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Statement of
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before the

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Committee on Science and Technology
U.S. House of Representatives

Mr. Chairman and Members of the Subcommittee, thank you for the opportunity to appear today as the new Associate Administrator for NASA's Science Mission Directorate (SMD). The four weeks I have spent on the job at NASA Headquarters have been personally rewarding, and I look forward to continuing that experience in appearing before the Subcommittee today to discuss NASA's plans for the future of SMD's space -- and Earth -- science portfolio, as represented in the President's FY 2008 budget request for NASA, and to highlight my vision for this organization. I appreciate this opportunity to address your questions and concerns.

First, permit me to note that although my scientific background and expertise is in astrophysics and planetary science, I serve as the Associate Administrator for all four of our Earth and space science disciplines, and that I look forward to learning more about Earth Science and Heliophysics in order to further advance these important programs in SMD's science portfolio.

The President's Vision for Space Exploration calls upon NASA to conduct robotic and human exploration of the Moon, Mars and other destinations, to conduct robotic exploration across the solar system, and to conduct advanced telescope searches for Earth-like planets around other stars. Other Presidential directives and legislative mandates instruct NASA to conduct Earth observation and scientific research and to explore the origin and destiny of the universe. With enactment of the NASA Authorization Act of 2005 (P.L. 109-155), the Congress provided a fresh legislative mandate for this charge, calling for a balanced program of science, exploration, and aeronautics.

I am committed to implementing this direction, and bringing to NASA and the Congress the best possible slate of programs and program success within the significant resources already available. This includes programs synergistic with NASA's Exploration Systems Mission Directorate and also research that both enables, and is enabled by, human exploration plans for the Moon and Mars. I am an enthusiastic advocate of human exploration and believe that a strong science program associated with this exploration is important to maximizing the benefits to the Nation of such human exploration.

Vision for SMD

Before I outline the recent scientific achievements of NASA's space science program and the President's request to further advance that program in FY 2008, I would like to share with the Subcommittee several guiding principles I am instilling in SMD, as well as an important change to the way matters of scientific prioritization are analyzed and debated within SMD.

Below are my three guiding principles for SMD, each is extremely important and of equal priority:

1. To make strong progress advancing the priorities of all four decadal surveys[1], for example by increasing our international collaboration efforts;
2. To get more from our existing and planned budgets, for example by better managing flight missions and by ensuring that data analysis from missions is sufficiently funded to "get the promised goods out;" and
3. To help the Vision for Space Exploration succeed, for example by fostering a lunar science community.

As stated above, I also have made an important change to the way matters of scientific prioritization are analyzed and debated within SMD. That change is both to our processes and to our senior leadership in SMD. On my first day with NASA, one month ago today, I established a new office, the Office of the Chief Scientist (OCS), reporting directly to me as the Associate Administrator for SMD. The primary function of this new office is to provide independent technical analysis and advice regarding scientific matters in the SMD portfolio. In particular, this includes issues of prioritization both within, and between, each of the four scientific disciplines in SMD's portfolio. Previously, no strong, formal, independent advice function was in place. To ensure the highest quality of advice, I asked cosmologist and Nobel Laureate Dr. John Mather to lead this effort as the SMD Chief Scientist, and he has accepted. John is ably supported by two deputy Chief Scientists, one for the Earth Sciences and one for the Space Sciences. I believe Dr. Mather and his team, coupled with the strong role they are chartered to play in mission prioritization, selection, and science management decisions, will produce increasing benefits as we go forward.

Scientific Achievements

Now I will turn to some of the recent scientific achievements of NASA's science program.

I am proud to be leading a world-class effort that consistently returns historic scientific results. This past year alone was truly remarkable for scientific discovery about our Earth, the Sun, our solar system, and the universe. This is exemplified in part by the fact that NASA alone was responsible for 11 percent of *Science News* magazine's top stories--covering all fields of science--for 2006; this is an all-time record in the 34 years that this metric has been tracked.

[1] The term "decadal survey" refers to a regular series of reports conducted by the National Research Council of the National Academies on behalf of NASA and its partner agencies. Each of SMD's science disciplines has its own decadal survey, representing community consensus in each field. These surveys assess proposed activities and recommend investment priorities over a ten-year timeframe.

