



FROM THE CHIEF HISTORIAN



One of the joys of being the NASA Chief Historian is the ability to “make things happen.” One way we do that is through sponsoring workshops and conferences on a wide variety of subjects related to aeronautics and space history. The latest example was our cosponsorship, together with the Dibner Institute for the History of Science and Technology at the Massachusetts Institute of Technology (MIT), of a seminar on “Cosmic Evolution and Astrobiology.” Held 15–22 May at the Marine Biological Laboratory in Woods Hole (1 of the 16 NASA Astrobiology Institute teams), the seminar brought together students, historians, philosophers, and scientists for a week of intensive discussions.

Among the highlights, NASA’s Planetary Protection Officer, John Rummel, opened the meeting with a lively presentation about astrobiology and the high-stakes necessity to protect “all of the planets all of the time,” including Earth, from biological contamination from another planet. Historian Bernard Lightman discussed the 19th century origins of the idea of cosmic evolution (the guiding principle for NASA’s space science program and much of the astronomy done today), and I traced the idea through the 20th century. Other historians (Jim Strick and Iris Fry) discussed the history of origins of life research and the Search for Extraterrestrial Intelligence (SETI) Institute. A stellar array of scientists described their work on extremophiles (Lynn Rothschild), endosymbiosis (Lynn Margulis), the three domains of life (Carl Woese), and extrasolar planets (Phil Crane). And finally, philosopher Carol Cleland tackled the

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2005 NASA ANNUAL HISTORY MEETING

By Giny Cheong

Historians, archivists, records managers, and friends of history from across the country met in Houston, Texas, for the Annual Joint History and Records Management Meeting, from 5 to 7 April 2005. Deputy Director of Johnson Space Center Robert Cabana began the meeting with inspiring words on the importance of capturing a diversity of perspectives on space history. He also expressed concern over how a decrease in written records and the selected preservation of electronic records will affect our ability to capture NASA history. Chief Historian Dr. Steven Dick established the background of the history program at Headquarters, and Agency Records Officer Patti Stockman reviewed the records management program. Since 1959, the History Division has promoted understanding of the history of spaceflight and of NASA’s contributions to science, aviation, and space through its active support of research, writing, publications, and conferences. The records management program has held legal responsibility for ensuring proper identification of records, enforcing records retention schedules, supporting the NASA declassification effort, and transferring records to the National Archives. The history and records presentations reinforced the integrated dynamic of both fields.

The audience observed informative presentations throughout the meeting. Nitin Naik, Associate to the Chief Technology Officer in the Office of the Chief

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From the Chief Historian (continued)

Participants of the NASA History Division and Dibner Institute seminar entitled "Cosmic Evolution and Astrobiology" gathered outside the Marine Biological Laboratory.

always-controversial question, "What is life?" All the while, the students kept the proceedings lively with a constant barrage of questions.

The meeting was dedicated to the memory of MIT physicist Philip Morrison, who died on 22

April. Presentations will be posted on the Dibner Web site at <http://dibinst.mit.edu/DIBNER/DIConferences/WoodsHole/WoodsHoleTopic.htm>.

Looking to the future, in the wake of our successful workshop entitled "Critical Issues in the History of Spaceflight," we are planning a companion conference entitled "Critical Issues in the History of Aeronautics," to be held in Washington, DC, in the spring of 2006. The NASA History Division will sponsor it jointly with the Aeronautics Research Mission Directorate (ARMD) at NASA Headquarters. Meanwhile, the proceedings for the first "Critical Issues" workshop are on track for publication by the end of 2005. We also will post this landmark volume of more than 500 pages online.

Beyond that, the August issue of *News and Notes* includes a call for papers for our three-day conference, "Societal Impact of Space Exploration," tentatively scheduled for September 2006 in Washington, DC. This enormous subject requires careful consideration. The purpose of the meeting is not an exercise in public affairs, but to examine with rigorous historical research what the impact of space has been on commercial and economic activity, local education and social concerns, and philosophy and culture. It will also explore the effect of applications satellites on modern life. In a related activity, the History Division is funding a variety of small and focused studies on the societal impact of space exploration, which will provide some foundation for papers presented at the conference. Do not hesitate to let me know if you have an idea for research in this area.

Finally, we are looking forward to the upcoming 50th anniversaries of the Space Age in 2007 and of NASA in 2008. These promise to be major national and international events.

Last but not least, since the last newsletter, the NASA History Division convened historians, archivists, and records managers from all 10 NASA Centers at Johnson Space Center in Houston, Texas, to discuss common issues and problems. In addition to attending the excellent sessions, we also toured the historic Mission Control Center as well as the flight control rooms for the Space Shuttle and International Space Station. As I travel to NASA's facilities around the country, I am constantly amazed at the many levels of technical expertise, human interaction, and state-of-the-art resources, all of which combine to "make things happen" in space.

Steve Dick

2005 NASA Annual History Meeting (continued)

Information Officer (CIO), spoke about enterprise architecture in relation to information technology operations and the NASA Web portal. He applied his work to records management and history by explaining the common need of a coordinated infrastructure for interoperability and certified security. Tom Carson from the New Economy Institute demonstrated the usefulness of new techniques for scanning in Portable Document Format (PDF) as an archival aid. He illustrated the low cost of scanning to preserve documents and envisioned further improving developments in Adobe® software. Both speakers showed the value of their fields and their effectiveness in supporting history.

Members of the history and archival community also gave interesting presentations. Records Manager Margie Pharr illustrated the problem with orphaned records at Stennis Space Center and the lessons learned from examining thousands of boxes. Kent Carter, Regional Administrator for the National Archives and Records Administration (NARA), Southwest Region, stressed the importance of close relations between NASA and the National Archives to preserve history and secure archival records. During lunch, Dennis Jenkins addressed his firsthand experiences as an engineer in the Space Shuttle program and his service on the Columbia Accident Investigation Board (CAIB). In addition, other fascinating presentations provided research updates, such as Glen Asner's dissertation on corporate research and development from 1945 to 1972; Douglas Mudgway's new publication, *Big Dish: Building America's Deep Space Connection to the Planets*; and Erik Conway's work on his upcoming atmospheric science book.

Another significant portion of the meeting connected the ongoing work of the Headquarters and Center history programs. Dr. Dick, Steve Garber, and Jane Odom provided information about the activities of the History Division over the last year. In March 2005, the NASA History Division and National Air and Space Museum Department of Space History hosted the "Critical Issues in the History of Spaceflight" workshop with memorable presentations by leading historians and humanities scholars. (For more information, please see the May 2005 issue of *NASA News and Notes*.) Steve Garber spoke about the various historical publications in progress and the helpful features of the newly redesigned NASA History Division Web site at <http://history.nasa.gov>. Jane Odom discussed the ongoing findings of the Archival Standards Workgroup and commented on the problems generated by a combination of increasing archival holdings and the ever-expanding number of researchers.



Participants of the Annual Joint History and Records Management Meeting at the Old Mission Control Center.

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2005 NASA Annual History Meeting (continued)

Astronauts and support specialists ending a training session at the Neutral Buoyancy Laboratory.

Organized tours to attractions in the Houston area provided educational entertainment at the end of each day. After the first day, University Archivist Shelly Kelly gave an introduction to the University of Houston-Clear Lake archives with a visit to the climate-controlled vault of historical documents. Next, the group gained the privilege of touring Johnson Space Center's historic old Mission Control Center (MCC) and the new Mission Control Center with flight control rooms for the Space Shuttle and the International Space Station (ISS). The ancient computer equipment, mission flags hung on the wall, and sentimental artifacts flown in space and given to the mission support crew inspired awe in those who visited the

historic environment of the old Mission Control Center. The new Mission Control Center ran training scenarios for the mission support specialists, and the ISS flight control room monitored the actual real-time progress of the Station. Finally, the group visited the Neutral Buoyancy Laboratory at the Sonny Carter Training Facility to watch the astronauts train underwater for activities in space. The tours fostered a greater understanding of NASA and provided visible evidence of history in the making.

Finally, participants at the annual meeting agreed on several initiatives to improve history programs across NASA, including an update of the *Research in NASA History* publication and a new inventory of oral histories to be made available online. NASA archivists anticipate further improvements to the Center archival programs once the Archival Standard Workgroup releases its final report. Overall, the 2005 Annual Joint History and Records Management Meeting successfully brought everyone together in sunny Houston for several memorable, informative, and forward-looking days.

