

the first American to fly in space. Of course, we remember him because he died just recently. In 1962, JOHN GLENN, who now serves with us in the U.S. Senate, became the first American to orbit the Earth. Project Gemini allowed two astronauts to travel in space. On Gemini IV, Edward White became the first American to conduct a space walk.

In 1969, just 11 years after the creation of NASA, and less than a decade after President Kennedy committed America to the project, Apollo 11 landed on the Moon and Neil Armstrong and Buzz Aldrin made the dramatic "leap" for mankind. NASA completed five more lunar missions and learned much about the origins of the Moon, as well as how to support humans in outer space. Twelve American astronauts walked on the Moon during the six Apollo missions. Nothing symbolizes the uniqueness of this great Nation better than the American flag flying on the lunar surface.

In 1975, NASA joined hands with its former competitor in the space race and cooperated with the Soviet Union to achieve the first international human space flight. This project successfully tested joint rendezvous and docking procedures for spacecraft from the United States and the Soviet Union.

In 1981, the advent of the space shuttle ushered in a new era of space travel and exploration. By creating a reusable launch vehicle, NASA was making access to space now more affordable. The disaster of the *Challenger* brought the shuttle program to a rapid standstill. It was a harsh reminder that the exploration of space is a dangerous and unpredictable undertaking. Seven astronauts gave their lives on that mission in an effort to further our knowledge of the universe. We owe them and their families our eternal gratitude and respect.

Two years after the CHALLENGER disaster, we returned to space. Through mid-1998, NASA has safely launched 65 shuttle missions. These missions have included a wide variety of scientific and engineering missions. There are currently four shuttles in NASA's fleet and NASA is working with the private sector to reduce the cost of space flight even more. Two experimental vehicles, the X-33 and X-34, are prototypes for cheaper, more efficient reusable launch vehicles that would provide commercial entities with access to space. I commend NASA for continuing to look to the future and the challenges that lie there.

One of our colleagues, JOHN GLENN, is scheduled to return to space on October 29th. It was in NASA's earliest days that JOHN GLENN made history by bringing the first American to orbit the Earth. Now he is making history again by being the oldest person to fly in space.

Looking forward to the next 40 years, NASA's future is as bright as its past. NASA's core mission of any future

space exploration will be man's departure from Earth orbit and journeys to the Moon or Mars. This will require extended, even permanent, stays in space and has led NASA to begin construction of the International Space Station.

In 1984, Congress authorized NASA to build the space station as a base for further exploration of space. A project of this magnitude was certain to face a multitude of unknowns—and NASA has confronted many of them. As has always been the case, though, NASA will overcome these obstacles and we will reap the rewards of doing so.

For example, NASA has developed a unique technology, a bioreactor, that allows medical researchers to produce breakthrough results by creating "artificial" human tissues outside the human body. This bioreactor has provided new knowledge in cell science and tissue engineering that will bring exciting advances in medicine and the treatment of disease. This amazing technology is already being used by scientists who are growing ovarian tumor samples so they can conduct studies outside the body and without harm to the patient.

The absence of gravity on the space station also will allow new insights into human health and disease prevention and treatment, including heart, lung, and kidney function, cardiovascular disease, osteoporosis, and immune system functions.

In recent years, NASA has obtained scientific data from space experiments that is five times more accurate than that on Earth. None of these benefits will be available unless we have a space station on which we can perform adequate research.

The space station is the greatest peaceful scientific international endeavor undertaken. This is our future and space is one of the last unexplored regions of our universe. It holds untold knowledge and could catapult us into even greater understanding of our world and yet undiscovered worlds. Yes, the station will provide us with fantastic science—but that is only one of the known positives of this great endeavor. The unknowns are limitless and could provide us with unimaginable discoveries. We are on the very cusp of launching the first elements in November of this year, with the second element to follow in December.

Since its inception in 1958, NASA has accomplished many great scientific and technological feats. NASA's technology has been adapted for many non-aerospace uses by the private sector. We can thank NASA for so many things—from car phone technology, satellite imagery, the CAT scan, to Velcro and freeze dried ice cream. At its fortieth anniversary, NASA remains a leading force in scientific research and is one of the best examples of the American spirit and our can-do attitude.

We are proud of what NASA has achieved, and on this 40th anniversary

we do have a number of accomplishments to celebrate.

I thank the Chair and yield the floor.

