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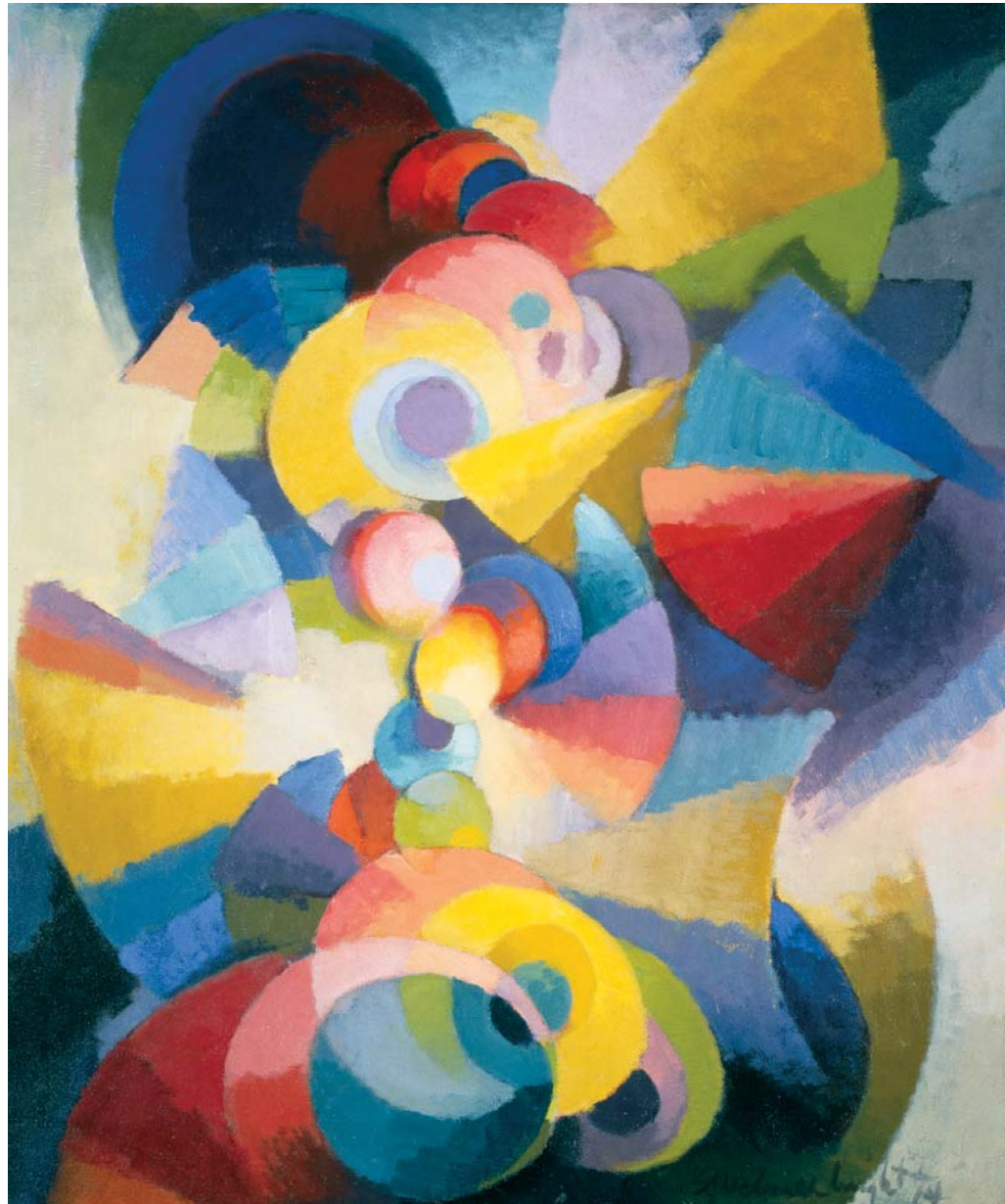
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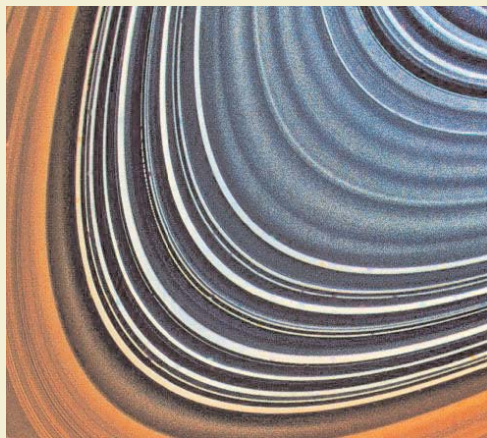
EASTER ISLAND STATUE



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Exploring the planets. When the ancient Greeks observed that some shiny celestial bodies moved across the sky differently than other stars, they named them “planetes,” or wanderers. For centuries afterward, astronomers were occupied with solving the



An image of the rings of Saturn with computer-generated color

mystery of planetary movement. Today, modern astronomers are still scrutinizing the planets with high-tech telescopes, orbiters, landers, probes and vehicles—such as the two rovers now on the surface of Mars. Just how much we know and what mysteries remain regarding each of the planets in our solar system is spelled out in “Exploring the Planets,” a Web site from the Smithsonian’s National Air and Space Museum. Earth, Mercury, Mars, Venus, Neptune, Jupiter, Pluto, Saturn and Uranus each have a special section on this site that is filled with facts, images and other details. Information on

comets, asteroids and planetary satellites, or moons, also is included here, along with a concise history of planetary science, descriptions of the many instruments used in its study and links to other sites on the Web devoted to the study of the planets.

—www.nasm.si.edu/research/ceps/etp

Wall Street hedcuts. When the Wall Street Journal was in the midst of a redesign in 1979, staff artist Kevin Sprouls devised a new technique of replicating photographs by hand that did not disrupt the paper’s “gray and wordbound” appearance. His stipple, or dot-laying, technique produced pictures that resemble the engravings on stock certificates and currency. Today, the distinctive “hedcut,” or dot-drawing, portraits used in the Wall Street Journal are a widely recognized American icon. In 2002, the Wall Street Journal donated a group of hedcuts, many depicting contemporary American business leaders, to the Smithsonian’s National Portrait Gallery. The Web site “Picturing Business in America” highlights this donation by exploring the development, technique and implications of the Journal’s hedcuts. Also featured are hedcuts and biographies of people whose contributions to American business and culture have been covered by the Wall Street Journal during the last quarter-century.

