

Charles Bolden, NASA Administrator
COMSTAC Advisory Committee Public Meeting

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Thank you, Chairman Will Trafton and FAA Associate Administrator, George Nield, for giving me this opportunity to join you this morning. I also want to thank FAA Deputy Associate Administrator, Jim Van Laak for his support of this meeting and for his long-time association with NASA.

This is an exciting time for all of us who are devoted to space exploration, especially for the team at NASA. We are literally at the brink of a new era in space exploration.

Many of you may have seen the Space Shuttle Discovery's Washington flyover a few weeks ago when that amazing vehicle was delivered to the Smithsonian Air and Space Museum's Udvar Hazy Center in Chantilly, Virginia.

As someone who flew on Discovery twice, I don't mind telling you that was a bittersweet moment. The shuttle gave us an amazing 30 years. It gave us the ability to build the International Space Station; it launched satellites like Hubble that allow us to peer deeper into the cosmos and look back on our planet; it lifted the spirits of a grateful nation and captivated the imagination of the entire world.

But to me, the Shuttle's greatest accomplishment is the fact that it has brought us to the threshold of a new era of exploration – one that I believe holds even greater promise.

The debate about the direction of NASA is over and we are moving strongly into implementing our exciting plans with wide bipartisan agreement.

NASA is making substantial and exciting progress in our human exploration activities. We are developing the Orion Multi-purpose crew vehicle and the Space Launch System to carry our astronauts farther into deep space than we've ever been – to an asteroid by 2025 and Mars in the 2030's. We are also moving full speed ahead with our earth and space science missions; our space technology and innovation efforts; and in our aeronautics research. We are committed to facilitating the success of a strong commercial space sector.

I know I may be preaching to the choir in a roomful of commercial space believers, but I think it bears repeating – Since the dawn of human spaceflight, private industry has been a critical partner in building the rockets and spacecraft that have helped NASA lead the world in the human and scientific exploration of our solar system. You in industry represent the best of NASA's past and the promise of an even brighter future.

If anyone is still wondering if this new era is real, they should try to get to the Kennedy Space Center in the coming days for the highly anticipated launch of the SpaceX *Dragon* module atop its Falcon 9 launch vehicle. This is planned to include the first rendezvous and berthing of a private industry-owned capsule to the International Space Station. This will be an historic milestone! Our current plans call for Orbital Sciences to follow suit later in the year with its *Cygnus* module launched on their Antares launch vehicle.

In FY 2013, NASA plans for at least three flights delivering research and logistics hardware to the ISS by U.S.-developed cargo delivery systems. Let me be clear: I am committed to launching American astronauts and their cargo from U.S. soil, on spacecraft built by American companies. It's time to end the outsourcing of this work to the Russians. It's time to bring these jobs back home. And it's time to allow America's commercial space industry to take over transport to the International Space Station so that NASA can do what we do best – make it possible for our astronauts to go deeper into space than anyone has ever gone before.

I am pleased that the Obama Administration's FY13 budget provides the funding needed to bring our human space launches back home to the U.S. and get American companies transporting our astronauts once again.

That's not all that's happening with commercial crew and cargo. Commercial Crew Integrated Capability Initiative proposals are in. In this latest round of our commercial space acquisition activities, we're asking industry to complete the design of a fully integrated commercial crew transportation system that consists of the spacecraft, launch vehicle, ground operations, and mission control. These proposals are going to lead to Space Act Agreements for initial development and will advance our efforts to help NASA and the U.S. achieve safe, reliable, and cost effective human access to space.

All of our commercial partners continue to work diligently and innovatively toward their milestones. Pratt & Whitney Rocketdyne, which is supporting The Boeing Company during the development of its CST-100 spacecraft in NASA's Commercial Crew Development Round 2, completed mission-duration hot-fire tests on a launch abort engine in March.

Blue Origin has successfully tested the aerodynamic design of its next-generation space vehicle in development, and the vehicle has completed a series of wind tunnel tests. Throughout the field, I've seen tangible examples like these.

The key to achieving our goal of facilitating a strong commercial space industry is adequate funding and good old-fashioned American competition. We are working hard to maintain both. NASA's 2013 request for commercial crew development is \$830 million. Despite a bi-partisan agreement to ensure American astronauts are traveling into space on U.S. built spacecraft as soon as possible, **some want to short-change this job-creating initiative** and limit competition in the commercial space arena.

I think we all agree: competition is a basic tenet of American democracy and the very cornerstone of America's technological excellence. Competition promotes innovation. Competition enhances our ability to identify the absolute best commercial partners. Ending competition by down-selecting to a sole commercial space company could double the cost of developing a privately built human spaceflight system and it will leave us in the same position we find ourselves today – having only one option for getting our astronauts to the space station. We are hopeful we can work to resolve these issues and keep this important initiative on track.

We are on the brink of a milestone moment in NASA space history, all part of a long-term strategy that will create well paying, high quality jobs here in America. With your help, we are making progress, and we intend to stay on track.

An important indicator of the future is that people still want to be astronauts. We had a near record number of 6300 applicants for the astronaut class of 2013 and the 2009 class is already well into training for the missions of the future. Their first stop is going to be the International Space Station, now coming into its own as a laboratory and technology test bed like no other.

More than 400 scientific studies were conducted on Station last year in an array of disciplines.

