



Space Shuttle *Columbia* Memorial Special Resource Study



Ed Michaels and his daughter were standing in a treeless clear-cut on the morning of February 1, 2003 hoping to watch the space shuttle *Columbia* re-enter the Earth's atmosphere high above their hometown of Nacogdoches, Texas.

At about 7:56 a.m., a bright glow appeared in the blue sky 15 to 20 degrees above the western horizon. They focused their binoculars on it and Michaels, the planetarium director at Stephen F. Austin State University, was immediately disturbed.

“The shuttle looked like a Fourth-of-July sparkler in slow motion,” he says. “Clearly something was horribly wrong. Within seconds, multiple contrails were becoming visible as the shuttle was obviously breaking up. Suddenly, a series of low-frequency rumblings began that gradually increased in loudness until they became quite intense. We had just witnessed the death of seven dedicated space explorers...”

Michaels started slowly walking back to his house. But his daughter was transfixed, silently looking at the sky. “It was clear that she understood the magnitude and historical significance of the human

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January 16, 2003: The STS-107 Crew, waving to onlookers, exits the Operations and Checkout Building on their way to the launch pad.

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disaster that had just unfolded high above our Texas home," he says.

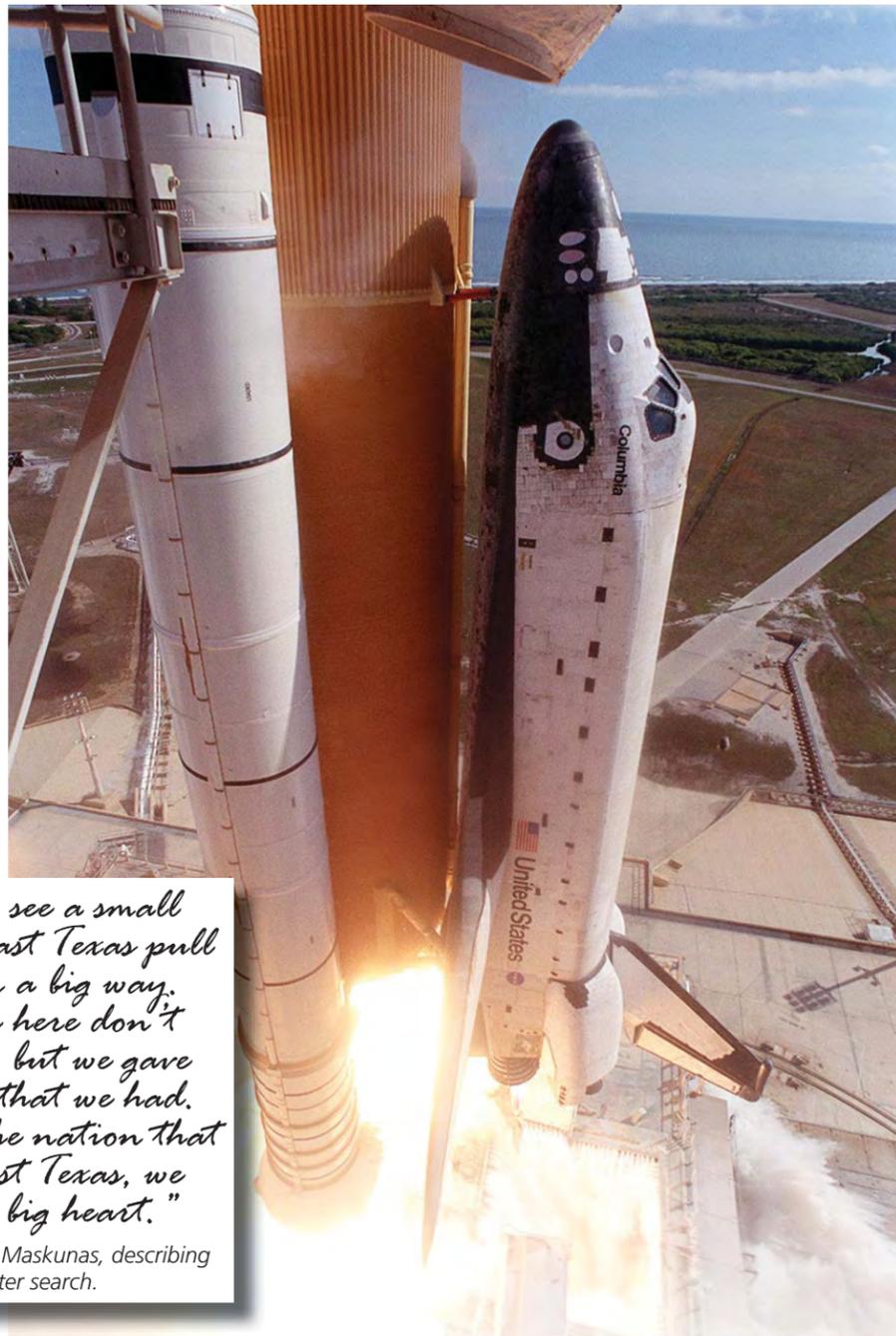
Now the National Park Service (NPS) is also trying to understand the historical significance of the *Columbia* disaster.

