

# Inside

*Smithsonian Research*

3

SWAMP SPARROW MYSTERY  
SOLVED

6

HUEY HELICOPTER LANDS  
AT SMITHSONIAN

8

PERFORMANCE ARTIST  
JAMES LUNA

10

ELABORATE HOAX OF THE  
CRYSTAL SKULLS



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SCIENCE, HISTORY AND THE ARTS  
NUMBER 9 • SUMMER 2005

**National Design Awards.** Each year, the Smithsonian's Cooper-Hewitt, National Design Museum honors America's top designers with its National Design Awards. Leading American architects, designers, educators, journalists, authors, filmmakers and other professionals from all 50 states are invited to submit nominations for these awards. Eligible nominees are then asked to submit materials for review. A panel of judges picks the favorite in 10 categories, which include architecture, interior design, environment, landscape architecture and corporate achievement. Special consideration is given to designers who broaden the conventions of their discipline, introduce formal innovation, and exhibit high levels of imagination and insight. The National Design Awards Web site, which features every award recipient since 2000, is an excellent introduction to the movers, shakers and innovators at work in American design today. Many images of their exciting design projects are featured as well.—[www.cooperhewitt.org/nda](http://www.cooperhewitt.org/nda)



**This plan for Flatbush Avenue was one project that led Amanda Burden, director of the New York Department of City Planning, to win the Design Patron category in the 2004 National Design Awards.**

**Remembering polio.** Fifty years ago, America rejoiced at the invention of a new vaccine developed by Jonas Salk to combat the polio virus. The vaccine worked by fooling the body's immune system to produce antibodies that made those inoculated immune to the disease. "Whatever Happened to Polio?" is a new Web site and exhibition from the Smithsonian's National Museum of American History, Behring Center about the vaccine, life before this medical miracle and the lasting impact polio has had on American culture. First reported in the United States in 1894, polio occurred mainly in summer. It struck regardless of geographic region, economic status or population density. Children were the most frequently affected. Leg braces worn by Franklin Roosevelt, as well as other polio-related artifacts from the Smithsonian's collections, illustrate the paralysis and hardship polio caused thousands of people. In 1938, President Roosevelt founded what is now the March of Dimes, an organization that enabled millions to donate small amounts to the researchers who developed the vaccine that children worldwide receive today.—[americanhistory.si.edu/polio](http://americanhistory.si.edu/polio)



**An Emerson iron lung, first used by polio patients in 1931 (Photo by Hugh Talman)**

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*On the cover: A male coastal plain swamp sparrow sings from a tree branch at the Bombay Hook National Wildlife Refuge on the Delaware coast. Isotope analysis of the cap feathers of this subspecies of sparrow by scientists at the National Zoo and the Smithsonian Environmental Research Center has revealed that these birds winter in North Carolina. Ornithologists had puzzled over this migratory mystery for more than 50 years. (Photo by Gerhard Hofmann)*



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# Migratory mystery of a secretive sparrow comes to light

By Michael Lipske  
Special to Inside Smithsonian Research

**S**taring intently at a tangled clump of salt hay and marsh elder growing in Delaware's Woodland Beach Wildlife Area, Russell Greenberg is waiting for the "chip, chip, chip" of a female coastal plain swamp sparrow. It's mid-May and the start of nesting season for these secretive, rusty brown birds.

Years ago in a different marsh, Greenberg, director of the Migratory Bird Center at the Smithsonian's National Zoological Park, discovered that each time a female swamp sparrow leaves her nest—about every 15 minutes—she sings the "chip, chip, chip." By glimpsing the bird at the instant she sings, a seasoned ornithologist like Greenberg can usually locate her well-concealed nest.

Today, he is helping graduate student Brian Olsen, from Virginia Polytechnic Institute, find and mark coastal plain swamp sparrow nests as part of a National Zoo study to document how many nests are lost to high tides, raccoons and other perils of the salt marsh.

With binoculars and rubber hip waders, Greenberg has been patiently observing



swamp sparrows in the wild for more than 20 years. Recently, his knowledge of these birds, combined with a bit of cutting-edge scientific sleuthing, paid off. In March, he and Peter Marra, senior scientist at the Smithsonian Environmental Research Center on the Chesapeake Bay, solved a mystery that has clouded scientists' understanding of the coastal plain swamp sparrow since the discovery of this subspecies some 50 years ago.

Each September, after a summer of laying eggs and raising chicks in the wetlands of New Jersey, Delaware and Maryland, the coastal plain swamp sparrow disappeared somewhere south. No one

**Brian Olsen takes the measurements of a female swamp sparrow captured in a mist net in a marsh at the Woodland Beach Wildlife Area in Delaware. Olsen is conducting a survey for the National Zoological Park on the success rate of swamp sparrow nests in the marsh. This bird was measured, banded and released. (Photo by John Barrat)**



**Above: Seconds after hearing a female swamp sparrow's nest departure call, Russell Greenberg locates her nest in dry marsh grass at the Woodland Beach Wildlife Area. Below: A swamp sparrow nest containing four eggs (Photos by John Barrat)**

knew its migratory destination or had seen it during the winter months.

"Here was an entire North American taxa for which no one knew where they wintered," Greenberg says. "That's kind of incredible."

Through analysis of the hydrogen and carbon isotopes in the male sparrow's cap feathers, Greenberg and Marra were able to "trick the birds into revealing where they winter," Greenberg says.

### Isotopic signature

By hand-rearing a number of coastal plain swamp sparrows at the National Zoo, Greenberg confirmed that, like other swamp sparrows, males of the coastal plain subspecies sprout a reddish patch of feathers on their heads in February or March. This plumage badge appears just as the birds are getting ready to head north to their breeding grounds.

"It's just a little rusty cap," Greenberg says, opening a field guide during an interview at the Migratory Bird Center to a picture of the sparrow.

Later, Greenberg collected samples of the rusty cap feathers from wild sparrows he had caught in Delaware salt marshes. He and Marra sent the feathers to Matt

Wooler of the University of Alaska at Fairbanks for analysis using isotope-ratio mass spectrometry. This scientific technique yielded what Greenberg calls an "isotopic signature" of the feathers.

The research is based on the knowledge that birds, like all creatures, are what they eat. Elements such as oxygen, carbon and hydrogen that occur naturally in soil, air and water are absorbed into the body tissues of animals through eating, breathing and drinking.

The number of neutrons in an element's nucleus can vary by geographic location. For example, a carbon atom found in one region of North America may have six neutrons. In another habitat, a carbon atom may have seven or eight neutrons. By mapping these variations geographically, isotopic signatures found in animal tissues can be linked to specific regions.

