

HOLD FOR RELEASE
UNTIL PRESENTED
BY WITNESS
April 25, 2006

**Statement of
Michael D. Griffin
Administrator
National Aeronautics and Space Administration**

before the

**Subcommittee on Science and Space
Committee on Commerce, Science, and Transportation
United States Senate**

Madam Chair and Members of the Subcommittee, thank you for this opportunity to appear today to discuss NASA's plans as represented in the President's FY 2007 budget request for NASA. I will outline the highlights of our budget request and discuss the strategic direction for NASA in implementing the priorities of the President and Congress within the resources provided. The President's FY 2007 budget request for NASA of \$16,792 million demonstrates his commitment to the Vision for Space Exploration and our Nation's commitment to our partners on the International Space Station. The FY 2007 budget request is a 3.2% increase above NASA's FY 2006 appropriation, not including the \$349.8 million emergency supplemental for NASA's recovery and restoration efforts following Hurricane Katrina. However, let me put NASA's budget into perspective. NASA's budget is roughly 0.7% of the overall Federal budget. This is a prudent investment to extend the frontiers of space exploration, scientific discovery, and aeronautics research. With it, we enhance American leadership, our safety and security, and our global economic competitiveness through the technological innovations stemming from our space and aeronautics research programs. Our Nation can afford this investment in NASA.

On January 14, 2004, President George W. Bush announced the Vision for Space Exploration to advance U.S. scientific, security, and economic interests through a robust space exploration program. NASA is grateful to the Congress for endorsing this Vision last December in the NASA Authorization Act of 2005 (P.L. 109-155) and providing guidance and expectations for us in carrying out the Agency's missions of space exploration, scientific discovery, and aeronautics research. NASA is also appreciative of the action by the Committees on Appropriations and Congress in providing regular FY 2006 appropriations for the Agency totaling \$16,456.8 million—essentially the level of the President's FY 2006 request before application of rescissions—including a strong endorsement for the Vision for Space Exploration, timely development of the Crew Exploration Vehicle (CEV) and Crew Launch Vehicle (CLV) and support for NASA's other core programs. To that end, NASA is implementing the priorities of the President and Congress within the resources available. NASA carries out its missions with a "go as you can afford to pay" approach where we assume NASA's top line budget will grow at the moderate rate laid out in the President's 2007 budget request. NASA's Strategic Plan and FY 2007 Congressional Budget Justification, provided to the Congress in February, reflect those priorities and describe how NASA is implementing those policies into practice by describing our programs, projected resources, and workforce needs.

As part of his FY 2007 budget request to Congress, the President proposed the American Competitiveness Initiative, or ACI, to encourage American innovation and strengthen our Nation's ability to compete in the global economy. Many have asked why NASA is not a part of the ACI. My response is that it is the mission of NASA to pioneer the future of space exploration, scientific discovery, and aeronautics research, while the ACI is focused on bolstering the Nation's economic competitiveness in areas such as information technology and nanotechnology. NASA contributes to the Nation's competitiveness through all of the cutting-edge exploration, science, and aeronautics investments accomplished by our Mission Directorates. As part of the President's Vision for Space Exploration, NASA expects to spawn entire new industries in this Nation. Furthermore, NASA's education and training initiatives are designed to enhance math and science education, as well as to provide research opportunities at the university level. We are currently reviewing our portfolio of education programs to assess opportunities for potential collaboration at the invitation of the Department of Education, National Science Foundation, and other Federal agencies. NASA can offer opportunities and inspiration to students as no one else can. For example, a University of Colorado-Boulder student-built experiment on the New Horizons mission is currently being activated and will be operated by university students all the way to Pluto and beyond.