The disaster captured the world's attention, and led to one of the largest search and recovery efforts in history. It's estimated that up to 30,000 people—many of them volunteers—spent 1.5 million hours combing the fields and forests of rural East Texas, finding thousands of pieces of the shuttle as well as the astronaut's remains. Dozens of local, state and federal agencies participated in the search, including the National Aeronautics and Space Administration (NASA), the Federal Emergency Management Agency (FEMA), and the U.S. Department of Homeland Security.

In 2008, five years after the shuttle disintegrated, then-President George W. Bush signed a congressional bill directing the NPS to research and write a report called a Special Resource Study to help determine whether the nation should create a new park memorializing the *Columbia* and its crew. The study began in

2009, as soon as schedules and budgets allowed. This newsletter briefly describes the study's long and technically complicated process. It also explains how

you can help the NPS as it completes this important task on behalf of the American people. 📌



"We got to see a small portion of East Texas pull together in a big way. The people here don't have much, but we gave everything that we had. We showed the nation that here in East Texas, we have got a big heart."

~ Texas Ranger Pete Maskunas, describing the disaster search.

Columbia was the oldest shuttle in NASA's fleet. Named after an 18th-century American ship that once explored the waters of what is now British Columbia, Canada, it was first launched in 1981. It was ending its 28th mission, STS-107, when it was torn apart as superheated gasses penetrated a 6- to 10-inch hole in the shuttle's left wing. Investigators later determined that the hole was caused by a chunk of insulating foam that fell off an external fuel tank during the shuttle's launch.



Columbia liftoff

What Is a Special Resource?

The NPS was created 95 years ago to protect and preserve a wide variety of America's most precious resources. They include places like battlegrounds and wilderness areas, and buildings such as historic military forts and ancient American Indian cliff dwellings. Resources often also include physical objects like trees, rocks and rivers, and animals such as fish, elk and turtles.

Some resources aren't objects at all—the clear view of a starry night sky, for example, or the quiet and solitude of a sheltered canyon. Even the human stories that surround a place or event can be considered resources.

All of these resources are equally important to the park service's mission.

Special resource studies help determine which of America's resources are special enough to be included in the national park system. 📌

Special Resource Study Criteria

For the Secretary of the Interior to recommend new national parklands, an area must:

- Contain nationally significant natural or cultural resources.
- Be a suitable addition to the national park system.
- Be a feasible addition.
- Require direct NPS management, instead of alternative protection by others.



All eyes in the VIP stand at Kennedy Space Center focus on space shuttle Columbia as it roars toward space on mission STS-107.



Crew members strike a "flying" pose for their traditional in-flight crew portrait aboard the space shuttle Columbia.