Mr. SESSIONS addressed the Chair.

The PRESIDING OFFICER. The Senator from Alabama is recognized.

THE 40TH ANNIVERSARY OF NASA

Mr. SESSIONS. Mr. President, I thank the Senator from Texas. We both share a keen interest in space. I will also be speaking on the topic of the 40th anniversary of NASA, which is today.

Mr. President, next month, from launch pad 39B at Cape Canaveral, the Space Shuttle's main engines will fire up, the solid rocket motors will ignite, and the crew of seven will be sent off into orbit around our home planet. One of those seven will be the distinguished Senator from Ohio. More than 36 years after his first flight, JOHN GLENN will again orbit the earth in a United States spacecraft.

I have here a picture of Senator GLENN taken 36 years ago with Dr. Wernher von Braun in Huntsville, Alabama, my home State. They are shown here discussing a proposed lunar landing craft. What an imagination, what a vision, what an exploring capacity they had. Shortly after that first orbital flight, they were already planning a trip to the moon—a vision that many thought could never be achieved and was achieved so successfully.

Senator GLENN's remarkable story is a subplot to the remarkable story of the National Aeronautics and Space Administration. On October 1, 1958, just six months before the distinguished Senator from Ohio was named as one of the original Mercury astronauts, NASA was born. Today, NASA marks its 40th anniversary of service to this Nation.

It is hard to believe that more than 40 years have passed since the Soviet launch of Sputnik. Spurred by concern over the Soviet advantage in space, the Eisenhower administration proposed the creation of a civil space agency to lead our Nation in the exploration of space. Forty years later, the Soviet Union no longer exists. But NASA stands on the threshold of a new millennium, the undisputed world leader in space exploration.

The agency's achievements and discoveries during that 40-year period have changed our world in many ways. Those who are familiar with the space program talk frequently of the many "spinoffs" from the program. There are, in fact, many products and services that are obviously and directly attributable to the space program.

For instance, many Americans do not leave home in the morning before checking the weather forecast. Being from Mobile and just sitting through a hurricane, this was particularly true for me this past weekend. Of course, weather satellites orbiting the earth have revolutionized weather forecasting. Many of us check the forecast by

turning on the television networks that distribute their signals by satellite. Indeed, I saw a writer interviewed recently. He said he realized just how significant this global communications system was when he was on a dirt road in Africa and he picked up a cell phone and, through a satellite, called his home in Ohio.

There are a great number of beneficial byproducts of NASA's work that are less obvious. Indeed, many credit the micro-miniaturization of electronics, which was driven by the needs of the space program, with ushering in the whole technological revolution and the information age that we are now experiencing.

As important as the tangible benefits from the space program have been, I believe the intangible benefits have been even more significant. What value can we assign to our victory in the space race—to our come-from-behind win against a totalitarian rival? What would have been the military and foreign policy implications of Soviet domination in outer space?

But Cold War implications aside, NASA's success has been an important factor in elevating our national spirit. For America, exploration is imperative. We will never be content to sit back as observers while others take the risks and are rewarded with new discoveries. Exploration can take many forms, but, probably more than anyone else, NASA exemplifies our spirit of exploration.

There was a time, earlier in our Nation's history, when Alabama and everything west of the Appalachians comprised the frontier. Today, space is the frontier. Since its inception 40 years ago, NASA has been charting the path in this new and exciting territory.

On October 7, 1958, just one week after it came into existence, NASA formally approved Project Mercury to send a man into orbit around the earth, investigate his capabilities and reactions to space and return him safely to earth. Project Mercury produced genuine American heroes, like the late Alan Shepard and then-Lieutenant Colonel JOHN GLENN.

On May 25, 1961—shortly after Alan Shepard's suborbital flight, and months before Senator GLENN became the first American astronaut to orbit the earth in February of 1962—President Kennedy set a high mark for the young space program. Speaking to a joint session of Congress, he established a national goal of landing a man on the moon and bringing him safely back to earth, and this was to be accomplished before the decade was out.

As we all know, the nation and NASA were up to the challenge. On July 20, 1969, an Apollo lunar landing craft carrying Neil Armstrong and Buzz Aldrin touched down on the surface of the moon. That remarkable achievement stands as one of the proudest moments in American history, and one of the greatest achievements in the history of mankind.