Implementing the Vision

Later this year, NASA will continue the assembly of the International Space Station (ISS) with the minimum number of Space Shuttle flights necessary to fulfill our commitments to our international partners before the Space Shuttle's retirement in 2010. The commitment of resources in the President's budget has shown our international partners that NASA and the United States are good partners through thick and thin and this commitment will encourage them to team with us in future endeavors of space exploration and scientific discovery. NASA has consulted with our international partners on the configuration of the ISS, and is working closely with them to determine the crew size and logistics necessary during this assembly period as well as the period following the retirement of the Space Shuttle. The heads of space agencies from Canada, Europe, Japan, Russia and the United States met at Kennedy Space Center on March 2, 2006, to review ISS cooperation and endorse a revision to the ISS configuration and assembly sequence. The partners reaffirmed their agencies' commitment to meet their mutual obligations, to implement six person crew operations in 2009, and to conduct an adequate number of Space Shuttle flights to complete the assembly of ISS by the end of the decade. The partners also affirmed their plans to use a combination of transportation systems provided by Europe, Japan, Russia, and the United States in order to complete ISS assembly in a timeframe that meets the needs of the partners and to ensure full utilization of the unique capabilities of the ISS throughout its lifetime. The FY 2007 budget request provides the necessary resources to purchase Soyuz crew transport and rescue for U.S. astronauts as well as needed Progress vehicle logistics support for the ISS from the Russian Federal Space Agency. Likewise, the FY 2007 budget request provides necessary funds for U.S. commercial industry to demonstrate the capability to deliver cargo and/or crew to the ISS. If such cost-effective commercial services are successfully demonstrated, NASA will welcome and use them.

The next return to flight test mission, STS-121 commanded by Colonel Steve Lindsey, will confirm that we can safely return the Space Shuttle to its primary task of assembling the ISS. We have continued to reduce the risk associated with the release of foam debris from the external tank by eliminating the liquid hydrogen and the liquid oxygen protuberance air load ramps. We are now working toward a July launch, which is the next available lighted launch window as mandated for STS-121. The window is open from July 1 through July 19. NASA will launch when ready. Pending the results of this test flight, I plan to convene my senior management team for space operations as well as my Chief Safety and Mission Assurance Officer and my Chief Engineer in order to determine whether the Space Shuttle can safely conduct a fifth servicing mission to the Hubble Space Telescope in 2007-08. NASA's FY 2007 budget provides the necessary resources to conduct this mission.

In previous budget requests, NASA reported only placeholder budget estimates for the Space Shuttle for FY 2008-2010. The Agency's management focus on return to flight efforts of the Space Shuttle resulted in NASA deferring this analysis until the FY 2007 budget. As I testified before Congress last year, NASA's estimates of the budget shortfall required to safely fly out the Space Shuttle with the minimum number of flights necessary to complete ISS assembly and meet our international partner commitments were \$3-5 billion. With the FY 2007 budget runout, NASA has added \$2.4 billion to the Space Shuttle program and almost \$1.5 billion to the International Space Station in FY 2008-2010 compared to the FY 2006 budget runout. There is no "new money" for NASA's top line budget within the budget projections available given our Nation's other pressing issues, so, working with the White House, NASA provided sufficient funds for the Space Shuttle and ISS programs to carry out their missions by redirecting funds from the Science and Exploration budgets.

There are several strategic implications behind this decision. Foremost among them is that our Nation will keep its commitment to our international partners on the ISS. Thus, with limited resources, we made some difficult decisions. Leadership means setting priorities of time, energy, and resources, and I have tried to make these decisions with the best available facts and analysis. The plain fact is that NASA simply cannot afford to do everything that our many constituencies would like the Agency to do. We must set priorities, and we must adjust our spending to match those priorities. NASA needed to reallocate budgeted funds from the Science and Exploration budget projections for FY 2007-2011 in order to ensure that enough funds were available to properly support the Space Shuttle and the ISS. Thus, NASA cannot afford the costs of starting some new science missions at this time. It is important to know that NASA is simply delaying missions, not abandoning them. With the limited resources available, I believe that fulfilling our commitments on the International Space Station and bringing the Crew Exploration Vehicle (CEV) online in a timely manner, not later than 2014 and possibly much sooner, is a higher priority than these science missions during this period.

