News & Notes

NASA HISTORY DIVISION
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From the Chief Historian

The year "2007" has a ring of magic for those of us involved in the history of the Space Age. Fifty years ago, events were building toward what some historians now recognize as a watershed in history. The Cold War was well underway, and the United States and the Soviet Union were locked in a perceived missile race that was important for many reasons, not the least being that it made possible the first reach into space. In the United States, the Army Ballistic Missile Agency in Huntsville, Alabama, was testing its Jupiter C rockets—successors to the V-2 and Redstone—under Werhner von Braun and his rocket team. The Navy and Air Force each had its own missile programs, and each wanted to be the first to reach the new "high ground" of space. The Defense Department gave the Navy the go-ahead to attempt the first American entry into space with Project Vanguard.

Meanwhile, the Soviet Union was feverishly testing its first R-7 rockets, with two unsuccessful attempts by July 1957. That same month, the International Geophysical Year began; one of its avowed purposes was to launch a rocket into space to study Earth. On 4 October 1957, the R-7 rocket succeeded in launching the first Sputnik—the "traveling companion" twice size of a basketball, weighing in at 184 pounds. It was followed on 3 November by Sputnik II, which carried the dog Laika. It would be almost 3 more months before the Army and the Jet Propulsion Laboratory could answer with the Jupiter launch of Explorer 1, which discovered the Van Allen radiation belts and began the process of understanding Earth and its environment from space. Its 10.5-pound weight belied its importance, which demonstrated an American lead in miniaturized electronics. Six weeks later, the

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Note from the editor: In celebration of the 50th anniversary of spaceflight, News & Notes *will reserve space in each 2007 edition for essays from historians at the NASA Centers that discuss some aspect of their Center's role in the early history of spaceflight. The following essay from NASA Marshall Historian Mike Wright reminds us that the decisions of political leaders have been as important as the technical capabilities of engineers in determining the contours of the Space Age.*

The Marshall Perspective on the Early Space Race

by Mike Wright

The launch of the first humanmade object into Earth's orbit, the Soviet Union's Sputnik I, on 4 October 1957, marked the birth of the Space Age. Sputnik inspired humanity to remove its earthly shackles and initiated a chain of events that continues to unfold today. One of the immediate consequences of Sputnik was the creation of the National Aeronautics and Space Administration (NASA) in October 1958. Two years later, NASA created the George C. Marshall Space Flight Center in Huntsville, Alabama, from the nucleus of Wernher von Braun's rocket team.

Von Braun and his colleagues, members of the team that designed German V-2 rockets during World War II, entertained visions of entering space long before the creation of NASA and the Marshall Space Flight Center. They came to the United States under Operation Paperclip, the U.S. government's program at the

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The Marshall Perspective on the Early Space Race (continued)

conclusion of World War II to reemploy Nazi scientists and engineers and deny the Soviet Union their unique talents. The team continued to develop military ordnance at Fort Bliss, Texas, and White Sands Proving Ground, New Mexico, during the late 1940s, and arrived at the Army's Redstone Arsenal in Huntsville in 1950. The development of rockets that could reach space remained von Braun's personal dream throughout his career.

Von Braun and his team, ironically, had all of the pieces in place to beat the Soviet Union to orbit. The Army had announced on 23 April 1956 that a Redstone short-range ballistic missile with added upper stages (later named the Jupiter C) could be fired in an effort to orbit a small satellite as early as January 1957. Looking back at those earliest days of the Space Age after 50 years reminds us that the race to be first in space in 1957 was a contest measured in days, not months, years, or decades. One of the most pressing technical problems related to launching rockets and missiles in those days had to do with resolving reentry heating problems for the vehicle. The von Braun team demonstrated the resolution of the problem more than 30 days prior to the launch of Sputnik. On 7 August 1957, the Army and the Jet Propulsion Laboratory had fired a scale model nose cone 1,200 miles down range from the Atlantic Missile Range with a summit altitude of 600 miles. Recovery of the nose cone the next day demonstrated that the Army had solved the reentry heating problem using a process called ablation.

President Eisenhower giving a national television address to the American public on 7 November 1957, one day before the Secretary of Defense directed the von Braun team in Huntsville to launch a scientific satellite using a modified Jupiter C. Eisenhower is standing next to the Army-Jet Propulsion Laboratory Jupiter C nose cone that verified the efficacy of ablative technology for overcoming the missile reentry heating problem.

Source: Dwight D. Eisenhower Library; this particular Web version from *http://www.eisenhowermemorial.org/legacyreport/presidential-legacy.htm.*

While most Americans expressed disbelief at the launch of Sputnik in 1957, von Braun took it personally. David Christensen, an associate of von Braun, recalled seeing von Braun in Huntsville the day after America witnessed the first flight of Sputnik. "I've never seen a more dejected-looking individual in my life. You could see he was heartbroken because they [the Russians] had beaten us to the punch and it was not really necessary."

Christensen, von Braun, and others felt that the United States could have been first in space had the Army team in Huntsville been allowed to pursue the proposal they had already put forward to launch a satellite before Sputnik. "Eisenhower was worried about rattling the saber," Marshall retiree Bob Schwinghamer later recalled. "He didn't want to let the Army do it." Just over a month after the launch of Sputnik, on 8 November 1957, spirits rose in Huntsville when the Secretary of the Army directed the team at Redstone Arsenal to launch a scientific satellite aboard a Jupiter C. It was the chance von Braun and his team had dreamed of. Even after the 8 November announcement, the Navy's Vanguard remained the preferred vehicle to launch the first satellite. But that changed, too, after 6 December, when the Vanguard erupted in a ball of fire on the launch pad.

On 31 January 1958, von Braun and his team used a modified Army Jupiter C to launch Explorer I, the United States' first satellite, confirming both the resolve of the Nation and the importance of Huntsville to the emerging national space program.

From the Chief Historian (continued)

Navy followed when Vanguard 1 reached orbit. All of these storied events have by now been analyzed in many books, notably Walter McDougall's Pulitzer Prize-winning …*The Heavens and the Earth: A Political History of the Space Age* and Asif Siddiqi's *Challenge to Apollo: The Soviet Union and the Space Race, 1945–1974*. The impact of those events 50 years ago was felt at many levels. At my level—that of a 7 year old in rural southern Indiana—my family named our dog Sputnik, as apparently did many others. If the beeping Sputnik passing overhead had that effect in the American heartland, the U.S. government knew that the Soviets had scored a public relations coup.

Because each new generation rewrites history in light of subsequent events, a variety of activities are planned during 2007 to analyze the origins of the Space Age and its impact. In July, the International Union of Geodesy and Geophysics, the premier international body advancing the study of Earth, will sponsor several sessions on space history at its General Assembly in Perugia, Italy. In September, the International Astronautical Congress in Hyderabad, India, the international organization for space exploration, will sponsor anniversary sessions from several perspectives, including those of the surviving participants.