—www.npg.si.edu/exh/journal



A hedcut from the Wall Street Journal of Jerry Yang, co-founder of Yahoo!

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On the cover: The title of American painter Stanton Macdonald-Wright’s 1914 oil-on-canvas painting “Conception Synchromy” alludes to the musical analogy that supported his theories of color. The term synchromy literally means “with color” just as symphony means “with sound.” This painting, from the permanent collection of the Smithsonian’s Hirshhorn Museum and Sculpture Garden, will appear in the upcoming exhibition “Visual Music: 1905-2005.” See story on Page 3.



Smithsonian
Institution

Exhibition traces music as an inspiration for visual art in the 20th century

Swirling in a kaleidoscopic array of shapes, trapeze acrobats and pastel colors, “Capriccio Musicale,” a 1913 painting of the circus by Russian artist Daniel Vladimir Baranoff-Rossiné, is about as far removed from a still-life painting as one can imagine.

Like the circus itself, the artwork sweeps viewers up in a sensual mix of movement and color, straining at the confines of its two-dimensional canvas. It is no surprise to learn that Baranoff-Rossiné later laid down his paint brushes to experiment with colored-light projections, creating visual concerts and performances that had as much in common with music as they did with painting.

Baranoff-Rossiné is just one of a number of painters whose adventurous attempts to capture music in visual art will be featured next year in the exhibition “Visual Music: 1905-2005.” Assembled by the Smithsonian’s Hirshhorn Museum and Sculpture Garden and the Los Angeles Museum of Contemporary Art, the exhibition will bring together artworks from the last 100 years that evoke musical sound, emulate musical composition and even venture outside the confines of conventional media to create transcendent experiences.

Color music

“Few people realize the impact music has had on modern visual art,” explains Judith Zilcher, curator emeritus at the Hirshhorn Museum and Sculpture Garden. “At the dawn of the 20th century, visual artists believed that music was the most liberated and liberating form of creative expression,” she says. They “wanted to create a similar aesthetic in the visual arts



“Capriccio Musicale,” painted in 1913 by Russian artist Daniel Vladimir Baranoff-Rossiné, one of a number of artworks that attempt to capture the essence of music, is part of the upcoming exhibition “Visual Music: 1905-2005.”

and began creating abstract, vibrantly colored dynamic paintings.” Critics labeled these new works “visual music” and “color music.”

To capture the music of the circus in “Capriccio Musicale,” for example, Baranoff-Rossiné inscribed the score for the opening measure of Franz Liszt’s “Hungarian Rhapsody No. 2 in C Minor” in the painting’s lower left. A second musical score is in the painting’s upper right.

In “Conception Synchrony,” a 1914 painting by American painter Stanton Macdonald-Wright (see cover), the canvas throbs with bold colors and shapes and is alive with musical motion. Macdonald-Wright helped found a movement of ab-

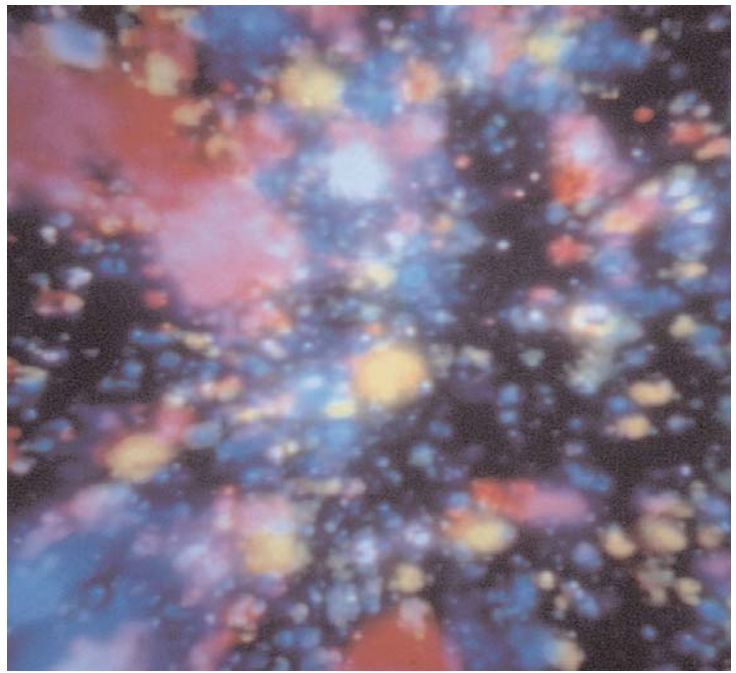
stract painting called “synchronism,” based on an almost scientific belief that colors, like musical notes, stimulate specific emotions in people.

Russian painter Wassily Kandinsky gave his paintings the musical titles “Improvisations,” “Impressions” and “Compositions.” Kandinsky once wrote: “Color directly influences the soul. Color is the keyboard, the eyes are the hammers, the soul is the piano with many strings.”

Beyond painting

As the 20th century progressed, many artists ventured beyond the two-dimensional realm of painting, which they be-

(continued)



lieved limited their ability to capture music's emotional impact. Many were seeking an experience of synaesthesia in their artworks—a heightened state of perception where the senses become interchangeable and music can be seen and colors heard.

“The medium of painting could not contain all the concepts that early abstract artists wanted to explore,” says Kerry Brougher, the Hirshhorn’s director of art and programs and chief curator. Brougher is a co-curator of the “Visual Music” exhibition. “This led to experimentation in cinema, light projections and color organs and eventually to performance, video and digital media.”

Brougher and Zilczer, with colleagues Jeremy Strick and Ari Wiseman of the Museum of Contemporary Art in Los Angeles, have spent the last three years working to bring examples of many types of visual music to the galleries, screening rooms and listening stations that will make up “Visual Music: 1905-2005.”

One gallery, for example, will hold a working instrument that generates light projections. Created in 1959 by Danish light artist Thomas Wilfred and commis-

sioned for the New York headquarters of the Clariol Corp., this “lumia instrument” will project a colorful light show on a screen in its exhibition gallery.