Marra likens isotope readings from tissues to "snapshots" of where a bird has been spending its time. He has been using

isotope analysis to draw connections between wintering and breeding populations of American redstarts, another species of migratory songbird.

### Deuterium pattern

Feathers are an especially useful tissue for tracking male coastal plain swamp sparrows because, once the sparrows sprout their rust-colored caps, those feathers stop growing. No longer metabolically active, the feathers effectively freeze the isotopic signal the birds have picked up from their winter habitat.

Deuterium, a stable isotope of hydrogen, is the particular signal Greenberg and Marra "tuned in" during their coastal plain swamp sparrow study. Scientists have long known that rain in southern latitudes contains more deuterium than precipitation farther north. This pattern of deuterium variation has been mapped.

Greenberg and Marra were able to match the isotopic signature of male coastal plain swamp sparrow cap feathers to latitudes of an area stretching from Charleston, S.C., to Beaufort, N.C.

Similar analysis of carbon isotopes in the feathers suggested that the birds stuck to coastal marshes and did not venture inland during the winter.



In March, Greenberg and Marra traveled to North Carolina and, for the first time, found and photographed the coastal plain swamp sparrow in its winter habitat. They located 12 coastal plain swamp sparrows in three different North Carolina sites. All

the birds were in marshes on the mainland bordering Pamlico and Albemarle sounds.

It does at first seem odd that these birds only migrate such a short distance, Greenberg notes. "Also, the migration takes place, we think, quite early. So they do not seem forced down by bad weather.

"Although the distance is small, the cli-

mate of the coastal Carolinas is very different” from coastal New Jersey, Maryland and Delaware, Greenberg continues. “It is really the first place where winter freezes don’t occur regularly. For a sparrow that pokes around in the mud to feed, unfrozen ground is probably a premium.”

### Extended studies

Locating their winter home is just one of several studies the National Zoo’s Migratory Bird Center is carrying out on this subspecies. Researchers also are examining how the coastal plain swamp sparrow has adapted to life in the salt marshes. Most swamp sparrows live inland, in freshwater marshes and swamps.

The coastal plain subspecies has a number of physical traits that set it apart from its inland cousins. It shares these traits with other North American sparrow species that live in salt marshes. “There’s a whole suite of differences” between freshwater and saltwater swamp sparrows, Greenberg says. “For example, salt-marsh swamp sparrows all tend to be very gray.” Their plumage is probably a camouflaging adaptation to the gray and black muds usually found in salt marshes.

Coastal plain swamp sparrows, like other salt-marsh sparrows, also have large kidneys—probably because they need to flush more fluid through their bodies to eliminate the salt they ingest from brackish water.

In addition, salt-marsh sparrows have longer, thinner bills, which are better for eating invertebrates. Inland sparrows, with short, broad bills, eat more seeds, which are in short supply in salt marshes.

For years, the Migratory Bird Center has worked with experienced volunteers from the Delmarva Ornithological Society to census populations of coastal plain swamp sparrows during their breeding season.

Greenberg notes that the subspecies has disappeared from some sites where it once bred. “Their geographic range is small, and ecologically, they’re restricted,” he says. Greenberg and his colleagues esti-

*It does at first seem odd that these birds only migrate such a short distance, Greenberg notes.*

mate as few as 25,000 breeding pairs of coastal plain swamp sparrows exist. It’s a situation “of conservation concern,” Greenberg says.

With the discovery of the coastal plain swamp sparrow’s winter range, an important chapter of this bird’s life history has been revealed, Marra says. “To fully understand the ecology of this subspecies, and to devise appropriate measures to

protect them, we need to know where they are year round. This knowledge is critical.”❖

**Below: The dark back, black forehead and dark eyestripe of the coastal plain swamp sparrow distinguish it from other swamp sparrows. This photo was taken at the Bombay Hook National Wildlife Refuge in Delaware. (Photo by Gerhard Hofmann)**



# Vietnam-era helicopter touches down one last time for duty in Smithsonian exhibition

I fully accepted the fact that my life was going to end that predawn morning,” Fred Castleberry recalls of his final battle near the Vietnamese village of Tay Ninh on Easter Sunday 1968. Castleberry, a soldier in the Army’s 25th Infantry Division, had just turned 21. Shrapnel from a rocket-propelled grenade had “left pieces of me—literally—all over the battlefield,” he says.

As the battle raged around him, Castleberry heard the penetrating “whup, whup, whup” of an incoming Huey helicopter. He lost an arm and a leg that day, but the Huey and crew who pulled him from the jungle under enemy fire saved his life.

Recognition is finally being given to the Huey helicopter—officially known as the UH-1 Iroquois—and its central place in the Vietnam War in “The Price of Freedom: Americans at War,” a new exhibition at the Smithsonian’s National Museum of American History, Behring Center. Huey helicopter number 65-10091 is the largest of nearly 800 artifacts in the exhibition, which surveys the history of America’s military, from the French and Indian Wars of the 1700s to Iraq.

Built in 1965 by Bell Helicopter, Huey 65-10091 was shot up twice and then shot down in Vietnam during active duty with the 173rd Assault Helicopter Company. It was recovered, repaired and later returned to military service until 1995.

## Cavalry

In the dense, hilly jungles of Vietnam, Hueys made it possible for battle-wounded soldiers, including Castleberry,

to be in a hospital on a surgeon’s table inside an hour, says Jennifer Jones, co-curator of “The Price of Freedom.” Rapid-combat casualty evacuations flown by dustoff crews—pilots, medics and crew chiefs—extracted nearly 400,000 wounded from battle zones during the course of the war.

All of the services in Vietnam—the Army, Navy, Air Force and Marine Corps—used Hueys, says exhibition co-curator Dik Daso, curator of modern military aircraft at the Smithsonian’s National Air and Space Museum. “It was versatile, doing everything from troop transport to ferrying cargo and serving as a gunship.”

Hueys carried thousands of troops into

battle. They flew low and slow, dodged enemy fire, hovered just above the ground at the outskirts of hamlets or fields and dropped onto clearings barely larger than the sweep of their rotors.

“The comparison I like to point out,” Daso says, “is that, during battle in Vietnam, the Huey took the place of traditional cavalry. They were capable of moving a force rapidly anywhere you wanted.” Able to survey a battle zone from on high, they served as the eyes of the commander. “And like the cavalry, Hueys could feint in one direction, then move quickly in another to trap an enemy.”

