

A Bold Approach for Space Exploration and Discovery

Fact Sheet on the President's April 15th Address in Florida

On Thursday, April 15, at the Kennedy Space Center in Florida, the President will outline a bold strategy for human spaceflight that increases the NASA budget by \$6 billion over the next five years. His plan represents an ambitious effort to foster the development of path-breaking technologies; increase the number, scope, and pace of manned and unmanned space missions; make human spaceflight safer and more efficient; and help create thousands of jobs. The President will lay out the goals and strategies in this new vision for NASA, including a sequence of deep-space destinations matched to growing capabilities, progressing step-by-step until we are able to reach Mars. He will provide new information about specific elements of the plan, including proceeding with a scaled-down variant of the Orion space-capsule technology developed in the Constellation program (to support crew escape requirements on the International Space Station) and setting a decision date for moving from research to development and production of a heavy-lift launch vehicle. In addition, he will speak to the new technologies, new jobs, and new industries this approach will create along the way.

This new strategy means more money for NASA, more jobs for the country, more astronaut time in space, and more investments in innovation. It will result in a longer operating lifetime for the International Space Station, new launch capabilities becoming available sooner, and a fundamentally more ambitious space strategy to take us to an increased number of destinations and to new frontiers in space. By undertaking this strategy, we will no longer rely on our past achievements, and instead embrace a new and bold course of innovation and discovery.

This new plan:

- Advances America's commitment to human spaceflight and exploration of the solar system, with a bold new vision and timetable for reaching new frontiers deeper in space.
- Increases NASA's budget by \$6 billion over 5 years.
- Leads to more than 2,500 additional jobs in Florida's Kennedy Space Center area by 2012, as compared to the prior path.
- Begins major work on building a new heavy lift rocket sooner, with a commitment to decide in 2015 on the specific heavy-lift rocket that will take us deeper into space.
- Initiates a vigorous new technology development and test program to increase the capabilities and reduce the cost of future exploration activities.
- Launches a steady stream of precursor robotic exploration missions to scout locations and demonstrate technologies to increase the safety and capability of future human missions, while also providing scientific dividends.

- Restructures Constellation and directs NASA to develop the Orion crew capsule effort in order to provide stand-by emergency escape capabilities for the Space Station – thereby reducing our reliance on foreign providers.
- Establishes the technological foundation for future crew spacecraft needed for missions beyond low Earth orbit.
- Increases the number of astronaut days in space by 3,500 over the next decade, extends the life of the International Space Station, likely beyond 2020, and enables the launching of astronauts on new vehicles from the Kennedy Space Center 1- 2 years sooner.
- Jumpstarts a new commercial space transportation industry to provide safe and efficient crew and cargo transportation to the Space Station, projected to create over 10,000 jobs nationally over the next five years.
- Invests in Florida, adding \$3 billion more for the Kennedy Space Center to manage – a 60 percent increase.
- Makes strategic investments to develop critical knowledge, technologies, and capabilities to expand long-duration human exploration into deep space in a more efficient and safe manner, thus getting us to more destinations in deep space sooner.
- And puts the space program on a more ambitious trajectory that pushes the frontiers of innovation to propel us on a new journey of innovation and discovery deeper into space.

Specific New Elements of the President's Plan:

Outlining A Bold New Vision for Reaching New Frontiers in Space: Building on the announcement of a new heavy-lift rocket decision date and the restructuring of Orion, the President will outline a broad vision and timetable for unlocking our ambitions and expanding our frontiers in space, until ultimately we can meet the challenge of sending humans to Mars.

The President's vision for NASA space exploration enables:

- a set of stepping-stone achievements in space that will take us further and faster into space, allowing us to reach a range of destinations including lunar orbit, Lagrange points, near-Earth asteroids, and the moons of Mars, and eventually Mars itself. This sequence of missions will begin with a set of crewed flights to prove the capabilities required for exploration beyond low Earth orbit. After these initial missions, our long-duration human spaceflight technologies will enable human explorers to conduct the first-ever crewed mission into deep space to an asteroid, thereby achieving an historical first; venture into deep space locations such as the Lagrange points (potential sites of fuel depots that would enable more capable future missions to the Moon, Mars, and other destinations); and then send humans to orbit Mars and return them safely to Earth.

- increasing investments in ground-breaking technologies that will allow astronauts to reach space faster and more often, to travel further distances for less cost, and to stay in space for longer periods of time
- systematically tackling the hard problems of space exploration – from protecting our astronauts from radiation to developing advanced in-space propulsion -- so that we can push the boundaries not only of where we can go in space but also what we can do there to improve our lives here on Earth

Developing a Heavy Lift Rocket, with a Specific Decision in 2015, to Expand Our Reach in Space: To demonstrate a concrete timetable and commitment for expanding human exploration further, the President is announcing that, in addition to investing in transformative heavy-lift technologies, he will commit to making a specific decision in 2015 on the development of a new heavy-lift rocket architecture. This new rocket would eventually lift future deep-space spacecraft to enable humans to expand our reach toward Mars and the rest of the Solar System. This new rocket would take advantage of the new technology investments proposed in the budget – primarily a \$3.1 billion investment over five years on heavy-lift R&D. This propulsion R&D effort will include development of a U.S. first-stage hydrocarbon engine for potential use in future heavy lift (and other) launch systems, as well as basic research in areas such as new propellants, advanced propulsion materials manufacturing techniques, combustion processes, and engine health monitoring, all of which are expected to shorten the development time for any future heavy-lift rocket. The new rocket also will benefit from the budget’s proposed R&D on other breakthrough technologies in our new strategy for human exploration (such as in-space refueling), which should make possible a more cost-effective and optimized heavy lift capability as part of future exploration architectures. A decision in 2015 means that major work on building a new heavy lift rocket will likely begin two years sooner than under the troubled Constellation program.

Restructuring the Orion Crew Capsule: Our goal is to take advantage of the best work undertaken in the Constellation program. The President is announcing that NASA will restructure the Orion crew exploration vehicle program to a simpler and more efficient design that will be focused on crew emergency escape from the International Space Station. Under the Constellation program, the Orion crew capsule was intended to house astronauts during their travel to the International Space Station and later missions to the Moon. It also was to be capable of docking at the Space Station for six months and returning crews to the Earth. As part of the President’s new plan for NASA, the development work already performed on this capability will be re-oriented to meet the important safety requirement of providing stand-by emergency escape capabilities for astronauts on the space Station. We will be able to launch this vehicle within the next few years, creating an American crew escape capability that will increase the safety of our crews on the Space Station, reduce our dependence on foreign providers, and simplify requirements for other commercial crew providers. This effort will also help establish a technological foundation for future exploration spacecraft needed for human missions beyond low Earth orbit and will preserve some critical high-tech contractor jobs in Colorado, Texas, and Florida.