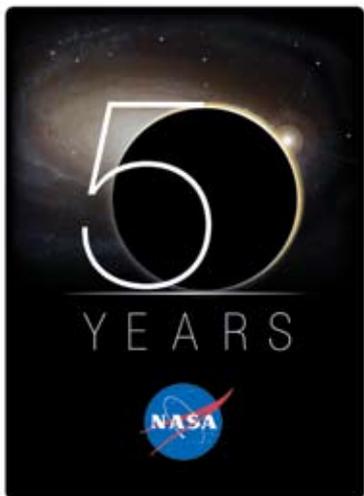




# Space Shuttle Program Artifacts



*Information Pamphlet*



## **SPACE SHUTTLE HISTORY**

NASA's Space Shuttle Orbiters are the first spacecraft capable of routinely launching into orbit like rockets and then returning to Earth as gliders. They are the main element of NASA's Space Transportation System, and are used for scientific research and space applications, such as deploying and repairing satellites.

On its own, a Space Shuttle can carry to orbit a payload of about 65,000 pounds. Typical missions have crews of about 7 astronauts, orbit at altitudes of around 150 to 250 miles, and stay in space for 10 days to 2 weeks.

As we celebrate our 50th anniversary, NASA continues to move forward with a new focus for the manned space program. We expect to commence with the retirement of the Shuttles and associated hardware following our last mission which is projected for 2010.

The Space Shuttle system is composed of several large components: the orbiter, three main engines, the external tank, and two solid rocket boosters.



During the Shuttle-Mir Program, the Shuttles' space access capabilities were combined with the Mir space station's long-duration spaceflight qualities to create a new and effective combination.

## **FREQUENTLY ASKED QUESTIONS**

### ***How will NASA dispose of Space Shuttle Program artifacts?***

NASA recognizes the importance the Space Shuttle Program has played in our Nation's history and will work with the appropriate Federal agencies to ensure that Shuttle artifacts are preserved. In order for that to occur, NASA will utilize existing legislative authorities and agreements to transfer these assets to authorized recipients.

### ***What will be available and when?***

There are potentially thousands of items that will be available that include major items such as Space Shuttle Main Engines and smaller hardware pieces that have flown in space. NASA continues to dispose of excess and obsolete Space Shuttle Program inventory but the majority will not be available until after the final flights in 2010.

### ***How do we obtain items we are interested in?***

Museums have the ability to obtain surplus property through their State Agencies for Surplus Property (SASP) which have access to the General Services Administration's automated system GSAXcess. SASPs are able to obtain "Search and Select" access by sending a request to [gsaxcess@gsa.gov](mailto:gsaxcess@gsa.gov) or by contacting GSAXcess® Help Desk at 1-866-333-7472.

### ***Are there costs?***

Costs vary but generally include packaging, preparation, and transportation costs as well as any SASP directed fees.

### ***When will a decision be made pertaining to who will receive one of the Shuttle Orbiters at the conclusion of the program?***

At this time, no decision has been made as to the final disposition of any of the Space Shuttle Orbiters. NASA's primary focus is to ensure that the Space Shuttle safely and successfully completes its mission of finishing the assembly of the International Space Station (ISS) by the end of 2010.

As the Space Shuttle phase-out plans mature over the next several years, disposition of all property will be accomplished according to Government guidelines. Because of the role that they have played in our Nation's space program, special attention will be provided to the Shuttle Orbiters to ensure they will be retired to places that will provide access to the maximum number of American taxpayers.



## **Federal Surplus Personal Property Donation Program**

### ***General Information***

The Federal Government has legislative authority to transfer surplus personal property to State Agencies for Surplus Property (SASPs) that screen property for further distribution to State and local governments and eligible nonprofit organizations.

SASPs determine eligibility for participation in the donation program and assist eligible donees in locating, screening, and acquiring needed equipment. SASPs also advise donees of the terms, conditions, restrictions, and noncompliance ramifications associated with donated personal property.

Additional conditions and restrictions are imposed by the GSA on certain types of property and SASPs may assess donation recipients a service charge to cover packaging, preparation, transportation, and administrative expenses for donated surplus property.

Additional information is available at <http://www.gsa.gov>

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## **Where to Find Additional Information**

<http://www.nasa.gov/transition>

This Web site offers various information regarding the Space Shuttle transition and highlights how NASA is progressing with Shuttle retirement and transitioning to the new Constellation human spaceflight system. It also has current transition documents, including the NASA Transition Plan, the Multi-Program Integrated Milestones chart depicting when the remaining Shuttle flights are scheduled to occur, as well as a listing of other public sites that provide other useful information.