Lightweight at 5,923 pounds, the Huey’s skin was little protection against bullets and shrapnel. “Its glass nose was



A Huey helicopter departs after dropping off supplies to American soldiers fighting in Vietnam’s Phuoc Tuy Province. (Photo courtesy of the National Archives)



**Soldiers from the 12th Aviation Battalion at Fort Belvoir, Va., and staff of Bell Helicopter gently push Huey 65-10091 into position for exhibition in “The Price of Freedom: Americans at War” at the National Museum of American History. (Photo by Richard Strauss)**

great for visibility but placed pilots and co-pilots in peril when landing in hot zones,” Daso adds. “Many soldiers flew sitting on their flack vests as protection from upward flying debris.”

#### **Veteran connection**

On March 19, 2004, flying under its own power, the 40-year-old Huey 65-10091 landed in Washington, D.C., at the American History Museum. It was the chopper’s final stop on a seven-week, 10,000-mile pilgrimage of reconciliation that brought Vietnam veterans and their stories to thousands of people across America. (See the Web site “Going Home With America’s Huey-091” at [www.americashuey.com](http://www.americashuey.com).)

After the helicopter landed, the Texas Air Command Museum of Fort Worth, the organization that owned the Huey and launched its national tour, donated it to the Smithsonian.

“We could have collected any helicopter out there,” Jones says, “but this one had a very strong connection to many veterans.”

Huey 65-10091 was disassembled by the 12th Aviation Battalion at Fort Belvoir, Va., and staff from Bell Helicopter and brought into the American History Museum piece-by-piece through the loading dock. To keep it from leaking, its fuel and hydraulic fluid were drained, and the engine and rotors were replaced. The tail was

hand-carried into the museum. With wheels under its runners, the chopper’s main body was pushed into position, barely navigating around corridor corners.

#### **Visceral memories**

Without the iconic Huey, any museum exhibition about Vietnam—a divisive and painful war—would have been incomplete, Jones says. She came to this realization, in part, after hours of interviewing veterans at the Vietnam Veteran’s Memorial in Washington, D.C.—groundwork for an earlier exhibition of objects left at that memorial. For most vets, the Huey helicopter sparked visceral memories. “Everyone had something to say about the Huey,” Jones says.

In the exhibition, two pilot-mannequins sit in the cockpit of Huey 65-10091, appearing to have just landed in a jungle clearing in Vietnam. Nearby, on the ground, a medic tends to a wounded soldier. Another soldier cautiously heads into the jungle carrying his M-16 rifle.

Video interviews with Vietnam veterans play on a large television inside the chopper’s open side door. They include Castleberry; Hal Moore, commander of a 7th Cavalry Regiment battalion; and others.

“In the X-ray battle in La Drang, we could not have lived without the Huey he-

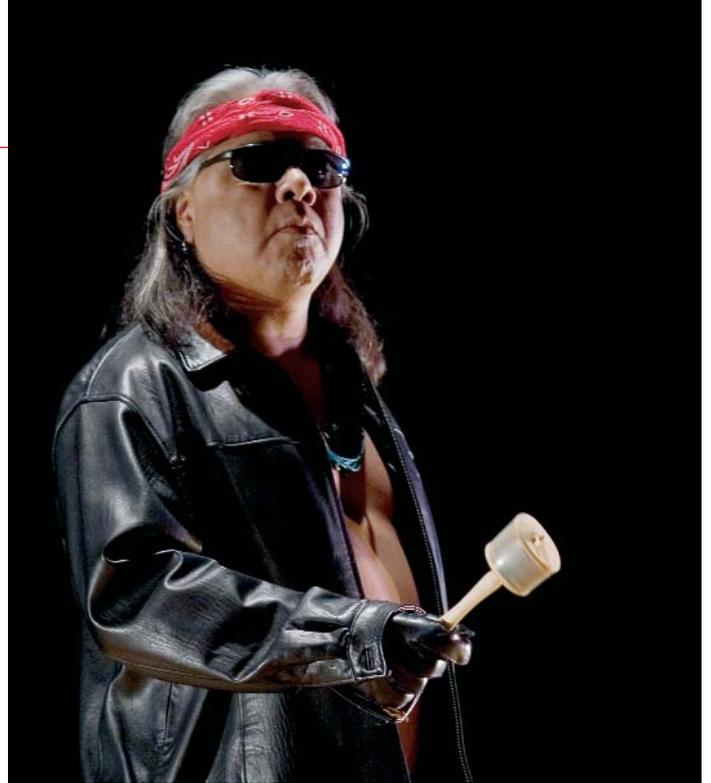
licopter bringing us ammunition and water,” Moore recalls. “A lot of my wounded would have died had those helicopters not come in under fire.

“All of us veterans who fought on the ground in Vietnam, we rode to the war in the Huey,” Moore continues. “That ‘whup, whup, whup’ is burned into our brains.” ❖ —Virginia Myers Kelly

*They dodged  
enemy fire, hovered  
just above the  
ground at the  
outskirts of hamlets  
or fields and  
dropped onto  
clearings barely  
larger than the  
sweep of their  
rotors.*

# James Luna: Correcting the erroneous in a one-man show

By Donald Smith  
Special to Inside Smithsonian Research



Visitors drifting through the American Indian halls of the San Diego Museum of Man for several days in 1987 were expecting just another exhibit on a vanished culture. A half-naked figure in a loincloth lay flat on his back on a layer of sand inside a display case.

The first clue that something unusual was going on was the odd group of objects near the body. Instead of pottery pieces or spear points, the artifacts turned out to be personal effects dating to the late 20th century—a college diploma, a photo of Jimi Hendrix and divorce papers. Exhibit labels even revealed the guy's name—James Luna.

Then, inevitably, somebody would notice that the object in the center of the exhibit was, um, breathing. It was even looking back at them.

It was, in fact, a real live Native American.

Unwittingly, the museum visitors had walked into “The Artifact Piece,” one of the early efforts of performance artist James Luna.

Luna, a member of Southern California's La Jolla Band of Mission (Luiseño) Indians, has since been recognized as one of America's foremost living artistic talents.

This summer, Luna exported his thought-provoking, in-your-face performance art to Europe under the sponsorship of the Smithsonian's National Museum of the American Indian. Luna performed his newest work, “Emendatio,” at the 2005 Venice Biennale in Italy. This major exhibition is a showcase for cutting-edge art from around the world.

## Exploring dynamics

Luna's 1987 “The Artifact Piece” altered “dramatically and forever the relationship between Indians and those who visit, study, patronize and in other ways interact with Native peoples,” says Richard West, founding director of the Museum of the American Indian. “Luna extended and deepened his exploration of these dynamics with his performance of ‘Emendatio.’”