There are several reasons not to delay the CEV farther. First and foremost is increased risk to the Vision due to an extended gap in our Nation's ability to launch humans into space after we retire the Space Shuttle in 2010. I experienced first-hand the stagnancy in the aerospace industry that existed during the gap in human spaceflight between the end of the Apollo program and the first flight of the Space Shuttle in 1981, and I know that our Nation's space program suffered greatly from the unintended loss of critical expertise. Our Nation's space industrial base withered. A longer gap in U.S. human spaceflight capabilities will increase risk and overall costs and lead to even more delays in pursuing the Nation's vision. Equally important, the U.S. may risk a perceived, if not a real loss of leadership in space exploration, if we are unable for an extended period to launch our astronauts into space when other nations are establishing or building on their own abilities to do so. An extended gap in U.S. human spaceflight capabilities also increases our risk posture to adequately maintain and utilize the ISS and, unless a commercial capability arises to transport our astronauts, NASA would continue to be reliant on the Russian Soyuz.

Thus, further delays in the CEV are strategically more damaging to our Nation's space program than delays to these other science missions. I stand by my decision regarding how to implement the priorities of the President and Congress within the resources provided, and I will work closely with our stakeholders in Congress and the scientific community to make sure they understand my rationale. Some of our stakeholders will not agree with my position, but it is important for everyone to understand the rationale. These are difficult decisions, but we must balance the competing priorities for our Nation's civil space and aeronautics research endeavors with the limited resources available.

If the funds budgeted for Exploration Systems were to be used to provide additional funds for Science missions, additional Aeronautics Research, or other Congressionally-directed items, I must advise the Congress that such redirection of already-budgeted funds will directly impact NASA's ability to effectively and efficiently transition the workforce and capabilities from the Space Shuttle to the new

CEV systems. Funds available to carry out this transition are already lean, with little management reserve or margin for error. This transition from the Space Shuttle to the CEV is NASA's greatest management challenge over the next several years, and we will need everyone's help within NASA, industry, and our stakeholders to make the transition successful.

Beyond fulfilling our existing commitment, NASA's FY 2007 budget provides the necessary resources to carry out the next steps of the Vision for Space Exploration. The FY 2007 budget provides \$3,978 million for Exploration Systems. Last summer, NASA defined the architecture for the exploration systems that will be necessary in carrying forth that Vision, and we notified the Congress of NASA's need to curtail several research and technology activities not directly contributing to the near-term priorities of timely development of the CEV and Crew Launch Vehicle (CLV) based on the results of that exploration architecture study and the limited funds available. I want to thank the Congress for its endorsement of the general architecture plans in the NASA Authorization Act of 2005 (P.L. 109-155) as well as the FY 2006 Appropriations Act for NASA (P.L. 109-108).

The FY 2007 budget request is sufficient to bring the CEV online no later than 2014, and potentially much sooner. Given the analysis I have today and the need to balance budgets with proposed development work for the CEV and launch vehicles along with the cost estimates for that work, I cannot be more specific for our stakeholders in the White House and Congress at this time about the specific point between 2010 and 2014 when NASA will be able to bring the CEV online. NASA requested industry proposals for the CEV, and we have considerable incentives for an industry bidder to propose a planned development for the CEV as close to 2010 as possible. NASA has begun to evaluate those industry proposals, with a planned contract award in late summer/early fall 2006. NASA plans to select one industry contractor team for the design and development of the CEV. Concurrently, NASA will refine its independent cost estimates for the CEV and launch systems as well as find cost savings through workforce synergies and contract efficiencies between the Space Shuttle and CEV launch systems within the budget profile projected in FY 2007. We believe we can find synergies and contract efficiencies by sharing or transferring subsystems, personnel, resources, and infrastructure between the Space Shuttle propulsion elements and the CEV, CLV, and Heavy-Lift Launch Vehicle. I believe that with the FY 2007 budget, NASA and industry have a real opportunity to make the CEV operational sooner than 2014. I should be able to report a more definitive date for bringing the CEV online by the time we award the CEV contract. Until then, NASA is in the midst of source selection for the CEV procurement, and we are limited in our ability to provide information in this competitive environment involving a multi-billion dollar procurement.

