

## **i** READING: Mission Directorates

### **NASA's Mission**

NASA's mission is to pioneer future space exploration, scientific discovery, and aeronautics research.

On January 14, 2004, President George W. Bush announced A Renewed Spirit of Discovery: The President's Vision for U.S. Space Exploration, a new directive for the nation's space program. The fundamental goal of this directive is "to advance U.S. scientific, security, and economic interests through a robust space exploration program." In issuing it, the President committed the nation to a journey of exploring the solar system and beyond. The journey will begin with returning to the Moon in the next decade, and then venturing further into the solar system, ultimately sending humans to Mars and beyond. He challenged NASA to establish new and innovative programs to enhance understanding of the planets; to ask new questions; and to answer questions that are as old as humankind.



### **NASA's Six Strategic Goals**

1. Fly the Shuttle as safely as possible until its retirement, not later than 2010.
2. Complete the International Space Station in a manner consistent with NASA's International Partner commitments and the needs of human exploration.

3. Develop a balanced overall program of science, exploration, and aeronautics consistent with the redirection of the human spaceflight program to focus on exploration.
4. Bring a new Crew Exploration Vehicle into service as soon as possible after the Shuttle's retirement.
5. Encourage the pursuit of appropriate partnerships with the emerging commercial space sector.
6. Establish a lunar return program having the maximum possible utility for later missions to Mars and other destinations.

### A Little History

President Dwight D. Eisenhower established NASA in 1958, partially in response to the Soviet Union's launch of the first artificial satellite the previous year. NASA grew out of the National Advisory Committee on Aeronautics (NACA), which had been researching flight technology for more than 40 years.

President John F. Kennedy focused NASA and the nation on sending astronauts to the moon by the end of the 1960s. Through the Mercury and Gemini projects, NASA developed the technology and skills it needed for the journey. On July 20, 1969, Neil Armstrong and Buzz Aldrin became the first of 12 men to walk on the moon, meeting Kennedy's challenge.

Meanwhile, NASA was continuing the aeronautics research pioneered by NACA. It also conducted purely scientific research and worked on developing applications for space technology, combining both pursuits in developing the first weather and communications satellites.

After Apollo, NASA focused on creating a reusable ship to provide regular access to space: the Space Shuttle. First launched in 1981, the Space Shuttle has had 120 successful flights. In 2000, the United States and Russia established a permanent human presence in space aboard the International Space Station, a multinational project representing the work of 16 nations.

NASA also has continued its scientific research. In 1997, the Mars Pathfinder became the first in a fleet of spacecraft that will explore Mars in the next decade, as we try to determine if life existed there. The Terra and Aqua satellites are flagships of a different fleet; they orbit Earth, helping us understand how our home world is changing. NASA's aeronautics teams also are focused on improved aircraft travel that is safer and cleaner.

Throughout its history, NASA has conducted or funded research that has led to numerous improvements to life here on Earth.

### Current Missions

In the early 21<sup>st</sup> century, NASA's reach spans the universe. Spirit and Opportunity, the Mars Exploration Rovers, are still studying Mars after more than three years. Cassini is in orbit around Saturn and the Hubble Space Telescope continues to explore the deepest reaches of the cosmos.

Closer to home, the latest crew of the International Space Station is extending the permanent human presence in space. Earth science satellites are sending back unprecedented data on Earth's oceans, climate, and other features. NASA's aeronautics team is working with other government organizations, universities, and industries to fundamentally improve the air transportation experience and retain our nation's leadership in global aviation.

In addition, there are many current missions being conducted by NASA each year. You can see mission highlights and photos on the **NASA Missions** website: <http://www.nasa.gov/missions/current/index.html>. On this site, you will be able to search through all NASA missions (past, present, and future) and also view the launch schedules and calendar for current missions. Below are a few current missions.



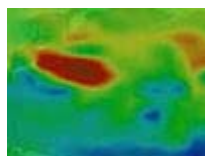
### Advanced Composition Explorer (ACE)

It is a major mission of the Explorer program.



### Rosetta Mission

Rosetta will orbit comet 67P and accompany it on its journey to the Sun.



### Aura Mission

This mission is dedicated to the health of Earth's atmosphere.



### Stardust

Stardust returns samples from Comet Wild 2 to Earth.



### Phoenix Mars Lander

The Phoenix Mars Lander is headed for the Martian arctic.



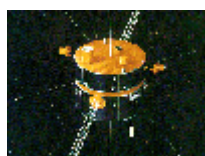
### Ulysses Mission

This mission is to study the Sun at all latitudes.



### Pioneer

It will journey through our solar system and beyond.



### Wind Mission

This mission is to investigate the solar wind and its impact on the near-Earth environment.

## Future Missions

In the next 20 years, NASA will be laying the groundwork for sending humans not only beyond Earth's orbit, but further into space than they've ever been. These are the next key steps:

- Complete the International Space Station and retire the Space Shuttle by 2010
- Begin robotic missions to the Moon by 2008 and return people there by 2020
- Continue robotic exploration of Mars and the Solar System
- Develop a crew exploration vehicle and other technologies required to send people beyond low-Earth orbit

Though nearly 50 years old, NASA is only beginning the most exciting part of its existence.

## NASA's Organization

### Aeronautics

Enable a safer, more secure, efficient, and environmentally friendly air transportation system.

### Exploration Systems

Direct the identification, development, and validation of exploration systems and technologies.

### Science

Explore the Earth-Sun system, our own solar system, and the universe beyond.

### Space Operations

Extend the duration and boundaries of human space flight to create new opportunities for exploration and discovery.

NASA Headquarters in Washington provides overall guidance and direction to the agency, under the leadership of Administrator Michael Griffin. Ten field centers and a variety of installations conduct the day-to-day work in laboratories; on air fields; in wind tunnels; and in control rooms.

NASA conducts its work in four principle organizations called mission directorates:

1. **Aeronautics:** pioneers and proves new flight technologies that improve our ability to explore and have practical applications on Earth.
2. **Exploration Systems:** creates new capabilities and spacecraft for affordable, sustainable human and robotic exploration.
3. **Science:** explores the Earth, Moon, Mars, and beyond; charts the best route of discovery; and reaps the benefits of Earth and space exploration for society.
4. **Space Operations:** provides critical enabling technologies for much of the rest of NASA through the Space Shuttle, the International Space Station, and flight support.

A **directorate** is an agency usually headed by a director, and is often a subdivision of a major government department.

### Learn More Online!

To learn even more about NASA's mission directorates, go to this interactive website:

<http://www.nasa.gov/externalflash/nasa101/index.html>.