Like Luna's previous performances and installation work, “Emendatio” is multifaceted, incorporating audio-visual elements, video projections, photographs, found objects, dance and audience participation. In it, Luna paid homage to Pablo Tac, a Luiseño Indian who traveled to Rome in 1834 to study the priesthood. Tac wrote a history of how his people in California were Christianized.

American Indian Museum Curator of

Contemporary Art Truman Lowe and Curator Paul Smith helped select Luna to represent the National Museum of the American Indian at the Venice Biennale. “We worked to identify an American Indian artist who would be appropriate to sponsor,” Smith says. “Since the Biennale is such a large venue, comparable to a World's Fair of art, we were looking for someone who could cut through the clutter,” he adds.

Smith and Lowe worked with Luna on the general concept of his presentation. “James had a lot of ideas, and we played a role in helping shape ‘Emendatio,’” Smith explains. “In addition, we took care of a lot of the more mundane activities, such as formally applying to the Biennale board, writing statements and descriptions of his performance, taking care of many aspects of producing the piece, writing a catalog and creating a DVD of James' performance, and arranging an upcoming symposium.”

**Above and opposite: James Luna rehearses his one-man show “Emendatio,” which he performed at the Venice Biennale under the sponsorship of the National Museum of the American Indian. (Photos by Katherine Fogden)**

## Faulty memory

People first seeing Luna's work may be surprised, baffled and discomfited, often all at once. In a scene from his 1996 one-man performance "In My Dreams: A Surreal, Post-Indian, Subterranean Blues Experience," Luna sits at a table and prepares himself a lunch of Spam, ketchup and mustard—diet staples for many low-income American Indians. He pretends to drink out of a Styrofoam coffee cup heavily loaded with artificial sweetener, then injects himself in the stomach with insulin. Luna, like many Indians, is diabetic.

In another scene from "In My Dreams," Luna, dressed in a sequined vest and feathered headdress, rides a gaudily decorated stationary exercise bike while images from the movies "Easy Rider" and

"The Wild One" flash onto a screen behind him. The blaring sound track consists of music of the 1950s and 1960s—including the inebriated voice of Dean Martin.

"James doesn't care if you think it's strange to position the music of Dean Martin as part of Luiseño culture," says Smith. "So there he is on stage, weeping about Dean Martin, shooting himself with insulin."

In fact, art critic Jane Blocker has suggested that the boozy Dean Martin embodies a recurring theme in Luna's art: the tendency of Euro-Americans to forget about the people they found here when they first arrived from across the Atlantic. Intoxicated, "Dean Martin cannot remember, and thus becomes the celebrity

mascot for the white man's custom of forgetting," Blocker writes.

Faulty memory is a unifying theme in "Emendatio." The word is the Latin root for "emendation," meaning an alteration intended to correct or improve that which is erroneous.

"One commonplace statement made by contemporary Native people is, 'We are still here,'" West, a Southern Cheyenne, points out. "Many thought we would vanish, and some think we did, so such an assertion becomes necessary.

"Yet it is discouraging that we must often remind others of our continuing existence," West continues. "James Luna and his work are wonderful correctives—or emendations, if you will—to this situation." ♦



# With a high-tech microscope, scientist exposes hoax of ‘ancient’ crystal skulls

By Donald Smith

Special to Inside Smithsonian Research

**T**hey were relics of a lost civilization, hand-crafted by wizards, or possibly extraterrestrials. They could cast spells, conjure spirits, cure illness and foretell the future.

At least that’s what a lot of people believed when a number of humanlike skulls carved out of rock crystal began causing a sensation in the art and antiquities world some 60 years ago.

Actually, they aren’t ancient at all. And now, the archaeological detective who applied space-age methods to expose the true nature of these strange objects is developing a way to help museums around the world separate real artifacts from modern fakes.

“Crystal skulls have always been questionable,” says Jane Walsh, an anthropologist at the Smithsonian’s National Museum of Natural History. “Nobody has ever excavated one. But they are in a number of major museums, including our own. That’s how we first got involved.



## Curses, gods and devils

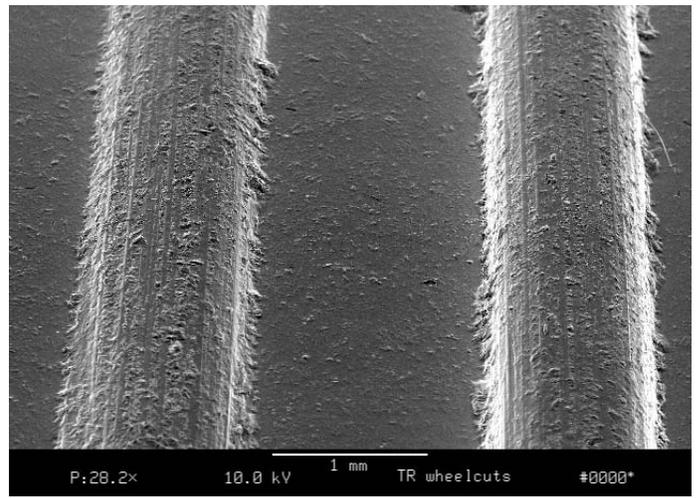
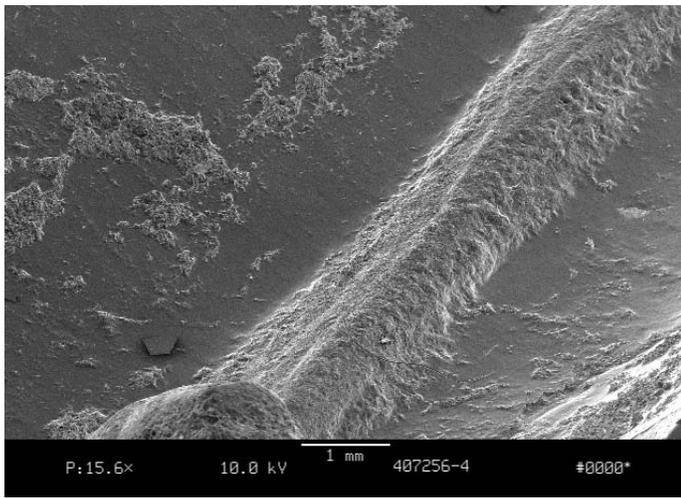
Tall tales concerning the crystal skulls first began circulating in 1943, when F.A. Mitchell-Hedges, a colorful British banker-turned-adventurer, and his adopted daughter, Anna, made a startling announcement. During a 1920s expedition deep into the jungles of Belize, Anna discovered, tucked away under the altar of a Mayan temple, a crystal skull with supernatural powers. Or so they claimed.

