

NATIONAL PRESS CLUB LUNCHEON WITH CHARLES F. BOLDEN, JR.

SUBJECT: AMERICA'S CONTINUED COMMITMENT TO LEADERSHIP IN HUMAN SPACEFLIGHT., BOLDEN WILL ALSO SPEAK ABOUT NASA'S PLANS TO EXTEND HUMAN PRESENCE BEYOND LOW-EARTH ORBIT.

MODERATOR: MARK HAMRICK, PRESIDENT, NATIONAL PRESS CLUB

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MARK HAMRICK: (Sounds gavel.) Good afternoon, and welcome to the National Press Club. I'm Mark Hamrick, I am a broadcast journalist with the Associated Press. And I'm the 104th president of the National Press Club. We are the world's leading professional organization for journalists, committed to our profession's future through programming, events such as this, while also working to foster a free press worldwide. For more information about the National Press Club, please visit our website at www.press.org. And to donate to programs offered to the public through our Eric Friedheim National Journalism Library, you can see our website about that.

So on behalf of our members worldwide, I'd like to welcome our speaker and those of you in our audience here today. Our head table include guests of our speaker as well as working journalists. And so, if you hear applause in our audience, we would note that members of the general public are in attendance. So it's not necessarily evidence of a lack of journalistic objectivity. I'd also like to welcome our C-SPAN, our NASA television audiences, as well as those who are on Public Radio. Our luncheons are featured on our member-produced weekly Podcast from the National Press Club, available for free download via iTunes. You can also follow the action on Twitter using the hash tag #NPCLUNCH. After our guest speech concludes today, we'll have Q&A and I'll ask as many questions as time permits. Captain Kelly has also kindly agreed to make some comments toward the end of the program today.

So, for our head table guests, I will introduce each of you. And I'd ask each of you to stand up briefly as your name is announced. We'll begin from your right. Ken Dalecki, he is a writer and editor, former deputy managing editor of the Kiplinger Washington Editors and a member of our Speakers Committee. Anthony Shop, he is director of client services with Social Driver and the dynamic Chair of our Events Committee. He's doing a fabulous job.

Jim Asker is managing editor with Aviation Week and Space Technology. David Weaver is associate administrator for communications at NASA. Mark Stencel, managing editor for Digital News at NPR. Captain Mark Kelly, an astronaut, Commander of FDS 134, the final mission for Endeavor, the only spouse of a member of Congress who has traveled in space, and one of only two siblings who have traveled in space. And it's not just any member of Congress, it's Congresswoman Gabrielle Giffords. [applause]

Skip over the podium for a moment. Melissa Charbonneau with News Hook Media, and she is the very effective Speakers Committee Chair who helps to get things going here for our Speakers Committee. Skip over the speaker for a moment. Lee Perryman, he is director of ENPS with Associated Press Broadcast and organizer of today's luncheon. He's organized two luncheons in very short amount of time. And we're extremely grateful for your work with that, Lee.

Lori Garver is NASA deputy administrator. Elaine Camhi is Director in Chief-- or rather Editor in Chief of Aerospace America. Chris Chambers, Professor of Journalism at Georgetown University and a commentator for Russia Today and RT America, our partners in space, Russia. Mark Brender, Executive Director with GOI Foundation and also former Vice-President of Communications at GOI, and also former National Security Assignment Editor, radio correspondent and Pentagon Producer at ABC News. [applause]

And now you can give a round of applause.

[applause]

Today's Newsmaker Luncheon is not just about Administrator Charlie Bolden. But it's also about the future of NASA, which he leads. It's about his vision, President Barack Obama's vision, and some dotting and even harsh budgetary realities, and about how he will deliver.

Headquartered here in the Nation's Capital, with more than 18,000 employees, many more working as contractors, NASA also runs 10 field centers, seven test and research facilities around the nation. It boasts of global leadership through a variety of strategic, domestic and international relationships.

As we all know, NASA has a rich history of unique scientific and technological achievement, although its most visible projects of late have been the space shuttle missions as much as the heavy lifting for the program for the past three decades.

The shuttle program now ending, and no immediate replacement in sight, critics have been skeptical of what NASA will or might become. Although our speaker insists there is no retreat from leadership in human space flight, but a shift to doing even more, more affordably, building on NASA's strengths, working with the private sector, and partners.

It is important to understand what makes our speaker tick, how he made it to the top of the nation's Space Agency, only the second astronaut ever in that special role. In just two weeks, he'll begin his third year as NASA's 12th Administrator. He will watch and celebrate the final space shuttle launch just one week from today, if it goes off as scheduled. A retired Major General, his 34 year Marine career included 14 years as a member of NASA's Astronaut Office. And he was named Administrator by the President in 2009.

In 2002, President George W. Bush tried unsuccessfully to name him the Space Agency's Deputy Administrator. But the Pentagon insisted that he was too valuable to them, and a brief review of his career may help to explain why. Born and raised in Columbia, South Carolina, his parents were educators, a theme that is engrained in his DNA, according to his staff, which they say helps explain a passion for education and a drive to inspire young people.

His father, who served in the Army during World War II, taught history and coached football. So our guest speaker was naturally involved in sports while his mother kept her son interested in the community and academics. He was to meet his future bride, Jackie, when he was three years old. Their parents had been classmates, and her mother and father were also local educators.