NEWS FROM HEADQUARTERS AND THE CENTERS

Headquarters

Nadine Andreassen continued her hard work supporting the History Division and taking care of the budget. Over the last quarter, she also attended various meetings and planned for future conferences. Nadine enjoyed attending the event at the National Air and Space Museum in mid-July to commemorate the 30th Anniversary of the Apollo-Soyuz Test Project, and she looks forward to the “Societal Impact of Space Exploration” conference in September 2006.

Glen Asner continued to work on forthcoming NASA History publications and the *Aeronautics and Space Report of the President for FY 2004*. He recently completed construction of the History Division’s integrated project database, better known as HOIPIS, which tracks all future and current publication projects. Glen also developed an outline for the monograph of NASA’s Decadal Planning Team (DPT) he is working on with Steve Garber.

Giny Cheong continued to compile a new version of *Research in NASA History* and create an oral history Web page with inventories from the Centers. Giny also works toward the publication of James Hansen’s *The Wind and Beyond, Volume II* and has completed the updated Apollo-Soyuz Test Project (ASTP) Web site for the 30th anniversary. The redesigned page is available online at <http://history.nasa.gov/30thastp/index.html>. Finally, she still edits this newsletter, provides Web updates, organizes the distribution of books from the warehouse, and helps coordinate special events, such as the book signing for *High Speed Dreams* by Erik Conway.

Colin Fries continued to scan NASA’s *Current News* issues for 1964 and finished cataloging the Headquarters Procurement Office files. In response to a request from the White House Liaison, he also compiled a chronology of the U.S. presidents’ calls to crews in orbit.

Steve Garber geared up to work on the DPT history project this summer. He currently enjoys completing the preliminary research and unofficial interviews necessary for the foundation of the project. In addition, Steve soon will graduate from the U.S. Department of Commerce Science Technology Fellowship (ComSci) Program, which has given him the rewarding opportunity to study national and international issues relating to the development, application, and management of science and technology.

John Hargenrader continued to scan and add NASA’s *Current News* issues from 1979 into the electronic database. He also reformatted old newspaper clippings in the human spaceflight files as well as other files that contain old, yellowing, and torn clippings. In addition, the History Division received a set of archival boxes on temporary loan that contain NASA Advisory Council material from 1994 to 2002. The material will move to the National Archives after the archival staff scans the meeting minutes, agendas, and other interesting material from this collection to add to the database.

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News from Headquarters and the Centers (continued)

Michael Makara returned as a summer intern in the History Division after a successful junior year at Virginia Tech. He has been assisting Steve Garber and Glen Asner in their research on the history of NASA's Decadal Planning Team. Mike began to write about the impact of DPT on President George W. Bush's Vision for Space Exploration. He also contributed to the *Aeronautics and Space Report of the President for FY 2004*.

Jane Odom continues to acquire and appraise new material for the Historical Reference Collection. With summer being the "busy season" in the archive, she and the archival staff have been hosting researchers, answering long-distance reference requests, and facilitating access to retired collections of material at the National Archives and Records Administration (NARA). Also, the activities of the archival standards workgroup are ongoing. Jane, Nora Blackman, Leilani Marshall, and Elaine Liston are studying archival practices and procedures Agencywide. Questions examining the area of preservation will soon be sent out to all participants, and a final report will be issued with the completion of the study later this summer. Jane, along with others at NASA Headquarters and Langley, has also been involved in discussions regarding the disposition of historic records and photographs at Langley. Unfortunately, there is no historian at Langley to care for the materials, and the prospects appear dim for hiring either a qualified historian and/or an archivist.

Ames Research Center

National Advisory Committee for Aeronautics (NACA) Reunion

More than 300 people, representing all of the former NACA laboratories and coming from more than 19 states, have registered to attend NACA Reunion XI, planned for 30 September through 2 October 2005 in San Jose, California. Four venues for attendees will include the Computer History Museum (which houses many important NASA computers), the Hiller Aviation Museum (which worked closely with NACA researchers at Ames to develop vertical flight), and the Cooper-Garrod Estate Vineyards (run by former Ames flight-test pilot George Cooper). The National Advisory Committee for Aeronautics has now been disbanded for 47 years—longer than the 43 years it was active—yet those who worked for NACA continue to feel passionate about its success and loyal to its memory. Vic Peterson, former Deputy Director at the Ames Research Center, chairs the Reunion Committee and can be reached at nacareunionxi@mac.com or 650-604-1032.

Human Performance Research Laboratory Reunion (HPRL)

NASA celebrated its legacy in forging the field of aerospace human factors with a day-long series of reunion events on 11 April 2005 at various sites around Ames Research Center. Terry Allard, Mark Rosekind, and Tom Allard were featured presenters who served on the alumni panel. Al Harrison and Patricia M. Jones led a colloquium on future directions in aerospace human factors. Dave Nagel served as the keynote speaker at an evening reception, which focused on how Ames made itself a center of excellence in human factors research.

On 11 April 1990, Ames dedicated its Human Performance Research Laboratory (N262), which provided a new center for the myriad researchers at Ames who were responsible for

developing the field of aerospace human factors. Key points in HPRL history include the Aviation Safety Reporting System in 1975, crew research management and other human fatigue countermeasures research in the early 1980s, the design of cockpit automation in the 1990s, and new methods of system monitoring and data visualization at the turn of the new century. Materials from the HPRL 15th Anniversary, including Nagel's keynote address, soon will be posted on the Ames History Office Web site.

Dryden Flight Research Center

Since 11 September 2001, Dryden's gift shop has been closed because the Center is on a military base where access has been severely restricted. The current general of Edwards Air Force Base is now keen to begin granting limited access to visitors, so Dryden will be joining the Air Force in welcoming visitors once again. The Center will open a new gift shop and visitor's center in July. Christian Gelzer has assumed the job of selecting imagery and artifacts for display in the new visitor's center. These items will be assembled in something of a chronological order and are meant to highlight the Center's role in flight research over the decades. Gelzer also continues to edit two monographs, a history of the Lunar Landing Research Vehicle and an examination of thrust vectoring research at Dryden, in preparation for their delivery to a Government Printing Office (GPO) printer.

Peter Merlin has begun composing photo captions for a pictorial history of Dryden in *A Place Like No Other*. This coffee-table book has more than 200 images, and his work entails both a bit of history and the laborious task of identifying the individuals in the photos. At the same time, Merlin is preparing a series of white papers on the diffusion of NASA-developed technology for commercial aviation. He also continues to catalog new accessions; the historical collection recently acquired the papers of Roy Bryant, an engineer who came to work for NASA two weeks after the Agency was formally created and who retired only this year. The collection totals some 60 boxes of material.

Curtis Peebles is deep into the history of the X-43 scramjet. He has conducted interviews with many of the key project engineers and continues to amass both engineering documents and additional interviews en route to producing a monograph of the multiyear project. In fact, he has already begun a first draft. Peebles wrapped up volume two of the *Spoken Word*, and the layout is currently being designed. He also interviewed Vance Brand in conjunction with the 30th Anniversary of the Apollo-Soyuz Test Project for a program on NASA TV.

Chief Historian Michael H. Gorn continues to serve as the Acting Chief of Code T, which includes history, photo, graphics, video, and technical publications services.

Glenn Research Center

As spring turns to summer, the Glenn History Office and Archives finds itself busier than ever.

Glenn recently hosted Shannon Bohle, a practicum student from the Kent State University School of Library and Information Science. She assisted in the processing of Space Shuttle press kits and developed an Encoded Archival Description (EAD) template, which is under review for use in the Archive's description procedures.

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News from Headquarters and the Centers (continued)

Archivist Nora Blackman, with RS Information Systems, presented an address on the history of rocketry and the recently decommissioned Rocket Engine Test Facility to the combined American Institute of Aeronautics and Astronautics (AIAA)/Aerospace Medical Association (ASMA) spring meeting.

In April, the History Office spent many hours researching the history of the Research and Analysis Center (RAC) in preparation for its 25th anniversary. The hard work culminated in an anniversary party attended by hundreds of people. An ongoing slideshow displayed historical photographs of the building and the people who have worked in it. Center newspapers documenting the construction of the building were displayed, and old video footage of the programs run in the RAC building was played. Everyone had a fantastic time seeing pictures of themselves and their friends in their early days at NASA.