Dubbing it “The Skull of Doom,” Mitchell-Hedges began producing it to entertain guests at social gatherings. According to him, it had been made 3,600 years ago. Mayan priests wielded it to invoke gods and devils. Its curse could bring misfortune and death.

As more skulls were “discovered” by others, the fanciful accounts escalated. Some said the things came from the lost kingdom of Atlantis, which had received them from space aliens. Others said the skulls had accompanied the Knights Templar in the Crusades.

**Above:** Jane Walsh holds a skull carved from crystal, which was donated to the Smithsonian’s National Museum of Natural History in 1992. Close analysis revealed that it is a 20th-century creation and not an ancient artifact. (Photo by Owen Macdonald)

**Opposite:** These electron scanning microscope images show the contrast in signatures left by modern and ancient stone-carving techniques. The image at left shows the silicone cast of an irregular groove cut centuries ago by a pre-Columbian sculptor using primitive techniques. The image at right shows a silicone cast of two uniform grooves cut by an electric diamond rotary saw. (Jane Walsh photos)



The objects emitted strange lights and sounds, depending on the alignment of the planets. They channeled spirits. They talked.

They could do stand-up comedy as far as Walsh is concerned and they still wouldn't impress her as having been made much earlier than the 19th century, if then.

"If you were a pre-Columbian artisan and you wanted to carve something in stone or rock crystal—which is actually quartz—you'd use a stone file with maybe sand as an abrasive," Walsh says. Modern stone carving tools have embedded abrasives, usually diamond or carborundum. They just leave very different imprints in the stone."

In investigating the skull owned by the Smithsonian—which the Institution had received in the mail from a donor in 1992—Walsh scoured historical records. Then, using methods first developed by Margaret Sax, a materials specialist at the British Museum, Walsh plunged into a world where distances are measured in microns.

### A dead giveaway

At a table behind her desk at the Natural History Museum, Walsh takes out a small stone carving, then picks up a device that looks like one of Martha Stewart's glue guns. Walsh squeezes a quarter-size dollop of oozy black silicone onto a

section of the carving. Within a few minutes the material hardens. She peels it off and holds up a perfect mold of the carving. Not only are the tiniest details revealed, but they pop out in relief, enabling Walsh to examine them more closely.

After receiving a super-fine coating of gold to reflect electrons, the mold is placed in a vacuum container to have its portrait made by a scanning electron microscope. At magnifications of 50 to 100 times, even an untrained observer can quickly discern patterns made by ancient tools versus modern ones.

Scorings made by pre-Columbian tools look uneven and messy. Modern stone-carving and polishing implements leave uniform marks that look like more like brushed steel. The reason is that abrasives that were used to make genuinely old artifacts—ancient craftsmen typically used sand—tended to move around as the tool dug into the stone's surface. Modern abrasives that are permanently affixed to engraving and polishing tools leave neat, even rows.

Another dead giveaway is the use of wheeled tools—used, for example, to inscribe the lines between teeth on a skull. These lines show up as arcs where the wheel has bitten into the stone. As far as anyone knows, wheels were unknown to pre-Columbian Americans.

### Modern fakes

Walsh took the Smithsonian's crystal skull to London, where it and two similar skulls owned by the British Museum were subjected to the microscopic treatment. Sax and Walsh compared these skulls to several carved crystal artifacts from Mexico known to be authentic and to a crystal skull known to have been carved in modern times.

"We discovered that all of the crystal skulls had been carved with modern coated lapidary wheels using industrial diamonds and polished with modern machinery," Walsh says.

Walsh is now working toward a collaboration with the British Museum to develop a database of scanning electron microscope images—taken of both authentic and fake carvings—that can be accessed via computer by other museum professionals. She is trying to raise \$25,000 for the project, to be spent mostly on travel to London and Mexico City to make molds.

In the meantime, the Smithsonian's crystal skull, a heavy object with a splotchy whitish complexion, resides inside a plain beige metal cabinet in Jane Walsh's outer office. No one has ever heard it say a word. It passes the time in silence, staring sightlessly, one presumes, into the darkness. ❖

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## NEWS AND NOTES

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**New director.** Lonnie Bunch has been named director of the new National Museum of African American History and Culture, which was established by legislation as a Smithsonian museum in December 2003. Bunch will work to develop exhibitions and public programs and coordinate the museum's fund-raising efforts and budget development. From 2001 to 2005, Bunch served as president of the Chicago Historical Society. From 1994 to 2000, he was associate director for curato-



**Lonnie Bunch**

rial affairs at the Smithsonian's National Museum of American History, where he oversaw the curatorial and collections management staff.

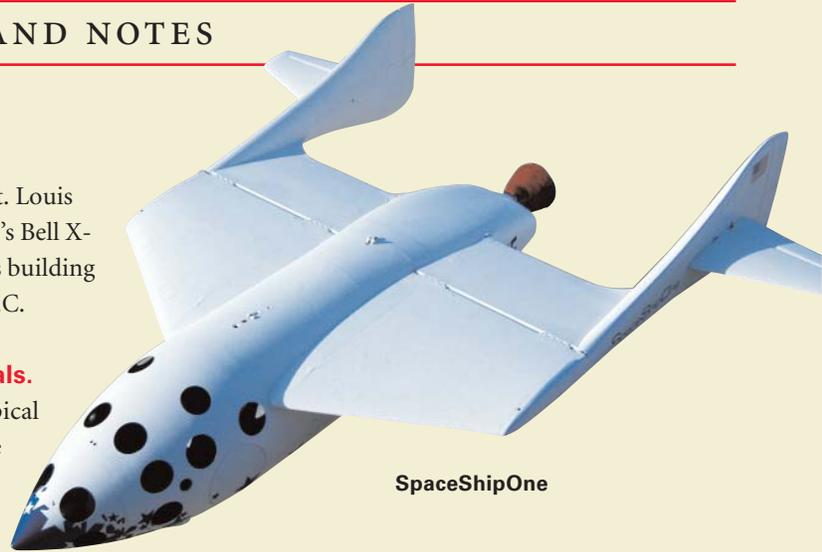
**SpaceShipOne.** The Smithsonian's National Air and Space Museum will soon become the permanent home of SpaceShipOne, the first privately built and operated vehicle to reach space. SpaceShipOne was awarded the \$10 million Ansari X prize on Oct. 4, 2004, by carrying a pilot and the weight of two people 62.5 miles into space twice in a two-week period. Paul Allen, Microsoft co-founder and sole funder of SpaceShipOne, will donate the spacecraft to the Smithsonian this summer. It will hang between Charles Lind-

bergh's Spirit of St. Louis and Chuck Yeager's Bell X-1 in the museum's building in Washington, D.C.

