

NASA OFFICE OF PUBLIC AFFAIRS
WASHINGTON, D.C.

NASA Future Forum

Remarks by
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February 21, 2012

The Ohio State University
Columbus, Ohio

1 P R O C E E D I N G S

2 **DEPUTY ADMINISTRATOR GARVER:** Thank you. Thank
3 you very much, Lauren.

4 As Lauren mentioned, she is from Ohio, and it is
5 just a thrill to be here at The Ohio State University.
6 Now, 30 years ago, I would have been surprised to say that,
7 given that I grew up in Michigan.

8 [Laughter.]

9 **DEPUTY ADMINISTRATOR GARVER:** But that was a
10 while ago, and now I could not be more proud of my Ohio
11 connections. I left East Lansing, Michigan, so not the
12 dreaded Ann Arbor, to go to Colorado College and studied
13 political science and economics, and as a young graduate, I
14 wanted to, as I'm sure many of you do, make a positive
15 difference for the world. And I felt that the most
16 important way I could do that was to come and work as a
17 volunteer initially for John Glenn's presidential campaign
18 in 1983.

19 So I drove across the country, never having been
20 to Washington, D.C., never having certainly met the
21 Senator, to volunteer on his campaign. The first day I
22 walked in, I happened to meet the gentleman who has now

1 been my husband of 26 years and the father of my two
2 teenage boys, and I feel that the connection from those
3 early days of my career has continued.

4 While it is true that we bond over cheering
5 against the University of Michigan, we have sent our kids
6 to Ohio State football camp. This was back in the Jim
7 Tressel days, but I can tell you now that if we had a
8 drinking game around our house the last 6 months every time
9 "Urban Meyer" was said, I would have always been feeling no
10 pain. Everyone is very excited for this new era.

11 And you can imagine last night at dinner, while I
12 know Mark Kelly feels he had the best seat in the house --
13 and, of course, he did sitting between John Glenn and Neil
14 Armstrong -- I had a pretty good one myself that I was
15 tweeting about and sending pictures to my husband and
16 children. I was between Charlie Bolden, my boss, the head
17 of NASA, and Archie Griffin.

18 [Laughter.]

19 **DEPUTY ADMINISTRATOR GARVER:** So I got married in
20 Ohio. I spend my vacations in Ohio visiting my
21 mother-in-law and sister-in-law, and in 1998, it was a
22 privilege to be at NASA during the time when Senator Glenn

1 had his second flight into space, so that I could help
2 support that mission and the incredible science that went
3 on the Space Shuttle mission.

4 So it is a twist of irony, having worked on his
5 presidential campaign, that then in the last 15 or so
6 years, we have worked together to advise presidential
7 candidates, from Senator Kerry to Senator Clinton to
8 Senator Obama at the time.

9 Together, we worked in 2008 especially, as I was
10 called to lead the pre-transition team initially before the
11 election and then the transition team for NASA. I, of
12 course, made a call to my friend, Senator Glenn, and he
13 gave me the recommendations and his advice that he has
14 given continually and consistently throughout his
15 professional career related to space.

16 First, he said utilize the Shuttle, extend the
17 Shuttle as much as possible, fully develop and utilize that
18 asset of our research laboratory in space, the
19 International Space Station, and don't forget to keep
20 investing in that seed corn of our future, technology.

21 So what did we do? We worked. We talked about
22 what we could do inheriting the space program in the shape

1 that it was in 2008 and 2009. We flew out the last two
2 missions of the Space Shuttle that were not funded in the
3 previous administration. We were able to launch the AMS to
4 the International Space Station and that last logistics
5 mission to the Space Station, which is helping us to
6 continue to utilize that laboratory. We were able to
7 extend the life of the Space Station to at least 2020, and
8 we are again investing in that important seed corn of our
9 future, the research and technology for NASA.

10 So I have to admit I have impersonated -- you say
11 you're born again, President Gee, as an Ohioan. I have
12 impersonated an Ohioan a few times over the years. I guess
13 in the three decades since I've lived in Michigan, the
14 twang is at least a little bit worn off, so I could pose as
15 a northern Ohioan perhaps, but the southern delegations
16 claim Charlie Bolden, the Administrator of NASA, being from
17 South Carolina and having lived in Houston, as the center
18 -- the person responsibility for those centers. And I get
19 the claim of the northern center being the Glenn Research
20 Center. And a few times at least, Senator Brown and
21 Portman have introduced me as being from Ohio, and I
22 haven't gone out of my way to correct them. So, if you see

1 them, feel free to just let that go.

2 Today, we are here at a Future Forum, right? We
3 are going to talk about how we've built on this incredible
4 50-year experience and what we plan to do going forward.

5 We just announced last week our proposed budget
6 for 2013, and President Obama has again considered the
7 importance of NASA by putting forward a stable budget of
8 \$17.7 billion. This is just about what we are operating
9 under now for the 2012 budget. It will allow us to
10 continue the advancements in scientific knowledge and human
11 exploration and the stewardship of the Earth, things that
12 NASA is all about.