In high school, he was the water boy for his father's football team. Good practice of working in Washington. [laughter] Then the trainer, manager and a backup quarterback. He stepped in and saved the day for a state championship game in 1963 when the first string quarterback was injured.

He grew up believing he could do anything with hard work. And set his sights on an appointment to the Naval Academy, something that just was not in the cards in the old segregationist south. Unable to get a recommendation, he wrote Vice-President Johnson, but was told to write back when he was older. After President Kennedy was assassinated and Johnson became President, he wrote again. And, two weeks later, a Navy recruiter knocked on his door. And the rest is history.

With the Naval Academy, he was elected President of his class. He graduated in 1968 and was commissioned as Second Lieutenant in the Marines. Later, a Naval aviator stationed in Thailand, he flew more than 100 sorties in an A6A intruder over Vietnam, Laos and Cambodia.

Back home in the U.S., and stationed in California, he served in a variety of positions in the Marines and earned a Masters from USC in 1977. He was then assigned to the Naval Test Pilots School, where he completed training in 1979.

One of our speaker's mentors was Ron McNair, who was killed in the Challenger disaster, also from South Carolina. It was McNair who convinced him to apply to the Astronaut Corps. In 1980, he selected-- NASA selected our guest speaker as an astronaut candidate. And, in 1981, he qualified as only one of eight Marines in the shuttle program, and the first African American Marine to become an astronaut.

He flew four shuttle missions, between 1986 and '94, two as pilot, two as Commander. His first included Representative Bill Nelson of Florida as Congressional Observer, the first Hispanic American in place. Others included the-- was onboard there as well. Others included the mission that deployed the Hubble Space Telescope.

Many important NASA assignments ended when his return to the Marine Corps and Deputy Commandant of Midshipmen at the Naval Academy came about. In 1997, he was named Deputy Commanding General, the first Marine expeditionary force in the Pacific. And, during the first half of 1998, he served as Commanding General, the first Marine force forward in support of Operation Desert Thunder in Kuwait.

In 1998, he was promoted to Major General, named Deputy Commander of U.S. Forces in Japan. He served as the Commanding General of the Third Marine Aircraft Wing at Marine Corps Air Station Miramar in San Diego, and then retired from the Marine Corps in 2003.

His many military decorations include the Defense Superior Service Medal and the Distinguished Flying Cross. And he was inducted into the U.S. Astronaut Hall of Fame in 2006. He and his wife have two children: a son, who is a Marine Corps Lieutenant Colonel, and a daughter, who is a medical doctor. And he is a very proud grandfather as well.

So, please give a warm National Press Club welcome to a man who has worn many hats, including a helmet or two, and earned his stripes in the process, NASA Administrator Charles Bolden.

[applause]

CHARLES BOLDEN: Mark, thank you very much for that introduction. I can tell that my mother, who is looking down on us from heaven right now, wrote it for you. [laughter] She would love that. I don't believe much of it. It is an honor for me to be here with you today. To say I'm humbled is to put it mildly. Looking out on this audience, recognizing all of you who are here, it's just a very humbling feeling to be here.

But, to have this opportunity to represent what I think are one of the two most incredible organizations on the face of the Earth right now, that being NASA. The other

organization is the United States Marine Corps. So, I'm especially proud, though, to be here to represent the NASA team, to be joined by my Deputy Lori Garver, who is a long-time space enthusiast, as a matter of fact. And many of you probably know her, because she ran the National Space Society for a while and is probably, if not as much, maybe even more of a space buff than I am.

We share something else in common. She has a son who's 16 named Mitch, who is a football player. He is a good football player. I was a lousy football player who just was blessed to have my starting quarterback go down so that I could get in the game. I could not throw. I could not run. I was a heady quarterback, as they call it. And, when my starting quarterback, Algernon(?) Goddard was injured, my father looked down the bench and saw me. I could see his heart just start to pound. [laughter] But he called me up, and he told me to go in. And his only words to me was, "Do not throw the football." [laughter]

And I will tell you, it was on the evening of the day that President Kennedy was assassinated. So, for me, it was a day that I shall long remember, kind of a dark evening, especially to be playing for the state championship in South Carolina. But, when he sent me in and said, "Don't throw the ball," I went in and did my best.

And, as the game was winding down, my best friend, Gary Bell, came in with a play from the sidelines. And the play was 88 left. That's a pass flick. And I looked to the bench. And my dad-- And I knew that Gary had made this up. Because Gary was a tight end. So I figured Gary had come in and called his own play. And I looked at my dad, and he said, "Yes." So I called the play, and faded back, and threw this wobbly pass out there. And the good thing was, Gary was a really good tight end. And he managed to catch the ball in the end zone, and we won the game. So I became a local hero, if only for a moment.

But that is my story of football. Mitch is much better than I am. He is a very good quarterback. And I kind of called him my adopted son, sort of like, or God-son, because I'm really impressed with his ability.