The office continues to receive interesting donations, including a number of personal photographs from the early 1940s that document the construction of the hangar building. Glenn also continues to assist with Center knowledge-capture activities and will cosponsor a series of visitor's center events in the fall.

Goddard Space Flight Center

Recently, the Goddard Library organized a historical outreach event entitled "The Beyond Einstein Program," featuring a presentation to the Goddard community and the general public by Dr. Nick White. In addition, the Library created a special display with a "Stand on the Shoulder of Giants" theme to highlight the World Year of Physics. Jessica David also continues to update the Goddard Projects Directory listed under the Quick Picks sidebar on the Library's home page at <http://library.gsfc.nasa.gov/GSFCHome.htm>.

Jet Propulsion Laboratory

June marks the publication of the supersonic transport history *High Speed Dreams*. Written by Erik Conway, this 392-page work examines the intersection of politics and technology in the United States' efforts to develop commercial supersonic aircraft. The former High Speed Research Program's program office at Langley Research Center funded the project. Conway started this contract project in 1998 and is very happy to finally see it in print. *High Speed Dreams* is available from Johns Hopkins University Press online at http://www.press.jhu.edu/books/title_pages/8516.html.

Meanwhile, Conway's other project, *A History of Atmospheric Science at NASA*, moves slowly towards completion. He submitted the first draft of the manuscript to Langley Research Center on 18 June 2005. Conway hopes to receive his peer reviews by the end of the summer and finish work on his book soon.

In addition, Conway plans to write a history of robotic Mars exploration, framed around the 1978 Committee on Planetary and Lunar Exploration's scientific objectives from 1979 to 1988, as his first book project at his new home. These objectives were largely, though not exclusively, implemented at the Jet Propulsion Laboratory (JPL), leading to both on-orbit science and the recent "landed" science rover missions. This book will largely focus on the technology development necessary to accomplish the expressed scientific objectives, as histories of Martian science seem abundant.

During the past quarter, Conway also had time to conduct a series of oral histories with JPL leaders to document their careers, including recently retired Larry Simmons, Thomas R. Gavin, and Chris P. Jones. Currently, he is finishing a series of oral histories with JPL's ocean scientists in support of an article-length study of the origin of the landlocked, desert-arroyo-dwelling oceanography community.

JPL Archives Devises Plan To Process Backlog

In an effort to provide researchers with information on heretofore unprocessed historical materials, the JPL Archives has adopted a three-tier approach to processing these records. This approach, which is patterned after a method that is used by the Stanford Linear Accelerator Center Archives located in Palo Alto, California, ensures that basic metadata for selected accessions are added to the Archives' online catalog. After reviewing the list of unprocessed accessions, JPL Historian Erik Conway and Chief Archivist Michael Hooks agreed on those that should be processed. These accessions were selected because of their importance in documenting core work done by the Laboratory as well as the management of the Laboratory (i.e., flight projects, the Director's Office and other top management offices, and key scientists and engineers).

For Tier 1, information from the Archives' accession log (title, description as originally reviewed, originator, number of boxes, and records storage number if applicable) was entered in the catalog. Next, in Tier 2, available box content information was added to the bibliographic record. With the completion of Tiers 1 and 2, selected accessions are now identified in the catalog with assigned JPL collection numbers. Lastly, Tier 3 processing involves the creation of full bibliographic records, including container lists, for the Director's Office and the various Mars projects' records. As new accessions are added to the Archives, they will be processed following this tier approach. For a complete list of the Archives' collections, see the catalog at <http://beacon.jpl.nasa.gov>.

Johnson Space Center

A number of graduate students provided research assistance to the Johnson Space Center (JSC) History Office this past summer as part of a continuing effort started in 1997. These interns worked 10 weeks and focused on specific topics for History Office projects.

Four interns compiled information on former Mission Control Center flight controllers that will serve as preparation materials for the ongoing JSC Oral History Project. Two of the student researchers, who worked as history interns last year, were Tessa Boyd, a master's student from the University of Houston-Clear Lake, and Ashley Laumen, from Texas Christian University, who successfully defended her master's thesis while being employed at JSC. The two new members of this research team were Angela Dowdell, a doctoral candidate from the University of Michigan, and Cameron Boone, who recently received a bachelor's degree from Baylor University and is currently enrolled at the University of Houston-Clear Lake.

Another member of the research team was Kevin Brady, a doctoral candidate from Texas Christian University, who returned to the research team this summer and continues into the fall as an intern funded by the Universities Space Research Association (USRA).

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News from Headquarters and the Centers (continued)

Simone Rieck, who is completing her master's degree at the University of Houston-Clear Lake, was an archivist assistant for the JSC History Collection. This is the second year NASA has funded a student to work in the archives to help process and organize materials as well as to respond to requests for resources.

Niles Illich, a doctoral candidate from Texas A&M University who had previously worked as a JSC Oral History Project summer intern in 1999, was assigned to a special research project this past summer. Niles recently conducted an intense search and compiled data regarding NASA's Landing and Recovery Operations from 1958 to 1975. Setting a substantial foundation for a future project, he gathered information from archives across the country, including the National Archives and Records Administration facilities in Fort Worth, Texas, and in Georgia; the NASA Center archives; and the armed forces archives.

Also working with the JSC History Office was Jason Metcalf-Lindenburger. His duties focused on transferring data from reel-to-reel tapes to CD ROM disks. This ongoing project will continue until the historic recordings housed in the JSC History Collection have all been "rescued" and moved to accessible formats for use by researchers, students, and the general public. Jason also processed boxes of materials that will be scanned for future research purposes and assisted in a variety of tasks during the summer.

The JSC History staff provided on-the-job training and arranged behind-the-scenes JSC tours for all for the new research team members.

Also, NASA civil servants' and contractors' use of the JSC History Collection has doubled since March. From September 2004 to February 2005, contractor visits averaged four per month. However, from March to May, the average climbed to 10 per month. Civil servant visits are up from an average of two per month to seven per month.

Use of the JSC History Collection is expected to be heavy through the summer. In addition to the semiregular visits of the JSC summer interns, we have had an increase in requests for historical documents from civil servants and contractors who are conducting research to plan for future Moon/Mars missions. These new researchers to the collection are searching for information on the following topics: Apollo Mission rules, Apollo guidance and navigation, lunar navigation, exploration, spacecraft atmosphere, habitability studies, flight design, back contamination, crew volume space allocation, and early Space Shuttle organizational structure.

Kennedy Space Center

Elaine Liston received a One NASA Peer Award, which fosters cultural change in the Agency by honoring groups or individuals that exemplify the qualities of One NASA. The criteria included making decisions for the common good, collaborating to leverage existing capabilities, and standardizing to improve efficiency. The NASA History Division congratulates Elaine for her outstanding efforts and recognition.

In addition, Elaine remains busy with an increase in reference requests related to the Return to Flight and the new Crew Exploration Vehicle. She enjoyed the historic launch of Space Shuttle *Discovery* and the Return to Flight.



Kennedy Space Center Director Jim Kennedy and Elaine Liston with her One NASA Peer Award.

Langley Research Center

Hampton Celebrates Legacy of NASA and Air Force

By Donna G. Lawson

A crowd of more than 100 gazed up at the clear blue sky in delightful anticipation.

“Over there!” someone yelled as all eyes excitedly turned toward the two F-22A Raptors and two F-15s flying overhead in commemoration of Langley Field in Hampton, Virginia.



Two Air Force F-22A Raptors and two F-15s performed a flyover at the unveiling ceremony. (Credit: Technical Sergeant Ben Bloker, U.S. Air Force)

The flyover was part of a ceremony that culminated Saturday, 11 June, in downtown Hampton at the Virginia Air & Space Center with the unveiling of two state highway markers noting the rich history and numerous accomplishments of Langley Field—the birthplace of the U.S. Air Force and the National Aeronautics and Space Administration.

Norman L. Crabill, a retired Langley engineer, envisioned this day several years ago while researching his book *Virginia Airports: A Historical Survey of Airports and Aviation from the Earliest Days*. As chairman of the historical marker committee of the Virginia Aeronautical Historical Society, Crabill was keenly aware of Langley’s accomplishments and was in a position to do something about it. He proposed having Langley Field recognized as the oldest continuously operating airfield in Virginia and quickly won approval for the highway markers and ceremony.

