initiative provides an additional $250 million to speed development and certification of these systems.

Sustains Investment in Space Technologies. Advanced technology investments will increase the affordability and safety of space activities by NASA, other Federal Government entities, and industry, with the ultimate goal of enabling 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 keep the U.S. aerospace industry competitive with other

nations. The Opportunity, Growth, and Security Initiative provides an additional $100 million to develop new space technologies.

Unlocks Mysteries of the Universe. The Budget continues the development of the James Webb Space Telescope, a 100-times more capable successor to the Hubble Telescope, keeping it on track for launch in 2018. Within the current constrained funding environment, the Budget also funds high priority planetary science missions, including efforts to detect and characterize potentially hazardous Earth asteroids, extension of an existing Saturn mission, and multiple missions focused on Mars exploration. The Opportunity, Growth, and Security Initiative provides funding to extend missions that continue to generate valuable science and to accelerate early work on a potential successor to the James Webb Space Telescope.

Continues Human Exploration of the Solar System. The Budget 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 its capsule counterpart, the Orion Multi-Purpose Crew Vehicle, is designed to carry crews past the Moon. Both programs leverage NASA's skilled workforce and contractor teams and build 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. The Opportunity, Growth, and Security Initiative provides an additional $100 million to aid the development of the heavy lift rocket and the Orion capsule.

Improves Understanding of the Earth

Advances Science Needed to Improve Prediction of Climate and Weather. The Budget provides $1.8 billion for NASA's Earth Science missions that will allow unprecedented study of climate change and weather modeling and prediction. From global measurements of soil moisture and the ocean to continuation of key climate and land imaging observations, NASA missions will advance Earth system science and demonstrate technologies for next generation measurements.

Makes Air Travel Safer and More Cost-Effective

Promotes Innovation in Aviation. The Budget continues support for research and development to improve the Nation's air transportation system so that Americans can get where they need to go as safely and efficiently as possible. The Budget funds the second year of an initiative that will make lighter composite materials more easily usable in aviation, and continues to fund myriad research projects aimed at increasing efficiency and reducing environmental impacts in aviation. The Opportunity, Growth, and Security Initiative provides additional funding for research to help increase the efficiency and throughput of the air traffic systems that affect all travelers.

Maximizes Resources

Supports High-Quality STEM Education Programs. The Budget continues NASA's effort to consolidate its education efforts into a more focused portfolio funded through the Office of Education. Additionally, the Budget provides $15 million to NASA's Science Directorate to fund the best application of NASA Science assets to meet the Nation's STEM education goals through a competitive process.

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, more than 80 percent of NASA buildings are beyond their design life. The Budget supports NASA's efforts 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 cost-saving investments across NASA that will reduce the agency's footprint, co-locate

personnel, consolidate data centers, increase energy efficiency, and improve sustainability.

Achieves Savings Through Reducing or Terminating Lower Priority Programs. Recognizing the challenges of the fiscal environment, the Budget focuses on those programs that have the most significant return on investment and reduces funding for lower priority programs. For example, the Budget sharply reduces funds for the Stratospheric Observatory for Infrared Astronomy in order to fund higher priority science missions.