Top: The remains of Space Shuttle Columbia could be seen streaking across the Texas sky as it fell back to earth. (AP photo/Dr. Scott Lieberman)

Center: Kennedy Space Center employees listen solemnly as Center Director Roy Bridges speaks about the tragedy of the loss of the Columbia.

Bottom: Members of a U.S. Forest Service search team walk a grid during a Columbia recovery search near Hemphill, Texas. The group is accompanied by a space program worker able to identify potential hazards of shuttle parts.

Right: Media broadcast outside of the NASA News Center as they report the loss of Columbia.



National Treasures are Identified by Special Resource Studies

Special resource studies are designed to identify treasured national resources that ought to be protected and preserved for the enjoyment of future generations. They are authorized by Congress, and can take 2-5 years to complete.

In this case, Rep. Louie Gohmert, R-Texas, introduced a bill authorizing the Secretary of the Interior to direct the National Park Service (NPS) to study whether a memorial to the *Columbia* should be created. The legislation became law in May 2008, and the NPS began the *Columbia* study last year.

The legislation directs the NPS to focus its study on four specific properties in East Texas.



"You could have brought all the people you wanted from Dallas, Houston, whatever. But we know this country—the backwoods—and without the people of the country to help you, you'd never find anything."

~ Former San Augustine County Judge Randy Williams, describing the challenges searchers faced in the dense wooded thickets of East Texas.

Workers organizing in one of the recovery areas. (Photo by Hardy Meredith)

1) A one-fifth-acre site, owned by the Fredonia Corporation, at the southeast corner of the intersection of East Hospital Street and North Fredonia Street in Nacogdoches.

2) Ten acres of a 61-acre tract owned by the Campbell Group, bounded by State Highway 83 and Bayou Bend Road in Hemphill.

3) Bronaugh Park at 301 Charlton St. in Lufkin.

4) The San Augustine County Fairgrounds at 1109 Oaklawn.

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Recovery search teams consisted of law enforcement personnel along with volunteer GPS specialists and amateur radio operators. (Photo by Hardy Meredith)



A reconstruction team member uses 1:1 engineering drawings as a tool in the process of identifying recovered debris material.



Columbia main engine powerhead recovered from Fort Polk in Louisiana.

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This East Texas area is where the astronaut's remains and a majority of the shuttle debris were found. It's also where the search and recovery effort, perhaps the largest in American history, was headquartered.