For the CLV, NASA has directed two industry teams to begin initial development of the vehicle's propulsion systems, and to develop designs for the CLV upper stage. The Agency also plans to award design, development, test, and evaluation contracts later this year. NASA is planning a systems requirements review for this project in the fall with a preliminary design review in 2008 in order for this new launch vehicle to be ready for when the CEV comes on-line.

While NASA needed to significantly curtail projected funding for biological and physical sciences research on the ISS as well as various research and technology projects in order to fund development for the CEV, the U.S. segment of the ISS was designated a National Laboratory in the NASA Authorization Act of 2005. Thus, NASA is seeking partnerships with other government agencies like the National Science Foundation, Department of Defense, National Institutes of Health (NIH), Department of Energy, and the National Institute of Standards and Technology as well as the commercial sector to conduct research onboard the ISS. However, the research utilization of the ISS is impacted due to limited cargo and crew transportation. For this reason, NASA's need for investment to spur a commercial cargo and/or crew transportation service is even more compelling.

With respect to funding for non-exploration related life and microgravity research pursuant to direction in Section 204 of the NASA Authorization Act of 2005, the Agency completed an extensive exercise to define exactly what activities should be categorized as ISS research. I have reviewed NASA's investments in non-Exploration related life and microgravity research, and I believe that NASA is complying with the NASA Authorization Act of 2005. Consistent with Section 204 of the Act, of the \$238.1 million allocated to ISS Research in FY 2006, \$35.7 million (or 15%) will be dedicated to non-exploration research.

Scientific Discovery

In 2005, NASA's science missions enjoyed a year of significant achievements. Deep Impact traveled 268 million miles to meet comet Tempel 1, sending its impactor to collide with the comet and providing researchers with the best-ever comet data and images. The Mars twin rovers continue studying the harsh Martian environment, well beyond their expected mission life. Cassini may have found evidence of liquid water erupting from below the surface of Saturn's moon Enceladus. The Mars Reconnaissance Orbiter successfully launched and went into orbit around Mars, to help us better understand the history of water on Mars. The Voyager 1 spacecraft entered the vast, turbulent expanse of the heliosheath, 8.7 billion miles from the sun, where no human-made object has traveled before. The Hubble Space Telescope continues its successful mission of discovery and exploration. Among its many achievements was the discovery that Pluto may have three moons, offering more insights into the nature and evolution of the Pluto system and Kuiper Belt. Through coordination of observations from several ground-based telescopes and NASA's Swift and other satellites, scientists solved the 35-year old mystery of the origin of powerful, split-second flashes of light called gamma-ray bursts. The Tropical Rainfall Measuring Mission (TRMM) provided data to aid our understanding of the changes inside a hurricane, helping scientists re-create storms on computer forecast models, which can assist in the forecasting of future tropical cyclone transformations. On January 19, 2006, we successfully launched the New Horizons Mission, beginning its nine year journey to Pluto for scientific discovery. On April 25, 2006, CALIPSO (Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observations) and Cloudsat are scheduled to launch from Vandenberg Air Force Base. Together, they will provide new perspectives on Earth's clouds and aerosols, answering questions about how they form, evolve, and affect water supply, climate, weather, and air quality. Truly, this has been a successful year of science achievements – a trend I expect to continue.