Also, with us, you know, among the amazing group of astronauts, who made the space shuttle program what it is today, is Captain Mark Kelly, who's already been introduced. Mark is a dear friend. And, probably more important, is the husband of a dear friend, Congresswoman Gabrielle Giffords. Pia, her Chief of Staff, is here right now. And Pia made a gift to me quite some time ago, when I visited Gabby in the hospital in Houston once.

And people ask me, "What are all these things you wear?" One is for my fraternity. One is just a bracelet. But this is my-- it's my "I love Gabby" band. And so, I wear that all the time. And I was telling somebody-- My wife always talks about these rings. It has now become even more special, because in a trip to Europe last couple of weeks, we had an opportunity to have an audience with the Pope. And the Pope blessed this. So, I count it special, for me anyway.

Mark's already been introduced, and you know what he has done. But Mark, I want to thank you very much for your dedication and for what you've done for NASA and the nation. Because it was very special, something you did not have to do. And I understand the sacrifice you went through. So, I'm incredibly pleased that you're here with us today.

[applause]

And it goes without saying that our continued thoughts and prayers are with Gabby. We watch her ongoing miraculous recovery, and we just pray that that continues.

One week from today, NASA is going to launch its final space shuttle mission. And we'll be turning the page on a remarkable period in America's history in space, while beginning the next chapter in our nation's extraordinary story of exploration. From the early exploits of Daniel Boone, Lewis and Clark, and Robert Perry, to the breakthrough journeys of Alan Shepherd and John Glenn, Americans have always, always been a curious people, bold enough to imagine new worlds, ingenious enough to chart a course to them, and courageous enough to go for it.

And the gifts of knowledge and innovation that we have brought back from the unknown have played their part in the building of a more perfect union. Some say that our final shuttle mission will mark the end of America's 50-year dominance in human space flight. As a former astronaut, as the current NASA Administrator, I'm here to tell you that American leadership in space will continue for at least, at least the next half century, because we've laid the foundation for success. And for us at NASA, failure is not an option.

Once again, we have the opportunity to raise the bar, to demonstrate what human beings can do if we're challenged and inspired to reach for something just out of our grasp, but not out of our sights. 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 the work order.

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, to orbit Mars, and eventually land on it. He has asked us to start planning a mission to an asteroid. And right now, our Dawn spacecraft is approaching one of the biggest in the solar system, Vesta. And we're scheduled to drop into orbit around that asteroid the middle of this month. What it finds out could help inform such a future mission to an asteroid.

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. That American ingenuity is alive and well. And it will fire up our economy

and help us create and win the future. Now, but only if we put aside our differences and come together to work hard, dream big, and imagine endless possibilities.

The space shuttle is an amazing vehicle, amazing vehicle. And the incredible program that it pioneered has taught us many things and helped make tomorrow's exploration possible. Every shuttle mission has showcased the amazing talents and expertise of our astronauts, in robotics and science. Each mission was different. Each was exceptional and challenging and expanded our capabilities as a nation and a world.

Atlantis's destination next week, the International Space Station, or ISS as we call it, is the centerpiece, the centerpiece of our human space flight activities for the coming decades. And, what a centerpiece it is. With almost a million pounds of hardware, measuring over the length of a football field, and with an interior volume greater than a 747 aircraft, traveling at 17,500 miles per hour around the Earth, 16 times every normal Earth day, it's occupied by an international crew of six actively participating, and over 100 research investigations at any given time.

In just a little over a decade, the ISS has expanded our knowledge of man's ability to live and work in space. And it has become one of the most important beacons of international cooperation as it orbits our Earth. The station is the pinnacle of our current achievements, a steppingstone to the rest of the solar system, and the tip of what comes next.

The shuttle allowed us to build and support the station. And the orbiting outpost research capabilities are unprecedented. The station has housed more than 1,200 experiments to date, supporting more than 1,600 scientists, representing 59 countries worldwide.

Every research investigation, and all the systems that keep the ISS operational help us figure out how to explore farther from our planet and improve life here. Studies of how our bodies respond to a microgravity environment ensure that we can live and work successfully as we travel farther from earth, and help us better understand the impacts of medical conditions encountered, both in space and here on Earth.

Solar power and water processing are two examples of how we are learning to better operate spacecraft independent of resources supplied from Earth. We need to break the ties to our home planet and learn to live and work in space without direct dependence on Earth.

The ISS can be a platform to us to learn these skills. Technology demonstrations on the ISS will support future missions and help us improve the reliability, for instance, of future life support systems. And all the many other things we'll need to understand in depth, to really become a space-faring people, who can safely reach our destination.

So, when I hear people say, or listen to the media reports that the final shuttle flight marks the end of U.S. human space flight, I have to tell you, you all must be living

on another planet. [laughter] We are not ending human space flight. We are recommitting ourselves to it and taking necessary and difficult steps today to ensure America's preeminence in human space exploration for years to come.

But we have to do things differently. For one, we have to get out of the business of owning and operating lower orbit transportation systems, and hand that off to the private sector, exercising sufficient oversight, of course, to ensure safety of our astronauts. We need to focus on deep space exploration while empowering today's innovators and entrepreneurs to carry out the rest.

This new approach to getting our crews and cargo into orbit will create good jobs and expand opportunities to the American economy. And let me be crystal-clear about this. I believe-- I believe that American companies and their spacecraft should send our astronauts to the International Space Station, rather than continuing to outsource this work to foreign governments. That's what this administration is committed to do. And that is what we're going to do.

