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Remarks of President Barack Obama – As Prepared for Delivery
Space Exploration in the 21st Century
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Kennedy Space Center

As Prepared for Delivery –

I want to thank Senator Bill Nelson and NASA Administrator Charlie Bolden for their leadership. And I want to recognize Doctor Buzz Aldrin as well. Four decades ago, Buzz became a legend. But in the four decades since he has also been one of America's leading visionaries and authorities on human space flight.

Few people – present company excluded – can claim the expertise of Buzz, Bill, and Charlie when it comes to space exploration. And few people are as singularly unimpressed by Air Force One. Sure, it's comfortable. But it can't even reach low Earth orbit. That is in striking contrast to the Falcon 9 rocket we just saw on the launch pad, which will be tested for the first time in the coming weeks.

I also want to thank everyone for participating in today's conference. Gathered here are scientists and engineers, business leaders and public servants, and a few more astronauts as well. And last but not least, I want to thank the men and women of NASA for welcoming me to the Kennedy Space Center, and for your contributions not only to America, but to the world.

Here at the Kennedy Space Center we are surrounded by monuments and milestones to those contributions. It was from here that NASA launched the missions of Mercury, Gemini, and Apollo. It was from here that Space Shuttle Discovery, piloted by Charlie Bolden, carried the Hubble Telescope into orbit, allowing us to plumb the deepest recesses of our galaxy. It was from here that men and women, propelled by sheer nerve and talent, set about pushing the boundaries of humanity's reach.

That is the story of NASA. And it's a story that started a little more than half a century ago, far from the Space Coast, in a remote and desolate region of what is

now Kazakhstan. It was from there that the Soviet Union launched Sputnik, the first artificial satellite to orbit the Earth, which was little more than a few pieces of metal with a transmitter and battery strapped to the top of a missile. The world was stunned. Americans were dumbfounded. The Soviets had taken the lead in a race for which we were not yet fully prepared.

But soon, we would be. President Eisenhower signed legislation to create NASA and to invest in science and math education, from grade school to graduate school. In 1961, President Kennedy boldly declared before a joint session of Congress that the United States would send a man to the Moon and return him safely to the Earth within the decade. And as a nation, we set about meeting that goal, reaping rewards that have in the decades since touched every facet of our lives. NASA was at the forefront. Many gave their careers to the effort. Some have given far more.

In the years that have followed, the Space Race inspired a generation of scientists and innovators, including – I’m sure – many of you. It has contributed to immeasurable technological advances that have improved our health and well-being, from satellite navigation to water purification, from aerospace manufacturing to medical imaging. And leading the world to space helped America achieve new heights of prosperity here on Earth, while demonstrating the power of a free and open society to harness the ingenuity of its people.

I have been part of that generation so inspired by the space program. One of my earliest memories is sitting on my grandfather’s shoulders, waving a flag as astronauts arrived in Hawaii. For me, the space program has always captured an essential part of what it means to be American – reaching for new heights, stretching beyond what previously did not seem possible. And so, as President, I believe that space exploration is not a luxury or an afterthought in America’s quest for a brighter future – it is an essential part of that quest.

Today, I’d like to talk about the next chapter in this story. Now, the challenges facing our space program are different, and our imperatives for this program are different, than in decades past. We are no longer racing against an adversary. We are no longer competing to achieve a singular goal like reaching the Moon. In fact, what was once a global competition has long since become a global collaboration. But while the measure of our achievements has changed a great deal over the past fifty years, what we do – or fail to do – in seeking new frontiers is no less consequential for our future in space and here on Earth.

So let me start by saying this: I am 100 percent committed to the mission of NASA and its future. Because broadening our capabilities in space will continue to serve our society in ways we can scarcely imagine. Because exploration will

once more inspire wonder in a new generation: sparking passions, launching careers. And because, ultimately, if we fail to press forward in the pursuit of discovery, we are ceding our future.

I know there have been a number of questions raised about my administration's plan for space exploration, especially in this part of Florida where so many rely on NASA as a source of income as well as a source of pride and community.

And these questions come at a time of transition, as the Space Shuttle nears its scheduled retirement after almost thirty years of service. This adds to the worry of folks concerned not only about their own futures, but about the future of a space program to which they have devoted their lives.