‘Visual Music’

The broad scope of “Visual Music: 1905-2005,” which spans a century and includes artists from around the world, is a reflection of the knowledge and experience both Zilczer and Brougher have brought to the study of modern art at the Hirshhorn Museum.

Zilczer’s early interests involved research on musical analogy in the works by early 20th-century American painters who belonged to photographer Alfred Stieglitz’s circle. Zilczer has worked on related exhibition concepts at the Hirshhorn since the mid-1970s.

Brougher, curator of the 1996 exhibition “Hall of Mirrors: Art and Film Since 1945” at the Los Angeles Museum of Contemporary Art, has long been interested in the interconnections among painting, film and technology. “Technological breakthroughs,” Brougher says, “played an important role in advances in visual music.”

For example, Brougher says, in the 1940s and 1950s, California filmmakers John and James Whitney were building simple analog computers to set colored light in motion. Their work was the precursor to the rock ‘n’ roll infused light

Top left: Leo Villareal’s “Lightscape” is an immersive environment in which viewers are invited to sit back on a large couch, listen to music and watch an ever-changing display of mesmerizing colored lights. “I love making a place for the viewer,” Villareal says. (Image courtesy of the Palm Beach Institute of Contemporary Art)

Top right: Jennifer Steinkamp’s “Swell” (detail) is a computer-generated projection and installation with a soundtrack. (Image courtesy of the Museum of Contemporary Art, Los Angeles)

Right: A computer controls the seemingly infinite array of colored light patterns in Leo Villareal’s “Lightscape” (detail). (Image courtesy of Conner Contemporary Art)

shows of the 1960s. John Whitney's designs were used for the dizzying opening credits of Alfred Hitchcock's 1958 thriller "Vertigo" and inspired Douglas Trumbull's special effects for a sequence in Stanley Kubrick's 1969 film "2001: A Space Odyssey."

In 1990, Brougher visited John Whitney in his Los Angeles studio—a small, dark space filled with computers and sound equipment. At the time, John Whitney was setting his own musical compositions to small points of moving light. "Even then, it was apparent that this new technology of digitalization was leading visual music in a new direction," Brougher says.

Films by James and John Whitney, Jordan Belson, Len Lye and Oskar Fischinger will be playing continuously in the galleries of "Visual Music: 1905-2005."

Immersion art

Multimedia and multisensory environments and high-tech light projections in the exhibition, created by a new generation of contemporary artists, including Jennifer Steinkamp and Leo Villareal, will explore the present-day quest to capture music visually.

Computer programs play a big role in the works of Villareal, whose mesmerizing creations were recently described by one art critic as "psychopharmaceuticals."

A small computer server at one end of Villareal's 2004 creation "Horizon (24)," for example, controls three 24-foot-long plexiglass tubes in which light-emitting diodes flash 225 different light patterns in some 16 million combinations of color. Villareal programs and previews his electronic creations on a computer in his New York studio.

In a recent installation of his work "Lightscape" in Palm Beach, Fla., visitors were invited to sit back on a giant couch and look up to watch bands and blips of blue, red, pink and orange light flash and move inside a large light box on the ceiling. The lights were synchronized with a soothing rhythmical soundtrack.

"I am interested in creating immersive experiences," Villareal recently said in a magazine interview. "I like making art you get inside of. Sound is very helpful in producing this effect.... I love making a place for the viewer." Visitors to "Visual Music: 1905-2005" will experience "Lightscape."

Interpretative synthesis

"Visual Music: 1905-2005" will be complemented by an exhibition catalog containing essays that examine theories of color music, the contributions of composers and musicians, color music and abstract film on the West Coast, the history of color organs and light projections, and the influence of visual music on contemporary art.

"By providing the first interpretative synthesis of the subject of visual music," Zilczer says, "this exhibition will deepen our understanding of the cultural history and art of our time."

It should also offer a look to the future. In beautiful and inventive ways, visual artists will be pursuing the elusive aesthetic of music for centuries to come. ❖

—Hope Cristol and Kristen Hileman

The exhibition "Visual Music: 1905-2005" will be on view next year at the Los Angeles Museum of Contemporary Art from Feb. 13 to May 22 and at the Smithsonian's Hirshhorn Museum and Sculpture Garden in Washington, D.C., from June 23 to Sept. 11.

Herds of hungry deer spell change for U.S. forests

By John Barrat
Smithsonian Office of Public Affairs

Something is squirming inside a white athletic sock marked with the number 16 and hanging from the belt of biology student Jessica Hollis. Standing in the deep woods of the Smithsonian National Zoological Park's 3,200-acre Conservation and Research Center in the Shenandoah Valley near Front Royal, Va., Hollis has four other socks hanging from her waist.

Gently, National Zoo Biologist William McShea reaches into sock 16 and pulls out a medium-size brown bird. "Wood thrush," he says matter-of-factly before turning the bird over and blowing on the speckled down of its belly. "Female with a brood patch. She's sitting on eggs somewhere nearby."

After the bird has been banded and its sex and species recorded, McShea opens his hand and the thrush disappears into

the woods and back to her nest. A casual observer might never guess these biologists are actually studying white-tailed deer and their impact on the forests of the Shenandoah Valley.

Migratory bird populations in forests in the Eastern United States have been significantly stressed in recent years by too many deer eating forest plants that provide nesting cover.

The thrush was one of a number of birds captured during a recent survey conducted inside a 10-acre plot surrounded by an 8-foot-high fence erected in 1990 to keep deer out. McShea—who maintains six deer-free forest plots and six unfenced control plots in the Shenandoah Valley, all in forests within 20 miles of Front Royal—also is keeping track of the variety and number of plants and small mammals living inside these "oases."

Remarkable difference

After 14 years, the appearance of the foliage on the forest floor inside the fences is remarkably different from that just outside the fences. Inside, amid the trunks of mature trees, a new generation of young oak, redbud, ash, tulip poplar, hickory and dogwood stand as high as 8 feet.

Amid these woody saplings, a lush variety of other native plants has sprung up, including wild yam, jack-in-the-pulpit, pink lady-slipper orchids, turk's cap lily, spice bush and Solomon's seal.

Because of its protective density, the number of migratory birds living in McShea's oases has doubled—Kentucky warblers, indigo buntings, worm-eating

warblers, oven birds and flycatchers abound.

