Statement

of

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Senator Hutchison, Senator Nelson, and Members of the Committee, thank you for inviting me here to discuss NASA's FY 2007 budget request and our progress in carrying out our mission of space exploration, scientific discovery, and aeronautics research within the resources provided. NASA carries out this nation's greatest technical challenges, but we cannot do it alone. We need the help of the Congress to do it.

Let me begin by thanking this Committee, especially Senator Hutchison and Senator Nelson, for your leadership in shepherding through the Congress the NASA Authorization Act of 2005. This was a landmark piece of legislation for NASA, and I, for one, am profoundly grateful to the Congress for the passage of this visionary Act.

The national priorities articulated in the NASA Authorization Act are a lasting legacy to the crew of the Space Shuttle *Columbia*, and a testament to the leadership in both the White House and Congress who realized in the aftermath of the *Columbia* tragedy that, while our national goals for space exploration must fulfill our existing commitments to the International Space Station, we must also commit ourselves to new, bolder journeys to the Moon, Mars, and beyond. I have a copy of that Act hanging on the wall just outside my office at NASA. This endorsement by the Congress of the Vision for Space Exploration will help to sustain this long journey over the years and decades.

However, our wishes alone do not make this Act a reality. The NASA Authorization Act sets clear and achievable goals, but I must be honest with this Committee, these goals are difficult and not without risk. We have a lot of hard work before us, and we will need the help of the Congress and this Committee to achieve them. For that reason, I ask for your specific help as we try to address each of the 50 or so reporting requirements specified in the Act. You have my pledge to keep this Committee fully informed, but the reports for which you've asked must be consistent with what we know technically at the time of the report, as well as the best cost estimates we have for the program at that time. Further, NASA is in source selection for the Crew Exploration Vehicle, and we must maintain the integrity of that process with respect to the reports we provide.

The other area where I need the help and understanding of this Committee is in realizing how much has changed in the years following the Space Shuttle *Columbia* accident. Put simply, the *Columbia* accident in 2003 profoundly changed the course of our nation's space program, and it profoundly impacted NASA's ability to carry out plans for the International Space Station which preceded the accident. We still need to make sure that we can control foam shedding from the Space Shuttle's external tank, and we still need to develop a robust space transportation capability to ferry astronauts and cargo to the Space Station, and from there onward to our next milestones: the Moon, Mars, and near-Earth asteroids. For this reason, I need your support in bringing the Crew Exploration and Launch Vehicles on-line not later than 2014, and possibly sooner. We also need your support for our effort to leverage the capabilities of commercial industry to demonstrate potentially cheaper means to deliver cargo, and later crew to the International Space Station. After a successful demonstration, NASA hopes to establish an arms-length commercial transaction for delivery service for the ISS.

While the primary emphasis of NASA's research on the Space Station is to prepare for future missions to the Moon, Mars, and beyond, NASA is conducting a certain amount of research, along with our government and commercial partners, for other scientific benefits. However, Senator Hutchison, as we have discussed with you and your staff, it can be difficult to divide research according to sharply

defined exploration and non-exploration purposes. Having said that, I have reviewed NASA's research plans, and I believe we are fully complying with the NASA Authorization Act's requirements as to the funding specified for non-exploration ISS research. We are also making plans to solicit additional partnerships with other government agencies and the commercial sector to conduct research onboard the Space Station. But let me be clear: we can only realize the potential of the Space Station if we have a robust space transportation capability to ferry crew, experiments, and equipment to and from the Station. Our emphasis over the next five years should be to assemble the Space Station with the Shuttle while working aggressively to develop these new space transportation capabilities.

While the NASA Authorization Act sets clear goals for the entire Agency, we simply cannot afford to do everything that our many constituencies would like us to do. I am truly sorry that this is so, but it is a fact. Thus, we must strike a careful and appropriate balance of resources in NASA's budget, consistent with the priorities specified. NASA carries out all of its missions -- space exploration, science, and aeronautics research -- with a "go as you can afford to pay" approach. NASA's top-line request of $16.8 billion in FY 2007 is roughly 0.6% of the overall Federal budget. By comparison, NASA's budget at the height of the Apollo program, including science and aeronautics research, represented 4.4% of Federal outlays. In terms of workforce, at the height of the Apollo program, NASA

employed over 400,000 contractors, civil servants, scientists, technicians and engineers on its programs. Today, NASA employs approximately 75,000 people on its various programs. I am not trying to be nostalgic for the past in pointing out these facts; I am trying to be realistic. NASA cannot do everything on its plate. But we can be guided by, and we can implement, the key priorities specified by the Congress and the White House, and as informed by the science community.