In the United States, both the History of Science Society (HSS) and the Society for the History of Technology (SHOT)—the premier scholarly organizations in their respective areas—will meet this year in Washington, DC. In conjunction with the SHOT meeting (also marking its 50th anniversary), the NASA History Division and the National Air and Space Museum (NASM) Space History Division will cosponsor a 2-day meeting, 22–23 October, called "Remembering the Space Age." It will encompass two main themes. The first theme of "National and Global Dimensions of the Space Age" will explore whether the Space Age has fostered a new global identity or if it has it reinforced distinct national identities. It will analyze how space history connects with national histories and with the histories of transnational or global phenomena such as the Cold War or the rise of global markets or global satellite communications. The second theme, "Remembrance and Cultural Representation of the Space Age," will explore how the historical record of the Space Age is collected, preserved, displayed, and interpreted around the world, especially in the United States, Russia, the European Union, Canada, and China. It will ask what purpose space museums serve and what message they convey, how accessible space archives are, and how "official" versions of events square with document trails and eyewitness accounts. It will also look at how the Space Age has been represented in the arts, the media, the movies, propaganda discourse, and so on. A call for papers for the "Remembering the Space Age" conference is in this issue. The connection of this meeting with SHOT is more than passing: Mel Kranzberg, one of the guiding lights of SHOT, was also instrumental in founding the NASA History Division in 1959.

The following week, just prior to the HSS meeting, the Space History Division of NASM will sponsor a meeting on "Making Science Global: Reconsidering the Social and Intellectual Implications of the International Polar and Geophysical Years." The meeting, to be held at the Smithsonian Institution on 31 October and 1 November, will examine the impetus for the International Polar Years (IPYs) of 1882–83 and 1932–33, and the International Geophysical Year of 1957–58, as well as their impact upon science, society, and culture.

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In the broadest sense, and in line with the current interest in counterfactual history, we might well ask, "What if there had been no Space Age?" All the effects recently examined at our "Societal Impact" conference would be called into question—satellites for weather, navigation, communications, and reconnaissance; the revolutions in astronomy from planetary probes and the Great Observatories, which include the Hubble Space Telescope, the Compton Gamma Ray Observatory, Spitzer, and Chandra; and the vast advances in Earth remote sensing and the changes in worldview caused by seeing the Earth from space. All of these effects argue that 50 years of the Space Age have been well worth the national investment. The question now is whether the Space Age can continue, and what the next 50 years will bring.

Steve Dick

News from Headquarters and the Centers

Headquarters

Nadine Andreassen continued planning for the 2007 History Division Annual Meeting and Training at Dryden Flight Research Center. She also worked on logistics for the upcoming conference on the 50th anniversary of the Space Age, to be held in Washington, DC, 22–23 October 2007, in conjunction with the 50th anniversary meeting of the Society for the History of Technology (SHOT). She also coordinated a book display of recent NASA History Series entries at the History of Science Society (HSS) in Canada and the American Historical Association (AHA) in Atlanta, Georgia.

Glen Asner continued to make progress on current writing projects; reviewed chapters of manuscripts under contract with the NASA History Division; and worked steadily on several ongoing tasks, including the NASA History Division newsletter, the *Aeronautics and Space Report of the President*, and the History Division annual report. He looks forward to participating in a 9 March 2007 conference on "Technological Innovation and the Cold War," sponsored by the Center for the History of Business, Technology, and Society at the Hagley Museum and Library in Wilmington, Delaware.

Colin Fries continued the ongoing task of scanning and adding our *Current News* collection to the electronic database; he recently completed scanning articles from 1977–78 and arranging, describing, and appraising for historical value a box of recently declassified material on a wide variety of subjects. He also finished appraising the "Other Histories" collection, adding 2 cubic feet to our subject files, donating 3 cubic feet to the Headquarters library, and discarding 4 cubic feet. Colin Fries and John Hargenrader, in consultation with the chief archivist, devised a processing plan for the National Advisory Committee for Aeronautics (NACA) files, 40 cubic feet, and began jointly processing this collection. The only finding aid that existed previously for the NACA files was a preliminary inventory.

Steve Garber is looking forward to giving a two-hour presentation on 22 January on NASA history to a Foundations of Aerospace at NASA class for new NASA employees. The course

is sponsored by NASA's Academy for Program, Project, and Engineering Leadership (APPEL) in the Office of the NASA Chief Engineer. This history orientation may become a regular part of this course, which will be held at a different NASA Center every 6 to 8 weeks.

John Hargenrader continued to scan the NASA *Current News* collection. He is presently working on news supplements from 1988–89. He is also assisting in the processing of a large collection of NACA files. He and Colin are appraising items for historical value, photocopying deteriorating items to preserve them, imposing an arrangement on the files, and adding descriptions of what is retained to the database.

Over the last several months, Jane Odom has been part of a national security information review team constituted to examine classified documents and determine their disposition before the end of the year, per Presidential Executive Order 12958. She continues to acquire and appraise new material for the archive collection. Recent additions include files on Mars exploration, lunar exploration, and safety and mission assurance. Jane answers reference requests and facilitates clearing into the building international visitors who wish to conduct research. Additionally, she, Colin Fries, and John Hargenrader have been working with the IT staff on a database upgrade. When time permits, Jane likes to process small archival collections.

Ames Research Center (ARC)

Sadly, Leilani Marshall resigned as Archivist in January to have more time to travel. She has done a wonderful job building from scratch an archive for the Center and an amazing research infrastructure for space historians. Jack Boyd has relied on her research skills in preparing materials for his many presentations about the Center. She will be much missed, and we wish her all the best. April Gage has stepped in as Acting Archivist, and we hope that position will be permanent as this goes to press. Last fall, April earned her Master's of Library and Information Science (MLIS) degree from San Jose State University, with a thesis titled, "Speaking Freely: An Oral History of the Freedom to Read Foundation." She can be reached at 650-604-1032 or *agage@mail.arc.nasa.gov*.

The office has been full of researchers. Joel West of the San Jose State University business school held a seminar on his work on NASA's convolutional coding systems for deep space communication. Mike Riordan of the University of California at Santa Cruz wrote a white paper on the role of NASA Ames in the launch of Silicon Graphics, Inc. (SGI) and computer visualization. Ron Kline of Cornell University looked into a 1962 NASA report on cyborgs. Charlotte Linde of the NASA Ames Intelligent Systems Division presented a paper on Apollo-era archives. In addition, the Aviation Safety Reporting System, which is based at NASA Ames, held a 30th anniversary event filled with historical reminiscences.

"H. Julian Allen: An Appreciation," by Walter G. Vincenti, John W. Boyd, and Glenn E. Bugos, was published in *Annual Reviews in Fluid Mechanics* 39 (2007) pp. 1–17.

The Ames History Office finding aids page was updated to reflect the flurry of new collection guides now available online: *http://history.arc.nasa.gov/finding_aids.htm*. Among finding aids added are those for the Archives Reference Collection, the Viking Lander

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News from Headquarters and the Centers (continued)

Imaging Collection, the Pioneer Program Papers, the Hartman Papers (NACA Western Operations Office) at NARA Laguna Niguel, and Ames-related documents in Record Group 255 at NARA Archives II. Several accessions were completely processed. Most notably, the Public Affairs Collection includes 14 cubic feet of materials pertaining to the NASA Ames Public Affairs Office during the 1980s and 1990s, including photographs, transparencies, press releases, and mission files. The entire Artifacts Collection of more than 500 items has been cleaned, tagged, photographed, and cataloged into a FileMaker database. Working with the National Archives and Records Administration (NARA), San Bruno, 500 boxes of materials were relabelled so that the official records of the Center for the 1960s could be located more easily.