Important findings resulting from our program ranged from new observations of familiar phenomena like the ozone hole, hurricanes, and rainfall, to the discovery of lakes of organic hydrocarbons on Saturn's planet-sized moon Titan, to the identification of new classes of planetary abodes across our galaxy, to the study of the Sun's magnetic field, showing it to be more turbulent and dynamic than previously expected.

As these and other results about our world and the universe pour in, NASA also continues to develop and launch our next generation of missions, and to support a vigorous scientific community via research and data analysis funding. In total, I note, NASA currently is developing or flying a total of 93 space and Earth science missions--far more than all of the other space agencies of the world combined. NASA also supports over 3000 separate space and Earth science research investigations in our Research and Analysis programs, spending approximately $600 million annually on scientific data analysis, modeling, and theory across the four disciplines of Earth and space science spanned by SMD.

I intend for SMD to continue to turn heads across the world by developing space missions and supporting scientific research that rewrites textbooks in all of our science disciplines.

At present, NASA is operating 52 space and Earth science missions and, simultaneously, developing 41 new flight missions. These new missions range from modest Principal Investigator-led efforts like the Interstellar Boundary Explorer (IBEX) currently planned for launch in 2008 and the Phoenix Mars lander about to launch this summer, to the flagship NASA space science missions like the James Webb Space Telescope (JWST) mission in development for launch in 2013.

In 2006, NASA launched four new science and technology demonstration missions: New Horizons, Solar Terrestrial Relations Observatories (STEREO), CloudSat, and Space Technology (ST)-5. We also partnered with other Federal and international agencies to launch five other science and technology missions: Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observations (CALIPSO), Two Wide-Angle Imaging Neutral-Atom Spectrometers (TWINS)-A, Hinode (Solar-B), ST-6, and the NOAA GOES-N satellite. Below Is more detail on this impressive list of newly launched missions.

In January 2006, NASA launched the New Horizons mission to the planet Pluto and the ancient Kuiper Belt in which it orbits. New Horizons, the fastest spacecraft ever launched, will begin its reconnaissance of these bodies 8 years hence, in 2015, following a 3 billion-plus mile crossing of our planetary system. I am very proud to have been since its inception, and to continue to be, the Principal Investigator of this mission. Just 13 months after launch, this February, New Horizons flew by Jupiter, making important new observations of a wide variety of exotic phenomena in the Jupiter system, including, for example, the eruption of the gargantuan Tvashtar volcano on Jupiter's moon, Io.

Following on the launch of New Horizons with the April 2006 launch of the CloudSat and CALIPSO spacecraft, NASA added two important assets to the "A-train" of satellites flying in close proximity polar orbits around the Earth to gain a better understanding of key factors related to climate change.

NASA has also been very active this past year launching new heliophysics missions. The agency collaborated on the Japanese Aerospace Exploration Agency's new Hinode (Solar-B) mission, which was successfully launched in September 2006. Early results have already provided new insight on solar magnetic processes operating in the Sun's atmosphere.

Then in October 2006, NASA's twin STEREO spacecraft were launched to help researchers construct the first-ever three-dimensional views of the Sun's atmosphere. This new view will improve our abilities in space weather forecasting and greatly advance the ability of scientists to understand solar physics, which, in turn, enables us to better protect humans living and working in space.

Already this year, on February 17, we launched all five THEMIS (Time History of Events and Macroscale Interactions during Substorms) microsatellites on a single rocket to study the genesis of Earth's aurora. On April 25, the Aeronomy of Ice in the Mesosphere (AIM) mission was launched to study ice clouds in the polar regions of Earth's upper atmosphere. We also remain on track to launch both the Dawn mission to explore fascinating and important Ceres and Vesta in the main belt of asteroids between Mars and Jupiter, and also the Phoenix Mars lander by late this summer.

From across the solar system, NASA's spacecraft have provided startling new insights into the formation and evolution of the planets. Images from the Mars Global Surveyor have revealed recent deposits in gullies on Mars, evidence that suggests water may have flowed in these locations within the last several years. The Mars Reconnaissance Orbiter, which began its primary science phase in November 2006, has not only taken extraordinary high resolution images of Mars at resolutions greater than any other mission to-date, but has taken incredible images of Opportunity and Spirit on the surface, and helped the Phoenix lander find a safe landing area. From its orbit around Saturn, the Cassini spacecraft recently found unexpected evidence of liquid water geysers erupting from near-surface water reservoirs on Saturn's moon Enceladus.