**Marine mammals.**

Smithsonian Tropical Research Institute marine scientist Hector Guzman provided scientific guidance in the drafting of a new law protecting marine mammals in Panama. The law was signed by Panamanian President Martin Torrijos at the Institute's Marine Exhibition Center in Culebra, Panama, on May 6. It declares Panamanian waters a protected corridor for marine mammals and provides safe passage to nearly 30 species of marine mammals found in Panama's coastal waters.

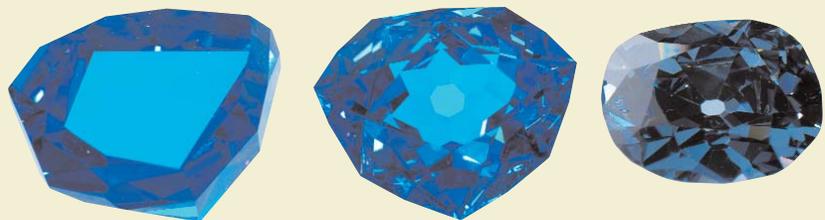
**Neiman papers.** American painter LeRoy Neiman donated his personal archives to the Smithsonian's Archives of American Art. Consisting of 90 boxes of correspondence and images and records of his commissions and business transactions, Neiman's collection also contains project files on portraits he was commissioned to paint of such celebrities as Muhammad Ali, Bill Bradley, Frank Sinatra, Louis Armstrong and Sylvester Stallone. Neiman is best-



**SpaceShipOne**

known for his colorful, energetic paintings of sporting events.

**Diamond mystery.** New research into the lineage of the legendary Hope diamond supports the theory that the Hope was cut from the French Blue diamond after the French Blue was stolen from France in 1792. Project researchers include Jeffrey Post, curator of gems and minerals at the Smithsonian's National Museum of Natural History, and engineer and gem cutter Stephen Attaway. Imaging, computer modeling, new measurements of the Hope diamond, and historical records and sketches of the Tavernier Blue and French Blue diamonds were used to create computer replicas of the three diamonds. The results show that the Hope fits exactly within the French Blue—a clear indication of its lineage. No large sister stone to the Hope diamond could have been cut from either previous stone.



**The creation of zirconia facsimiles of the 115-carat Tavernier Blue diamond, left, and the 67-carat French Blue diamond, center, was made possible by high-tech computer modeling, making it easy to compare them with the Hope diamond, far right. (Chip Clark photos)**

## Smithsonian entomologists name a new genus and family of beetles from Venezuela

A tiny aquatic beetle found living among decaying leaves in a Venezuelan mountain stream by Smithsonian scientists represents not only a new species but also an entirely new taxonomic genus and family of beetles. So tiny that it can only be studied under a scanning electron microscope, the newly named *Meru phyllisae*, or comb-clawed cascade beetle, is the smallest member of a suborder that includes ground beetles, tiger beetles, whirligig beetles, crawling water beetles and burrowing water beetles.

*Meru phyllisae* was officially named in July 2005 by Paul Spangler and Warren Steiner of the Entomology Department at the Smithsonian's National Museum of Natural History. Their article describing the beetle appeared in the journal *Systematic Entomology*, published by the Royal Entomological Society of Great Britain.

The beetle was first collected in 1985.

Despite repeated collecting attempts, the scientists were unable to find any eggs, larvae or pupae of this new insect that would have aided in its scientific description. Although *M. phyllisae* shares a number of characteristics with beetles of other families, it is distinct enough to be declared a member of a previously unknown family.

"The discovery of *M. phyllisae* has caused quite a stir in the community of scientists who study water beetles," Steiner says. In the last 50 years, only about five new beetle families have been described from newly discovered species.

The new family name, Meruidae, comes from "meru," which means "waterfall" in the language of the Pemon people of Venezuela. *Meru phyllisae* was discovered in a cascading waterfall at a natural "water slide," El Tobogán, in the Amazonas region of Venezuela.

"With insects, the age of discovery is far



The newly discovered beetle *Meru phyllisae* is about the size of a poppy seed.

from over," Steiner continues. "We are still finding higher-level taxonomic categories of insects. These forms of life are not related to groups that we already know about, yet they can help us understand the relationships among known groups."

*Meru phyllisae* was given the common name "comb-clawed cascade beetle" for its unusual claws. "Most terrestrial beetles have a pair of claws on the tips of their feet that they use as tiny grappling hooks," Steiner says. "It is surprising, however, to see comb-claws on a water beetle."

—John Barrat

## Jupiter-sized planet orbiting a star is discovered in the constellation Lyra

Light from a Jupiter-sized planet in orbit around a star some 500 light-years from Earth in the constellation Lyra has been detected by a team of astronomers led by David Charbonneau of the Harvard-Smithsonian Center for Astrophysics in Cambridge, Mass.

Using the Infrared Array Camera, a Smithsonian-developed instrument aboard the National Aeronautics and Space Administration's Spitzer Space Telescope, the team was able to positively confirm the planet's presence.

"It's an awesome experience to realize we are seeing the glow of distant worlds," Charbonneau says of the new planet, named TrES-1.

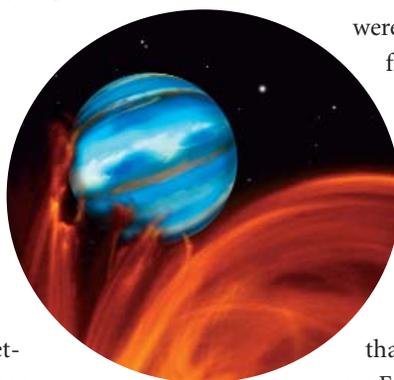
Hints that TrES-1 existed first came from a network of three small-aperture, visible-light telescopes known as the Transatlantic Exoplanet Survey. This ground-based network is designed to spot planets orbiting bright stars. Further study of the newly discovered planet was then turned over to astronomers using the Spitzer and other instruments.