For many reasons, friends of mine who worked at NASA or in industry during the Apollo era, and who helped bring the Shuttle online 25 years ago, have called the next decade for NASA the greatest technical and management challenge the Agency has faced. I believe they are right. Fulfilling our commitments with the International Space Station, retiring the Space Shuttle by 2010, developing the Crew Exploration Vehicle and launch vehicles to carry out missions to the Moon, Mars, and beyond, are goals as challenging as those NASA faced two generations ago.

At the same time, we are also making plans for a Shuttle servicing mission to the Hubble Space Telescope, and building our nation's next great observatory, the James Webb Space Telescope. We're continuing our stewardship of the Nation's Earth science research with satellites like the soon to be launched Cloudsat and Calipso, and we're also building the next robotic Mars landers and laboratories. NASA's science program still remains one of our nation's greatest

achievements, but in view of our fiscal constraints, we must defer some missions that we would prefer to do now, but simply cannot afford at this time. We will continue to maintain a robust portfolio of missions and research within the $5.33 B budget requested for the Science Mission Directorate in FY 2007.

In aeronautics research, NASA is developing a national policy and plan with the White House and other Federal agencies, including DoD and FAA, which dedicates us to the mastery and intellectual stewardship of the core competencies of aeronautics in all flight regimes. This plan will focus our research efforts in those areas appropriate for NASA's unique capabilities. We hope to provide this plan, which will inform future budget resource decisions, to the Congress by December.

But let me speak plainly to the Agency's greatest challenge: transitioning from the Space Shuttle to the Crew Exploration Vehicle. The most important strategic decision we made last year was to use a Shuttle-derived launch architecture, and I want to thank you for endorsing this approach in the NASA Authorization Act. Next, we are addressing the workforce, launch infrastructure, contracting, and affordability issues in the weeks, months, and years ahead. We have a lot of work to do. But, to be clear, NASA will not need as many engineers and technicians on the shop floor to operate and maintain the CEV and Crew Launch Vehicles as we do today with the Space Shuttle. The CEV and CLV are

designed to be simpler and cheaper to operate than the Shuttle. For this reason, many of our highly specialized, human spaceflight engineers and technicians will need to transition to projects such as commercial crew/cargo transport services, heavy-lift launch vehicle development, and the Lunar Lander. Change is hard, but if we don't act now to bring it about, we will not develop the space program that we want to have.

I recall first-hand the damage suffered by our Nation's space program by the unintended loss of critical expertise during the gap between Apollo and Shuttle between 1975 and 1981. When major cutbacks occurred in NASA operations in the early 1970s, the area around Kennedy Space Center suffered greatly, with 13% unemployment and over 1,000 repossessed homes, as former Apollo workers simply walked away from homes that no one was there to buy. The expertise we lost in this era was never regained.

We must not repeat the mistakes of the 1970s as we proceed to retire the Space Shuttle and transition to the Crew Exploration Vehicle. This must be a safe and orderly transition. We have our work cut out for us in flying the Shuttle until 2010 to complete the Space Station, and effecting this transition. We will need the help of Congress during this critical time. You can expect to see more from us on our transition plans in the months and years ahead.

This year, in addition to dealing with foam shedding from the external tank, the Space Shuttle program is also recovering from damage by Hurricane Katrina to the Michoud Assembly Facility in Louisiana and Stennis Space Center in Mississippi. I want to thank members of this Committee for their support for NASA during these trying times. We are asking for Congress's help in the Administration's emergency supplemental request. We're also asking the Congress to provide NASA with flexibility (but not new money in appropriations) to move up to $50 M to pay back the Space Shuttle and Space Station accounts, which were used to pay for recovery efforts last fall. As we make a more complete assessment of the recovery and repair costs from the hurricane, we will keep the Committee fully informed of our plans and how we would use this limited flexibility. I look forward to working with you to address this issue.

In conclusion, Senator Hutchison, Senator Nelson, and members of the Committee, our nation has a long journey ahead of us, just as was the case for explorers and scientists throughout history. But I would like to leave you with the following thought before taking your questions: imagine if you will a world of some future time – whether it be 2020 or 2040 or whenever – when some other nations or alliances are capable of reaching and exploring the Moon, or voyaging to Mars, and the United States cannot and does not. Is it even conceivable that in such a world America would still be regarded as a leader among nations, never

mind *the* leader? And if not, what might be the consequences of this for the global balance of economic and strategic power? Are we willing to accept those consequences? In the end, these are the considerations at stake when we decide, as Americans, upon the goals we set for, and the resources we allocate to, our civil space program. I believe that the NASA Authorization Act answers these questions with a balanced set of goals America seeks from its space program. And now we must implement those goals.

Thank you for your consideration and your leadership in helping to answer these questions.