Additionally, the Wilkinson Microwave Anisotropy Probe (WMAP) Explorer mission was able to gather new information about the first second after the universe formed, while the Chandra X-ray Observatory provided new and strong evidence of dark matter, and the Hubble Space Telescope identified 16 candidate planets orbiting other stars near the center of our galaxy.

In late October 2006, NASA Administrator Mike Griffin announced plans for a fifth and final Space Shuttle servicing mission to the Hubble Space Telescope (HST) to extend and dramatically improve its capabilities for the future. The repaired and revitalized HST will boast two new major scientific instruments with capabilities that will make it 10 times more powerful than the HST we have today.

In Earth Science, researchers are using Tropical Rainfall Measuring Mission (TRMM) data to provide a complete picture of low-latitude precipitation and storms around the entire world; in 2006, researchers used 8 years of continuous data from the TRMM lightning Imaging Sensor to identify the regions on Earth that typically experience the most intense thunderstorms.

Using instruments flying closer to Earth, NASA investigators flew 29 separate scientific instruments to 60,000 foot altitudes aboard NASA's WB-57F Canberra aircraft in the Costa Rica Aura Validation Experiment (CAVE). These airborne measurements, coupled with measurements from the orbiting Aura spacecraft, shed light on how ozone-destroying chemicals get into the stratosphere over the tropics and how high-altitude clouds affect the flow of water vapor – a powerful greenhouse gas – in this critical region of the atmosphere.

Additionally, scientists using nearly a decade of global ocean satellite data were able to demonstrate a strong relationship between warming climate and a decline in the microscopic marine plant life (phytoplankton) at the base of the marine ecosystem.

Examples of important successes in our data analysis programs are also diverse. Astronomers combining data from the Hubble Space Telescope with data from ground-based and other space-based telescopes have created the first three-dimensional map of the large-scale distribution of dark matter in the universe. NASA researchers also found organic materials that formed in the most distant regions of the early solar system preserved in a unique meteorite that fell over Canada in 2000. And, using a network of small automated telescopes, astronomers have discovered a planet orbiting in a binary star system, showing that planet formation very likely occurs in most star systems. In our home solar system, scientists predicted that the next solar activity cycle will be 30-50 percent stronger than the previous one and up to a year late. Accurately predicting the sun's cycles will help plan for the effects of solar storms and help protect future astronauts. And a breakthrough "solar climate" forecast was made with a combination of computer simulation and groundbreaking observations of the solar interior from space using the NASA/ESA Solar and Heliospheric Observatory (SOHO).

The list of achievements resulting from NASA's space and Earth science portfolio is much longer than these examples alone. I am excited to tell you that lack of time here today rather than lack of results, causes me to have to move on from this topic to discuss the President's FY-2008 budget request for space science.

Highlights of the Science Mission Directorate's FY 2008 Budget Request

NASA's FY 2008 budget request for the Agency's science portfolio is $5.5 billion. This represents an increase of $49.3 million (or 1 percent) over the FY 2007 request, adjusted for NASA's new, simplified full cost accounting system. It will enable NASA to launch or partner on 10 new missions, operate and provide ground support for more than 50 spacecraft, and fund a wide array of scientific research related to and based on the data returned from these missions.

The Planetary Science budget request of $1.4 billion will advance scientific knowledge of the solar system, search for evidence of extraterrestrial life, and prepare for human exploration of the Moon and Mars. NASA will get an early start on Lunar science when the Discovery Program's Moon Mineralogy Mapper (M3) launches aboard India's Chandrayaan-1 mission in March 2008. Also aboard this mission will be Mini-RF, a technology demonstration payload, supported by NASA's Exploration Systems and Space Operations Mission Directorates which may glean evidence for water in the Moon's polar regions. In support of expanded opportunities for pursuing lunar science, the President's request includes $351 million from FY 2008-2012 for a Lunar Science Research budget line within the Planetary Science Division. The Science Mission Directorate is already hard at work creating synergy with the programs of the Exploration Systems Mission Directorate. After the Lunar Reconnaissance Orbiter completes its prime mission for the Exploration Systems Mission Directorate, the Science Mission Directorate plans to fund extended mission operations through this budget line in order to maximize scientific return from the spacecraft. In addition, the new Lunar Science Research Initiative includes Missions of Opportunity, technology development, data archiving, and expanded basic lunar research. The Discovery and New Frontiers programs also provide opportunities for the science community to propose missions to accomplish lunar science investigations, and one such mission is under study. We have tasked the National Research Council (NRC) to conduct a study on the scientific context for the exploration of the Moon. Their preliminary report is in hand, and their final report is due this summer. That report will help us mature our lunar science plans in the months ahead. We have also begun similar coordinating steps for Mars, where SMD already has a mature and robust program of scientific exploration.

