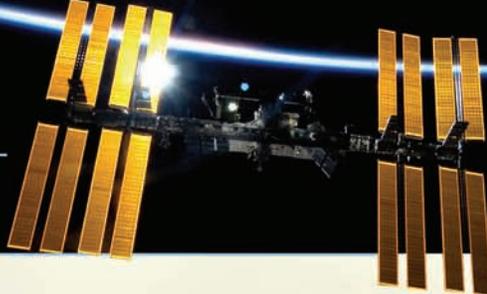


# William H. Gerstenmaier

## 2010 NATIONAL SPACE TROPHY WINNER



**William H. Gerstenmaier**  
*(NASA Photo)*

The Rotary National Award for Space Achievement (RNASA) Foundation is pleased to honor NASA Associate Administrator for Space Operations, William (Bill) H. Gerstenmaier with the 2010 National Space Trophy. He was nominated by four distinguished members of the RNASA Board of Advisors: Director of NASA Langley Research Center in Virginia, Mrs. Lesa B. Roe; former

NASA Administrator Mike Griffin; Johnson Space Center Director Mike Coats; and Apollo 17 Astronaut and former U.S. Senator Harrison Schmitt. They cited him for “his unwavering commitment and remarkable contributions to human space flight and providing outstanding leadership and direction to the exploration of space through his contributions to the Space Shuttle and International Space Station (ISS) programs.”

William H. Gerstenmaier is the Associate Administrator for Space Operations at NASA Headquarters in Washington, DC. In this position, he is responsible for oversight of all NASA’s Space Shuttle, ISS, space launch services programs, the astronaut crew health program, and the communication systems network.

### Spaceflight was Special

Gerstenmaier was born in Akron, Ohio in September 1954. His father, Howard (1917-82), worked for Firestone Tire and Rubber Company as a technician. His mother, Evelyn (1917-96), was an accountant. “When I was about 3 years old, I remember being taken outside to see Sputnik fly over our house. All of our neighbors were outside also. This impressed on me that spaceflight was special.”

Growing up, Gerstenmaier had a strong curiosity and love of science and mathematics. “I really liked to understand how things worked and was continually taking things apart. I also had a chemistry set and loved to experiment.”

Though the young Gerstenmaier didn’t aspire toward any particular career, he knew he’d rather “do things and not just talk about things.” The future aerospace engineer built

a Gemini model and followed the space program very closely.

He graduated from Akron East High School in 1973 and enrolled in the U. S. Naval Academy in Annapolis, Maryland, hoping to become a test pilot. With a glut of pilots returning from Vietnam, he didn’t think he’d get a chance to fly. So, in 1975, he transferred to Purdue in West Lafayette, Indiana, to study aeronautics and astronautics. He graduated with a BS in aeronautical engineering in 1977 and went to work for NASA at the Lewis (now Glenn) Research Center in Cleveland, Ohio.

Research suited the young engineer. “I like comparing analysis with results from physical tests,” he told



**A rocket for Christmas**  
*(Photo courtesy Gerstenmaier)*

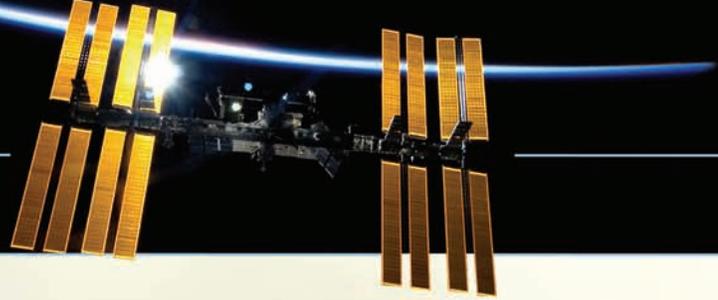


**Gerstenmaier examines a model in the wind tunnel at Lewis Research Center in Cleveland while Mo Raita looks on.** *(NASA Photo, 1978)*

RNASA. He was involved with the wind tunnel tests used to develop the calibration curves for the air data probes used during entry on the Space Shuttle.