Glenn Research Center (GRC)

The 18 October Lunch and Learn Lecture focusing on the new book, Science in Flux: NASA's Nuclear Program at Plum Brook Station, 1955–2005, by Mark Bowles, was very well attended and enjoyed by all. Dr. Bowles signed copies of the book for all who attended the lecture. The book was also promoted and distributed that evening at the annual Plum Brook Reactor Decommissioning Community Information Session in Sandusky, Ohio. Archivist Bob Arrighi, RS Information Systems (RSIS), prepared a new exhibit panel on the history of Plum Brook Station for use at these and future events.

Nora Blackman (RSIS) has been working on several large reference projects documenting research done by NASA Lewis Research Center's Wind Energy Program Office in the mid to late 1970s, Center facilities that fabricated Project Mercury test flight hardware, and the development of the Hermes Communications Technology Satellite.

On 10 November, the Glenn History Office was asked to participate in the grand opening of the "Mercury Women: Forgotten Link to the Future" exhibit at the International Women's Air and Space Museum. Anne Power presented a short lecture on NASA Glenn's involvement with the Mercury Program as well as the Lovelace Clinic's Future Lady Astronaut Trainee (F.L.A.T.s) Program in the late 1950s. At the center of the exhibit is a large poster designed by the GRC publishing program, with historical research by archivist Nora Blackman. The International Women's Air and Space Museum is located at Burke Lakefront Airport in Cleveland, Ohio. More information about the museum and the exhibit can be found on their Web site, *www.iwasm.org*.

As 2006 draws to a close, the Glenn History Office is busy preparing for many exciting projects in 2007. In early 2007, we hope to add many improvements and new content to our Web site. Continued processing of our archival collection will provide easier access for researchers to our holdings. In summer of 2007, we will be moving the archives out of our current basement location to a new facility.

Goddard Space Flight Center (GSFC)

The Goddard Library continued to collaborate with other organizations, including Goddard's Project Libraries and the Landsat Legacy project, to capture and preserve

knowledge and digital resources created at Goddard. The library also networked with the National Agricultural Library to encourage and develop a resource-sharing plan.

After 40 years at Goddard, Jane Riddle decided to retire. Her last day at Goddard was 3 January 2007. The NASA History Division thanks Jane for her dedication over the years and for single-handedly representing history at Goddard from her position as a librarian. She will be missed by all.

Johnson Space Center (JSC)

Throughout the past decade, the JSC History Office provided the capability to transfer the information from hundreds of reel-to-reel tapes within the JSC History Collection to CD-ROMs. The successful effort resulted in preserving interviews, briefings, panel discussions, programs, etc., recorded more than 40 years ago. The "saved" audio features the voices of NASA pioneers such as Bob Gilruth, Abe Silverstein, George Low, C. Stark Draper, and many more who worked together to enable the country to reach its goal of sending Americans to the Moon. However, with the constant evolution in technology, the JSC History Office will soon begin another transition of these historical recordings—moving the data to uncompressed digital audio files.

Recently, industry experts and audio archivists started to move away from the CD-ROM as the choice for use and archival. Due to limitations with CD-ROM durability and usability, the digital audio WAV file emerged as the new "norm" and now serves as the bridge between current and future formats. WAV also allows the recordings to be preserved in an easily accessed and easily migrated file format. Sandra Johnson, the JSC History Office Production Coordinator, initiated the proposal for the transition after researching the latest in digital preservation technology. This spring, as lead on this task, she will start the process to systematically transition the audio from the 2,200 CDs in the JSC History audio collection to digital files. These files will reside on electronic repositories.

In the near future, researchers interested in obtaining an audio file will be able to electronically receive the data and not have to wait until a CD-ROM can be "burned" and mailed. Until then, anyone interested can obtain an audio recording from the collection by contacting the archivist for the JSC History Collection, located at the University of Houston-Clear Lake. Additional contact information can be found at *http://www.jsc.nasa.gov/history*.

As part of an ongoing partnership with the NASA Headquarters History Office, the JSC Oral History team interviewed Bill Taub. Although the name might not be familiar to all, Bill's work as the first senior photographer for NASA provides a vivid and diverse look at aerospace history.

Taub began working for the National Advisory Committee for Aeronautics (NACA) in January of 1941 and, with hundreds of others, transitioned to a NASA employee in October 1958. He continued serving the Agency until 1975 and was responsible for taking millions of photographs, many that were published as covers of national magazines and serve as a pictorial record for the Mercury, Gemini, and Apollo eras. Helping to document

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News from Headquarters and the Centers (continued)

Taub's historical contributions were members of a NASA TV crew who videotaped an interview with the former photographer that aired on *This Week at NASA*. To view the segment, go to *http://www.nasa.gov/multimedia/podcasting/vodcast_page_collection_regular_archive_1.html* and choose the week for November 24.

JSC History team members Sandra Johnson and Rebecca Wright collaborated in presenting, "Introduction to Oral History Interviewing: From Planning to Preservation" during the recent national Oral History Association annual meeting. The workshop participants represented various regions throughout the United States and came from both scholarly and community-based history traditions. One participant was preparing for a trip to the Middle East to facilitate an oral history project for the country of Oman.

The all-day workshop featured a diverse range of information, including the history of oral history; unique aspects and benefits; details of an oral history process and project design; interviewing techniques; and guidelines covering the legal and ethical issues involving oral history. The workshop included segments on recording equipment and formats, preservation and archiving, and outcomes and accessibility. Every student departed the workshop with a collection of printed materials and resource information to assist them with their projects as their ideas become closer to implementation.

Langley Research Center (LaRC)

Langley received a request from the office of Senator Robert Byrd (WV) to help a constituent locate documentation of a relative's career as an NACA test pilot. The Lilly Family Reunion committee is seeking to have a West Virginia public building or place named after Howard C. Lilly, who lost his life while on duty flying a D-558-1 in 1948 at Muroc (now NASA Dryden). He was the third pilot to exceed the speed of sound in the XS-1. Lilly began his career at Langley, transferred to Aircraft Engine Research Lab (now NASA Glenn), and then became the first permanently assigned NACA engineering test pilot at Muroc. Dryden sent Mr. Lilly's family photos and books and has a biography of Mr. Lilly on their online history Web site. Langley requested Mr. Lilly's official personnel records from the National Personnel Records Center and forwarded them to Mr. Joe Akers of the Lily Family Reunion committee.