NASA's FY 2007 budget request provides \$5,330 million for the Agency's Science portfolio to explore the universe, solar system, and Earth. My decision to curtail the rate of growth for NASA's Science missions is not intended in any way to demonstrate any lack of respect for the work done by NASA Science. On the contrary, NASA's science missions remain one of the nation's crowning achievements, and NASA is a world leader with 54 satellites and payloads currently operating in concert with the science community and our international partners. My decision to slow the rate of growth for NASA's Science missions is simply a matter of how the Agency will use the available resources within the overall NASA portfolio. In fact, the Agency's Science budget has grown much faster than NASA's total budget since FY 1993. In 1992, the Science budget represented only 24 percent of the overall NASA budget while it represents 32 percent of the Agency's budget in FY 2007. NASA's Science budget is moderated to 1.5 percent growth in the FY 2007 budget request compared with the amount appropriated for NASA in FY 2006 (in accordance with NASA's Initial Operating Plan provided to the Committee) and then 1 percent per year thereafter through FY 2011.

In the FY 2007 budget, there are some additional budget shifts within the Science portfolio to rebalance the program to better reflect our original science priorities and consistent with the FY 2006 Budget Amendment. Within the Science budget, the Solar System Exploration budget provides \$1,610 million to fund missions to all solar system bodies and to maintain the Deep Space Network. Mars exploration is

kept at roughly its current level of funding which allows missions every 26 months when the Earth and Mars are in planetary alignment. Mars will be the most thoroughly studied planet besides our own Earth. NASA continues a series of openly competed missions for Discovery, New Frontiers, and Scout missions to various planetary bodies in the solar system. Juno, a competitively-selected mission to study Jupiter, is slated to be the next New Frontiers mission, following the New Horizons mission on its way to Pluto after its successful launch in January.

After extensive reviews, NASA has extended the mission operating life of several Earth Science missions including TRMM and Terra, Heliophysics missions such as both Voyager spacecraft, and Astrophysics missions including Chandra and the Wilkinson Microwave Anisotropy Probe.

Aeronautics Research

NASA's FY 2007 request for the Aeronautics Research Mission Directorate is \$724 million. Proper stewardship of this funding requires a coherent strategic vision for aeronautics research, which we are working to develop. While I am concerned that our Nation's aviation industry not lose market share to global competitors, NASA's research must benefit the American public by supporting a broad base of aeronautics research. NASA's aeronautics research cannot and will not directly subsidize work to specific corporate interests. There are fundamental questions in aeronautics research needing to be answered, and NASA will focus its aeronautics research on those issues. NASA will take responsibility for the intellectual stewardship of the core competencies of aeronautics for the Nation in all flight regimes, from subsonic through hypersonic flight. We will also conduct the fundamental research that is needed to meet the substantial challenges of the Next Generation Air Transportation System (NGATS), and we intend to work closely with our agency partners in the Joint Planning and Development Office (JPDO).

Across our aeronautics portfolio, NASA is taking a long-term, strategic approach to our research plans to ensure that we pursue the cutting-edge across the breadth of aeronautics disciplines that will be required to support revolutionary capabilities in both air vehicles and the airspace in which they fly. NASA's commitment to technical excellence requires a commitment to rigor and discipline and will not focus on demonstrations that lack the traceability and scalability required for true scientific and engineering advancement. Hence, we are turning away from the four-demo approach proposed last year under the Vehicle Systems Program. Instead, our Fundamental Aeronautics Program will focus on fundamental research that addresses aeronautics challenges in areas such as aerothermodynamics, acoustics, propulsion, materials and structures, computational fluid dynamics, and experimental measurement techniques. The Fundamental Aeronautics Program will generate data, knowledge, and design tools that will be applicable across a broad range of air vehicles in subsonic (both fixed and rotary wing), supersonic, and hypersonic flight.

In the Aviation Safety Program, NASA is developing strategic research plans, ensuring that the research conducted will lead to capabilities and technologies for improving safety consistent with the revolutionary changes anticipated in air vehicles foreseen in the future. The focus will be vehicle-centric, with areas of research that include vehicle health management, resilient aircraft control, aging and durability challenges, and advanced flight deck technologies.