While at Lewis, Gerstenmaier continued his education and earned a master’s degree in mechanical engineering from the University of Toledo in 1981.

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### Propulsion Officer

Gerstenmaier moved to Houston in July 1980 to work at the Johnson Space Center. “I really liked the research test experience at Lewis, but I thought I would go to Houston for a couple of years and see what space operations were like,” he said. “I planned on staying 2-3 years and then returning to research. I got hooked and ending up staying 25 years!”

Gerstenmaier worked in Mission Control as a Space Shuttle Propulsion Engineer (Prop), responsible for monitoring and evaluating propellants and other consumables required for maneuvers. “The preparation required was enormous,” he told RNASA. “You had to multi-task and make the right decision in a very short amount of time. My experience with real hardware and hands-on experience from Lewis was a tremendous benefit.”

He worked as Prop for STS-4 and STS-5 in 1982, STS-6 through STS-9 in 1983, and 41D/STS-13 and 41G/STS-17 in 1984. He called the preparation for each flight the most rewarding part of the job. “Working as a team also brings a very strong satisfaction,” he added. “Our mission is so complex, that everyone must work together to accomplish the goal. This brings a real sense of family and friendship to the Mission Control team.”

A fan of the outdoors, Gerstenmaier met his wife, Marsha Ann Johnson, while jogging in Clear Lake. The daughter of Betty and Raynard Johnson of Sugarland, Marsha was born in Olean, New York and moved to Houston when she was 13. She has a degree in civil engineering technology from the University of Houston and worked on space suits for Hamilton Standard (now Hamilton Sunstrand) when they met. They were married in 1982. They have two daughters, Katie and Lora, both engineers like their parents. Katie graduated from Texas A&M with a BS in Industrial Engineering and now works for Astra Zenica in Dallas. Daughter Lora graduated with a BS in Mechanical Engineering from UT in Austin and now works for Accenture in Houston.

“I left console to become the head of the Deployable Payloads Section,” Gerstenmaier explained. “We worked on the Intelsat repair mission, Hubble, and Spartan payloads.”

### Challenger/Columbia

On January 28, 1986, Gerstenmaier was in the weightless environmental test facility with future astronaut (class of 1987) Mike Foale, watching the launch of STS 51-L on TV. “We immediately knew something was grossly wrong,” Gerstenmaier said. “The loss was devastating. Professionally, I saw our system fail, and personally, I saw friends on the crew perish. It drove home how demanding and dangerous our business really is. I vowed internally to never allow another Challenger disaster to occur.”

Beginning in 1988, Gerstenmaier headed the Orbital Maneuvering Vehicle (OMV) Operations Office. Subsequently, he led the Space Shuttle/Space Station Freedom Assembly Operations Office and served as chief, Projects and Facilities Branch, Flight Design and Dynamics Division.

“I got to the point in my career where my technical skills were getting weak,” he said in an interview with the Purdue Engineering Department in 2002. So he took advantage of a NASA fellowship and completed the course work for a PhD in dynamics and control in 1992-93.

Gerstenmaier then returned to NASA and served as Shuttle/Mir Program operations manager from 1995

to 1997. During this time, he acted as the primary liaison to the Russian Space Agency for operational issues and negotiated all protocols used in support of operations. From January through September 1996, he was stationed in Russia to support astronaut Shannon Lucid while she was on Mir. His work on the Phase 1 Mir program was recognized in 1997 with a RNASA Stellar Award in the Mid-Career category.

In 1998, Gerstenmaier became manager of Space Shuttle Program Integration, where he had responsibility for the overall management, integration, and operations. In December 2000, he was named deputy manager of the ISS Program. He became ISS program manager in 2002.

Gerstenmaier was at home in Houston on Saturday, February 1, 2003 when the Space Shuttle Columbia broke apart over Texas. “I was in charge of the International Space Station at the time. I immediately went to the Space Station Control Center and called all of the international partners and informed them of the disaster. We had a Progress supply vehicle about ready to launch, and we needed to review the cargo onboard to see if we should delay the launch to fly additional supplies to ISS.” They determined the manifest was fine, and the Progress launched on schedule.