Ms. Kathleen Kilpatrick, Director, and Ms. Kristen Kircher, Historical Architect, of the Virginia Department of Historic Resources, visited for a tour of and discussions about historic landmarks on Langley. Tour stops included the Variable Density Tunnel, the Docking and Rendezvous Simulator in the ceiling of the Langley Hangar, the Landing and Impact Research Facility (formerly the Lunar Landing Facility), the George Wythe (signer of the Declaration of Independence and teacher of Thomas Jefferson) home site, and the 30-by-60-Foot Tunnel (formerly the Full Scale Tunnel) now operated by Old Dominion University. As a result of the discussions, a virtual tour of the (now closed) Langley 7-by-10-Foot Tunnel is being planned for posting on a Web site.

Dr. John Anderson, Aeronautics Curator of the National Air and Space Museum, visited Langley for a tour of NACA-era wind tunnels and discussions. Tour stops included the Variable Density Tunnel, the Landing and Impact Research Facility, the 8-Foot Transonic

Pressure Tunnel (now closed), the 30-by-60-Foot Tunnel, the 20-Foot Vertical Spin Tunnel, and the Low Turbulence Pressure Tunnel (now closed). The tour also drove by the original NACA Langley headquarters building, now a Langley Air Force Base conference center. As a result of this tour, the logbook for the 30-by-60-Foot Tunnel dating from the 1930s to the mid-1980s was located. A copy of the logbook is being made and will be put in the Langley Archives. Wind Tunnel Test update sheets (which replaced the logbook) of the 30-by-60-Foot Tunnel from the mid-1980s to the mid-1990s, when it was turned over to Old Dominion University, were also located. An agreement was made to turn these files over to the Langley Archives to organize after the sheets have been copied. The test sheet copies, organized by date, will be placed in the Langley archives as well.

Marshall Space Flight Center (MSFC)

Architectural historians are reviewing their survey of the massive Neutral Buoyancy Simulator tank at the Marshall Center in 2006 and planning to survey the Dynamic Test Stand, another Marshall National Historic Landmark.

The tank was built in the early 1960s and put into operation in 1968. More than a million gallons of water once filled the 40-foot-deep, 75-foot-diameter tank. Hardware and human subjects were fitted with a series of weights and ballasts that prevented floating or sinking, thus creating "neutral buoyancy" similar to gravity-free conditions in space.

A team from Historic American Buildings Survey and Historic American Engineering Record program documented the Neutral Buoyancy Simulator in 2006. Part of the U.S. Department of Interior's National Park Service, the program documents historic private, commercial, and engineering structures and facilities all over the Nation.

In June, another team will return to Marshall to document the Dynamic Test Stand, one of NASA's vital proving grounds for Space Shuttle propulsion systems in the late 1970s and early 1980s and also a National Historic Landmark.

In 1973, NASA engineers used the Neutral Buoyancy Facility to develop the procedures that saved Skylab after it suffered sunshield damage during launch. In the early 1980s, engineers used the simulator to practice the intricate space repair procedures that revitalized the Solar Maximum Mission satellite. The simulator also was used to test the Manned Maneuvering Unit. In the early 1990s, the tank helped engineers and astronauts prepare for the 1993 Hubble Space Telescope servicing mission. In 1986, the Department of Interior designated the Neutral Buoyancy Simulator as a National Historic Landmark. The tank was decommissioned in 1996.

In 2006, Tom Behrens, an architect with the engineering record program, and three graduate-student interns documented the facility. "Our job has been to provide a comprehensive historic record of the physical site as it exists now, all the nuts and bolts," Behrens says.

The site was assessed in the mid-1980s before it received landmark status, according to Ralph Allen, Marshall facilities planner and cultural and historic preservation manager, who served as the historic survey team's liaison at Marshall. But Behrens says that preliminary assessment barely scratched the surface of the facility's vast inner workings. "We're capturing the entirety of operations here," he says. The team took countless photographs, recorded hardware measurements and other numerical data, and produced stacks of computer-aided design (CAD) drawings of the simulator facility's complex inner works.

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In September, Behrens returned to his office in Washington, DC, to compile the CAD files, images, and data. Behrens' interns included Laura Royer of Omaha, Nebraska; Anne Harrington of Claremont, California; and Meghan Shannon of Charleston, South Carolina. Brehen's last task will be to develop a final series of interpretive diagrams and cutaway drawings to enhance the hard data. "I try to bring a site to life on paper," he says, "Humanizing the cold, technical data with an accessible, artistic aesthetic."

Once Behrens has delivered the documentation, a program historian will write a comprehensive history of the facility and its use. The entire package, once approved by the National Park Service and NASA, will be filed with the Library of Congress.

Stennis Space Center (SSC)

On 9 November, Stennis Space Center held a ceremony marking the turnover of the A-1 Test Stand from the Space Shuttle Program to the Constellation Program, which is developing the next generation of spacecraft. Under the direction of NASA's Constellation Program, the A-1 test stand begins a new chapter in its operational history. It is being temporarily decommissioned for conversion to test the J-2X engine. That engine will power the upper stage of NASA's new crew launch vehicle, Ares I, and the Earth departure stage of the new cargo launch vehicle, Ares V.

Construction on the 158-foot-tall A-1 test stand began in 1964 and was completed in 1967. The stand was built to test the S-II stage, a cluster of five J-2 engines, for the Apollo program's Saturn V rocket from 1967–69. A total of seven stage tests were conducted for this program.

Following this program, the A-1 test stand was modified to test the Space Shuttle's main engines. The A-1 test stand, site of the first Space Shuttle main engine (SSME) test in 1975, held its last test for that program 29 September. A total of 1,007 SSME tests have been conducted on this stand. (The A-2 test stand will continue testing Space Shuttle main engines through the end of the Space Shuttle Program in 2010.)

In 1998, the A-1 was called upon once again to test the engines for another futuristic spacecraft—the X-33, an experimental, half-scale, suborbital flight demonstrator. The XRS-2200 Linear Aerospike engine, projected to power the X-33, was successfully tested on the A-1 stand until the X-33 Program was canceled in 2001. A total of 35 tests were conducted for this program.

Drawing on the past, NASA has merged Apollo-era visionaries with today's engineering minds to forge the exploration missions that will take us further into the solar system. Forty years after their beginnings, SSC's test stands will once again be part of the adventure. As the test stand undergoes its newest transition, the History Office will be documenting all aspects of this process.

OTHER HISTORY NEWS

National Air and Space Museum (NASM), Division of Space History (DSH)

Several NASM curators (Paul Ceruzzi, Martin Collins, Jim David, Roger Launius, Cathy Lewis, Mike Neufeld, Frank Winter, and Tom Crouch) participated in the Society for the History of Technology (SHOT) annual meeting in Las Vegas, Nevada, 12–15 October 2006. Presentations from NASM curators included:

- Frank Winter, "The Silent Revolution: How Robert H. Goddard Helped Start the Space Age"

- Cathy Lewis, "Making Space a Hobby: Trading and Collecting Soviet Space Znachki for Fifty Years"

- Martin Collins, " 'One World & One Telephone': The Political Imagery of the Iridium Satellite Venture."

Jim David published "Astronaut photography and the intelligence community: Who saw what?" in *Space Policy* 22 (2006). David also presented a paper titled "The National Aeronautics and Space Administration's Use of Technology from the Covert World" at the SHOT annual meeting.