Since Apollo, NASA's accomplishments have been legion, in aeronautics as well as space, in unmanned exploration as well as human space flight. While it is hard to match the thrill of the first moon landing, the expansion of scientific knowledge flowing from NASA's later programs has truly been historic.

As we look to the future, NASA cannot, and would not, rest on its laurels. Within the first few months after its 40th Anniversary, NASA will launch the STS-95 science mission, with Senator GLENN on board, will launch the first U.S. element of the International Space Station, and will launch its next great observatory, the Advanced X-Ray Astrophysics Facility.

Following close on the heels of those missions will be the first flights of the X-34 technology demonstrator and the X-33 reusable launch vehicle prototype, as well as the launch of the U.S. Laboratory Module for the Space Station.

All of this is scheduled to occur before this millennium closes. With proper support from the Administration, the Congress and the public, NASA will continue to lead the world in exploration well into the next millennium.

I am proud of the role that my home state has played and continues to play in the space program. Even before NASA was formed, Dr. Wernher von Braun and his team of rocket scientists with the Army Ballistic Missile Agency in Huntsville were developing new rocket systems. A modified Jupiter-C rocket, developed by von Braun's team, answered Sputnik by placing the Explorer I Satellite into orbit on January 31, 1958.

This is a remarkable picture taken at the ABMA Fabrication Lab in Huntsville in 1959. Shown here are the original seven Mercury astronauts, who are touring the facility with Dr. von Braun. From left to right we see: Gus Grissom, Wally Schirra, Alan Shepard, JOHN GLENN, Scott Carpenter, Gordon Cooper, Deke Slayton, and Dr. von Braun.

In 1960, 4000 employees of the ABMA in Huntsville were transferred to NASA's control, and Dr. von Braun became the first Director of the George C. Marshall Space Flight Center. Von Braun and the Marshall Center would be responsible for the Redstone rocket, which lifted Alan Shepard into outer space, and for the giant Saturn V rocket, which propelled Apollo 11 to the moon.

Marshall Space Flight Center is still NASA's center of excellence for space propulsion, as well as NASA's lead center for Space Transportation Systems Development and for Microgravity Research. Companies and universities in Alabama also continue to play important roles in the space program.

So I have reason to be proud of Alabama's contributions. But universities, corporations, and NASA installations throughout the country play important roles in the space program and in space-based research. Our whole nation

can be proud of our accomplishments in space, and in NASA's important aeronautics research.

We have succeeded because we are willing to take risks. And we have been unwilling to quit when we encounter difficulties and setbacks.

The tragic Apollo fire cost the lives of three brave astronauts. But we persevered, and the Apollo program made giant leaps for mankind.

During launch in 1973, the Skylab space station sustained damage that threatened to render it useless before it ever was put into service. Creative engineering salvaged that very important program.

The *Challenger* explosion in 1986 was a terribly painful event. We all mourned with the families of those brave explorers. But, following that tragedy, NASA was able to regroup, and has since safely flown 65 Space Shuttle missions, with a tremendous harvest of scientific results.

Perhaps it is this knack for overcoming adversity that makes NASA so special. Space is a harsh environment, and setbacks are inevitable. The risks are real. But NASA has done an extraordinary job of coping with the difficult situations that they have confronted. Many times the people of NASA have turned potential failures into remarkable successes.

Now, as we stand on the threshold of a new century—indeed, a new millennium—our whole nation can be proud as we look back on NASA's accomplishments in its first 40 years. And we can be optimistic as we look ahead.

Optimistic that our spirit of exploration is alive and well. Optimistic that we will continue to see tangible and intangible fruit from our investment in space. Optimistic that our children's lives will be richer because we dare to reach for the stars.

Mr. President, I congratulate NASA on its 40th anniversary. I look forward to continuing to work hard to support this program in the future. Unfortunately, the administration's budget for the last 4 years has shown a net reduction in funding for NASA. I have spoken on that before. The budget we approved this year represents a small reduction again this year over last year's budget for NASA. I think it is time that we recognize our character as a nation, that we not cut NASA, that we recognize that it symbolizes who we are as a people. We should recognize that NASA symbolizes our best and highest instincts as a nation, and that we ought to be space explorers as Lewis and Clark explored the frontier, and as we have explored the seas and so many things.

Mr. President, I want to again say how much I have been honored to serve with astronaut GLENN, Colonel GLENN, and Senator GLENN. He has been a high representative of this Senate. We cheer him on again as he goes forward to his next flight 36 years after the first.