Along with supporting the ISS in commercial crew transportation, NASA will pursue two critical building blocks for our deep space exploration future, a deep space crew vehicle and evolvable heavy lift rocket. And we will make the technology investments required to begin the era of deep space exploration today.

Our destinations for human beings beyond Earth remains ambitious. They include the moon, asteroids, and Mars. Our investments in the systems, research and technology for deep space will prioritize a logical sequence of future human exploration missions and forge a tighter bond between robotics and human exploration.

The debate is not "if" we're going to explore, but how we'll do it. Not "if" there will be human space flight, but the right path to the next generation of systems. The shuttle is an expensive system to maintain. It has served us well, incredibly well. But now is the time to cut the cost of transportation to lower orbit and foster the American aerospace base and its amazing potential to become a job-creating engine for decades to come.

NASA's 21st century mission will focus on the transportation system that will carry us beyond where we have been, to new destinations, and new milestones, in the annals of human history. So, we're one week from a very important space flight milestone, but far, far from the final one. We celebrate the shuttle's 30 years of success, which is longer than any other human space flight program. The shuttle has expanded our picture of what it means to be an astronaut. And we salute the hundreds of men and women who have carried out the program's missions, both in space and on the ground.

We also remember the hard lessons that have helped us to continually improve safety. We shall always remember the crews of STS 51L, the Challenger, and STS 107, Columbia, who made the ultimate sacrifice. I spent 14 years at NASA before leaving and then returning to head the agency. Some of the people I respect most in the world are my

fellow astronauts. Some of my best friends died flying on the shuttle. And I'm not about to let human space flight go away on my watch. I'm not going to let it flounder because we pursued a path that we could not sustain.

It's vital that we keep exploring, not only so we can learn to live and work other places and find out what it means for us as the human race, but also so the benefits of that exploration continue to return to Earth. So we keep generating new knowledge about our planet and our universe and new solutions to the challenges our planet faces on many levels.

President Obama has put NASA and several other technology focused agencies at the forefront of innovation for our country. We're pleased to be a central part of this national focus on research and development, which will greatly improve our future, and give coming generations more choices in how they face planetary challenges and seek knowledge about the universe beyond.

We will maintain and grow U.S. leadership in space and derive all the benefits that flow from it. Tomorrow's Space Program is taking shape right now. Earlier this year, I made a decision to base the new multi-purpose crew vehicle, or MPCV, our deep space crew module, on the original work we've done on the Orion Capsule. The spacecraft will carry four astronauts for 21 day missions, and be able to land in the Pacific Ocean off the California coast. It's designed to be much safer during ascent and entry than the shuttle.

We're nearing a decision on a heavy lift rocket, the space launch system, or SLS, and will announce that soon. Complemented by a host of technology developments, these two systems will open up the entire solar system to us. I have established program offices for both MPCV and SLS at the Johnson Space Center in Houston and the Marshall Space Flight Center in Huntsville, Alabama, respectively. I have established our Commercial Crew Program Office at the Kennedy Space Center. And we're going to work on upgrading the Center's launch facilities, one of our most valuable national resources to accommodate more kinds of users.

And, speaking of those facilities at KSC and across the agency, we've had a tremendous interest from our commercial space partners, and reusing or leasing these assets, and are close to making some major announcements about them soon. The reuse of our unique NASA assets, like the Orbiter Processing Facilities, will help these companies keep their costs down, and create jobs for the space industry of tomorrow.

The Mid-Atlantic Regional Space Port is taking shape at our Wallace Flight Facility in Virginia. One of the first customers will be Orbital Sciences Corporation with its Taurus 2 rocket. Last week, we issued a call for proposals for mission concepts studies of a solar electric propulsion system demonstration, just one of the many technologies we need to advance and validate as we seek to reach those farther destinations.

Consider how the architectural options for human exploration of our solar system will change as we develop space technologies for which there is wide consensus we need.

Better in-space propulsion. Refueling depots on orbit. Inflatable habitat. High reliability life support systems. High bandwidth communications. Adaptive avionics. Radiation protection. Integrated human and robotic systems. And precision navigation.

Our partners in the commercial orbital transportation services program, SpaceX and Orbital Sciences, continue to meet milestones. The new participants in the second round of our commercial crew development program have just met their first set of milestones required by NASA and are on a path for continued success.

Recently, my Deputy Lori Garver and I have had the chance to visit facilities of some of our industry partners, like Blue Origin in Sierra Nevada. They're working diligently. And the hardware and systems they're creating and testing are amazing. The energy and ideas in the field are palpable. All of this, just the early days of our push into the next chapter of human space flight.

In addition to this human space-- to our human space flight progress, we have a large number of amazing science missions coming up. Just in the next six months, we'll launch Juno to Jupiter. We put the Dawn satellite I mentioned earlier into orbit around a giant asteroid in the main asteroid belt for the first time later this month. In September, we launch the Twin Grail Probes that will use changes in the moon's gravity to study its interior. And the Curiosity Rover heads for Mars in November.