General John P. Jumper, Air Force Chief of Staff, represented the Air Force in the ceremony. Jumper, whose father was a commander in the Air Force, recalled being a senior attending Hampton High School who was inspired to pursue a career as an engineer and pilot while living at Langley—a place that trained fighter pilots and the nation’s first astronauts. “I used to watch those men and knew that I wanted to be doing what they were doing,” said Jumper.

Roy D. Bridges, Director for Langley Research Center, read a letter from NASA Administrator Mike Griffin congratulating both the Air Force and Langley. “This nation has the world’s best military and commercial aircraft because of the pioneers at Langley Field and their colleagues in government, industry, and academia. They contributed to achievements in aerospace that have greatly enriched our society and provided a vital measure of our national defense in times of great peril,” Bridges added.

Mayor Ross A. Kearney II commended the three local businessmen who in 1916 had the forethought and the vision to propose that the federal government locate Langley Field in Hampton. Albert M. Orgain IV, chairman of the historical society, recognized the local officials attending the ceremony, including Congresswoman Thelma Drake, and read a letter by Senator George Allen recognizing Langley Field’s role in maintaining the nation’s preeminence in aeronautics.

Langley Research Center and Langley Air Force Base chose their visitor’s center, the Virginia Air & Space Center, to be the official site of the markers so that the citizens of Hampton and the more than 400,000 annual visitors to the museum could enjoy them.

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News from Headquarters and the Centers (continued)



The markers read as follows:

“WY 96
Langley Field: Creating an Air Force

In Dec. 1916, the U.S. Army purchased land four miles north of here to build an airfield to use jointly with the National Advisory Committee for Aeronautics. During World War I, the Army trained aircrews and tested aircraft there. In 1921, Brig. Gen. William “Billy” Mitchell led bombing trials from Langley to demonstrate that air power could destroy battleships. On 1 March 1935, Air Corps Combat units were realigned nationwide under the GHQ Air Force. Led from Langley by Maj. Gen. Frank Andrews, that combat air command was the forerunner of the Army Air Forces of World War II and marked the first real step toward the U.S. Air Force.”

“WY 97
Langley Field: Discovering Aerospace

The National Advisory Committee for Aeronautics (NACA), created in 1915 to revitalize American aviation, was a pivotal force behind opening Langley Field in 1917 nearby to the north. It was named for the late Smithsonian Secretary Samuel P. Langley. The NACA’s first research facility, Langley Memorial Aeronautical Laboratory, opened in 1918. Over the years, it solved complex problems of atmospheric flight, yielding ongoing advances in aircraft design. After World War II, the laboratory also laid the foundation for space flight. When the National Aeronautics and Space Administration (NASA) emerged in 1958, Langley trained America’s first astronauts.”



Marshall Space Flight Center

Marshall Historian Mike Wright traveled to headquarters to provide informal training to members of that history staff on how to use the Portable Document Format (PDF) for document scanning and archiving. He also reported that Marshall now has an extensive collection of Skylab mission transcripts that have been converted to DVD. “Each transcript seemed as thick as a New York City phone book. I am sure the complete stack would have reached the ceiling,” Wright said. “The transcripts are an important archive and are actually searchable now on DVD. They are also much easier to use.” He said the Marshall History Office is in the process of converting a number of paper documents to an electronic format.

Stennis Space Center

The Stennis History Office recently sponsored a “Historic Towns Lunch-and-Learn” for employees to learn about the historic towns and culture that existed in the Stennis Space Center (SSC) area before the development of the Center. NASA’s Dr. Marco Giardino spoke about the Mississippi towns of Gainesville, Napoleon, Santa Rosa, Logtown, and Westonia. The session was videotaped and is available for check-out by employees who were unable to attend.

This summer, SSC marks the 30th Anniversary of Space Shuttle Main Engine (SSME) testing at SSC. To celebrate this historic event, employees are receiving commemorative coins that contain metal shavings from an SSME and are invited to attend an anniversary reception and an SSME test. Every SSME has been tested at SSC since 1975 on the same test stands that were built in the 1960s to test the first and second stages of the Saturn V rocket that took Americans to the Moon.

NASA HISTORY NEWS

The National Historic Preservation Act and Executive Order 13287, *Preserve America*

By Tina Borghild Norwood

NASA's historians and archivists ensure the preservation of records that document the Agency's contributions to science, technology, and exploration. The Agency similarly retains responsibility for preserving historic properties at the NASA Field Centers, including design and testing facilities. NASA fulfills this regulatory obligation through its compliance with the National Historic Preservation Act of 1966, as amended (NHPA) (16 U.S.C. 470 *et seq.*).

As the basic federal cultural resource management statute, the NHPA created a national program of historic preservation by requiring federal agencies to consider the effect their programs and projects may have on historic properties (also referred to as federal undertakings). The NHPA authorized the *National Register of Historic Places*—the nation's official list of cultural resources worthy of preservation. The *National Register* lists properties associated with important individuals or events, or with distinctive architectural characteristics proven as historically significant on a local or state level. Today, the list includes over 79,000 districts, buildings, structures, and objects that are significant to American history, architecture, archeology, engineering, or culture.

On 24 May 1973, the *National Register* designated Launch Complex 39 at Kennedy Space Center, Florida, as a historic district—the first time that a NASA property was listed on the *Register*. Launch Complex 39 encompasses about 2,800 hectares (7,000 acres) and 322 buildings linked to the Apollo Manned Lunar Landing Program. Then on 13 May 1976, Redstone Test Stand, a static firing facility at the Marshall Space Flight Center in Huntsville, Alabama, earned its place on the *Register*. These are but two of the many NASA properties currently listed on the *National Register*.

The Act also created the National Historic Landmark (NHL) Program, which identifies properties (also referred to as NHLs) of national importance. Certified NHLs include places where significant historical events have occurred, places where prominent Americans have worked or lived, places representing those ideas that shaped our nation, and places that provide important information about our past or are outstanding examples of design or construction. As such, the NHL list of 2,500 properties is very exclusive.

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NASA History News (continued)

The Redstone Test Stand, used in the 1950s in the early development of the Redstone missile propulsion system, static tested the Redstone missile that launched Alan Shepard into space.

The Department of the Interior's National Park Service (NPS) manages the *National Register* and NHL programs. The NPS nominates NHLs, with the determination often being made through theme studies. In 1984, Dr. Harry Butowsky of the NPS led a *Man-In-Space* theme study, which found that 24 facilities or complexes related to manned space exploration merited NHL status. NASA owned or operated 20 of these facilities, including the Redstone Test Stand, which was already on the *National Register*. In addition, the NPS nominated NASA's Mission Control Center located at Cape Canaveral Air Force Station as an NHL. It was officially designated as a National Historic Landmark on 3 October 1985. The NHL designation for the Rocket Engine Test Facility at Glenn Research Center in Cleveland, Ohio, was withdrawn on 4 April 2005, when an airport expansion forced the facility to be demolished.

The NHPA requires each federal agency to designate a Federal Preservation Officer (FPO) who is responsible for developing and managing a historic properties management program. A Facility Preservation Officer (FaPO) designated at each NASA Center and major component installation assists NASA's FPO, Kenneth Kumor. It's a small group with the enormous charge of overseeing regulatory compliance and preservation stewardship for NASA.

In addition to following guidelines for nominating and listing properties worthy of historic preservation, federal agencies must comply with the NHPA Section 106 implementing regulations (codified in the Code of Federal Regulations at Title 36 Part 800). NASA works closely with the Advisory Council of Historic Preservation (ACHP) and State Historic Preservation Officers (SHPOs) to successfully complete the Section 106 consultation process. To reinforce and track federal compliance and stewardship efforts, President Bush signed Executive Order (EO) 13287, *Preserve America*, on 3 March 2003.

Preserve America instructs agencies to, "maximize efforts to integrate the policies, procedures, and practices of the NHPA and this order into their program activities in order to efficiently and effectively advance historic preservation objectives in the pursuit of their missions." The ACHP requires every federal agency with real property management responsibilities to provide triennial status assessments of its historic property inventory, as required by the NHPA. The ACHP also must collect initial progress reports from federal agencies in September 2005 and submit a subsequent status report to Congress in February 2006, and every three years thereafter. NASA is currently reviewing its real property inventory to identify historic properties (those 50 or more years old).

NASA's cultural resource management responsibilities include the management of *National Register* or NHL properties that NASA owns or operates. According to Kenneth Kumor, "Our management responsibilities also include properties that were not originally owned or operated by NASA, but are now owned by NASA. For example, the NASA

Ames Research Center manages the Shenandoah Plaza Historic District, Sunnyvale, California, under a Federal Facility Agreement in 1994 with the Navy.” Additionally, the Act obligates NASA to ensure NHPA compliance for educational grants involving construction plans that may potentially affect historic resources.