Roger Launius delivered a speech on 1 November 2006, "National Security Space and the Course of Recent U.S. History," as the Harmon Memorial Lecture at the U.S. Air Force Academy's 21st Military History Symposium. The Harmon Memorial Lecture is the oldest and most distinguished series sponsored by the Air Force Academy and is one of the Nation's leading annual lectures in military history and the history of military technology. Launius also published, "Assessing the Legacy of the Space Shuttle," *Space Policy* 22 (November 2006): 226–34. This essay reviews the core legacies of the Space Shuttle program after 25 years and suggests that while it was not an unadulterated success, on balance, the Shuttle served a valuable role in the development of spaceflight and deserves an overall positive assessment in history.

Roger Launius and Howard McCurdy have forthcoming in 2007 from the Johns Hopkins University Press a book entitled, *Robots and Humans in Space Flight: Technology, Evolution, and Interplanetary Travel*. This study offers a history and analysis of how we came to the point that we have in human spaceflight, as well as a discussion of the relative merits of human versus robotic space exploration.

Roger Launius rotated out of the chairmanship of the Division of Space History at the National Air and Space Museum at the beginning of 2007 to assume a role as a senior researcher.

David H. DeVorkin has published "The Changing Place of Red Giant Stars in the Evolutionary Process" in *Journal of the History of Astronomy* 37 (2006): 1–41. He has also been designated a distinguished alumnus of San Diego State University and will receive a "Monty" award in April 2007, a designation marked by two days of ceremonies on campus.

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Other History News (continued)

He also organized a session on "Cold War Astronomy" at the annual meeting of the History of Science Society at Vancouver, British Columbia, on 2–5 November 2006.

Peter Jakab from Aero and Martin Collins from DSH participated in the 11th annual Artefacts Seminar at the Nobel Museum in Stockholm, Sweden, 14–16 September 2006. The seminar has long been a joint undertaking of the London Science Museum, the Smithsonian, and the Deutsches Museum to explore themes in history of science and technology from the perspective of museums and academia. Jakab presented "From Invention to Icon: The Transformation of the Wright Brothers' Research Aircraft," while Collins provided a summary commentary on the seminar and the presented papers.

James Rodger Fleming (NASM Lindbergh Chair for 2005–06 and current American Association for the Advancement of Science [AAAS] Roger Revelle Fellow in Global Stewardship) was interviewed by the Weather Channel for its 25th anniversary special in October 2006. He has also just published and launched at an event at the Woodrow Wilson International Center for Scholars on 11 December 2006 two new books: *Intimate Universality: Local and Global Themes in the History of Climate and Weather* (Science History Publications, 2006) and *The Callendar Effect: The Life and Work of Guy Stewart Callendar* (1896–1964), *the Scientist Who Established the Carbon Dioxide Theory of Climate Change* (American Meteorological Society, 2007).

The National Air and Space Museum Archives and the Smithsonian Institution Research Information System now offer online an expanded version of the Smithsonian National Air and Space Museum *Directory of Airplanes, Their Designers and Manufacturers*. Available for free at *http://siris-thesauri.si.edu/ipac20/ipac.jsp?profile=planes* and edited by former museum archivist Dana Bell, the guide serves as a single authoritative listing of aircraft names organized by designer and manufacturer.

Martin Collins from DSH conducted an *Inside the Actors' Studio*-type discussion with Walter Cronkite as part of the annual awards ceremony of the Arthur C. Clarke Foundation, held this year at the Cosmos Club on 3 October 2006. The focus of the discussion was Cronkite's coverage of the space program during his years as anchor for *CBS News*.

Christine Yano, NASM's Verville Fellow for 2006–07, has curated an exhibit at the Japanese Cultural Center of Hawaii, "Airborne Dreams: Japanese-American Flight Attendants and the Development of Global Tourism in the Pacific." The exhibit, which ran from 2 November through 15 December, featured Pan Am memorabilia, including bags, uniforms, posters, menus, chinaware, instructional booklets, model planes, and photos. It also features an interview video with nine of the former flight attendants.

CALLS FOR PAPERS AND ANNOUNCEMENTS

The Society for the History of Technology (SHOT) will hold its annual meeting in Washington, DC, from 17–21 October 2007. This meeting, along with the following year's meeting in Lisbon, Portugal, will celebrate the 50th anniversary of the founding of SHOT and of its journal, *Technology and Culture*. The theme of both conferences will be "SHOT@50: Looking Back, Looking Beyond." To that end, the Program Committee seeks papers or sessions for the 2007 meeting that concern the history of technology as it has been practiced in the past and, for the 2008 meeting, as it may or ought to be practiced in the future. Under the general theme of celebrating SHOT's past, several more specific themes suggest themselves, including historiography, relationships with other disciplines, and how changing social and political circumstances affect the practice of the history of technology. The committee welcomes proposals for individual papers or sessions, as well as works-in-progress from researchers of all stripes (including graduate students, chaired professors, and independent scholars). It also welcomes proposals from those new to SHOT, regardless of discipline. The committee will also consider alternative venues for presenting one's scholarship, such as poster sessions, short (8-minute) quick sessions, author-meets-critics panels, discussion of precirculated papers, and others. The deadline for submission is 16 March 2007. For additional information on the conference themes and submission guidelines, visit the SHOT Web site: *http://www.historyoftechnology.org/fiftieth.html*.

Final call for papers and posters for the "Making Science Global: Reconsidering the Social and Intellectual Implications of the International Polar Years" conferences scheduled for 31 October–1 November 2007, in Washington, DC. The program committee for "Making Science Global" at the Smithsonian Institution invites proposals for historical papers that examine the impetus for (and the impact upon) the science, society, and culture of the International Polar Years (IPY) of 1882–83, 1932–33, and 1957–58, and how this perspective might be useful for planners of IPY-4 in 2007–08. We intend to explore the origins of these campaigns, their political dimensions, and their consequences. Papers are not limited to a specific IPY event or to specific expeditions or missions, but they may entertain studies of the eras leading up to each of the campaigns, the IPYs themselves, and the aftermath of each. Themes might include the place of the poles in human imagination, discipline formation, cultural nationalism and politics, and transnationality prior to and after 1882; the emergence of the modern geosciences in the first half of the 20th century; the uses of new technologies to explore the poles; and changing assessments of the nature of human cultures in high latitudes. Papers addressing the International Geophysical Year (IGY) might examine its role in the Cold War and the extent to which multidisciplinarity and multinational cooperation and competition shaped the geosciences and contributed to environmental awareness. We are very interested in creating an historical assessment of how the IPYs stimulated the professionalization of the various disciplines within both the geosciences and in

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Calls for Papers and Announcements (continued)

ethnographic studies; how they elucidated national styles; how they fostered the development of scientific instrumentation; and how they focused or reflected patronage for science. We wish to learn, in general, what the experience of the first three IPYs offers to the upcoming IPY-4 and what it reveals about the changing character of science, technology, and "polar affairs." If you are interested in participating, please send a paper or poster proposal and short abstract to the organizers by 15 March 2007. Conference organizers: David DeVorkin (*devorkind@si.edu*), Roger Launius (*launiusR@si.edu*), and James Fleming (*jfleming@colby.edu*).