In the coming years, we'll undertake many more world class science missions to observe our planet, reach destinations throughout the solar system, and peer deeper into the universe. At the same time, we'll advance aeronautics research in partnership with other agencies and the aircraft industry, to create a safer, more environmentally friendly and efficient air travel network called NextGen.

It's true that the aerospace field faces many significant challenges. But challenges can also serve as catalysts for innovation. No doubt we're going to have to develop new ways of doing business. The Orion Government and Industry Team, for example, has shown exceptional creativity in finding ways to keep costs down through new management techniques, technical solutions, and innovation.

But right now, at this historic moment, America is leading, once again, by making hard choices that will define us anew. We're taking those bold actions because that's what we need to do to create and win the future. Thanks to the many achievements of NASA and its partners, the brave and talented men and women who have soared into space and developed so many cutting-edge science missions, we now have a strong foundation from which to pursue these larger goals.

The space shuttle gave us tremendous insight into how humans can live, travel and work in space. Because of the shuttle, we have the ISS, which is giving us the breakthroughs in human health research that will help us reach and return from those new destinations and inspire the next generation of leaders.

We have choices today. Do we want to keep repeating ourselves? Or do we want to look at the big horizon and do inspirational things we've always challenged ourselves to do? My generation touched the moon. Together, with those that followed, we built the ISS. Today, NASA and the nation wants to touch an asteroid, and eventually send humans to Mars.

NASA is moving forward and making change, because the status quo is no longer acceptable. We need future generations to be able to do more than we can today. The students and early career scientists and engineers I speak to around the world have a ton of energy and enthusiasm. They're excited about the chance to do something new, to be on the ground floor of the next big frontier of human exploration, to put their big ideas into practice, and they should be.

If you're studying in a STEM discipline today, you're going to have a great career ahead of you-- not just at NASA, but at other government agencies or in private industry or academia. So, when the final shuttle landing occurs, and the cheers and tears subside, we'll keep on moving toward where we want to go next. Your kids and my grandkids, they're going to do things that today we can barely dream of.

Our nation has made great progress throughout its history, by innovating solutions to meet grand challenges, to build an intercontinental railroad, or land a man on the moon, and return him safely to Earth. These challenges not only motivated a technological workforce, they also created new technologies and innovation along the way. These achievements inspired generations to pursue challenging goals, created new industries, and ultimately improved our country and our world.

Fifty years ago, a young President gave NASA a grand challenge, one chosen not for its simplicity, but for its audacity to, as I quote, "best measure and organize our collective energies and skills." In accomplishing that goal, NASA not only defined America, it made a lasting imprint on the economic, national security, and geopolitical landscape of our time.

Today, we have another young President, Barack Obama, who has outlined an urgent national need to out-innovate, out-educate, and out-build our competitors, and create new capabilities that will take us farther into the solar system, and help us learn even more about our place in it.

President Obama not only honors the Kennedy space legacy, but also, again, challenges this nation with his vision for the next era of exploration. And let me tell you, NASA is ready for the grand challenge. Thank you all for blessing me, by allowing me to be here. I'll take questions I guess.

[applause]

HAMRICK: Thank you, Administrator. And we have a lot of questions that are coming from the audience. And, as I mentioned earlier, we want to give Captain Kelly an

opportunity to speak before the top of the hour. I want to talk about the environment that we're now operating in, in Washington.

And the news of the day, thematically within Washington, involves the budgetary reality that I alluded to in my introduction. It seems as if, right now, there are a lot of wheels in motion. There seems to be a lot of risks to the federal funding environment, in the sense that the White House and the Congress are trying to come to terms on an agreement that could include avoiding a rather dangerous debt ceiling deadline down the road. So, we have a short-term problem, and we have a long-term problem. Can you talk about the risk to the work that you're talking about here, in the short term, as well as the intermediate or longer term, just because of this problem alone?

BOLDEN: Yeah. I think, as I've tried to say in my remarks, you know, America is the foremost leader in space exploration. There is no question about that. When I go travel overseas and talk to my international partners, they acknowledge that. We are going to explore. We've set out a course-- set on a course where we're going to explore even farther into deep space. And our focus, right now, to be quite honest, is I hope I've got you all to understand is, is in safely flying out the shuttle program that we started some six years ago, with a very, very well organized transition plan. We're about to realize that.

Mark flew the next to the last mission. We're going to launch STS 135 next week, bring it back safely to Earth, and effectively close out the space shuttle program. So we have, at the 2010 Authorization Act, you know, produced by a bipartisan vote of Congress, signed into law by the President, and formulated or supported with the full year CR that provides our funding right now. Again, through bipartisan action in the Congress and signed into law by the President.

The elements of that Act I talked about in my comments. And so, I'm very confident that, in spite of all else that churns around us, our future is bright. It's most important, though, that America remain a leader. And so, our primary focus after shuttle is going to be to make sure that we have a viable domestic space industry, so that we don't have to rely on international partners to get us to and from the International Space Station.

HAMRICK: So, it seems as if, because of the budgetary environment that we're in, that there's sort of a general acceptance of the idea that we need to hand off a good deal of this work to the private sector. And, in an environment where the risk seems to be rising, that essentially, America can't afford a lot of things, is the risk growing, that the government can't be as much in the business of space in the future?