But I also know that underlying these concerns is a deeper worry, one that precedes not only this plan but this administration. It stems from the sense that folks in Washington – driven less by vision than by politics – have for years neglected NASA's mission and undermined the work of the professionals who fulfill it. We can see that in NASA's budget, which has risen and fallen with the political winds. But we can also see it in other ways: in the reluctance of those who hold office to set clear and achievable objectives; to provide the resources to meet those objectives; and to justify not just these plans but the larger purpose of space exploration in the 21st century.

That has to change. And with the strategy I'm outlining today, it will. We start by increasing NASA's budget by \$6 billion over the next five years, even as we have instituted a freeze on discretionary spending and sought to make cuts elsewhere in the budget.

We will ramp up robotic exploration of the solar system, including a probe of the Sun's atmosphere, new scouting missions to Mars and other destinations, and an advanced telescope to follow Hubble, allowing us to peer deeper into the universe than ever before.

We will increase Earth-based observation to improve our understanding of our climate and our world: science that will garner tangible benefits, helping us to protect our environment for future generations.

And we will extend the life of the International Space Station likely by more than five years, while actually using it for its intended purpose: conducting advanced research that can help improve daily life on Earth, as well as testing and improving upon our capabilities in space. This includes technologies like more efficient life support systems that will help reduce the cost of future missions.

And in order to reach the Space Station, we will work with a growing array of private companies competing to make getting to space easier and more

affordable.

I recognize that some have said it is unfeasible or unwise to work with the private sector in this way. But the truth is, NASA has always relied on private industry to help design and build the vehicles that carry astronauts to space, from the Mercury capsule that carried John Glenn into orbit nearly fifty years ago, to the Space Shuttle Discovery currently orbiting overhead. By buying the service of space transportation – rather than the vehicles themselves – we can continue to ensure rigorous safety standards are met. But we will also accelerate the pace of innovation as companies – from young start-ups to established leaders – compete to design, build, and launch new means of carrying people and materials out of our atmosphere.

In addition, as part of this effort, we will build on the good work already done on the Orion crew capsule. I have directed Charlie Bolden to immediately begin developing a rescue vehicle using this technology, so we are not forced to rely on foreign providers if it becomes necessary to quickly bring our people home from the International Space Station. And this Orion effort will be part of the technological foundation for advanced spacecraft to be used in future deep space missions. In fact, Orion will be readied for flight right here in this room.

Next, we will invest more than \$3 billion to conduct research on an advanced “heavy lift rocket” – a vehicle to efficiently send into orbit the crew capsules, propulsion systems, and large quantities of supplies needed to reach deep space. In developing this new vehicle, we will not only look at revising or modifying older models. We will also look at new designs, new materials, and new technologies that will transform not just where we can go but what we can do when we get there. And we will finalize a rocket design no later than 2015 and then begin to build it. That’s at least two years earlier than previously planned – and that’s conservative, given that the previous program was behind schedule and over-budget.

At the same time, after decades of neglect, we will increase investment – right away – in other groundbreaking technologies that will allow astronauts to reach space sooner and more often, to travel farther and faster for less cost, and to live and work in space for longer periods of time more safely. That means tackling major scientific and technological challenges. How do we shield astronauts from radiation on longer missions? How do we harness resources on distant worlds? How do we supply spacecraft with the energy needed for these far-reaching journeys? These are questions we can and will answer. And these are questions whose answers will no doubt reap untold benefits right here on Earth.

Yes, pursuing this new strategy will require that we revise the old strategy. In

part, this is because the old strategy – including the Constellation program – was not fulfilling its promise in many ways. That’s not just my assessment; that’s also the assessment of a panel of respected non-partisan experts charged with looking at these issues closely. Despite this, some have had harsh words for the decisions we’ve made, including individuals for whom I have enormous respect and admiration. But what I hope is that these folks will take another look, consider the details we’ve laid out, and see the merits as I’ve described them today.

Some have said, for instance, that this plan gives up on our leadership in space by failing to produce plans within NASA to reach low Earth orbit, relying instead on companies and other countries. But we will actually reach space faster and more often under this new plan, in ways that will help us improve our technological capacity and lower our costs, which are both essential for the long-term sustainability of space flight. In fact, through our plan, we’ll be sending many more astronauts to space over the next decade.