Kumor confirms that NASA’s cultural resource management extends far beyond the information presented and equipment displayed at NASA visitor’s centers and museums. He added, “The reach of the National Historic Preservation Act greatly extends NASA’s historic stewardship responsibilities.” For more information, contact Kenneth Kumor at Kenneth.M.Kumor@nasa.gov or the FaPO at your Center.

OTHER HISTORY NEWS

Fellowship in Aerospace History

The 2005–2006 American Historical Association Fellowship in Aerospace History has been awarded to Alexander Brown, a graduate student at the Massachusetts Institute of Technology (MIT). Brown is studying engineering cultures at NASA, particularly in relation to the Apollo 204, *Challenger*, and *Columbia* accidents. The Fellowship, supported by the NASA History Division, provides the Fellow with an opportunity to engage in significant and sustained advanced research in aerospace history.

The Dibner-Marine Biological Laboratory Seminar in the History of Biology, 2006: Astrobiology

By Matthew Shindell, University of California, San Diego (UCSD)

Does life have a home outside of Earth? NASA thinks so. From missions to Mars in the 1960s and 1970s, to the search for biological precursors in interstellar space, to upcoming missions to the distant and icy moons of Jupiter, NASA has invested heavily in the search for life in space. NASA is not alone. Astrobiology has become an international pursuit, with programs in universities across the United States and around the world. Why has NASA funded such costly projects? What is the history of the science behind this expensive search, and who are the scientists whose research has contributed to its success? Participants in this year’s annual Dibner-Marine Biological Laboratory (MBL) “Cosmic Education and Astrobiology” seminar asked just these questions.

The topic of this year’s seminar, funded in part by NASA’s History Office, was cosmic evolution and astrobiology. Historians, philosophers, anthropologists, biologists, and others involved in interdisciplinary science studies came together in Woods Hole, Massachusetts, to discuss the who, what, when, and where of astrobiology’s origins and how it became the fruitful research program it is today. To help them answer these questions, NASA and NASA-funded scientists John Rummel, Phillippe Crane, Lynn Rothschild, Carl Woese, and Lynn Margulis were on hand to discuss their own careers and research in astrobiology, to testify to the state of their science, and to participate in group discussions. The participants heard from evolutionary biologists who study the history of life on Earth by looking for clues about the conditions of the early Earth and how they interacted with the process of evolution. They heard from microbiologists about the limits of life on Earth and the study

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Other History News (continued)

of the microbes that live under Earth's most extreme conditions. They also heard from planetary astronomers about how the universe is being scoured for planets, large and small, where life may or may not have had a start. And, of course, historians documenting the development of the field of astrobiology addressed the group as well.

John Beatty, James Collins, and Jane Maienschein coordinate the Dibner-MBL History of Biology seminar series, which presents a different topic each year. NASA Chief Historian Steven Dick and Historian of Science James Strick of Franklin and Marshall College organized this year's seminar and co-authored the book, *The Living Universe*, a history of NASA's astrobiology program. The seminar was dedicated to Professor Emeritus Philip Morrison (1915–2005), who was himself a proponent of the search for extraterrestrial intelligence.

National Air and Space Museum: Division of Space History

The National Air and Space Museum (NASM) recently increased its archival holdings with several fascinating new accessions. Additions include the Apollo-Soyuz Test Project Soviet Crew Material, Saturn V Restoration Collection, Grumman Apollo Lunar Module Propulsion Reports and Photographs, and many other aerospace collections. Information regarding the NASM archives and its access policies is available online at <http://www.nasm.si.edu/research/arch/collections.cfm>.

NASM held the annual "John Glenn Lecture" on 8 April 2005 with Gene Kranz, the flight director at Mission Control Center for some of NASA's most dramatic space missions. During the exciting days of the Mercury and Gemini missions, the Apollo 11 Moon landing, and the first Space Shuttle flights, Kranz shaped the history of the Space Age. Most famously, he led the dramatic effort to save Apollo 13—just one memorable episode in his career. The film *Apollo 13*, in which he was portrayed by actor Ed Harris, immortalized his "can do" style. In this lecture, Kranz presented a fascinating firsthand account of the beginnings of the U.S. space program and revealed behind-the-scenes details that demonstrate the discipline and teamwork that made the program possible.

On 19 May 2005, NASM's "Charles A. Lindbergh Memorial Lecture" featured aeronautical design pioneer Burt Rutan, who designed SpaceShipOne. Rutan's vision is "to see affordable travel to the Moon." He took a big step closer to that dream in October 2004, when his SpaceShipOne became the first privately built spacecraft to exceed an altitude of 328,000 feet (approximately 100 kilometers) twice within a 14-day period. Reaching this milestone won SpaceShipOne the \$10 million Ansari X-Prize. Rutan first achieved worldwide fame in 1986 as the designer of Voyager, an aircraft that flew nonstop around the world without refueling. Voyager now hangs in the Milestones of Flight Gallery in the museum on the National Mall, and SpaceShipOne will also one day be displayed at NASM. Rutan spoke of his passion for creating innovative, radical aircraft designs and his exciting plans for the future. The extensive question-and-answer session with Burt Rutan can be found in *Air&Space* magazine at <http://www.airandspace magazine.com/ASM/Web/TWD/Rutan.html>.

NASM's very successful 2005 Exploring Space Lecture Series, "Rocks in Space: Asteroids, Comets, and Moons," concluded on 9 June 2005 with a presentation by Dr. Michael A'Hearn, Principal Investigator for the Deep Impact mission. Dr. A'Hearn

described the mission plan and previewed the imminent encounter in which the spacecraft's impactor would collide with comet Tempel 1 in July. Approximately 335 people attended the lecture and associated educational activities, bringing the attendance for the entire series of four lectures to about 1,335.

For the Hubble Space Telescope's 15th Anniversary (celebrating its original launch), the Division of Space History worked with the Space Telescope Science Institute, NASA Goddard Space Flight Center, and Lockheed Martin to upgrade the Hubble display located in the "Space Race" exhibition at NASM. The improvements consisted of three major elements: the addition of a television monitor broadcasting short documentaries on Hubble's origins and evolution; an update of the graphics panels explaining the Hubble Structural Dynamic Test Object on display; and the addition of a gallery of historic and iconic images of the universe taken by Hubble. NASM unveiled the enhanced display at a Hubble Space Telescope anniversary event on 25 April 2005, the 15th anniversary of the instrument's deployment from the Space Shuttle *Discovery* during the STS-31 mission.

The NASM Division of Space History has been working with the History Channel to film an episode of the *Save Our History* program concerning spaceflight objects. Featured in the episode will be the preservation work performed on the Saturn V at Johnson Space Center in Houston and the work underway to preserve spacesuits. Steve Thomas (formerly of *This Old House*) stars as the show's host. In addition to interviews with various members of the NASM staff, the show will also feature Buzz Aldrin and his remarks about his Apollo 11 spacesuit, which is currently undergoing conservation. The program will air on the History Channel in August 2005.

Everyone in the Space History Division contributed to the preparation of *The Nation's Hangar: The Aircraft Collection of the Steven F. Udvar-Hazy Center*, edited by F. Robert van der Linden. This book opens with a detailed account of the life and vision of Paul Garber, whose dream was to display the world's entire aeronautical collection for the public to view and enjoy. The Udvar-Hazy Center is fulfilling the dream of Paul Garber and all devoted curators, aviators, and supporters by providing a complete exhibition of aircraft history. In addition, the book contains a detailed exploration of the history of flight and every aspect of aviation, including the aircraft of both world wars, civilian and commercial flight, postwar aviation, and the early years of flight. The text is interlaced with nearly 300 color photographs taken by NASM photographers.

Martin Collins has received a Smithsonian Scholarly Studies Program award to fund research for his book on the history of the Iridium communications satellite venture. The award will facilitate the final phase of research and support travel to archives and the collection of oral histories. The book project is part of ongoing research to understand the important technical and social implications of space-based communications on modern life.

Two NASM space history curators presented papers at the Western Social Sciences Association meeting in Albuquerque, New Mexico, in mid-April 2005. Michael Neufeld presented "Space Superiority: Wernher von Braun's Campaign for a Nuclear-Armed Space Station, 1946–1956," based on his research for a comprehensive von Braun biography.