BOLDEN: I mean, let me step back for a minute. Because I want to remind everybody, our turn to reliance on commercial entities for providing access to the Earth orbit actually started long before the present economic crisis. In the National Space Act of 1958, that established NASA, it said, you know, to the greatest extent possible, utilize

commercially available assets to do our work. We've been doing that for years, in terms of Earth-sensing data and the like.

The previous administration, after the Columbia accident, said, "We need to bring about a viable commercial space industry so that NASA can be about exploration." So, everyone has always known that owning and operating a low Earth orbit transportation system is not in the best interest of the nation, that it detracts from the ability of our industry to grow and run that particular aspect of space flight.

So, this did not start as a result of the crisis. And it's not a response to our financial crisis. It's the smart thing to do. And that's where we're headed.

HAMRICK: I'm talking about the risk at the moment, as things change.

BOLDEN: Oh, okay. You know, as I said, my first pledge, when I became the NASA Administrator, was to maintain the safety, look out for the safety of the crews going to and from space, maintain the safety of crews operating on the International Space Station. And that has not changed. So, we will safely fly out the shuttle, safely operate the station. And then, safely operate or oversee the operation of the commercial space entities.

I'm very confident that that's going to be done well. I will tell you, if you look at any of the major companies today, whether they're entrepreneurial or otherwise, in many of them, you will see faces that are familiar to you. Because they will be former astronauts who are now in executive positions here. If you look at SpaceX, I've got Garrett Reisman, Ken Bowersox, Orbital Sciences right here Frank Cobertson, who is my fellow South Carolinian. So I am very comforted and confident that safety is not going to be compromised. Because we have NASA engineers, scientists, flight directors, flight controllers, who are now transitioning, not out of the aerospace business, but just to the new arena for access to low Earth orbit.

HAMRICK: So this isn't a new question, but it's one that seems to persist to some degree. We've had some of our greatest space heroes testify on Capitol Hill, at hearings that you've been present at-- Neil Armstrong and the like-- to say, "We think the national security is innately tied to the nation's space program. And there is a certain level of uncomfortableness we have with doing business with international partners, to some degree. And also, to some degree, taking the tradition that we have within NASA and the government sector, and transferring it, to some degree, to the private sector." To what degree can you recognize the validity of the passion and argument that they make?

BOLDEN: I would only say that everybody you mentioned, I consider personal friends. And I have the utmost respect for them. Many of them are my mentors and my heroes. I just respectfully disagree with the positions that they have frequently taken, because we are doing things that are in the national interest, that will ensure our national security by producing or facilitating the success of a viable commercial space entity for this nation. We will grow our technology, our jobs.

I think everyone will admit, what is most important to the nation today, is increasing our technological workforce, ensuring that our people have places to work, and the space program that President Obama envisions, and it is my task to carry out, with the help of our NASA contractors and civil servants, is a viable, vibrant commercial use to get to low Earth orbit while we go and explore.

I can't imagine, when I flew the Hubble Space Telescope mission in 1990, the deploy mission, I don't think anybody imagined what it would do to change our world, to change our perspective on the universe. Without shuttle, Hubble would not even be in existence today. And it definitely would not be rewriting the textbooks on planetary science and other things of that nature.

We are going to continue to do that. I was with some congressional interns earlier. And I mentioned to them-- I asked if anybody had ever had a parent or a relative have to go to the hospital in an EMS vehicle. And several of them said they had. And I asked the question-- I said, "Did it strike you as strange that, when they arrived at the hospital, the doctor knew everything about their vital signs, knew exactly where to put them and everything?"

I said, "That was not planned that way, it happened, because we decided, following President Kennedy, that we were going to send humans to the moon. And we realized all of a sudden, you know, a quarter of a million miles is a long way. We don't have that much cable. So we have got to be able to find ways to know how our astronauts are doing. And so, wireless communications, wireless biomedical instrumentation developed. Not because we knew we needed it, but because of necessity."

That's what space exploration does for us. And that's why it's so important, you know, that I be able to carry out President Obama's vision for increasing the amount of technological development that we do in this nation. It is vital for our national security. So, you know, I would say, don't be fooled by anybody who says that space is not important, that the things that we do are not important. They are vital for our national security.

HAMRICK: So you mentioned earlier that Orbital Sciences and SpaceX are the primary private sector partners that you have right now. Insofar as there is a great deal of interlay between defense contracting and the space business, how do you guard against transfer of some of this technology to entities, governments that might be hostile to us?

BOLDEN: I don't have a real problem with that, because of the-- You know, there are a lot of laws that help me make sure that I don't do that. But let me-- Since you mentioned Orbital and SpaceX, if I go back to how we're going to explore. I think you may have mentioned in my introduction that we're going to be a while without being able to do things in space. And that's not entirely accurate. Because I think you will find that those two entities, for example, in less than a year, will be providing, under contract for us, access to low Earth orbit, access to the International Space Station for cargo.

The reason I talked about the critical importance of a domestic capability to get cargo and crew to orbit, is because if we don't have to rely on international entities, then there are certain things that we can do domestically, that take care of national security interests.

Growing an international partnership, and expanding our international outreach, is critical. It's a vital part of our national security policy, our national space policy. But we need to have our own integral domestic capability that's used in times that it's critical for us to do things alone.