"Low-dwelling birds need cover. Otherwise, predators such as foxes and bobcats find their nests too easily," McShea says. "A dense understory also provides birds with seeds, insects and small animals, such as salamanders."

Outside the fences, there is little or no understory in which birds can hide. The ground is thinly covered with an invasive garlic mustard plant, which deer don't like. Nearly every other plant on the forest floor has fallen victim to the relentless appetite of white-tailed deer.

An overabundance

When McShea began his experiment in 1990, deer populations were just beginning to explode in the Eastern United States. Today, they have reached alarming numbers. Experts estimate there are now some 25 million to 30 million deer living



Left: A white-tailed deer at the National Zoo's Conservation and Research Center near Front Royal, Va. (Photo by Lisa Ware)

Top right: William McShea in the field

Right: Biologist Chad Stewart stands just outside a fence that keeps deer out of a 10-acre forest study plot at the National Zoo's Conservation and Research Center. A new generation of young trees is thriving inside the fence. (Photo by John Barrat)

in the United States, up from 500,000 a century ago.

While millions of suburbanites have watched deer decimate their neighborhood parks, vegetable gardens and backyard philodendron, McShea has been meticulously documenting, quantifying and analyzing the deer's impact on the forest ecosystems of the Shenandoah Valley. For governments, wildlife managers and others seeking answers to this complex problem, McShea's research may someday provide the guideposts and solutions to effective long-term deer control.

Today, however, there are no easy answers. A number of townships and communities in the East, despite the objections of animal-rights groups, have begun hiring sharpshooters to thin out deer herds.

"But once you begin shooting deer to thin out the herds, it must be done every year forever," McShea points out. "Deer populations rebound very quickly. A doe that usually has a single fawn each year, can have three the year after a herd has been thinned."

In addition, McShea says, in overpopulated situations, deer are always looking for new territory. "Thinning them out in one area creates a vacuum into which deer from neighboring areas swiftly move," he says.

Contraception

Recently, McShea has been conducting studies with a new permanent contraceptive that shows promise for population control of deer, when used in conjunction with other management practices.

At the Conservation and Research Center, McShea has captured 40 female deer, injected them with the contraceptive and

fitted 20 with radio collars. McShea and his assistants are now tracking the deer to monitor their health, movement and behavior and to see if they reproduce.

But with no solution for deer management on the horizon in the Eastern United States, dramatic change seems to be the destiny for many forested areas. Though deer are not the only cause of forest alteration, in national and state forests, where human development is not a factor, they are having a major impact.

"Today, deer are the landscape engineers of forest ecosystems of the Eastern United States," McShea says. "Their overabundance is shaping forest regeneration and, in turn, causing negative consequences for many native animals and plants whose presence we consider valuable." ❖



"Today, deer are the landscape engineers of forest ecosystems of the Eastern United States," McShea says.



Spectacular African ceremonial costume slowly regains its former beauty

By Michael Lipske
Special to Inside Smithsonian Research

One central principle guiding the work of physicians—“First, do no harm”—applies equally to conservators who regularly handle and repair priceless museum artifacts.

With this in mind, Stephanie Hornbeck, a conservator at the Smithsonian’s National Museum of African Art, is gingerly pushing a curved sewing needle through a pre-existing hole in a leopard-skin patch. The patch, about 3 inches square, is part

of a spectacular ceremonial warrior’s costume from Liberia that is spread across a table in the museum’s Conservation Lab. It is a colorful and dazzling patchwork of wool, leather, leopard skin and antelope hide.

Deftly, despite her plastic gloves, Hornbeck gently pulls tight the trailing cotton thread and the seam comes together.

On loan to the Smithsonian for safe-keeping since 1982, the costume “is one of the most spectacular of its kind and one of few in existence,” Hornbeck explains. “It is an irreplaceable part of the cultural patrimony of Liberia.” Hornbeck is repairing it in preparation for its display in an exhibition next year.

Consisting of a tunic, trousers and headdress, the garment was used in the last century by the Loma people of Liberia. Worn by a Korkia, or ritual commander-in-chief, the outfit was a symbol of status that bestowed mystical powers upon its wearer.

Testing materials

The costume has, however, seen better days. In addition to its separating seams, the costume has suffered numerous tears and bears the scars of hungry insects.

To fix holes in the costume’s many brown wool patches, Hornbeck first selected several woven fabrics. Next, she heated a swatch of each fabric for 28 days at 140 degrees Fahrenheit in a small gray oven in her lab. Each swatch was then placed in a glass beaker that also contained delicate strips of silver, copper and lead.

Heating accelerates the release of harmful gases from dyes and other chemicals in



cloth, she explains. Swatches whose gases caused corrosion of the metal strips in their beakers were rejected for use in repairing the costume. It's a "a low-tech but informative test," she says.

In the end, Hornbeck chose two fine cotton shirting fabrics to repair holes in the wool. The use of cotton fabric repairs will differentiate the repairs from the original wool material. She also tested the working properties of five different adhesives and fabrics for use as a backing for the leather parts of the costume.

Using leather scraps obtained from a local upholsterer, she practiced applying different adhesives and backings to observe which best emulated the costume. Based on her observations, Hornbeck will attach backings of flexible spunbonded polyester fabric, with the aid of adhesive film, to some of the torn areas of leather.

To patch holes in the antelope hide and leopard skin, "I'll likely use faux fur shaved down and colored with acrylic paints that match the rest of the costume," she continues.

The use of faux, rather than authentic fur, stems partly from a second principle of conservators. "All repair should always be able to be distinguished from the original material," Hornbeck says. An expert studying the costume years from now should have no trouble discerning Hornbeck's work from the work of its creator.

Amulets

Three pairs of large, frightening, black talons from a still-to-be-identified bird of prey are sewn to the front of the headdress. Covering the headdress are dozens



Far left: Using a micro-spatula and heat-activated film, Conservator Stephanie Hornbeck reattaches a leather appliqué to the tunic of the costume as Curator Christine Mullen Kreamer looks on.

Above: Stephanie Hornbeck carefully examines the contents of one of the amulets adorning the headdress of the costume. (Photos by Eric Long)

of square and triangular leather packets, each finished in the same red cloth or fur as that found on the rest of the costume. The packets are sealed, but where one has come unstitched, a corner of paper that protrudes is covered in what looks like Arabic script.

