Remarks by The Honorable Shana Dale
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United Nations Committee On The Peaceful Uses of Outer Space
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Mr. Chairman, and distinguished delegates, thank you for the opportunity to address the Committee today at its 51st session. It is truly an honor for me to join you on the occasion of the 50th anniversary of the establishment of the first United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS). You may be aware that the National Aeronautics and Space Administration (NASA) is also celebrating its 50th anniversary this year. This is not exactly a coincidence. Upon its creation, NASA was embodied with a strong statement of U.S. policy in favor of international cooperation. Just over a month after creating the NASA, U.S. President Dwight Eisenhower asked the United Nations General Assembly to include on its agenda a draft U.S. resolution calling for the establishment of an Ad Hoc Committee on the Peaceful Uses of Outer Space. Seventeen other nations joined the United States in sponsoring Resolution 1348, which was approved by the General Assembly on December 13, 1958. Almost exactly one year later, on December 12, 1959, the General Assembly adopted Resolution 1472, creating the permanent United Nations Committee on the Peaceful

Uses of Outer Space, a Committee whose membership has grown from 18 to 69 member countries over the intervening years.

What a spectacular journey our many nations have undertaken in the peaceful use of outer space over the last 50 years! For its part, UNCOPUOS has helped lead the way with the establishment of the Outer Space Treaties, which form the bedrock principles upon which we carry out our activities in space. We commend the continuing work of the Committee to bring the benefits of space technology to developing countries, and to encourage the use of space as a tool for sustainable development here on the Earth. And we praise the work of the Committee for positively and effectively addressing issues related to sustainable access to space for all; the mitigation of space debris and the safe use of nuclear power sources in space. Throughout this period, UNCOPUOS has been a major advocate and catalyst for international space cooperation. We at NASA have been intimately involved in all of these UNCOPUOS activities, and we plan to remain so in the future because we share the Committee's vision for the peaceful use of outer space by all nations.

Many of our goals and missions to date have been achieved in coordination with international partners. International cooperation was envisioned as a key element in the U.S. legislation that formally established NASA. Over the past five decades, NASA has concluded more than 3000 agreements with over 100 nations and international organizations. And the level of new cooperation is rising each year. During the past year alone, NASA signed 67 new international agreements with governmental and non-governmental entities in North America, South America, Europe, Asia, Africa, and Australia.

As we look back at NASA's first 50 years, I think you may agree that we have achieved quite a bit, as well. Through triumph and tragedy, we have walked on the Moon, piloted the first winged spacecraft, and led construction of the International Space Station. NASA's robotic spacecraft have studied the Earth and the solar system, imaged the Universe at many wavelengths, and peered back to the beginnings of time. Our scramjet aircraft have reached the aeronautical frontier, traveling 7,000 miles per hour, ten times the speed of sound, and thus setting the world's record.

The societal impact of spaceflight is not always appreciated, but it extends well beyond the usual topic of technology "spinoffs," of which there are many that are critically important to human beings. In the broadest sense, spaceflight has changed the way we view ourselves and our home planet, placing Earth and its inhabitants in the context of 13.7 billion years of cosmic evolution. The iconic image called "Earthrise" of the full Earth taken by the crew of Apollo 8 and numerous later images, including the "pale blue dot" as seen by the Voyager spacecraft, have given us a new sense of the fragility of our planet and the need to take care of it. The great public interest in the spectacular images from the Hubble Space Telescope and other spacecraft show how deeply the results of space exploration have penetrated public consciousness.

All of this may be seen as part of a long tradition of exploration, both for the United States and for mankind. Quite aside from the short-term benefits of applications satellites, jobs, and inspiration to the young to study math, science, and engineering, we believe it is necessary for creative societies to look outward and reach continually toward the next horizon.

Distinguished delegates, I would now like to take you back for a look at NASA's first 50 years.

(Brief NASA History Film)

50 Years of Exploration: The Golden Anniversary of NASA

Distinguished delegates, NASA is proud of its accomplishments over the past 50 years, and we are equally proud of the significant efforts currently underway, with many of the nations represented in this room, to implement a Global Exploration Strategy. NASA's efforts to support the implementation of this strategy are guided by the U.S. Space Exploration Policy established in 2004.

It may surprise some of you that NASA's future exploration plans begin with something very much in the here and now: the continued safe operation of the Space Shuttle through 2010 and the continued assembly of the International Space Station (ISS). After the tragic loss of the Space Shuttle Columbia in 2003, engineers, technicians, and contractors at NASA worked tirelessly to safely return the Space Shuttle to flight.