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Valerie Neal presented “Mourning Our Astronauts: Public Grief, Commemoration, and Memory after the Space Shuttle Tragedies,” part of her longer study of the Space Shuttle era.

Allan Needell served as the guest speaker for the History of Science and Technology Spring Colloquium held at the University of Minnesota on 4 March 2005. His presentation was titled “Failure and the Technocratic Vision: James E. Webb’s Response to the Fatal Apollo 204 Fire of January 1967.”

Cathleen Lewis gave a presentation entitled “World’s Fairs in the Space Age: A Tale of Two Spacecraft” on 2 June 2005 at the Hagley Museum and Library in Wilmington, Delaware. Her talk was part of a lecture series cosponsored by the Hagley and the Delaware Humanities Council in conjunction with their exhibition, “Centuries of Progress: American World’s Fairs, 1853 to 1982.”

Roger D. Launius published “Perceptions of Apollo: Myth, Nostalgia, Memory or All of the Above?” in *Space Policy* (vol. 21, no. 2, May 2005, pp. 129–139). This essay explores the Apollo program’s place in the popular recollection of Americans more than 30 years after the last Moon landing in 1972, partly through a discussion of films and popular music. Launius finds that the collective memory of this singular episode in American history has altered over time. His essay, “Technology in Space,” appeared in *A Companion to American Technology*, edited by Carroll Pursell (Oxford, U.K.: Blackwell Publishing, 2005, pp. 275–297). Part of the Blackwell Companions to American History series, *A Companion to American Technology* comprises 22 original essays that analyze the American technology phenomenon and provide a survey of its history and historiography in the United States. Each essay is written by a separate expert in the field and includes developments in airplanes, automobiles, computing, spaceflight, television, and more.

Margaret Weitekamp’s article, “The ‘Astronautix’ and the ‘Magnificent Male’: Jerrie Cobb’s Quest to Be the First Woman in America’s Manned Space Program,” appears in *Impossible to Hold: Women and Culture in the 1960s*, edited by Avital H. Bloch and Lauri Umansky (New York: New York University Press, 2005, pp. 9–28).

Jim David published his article, “Was It Really ‘Space Junk’? U.S. Intelligence Interest in Space Debris that Returned to Earth,” in *Astropolitics: The International Journal of Space Power and Policy* (vol. 3, Spring 2005, pp. 43–65). In this article, he explores the massive U.S. Cold War intelligence effort to learn about Soviet missile and space programs by acquiring and analyzing Soviet space debris that had returned to Earth. Equally important was retrieving U.S. fragments that had landed in foreign nations to prevent the Soviets from recovering and exploiting them. In many cases, the United States successfully acquired and tested important Soviet fragments in addition to retrieving its own debris.

NASA Explorer Institutes

NASA Explorer Institutes (NEI) is a new national-level program. It is intended to provide, “. . . as only NASA can,” engaging experiences, opportunities, materials, and information to members of the informal education community, including, but not limited to, representatives of science centers, museums, planetariums, libraries, parks, aquariums, nature centers, botanical gardens, youth groups, and community-based organizations.

In fiscal year (FY) 2004, NASA funded 17 NEI pilot projects. Over 300 individuals (representing more than 200 informal education organizations) participated in six professional development workshops. Over 400 experts from the informal education community (representing over 200 institutions) participated in 11 focus groups. The categories addressed in this funding opportunity reflect the input NASA received from the FY 2004 NEI participants.

NASA will consider four categories of NEI projects for funding in FY 2005: Professional Development Workshop Opportunities; Science, Technology, Engineering, and Mathematics (STEM) Teaching Tools and Products; Infrastructure Development Projects; and Partnerships for Sustainability. This funding opportunity is open to NASA Field Centers, the Jet Propulsion Laboratory, and NASA installations, in collaboration with Center Education Directors and Mission Directorate education liaisons. All NEI projects will be conducted in partnership with members of the informal education community. The NASA Office of the Chief Education Officer, Informal Education Division, anticipates that FY 2005 NEI initiatives will be funded at a minimum of \$25,000 and a maximum of \$150,000. Approximately \$1.2 million is available to support this effort. Additional funds from Mission Directorates, Field Centers, and/or external sources may be used to supplement NEI-funded projects but are not required. Final project selections should be announced by mid-September 2005.

NEI's goal is to encourage and support projects that will:

- Improve the public's understanding and appreciation of STEM disciplines in order to enhance people's scientific and technological literacy, mathematical competence, problem-solving skills, and desire to learn;
- Establish links promoting new relationships between informal and formal education providers that result in improved and creative STEM education in all learning environments;
- Excite youth, particularly those who are underrepresented and underserved, about STEM disciplines;
- Expand STEM informal education programs and activities to communities/locations that have been traditionally underserved by such opportunities;
- Stimulate parents and others to support children's learning endeavors in formal and informal settings and to become informed proponents for high-quality, universally available STEM education in the home and elsewhere; and
- Encourage and implement innovative strategies to support the development of a socially responsible and informed public that can make responsible decisions about STEM policy issues affecting everyday life.

NEI objectives are designed to:

- Engage the informal education community in discussions about how to involve the public in shaping and experiencing NASA-related missions;
- Identify NASA-related instructional content, resources, and information (in collaboration with the informal education community) that will enhance informal education program goals and objectives;

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- Provide NASA-related professional development opportunities for members of the informal education community across the nation; and
- Facilitate the formation of collaborative partnerships between informal and formal education communities.

Proposals must be received by 4:30 p.m. eastern daylight time (EDT) on 2 September 2005. The point of contact for technical questions regarding this announcement is listed below:

Debbie Gallaway, Project Manager
 NASA Explorer Institutes
 Informal Education Division
 Office of the Chief Education Officer
 NASA Headquarters
 Washington, DC 20456
 Telephone: 202-358-1516
 Fax: 202-606-0122
 E-mail: debbie.gallaway@hq.nasa.gov

NASA PUBLICATIONS

Project Apollo: The Tough Decisions (NASA SP-2005-4537, no. 37, the Monographs in Aerospace History Series) by Robert C. Seamans, Jr. A very insightful and well-written memoir covering his time as NASA's Deputy and Associate Administrator during the 1960s, this monograph expands upon the NASA chapter in his autobiography *Aiming at Targets* (NASA SP-4106, 1996). Copies are available by sending a stamped (for 17 ounces), self-addressed 9" by 12" envelope to the Headquarters Information Center, First Floor, NASA Headquarters, Washington, DC 20546. The monograph is also available online at <http://history.nasa.gov/monograph37.pdf>.

NASA and the Environment: The Case of Ozone Depletion (NASA SP-2005-4538, no. 38, Monographs in Aerospace History Series) by W. Henry Lambright. This timely and interesting study by a public administration professor examines NASA's decision-making process for ozone policy. Hard copies are available by sending a stamped (for 15 ounces), self-addressed 9" by 12" envelope to the NASA History Division, Room CO72, NASA Headquarters, Washington, DC 20546. The monograph is also available online at <http://history.nasa.gov/monograph38.pdf>.

The Role of Small Business in NASA's Return to Flight Initiative (NP-2005-04-399-HQ) by the Office of Small and Disadvantaged Business Utilization. This short publication showcases the role of small businesses in accomplishing the New Vision for Space Exploration. Hard copies are available by contacting Ms. Tara Hawkins at 202-358-2088 or online at <http://www.osdbu.nasa.gov>.

Non-NASA Publications

Europa—The Ocean Moon: Search For An Alien Biosphere by Richard Greenberg. This book explains the science surrounding Europa using information gained by the Galileo

spacecraft probe and discusses the future of further exploration. The book is available from the Springer Praxis Books at <http://www.amazon.com>.

Atlas: The Ultimate Weapon by Those Who Built It by Chuck Walker. Written by the former manager of program control for the Atlas program, this book examines the history of the first American intercontinental ballistic missile as a civilian and military vehicle. It is available from Apogee Books at <http://www.amazon.com>.

Dr. Space: The Life of Wernher von Braun by Bob Ward. This book reveals the vibrant personality and enormous role of Wernher von Braun as the father of modern rocketry. It is available from the Naval Institute Press at <http://www.amazon.com>.

