

REMARKS FOR ADMINISTRATOR BOLDEN

FIRST U.S. SPACE STATES AND FEDERAL GOVERNMENT

SPACE FORUM

Nov. 30, 2011

It's nice to see so many friends and colleagues here today. This is an important gathering, and I want to thank Lt. Gov. Carroll for convening it and inviting me to speak.

Ever since we got our roadmap forward in the form of the NASA Authorization Act of 2010 last fall -- which was passed with strong bi-partisan Congressional support and signed by President Obama -- we've been moving toward the missions of tomorrow and the capabilities we'll need to visit new places, launch cutting edge science missions and help develop the next generation of aviation systems from which we'll all benefit.

President Obama has given us a Mission with a capital "M" -- to focus again on the big picture of exploration and the crucial research and development that will be required for us to move beyond low Earth orbit. He's charged us with carrying out the inspiring missions that only NASA can do, which will take us farther than we've ever been – ultimately a human mission to Mars.

The President is asking us to harness that American spirit of innovation, the drive to solve problems and create capabilities that is so embedded in our story and has led us to the Moon, to great observatories, and to humans living and working in space, possibly indefinitely.

NASA and other federal agencies, along with corporate partners like NIKE, have hosted several sustainability forums at the Kennedy Space Center, bringing innovators from around the

world to meet at a center known for legendary accomplishments enabled by American technology and innovation.

There's a strong ferment of innovation out there right now – an energy of people ready to leap into the next great chapter of exploration and all the benefits it will bring us here on Earth. The future is literally happening right now.

The International Space Station (ISS) has been operating in space for over 11 years, with crew living and working onboard 24/7. We are carrying out research relevant for life on Earth, which will also prepare us for future human exploration. The Station also serves as a platform to demonstrate new technologies and operations concepts. It's an economic engine, serving as the destination for the commercial sector to provide space transportation for cargo in the near-term and for crew by the middle of this decade.

We have dozens of scientific missions operating to provide data in the fields of astrophysics, Earth science, heliophysics, and solar system exploration. In parallel, we are developing new capabilities.

Later this week, another test firing of the J-2X engine takes place in Mississippi at the Stennis Space Center. It will power the upper stage of our new heavy lift rocket. The last time Stennis did a test fire, a couple of weeks ago, there were calls from throughout the region wondering if there had been an earthquake. Our response was, no! It's just NASA hard at work on the technology to take us places where we've never before been.

We're busy around the country - with Stennis at the forefront of propulsion testing; Marshall working hard on the heavy lift rocket; Kennedy upgrading its launch facilities; Johnson working on the Orion crew capsule and ongoing mission management of

the International Space Station; and our other centers across the nation providing their special expertise.

Our many industry partners across the country have been building and launching our spacecraft from the beginning of the Space Age.

Now they are innovating new systems to take us to low Earth orbit so NASA can do what we do best – taking on the next big challenge - those hard things that we don't quite have all the technological capability to do yet, but know we can if we work hard and work together.

I know right here in Florida, it's been a tough few years for space workers. The retirement of the shuttle, while planned, has been a big transition.

Gov. Scott and Lt. Gov. Carroll have been tireless workers to help open up new sectors of the aerospace economy here on the Space Coast and throughout the state and we're making steady progress to restore the region to its leadership role in space exploration.

We recently signed a new cooperative agreement between NASA and the Center for the Advancement of Science in Space (CASIS), for instance, to operate a nonprofit to manage the national laboratory portion of the U.S. segment of the ISS.

CASIS will help create jobs here in Florida while it helps us maximize the potential of this unique orbital outpost that is the ISS. It will help us involve more users from academia, industry, and other government agencies, allowing them to take advantage of the resources the Station offers to conduct research and develop applications for fields beyond NASA's interests, such as health care.

This partnership is just one of many ways we're expanding our focus and looking at the jobs of the future – the jobs that support the new direction in which NASA is headed.

The debate about NASA's direction is over! We're moving ahead toward commercial space, toward Orion and the heavy lift rocket, and cutting edge science and aeronautics, all of which will generate jobs through innovation and increase our national competitiveness in areas where we already possess considerable resources. It's an exciting time, because that path forward is taking tangible shape.

Consider again, for instance, the Kennedy Space Center. We're going to reinvigorate its launch capabilities to increase its flexibility and ability to serve more users. The budget bill just passed by Congress has \$484 million for this purpose in the coming year. Congress recognizes the importance of this unique national resource -- our own national spaceport. In a time when

conference agreement on agency budgets has not been the norm, our representatives in Washington have moved forward with NASA's bill, in a strong bipartisan manner because they know we help create jobs and spur innovation.

Just two weeks ago, the new mobile launcher moved to launchpad 39B at Kennedy for structural and functional engineering tests in preparation for the eventual Space Launch System (SLS) it will support.

A couple of weeks ago, I had the opportunity to visit the Marshall Space Flight Center, where several of the basic components for the SLS, that heavy lift rocket that will carry us to deep space, are already in various stages of design and testing.

I visited an engineering lab where the SLS team can conduct end-to-end system level testing for the guidance, navigation, and control software and the thrust vector control hardware.

The new SLS heavy-lift launch vehicle will expand human presence beyond low Earth orbit and enable new missions of exploration across the solar system. Our destinations remain ambitious, with the ultimate target being Mars. Missions to an asteroid and back to the Moon are also envisioned.