We also refocused our future Space Shuttle missions on the completing the International Space Station. I am very pleased to report to all of you that the assembly of this unprecedented orbiting international research facility will soon be completed. With significant transportation support from our colleagues from the Russian Federal Space Agency, Roscosmos, the ISS Partnership has safely maintained a continuous human presence on-orbit for over seven years. Two weeks ago, we celebrated the arrival of Japan's research module, *Kibo*, at the Space Station, and several months before that, Canada's robotic manipulator, *Dextre*, Europe's *Columbus Module* and the *Jules Verne* Automated Transfer Vehicle. These steps are more than engineering accomplishments; they are visible testimony to the strength and durability of noble international endeavors in science and technology.

Although not yet completed, the International Space Station is already serving as an ideal test bed for technology advancement, and for operational experience that is essential for long-duration missions beyond low-Earth orbit. In addition, ongoing and future research aboard the International Space Station related to the effects on humans of long-duration spaceflight will help us to return humans to the Moon's surface by 2020.

As I mentioned earlier, the Space Shuttle will cease operations in 2010. Consistent with U.S. Space Exploration policy, NASA is currently developing a new generation of space transportation systems including the Orion Spacecraft and the Ares 1 launch vehicle, which will be capable of initially servicing the International Space Station in the 2015 time frame. And soon, we will initiate work on Ares 5, which will transport humans and cargo to the moon and beyond. The major Orion and Ares 1 components were put under contract last year. An engineering model of the Orion vehicle has been built and will be used to test the launch escape system this September. The first Ares 1 test flight, Ares 1-X, is scheduled for mid-2009.

We are preparing for this return to the Moon in other ways as well. Later this year, NASA will launch the Lunar Reconnaissance Orbiter or LRO, a robotic mission to create a comprehensive atlas of the Moon's features and resources which will aid in the design of a lunar outpost. LRO will also help us to identify potential landing sites at the poles where human missions can establish outpost dwellings and usher in an exciting new era of humans living and working on the surface of the Moon.

Once again, expanding human presence beyond low-Earth orbit promises incredible future scientific discoveries and the possibility for unparalleled international cooperation. Early in the next decade, NASA will send additional robotic missions to the Moon to map the characteristics of the Moon's gravity, atmosphere, and surface. Later in the decade, we will send landers to various places on the lunar surface to study the seismic and heat flow characteristics, seeking to unlock mysteries of the birth of our planet some 4.5 billion years ago.

NASA, of course, will be but one of the world's space agencies orbiting and landing at the Moon. Japan and China already have spacecraft orbiting the Moon and obtaining impressive science results that will benefit future robotic and human missions. Later this year, India is also planning to launch its lunar orbiter, known as Chandrayaan, and potential joint lunar missions with the United Kingdom and Germany are also under consideration. NASA and its international partners are discussing means to coordinate all of these missions, as well as plans for later human missions within the context of the Global Exploration Strategy.

The Global Exploration Strategy is a multilateral initiative born in 2006 out of a commitment by 14 national and international space agencies to identify a shared vision of space exploration. This shared vision focuses on solar system destinations where humans may some day live and work. In May, 2007, these agencies from Australia, Canada, China, France, Germany, Great Britain, India, Italy, Japan, Russia, the Republic of Korea, Ukraine, the United States, and the European Space Agency released a report called "The Global Exploration Strategy: The Framework for Coordination." This framework articulates a shared vision of space exploration focused on solar system destinations where humans may someday live and work.

These space agencies are now working to coordinate space exploration planning in order to identify gaps, overlaps and synergies in their respective programs involving destinations such as the Moon. Importantly, this group also is initiating discussions on potential standard interfaces that will facilitate greater collaboration among the world's space-faring nations as we seek to uncover the mysteries that exist beyond Earth's gravitational pull; mysteries that lie at Mars, on near-Earth objects, and elsewhere.

Within our space science programs, NASA is planning to explore it all -- from the Sun, to the entire Solar System, to the farthest reaches of the Universe, NASA is planning to explore it all within our space science programs. NASA has kicked off planning on a long-awaited Solar Probe mission to launch within the next decade and fly within 7 million kilometers of the Sun's surface. Meanwhile, at Mercury, NASA's MESSENGER spacecraft will enter orbit in 2011 to provide pictures of never-before-seen surface features.