In the Airspace Systems Program, NASA will conduct the fundamental research required to bring about the revolutionary capabilities articulated in the JPDO's vision for the NGATS. Our research will focus on the development of future concepts, capabilities, and technologies that will enable major measurable increases in air traffic management effectiveness, flexibility, and efficiency.

In addition to the Aeronautics Research Mission Directorate's three research programs, NASA is committed to preserving as national assets those aeronautics test facilities which are deemed mission critical and necessary to meet the needs and requirements of the Agency and the Nation. NASA has established the Aeronautics Test Program (ATP), a component of the Shared Capability Assets Program (SCAP), as a long-term, funded commitment by NASA to retain and invest in test capabilities that are considered important to the Agency and the Nation. ATP's purpose is to ensure the strategic availability of the requisite, critical suite of wind tunnel and ground test facilities which are necessary to meet immediate and future National requirements.

As part of our overall portfolio, NASA program managers and researchers will work closely and constructively with industry, academia, and other Government entities to enhance our Nation's aeronautics capability. In this vein, as a principal member of the interagency JPDO, NASA has established investment priorities that directly address the research and development needs of the NGATS which will enable major increases in the capacity and mobility of the U.S. Air Transportation System. NASA also plans to collaborate closely with industry and academia through the use of competitive research awards and Space Act agreements on prospective research work in line with the critical thrust areas of the Aeronautics program that will enable numerous commercial aviation and scientific applications. Our goal is to focus our total research investments on fundamental aeronautics questions that need to be answered, and that will benefit the broader community of academia, industry, and Government researchers. We will transition the achievements from NASA's Aeronautics research and technology for use by both Government and industry. Additionally, and in line with the refocused program's priorities, NASA will leave to others work more appropriately performed or funded by other Agencies or the private sectors.

In accordance with the NASA Authorization Act of 2005 (P.L. 109-155) and the FY 2006 Science, State, Justice, Commerce, and Related Agencies Appropriations Act (P.L. 109-108), NASA and the Office of Science and Technology Policy have been jointly developing a National Aeronautics Research and Development Policy which will establish a long term policy and guidance for future aeronautics research and development activities. This policy will establish the appropriate role for Federal investment in U.S. aeronautics research: near- and far-term, high-priority objectives; roles and responsibilities of the multiple agencies involved; and, guidance on related infrastructure and workforce challenges.

Cross-Agency Support Programs

In the FY 2007 budget, NASA proposes a new direct budget category for programs that cut across NASA's portfolio of space exploration, scientific discovery, and aeronautics research. These Cross-Agency Support Programs include: NASA's Education programs funded at \$153.3 million; Advanced Business Systems, or more commonly known as the Integrated Enterprise Management program, is called out as a separate program rather than being budgeted from within Corporate and Center General and Administrative accounts and is funded at \$108.2 million; NASA's Innovative Partnership Program, including Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR), has been transferred from Exploration Systems so that these partnerships may better address Agency-wide needs and is funded at \$197.9 million. Also, the Shared Capabilities Assets Program is funded at \$32.2 million (with additional funding located in the Mission Directorates) and will ensure that NASA's unique facilities (e.g., wind tunnels, rocket engine test stands, high-end computing, thermal vacuum chambers, and other capital assets) are adequately managed with agency-level decision-making to address NASA's and the Nation's needs.

NASA's Education budget request sustains our commitment to excellence in science, technology, engineering and mathematics (STEM) education to ensure that the next generation of Americans can accept the full measure of their roles and responsibilities in shaping the future and meeting the workforce

needs to implement the Vision for Space Exploration. NASA will continue to provide innovative programs that use STEM resources (NASA content, people and facilities) to inspire the next generation of explorers and innovators. I have outlined three primary goals for our education investments: (1) strengthening NASA and the nation's future workforce; (2) attracting and retaining students in the STEM pipeline; and, (3) engaging Americans in NASA's mission through partnerships and alliances. The greatest contribution that NASA makes in educating the next generation of Americans is providing worthy endeavors for which students will be inspired to study difficult subjects like math, science, and engineering because they too share the dream of exploring the cosmos. These students are our future workforce. Our education investment portfolio is directly linked to our overall workforce strategy.