SLS will meet the agency's affordability goals in several key ways. It starts where we are, with a talented workforce, robust hardware, and unique infrastructure that is either already in place or well into development, like that lab at Marshall. By using different combinations of the stages, engines, and boosters, the goal is to create a versatile vehicle that can efficiently carry cargo or people and perform a variety of missions.

Right now we're working through the contract issues and will utilize existing agreements, where appropriate to maximize resources and avoid delays.

But we'll also provide competitive opportunities, such as a solicitation that will request proposals for the design, development, test, and evaluation of a new advanced liquid or solid booster capability for the SLS.

Another future contract NASA intends to compete will be for the development of spacecraft and payload adaptors and fairings for crew and cargo missions.

Right now, we're also working hard on the Orion crew capsule. Planning toward some test flights in the next couple of years, and a flight test in 2014 to obtain high-energy re-entry data. Drop tests for the water landings are ongoing at Langley Research Center in Virginia. The heat shield technology development is progressing at Ames Research Center.

In just a couple of days, NASA's Glenn Research Center will host a Technology Showcase -- a unique opportunity to learn

about and tap into cutting edge NASA technologies with commercial potential.

Attendees will have the opportunity to attend breakout sessions describing more than 36 different technologies that were developed at NASA Glenn. The goal of the workshop is two-fold: to display a selected portfolio of NASA-developed technologies that align with the State of Ohio's targeted areas for economic development and identify opportunities for collaboration between Glenn and Ohio-based companies.

So we're moving out and we're moving fast on the ambitious new direction our nation's leaders have given us – developing new technologies; developing partnerships; providing opportunities for competition and innovation; and looking for ways to get the most mileage out of all of the hard work underway in the fields of engineering, science, aeronautics, and technology.

The partnerships among the “space states” and the federal government will be crucial in the years ahead. Our tight budgets are not going away any time soon.

The need for us to develop new ways of doing business; to focus on the many opportunities we have -- which are truly amazing -- are going to give the “space states” a strong competitive edge in the years to come. We want to be partners to showcase your work; to help make new, innovative things happen; and to continue communicating the stories about space exploration and its ongoing wonder.

The excitement about our missions will continue to grow. The *Curiosity* rover, for instance, launched last Saturday morning from Cape Canaveral. It will reach Mars next August. At the size of a small car, with an incredibly sophisticated suite of instruments, it’s going to look for signs of potential habitability at any time in the planet's history. I know it's going to spark

imaginations as much or even more so than the intrepid *Spirit* and *Opportunity* rovers already have.

In 2015 *New Horizons* reaches Pluto and in 2016 *Juno* reaches Jupiter. These are just a few of the things that are going to keep interest in our space program high even as we do the long-term work to develop the capabilities to send humans to an asteroid and Mars. As the ISS itself reaches its potential for research and technology demos, we continue to support U.S. industry in their development and test of commercial vehicles that will enable them to eventually take over cargo and crewed missions to the ISS – all of this is going to keep building our momentum.

We recently graduated the new Class of 2009 Astronauts and are now recruiting for the Class of 2013. These ambassadors are training for the missions of the future and anyone who's seen an astronaut in the classroom knows they can

engage students like nothing else I know. They are inspiring future generations to become the leaders in our field.

This past year, we selected 80 students for NASA's first class of Space Technology Research Fellowships. They are going to be the future exploration leaders.

At NASA, we're going to keep focusing on the big picture -- the next big missions that no single country is able to undertake right now. For years we've known the kinds of things we would need to undertake missions to destinations farther in the solar system – things like that heavy lift rocket; revolutionary in-space propulsion; closed-loop life support; and many other technological capabilities.

With the help of the National Research Council, we're developing Space Technology Roadmaps to consider a broad range of pathways to advance the nation's current capabilities in

space and serve as an initial point of departure for mapping NASA's future investments in technology.

We are pursuing the capabilities to undertake the most challenging missions of our history. That's a big deal. We are opening a new chapter in the history of exploration, and it has already begun. American technological leadership is vital to our national security, our economic prosperity, and our global standing.

The United States is the nation we are today because of the technological investments made in earlier decades. American engineers, scientists, and elected officials had the wisdom and foresight to make the investments required for our country to emerge as a global technological leader.

These past investments accelerated our economy through creation of new industries, products, and services. They have

yielded lasting societal benefit. Government investment has fueled past innovations such as the commercial aviation sector and a host of technologies that have improved air travel and telecommunications, developed GPS technology and remote sensing, and enabled human space flight in the first place.

Aerospace remains a strong component of our national fabric and is the largest positive contributor to our nation's trade balance. But to maintain American technological leadership, we must continue to invest in the technologies and the people who will create the breakthroughs of tomorrow.

As you share ideas and insights at this conference, I hope and trust it will be in a spirit of cooperation with each of you poised to make real progress and make even more of a difference in the world.

I'm an eternal optimist, and I'm truly confident that our best days in exploration still lie ahead. All of you who have space industry in your states are very fortunate to be a part of building our nation's grand future. I look forward to hearing from Lt. Gov. Carroll about the outcomes of this Forum and to working with all of you to keep America the leader in scientific achievement and space exploration.

Thank you.