<http://spaceoperations.nasa.gov>

This Web site offers various information regarding current Shuttle and International Space Station missions as well as general space operations in space communication and launch services. It also provides details about future activities as Shuttle retires and the space operations organization begins fully supporting the Constellation Program.

<http://www.nasa.gov/directorates/esmd>

This Web site offers the latest information on space exploration and primarily highlights the development of the new Constellation human spaceflight system. This is a very exciting Web site where you can experience NASA's new "future" along with links to lots of information and videos. This is a very good site for those interested in the future of space exploration.

## ***Identifying Space Shuttle Related Artifacts***

NASA understands that history is more than what happened and when. There are many interconnected pieces that make up our rich story of spaceflight. NASA has made a concerted effort, with the assistance of our historians and the National Air and Space Museum (NASM), to identify those assets to ensure they are preserved for all mankind.

Space Shuttle Program historic artifacts are generally categorized as those items having significance to the history of human spaceflight in the Space Shuttle era (from its inception in 1972 to its end near 2010).

### ***The National Air and Space Museum has identified the following categories as having historic significance:***

- Events (missions, extravehicular activities, etc.)
- People (astronauts, managers, engineers, technicians, etc.)
- Technologies (engines, tiles, spacesuits, spacecraft components, etc.)
- Processes (tests, manufacturing, mission operations, etc.)
- Research (scientific instruments, experiment specimens, etc.)
- Memorabilia (patches, pins, posters, awards, collectibles, etc.)

### ***Flight status is being used as a first-cut criterion for judging the significance of potential artifacts:***

Category I: Items that have flown (spacecraft and components, crew equipment, scientific instruments, memorabilia).

Category II: Items that have not flown but could have (flight qualified spares, backup hardware, and engineering test articles made of the same components as the flight article).

Category III: Items that have not flown and are not meant to fly but represent the development and practice of spaceflight (prototypes, boilerplates, developmental test models, wind tunnel models, mockups, display models, simulators, training equipment, memorabilia, public outreach materials, and commissioned art).



## **Potential Space Shuttle Program Historic Artifacts:**

*Examples include, but are not limited to, items such as the following:*

**Personal Use Flight Items (Mission Related)**—items used to serve the astronaut’s needs such as clothing and body protection as well as:

- Crew altitude protection system (CAPS) consisting of a helmet; communications cap; pressure garment; antiexposure, antigravity suit; gloves; and boots;
- Escape equipment worn over the CAPS during launch and consisting of an emergency oxygen system; parachute harness, parachute pack with automatic opener, pilot chute, drogue chute and main canopy; life raft; flotation devices; and survival vest pockets containing a radio/beacon, signal mirror, shroud cutter, pen gun flare kit, sea dye marker, smoke flare and beacon;
- Miscellaneous gear used by an astronaut as a carrying device (such as pouches) and as protective apparatus (such as goggles).

### **Tools, Equipment, and Materials (Manufacturing):**

- Specifically manufactured to support the orbiters—could include equipment in the Vehicle Assembly Building and Orbiter Processing Facilities;
- For manufacturing materials that mask large surfaces such as the thermal protection system;
- For manufacturing or preparing materials such as tools used for repair work, testing, training (space and ground support);
- For fabricating of all other objects required specifically for use in support of the Space Shuttle Program.

**Tools and Equipment for Science and Technology (Mission Requirements)**—items such as the operational bioinstrumentation system and radiation equipment as well as tools, equipment, and supplies for:

- Observing, measuring, and documenting objects and events outside Earth’s atmosphere;
- Observing, measuring, and documenting atmospheric phenomena;
- Studying the universe.

**Communication Equipment**—tools, equipment, and supplies such as:

- Ground and on-board orbital computers;
- Precision drawings and models;
- Still and video cameras used on the orbiter;
- Equipment used to facilitate communication outside Earth’s atmosphere.

**Distribution and Transportation**—assets used in order to:

- Pack, transport, or hold unique items used in space such as cargo containers;
- Transport people or goods above the surface of Earth;

**Miscellaneous Communication** (Outreach and Education):

- Items used in advertising an event such as limited edition posters, banners, or catalogues;
- Limited editions of paintings or other artwork specifically depicting scenes or events directly related and unique to the SSP;
- Flags, pins, or patches;
- Information used to communicate, such as documents, photographs, commemorative items, and instructional models;
- Items used to communicate a particular achievement such as “Return to Flight.”

## ***Space Shuttle Program Transition***

By focusing on the evolution of our skilled workers, our facilities, and our infrastructure as we move from the Space Shuttle system to the Constellation system, transition requirements provide NASA with a unique opportunity to revitalize the Nation's human spaceflight program. NASA has established a senior leadership team to address the disposition of personal property to include artifacts and memorabilia. Our partnership with GSA provides the mechanism to notify interested eligible recipients of the availability of these items.