13 It's going to keep us on course to go places we
14 have never been before, to an asteroid and on to Mars, and
15 Ohio continues to play a great role in this budget. We
16 have \$658 million requested for the 2013 budget for the
17 Glenn Research Center. That is higher by about 12 million
18 than their budget this year, and the State of Ohio
19 continues to play a key role in our research, in our space
20 technology, and in developing those exploration systems for
21 human space flight to take us farther than ever before.

22 Overall within our budget, human space flight is

1 around \$8 billion of our budget. People tell you we are
2 not continuing with human space flight; you need to set
3 this straight. For those of you going into, as I know you
4 are, aerospace engineering, please know there is a bright,
5 bright future for you at NASA.

6 About half of that \$8-billion investment, \$4
7 billion, is for the continued operations of the Space
8 Station program, and another 4 billion are developing these
9 new vehicles, the deep space systems that will take us
10 farther than ever before.

11 Within the budget, we have nearly \$5 billion
12 invested in the sciences, Earth science, space science,
13 those amazing spacecraft that help us learn things we have
14 never known before. New knowledge is one of the very, very
15 key aspects of NASA.

16 We have nearly \$700 million in this budget
17 request for that investment in cutting-edge technology and
18 \$550 million in aeronautics. So it's a stable budget, and
19 while we know we had to make difficult choices, as
20 President Gee said, in these challenging times, it really
21 does represent the continued support of this nation for our
22 nation's space program.

1 About half of 1 percent of the nation's budget is
2 at NASA. While it was cut somewhat, last year's request
3 continues to be supported in Congress. We are just starting
4 this year's budget process now. So we look forward to our
5 discussions with Congress and hope that this year, they
6 will see fit to fund our full request.

7 So we believe that this budget is balanced. It
8 keeps the balance between human and robotic spacecraft,
9 with that focus on our cornerstone program, the
10 International Space Station. This is where we do our
11 research not only about the human body and how humans will
12 be able to explore farther into the solar system, but it
13 also gives us research and knowledge to help humanity right
14 here on Earth.

15 We are working in new partnerships, so that the
16 transportation to and from the International Space Station
17 does not cost what it has been at NASA, about a third of
18 our budget with the Space Shuttle program, but reduced that
19 cost so we can spend more money doing the research. So you
20 have heard a lot about these programs, Commercial Crew and
21 Cargo.

22 Well, what have we been doing for the last 50

1 years? What are we celebrating? Transportation, right?
2 The launch of people to and from space, and we have been
3 doing that this entire 50 years with our commercial private
4 sector partners who are incredibly innovative and are ready
5 to have us loosen our grip and then help us continue to do
6 that in ways that are innovative and in ways that expand
7 the possibilities, so more and more people can go into
8 space and not just government-paid civil servants.

9 So as NASA becomes just one of the customers for
10 going not only with our own astronauts but with cargo to
11 and from the International Space Station, we'll be able to
12 invest more in those cutting-edge programs, right?

13 What did Lauren say our vision is at NASA? To
14 reach for new heights and reveal the unknown, not to keep
15 doing the same thing over and over. And why? Why do we do
16 those things? To benefit human life here on Earth, to make
17 this world a better place, and that is what we're doing on
18 the Space Station.

19 And we need to find a way to get that investment
20 from the private sector, so they can develop not only
21 markets for people going to and from space, but in this
22 country, in the 1990s, we had 80 percent of the launch

1 market, commercial satellites launched from the United
2 States. We have lost that market overseas. We need to
3 lower our costs so that we can win back that market share.

4 And what happens when we do that? Well, I
5 studied political science and economics. This is really
6 basic. When we do that, we will lower the cost to NASA for
7 our science missions. We will lower the cost for our
8 Defense Department for our military satellite missions, and
9 it will allow us to grow our economic base, to be able to
10 create more jobs, and help grow our economy. That's what
11 we do, right? Ohio State is here talking about the
12 investment in science and technology. The critical
13 investment in these areas is what has made this country
14 great, and NASA is a key part of that.

15 So we plan to end the outsourcing of our human
16 space launch business and bring that work back here to the
17 United States and have Americans launching Americans and
18 creating more jobs.

19 Just this year alone, we believe we will have the
20 first three commercial logistics flights to the Space
21 Station by private companies, SpaceX and Orbital Sciences.
22 Through our COTS program, we'll be doing that at a much

1 lower cost than we have done in the past.

2 We just announced last week the announcement for
3 proposals for the Commercial Crew program. Now we have
4 five companies involved, and we will look forward to
5 announcing the winners of those proposals this summer.