NASA Workforce Strategy

The Vision for Space Exploration is a unique endeavor that will last many generations. The NASA management team has been working to build NASA as an institution having ten healthy field Centers known for technical excellence. We continue to define program management and research roles and responsibilities for each Center in order to carry out NASA's missions of space exploration, scientific discovery, and aeronautics research. All of our centers must contribute to NASA's primary missions. We are beginning the process of assigning specific research programs and projects to appropriate NASA Centers. We are not done, but we are taking the necessary steps to make it happen.

We have many challenges in the Agency, but none more important than the technical excellence of NASA's workforce. Likewise, we are beginning to address the problems posed by the aging of NASA's facilities and physical assets. The overall objective is to transform the composition of NASA's workforce so that it remains viable for the long-term goals of NASA's missions. We have a lot of work cut out for us in the coming months and year ahead in assigning these program responsibilities and re-building the Agency's technical competence in performing cutting-edge work. NASA has been addressing the challenge of mitigating the number of civil service employees in the Agency that are not currently assigned or supporting NASA programs (the so-called "uncovered capacity") through a number of means, which were addressed in a draft report, shared with the Subcommittee in February in compliance with the NASA Authorization Act of 2005. The final workforce report, reflecting input from our unions, was submitted to the Subcommittee on April 13. NASA will conduct a reduction in force of our civil servants only as an action of last resort consistent with our statutory constraints. Instead, NASA is focusing its efforts to solve its uncovered capacity workforce problems through a number of other actions, including the assignment of new projects to research Centers that will strengthen their base of in-house work, the Shared Capability Assets Program that should stabilize the skills base necessary for a certain specialized workforce; the movement of certain research and technology development projects from certain centers not suffering from uncovered capacity problems to centers that are; retraining efforts at field centers so that the technical workforce can develop new skills; and the pursuit of reimbursable work for projects and research to support other government agencies and the private sector through Space Act Agreements.

NASA's Financial Management

Earlier this month, NASA notified the Committee that it had two violations of the Antideficiency Act. The violations resulted from the Agency's failure to request from the Office of Management and Budget timely reapportionment of Congressionally-approved FY 2004 funds and timely apportionments of unobligated balances carried over from FY 2004 to FY 2005. The Agency has corrected the errors without the need for additional appropriations. The Agency has also identified the root cause of these errors and has addressed them through its aggressive staff training and process improvements.

NASA has continued to make progress in addressing its other financial management and reporting challenges. The Office of Management and Budget has recently provided feedback to NASA affirming

the Agency's progress. The Agency finalized a Corrective Action Plan addressing financial weaknesses identified in NASA's 2005 financial audit. The plan was delivered to the Congress, specifically at the request of the Subcommittee on Space and Aeronautics of the Committee on Science and the Subcommittee on Government Management, Finance and Accountability of the Committee on Government Reform, on February 15, 2006. It incorporates the expert advice of NASA's Inspector General. In addition, we have reviewed the plan with the Office of Management and Budget. This Corrective Action Plan provides an integrated, cross-NASA approach to resolving the Agency's outstanding deficiencies. Implementation of these corrective actions is reviewed regularly by the NASA Deputy Administrator. While these corrective actions will require some time to implement, NASA remains committed to improving its financial management and reporting.