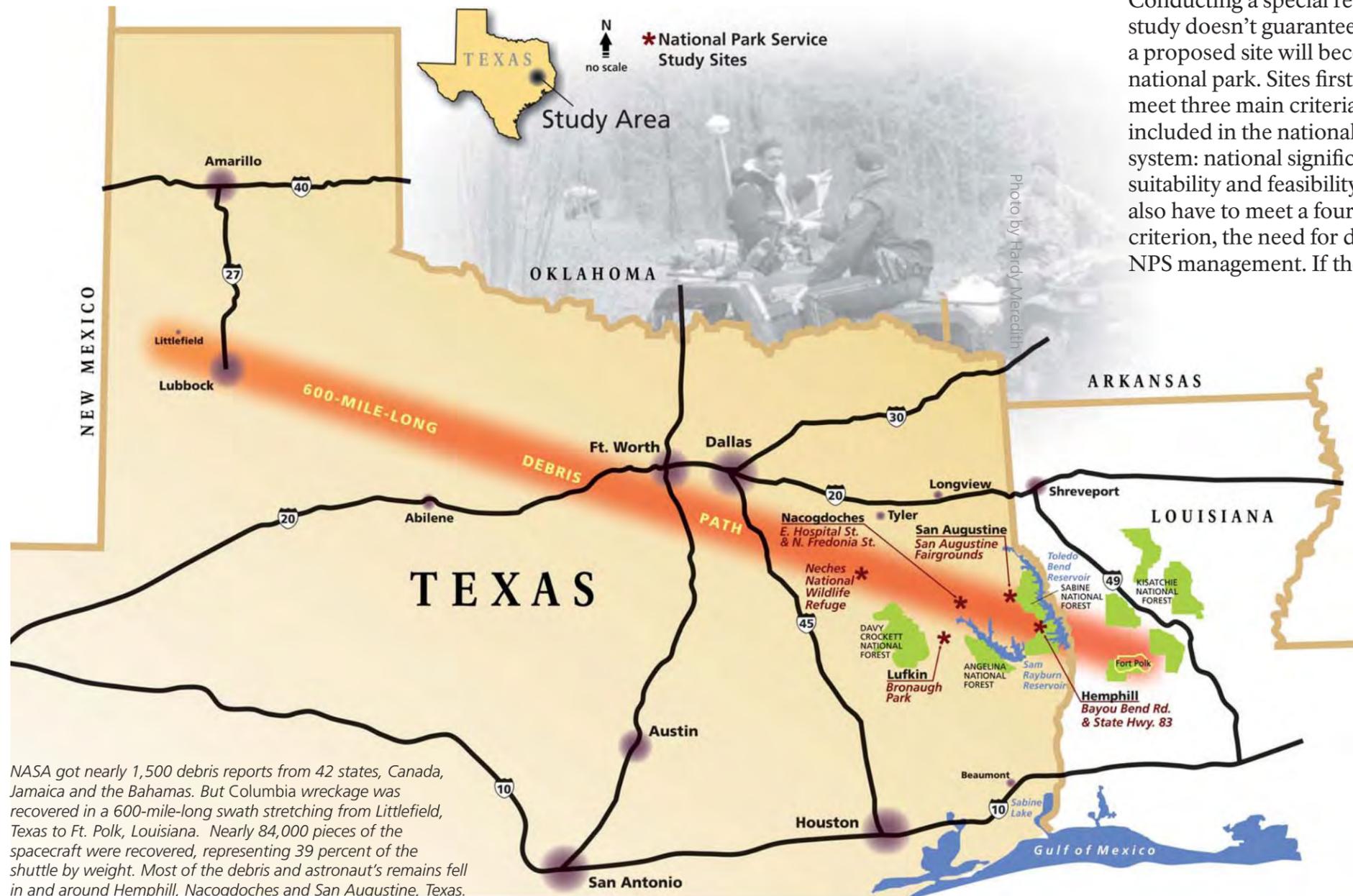
The act also gave the NPS permission to study additional sites. One new site—the Neches Wildlife National Refuge—is already being looked at. Others may be named as the study progresses.

Conducting a special resource study doesn't guarantee that a proposed site will become a national park. Sites first have to meet three main criteria to be included in the national park system: national significance, suitability and feasibility. They also have to meet a fourth criterion, the need for direct NPS management. If the study

team finds that another entity can adequately protect a site and keep it open to the public, it may conclude that there is no need for NPS management.