The FY 2008 budget also supports the Mars Exploration Program by operating five spacecraft at Mars, flying the Phoenix lander, scheduled for launch in August 2007, and continuing to develop the Mars Science Laboratory for a launch scheduled in 2009. The Discovery Program's Dawn Mission dual asteroid orbiter will be operating en route to the asteroid belt, and the Mercury Surface, Space Environment, Geochemistry and Ranging (MESSENGER) spacecraft will make its first flyby of Mercury. Last year, three Discovery mission proposals and three Discovery Missions of Opportunity were selected for Phase A studies which will culminate late this year in new mission and instrument selections. The Discovery Program plans to again invite proposals for additional new missions in 2008. Additionally, the New Frontiers Program's Juno Mission will undergo both a Preliminary Design Review and a Non-Advocate Review in FY 2008 in preparation for entering development towards a 2011 launch to study Jupiter's interior, aurora, and magnetosphere. Like Discovery, the New Frontiers Program plans to release a new Announcement of Opportunity (AO) in 2008.

The Heliophysics budget request of $1.1 billion will support 14 operational missions and 6 missions in development to better characterize and understand the Sun and its effects on Earth, the solar system, and space environmental conditions that will be experienced by astronauts, and to demonstrate technologies that can improve future operational systems. Additionally, during FY 2008, the Explorer Program will launch both the Interstellar Boundary Explorer (IBEX) mission, focused on the detection of the very edge of our solar system's heliosphere and the Coupled Ion-Neutral Dynamics Investigation (CINDI) Mission of Opportunity. The Solar Dynamics Observatory (SDO) to study the Sun's magnetic field is also scheduled for launch in late 2008 or early 2009. The Geospace Radiation Belt Storm Probes (RBSP) mission, presently in formulation, will undergo a Preliminary Design Review and a Non-Advocate Review in FY 2008 in preparation for entering development in early FY 2009. RBSP will improve the understanding of how solar storms interact with Earth's Van Allen radiation belts. We remain on track to release the next Explorer Announcement of Opportunity in very early FY 2008 and we hope to select three new astrophysics and heliophysics missions, as well as one or more Missions of Opportunity, as a result of that call for proposals.

The Astrophysics budget request of $1.6 billion will support continued operation and data analysis from NASA's orbital astronomical observatories, including the Hubble Space Telescope (HST), Chandra X-Ray Observatory, and the Spitzer Space Telescope, and to build more powerful instruments to peer deeper into the cosmos. HST is scheduled for a final servicing mission in August 2008 using the Space Shuttle. Along with repairs and service life extension efforts, two new instruments will be installed during the servicing mission that will dramatically extend HST's performance and enable further discoveries, including Wide Field Camera 3 (WFC3), which will re-enable some science observations that have been affected by the recent failure of the Advanced Camera for Surveys. After the servicing mission, HST is planned to have 6 fully operational instruments (including a suite of cameras and spectrographs that will have about 10 times the capability of older instruments) as well as other new hardware planned to support another five years of world-class space science. Additionally, the Gamma-ray Large Area Space Telescope (GLAST) will launch in FY 2008 to begin a five-year mission mapping the gamma-ray sky and investigating gamma-ray bursts, and the Kepler mission development will be near completion in preparation for launch in FY 2009, to determine the frequency of Earth-like planets. Further, the James Webb Space Telescope astrophysics flagship mission will undergo its Preliminary Design Review and a Non-Advocate Review in FY 2008, in preparation for entering hardware development

As the Subcommittee is aware, the SOFIA airborne observatory, which we have been developing with the German Aerospace Research Center (DLR) has been reinstated. I am pleased to report that SOFIA had its first functional check-out flight last week; it is scheduled to undergo an ambitious program of flight testing that begins this year and will continue in 2008. Though we know of no technical showstoppers in regard to the airworthiness of the aircraft or operation of the telescope, this program has some remaining hurdles to overcome and so remains subject to a careful management review later this spring chaired by the NASA Associate Administrator. The SOFIA program baseline will be finalized at that time.