This science helps people here on Earth; just as much as it tells us about living in space and helps us make the next great leaps to farther destinations. We're learning a lot about the human immune system, inner ear response and balance, visual acuity changes and bone density loss, for example.

These studies are proving helpful with everyday problems of people of all ages here on Earth and are also applicable to astronauts on long space voyages.

Each day, international crews of six (6) are performing research on the ISS and they also talk to students around the world and get them fired up about space and help us create the next generation of scientists and engineers we so critically need. K-12 students have been participating in ISS perhaps more than any other group, sending us their ideas for experiments, like the programmable *SPHERES* satellites flying on Station today and other concepts for experiments through programs like the YouTube Space Lab contest.

The technology to take us farther into the solar system; the deep space rocket we call the Space Launch System; and the *Orion* multi-purpose crew vehicle are all making steady progress.

SLS Advanced Booster risk-reduction effort proposals are in.

We'll award a demonstration study contract this summer that will lead us ultimately to a decision on the boosters.

Orion has been undergoing parachute drop and water tests and thermal protection system work for the module continues at Ames.

A Lockheed Martin-sponsored exploration flight test of *Orion* is scheduled to take place in 2014, with our first uncrewed NASA test flight of the integrated capsule and rocket scheduled for 2017. The 2014 flight will simulate about 80% of the speed of a lunar re-entry and will tell us a lot about the thermal protection system and provide many other data points.

Our commitment to science also remains strong. Our 2013 budget supports more than 80 science missions – 60 currently in operation and 26 now under development – that cover the vital data we need to understand our own planet; enhance exploration farther into our solar system; and support the next generation of observatories peering beyond the reaches of our neighborhood to other galaxies and their solar systems and undiscovered phenomena.

We'll be at Jupiter with *Juno* and Pluto with *New Horizons* before you know it. Not to mention, *Dawn's* flight to the dwarf planet Ceres will begin when it completes its investigations from the orbit of the asteroid, Vesta.

Information is still flowing in by the terabyte from Hubble, LRO, MRO, SDO, *Cassini*, *Swift*, *Chandra*, *Fermi* and many others.

Kepler is documenting an ever-increasing number of exo-planets -
- showing that our solar system is just one of countless others.

The James Webb Space Telescope is being developed for launch in 2018. As the successor to the Hubble Space Telescope, Webb will allow us to continue to revolutionize our understanding of the universe by peering across space and back in time to the formation of the first stars and galaxies.

We are developing the next generation weather forecasting and climate monitoring capabilities with our partner, NOAA. We are making new global measurements, like sea surface salinity from the U.S.-Argentine satellite, *Aquarius SAC-D*, never made before. We are enabling others to use our data to protect lives, property, and the environment and supporting research that improves our understanding of our planet to improve the quality of life on Earth.

The Mars Science Laboratory (MSL), the rover known as *Curiosity*, will land on Mars in August and demonstrate precision landing technology, enabling us to probe the mysteries of the Red Planet. This mission is also an excellent example of the synergy we're trying to nurture between exploration and science as it performs amazing science using the most sophisticated suite of tools we've ever been able to send to Mars.

We are developing an integrated strategy to ensure that the next steps for Mars exploration will support science as well as human exploration goals, and potentially take advantage of the 2018-2020 exploration window for Mars missions.

In Space Technology, there are about 1000 projects developing the technologies we need for tomorrow's missions.

In the nation's laboratories and test chambers, NASA is driving advances in new high-payoff space technologies and developing and maturing broadly applicable technology in areas such as: in-space propulsion, robotics, space power systems, deep-space communications, cryogenic fluid handling, and entry, descent, and landing, which are essential for exploration beyond low Earth orbit.

You should also know that we haven't forgotten the first "A" in NASA. In aeronautics, our investments are driving technology breakthroughs for cleaner, safer, and more efficient aircraft. The millions of air travelers around the world will benefit from our work and our partnership with the greater aviation community to transform our air travel system.

We are accelerating the nation's transition to the Next Generation Air Transportation System (NextGen) and making commercial aviation safer, more fuel efficient, quieter, and more environmentally friendly through investments in revolutionary concepts for air vehicles and air traffic management.

Our FY13 budget also continues support for the integration of unmanned aircraft systems (UAS) into the National Airspace System as well as the validation of complex aviation systems.

NASA is not only still open for business; we're pushing the envelope of current capabilities and bringing new ones to life.

Our \$17.7 billion budget request for FY 13 includes \$4 billion for space operations including the International Space Station (ISS); \$4 billion for exploration activities in the Human Exploration Operations Mission Directorate; \$4.9 billion for science; \$699 million for space technology; and \$552 million for aeronautics research.

This is a stable budget, not a shrinking budget. Some tough decisions had to be made, but I believe we have the right balance to accomplish great things, now and in the future.

Under the president's leadership, NASA and the nation are embarking on an ambitious program of space exploration that will build on new technologies as well as proven capabilities as we expand our reach into the solar system.

I don't know about you, but for me, it's an exciting time to be in aerospace. Everyone here – the full spectrum of industry, the defense world, and other government agencies – is going to benefit from what NASA is doing right now.

Make no mistake about it. NASA is open for business. Our best days are yet to come. The future is literally happening right now, and NASA is leading the way. I hope you share my enthusiasm and will join us in this great adventure.

Thank you.