The Brooke Hindle Postdoctoral Fellowship in the History of Technology honors the contribution of Brooke Hindle to the work of the Society for the History of Technology and is made possible thanks to the generosity of his family. The fellowship is for $10,000 and may be used, as further detailed below, for any purpose connected with research or writing in the history of technology for a period of not less than 4 months during the year following the award. Applicants must hold a doctorate in the history of technology or a related field, normally awarded within the preceding 4 years, or expect to have graduated by the time of the award. (Those who graduated earlier and can demonstrate good reason why they should be considered as being at an early stage in their postdoctoral career—e.g., because of family commitments—may apply at the discretion of the committee chair.) Other awards may be held in conjunction with the fellowship. The proposal must be in a field related to the history of technology. Applicants should be intending either to prepare a dissertation for publication as articles or as a monograph, whether or not this involves fresh primary research, or to develop a new project based on primary research. Applications must be in English. Please send a copy to each of the members of the committee, either by mail or e-mail, by 1 April 2007. Further information is available at *http://www.historyoftechnology.org/awards/hindle.html*.

A group of Russian history specialists is forming an aerospace history interest group to foster increased scholarship in Russian and Soviet aerospace history. Anyone interested in participating should e-mail Cathleen S. Lewis, Curator of International Space Programs, Division of Space History, National Air and Space Museum, at *LewisCS@si.edu*.

The Fellowship in Aerospace History, supported by NASA, annually funds one or more research project(s) for 6 months to 1 year. Proposals of advanced research in history related to all aspects of aerospace, from the earliest human interest in flight to the present, are eligible, including cultural and intellectual history; economic history; history of law and public policy; and history of science, engineering, and management. The fellowship is open to applicants who hold a doctoral degree in history or a closely related field or who are enrolled in and have completed all course work for a doctoral degree-granting program. The stipend is $20,000. The deadline for application is 1 March. For more information, see *http://www.historians.org/prizes/NASA.htm*.

"Remembering the Space Age" 50th Anniversary of the Space Age Call for Papers

The NASA History Division and the National Air and Space Museum History Division issue a call for papers for a conference on the 50th anniversary of the Space Age, to be held in Washington, DC, 22–23 October 2007, in conjunction with the 50th anniversary meeting of the Society for the History of Technology. The conference is titled "Remembering the Space Age," and encompasses two main themes:

1) **National and Global Dimensions of the Space Age.** Has the Space Age fostered a new global identity, or has it reinforced distinct national identities? How does space history connect with national histories and with the histories of transnational or global phenomena such as the Cold War or the rise of global markets or global satellite communications?

2) **Remembrance and Cultural Representation of the Space Age.** How is the historical record of the Space Age collected, preserved, displayed, and interpreted around the world, especially in the United States, Russia, the European Union, Canada, and China? What purpose do space museums serve and what message do they convey? How accessible are space archives? How do the "official" versions of events square with the document trail and with eyewitness accounts? How has the Space Age been represented in movies, the arts, the news media, and other forms of public discourse?

Please send all proposals in the form of a 300-word abstract and a brief curriculum vitae to Dr. Steven J. Dick, NASA Chief Historian, at *steven.j.dick@nasa.gov*. The deadline for submissions is 1 March 2007.

CONTRACTS

Contract Awarded

The History Division is pleased to announce that it has awarded independent historian Dr. Andrew Butrica a contract to write a book on *A History of NASA's Deep Space Navigation*. The book shall focus on the history of deep space navigation since NASA's inception. The goal of this research project is to produce a roughly 400-page manuscript history on the views of scientists, engineers, policymakers, enthusiasts, and the general public regarding deep space navigation. The history will include discussion of the latest developments in deep space navigation, such as very long baseline interferometry using both Deep Space Network techniques and those developed at the National Radio Astronomy Observatory. The NASA History Division shall administer this project jointly with the Science Mission Directorate.

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Contracts (continued)

Current Solicitations

In celebration of NASA's upcoming 50th anniversary, scholarly histories of NASA's activities in the scientific exploration of Earth and space are solicited by this *History of the Scientific Exploration of Earth and Space* (*HSEES*) program element. The International Geophysical Year (IGY) of 1957–58 marked the beginning of the Space Age and the birth of NASA; it ushered in a half-century of unprecedented achievement in our scientific exploration of Earth and space. The concurrence of the International Polar Year (IPY) in 2007–09 and the International Heliophysical Year (IHY) in 2007–08, also provides a unique opportunity to examine the scientific advances that have occurred in the nearly 50 years since the establishment of NASA on 1 October 1958.

The primary objective of the *HSEES* program element is to engage, inform, and inspire diverse public audiences by sharing historical knowledge about NASA's scientific exploration of Earth and space and by communicating NASA's unique contributions to the advancement of Earth and space science during the past 50 years. An essential component of communicating to the public is accurate, complete, well-written histories about the scientific exploration of space. Credible histories require work over a period of years and sustained support to be successful. In addition, an accurate history requires access to individuals and documents, which may be difficult for independent authors who are not coordinated with NASA.

A secondary objective is to extend the spirit of exploration and discovery embodied in past NASA science missions and to help attract and educate the next generation of scientists and engineers. This opportunity is a coordinated program with the NASA History Division and is funded by the Science Mission Directorate (SMD). It is part of a coordinated set of education, public outreach, and historical research activities in relation to IPY, IHY, and NASA's 50th anniversary.

Historical investigations will be selected for a period of no more than 3 years, beginning in Fiscal Year 2007 (1 October 2006–30 September 2007). The anticipated total amount of funds available for this amendment is approximately $1.5 million for the 3-year period (at approximately $500 thousand per year). This program element is open to a wide range of proposed costs, from zero to a few tens of thousands for monographs, and approximately $50–$100 thousand per year for book-length works. Proposals are due 15 February 2007.

The specifics of the *HSEES* solicitation are available at *http://nspires.nasaprs.com/external/viewrepositorydocument/70450/E.5%20HSEES.pdf*.

Upcoming Contracts

The NASA History Division will soon release a solicitation for a book-length manuscript on *Mission to Saturn: A History of NASA's International Cassini-Huygens Mission*. The goal of this research project is to produce a roughly 400-page manuscript history on the origins, development, and operations of the Cassini-Huygens mission. The book shall focus on the time period from mission advanced studies (c. 1986) to the present day, and shall consider the mission in the context of space science and in relation to past missions to the outer planets. The author shall document the views of scientists, engineers, policymakers, enthusiasts, and the general public regarding the mission and various ancillary issues, including the use of plutonium in the spacecraft's radioisotope thermoelectric generators and relations with international partners. The finished manuscript is to be delivered within 3 years and must reflect extensive

research of NASA records, scientific journals, and the records of other relevant government agencies (for example, the Smithsonian Institution, the Department of Defense, personal paper collections, and private company archives). The contractor shall use oral history interviews, as appropriate, to augment written records as source material for this book. The NASA History Division shall administer this project jointly with the Science Mission Directorate/Planetary Science Division. The NASA History Division also shall manage professional review and oversight of final publication of the work. This solicitation is separate from the *HSEES* solicitation mentioned above. Please contact Stephen Garber (*stephen.j.garber@nasa.gov*) or Steven Dick (*steven.j.dick@nasa.gov*) for additional information.

