

REMARKS FOR ADMINISTRATOR BOLDEN
NATIONAL SPACE SOCIETY
INTERNATIONAL SPACE DEVELOPMENT CONFERENCE

May 25, 2012

It's great to be here at another International Space Development Conference (ISDC). The theme this year of "Onward and Upward" could not be more appropriate.

As we gather here this morning to talk about the future of exploration, that future is being defined -- and history is being made -- right now as the SpaceX Dragon capsule is joined with the International Space Station. And while that berthing process is still underway and additional hurdles must be overcome, we are witnessing an extraordinary first in space flight: A cargo re-supply mission being carried out by a private company, an American company I might add! This is truly a major milestone in President Obama's ambitious space exploration plan, one that

seeks to rely on private industry to take over transportation to low-Earth Orbit so that NASA can focus on the really hard stuff like sending humans to an asteroid and eventually on to Mars.

Around this time last year, we were still flying out the shuttle manifest.

Now we've transferred Discovery to the Smithsonian, and Enterprise is in New York awaiting its move to the Intrepid Sea Air and Space Museum. Private industry control of access to low Earth orbit (LEO) is rapidly becoming a reality; we continue to make tangible progress on the heavy lift rocket and the *Orion* crew exploration vehicle to take our astronauts to deep space; and our efforts at developing the many associated technologies is picking up steam. NASA is also making substantial and exciting progress in our Earth and space science missions; our space technology and innovation efforts; and in our aeronautics research.

So while our flagship program of 30 years now undertakes a new mission in museums to inspire the next generation of explorers, the space program remains very much a dynamic thing, a living history that we are creating every day. Today is, and I'm not overstating this, a day that will go down in history.

After a vigorous public discussion, the debate about our direction is over and we're moving strongly into implementing some very exciting plans, plans developed with bi-partisan agreement between President Obama and bipartisan leadership in the Congress.

If you're still wondering if this new era is real, I think the SpaceX success this week should begin to dispel those notions. Our current plans call for Orbital Sciences to follow suit later in the year with its *Cygnus* module launched on their *Antares* launch vehicle. Behind them are *Dream Chaser*, the CST-100, *Liberty* and other innovative private industry candidates to carry our U.S.

Astronauts to the ISS and other LEO destinations in the years to come.

In FY 2013, NASA plans for at least three flights delivering research and logistics hardware to the International Space Station by U.S.-developed cargo delivery systems.

As you've heard me say before, I am committed to launching astronauts from American soil on spacecraft built by American companies.

NASA'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.

Right now we're looking at proposals for our Commercial Crew Integrated Capability Initiative (CCiCI). With these proposals, 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 (CCDev) 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.

Another very important indicator of the future is that people still want to be astronauts. We had a near record number of 6300 applicants for the 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 ISS, now coming into its own as a laboratory and technology test bed like no other.

NASA's Robotic Refueling Mission (RRM) experiment aboard the ISS, for instance, recently demonstrated remotely controlled robots and specialized tools can perform precise satellite-servicing tasks in space.

We do great things on the ISS. More than 400 scientific studies were conducted on station last year in an array of disciplines, not just those related to human health. There are probably 5-10 investigations going on any given day.

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. We're learning a lot about the human immune system, inner ear response and balance, visual acuity changes and bone density loss, for example. Some of this particular research is especially relevant to our senior population.

The call for advanced development proposals for the Space Launch System (SLS) just closed. J-2X power pack tests of varying lengths are slated through summer at the Stennis Space Center's A-1 Test Stand to help us learn more about the upper stage. The space shuttle's RS-25D main engine inventory has been relocated to Stennis in Mississippi for use in the SLS core. I hope we have the opportunity to learn a lot from the SLS panel this morning.

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* will 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 remains strong, although there has never been a time when there weren't more things on our wish list than we were able to pursue given our resources. But 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, which will begin when it leaves the asteroid Vesta this summer. I hope you have seen the amazing results *Dawn* has continued to send us about Vesta itself. Much of this is unexpected data that will help inform our future missions to asteroids with humans.

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. It recently reached a hardware milestone with completion of the backplane that will support the telescope's beryllium mirrors, instruments, and thermal control systems

The Mars rover known as *Curiosity* will land on Mars in August.

There it will demonstrate precision landing technology, enabling us to probe the mysteries of the Red Planet in unprecedented new ways. This mission is also an excellent example of the synergy we're trying to nurture between exploration and science

as the rover performs amazing research using the most sophisticated suite of tools we've ever been able to send to Mars.

At the same time, we are also 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, all of which are essential for exploration beyond low Earth orbit.

The Space Technology Program has recently given out the second round of Space Technology Fellowships to help us develop tomorrow's leaders and benefit from their work now.

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.

So with the retirement of the shuttle, NASA is not only still in business, we're pushing the envelope of current capabilities and bringing new ones to life. You can do a lot with the \$17.7 budget request we have for FY13 and we will -- we are.

Our budget is stable, and while some tough decisions had to be made, that's true for everyone these days, from government agencies to households. I believe we have the right balance to accomplish great things, now and in the future.

I believe that the best is yet to come. Our bigger dreams are just starting to come to fruition. At its core, NASA is more than ever about American innovation and American ingenuity. It's about keeping the U.S. the world leader in space exploration and showcasing our knack for solving problems and improving life here on Earth.

It's going to be an amazing ride. The future is literally happening right now, and NASA intends to lead the march to it. I hope most of you share my enthusiasm and are willing to join us in this great adventure.

Thank you.