There are also those who have criticized our decision to end parts of Constellation as one that will hinder space exploration beyond low Earth orbit. But by investing in groundbreaking research and innovative companies, we have the potential to rapidly transform our capabilities – even as we build on the important work already completed, through projects like Orion, for future missions. And unlike the previous program, we are setting a course with specific and achievable milestones.

Early in the next decade, a set of crewed flights will test and prove the systems required for exploration beyond low Earth orbit. And by 2025, we expect new spacecraft designed for long journeys to allow us to begin the first-ever crewed missions beyond the moon into deep space. We’ll start by sending astronauts to an asteroid for the first time in history. By the mid-2030s, I believe we can send humans to orbit Mars and return them safely to Earth. And a landing on Mars will follow. Now, critical to deep space exploration will be the development of breakthrough propulsion systems and other advanced technologies. So I’m challenging NASA to break through these barriers. And I know you will – as always – with ingenuity and intensity.

I understand that some believe that we should attempt a return to the surface of the Moon first, as previously planned. But the simple fact is, we have been there before. There is a lot more space to explore, and a lot more to learn when we do. I believe it is more important to ramp up our capabilities to reach – and operate at – a series of increasingly demanding targets, while advancing our technological capabilities with each step outward. That is what this strategy does. And that is how we will ensure that our leadership in space is even

stronger in this new century than it was in the last.

Finally, I want to say a word about jobs. Despite some reports to the contrary, my plan will add more than 2,500 jobs along the Space Coast in the next two years compared to the plan under the previous administration. We'll modernize the Kennedy Space Center, creating jobs as we upgrade launch facilities. And there is potential for even more job creation as companies in Florida and across America compete to be part of a new space transportation industry. This holds the promise of generating more than 10,000 jobs nationwide over the next few years. Many of these jobs will be created in Florida, an area primed to lead in this competition.

At the same time, there are Floridians who will see their work on the Shuttle end as the program winds down. And while this decision was made six years ago, and not by my administration, it is no less painful for the families and communities affected as this decision becomes reality. So I am proposing a \$40 million initiative - led by a high-level team from the White House, NASA, and other agencies - to develop a plan for regional economic growth and job creation. And I expect this plan to reach my desk by August 15th. It's an effort that will help prepare this already skilled workforce for new opportunities in the space industry and beyond.

So that is the next chapter we can write here at NASA. We will partner with industry. We will invest in cutting edge research and technology. We will set far-reaching milestones - while providing the resources to pass them. And step by step, we will push the boundaries not only of where we can go but what we can do. In short, fifty years after the creation of NASA, our goal is no longer just a destination to reach. Our goal is the capacity for people to work and learn, operate and live safely beyond the Earth for extended periods of time, ultimately in ways that are more sustainable and even indefinite. And in fulfilling this task, we will not only extend humanity's reach in space, we will strengthen America's leadership here on Earth.

I'll close by saying this. I know that some Americans have asked a question that's particularly apt on Tax Day: Why spend money on NASA at all? Why spend money solving problems in space when we do not lack for problems to solve here on the ground? Our country is still reeling from the worst economic turmoil we've known in generations. And we also have a massive structural deficit to close in the coming years.

But we know that this is a false choice. Yes, we need to fix our economy. Yes, we need to close our deficits. But for pennies on the dollar, the space program has fueled jobs and entire industries. For pennies on the dollar, the space

program has improved our lives, advanced our society, strengthened our economy, and inspired generations of Americans. And I have no doubt that NASA can continue to fulfill this role. But that is why it is so essential that we pursue a new course and that we revitalize NASA and its mission – not just with dollars, but with clear aims, and a larger purpose.

Little more than 40 years ago, astronauts descended the nine-rung ladder of the Lunar Module called Eagle, and allowed their feet to touch the dusty surface of the Earth's only Moon. It was the culmination of a daring and perilous gambit, of an endeavor that pushed the boundaries of our knowledge; of our technological prowess; of our very capacity as human beings to solve problems. It was not just the greatest achievement in NASA's history. It was one of the greatest achievements in human history.

The question for us now is whether that was the beginning of something or the end of something. I choose to believe it was only the beginning.

Thank you. God bless you. And may God bless the United States of America.

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