Impact of Earmarks on NASA's Mission

NASA pioneers the future in space exploration, scientific discovery and aeronautics research. In order to carry out this mission, NASA awards peer-reviewed science grants and conducts competitively-selected procurements to select research and development projects to benefit the public based on the priorities of the Congress, President, and scientific community. NASA is implementing these priorities within the resources provided. NASA's FY 2006 appropriation totals \$16.623 billion, including \$349.8 million in emergency supplemental appropriations for Hurricane Katrina recovery at NASA facilities in Louisiana and Mississippi. Within this FY 2006 appropriation is a total of \$568.5 million in directed funding for 198 discrete site-specific and programmatic Congressional interest items, a record high in both dollar amount and number of individual items. These Congressional interest items are offset by reductions within NASA's budget, to ongoing and planned NASA programs. Earmarks have increased by a factor of more than 30 in number and almost 8 in dollar value since FY 1997, when NASA was earmarked \$74 million, for 6 discrete items. The growth of these Congressional directions is eroding NASA's ability to carry out its mission of space exploration and peer-reviewed scientific discovery.

In formulating our budget, NASA prioritizes activities to achieve an integrated package of programs and projects to best achieve the priorities that have been provided us by both the President and the Congress. The redirection of funding erodes the integrity of our plans, has resulted in delays and/or cancellation of planned activities, and may conflict with timely development of the CEV. In FY 2006, as a result of earmarks, NASA had to redirect a significant portion of many planned budgets. Fully 50 percent of the planned Education program required redirection, 16 percent of the Innovative Partnerships Program, 5 percent of the Exploration Systems budget, and 4 percent of the Science budget. Further, the scientific community bases its research priorities on a peer-review process. Congressional site-specific earmarks circumvent this process for setting research priorities within the science community and erode the integrity of that process. Site specific earmarks to institutions outside of NASA exacerbate the problems of NASA's "uncovered capacity" workforce, where NASA civil servant scientists and engineers do not have funds for their own research and development projects. As stated in the President's ACI, "The rapidly growing level of legislatively directed research funds undermines America's research productivity." NASA seeks the assistance of this Committee and Congress in reducing earmarks in the FY 2007 budget process.

NASA's Next Steps

For the last three decades, NASA and the Nation's human spaceflight program have been focused on the development and operation of the Space Shuttle and the ISS. In its final report, the *Columbia* Accident Investigation Board (CAIB) was very forthright in its judgment that these goals are too limited to justify the expense, difficulty, and danger inherent to manned spaceflight, given the limitations of today's technology. The CAIB was equally forthright in calling for a national consensus in the establishment of a program having broader strategic goals. The Vision for Space Exploration is that endeavor. The

Congress has endorsed it, and NASA is working to implement it. But to effect these changes, NASA must engage in a major transformation—taking the capabilities we have throughout the Agency and restructuring them to achieve a set of goals for the 21st Century that we have outlined earlier this month in our 2006 NASA Strategic Plan. This is an enormous challenge, but we have begun to transform our entire organization to foster these changes and to enhance a positive, mission-driven culture.

The CAIB was also clear in its assessment that the lack of open communication on technical and programmatic matters was a direct cause of the loss of *Columbia*. We have understood and embraced this assessment, and are absolutely and completely committed to creating an environment of openness and free-flowing communication. However, NASA still has to make a number of improvements in its internal communications as well as how we communicate externally to our stakeholders, the scientific community, and the public. NASA is making a concerted effort to address all problems in this area.

For America to continue to be preeminent among nations, it is necessary for us also to lead in space exploration, scientific discovery, and aeronautics research. It is equally true that great nations need allies and partners. The spirit of innovation and the muscle of government and industry are needed to turn the Nation's Vision for Space Exploration into reality. These journeys to the ISS, the Moon, Mars, or even Pluto are the most difficult things our nation does. June Scobee Rodgers, the widow of Dick Scobee, Commander of the Space Shuttle *Challenger* on that ill-fated day twenty years ago, recently noted, "Without risk there's no discovery, there's no new knowledge, there's no bold adventure...the greatest risk is to take no risk." We must continue our journey. America, through NASA, leads the way.

Once again, thank you for the opportunity to testify today. I would be pleased to respond to any questions that you may have.