"Talismanic amulets" is how National Museum of African Art Curator Christine Mullen Kreamer describes the packets. West African artists have traditionally created amulets that contain verses from the Koran or, sometimes, "pseudo-text" simulating Arabic writing. In either case, Kreamer says, the amulets "reference the power that is associated with Arabic script and, by extension, the word of God as reflected in the Koran."

The costume's checkerboard pattern also represents a form of talismanic protection for its wearer, Kreamer says. Add the predatory strength implicit in leopard fur and raptor claws and the outfit leaves no doubt about the Korkia's power.

"He's proclaiming his political and reli-

gious authority by wearing it, and he's also protecting himself," says Kreamer, who places the costume in a long line of African art incorporating script and graphic symbols.

In 2005, the costume, supported on a custom-made padded lining, will go on view in the exhibition "Inscribing Meaning: Writing and Graphic Systems in African Art." With Kreamer as lead curator, the exhibition will bring together 90 artworks, traditional and contemporary, tracing the story of writing in African art.

"This is definitely a challenging project," says Hornbeck, who, with the assistance of interns, began her research and repairs on the costume last November.

Thanks to a mix of science and craft, and a few thousand stitches by hand, the costume of the Loma Korkia will soon be working its magic on museum visitors. ❖

Columbia's cockpit still soars in Air and Space Museum's collections

Standing 6 feet, 3 inches tall, to stretch upright inside the cramped cockpit of the Space Shuttle Columbia was not an option for Smithsonian National Air and Space Museum Photographer Eric Long. Lugging a cumbersome large-format camera, trying not to bump into the 2,000-plus switches that covered the walls and ceiling of the cockpit, and working under tight time constraints, Long and colleague Mark Avino came away with a remarkable, one-of-a-kind image of Columbia's cockpit.

The two Smithsonian photographers were granted rare access to the Space Shuttle Columbia in February 2001 as it was being upgraded in a hangar in Palmdale, Calif., by the Boeing Co. Exactly two years later on Feb. 1, 2003, Columbia disintegrated and fell to Earth in flames. Since that disaster, the photograph has been drawing many

emotions from visitors to the National Air and Space Museum, ranging from curiosity to awe and solemnity.

Rare opportunity

It is an image that “calls to mind a cityscape at night seen from a mountaintop. It's a beautiful universe of lights, with patterns of color and its soft glow,” says Valerie Neal, curator of contemporary space flight at the museum. It was Neal who secured the necessary permissions to photograph the Columbia. She accompanied the photographers to California.

Looking at the photograph today, Neal says that she realizes what a rare opportunity it was to be granted access to Columbia. “I feel a real pain of loss, not only for the crew, but for the vehicle itself. Columbia was the oldest of the space shuttle fleet—a pioneering vehicle that was to be

given to the National Air and Space Museum by the National Aeronautics and Space Administration and put on display with other pioneering craft trusted to the museum, such as the Wright brothers' Flyer, the Spirit of St. Louis and the Bell X-1.”

On the day following the Columbia tragedy, Neal had the cockpit photo and a picture of Columbia's last crew enlarged and put on view next to a scale model of Columbia, which had long been on display in an exhibition on America's space shuttle program.

“That photograph enhances the exhibition and gives people a different perspective on the shuttle...context on where the crew were and what their surroundings were like during their last moments,” Neal says. “People knew Columbia from the outside. Few have seen it from the inside.”

Getting the shot

Long and Avino's shot of Columbia was the final image taken for the book *At the Controls: The Smithsonian National Air and Space Museum Book of Cockpits*, published by Firefly Books. They shot the photo with a 4-by-5-inch format Cambowide—an architectural camera.

“We decided to shoot Columbia's cockpit with the widest angle lens available, using the largest format camera we could find,” Long explains. “Our aim was to duplicate the sensation of being at the controls inside the cockpit.” The Cambowide's 120-degree lens gives the impression of roominess—without distortion—even in the most confined spaces.

Fortunately, the electricity inside Columbia was powered up at the time of their shoot. Glowing computer screens,





control panels and other interior lights provided adequate illumination for a 90-second exposure.

“The cabin was lit with fluorescent lights, which we diffused with transparent mylar gels and black paper,” Long explains. “The fluorescent light added fill but did not overpower Columbia’s computer screens.”

Lighting is what makes the cockpit photograph so crisp, Long explains, noting that he and Avino spent more than two hours just setting up for the shoot. Boeing gave them only three hours.

Above: The photo of Columbia’s cockpit taken by Eric Long and Marc Avino

Left: Smithsonian photographers Eric Long, left, and Marc Avino, center, accompanied by a National Aeronautics and Space Administration technician, set up their camera inside Columbia’s cockpit. (Photo by Eric Long)

“By measuring the closest and farthest points in the cockpit, we were able to match these distances to the f-stops on the lens barrel of our camera. In this way, we made sure that the aperture we were using was sufficient to cover the distance needed,” Long points out. “This was not the kind of opportunity that, if we made a mistake, we could go back and re-shoot.”

Long and Avino took their first shot with Polaroid film, producing a black-and-white print that allowed them to preview the image and make changes to lighting and composition. The Polaroid also produced a black-and-white negative, allowing “us to examine, through a loupe, the sharpness of the image. This is essential when zone focusing the lens and determining depth of field,” Long explains.

As if working in the tight cockpit under time constraints was not enough, Long and Avino took the image while shuttle engineers were knocking around inside the spacecraft. “Technicians in the bay

were jumping from side to side,” Long recalls. “Every time they moved, the whole shuttle would move.”

The 90-second exposure was taken on Kodak 64T tungsten film. Somehow, the photographers came away with a perfect shot. “I haven’t seen another like it anywhere,” Long says.

Mementos

At the museum, in the days following the Columbia tragedy, tourists from more than 50 countries left nearly 2,000 messages in condolence books that Neal set out. A table near the Columbia exhibition filled up daily with yellow roses, teddy bears, personal notes, small angels, prayer cards and many other mementos.