During its orbit, as it crosses periodically in front of its parent

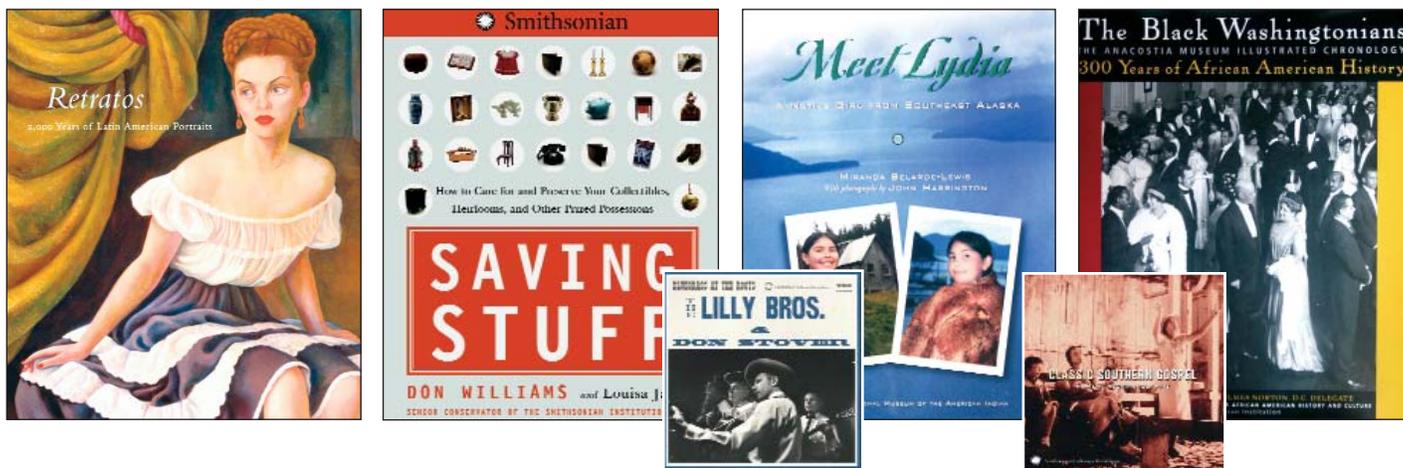
star, TrES-1 blocks a portion of that star's light. Similarly, the star appears to dim again as TrES-1 disappears behind it and the reflected light of the planet is blocked. Through observations of variations in the star's brightness, Charbonneau and his team were able to tease out the faint signal of the planet from the bright light emitted by the parent star.

Infrared observation of extrasolar planets offers distinct advantages. In visible light, the star outshines the planet by a factor of 10,000. In infrared light, the star is only about 400 times brighter, making it easier to pick out the planet's faint light.

Charbonneau and his colleagues determined that TrES-1 has a temperature of about 1,450 degrees Fahrenheit. They also calculated the planet has a reflectivity of 31 percent, meaning that it absorbs the majority of the star's light that falls on it.



This artist's concept of TrES-1 shows it orbiting a mere 4 million miles from its sunlike star. (Illustration by David Aguilar)



**Retratos: 2000 Years of Latin American Portraits**, by Elizabeth P. Benson [et al.] (University of Washington Press, 2004, \$24.95). This richly illustrated book is the catalog accompaniment to a groundbreaking exhibition that explores Latin American art and history through portraiture. Both book and exhibition were organized by the Smithsonian's National Portrait Gallery, the San Antonio Museum of Art and the El Museo del Barrio in New York.

**Saving Stuff: How to Care for and Preserve Your Collectibles, Heirlooms and Other Prized Possessions**, by Don Williams and Louisa Jaggar (Fireside Books, 2005, \$16). The most comprehensive book on preserving every type of collectible—from the sentimental to the valuable—co-written by a senior conservator for the Smithsonian Center for Materials Research and Education.

**The Black Washingtonians: 300 Years of African American History**, foreword by Eleanor Holmes Norton (Wiley Publishers, 2004, \$40). A comprehensive and authoritative history of African American life in the nation's capital from the Smithsonian's Anacostia Museum and Center for African American History and Culture.

**Meet Lydia: A Native Girl From Southeast Alaska**, by Miranda Belarde-Lewis (Council Oaks Books, 2004, \$15.95). Join Lydia, a Tlingit girl living in southeast Alaska, as she makes and wears ceremonial clothing, dances in a Native festival, fishes for salmon and shows what a Tlingit kid's life is really like. This children's book is the third in a series that profiles young American Indians.

**The Price of Freedom: Americans at War**, edited by Dik Daso (Marquand Books, 2004, \$16.95). A series of essays on Americans at war, inspired by the new exhibition of the same name at the Smithsonian's National Museum of American History, Behring Center.

**Folkways: The Original Vision, Songs of Woody Guthrie and Lead Belly** (Smithsonian Folkways Recordings, 2005, \$15). Twenty-six digitally remastered tracks, along with expanded notes that provide insight into the lasting impact of the music of Woody Guthrie and Lead Belly.

**Bluegrass at the Roots: The Lilly Brothers and Don Stover** (Smithsonian Folkways Recordings, 2005, \$15). Vocal harmonies and classic banjo from

1961 make this milestone recording honest, first-class bluegrass.

**Classic Southern Gospel From Smithsonian Folkways** (Smithsonian Folkways Recordings, 2005, \$15). From the Smithsonian Folkways archives, some of the best in bluegrass gospel and country gospel by Bill Monroe, Doc Boggs, Doc Watson, the Country Gentlemen and other roots-music icons.

**Songs and Stories of Grand Canyon** (Smithsonian Folkways Recordings, 2005, \$15). A musical mosaic of local songs and stories by people who call the Grand Canyon their home. From the Folkways Recordings series Authentic Voices From America's Best Loved Places.

*Books listed on Pages 14 and 15 can be ordered through online book vendors. They also can be purchased in many bookstores nationwide.*

*Recordings can be ordered from Smithsonian Folkways Mail Order, Smithsonian Folkways Recordings Dept. 0607, Washington, D.C. 20073-0607. To order by phone, call (800) 410-9815 or (202) 275-1143.*

## Gilbert Stuart

By Carrie Rebora Barratt and Ellen Miles  
(Metropolitan Museum of Art Series, Yale  
University Press, 2004, \$65)

In the decades just after the American Revolution, American painter Gilbert Stuart (1755-1828) captured for posterity the portraits of the founders of a new nation. His masterful images of George Washington, Thomas Jefferson and John Adams have become the world's accepted renditions of these early presidents.

Now, a new book, *Gilbert Stuart*, by National Portrait Gallery Curator Ellen Miles and Carrie Rebora Barratt, curator of American paintings and sculpture at the Metropolitan Museum of Art in New York, offers a vivid look at this complex American artist and his career and evolution as a portraitist.