Also in our Astrophysics program, ESA's Herschel and Planck missions are planned for launch in FY 2008; both of these missions include important contributions and scientific participation from NASA.

While the focus of this hearing is on space science, I would also like to briefly address the FY 2008 President's Budget request for Earth Science. The Earth Science budget request is $1.5 billion, an increase of $27.7 million over the FY 2007 request, to better understand the Earth's atmosphere, lithosphere, hydrosphere, cryosphere, and biosphere as a single connected system. This request includes additional funding for the Global Precipitation Measurement (GPM) mission in response to the high priority placed on GPM in the National Research Council (NRC) Decadal Survey. As the follow-on to the highly successful Tropical Rainfall Measuring Mission, GPM's Core satellite is planned for launch no later than 2013, followed by a Constellation spacecraft the following year. Other satellites in the GPM constellation will be provided by NASA's international partners or domestic operational partners. The Earth Science budget also includes increased funding for the Landsat Data Continuity Mission and for the Glory mission, and provides funds for the National Polar-orbiting Operational Environmental Satellite System (NPOESS) Preparatory Project (NPP) to reflect instrument availability and launch delays. Funds are requested for continued development and implementation of the Ocean Surface Topography Mission to launch in 2008, the Aquarius mission to measure the ocean's surface salinity to launch in 2009, and the Orbiting Carbon Observatory mission planned for launch in 2008. NASA will continue to be the largest contributor to the Administration's Climate Change Science Program by collecting global data sets and improving predictive capabilities that will enable advanced assessments of the nature, causes, and consequences of global climate change. Over the coming months, NASA will evaluate strategies for implementing the recommendations of the National Research Council's Earth Science Decadal Survey and responding to challenges to the continuity of climate measurements resulting from the Nunn-McCurdy recertification of the NPOESS program. By working together, NASA and NOAA have already been able to initiate the restoration of one of the de-manifested sensors to (the Ozone Mapping and Profiling Suite limb instrument) to the NPP satellite, which will help continue the record of high vertical resolution ozone profile measurements into the next decade. I am personally committed to continuing and continually improving the working relationship between NASA and NOAA, and met with NOAA executives on my first week in office to transmit this message.

Looking Forward

With that overview of the FY 2008 budget request as a backdrop, I turn now to addressing the specific questions raised in the letter of invitation to this hearing. The Subcommittee's first question concerns my goals for SMD over the next five years.

I view my role as the Associate Administrator for SMD as being an agent for change, to make SMD work better and more efficiently, and to turn heads by producing landmark scientific accomplishments. With that in mind, as outlined earlier in my testimony, I have three goals for the organization that I want to share with you today. The first is to make strong progress advancing all four decadal surveys, which we will attack as vigorously as possible, for example by increasing our international collaboration efforts. The second is to get more science accomplished from our budget. I believe that by looking for ways to increase efficiency within our organization, and within the way we manage missions, we can make new funding available within the President's budget that will enable us to do significantly more. My third objective is to help ensure that the Vision for Space Exploration is successful by increasing the scientific yield it will produce. There are many ways that SMD and the scientific community will help support the Vision, such as through a robust lunar science research program. By providing increased opportunities to conduct lunar science, I believe that we can grow a strong lunar community, just as the Mars community increased once regular flight opportunities were made available in the mid-1990s.

The Subcommittee's second question concerns SMD's top three programmatic risks. The first is the rising cost of launches to space. The Delta-II launch vehicle has been the reliable workhorse for launching science missions to Earth orbit or in the inner planets neighborhood across SMD disciplines. However, the supplier of that launcher is getting out of the Delta-II business in favor of larger and more expensive Evolved Expendable Launch Vehicles (EELVs). NASA's Space Operations Mission Directorate (SOMD) acquires launch services for SMD, and we are working with SOMD on their assessment of options for the future. These options include: design of the future medium-class mission set to fit either larger or smaller ELVs; planning to co-manifest more missions to optimize the use of larger ELVs, and working with SOMD to qualify new and as yet unproven alternate launch vehicles to be offered by new entrants into the market. A second risk area is cost and schedule growth as SMD pursues its challenging flight missions. At both the Agency and SMD level, we are putting in place better cost-estimating tools and capturing lessons learned from recent missions. We are also carefully examining the readiness of new technologies before we confirm missions that use them, and we are introducing new experience-based standards for the selection of Principal Investigators. This ties into the third risk, which is uncertainty in mission development risk. SMD will work harder to understand and reduce risks, rather than waiting for problems to appear when missions are deep in development when cost impacts are most severe. I note that these kinds of emphasis on good management will be key to getting more from our budget so that future missions are not delayed or cancelled to pay for problems on existing mission developments.