Moving further out in the solar system, late last month, NASA successfully landed the Phoenix Mars Lander on the surface of Mars on the first ever mission to explore the arctic regions of Mars. The Phoenix Mission has two bold objectives: (1) to study the history of water in the Martian arctic; and (2) to search for evidence of a habitable zone and assess the biological potential of the ice-soil boundary. In 2009, NASA will launch the Mars Science Laboratory (MSL) mission to assess whether Mars ever had an environment capable of supporting microbial life. Determining past habitability on Mars gives NASA and the scientific community a better understanding of whether life could have existed on the Red Planet and, if it could have existed, an idea of where to look for it in the future. The Mars

Science Laboratory brings together an international team with instrumentation and hardware from Russia, Spain, Canada, France, and Germany.

For the Outer Planets, NASA will launch Juno in 2011 to provide an in-depth look at Jupiter. The international Cassini/Huygens mission continues to operate at Saturn, having just been approved for a two-year mission extension. And the New Horizons mission continues its journey towards Pluto, to make its closest approach in 2015. Looking even further away, we anticipate the launch this month of the Gamma-ray Large Area Space Telescope (GLAST) mission, an international partnership of the U.S., Italy, Germany, Japan, France, and Sweden, to study the high-energy spectrum of the universe. We also look forward to the launch of the Herschel and Planck missions by the European Space Agency later this year. NASA has partnered with ESA and its contributing member states to support these two dynamic missions studying the "cool universe" and the Cosmic Background Radiation Field respectively. NASA plans to launch its Kepler mission in 2009 to search for Earth-sized planets around neighboring stars. Then in 2013, the James Webb Space Telescope (JWST), a large infrared-optimized space telescope, being built through a partnership of NASA, the European

Space Agency, and the Canadian Space Agency, will find the first galaxies that formed in the early Universe, connecting the Big Bang to our own Milky Way Galaxy. JWST also will peer through dusty clouds to see stars forming planetary systems, connecting the Milky Way to our own Solar System. In all, NASA currently operates about three dozen space science missions, with another two dozen in development, including numerous contributions to international missions.

As we implement our exploration program, NASA is also continuing to study our home planet, conducting research that is vital to our lives here on Earth. Based on NASA satellite data, we have not only seen the receding ice sheets of Greenland and Antarctica, but have quantitatively measured how fast these ice sheets are melting. NASA scientists have observed, in 2007, the smallest Arctic sea ice coverage ever recorded, and when comparing that ice coverage for the months of September in 2006 and 2007, the loss of sea ice exceeds the combined geographical areas of California and Texas, or nearly the size of five United Kingdoms.

The Ocean Surface Topography (OSTM) mission, known as Jason-2 in Europe, is a partnership of NASA, NOAA, CNES, and EUMETSAT. This

mission, also scheduled to launch in June, follows on the previously successful partnerships of Topex/Poseidon and Jason-1 to help us understand and foresee the effects of the changing oceans on our climate.

NASA has 14 Earth-observing satellites in orbit today. Another seven Earth science missions are under development, three of which will launch during the next 13 months; and earlier this year, we initiated formulation activities that are expected to lead to the initiation of five new missions to be launched before 2020 that will address high priority national research objectives.

NASA discoveries provide real benefits for people around the world. On a recent trip to Central America, I was able to see first-hand the practical applications of NASA's Earth science research and development, which enables improved environmental decision-making. For example, NASA is helping the countries of Central America and the Dominican Republic with SERVIR which is Spanish, meaning "to serve." SERVIR is a high-tech visualization and decision support system that integrates satellite imagery, forecasts models, and field data to address environmental changes and respond to natural disasters such as floods and wildfires. NASA is now working with the United States Agency for International Development, the

National Oceanic and Atmospheric Administration, and other agencies to provide capabilities like SERVIR to other regions of the world, such as Africa.

NASA-derived technologies also are helping people in the developing world overcome everyday challenges. Water recycling and filtration systems engineered to sustain astronauts living on the International Space Station have been adapted to provide safe and affordable drinking water in poor or remote regions of the world where access to clean water can mean the difference between life and death.

Distinguished delegates, as the nations of the world come together to embark on the journey of sending human beings further into our solar system, we will continue to realize benefits of this effort not only in space, but here on the Earth, as well. The exciting journey in space that started 50 years ago is destined to continue, and UNCOPUOS will have an important role to play in this human endeavor. Let us go forward together!

Thank you, Mr. Chairman.