HAMRICK: And the questioner asks, realistically, how soon do you think a commercial company will be flying astronauts? And, as an aviator and an astronaut yourself, how would you feel about flying commercially?

BOLDEN: Well, I have just said that I think, when we ask the commercial entities how long it will take-- And our previous experience says about three years after we let the first contract, we should have a viable commercial capability to take humans to space. And I think that's correct. Some of them say they think it will take even shorter. But we're saying about three years. So roughly, the 2015-ish timeframe, if you want to put a date on it.

Would I? What do I think about commercial space if I were still an active astronaut? I wouldn't be standing here touting it if I wouldn't be willing to go it, go get on it. So people ask me, every once in a while, "Would you fly if offered the opportunity?" And I tell them, "Please don't tell my wife my answer. But, in a heartbeat." [laughter]

HAMRICK: Very good. So, if someone had the money-- and it's been apparent through the use of the Russian Space Program that people do have the money to essentially buy a ticket into space. There are some efforts underway to facilitate that in greater fashion, with Sir Richard Branson's Enterprise and so forth. When do you see that opportunity happening on a more appropriate basis?

BOLDEN: I don't want to try to give you a date. But I know that we're very, very, very close to having the capability to do sub-orbital flight, which is not-- it's not what we're talking about when we send people to the International Space Station. But it is the type of operation that Sir Richard Branson wants to do, where scientists, just plain people, who want to experience space flight have an opportunity to launch, do like Alan-- In fact, it's a repeat of the Alan Shepherd first flight into space. That's a sub-orbital mission, where one goes into space, and then comes back. Gets to view our planet from an incredible vantage point that many-- you know, many people, to this date, have not had an opportunity to do.

I think that's around the corner. And, when I say around the corner, I mean not that many years away, if not within a couple of years or so.

HAMRICK: The questioner asks, considering the number of expeditions to the International Space Station each year, what is the future of the Astronaut Corps? And, how do you attract, motivate and retain those that would be attracted to it?

BOLDEN: The good thing is, I don't have any problem attracting people to the Astronaut Corps. I have a problem warding all of them off and selecting out of the thousands that apply. I think, though, the fact that America is the leading nation in terms of exploration, attracts young men and women.

The fact that they can see that there is a real possibility that they can go to space, and go to space very soon, because we are not leaving space, and we are going to be occupying the International Space Station at least until 2020, if not beyond. And they see that there are opportunities to fly in space as soon as they can get in the program and get trained. There's no gap. We can get them there, and we will get them there.

The fact that they see that we're trying to get a viable commercial entity in place means that even more people will have an opportunity to venture into space. So, there are a lot of things that I think we're doing to attract young people, you know, to follow in my footsteps. I'm hoping that we will have many more do that.

HAMRICK: I understand that we have a member of the Astronaut Corps that would actually like to make a statement now. So I'll let you prepare us for that.

BOLDEN: I will. And I think, you know, Mark Kelly really needs no introduction. He has become quite a figure after deciding that he was going to split his time, if you will. He is an incredible husband and father, and an even more incredible Commander for space shuttle missions.

Mark is a veteran of four flights. Actually was the Commander for STS 134 that recently landed and was the last flight of Endeavor. I consider him a true friend. And Mark, if you would come forward and give us a message.

[applause]

MARK KELLY: Good afternoon everybody. It's great to be here. It's good to see some familiar faces in the audience. I appreciate the kind words from General Bolden about the time that I've spent at NASA. It's been a tremendous honor to be an astronaut and to follow in the footsteps of some really great pioneers, like Alan Shepherd, John Glenn, Neil Armstrong, and so many others that have led us into the space age.

Since I joined NASA 15 years ago, I've been privileged to take four trips into space, all to the International Space Station. It's been a really an amazing ride. As I watched ISS just fade away in the distance, when I last departed Space Station on the 30th of May, I couldn't help but think at what an amazing accomplishment this has all been.

American ingenuity and the vision to build a strong international partnership is what made this such a great success.

With the addition of the alpha magnetic spectrometer, which we installed on Space Station just six weeks ago, we now have a completed and incredibly capable laboratory in space. I expect that this new instrument will revolutionize particle physics research and add to the significant discoveries that will certainly be the legacy of the Space Station Program.

Now, has anybody heard of the AMS in this office? I see a lot of-- a lot of nos. So, AMS was a two billion dollar cosmic particle detector. We didn't pay for most of that. It's actually paid by 16 different countries. There are 60 universities involved, 600 physicists. And AMS does what Hubble doesn't do. Charlie launched Hubble in 1990. And Hubble has been an amazing tool for astronomers and astrophysicists. It shows us galaxies, you know, that, you know, how they looked to within 500 million years, a billion years after the Big Bang.

So, what AMS is going to tell us is what are those things made of. And the way it's going to do that is, in the beginning, when the universe was created, there was a lot of hydrogen and helium. We know that. We know there was a lot of matter. When something comes out of nothing, if there is a positive, there should be a negative, is what astrophysicists will tell you. So, not only should there have been a lot of matter, but there should have been a lot of antimatter. And we don't know what happened to that antimatter.