6 The Space Station is fully utilized. We have had
7 people living and working in space continuously for the
8 last 11 years. Just last year alone, we conducted over 400
9 experiments on the Space Station. We are developing the
10 Space Launch System and the Orion Multi-Purpose Crew
11 Vehicle to go farther into space than ever before. These
12 are the launch vehicles and crew capsule that will take
13 Americans to that asteroid for the first time and on to
14 Mars.

15 We have already tested the Orion vehicle, water
16 landing tests in preparation for its ocean landing. We are
17 testing the J-2X upper stage for the rocket. We have a
18 planned test flight of the rocket in 2014 that is supposed
19 by this budget. We have a test flight of the entire system
20 uncrewed in 2017 and the first crewed launch in 2021.

21 The 21st Century Launch Complex is another key
22 part of this budget. We believe that we need to support

1 the infrastructure in this country to have a multi-user
2 space transportation facility. Down in Florida, the
3 Kennedy Space Center has been launching NASA rockets, and
4 we intend to be able to develop that infrastructure again,
5 to lower the costs so that we can have more launches and
6 create more jobs helping our economy.

7 The science budget I mentioned, the \$5 billion,
8 supports over 80 science missions. We have 56 currently
9 operating that this budget supports and 28 under
10 development. These are Earth science missions all the way
11 to deep space missions.

12 The most talked about at least at this point is,
13 of course, the Mars Science Laboratory. Curiosity is on
14 her way to Mars with a landing planned for August 5th.

15 We also are planning the Webb Space Telescope.
16 The James Webb Space Telescope will see farther into the
17 universe than ever before, following up on the Hubble Space
18 Telescope's amazing discoveries, rewriting textbooks for
19 the future.

20 We have several Earth sciences missions that will
21 be launched in the next 18 months, the Landsat Data
22 Continuity Mission, the Global Precipitation Mission, and

1 the Orbiting Carbon Observatory, OCO-2. We have missions
2 to the Moon, LADEE, another one to Mars, MAVEN, and 16
3 heliophysics missions in operation, including the
4 development of the MMS, which will continue to look at
5 space weather. You've heard a lot most recently about
6 space weather. The solar activity of the Sun affects us
7 here on Earth, and the studies NASA is doing are critical
8 to our continuing ability to utilize all of the electronics
9 that we have become accustomed to.

10 Aeronautics research continues to give us
11 breakthroughs for cleaner, safer, and more efficient
12 aircraft. We are partnering, as always but even more so,
13 with the greater aviation community to transform our air
14 transportation system. What could benefit us more here on
15 Earth than this? It is an important part of NASA.

16 The President just 3 days ago was at a Boeing
17 plant in Seattle, Washington, talking about the Dreamliner,
18 the 787, and how it is going to help benefit our economy.
19 They're hiring many Americans, and they are exporting
20 airplanes. NASA's involvement in this, which the President
21 highlighted, included development of composites,
22 fly-by-wire, and in fact, those engines that are built

1 right here in Ohio.

2 Well, finally and perhaps most importantly, this
3 Budget Request will drive advances in those high-payoff
4 technologies, again, that Senator Glenn has been talking
5 about at least for the 30 years I have known him. Missions
6 of investment in technology here help us here at home and
7 help advance those technologies, so that we can go further.
8 So things like robotics, space power and propulsion, deep
9 space communications and navigations, and entry, descent,
10 and landing, these investments in technology are going to
11 help us reduce the cost of our missions, so that when we
12 go, we can spend even a higher percentage of the money that
13 is invested in really the cutting-edge key learning things
14 that NASA is uniquely able to do.

15 So, at its core, NASA is about innovation. We're
16 about keeping the U.S. the world leader in air and space.
17 We have expanded our base of human knowledge throughout
18 NASA's history, and we have expanded our economy. We have
19 solved so many problems right here on Earth and lifted our
20 sights to the heavens, all for about a half-a-percent of
21 your tax dollar.

22 The economic impact in Ohio alone of this

1 investment is over a billion dollars, and the Glenn
2 Research Center invests in the technologies to partner with
3 a number of industries, including the automotive industry
4 and the power industry. They also invest in the university
5 system. I know at least \$7 million in awards last year to
6 academic institutions, not unlike The Ohio State
7 University.

8 So, as I mentioned, while it's a time of fiscal
9 austerity, NASA has accepted the challenge to manage at a
10 flat top line, building on the great 50 years of success
11 that we have experienced to date.

12 So, while John Glenn's bravery and leadership
13 inspired me 30 years ago to drive across the country to see
14 what I could do to help make the nation and the world a
15 better place, with his support I found a way to make that
16 difference by working at NASA. It has been an amazing
17 career, and I do know that I, after the transition team was
18 over, asked the head of the transition team, Tom Wheeler --
19 I don't think I've told Senator Glenn this -- who led the
20 science and technology portion of President Obama's
21 incoming transition team, how he happened to select me to
22 lead it. And he said he made one phone call. He's on the