The Subcommittee's third question concerns prioritization and balance. NASA's approach to setting the balance of investment among science areas is based on the following considerations: science value, mission affordability, mission risk, and mission readiness. The SMD makes a commitment to progress on each of the four SMD-assigned science objectives in the 2006 NASA Strategic Plan and each of the four decadal surveys produced for us by the National Academy. Long-term outcomes are science-based, not solely mission-based; thus suborbital and research and analysis (R&A) programs are also part of this. We assess progress against community roadmaps laid out for each science area. The pace of progress can be influenced by ties to other NASA and Federal programs, e.g., the U.S. Climate Change Science Program and NPOESS in the case of Earth Science, and human exploration time lines in the case of the Mars Exploration Program. Many science objectives can be accomplished using a mix of small, medium and large missions, international collaboration, and innovative missions of opportunity; others require large missions that are more difficult to initiate. NASA begins in each science area with the priorities defined in decadal surveys of the NRC, then generally sponsors science community-led teams to develop 'roadmaps' to plan implementation of survey research and mission priorities. We then pass these through the filter of budget availability to set final priorities that are affordable and at an appropriate stage of technological readiness and risk reduction. Within each science area, the challenge is to find the proper balance among large, medium and small missions, research and analysis in all its forms, data analysis, and technology development. At the Directorate level, as I previously highlighted, I have charted an Office of the Chief Scientist and appointed Dr. John Mather to lead that office in making recommendations for the best way to balance priorities with in and among each of our four portfolio areas.

The Subcommittee's fourth question concerns strategic investments in space and Earth science I would like to make as the Associate Administrator. I must preface by noting that my analysis of the SMD portfolio is not yet complete and that there are many areas that likely warrant attention or refocus; I address a few here. I believe that, within the SMD five-year budget profile put forward in the President's FY 2008 request, SMD can make modest investments in three key areas that will yield profound and lasting improvements to our bottom line that will increase in our understanding of the Earth, the Sun, the solar system, and the Universe. The first area in which I would invest is Research and Analysis (R&A). This investment would, in part, focus on process improvements to make scientists more efficient and productive; it would also seek new research funding initiatives offered to members of the scientific community. I have appointed a Senior Advisor for R&A, Dr. Yvonne Pendleton, to oversee SMD’s efforts in this area and to make recommendations for ways we can improve R&A processes and program content. Dr. Pendleton will work closely with Dr. Mather and the office of Chief Scientist in this regard. The second investment I hope to make is in mission data analysis, so that the taxpayer gets the best value for the investment we make in science missions. Too often, data analysis efforts are curtailed as a result of rising mission development and operations costs. This problem will be addressed beginning this year. The third area in which I would invest is our Suborbital programs. Suborbital flight using rockets and balloons, as well as aircraft, provide opportunities to train new space scientists in the art of space flight, to bridge the 2010 to 2012 gap in orbital and planetary mission launches, and to produce some exciting science as well. I would also like to see suborbital opportunities expanded. Again, I believe it is possible to make progress within the SMD five-year budget profile put forward in the FY 2008 President’s request.

Conclusion

In summary, let me say that the President’s FY 2008 budget request funds an exciting, productive, and balanced portfolio of Space and Earth science missions, and presents a program that will yield even better results than formerly anticipated though increased efficiencies. This exciting program of research is described in the Science Plan for NASA’s Science Mission Directorate (2007-2016), recently submitted to this Subcommittee as directed in the NASA Authorization Act of 2005 (P.L. 109-155). I look forward to working with this Subcommittee to implement this Plan, as well as my plans to help shape SMD for the years to come. I would be happy to respond to any questions the Subcommittee may have regarding SMD, SMD's portfolio, and the exciting scientific results NASA Is achieving.