Well, we do know that matter, like atoms of oxygen and nitrogen, are created inside of stars. But antimatter, if there is an anti-oxygen or nitrogen atom, that would be created inside of a star too. So, if we can detect just one particle like that, an anti-oxygen or anti-nitrogen particle through this detector, then we know it came from something, a star that's made of antimatter.

So, a lot of those galaxies that we look at with Hubble Space Telescope, and those stars we see out there, might actually not be made out of stuff like this. It might be made out of the opposite of that. So, it's really an exciting time for science on the Space Station. And it's certainly going to add a lot to the science program.

As we continue to live and work on ISS, we also hope to open a new chapter in space, one that includes new launch vehicles and destination in and beyond Earth's orbit. How exciting will it be to see the next generation of astronauts-- it's not going to be Charlie or me, it will be somebody else-- but, how exciting will that be to see somebody visit an asteroid, or venture further into our solar system? I mean, it's really going to be something.

As we enter into this Fourth of July weekend, I can't help but reflect on how we've been a nation of explorers for over 200 years. It is our responsibility, all of us, to maintain that leadership in the exploration of space. President Kennedy told us-- and I

quote, "Our leadership in science and in industry, our hopes for peace and security, our obligations to ourselves as well as others, all require us to make this effort."

Many of you have been following the recovery of my wife Gabby. She's doing very well. She's sorry she couldn't be here today. We both are so appreciative of the outpouring of support. The hopes and prayers of so many people are a tremendous source of strength to her, but also to me, our family, her friends, and her staff. I love her very much.

But I have to say, I also love the space shuttle very much. [laughter] The space shuttle has been very good to this country. It's an incredible ship that is difficult to let go. In just one week from today, the space shuttle will rocket off the planet one last time. Now, how many people haven't seen this before? So there's a couple hands. I'm assuming everybody else has seen a space shuttle flight in person? Is that true? Probably a lot of you haven't. Well, you got a week to figure it out. [laughter] I really suggest you get down there and do this. And Charlie and Lori can help you with that. [laughter]

So, as Atlantis heads off on its last mission, we can all be a little sad for a little while. You know, that's okay. I'm going to be sad. But also know that NASA will open a new and exciting chapter. We're going to continue to inspire our children. And we're going to be-- continue to be a great investment for the American people.

As some of you might know, I announced my retirement from the Navy and NASA a couple weeks ago. It was great to complete my last flight in the Navy and in NASA by landing the space shuttle on June 1st. It was the highlight of my career. Since then, there has been quite a lot of speculation about what my plans are. Do I plan to run for public office? And I just find that interesting. It means it must be a really, really slow summer out there. [laughter] But, I'll go into more detail about that next week when I visit Iowa New Hampshire. [laughter]

In all seriousness, so my main focus, right now, and for the foreseeable future, is Gabby's recovery and also spending some more time with my kids. She's the politician in the family. I'm the space guy. And I see no reason to change that now. So thank you folks.

[applause]

HAMRICK: We're almost out of time. But before I ask the last question-- and I'll have a last question for both of them-- I have a couple of housekeeping matters to take care of. I'd like to remind you about some of our upcoming Luncheon speakers. On July 10th, Ted Leonsis, majority owner of the NHL's Washington Capitals, the NBA's Washington Wizards, and a technology maven himself, will be our guest speaker. July 15th, Tim Armstrong, CEO of AOL and Arianna Huffington, will discuss the future of journalism. And July 18th, Gregory Jaczko, the Chairman of the Nuclear Regulatory Commission, will join us.

If I could ask both of our guest speakers to come up for just a moment, I do have a last question, as well as a couple of more things I actually want to-- Well, I'll ask the question now. And then I'll get to the other part. And, for both of you, very important question, what was your favorite food in space?

BOLDEN: Oh, mine is easy. My is very easy. Shrimp cocktail. It's real jump shrimp with cocktail sauce and everything. You know, we used dehydrated food. You add a little water, and it's back to normal. So that's, without a doubt, my favorite. [laughter]

KELLY: You know, Charlie stole my answer. So I'm going to-- You know, I've seen most people tend to like that. You know, those cupcakes look pretty good. [laughter] Fortunately, the way we package stuff, they'd be all smashed down. And you wouldn't be able to read "NASA" on them anymore. But, you know, the food, we've got 400 options. So, you know, I also like the creamed spinach, believe it or not. A lot of my crew members think it's pretty disgusting. [laughter]

HAMRICK: So here are the other two housekeeping matters to take care of. First of all, for the Administrator, our complementary NPC coffee mug.

BOLDEN: Thank you very much.

[applause]

HAMRICK: Also, Mark, stay up here. Another thing is that I noticed, and I said this to Gary Sinise yesterday. I noticed, you know, short haircuts are all the rule these days, particularly for guys who have a military history. So I'd like to present you both with a complementary National Press Club baseball cap. [applause]

How about a round of applause for our speakers today. Thank you.

[applause]

I'd like to thank all of you for being here. I'd like to thank our National Press Club staff, including the Library and the Broadcast Center for organizing today's event. A reminder, you can find out more about the National Press Club at our website. And you can also get a copy of today's program at www.press.org. Thank you. And we're adjourned.

(Gavel)

END OF LUNCHEON