“Many of the visitors have shown a keen curiosity about how complex Columbia’s cockpit was,” Neal says. “They seem fascinated to get an inside look.” ❖

—Jay Fletcher and John Barrat

Tiger cubs. A litter of three Sumatran tiger cubs was born at the Smithsonian's National Zoological Park in May. Zoo staff had the mother, a Sumatran tiger named Soyono, on a pregnancy watch for several weeks before she gave birth to the litter. Fewer than 500 Sumatran tigers are believed to exist in the wild and 210 more live in zoos around the world. The cubs represent the third generation of Sumatran tigers born at the National Zoo.

Observatory director. Charles R. Alcock, 53, the Reese W. Flower professor of astronomy and astrophysics in the Department of Physics and Astronomy at the University of Pennsylvania, has been appointed director of the Harvard-Smithsonian Center for Astrophysics in Cambridge, Mass. Alcock is the principal investigator for the Taiwan-America Occultation Survey, a project that is taking a census of objects in the Kuiper Belt, located beyond the orbit of the planet Neptune. Alcock's main research interests are mas-



Charles R. Alcock

sive compact halo objects, comets and asteroids.

Carbon dioxide and plants. A recent study by Botanist Bert Drake of the Smithsonian Environmental Research Center and Bruce Hungate of Northern Arizona University suggests that high levels of carbon dioxide in the atmosphere may depress growth in certain plants. Most plants respond to higher carbon dioxide by continuing to grow, sometimes vigorously. Drake and Hungate have discovered, however, that some plants, such as the white milkpea in Florida's oak woodland, is inhibited by sustained high levels of carbon dioxide in the atmosphere. As human activity continues to increase atmospheric concentrations of carbon dioxide, their research raises concerns about its potential impact on plant biodiversity.



These three Sumatran tiger cubs were born at the National Zoo in early May. (Photo by Jessie Cohen)

Archaeology award. Bruce Smith, anthropology curator at the Smithsonian's National Museum of Natural History, has been selected to receive the Society for American Archaeology's Fryxell Medal for Interdisciplinary Research. The medal is awarded annually to an outstanding researcher who has made significant contributions in areas of inquiry that combine archaeology with another discipline. Smith is credited with identifying the Eastern United States as an independent center of agricultural origins in the New World.



A Huey helicopter that saw combat in Vietnam lands on the National Mall in front of the Smithsonian's National Museum of American History. (Photo by Dane Penland)

Helicopter acquisition. A Vietnam combat Huey helicopter was recently acquired by the Smithsonian's National Museum of American History for display in the Vietnam War section of an upcoming exhibition "The Price of Freedom." The Huey 65-10091 was manufactured by Bell Helicopter in 1965 for the U.S. Army and deployed to Vietnam in 1966. The chopper served with the 173rd Assault Helicopter Company and was shot down on Jan. 7, 1967. It was eventually acquired by the Texas Air Command Museum in Fort Worth, which donated the helicopter to the Smithsonian.

Smithsonian anthropologist discovers first hominid fossils at Olorgesailie site

At a well-known archaeological site in Olorgesailie, Kenya, that was first excavated in 1942 by Louis and Mary Leaky, a Smithsonian anthropologist has discovered fragments of the skull of a hominid that lived between 970,000 and 900,000 years ago. The find is significant in that the remains are between 1 million and 600,000 years old, a period of prehistory long recognized as a virtual blank in the human evolutionary record in Africa.

The brain-case fragments, brow ridge and nearly complete temporal bone unearthed in summer 2003 by Rick Potts, director of the Human Origins Program at the Smithsonian's National Museum of Natural History, represent the first human remains found at Olorgesailie. The discovery was announced in the July 2 issue of *Science* magazine.

Their location at Olorgesailie directly links these new fossils to the rich array of hand axes and other human-made stone tools found there.

Since 1985, the Smithsonian's Human Origins Program has directed excavations at the Olorgesailie site in collaboration with the National Museum of Kenya. Researchers there have discovered stone tools and animal butchery sites and are investigating how humans adapted over time to great environmental change.

"Most of our work [at the Olorgesailie site] involves looking for the stone-tool clues of the behavior of these hominids, as we call them," Potts says. "It's something of an emotional discovery to actually see a portion of an individual who lived at the time, who had made one of the hand axes you yourself have excavated



Rick Potts, left, and anthropologist Mike Knoll search for evidence of hominids in Olorgesailie, Kenya. (Photo by Chip Clark)

and touched for the first time in nearly a million years."

Potts and his team are in Olorgesailie again this summer to conduct further excavation. Their work can be followed on the Human Origins Program Web site at www.mnh.si.edu/anthro/humanorigins.

Telephone hotline helps scientists learn the secrets of blue crab migration

By water, there are approximately 135 miles between the spot where Maryland's Rhode River empties into the Chesapeake Bay and the spawning grounds of the blue crab at the mouth of the bay in Virginia. For a female blue crab, that's a lot of crawling. Once female crabs mate—and they mate only once in their lives—they must soon migrate to their spawning grounds at the Chesapeake's mouth.

"Whether they walk, swim or both to their spawning grounds is unknown," says Robert Aguilar, a biologist at the Smithsonian Environmental Research Center on the Chesapeake Bay. "The timing, route and mechanisms of their migration are poorly understood."

To aid in the study of the female blue crab spawning migration, Aguilar is enlisting the help of Chesapeake Bay watermen. Monthly from June to October, Aguilar buys several bushels of live mature female crabs and releases them after he has attached to the back of each a numbered plastic tag that offers a "REWARD" if a toll-free phone number is called.

Any crabber who calls the hotline with a crab's tag number, capture date, location and depth earns \$5. The crabber's name is then entered in a \$200 lottery. In any given year, roughly 5 to 16 percent of the crabs that Aguilar tags and releases are called in.