## ***What's Next?***

### ***Rendezvous Magazine***

"NASA is not going out of business, but rather beginning a new way of doing business for the next 50 years. We are extending our reach beyond low earth orbit, which is truly exciting."

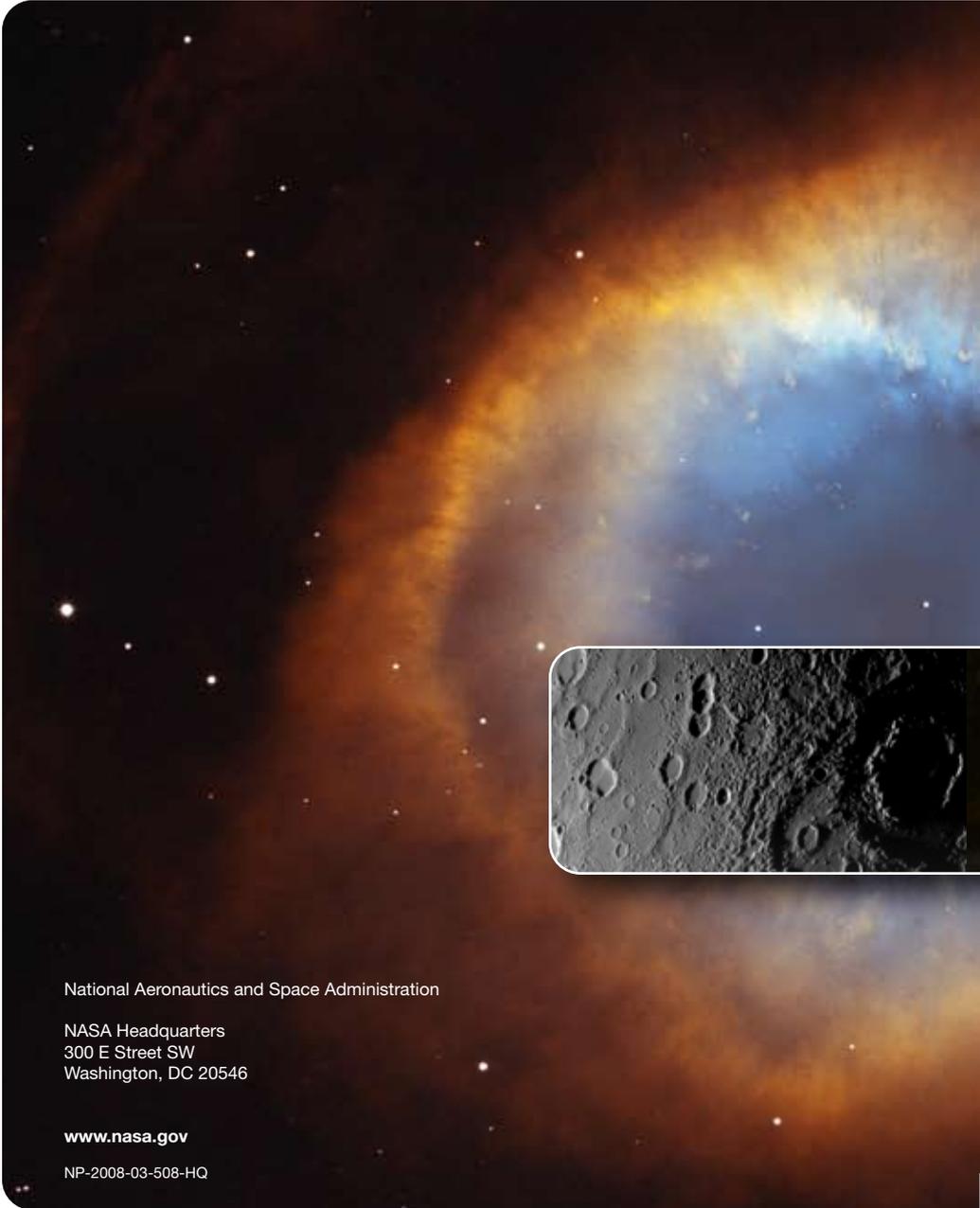
—William Gerstenmaier, Associate Administrator/Space Operations

From the time of our birth, humans have felt a primordial urge to explore—to blaze new trails, map new lands, and answer profound questions about ourselves and our universe. The Vision for Space Exploration will take us across the solar system beginning with the Moon, then on to Mars, and beyond. But before we can achieve the future, we must perform in the present. NASA's current spaceflight programs, Shuttle and Station, are our present reality and our primary overriding responsibility is to safely and successfully complete the Space Shuttle program.



"It is with an iron will that they embark on the most daring of all endeavors . . . to meet the shadowy future without fear and conquer the unknown."

—Ferdinand Magellan, circa 1520



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