PUBLICATIONS

NASA Publications

Unconventional, Contrary, and Ugly: The Lunar Landing Research Vehicle (NASA SP-2006-4535) by Gene J. Matranga, C. Wayne Ottinger, Calvin R. Jarvis, with D. Christian Gelzer, is Monograph in Aerospace History #35. With a foreword by Neil Armstrong explaining the importance of the Lunar Landing Research Vehicle (LLRV), this monograph tells the fascinating story of how engineers, largely at NASA's Dryden Flight Research Center, developed a vehicle to touch down on the Moon. These engineers faced remarkable challenges, considering that the Moon has no atmosphere (to support winged flight), one-sixth of Earth's gravity, and obviously no existing physical guiding infrastructure for pilots such as beacon lights or landing strips. An electronic version of this monograph should be available soon through the Dryden History site, *http://www.nasa.gov/centers/dryden/history/index.html*. Contact *http://www.nasa.gov/centers/dryden/about/contact_us.html* for a hard copy of this monograph.

Forthcoming NASA Publications

Flights of Discovery: The History of the Dryden Flight Research Center, by Lane E. Wallace. This history of the first 50 years at the NASA Dryden Flight Research Center captures the spirit of the role flight research has played in aeronautical research and development and provides insightful accounts of most of the major flight research projects from 1946 to 1996. The second edition will be published in 2007.

The Wind and Beyond: A Documentary Journey into the History of Aerodynamics in America, Volume II: Reinventing the Airplane, edited by James R. Hansen, with Jeremy Kinney, D. Bryan Taylor, and J. Lawrence Lee. The second volume in *The Wind and Beyond* series discusses the airplane design revolution of the 1920s and 1930s and the quest for improved airfoils. The volume is slated for publication in early 2007.

Mission to Jupiter: A History of the Galileo Project, by Michael Meltzer. This informative manuscript discusses the Galileo spacecraft project from its inception to its conclusion. It should be published in 2007.

Dictionary of the Space Age, by Paul Dickson. This new book will augment and update *The Origins of NASA Names* (NASA SP-4402, 1975) by including terms not in common usage approximately 30 years ago, as well as etymological information. This book should be published in early 2007.

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Publications (continued)

Facing the Heat Barrier: A History of Hypersonics, by T. A. Heppenheimer. This book documents the history of hypersonics research in great detail. It should be published in early 2007.

Mars Wars: A Policy History of the Space Exploration Initiative, by Thor N. Hogan. This provocative book argues that the failure of President George H. W. Bush's Space Exploration Initiative (SEI) was the result of a flawed policy process. The book should be published in 2007.

Nose Up: High-Angle-of-Attack and Thrust Vectoring Research at NASA Dryden, 1979–2001 (NASA SP-2006-4534), by Lane Wallace. This monograph examines three different programs that explored high-angle-of-attack flight: the F-18 High Alpha Research Vehicle (HARV), the X-31, and the F-15 Advanced Controls Technology for Integrated Vehicles (ACTIVE). This monograph is scheduled for publication in 2007.

Non-NASA Books

Erik Benson, *Lowell Yerex and the Anglo-American Commercial Rivalry, 1931–1946* (College Station, Texas: Texas A&M University Press, 2006).

Fred R. Erisman, *Boys' Books, Boys' Dreams, and the Mystique of Flight* (Fort Worth, Texas: Texas Christian University Press, 2006).

James Rodger Fleming, Vladimir Jankovic, Deborah R. Coen, eds., *Intimate Universality: Local and Global Themes in the History of Climate and Weather* (Science History Publications, 2006).

James Rodger Fleming, *The Callendar Effect: The Life and Work of Guy Stewart Callendar (1896–1964), the Scientist Who Established the Carbon Dioxide Theory of Climate Change* (American Meteorological Society, 2007).

Roger Handberg, *International Space Commerce: Building from Scratch* (Gainesville, Florida: University Press of Florida, 2006).

New NASA Online Resources

Rockets and People: Creating a Rocket Industry, Volume II. (NASA SP-2006-4110), by Boris Chertok, has been posted online at *http://history.nasa.gov/SP-4110/vol2.pdf*.

Exploring the Unknown: Selected Documents in the History of the U.S. Civil Space Program (NASA SP-4407) Volumes I and II are available online at *http://history.nasa.gov/SP-4407/vol1/intro.pdf* and *http://history.nasa.gov/SP-4407/vol2/v2intro.pdf*, respectively. Volume I is subtitled *Organizing for Exploration* and Volume II is subtitled *External Relationships*. Online versions of the other volumes in this documentary history series are also available at *http://history.nasa.gov/SP-4407/sp4407.htm*.

Science in Flux: NASA's Nuclear Program at Plum Brook Station, 1955–2005 (NASA SP-2006-4317), by Mark D. Bowles, has been posted online at *http://history.nasa.gov/sp4317.pdf*.

UPCOMING MEETINGS AND EVENTS

9–10 March 2007, the Center for the History of Business, Technology, and Society at the Hagley Museum and Library in Wilmington, Delaware, will host a symposium on technological innovation and the Cold War. For more information, contact Carol Lockman, Hagley Museum and Library, *clockman@Hagley.org*.

20–21 March 2007, the American Astronautical Society will hold its 45th Robert H. Goddard Memorial Symposium at the University of Maryland University College Inn and Conference Center in Adelphi, Maryland. For information, call 703-866-0020.

29 March–1 April 2007, the Organization of American Historians will hold its 100th annual meeting in Minneapolis, Minnesota. The title of the centennial conference is "American Values, American Practices." For more information on the meeting, see *http://www.oah.org/meetings/2007/index.html*.

1–4 April 2007, the 2007 Mutual Concerns of Air and Space Museums Seminar will be held in at the San Diego Air and Space Museum in San Diego, California. There is an early-bird registration discount if you register by Friday, 16 February. For detailed information on the seminar, see *http://www.nasm.si.edu/getinvolved/mutualconcerns/*.

4–7 April 2007, the National Popular Culture/American Culture Association annual conference will be held in Boston, Massachusetts, at the Boston Marriott Copley Place. For registration and conference information, see *http://www.popularculture.org*.

12–14 April 2007, the National Council for History Education will host its 2007 conference at the Williamsburg Marriott in Williamsburg, Virginia. See *http://www.nche.net/docs/conferences.html* for additional information.

12–17 April 2007, the National Council on Public History will hold its annual meeting titled "Many Histories, Many Places—Common Ground?" in Santa Fe, New Mexico. For registration information, see *http://www.ncph.org/2007annualmtg.html*.

19–21 April 2007, the Mid-Atlantic Regional Archives Conference will hold its spring meeting in Scranton, Pennsylvania, at the Radisson Hotel Lackawanna Station. For more information, see *http://www.lib.umd.edu/MARAC/conferences/conferences.html*.