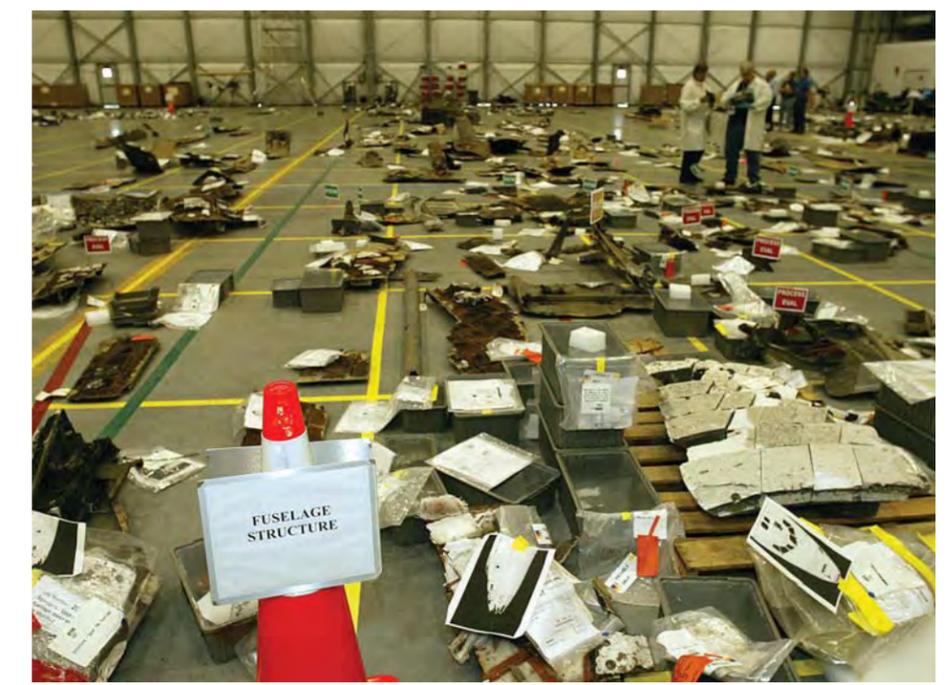
At the conclusion of the Columbia study, the NPS findings will be sent to the Secretary of the Interior. The Secretary will make a

recommendation whether or not the sites should become part of the national park system, and will send the study and his recommendation to Congress. Congress alone has the authority to add the sites to the national park system; Congress could also choose to honor the Columbia story in other ways. ▲



NASA got nearly 1,500 debris reports from 42 states, Canada, Jamaica and the Bahamas. But Columbia wreckage was recovered in a 600-mile-long swath stretching from Littlefield, Texas to Ft. Polk, Louisiana. Nearly 84,000 pieces of the spacecraft were recovered, representing 39 percent of the shuttle by weight. Most of the debris and astronaut's remains fell in and around Hemphill, Nacogdoches and San Augustine, Texas.

"Window frames rattled, pictures fell from walls, and still the horrible sound grew louder. As we began to realize that this nightmare was really happening, many panicked minds reached out, grasping the most terrible possibilities they could imagine, everything from pipeline explosions to nuclear war and Armageddon ... The sound grew to such a crescendo that the walls of our houses began to shake. And some even had the added horror of opening their windows to see jagged pieces of twisted metal raining from the sky."
 ~ East Texas author Byron Starr, describing the disintegration of Columbia in his book, Finding Heroes.



Looking down the line of identified main fuselage debris located on the grid system in the Columbia debris hangar.

What is the Historic Significance of this Event?

What happened to the *Columbia's* seven-member crew and the effect the disaster had on East Texas are clearly significant on a local and regional level. It was arguably nationally significant for a given time. Many people's lives here and abroad were profoundly affected by loss of the shuttle and its crew.

But the National Park Service (NPS) has a tough job in this case. In addition to determining whether it's appropriate and practical to create a new *Columbia* memorial, the NPS is required to determine if the disaster was nationally significant in the light of U.S. history.

To be considered nationally significant, the sites related to the *Columbia* must meet the following:

- Are an outstanding example of a particular type of resource.
- Possess exceptional value or quality in illustrating or interpreting the natural or cultural themes of our nation's heritage.
- Offer superlative opportunities for recreation, public use and enjoyment, or scientific study.
- Retain a high degree of integrity as a true, accurate, and relatively unspoiled example of the resource.