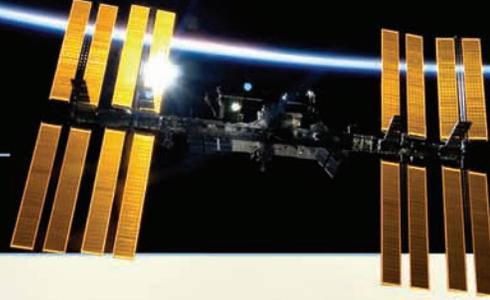


Bill inspects the shuttle after STS-124 (NASA, 6-14-08)

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**Gerstenmaier congratulates Exp. 10 crew from Russian control center (NASA, 10-16-04)**

difficult challenge,” Gerstenmaier said. The shuttle was grounded until July 2005, and then again for another year.

Gerstenmaier felt the loss of Columbia very personally. “As part of the ISS team, I sat in the Flight Readiness Reviews when we discussed bi-pod foam loss on an earlier mission. I made assumptions and did not ask hard questions. I failed to realize how complicated and unintuitive space flight really is. The system and environment in which we operate is at the limits of our engineering capability. There will be surprises and unknowns. We need to keep looking for clues and determine the margin in which our designs are operating. We need to not be afraid of learning new things. We need to be willing to take risk. Our job is to determine to the best of our ability that level of risk. We need to both fly and be safe.”

### Associate Administrator

Combining his Space Shuttle and ISS experience, Gerstenmaier was selected for his current position as NASA Associate Administrator for Space Operations in August 2005, overseeing a budget of \$6.2 billion and the work of 8,000 people around the world. He and his wife now reside in Alexandria, Virginia.

Gerstenmaier’s leadership has been recognized with many honors and awards. Aviation Week and Space Technology has twice (in 1996 and in 2002) awarded Gerstenmaier with the Laureate Award. NASA recognized him with three Certificates of Commendation, two Exceptional

“Our job was to protect the flying crew and plan for their safe return and continued operation of the ISS,” Gerstenmaier explained. The Expedition 6 crew consisted of Americans Ken Bowersox and Don Pettit, and Russian Nikolai Budarin who had launched to ISS in November 2002. Instead of returning on Atlantis in March, they came home on a Soyuz in May 2003, and were replaced by a crew of 2 instead of 3. “Flying the ISS for an indeterminate time without the Shuttle was an extremely

Service Medals, and a Senior NASA Outstanding Leadership Medal (2001). In 2004, for his work in maintaining the safe operation of ISS, he was nominated for a Service to America Medal. He received the Presidential Rank Award for Meritorious Executives in 2005. The Huntsville National Space Club awarded him the Von Braun award in 2006. He received an AIAA International Cooperation Award (2006), and was elected as an AIAA Fellow (2007). The Federation of Galaxy Explorers honored him with the 2007 Space Leadership Award. Purdue University honored him with the Outstanding Aerospace Engineer (2003), Distinguished Alumni Award (2007), and as an Old Master (2008).

Asked what he saw as the Space Shuttle’s most important contribution to the space program, Gerstenmaier said, “Shuttle allowed us to do tremendous things in space: satellite repair and retrieval; planetary payload deploys; science missions; and finally, to build the International Space Station. The reusable design pushed technology to new levels. The shuttle made us a true leader in space. The shuttle also allowed us to explore, live, and learn as an international team.”

As a final thought, Gerstenmaier added, “Folks often think of the launches, hardware, and software and systems involved in space flight. I think of the people that I have been blessed to work with throughout my career. I feel humbled and blessed when I think of the folks all over the world that I have had the privilege to know and work closely with. Space flight attracts a very special group of people and I am blessed to know and consider those folks my friends.”

As the Space Shuttle era ends and the Space Station Utilization era begins, it is the privilege of the RNASA Foundation and its sponsors to recognize the hard work and leadership that Bill Gerstenmaier has contributed to the success of these complex human endeavors by awarding him with the National Space Trophy.



**AA Gerstenmaier and former NASA Administrator Mike Griffin in Baikonur (NASA, October 2005)**