19–22 April 2007, the Catoctin Center for Regional Studies, located at the Frederick Community College in Frederick, Maryland, will host the 74th meeting of the Society for Military History. The theme for the conference will be "Crossroads of War." For more information about the conference, see *http://catoctincenter.frederick.edu/conferences.html*.

19–22 April 2007, the 4th annual Cultural Studies Association Conference will be held at George Mason University in Arlington, Virginia. For more information, see *http://www.csaus.pitt.edu/frame_home.htm*.

3–6 May 2007, the American Association for the History of Medicine will hold its 80th annual meeting in Montreal, Canada. For more information, see *http://histmed.org*.

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Upcoming Meetings and Events (continued)

15–16 May 2007, the Chemical Heritage Foundation will host the E. N. Brandt Oral History Conference in Philadelphia, Pennsylvania. For more information, see *http://www.chemheritage.org/*.

27–31 May 2007, the American Astronomical Society (AAS) will be holding its 210th meeting in Honolulu, Hawaii. See the AAS Web site, *http://www.aas.org*, for meeting updates.

1–2 June 2007, the Business History Conference will hold its annual conference at Case Western Reserve University in Cleveland, Ohio. The theme of the conference is "Entrepreneurial Communities." For more information, see *http://www.h–net.org/~business/bhcweb/*.

20–24 June 2007, the Society for Historians of American Foreign Relations (SHAFR) will hold its annual meeting at the Marriott Westfields Conference Center in Reston, Virginia. For additional information, see *http://www.shafr.org/*.

21–27 June 2007, the American Library Association annual conference will be held in Washington, DC, at the Washington Convention Center and at several hotels within the city. See *http://www.ala.org/ala/eventsandconferencesb/annual/2007a/geninfo.htm* for details on the conference and related activities.

14–19 August 2007, the International Committee for the History of Technology's (ICOHTEC) 34th Symposium will meet in Copenhagen, Denmark. "Fashioning Technology: Design from Imagination to Practice" is the symposium's general theme. For details, see *http://www.icohtec2007.dk*.

29 August–2 September 2007, the Society of American Archivists will be holding its 71st annual meeting at the Fairmont Hotel in Chicago, Illinois. For additional conference information, visit *http://www.archivists.org/conference/index.asp*.

17–21 October 2007, the Society for the History of Technology will hold its annual meeting at the Capital Hilton in Washington, DC. The theme of the conference will be "SHOT@50: Looking Back, Looking Beyond." For additional information on the meeting, see *http://www.historyoftechnology.org/annualmtg.html*.

1–3 November 2007, the Mid-Atlantic Regional Archives Conference will hold its fall meeting in Williamsburg, Virginia, at the Williamsburg Marriott. For more information, see *http://www.lib.umd.edu/MARAC/conferences/conferences.html*.

3–6 January 2008, the American Historical Association will host its annual meeting at the Marriott Wardman Park and Omni Shoreham hotels in Washington, DC. For more information on the conference, see *http://www.historians.org/*.

Curator's Choice Schedule at the National Air and Space Museum (NASM)

NASM staff members give brief talks to the public every Wednesday on topics related to artifacts or exhibitions in the museum. To attend one of these talks, meet at 12:00 p.m. at the Museum Seal in the Milestones of Flight Gallery on the first floor of the museum on the National Mall. The schedule through April is as follows:

14 February 2007, Judy Chelnick, National Museum of American History (NMAH) Science and Medicine Division, "A Cure for the Broken Hearted: Artificial Hearts in America"; Treasures of American History Exhibit, Gallery 211. An American Heart Month event.

21 February 2007, Martin Collins, Division of Space History (DSH), "Promises of Progress: Communications Satellites and Africa"; Beyond the Limits Exhibit, Gallery 213. A Black History Month event.

28 February 2007, Valerie Neal, DSH, "African American Astronauts from Guy Bluford to Joan Higginbotham"; Space Race/Space Hall Exhibit, Gallery 114. A Black History Month event.

7 March 2007, Valerie Neal/DSH, " 'We Can Do It!': Women at Work on the International Space Station"; Space Race/Space Hall Exhibit, Gallery 114. A Women's History Month event.

14 March 2007, Lisa Kathleen Graddy, NMAH Politics and Reform Division, "Amelia Walker and Jailed for Freedom"; Treasures of American History Exhibit, Gallery 211. A Women's History Month event.

21 March 2007, David Devorkin, DSH, "What Are Stars Made Of? How Cecilia Payne Unlocked this Secret of the Universe in 1924"; Explore the Universe Exhibit, Gallery 111. A Women's History Month event.

28 March 2007, Dorothy Cochrane, Aero, "Jackie Cochran, Pilot in the Fastest Lane"; Golden Age of Flight Exhibit, Gallery 105. A Women's History Month event.

4 April 2007, James David, DSH, "The Short-Lived Pershing II Missile"; Milestones of Flight Exhibit, Gallery 100.

11 April 2007, John Hasse, NMAH Sports, Music, and Entertainment Division, "Duke Ellington: Genius Beyond Category"; Treasures of American History Exhibit, Gallery 211. A Jazz Appreciation Month event.

18 April 2007, Tom Crouch, Aero, "Going for Altitude: High Altitude Ballooning from H.C. Gray to Explorer II"; Pioneers of Flight Exhibit, Gallery 208.

IMAGE IN SPACE HISTORY

Center: JSC • Center Number: s65-34635 • GRIN DataBase Number: GPN-2006-000025

Ed White performs first U.S. spacewalk

Astronaut Edward H. White II, pilot for the Gemini 4 mission, floats in space during America's first spacewalk. White performed the extravehicular activity (EVA) on 3 June 1965. He spent 23 minutes maneuvering around his spacecraft as Jim McDivitt remained inside the spacecraft. White is attached to the spacecraft by a 25-foot umbilical line and a 23-foot tether line, both wrapped in gold tape to form one cord. In his right hand, he carries a Hand-Held Self Maneuvering Unit (HHSMU), which he used to help move him around the weightless environment of space. The visor of his helmet is gold plated to protect him from the unfiltered rays of the sun.

The NASA History Division, under the Office of External Relations, NASA Headquarters, Washington, DC 20546, publishes *News and Notes* quarterly.

To receive *News and Notes* via e-mail, send a message to *domo@hq.nasa.gov*. Leave the subject line blank. In the text portion, simply type "subscribe history" without the quotation marks. You will receive confirmation that your account has been added to the list for the newsletter and for receiving other announcements. We also post the latest issue of this newsletter at *http://history.nasa.gov/nltrc.html* on the Web.

Do you have more questions about NASA history in general? Please check out our NASA History Division Home Page at *http://history.nasa.gov* on the Web. For information about doing research in the NASA History Division, please e-mail us at *histinfo@hq.nasa.gov* or call 202-358-0384.

We also welcome comments about the content and format of this newsletter. Please send comments to Glen Asner, newsletter editor, at *glen.asner@nasa.gov*.

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