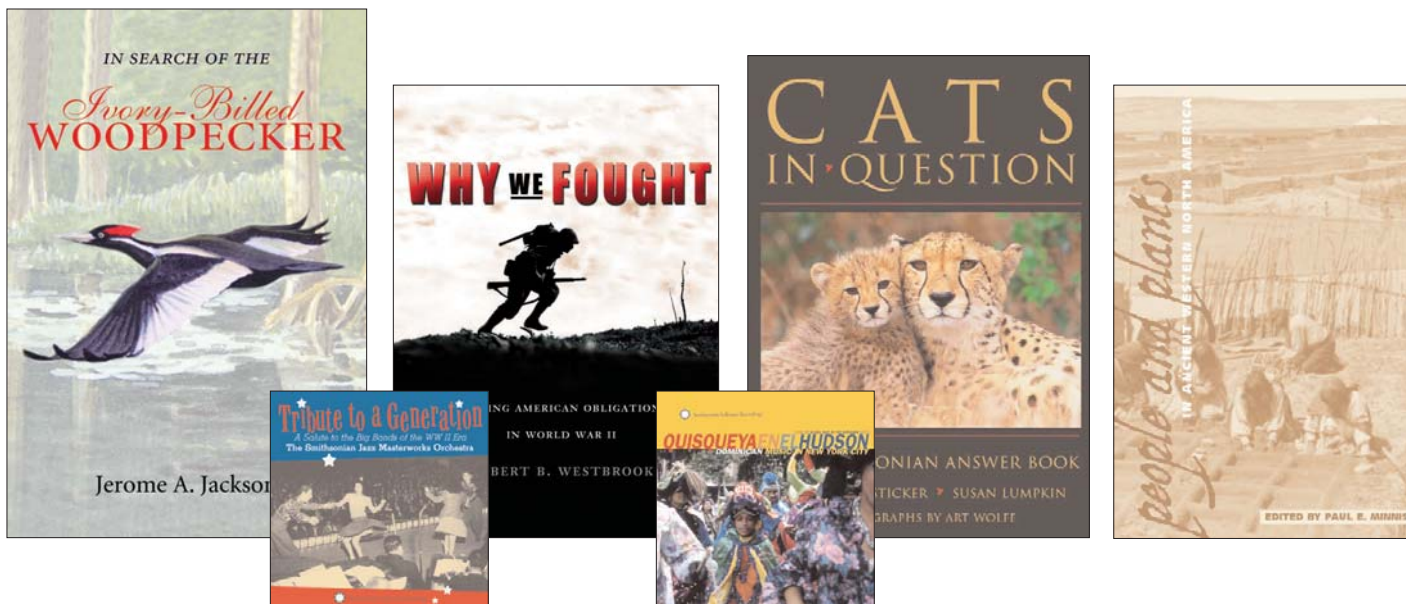


This summer, Aguilar is releasing crabs at points along the western shore, on the Maryland side of the bay at the mouths of the Rhode River, the South River and the York River.

Because Aguilar records where each crab is released, he knows how far a recaptured crab moved, how much time the trip required and in what direction it traveled. "We can then map the timing and route of the mature female crabs as they move to their spawning grounds," Aguilar says.

Data collected since 1999 indicate that most female blue crabs begin their spawning migration in September and October, traveling along the deep areas near the main channel of the Chesapeake Bay.

—John Barrat



In Search of the Ivory-Billed Woodpecker, by Jerome A. Jackson (Smithsonian Books, 2004, \$24.95). The enthralling history of the one bird every serious birder hopes to find, even as the world doubts that it still exists.

Cats in Question: The Smithsonian Answer Book, by John Seidensticker and Susan Lumpkin (Smithsonian Books, 2004, \$24.95). From tigers to tabbies, the most authoritative popular reference on cats in an engaging question-and-answer format.

People and Plants in Ancient Western North America, edited by Paul E. Minnis (Smithsonian Books, 2004, \$34.95). New information on how the prehistoric people of North America used plants in environmentally sustainable ways.

Home Gardens and Agrobiodiversity, edited by Pablo B. Eyzaguirre and Olga F. Linares (Smithsonian Books, 2004, \$40). An exploration of the diverse ways rural and urban home gardens contribute to agricultural biodiversity—from

Cuba to Ethiopia and Ghana and from Venezuela to Vietnam.

Why We Fought: Forging American Obligations in World War II, by Robert B. Westbrook (Smithsonian Books, 2004, \$29.95). A timely and provocative analysis of why Americans chose to sacrifice and commit themselves to World War II.

Tribute to a Generation: A Salute to the Big Bands of the WWII Era (Smithsonian Folkways Recordings, 2004, \$15). The Smithsonian Jazz Masterworks Orchestra pays tribute to Benny Goodman, Duke Ellington, Glenn Miller and many others.

Jibaro Hasta el Hueso: Mountain Music of Puerto Rico by Ecos de Borinquen (Smithsonian Folkways Recordings, 2004, \$15). “Musica jibara” played by a hand-picked group of virtuoso instrumentalists. This CD is a 2004 Grammy Awards nominee.

Blues Highway: Warner Williams Live With Jay Summerour (Smithsonian Folkways Recordings, 2004, \$15). Piedmont blues played by an old-style en-

tertainer on acoustic and electric guitar in a jaunty, rhythmic, finger-picked style.

Quisqueya en el Hudson: Dominican Music in New York City (Smithsonian Folkways Recordings, 2004, \$15). An exciting, fast-paced selection of music from the Dominican Republic that is now widely played in New York City.

Cape Breton Fiddle and Piano Music: The Beaton Family of Mabou (Smithsonian Folkways Recordings, 2004, \$15). When the Beatons play, the dancing feet of family, friends and fans pound out the vibrant rhythms of this tradition-rich corner of Canada.

Books published by Smithsonian Books can be ordered from Smithsonian Books, c/o W.W. Norton & Co. Inc., National Book Co. Inc., 800 Keystone Industrial Park, Scranton, Pa. 18512. To order by phone, call 1 (800) 233-4830.

Recordings can be ordered from Smithsonian Folkways Mail Order, Smithsonian Folkways Recordings Dept. 0607, Washington, D.C. 20073-0607. To order by phone, call 1 (800) 410-9815 or (202) 275-1143.

The World War II Memorial: A Grateful Nation Remembers

Edited by Douglas Brinkley, with a forward by John S.D. Eisenhower (Smithsonian Books, 2004, \$39.95)

Seven words carved into the granite plaza of the new World War II Memorial in Washington, D.C., read simply: “Here we mark the price of freedom.” The words are located in front of a legion of sculpted gilt stars—4,000 to be exact—that shine solemnly against a background of navy blue. Each star represents 100 American soldiers who died during World War II.