NASA Web Sites

The *Apollo-Soyuz Test Project* Web site was created by Giny Cheong and Elizabeth Suckow and designed by Todd Messer. Available at <http://history.nasa.gov/30thastp/index.html>, it commemorates the 30th Anniversary of the Apollo-Soyuz Test Project with a concise overview, chronology, audiovisual resources, and historical documents.

The *Apollo 12 Flight Journal* Web site was authored by David Woods and Lennox J. Waugh. Available at <http://history.nasa.gov/ap12fj/>, it includes transcripts, documents, and essays that add to the already considerable contributions of the Apollo Lunar Surface Journal and the Apollo Flight Journals already online.

CONTRACTS

The NASA History Division recently contracted with Dr. Maura Mackowski to complete a scholarly book-length manuscript on the history of NASA's life sciences research and programs. The book will concentrate on NASA's life sciences research efforts from 1980 to the present day, with some background discussion of antecedent thoughts and efforts. This history project is intended to update and augment *The Human Factor: Biomedicine in the Manned Space Program to 1980* (NASA SP-4213, 1985) by John A. Pitts. It will focus on the biomedical support for advanced human space programs as well as on the administrative and political issues that have emerged as NASA's life sciences program has risen to meet the demands of an accelerated space program. This book should illustrate the important contributions of NASA's life scientists to the nation's achievements in space and the hardships experienced by these scientists as they worked to create an integrated and effective program in the space life sciences. The research and writing for this project are scheduled to take three years.

The NASA History Division has also contracted with Mr. Paul Dickson to complete the scholarly book-length *Dictionary of the Space Age*. The dictionary will concentrate on the time period since the dawn of the Space Age in 1957 and NASA's inception in 1958, with some background discussion of antecedent thoughts and efforts. Its focus will be on space terms but should also include aeronautics and aerospace terms as well. Building upon the existing literature on this subject, primarily *The Origins of NASA Names* (NASA SP-4402, 1975), the new dictionary will augment and update the older book by including terms not

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Contracts (continued)

in common usage approximately 30 years ago and presenting etymological information in a more detailed format. It will also be based on historic principles employed in the *Oxford English Dictionary* and the *Webster's III International*. The research and writing for this project are scheduled to take one year.

AEROSPACE HISTORY IN THE NEWS

First Congressional Testimony from Space

Astronaut John Phillips, aboard the International Space Station (ISS), testified before the House Committee on Science, Subcommittee on Space and Aeronautics, via satellite on 14 June 2005. While floating weightlessly, he answered questions about living and working on the Station—an environment that prepares humans for the longer duration missions outlined in the Vision for Space Exploration. Peggy Whitson and Mike Fincke, two other astronauts with experience aboard the ISS, also testified in person before the subcommittee. The astronauts described the importance of experiments conducted on the Station that have the ability to improve life back on Earth. As Whitson eloquently stated, “A full-time human presence aboard the Space Station offers us a tremendous opportunity to study human survival in the hostile environment of space and assess how to overcome the technological hurdles to human exploration beyond Earth orbit.”

Death of Bernard Schriever

On 20 June 2005, Bernard A. Schriever, a retired Air Force general and aeronautical engineer, died of complications from pneumonia at the age of 94. General Schriever earned recognition for his management of the team that developed the first intercontinental ballistic missile. In 1954, he became Commander of the Western Development Division (soon renamed the Air Force Ballistic Missile Division). From 1959 to 1966, General Schriever was the Commander of the Air Research and Development Command, renamed the Air Force Systems Command in 1961. During his career, he presided over the development of the Atlas, Thor, and Titan missiles, which served not only as military weapon systems but also as boosters for NASA's space missions. In developing these missiles, Schriever instituted a systems approach, whereby the various components of the Atlas and succeeding missiles underwent simultaneous design and test as part of an overall “weapons system.” He also introduced the notion of concurrency, which has been given various interpretations but essentially allowed the components of the missiles to enter production while still in the test phase, thereby speeding up development.

Schriever was born in Bremen, Germany, and became a naturalized citizen at the age of 13. He earned a bachelor of science degree in architectural engineering from Texas A&M University as a Reserve Officer Training Corps (ROTC) cadet in 1931, and he chose the Army Air Corps Reserve in 1933 after completing pilot training. Schriever received a regular commission in 1938 and his master of arts in aeronautical engineering from Stanford University in 1942. During World War II, Schriever maintained Army Air Force planes and flew 63 combat missions as a B-17 pilot with the 19th Bombardment Group in the Pacific Theater. In 1966, General Schriever retired but continued in consulting and advisory positions. NASA awarded him the Distinguished Public Service Medal in 1999.

NASA's Successful Deep Impact

On 4 July 2005, Deep Impact's impactor spacecraft successfully crashed into comet Tempel 1 and created enough debris to generate a large flash of light. The short-lived probe inside the impactor transmitted its final spectacular images 3 seconds before collision and 18.6 miles from the comet's surface. Scientists believe the 820-pound impactor collided into the comet at a rate of 6.3 miles per second and produced heat levels of several thousand kelvins. The Deep Impact mission sought answers about the formation of the solar system by examining the nature and composition of comets. The University of Maryland holds responsibility for Deep Impact mission science, and the Jet Propulsion Laboratory handled project management. For more information about Deep Impact, please visit the NASA Web site at <http://www.nasa.gov/deepimpact>.



CALL FOR PAPERS AND PROPOSALS

Societal Impact of Space Exploration

The NASA History Division and the Department of Space History at the National Air and Space Museum are issuing a call for papers to be presented at the “Societal Impact of Space Exploration” conference. The three-day conference will be held in Washington, DC, in September 2006.

The purpose of the conference is to undertake a broad overview of the societal impact of space exploration, especially as illuminated by historical research. The conference will examine, with rigorous research, the national and international impact that space activities have had on society over the last 50 years. The conference will also address society's impact on the space program.

The following five sessions are currently planned:

I. Catalyzing Events

What was the national and international impact of the defining moments of the Space Age (e.g., Sputnik, Apollo 8 circumlunar mission, first lunar landing, *Challenger*, and *Columbia*)?

II. Commercial and Economic Impact

What has been the commercial and economic impact of space exploration? This topic ranges from specific studies of spinoffs like integrated circuits (ICs) and microelectromechanical systems (MEMs) to broader impacts like the aerospace industry. What has the effect been on the management of large-scale technological systems? How has NASA's impact differed from that of Department of Defense (DOD) space systems, and what has been the relative impact of other space programs?

III. Applications Satellites, the Environment, and National Security

Where would we be without satellites for Earth resources, weather, navigation, communication, and reconnaissance? What has been their measurable impact over the last 50 years? What effect have they had on the environmental movement? What effect have they had on national security?

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Call for Papers and Proposals (continued)

IV. Local Impacts: Educational, Social, Political, and Economic

Has the spaceflight enterprise had a significant impact on education, in terms of specific programs, educational infrastructure, and as an inspiration to youth? What has been the impact of the space Centers on social dynamics and politics?

V. Philosophical and Cultural Impact: Our Place in the Universe

What impact has human and robotic exploration had on our self-image? What is the impact of the visual imagery from the Space Age (e.g., Earthrise from the Moon, the whole Earth, the pale blue dot from Voyager, and the Hubble Space Telescope images), and, more generally, what is the picture that space science has given us of our place in cosmic evolution? What has been its general impact on culture, including popular culture (e.g., science fiction, literature, and film), music, religion, etc.?

Depending on the proposals received, other sessions are possible. For example, a session may be devoted to the impact of society on the space program.

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.