Historians almost always believe that they must wait 50 years before deciding if an event

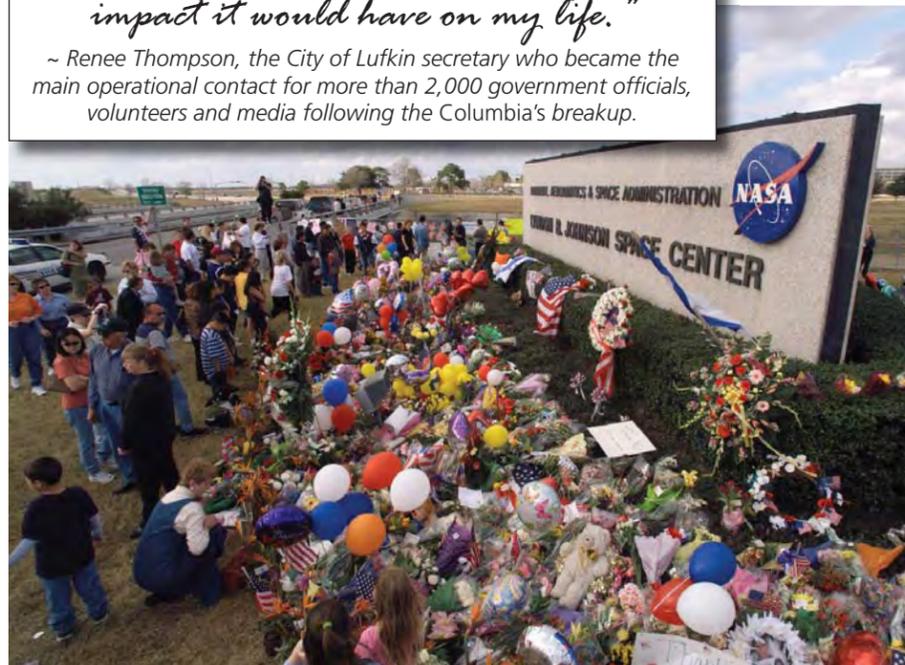


changed the course of history enough to be judged nationally significant. It's only been eight years since the *Columbia* disintegrated while re-entering the Earth's atmosphere. This 50-year factor would also need to be considered in the assessment of national significance.

One of the ways the NPS determines whether a resource is nationally significant is to ask historians if it meets well-established National Historic Landmark (NHL) guidelines for determining national significance. Independent researchers at the University of Houston's Center for Public History are studying that now, and the results of their findings will contribute to the assessment of national significance incorporated into the study report. 📌

"When I heard about the shuttle that morning, I had no idea how big an impact it would have on my life."

~ Renee Thompson, the City of Lufkin secretary who became the main operational contact for more than 2,000 government officials, volunteers and media following the *Columbia's* breakup.



In memory of the Space Shuttle *Columbia* crewmembers who lost their lives on February 1, 2003, a massive collection of flowers, balloons, flags, signs, and other arrangements were placed at the Johnson Space Center sign at the Center's main entrance. (NASA)

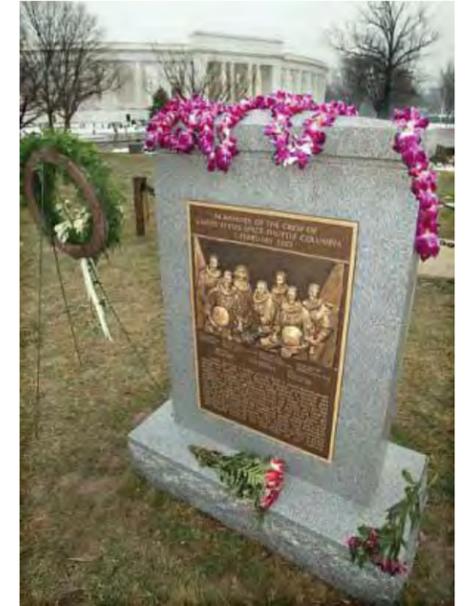
Is a New National Memorial Appropriate?

Should a new national memorial to the *Columbia* be created when dozens of memorials already exist?