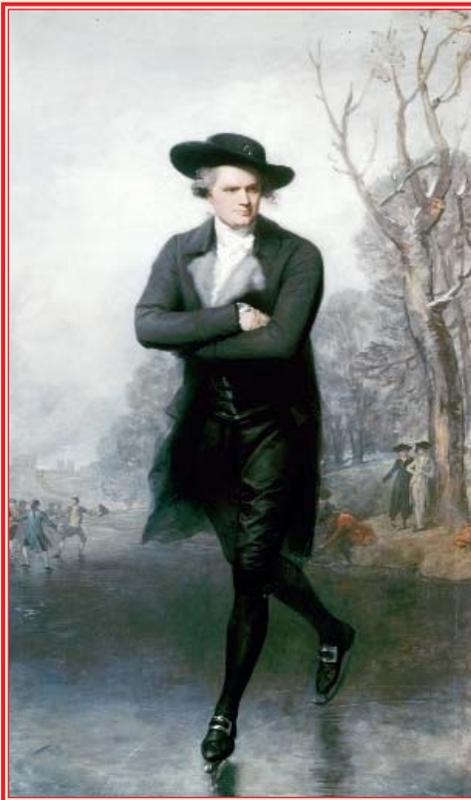
Stuart, as the authors point out, was charming and cantankerous, tolerant and opinionated, curious and dogmatic, easily offended but resilient, articulate and verbose. He commanded high prices for his portraits but constantly teetered on the verge of bankruptcy.

Extremely prolific—painting more than 1,000 portraits in his lifetime—he often failed to finish works, especially if the sitters annoyed or bored him. Ranked among the best-known of American portraitists, Stuart spent half of his life living and working under British rule.

“Stuart is, indeed, a painter for whom there are as many tales as pictures,” write Miles and Barratt. As a portraitist, “he was renowned for his aptitude in conveying sentience and the presence of a soul.”

Stuart talked incessantly with his sitters. “I should like to sit for Stuart from the first of January to the last of December,” wrote 90-year-old John Quincy Adams, “for he lets me do just as I please and keeps me constantly amused by his conversation.”

*Gilbert Stuart* is published in conjunction with the exhibition “Gilbert Stuart,” organized by the Smithsonian’s National Portrait Gallery and the Metropolitan Museum of Art. The 338-page volume includes nearly 100 full-page photographic reproductions of Stuart portraits supplied by museums and owners of the works from around the world.



“The Skater (William Grant),” oil on canvas, 1782, by Gilbert Stuart

Organized chronologically, the book follows Stuart’s life of travel, training and painting from 1775 to 1828. Chapters focus on the cities and countries where Stuart worked and studied, including Newport, R.I.; Scotland; London; Dublin; New York; Philadelphia; Washington, D.C.; and Boston.

One section of *Gilbert Stuart* is devoted to 14 of Stuart’s celebrated portraits of George Washington. The famous full-

length “Lansdowne” portrait of Washington in a black velvet cloak, rapier in his left hand and right arm outstretched in an oratorical pose, has been called Stuart’s grandest American accomplishment. Miles and Barratt offer many details of Stuart’s interactions with the first president during the creation of these much-sought-after works.

A second account from *Gilbert Stuart* involves the athletic William Grant, who arrived at a London studio where Stuart was working and quipped that “the day was better suited for skating than for sitting for one’s portrait.” This comment sparked an excursion that has become legend. Grant appears in his portrait—known popularly as “The Skater”—with arms crossed, hat askew, skating in a park with carefree ease in a double-breasted suit. The portrait enjoyed popularity, critical praise and debate for years.

But not all of Stuart’s relations with his sitters were so smooth. Ireland’s Earl of Clonmell argued with Stuart over portraits of himself and his children and came to blows with the artist. “I have had a picture painted by Stuart, and lost a front tooth,” Clonmell wrote in his diary.

“At a time when portraits were used in the United States to celebrate national achievements and public heroes, as well as the self-aware experiences of private individuals, Stuart set higher standards in portrait painting for his sitters, his colleagues and his students,” Miles and Barratt write.

“By examining his work city-by-city and portrait-by-portrait,” they continue, “we hope to re-engage an interest in the interconnection between artist and sitter, between sitter and society, and between artist and politics, connections that characterize the first decades of a new nation.”

—Daniel Friend

## *A piece of the Park Forest meteorite lands at the Smithsonian*

With a fiery flash and thunderous bang, a meteorite some estimate was the size of a minivan exploded above the Chicago suburb of Park Forest near midnight on March 26, 2003. Large and small chunks of the space rock showered down upon houses, cars and streets. One piece pierced the roof of the Park Forest Fire Station. A five-pound chunk smashed a bedroom mirror on the second floor of a steelworker's house.

Next morning, Meenakshi Wadhwa, a planetary scientist at the Field Museum of Natural History



in Chicago, rushed to Park Forest to barter for meteorite specimens with residents alongside professional rock dealers planning to sell them on the Internet. Wadhwa purchased nearly 6 pounds of the Park Forest meteorite for the Field Museum. The meteorite is a chondrite, the most common meteorite type.

Wadhwa sent one of her specimens—a large piece excavated from someone's backyard—to the Department of Mineral Sciences at the Smithsonian's National

Museum of Natural History to be cut and expose its interior. Using a rock saw with an abrasive, meteorite blade, Smithsonian Collections Manager Linda Welzenbach and Museum Preparator Timothy Rose made three parallel

slices through the stone. A center slice, an inch-and-a-half thick and weighing 432.65 grams, was purchased by the Smithso-

nian Institution from the Field Museum.

"Acquiring this specimen was a unique opportunity because it is straight from outer space," Welzenbach explains. Most meteorites lie around on Earth for countless years before they are recovered. After prolonged exposure to water and weather, their iron grains start to rust. "A freshly fallen meteorite can give more accurate data to scientists about its formative history," Welzenbach says.

Welzenbach has removed tiny pieces of the Park Forest meteorite and created a number of slide-mounted, 30-micron-thick samples for study. "Polished down to 30 microns, a sample becomes transparent, enabling a detailed study of the meteorite's mineralogy and grain structure." Samples of this chondrite meteorite are available to qualified scientists worldwide.

"The Park Forest meteorite is fabulously unique," Welzenbach says. "It is one of three meteorite falls we've acquired in the last decade, and the only other domestic fall since the 1992 Peekskill, N.Y., meteorite."

—John Barrat

**Linda Welzenbach displays the Smithsonian's piece of the Park Forest meteorite. (Photo by James Di Loreto)**

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