2006 Mutual Concerns of Air and Space Museums Seminar

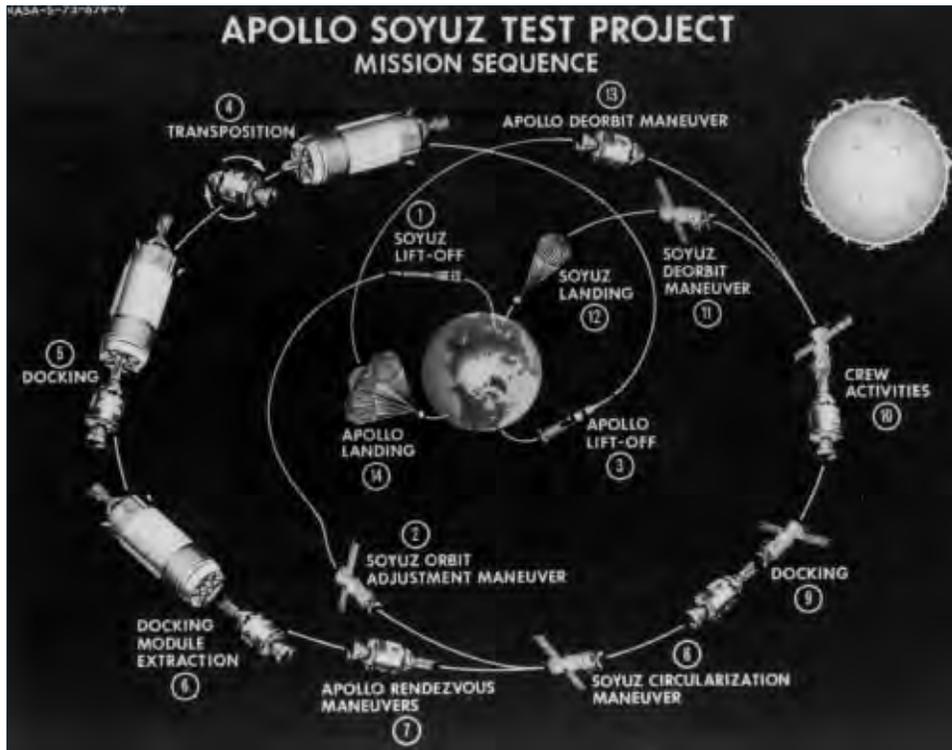
The National Air and Space Museum (NASM) seeks proposals on any topic or issue relevant to the community of museums and aerospace education centers for the “2006 Mutual Concerns of Air and Space Museums Seminar.” NASM will hold the seminar in Washington, DC, in the spring of 2006, from Saturday through Thursday. More information about the exact dates and location are forthcoming.

Submitting a session proposal is an important means of sharing and exploring our common interests. The program committee will review all proposals and may, based on the number and subject matter balance of the submissions, add other session ideas. In addition to clearly describing the session and listing possible speakers, each proposal should try to designate a chair for the session. Each session will usually include a brief introduction by the chair, the speakers’ presentation, the chair’s comments, and a question-and-answer period with the audience.

In thinking about your proposed session, please carefully consider your subject and the number of speakers. In most cases, a two-speaker format will allow sufficient flexibility to cover a subject in depth and involve the audience. The agenda for the seminar will be finalized by the end of the year. Session proposals should be submitted by Wednesday, August 31, 2005, preferably by e-mail. Please contact either Jean M. DeStefano by phone at 202-644-2388 or by e-mail at destefanoj@si.edu, or Jennifer Skomer by phone at 202-633-2429 or by e-mail at skomerj@si.edu, for an electronic copy of the proposal forms and more information.

Con/texts of Invention

From 20 to 22 April 2006, The Society for Critical Exchange will host a working conference at Case Western Reserve University, Cleveland, Ohio. “Con/texts of Invention” will examine the social and cultural construction of invention: the diverse ways in which invention has been conceptualized in the arts and sciences in the broadest sense. Please e-mail a short curriculum vitae and an abstract of the paper to dar29@case.edu by 5 October 2005. For more information, please visit the Web site at <http://www.case.edu/afil/sce>.



IMAGES FROM SPACE HISTORY

The image above illustrates an artist's concept of the sequence of events during the joint United States-Soviet Union Apollo-Soyuz Test Project (ASTP) mission. The actual ASTP mission occurred from 15 to 24 July 1975, but the seeds of cooperation originated with the Soviet offer of support under the "Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched into Outer Space" or the "Rescue Agreement," effective December 1968, for the Apollo 13 mission in April 1970. Interested in testing equipment and techniques, the United States proposed a joint mission with the goal of docking an American Apollo spacecraft with a Soviet Soyuz spacecraft in early 1971. The two countries officially authorized the joint mission in the "Agreement Concerning Cooperation in the Exploration and Use of Outer Space for Peaceful Purposes," signed during the 1972 Strategic Arms Limitation Treaty talks.

During the next few years, scientists and engineers collaborated on resolving technical problems between the two spacecraft, such as differences in atmospheric pressure and manufacturing the docking module. The Soviet Union even allowed American visitors and journalists into their training facilities. On 17 July 1975, the two spacecraft successfully rendezvoused and docked in space. The historic handshake between astronaut Thomas Stafford of the United States and cosmonaut Alexei Leonov of the Soviet Union in the docking ring created hope for further cooperative efforts that were not realized for another two decades. The United States and Russia finally reunited for Phase 1 of the International Space Station, or the Shuttle-Mir missions, with STS-60 on 3 February 1994 and the Space Shuttle *Atlantis* (STS-63) rendezvous with *Mir* on 29 June 1995.

For more information and audiovisual images, please visit the new Apollo-Soyuz Test Project Web site (redesigned for the 30th anniversary) at <http://history.nasa.gov/30thastp/index.html>.

UPCOMING MEETINGS/EVENTS

From 30 August to 1 September 2005, the American Institute of Aeronautics and Astronautics will host its "Space 2005" conference sponsored by the Raytheon Company at the Long Beach Convention Center in Long Beach, California. The conference will examine the context of space and the vision for the future. For more information, please visit the Web site at <http://www.aiaa.org/content.cfm?pageid=230&lumeetingid=1181>.

From 28 September to 1 October 2005, the Society for Military History will sponsor presentations at the Northern Great Plains History Conference at the Plaza Hotel in Eau Claire, Wisconsin. For more information, please visit the Web site at <http://personal2.stthomas.edu/jcfitzharris/NGPHC/>.

From 3 to 6 October 2005, the Society of American Engineers (SAE) will sponsor its 2005 SAE Aerotech Congress and Exhibition at the Gaylord Texan Resort and Convention Center in Grapevine (Dallas/Ft. Worth region), Texas. The theme, "Where Technology Takes Off," honors the 100th anniversary of the Society's involvement with and support of American aviation. For more information, please visit the Web site at <http://www.sae.org/aerotech>.

From 4 to 6 October 2005, the Space Foundation and *Space News* will cohost "Strategic Space 2005" to support the U.S. Strategic Command at the Qwest Convention Center and Arena in Omaha, Nebraska. For more information, please visit the Web site at <http://www.spacesymposium.org>.

From 5 to 9 October 2005, the National D-Day Museum will host an International Conference on World War II with a theme entitled "The War That Changed The World" at the New Orleans Hilton Riverside and the Ernest N. Morial Convention Center in New Orleans, Louisiana. For more information, please visit the Web site at <http://www.ww2conference.org>.

From 8 to 10 October 2005, the George C. Marshall Foundation, the McCormick Tribune Foundation, and the History Department of the Virginia Military Institute (VMI) will host "From Quagmire to Détente: The Cold War from 1963 to 1975" at the Marshall Center in Lexington, Virginia. For more information, please e-mail Professor Malcolm Muir, Jr., at muirm@vmi.edu.

From 27 to 28 October 2005, the Center for Cryptologic History will host its "2005 Symposium on Cryptologic History" at the Johns Hopkins Applied Physics Laboratory in Laurel, Maryland. For more information, please visit the Web site at <http://www.nsa.gov/cch/>.

From 3 to 6 November 2005, the Society for the History of Technology and the History of Science Society will hold their annual meetings in Minneapolis, Minnesota. For more information, please visit the Web site at <http://www.shotprogram.org>.

From 5 to 8 January 2006, the American Historical Association will hold its annual meeting in Philadelphia, Pennsylvania. For more information, please visit the Web site at <http://www.historians.org/annual/index.cfm#future>.

From 8 to 12 January 2006, the American Astronomical Society will hold its meeting in Washington, DC. For more information, please visit the Web site at http://www.aas.org/meetings/meeting_dates.html.

From 9 to 12 January 2006, the American Institute of Aeronautics and Astronautics will host an Aerospace Sciences Meeting and Exhibit in Reno, Nevada. For more information, please visit the Web site at http://www.aas.org/meetings/meeting_dates.html.

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

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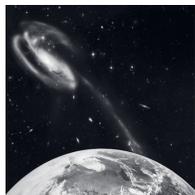
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We also welcome comments about the content and format of this newsletter. Please send comments to Giny Cheong, newsletter editor and compiler, at gcheong@hq.nasa.gov or call 202-358-5125.

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Vision

To improve life here,
To extend life to there,
To find life beyond.

Mission

To understand and protect our home planet,
To explore the universe and search for life,
To inspire the next generation of explorers

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