To answer that question, the sites identified in the *Columbia's* special resource study must meet a key criterion the NPS calls suitability. Suitability is another way of asking whether it's appropriate to establish a new unit of the national park system. To meet the suitability criterion, one or more of the *Columbia* sites must represent a natural or cultural resource type that is not already adequately

represented in the national park system or is not comparably represented in the national park system, or is not comparably represented and protected for public enjoyment by another federal agency; tribal, state, or local government; or the private sector. Adequacy of representation is determined on a case-by-case basis by comparing the proposed area to other units in the national park system and other protected areas for differences or similarities in the character, quality, quantity, or combination of resource values. It will mean distinguishing the East Texas study sites from existing *Columbia* memorials.

There is a national memorial honoring the *Columbia* and her crew at Arlington National Cemetery in Arlington, Va.



Memorial to the crew of space shuttle *Columbia* at Arlington National Cemetery.

It is near a monument to the shuttle *Challenger*, which exploded during takeoff on January 28, 1986. The graves of 29 astronauts are also in the national cemetery.

Other national memorials include a display at the Johnson Space Center in Houston, Texas, and the 42.5-foot-tall Space Mirror Memorial at Kennedy Space Center near Orlando, Fla. There are also memorials in California, Colorado, Washington, Texas, Guam, Afghanistan, India, Israel, and the Canadian arctic. Even outer space contains memorials to the *Columbia*. The National Aeronautics and Space Administration (NASA) dedicated seven asteroids to the memory of the seven



Astronaut Memorial Space Mirror at the Kennedy Space Center.



Brilliant roses and carnations frame the names of the *Columbia* crew carved onto the black granite surface of the Astronaut Memorial Space Mirror.

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astronauts who were killed when the *Columbia* broke up. It also put a memorial on its Mars Exploration Rover.

Existing memorials may tell the *Columbia*'s story adequately. Or, the study may find that the East Texas sites are significant and unique enough that they warrant preservation and protection for future generations. ▲



Among the visitors placing flowers in the wire mesh fence surrounding the Space Memorial Mirror is one of the American Indian dancers who performed a healing ceremony during a memorial service for the crew of the *Columbia*.

"The final days of their own lives were spent looking down upon this Earth, and now, on every continent, in every land they can see, the names of these astronauts are known and remembered."

~ President George Bush, speaking at a Feb. 4, 2003 memorial service for the *Columbia*'s crew at the Johnson Space Center in Houston, Texas.



One of the crew members aboard the space shuttle *Columbia* used a digital still camera to capture a sunrise from the crew cabin during flight day seven.



Astronaut Rick D. Husband, Mission Commander



Astronaut William C. McCool, Pilot



Astronaut Michael P. Anderson, Mission Specialist

Is it Feasible to Create A New National Memorial?

Let's say the special resource study finds that certain *Columbia*-related sites are nationally significant and suitable for addition to the national park system.

The study would still need to determine if it's feasible to make one of more of the sites part of the national park system. That means the site (or sites) would have to be of significant size, set up to ensure the long-term protection of its resources and able to provide opportunities for public use and enjoyment.

A lot of issues are studied to determine feasibility, including land ownership, acquisition costs, access, threats to resources, staffing needs and development requirements. ▲

Are Other Management Options Possible for a National Memorial?

Even if the study sites pass the significance, suitability, and feasibility standards, the NPS may determine that a new national park is not the best way to memorialize the *Columbia* story and preserve resources related to the story. NPS may find that the study sites could be managed equally well by other organizations, including another federal agency, or state and local agencies. The study will examine potential alternatives for management to determine which is the best option. ▲



Astronaut David M. Brown, Mission Specialist



Astronaut Laurel B. Clark, Mission Specialist



Astronaut Kalpana Chawla, Mission Specialist



Ilon Ramon, Payload Specialist Representing the Israeli Space Agency

What Are Your Thoughts?

We encourage you to share your thoughts with the study team by visiting the project website at <http://parkplanning.nps.gov/spsh> and posting your comments. This is the most efficient and cost-effective way to communicate with the study team. The National Park Service will use this website to convey public information throughout the course of the study. Meeting dates and locations will be posted here, along with a draft special resource study, once the document is ready for public review.