Situated between the Lincoln Memorial and the Washington Monument on the National Mall, the World War II Memorial has taken its place among the other great monuments and memorials in the nation’s capital.

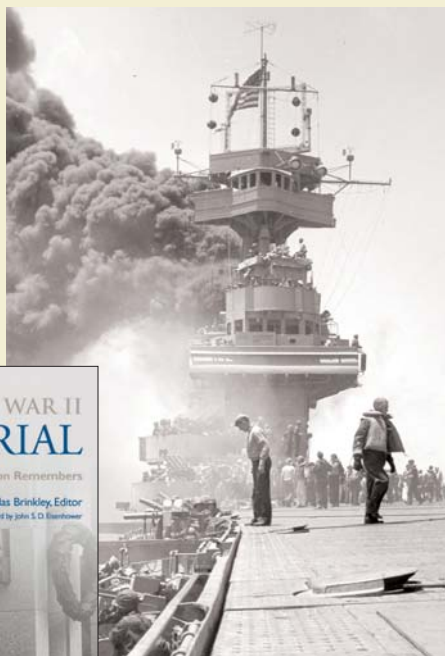
It preserves the memory of a generation of Americans who, in the mid-20th century, during the world’s darkest hours, sacrificed their lives and their self-interest for the greater cause of freedom.

The World War II Memorial: A Grateful Nation Remembers, a new book from Smithsonian Books, is a moving introduction to the magnificent arches, columns, pavilions, fountains, bronze reliefs and inscriptions of the memorial.

Edited by Douglas Brinkley, director of the Eisenhower Center for American Studies at the University of New Orleans, the book opens with the story of the

memorial itself and how it was conceived and built by architect Friedrich St. Florian. More than 100 color images capture the beauty and symbolism of this newly dedicated landmark.

Next, the book focuses on World War II and the meaning behind America’s involvement in the war. In-depth essays by some of America’s finest military histori-



This photograph of the USS Yorktown, shortly after she was

hit by three Japanese bombs on June 4, 1942, is one of many images featured.

ans detail the major campaigns in Europe, North Africa and the South Pacific. Well-known World War II veterans—including Yogi Berra, George H.W. Bush, Sen. Daniel Inouye and former senators Bob Dole and George McGovern—contribute firsthand accounts of their training and battle experiences.

Other sections of *The World War II Memorial* are told by less well-known veterans. Detailed and stirring first-person accounts capture battles at sea, in the air,

in the freezing Ardennes forest, in Japan and in the unforgiving deserts of North Africa.

For example, Stanford Linzey, a Navy seaman from Texas, recalls the Japanese torpedo bombing of his ship, the USS Yorktown, after the battle of Midway in June 1942.

Readers also learn the story of Audie Murphy, America’s most decorated soldier. On Aug. 15, 1943, Murphy and the 3rd Division landed in Southern France. While firing on a German machine-gun nest, Murphy and his friend, Lattie Tipton, saw the Germans wave a white flag. Tipton stood up and was shot and killed. Murphy went berserk, throwing grenades and firing his machine gun, eliminating the German position by himself.

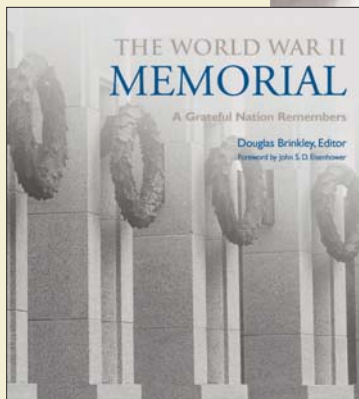
Powerful photographs of numerous battles from Europe to the South Pacific provide a graphic backdrop to the gripping stories of the men and women who lived through the tragedies and victories of the largest conflict in America’s history.

One image shows a catapult officer of the USS Enterprise aircraft carrier clambering up the side of a flaming F6F fighter to rescue the pilot after a raid at Makin Island, Japan, in November 1943.

The role of women in the service and on the home front also is featured prominently in the book. Capt. Laura Ruth Balch, a U.S. Army nurse who received the Bronze Star and the Purple Heart, recounts her experiences in Africa and Italy. Lucille Hoback Boggess, whose two brothers died at Normandy, tells of the effect of the war on her family and her community in Bedford County, Virginia.

The World War II Memorial: A Grateful Nation Remembers is an appreciation of Washington, D.C.’s newest memorial, an informative history book and a sobering reminder of the price of freedom.

—Daniel Friend



After 118 years, an Easter Island sculpture takes its place in the Smithsonian collections

If the massive stone figures that stand sentinel on Easter Island in the South Pacific could speak, “Little Brother” is the name they might fondly call a small wood figure recently donated to the Smithsonian’s National Museum of Natural History.

A few years ago, this 26-inch-tall figure was the property of June L. Green, a U.S. District Court judge who worked in Washington, D.C. After Green died in 2001, her husband donated it to the Smithsonian with a note indicating that it originally belonged to his wife’s great-great-uncle, William Judah Thompson.

Now that was a name that rang bells among anthropologists at the Natural History Museum.

In December 1886, Thompson was a U.S. Navy paymaster aboard the warship *Mohican*. As an agent for the Smithsonian, Thompson collected a number of artifacts

made by the Rapa Nui people of Easter Island. Incredibly, he returned with two of the massive stone figures for which the island has become known.

“As an icon of Pacific culture, the acquisition of these carved stone statues was a real coup for the Smithsonian,” explains Natural History Museum Anthropologist Adrienne Kaeppler. The Rapa Nui collection made by Thompson is “one of the most important Pacific collections in the world.” One of the stone sculptures has been on exhibit at the Smithsonian since its acquisition.

But unbeknownst to Smithsonian staff, Thompson kept one of the small, wooden statues he had purchased. Perhaps it was the figure’s odd smile and wide-eyed expression that persuaded him to hang on to it as a souvenir of his Easter Island expedition.



Knowledge of the uses and significance of these Polynesian sculptures, called “moai miro,” which means “wooden figure,” is sketchy. They are believed to honor gods, spirits and ancestors and may have been worn as pendants by chiefs and other prominent people.

Today, after being handed down through generations of William Judah

Thompson’s family, this figure has been reunited in the collections of the Natural History Museum with other Easter Island artifacts delivered to the Smithsonian more than a century ago.

—John Barrat

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