News & Notes

NASA HISTORY OFFICE
OFFICE OF EXTERNAL RELATIONS

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From the Chief Historian

How much risk should individuals and institutions take in the pursuit of exploration? It is a question that has been asked throughout history, and at NASA every day—most recently, in the context of the deliberations following the Space Shuttle *Columbia* accident and the cancellation of the Shuttle servicing mission to the Hubble Space Telescope. At the end of September 2004, various aspects of the question were pondered at the Administrator's symposium on "Risk and Exploration: Earth, Sea and the Stars." Held at the Naval Postgraduate School in Monterey, California, the gathering brought together a variety of risk takers, ranging from mountain climbers to astronauts and deep-sea divers, as well as several speakers who addressed history. One of the organizers was NASA's own Chief Scientist, John Grunsfeld, who knows something about risk. A mountain climber and a veteran of four Shuttle flights, he was the last man to touch the Hubble Space Telescope on its last servicing mission. This meeting was intended to draw on a wide variety of experience inside and outside NASA in order to illuminate the question of risk and reward in exploration.

The Administrator posed the challenge on the first day: knowing that a creative society should not forsake exploration, and knowing that this means undertaking bold ventures, how do we balance risk and rewards? In his opening remarks on the public perception of risk, CNN science correspondent Miles O'Brien noted that the public is not risk-averse and that minimizing risk means minimizing public interest. Numerous speakers emphasized that risk is everywhere, whether in marriage, in investing, or aboard a spacecraft. All agreed that risk should be mitigated to the extent possible. Apollo 13 astronaut Jim Lovell pointed out that there is also a risk of too much mitigation, which he thought was the case on his

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An Interview with NASA Chief Historian Steven J. Dick

By Benjamin Guterman; originally printed in *The Federalist* (the newsletter of the Society for History in the Federal Government), summer 2004

Steven J. Dick recently became the Chief Historian of the National Aeronautics and Space Administration (NASA). The History Office has seven permanent staff members and several students at NASA Headquarters in Washington, DC. In addition, the office coordinates history staff at NASA's 10 Centers around the country. In this interview, Dr. Dick provides some insights into the Office's diverse functions and services and discusses his priorities and goals for the coming years.

Congratulations on your award of the Society's 2004 Pendleton Prize for your recent book, *Sky and Ocean Joined: The U.S. Naval Observatory, 1830–2000*. What did that investigation reveal to you about the development of science in the United States?

The 170-year span of the Observatory's history encompassed many themes. As was the case with some of the other sciences, military patronage was very important for the rise of astronomy in the United States in the 19th century. In this instance it was because of the practical needs of navigation, but the Observatory's history is a case study of the tensions and synergies between practical and pure research. The controversy over military vs. civilian control of the agency also echoes broader themes in science in the United States, extending even to the founding of NASA in 1958. The Observatory's long history was an almost unique opportunity to examine six generations of scientists and how their worked changed over time in a single institution as science and technology

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From the Chief Historian (continued)

Gemini VII flight. Lovell discussed the bold decision to send Apollo 8 to the Moon in December 1968, only three months after Apollo 7 had circled Earth. He described the harrowing experiences of his crew when an oxygen tank on the servicing module exploded 200,000 miles from Earth, forcing the crew to use the Lunar Module as a lifeboat (see his book *Lost Moon*). Lovell emphasized that events leading to the Apollo 13 explosion actually began many years earlier, when decisions were made about the Apollo power system and thermostat; he pointed out that a heritage of risk can build up over many years. Similarly, astronauts Shannon Lucid and Michael Foale recounted their experiences aboard the aging Mir Space Station and the risks with which they grappled every day in the face of the unexpected. And Mike Gernhardt, a veteran of four Shuttle missions, discussed the risk-reward equation in more mathematical terms, as well as in personal terms of whether a 25-percent decompression sickness was an acceptable risk for extravehicular activity (EVA).

Jack Stuster, an anthropologist specializing in human factors and the author of *Bold Endeavors: Lessons from Polar and Space Exploration*, brought historical depth to the subject with a discussion of voyages from Lewis and Clark to Arctic and Antarctic exploration. He argued that some of these expeditions might serve as models for future long-duration human space missions. Laurence Bergreen, author of the recently published *Over the Edge of the World: Magellan's Terrifying Circumnavigation of the Globe*, pointed out that on 6 September 1522, when the battered ship *Victoria* returned to Spain, only one of five ships and 18 of 260 crew members had survived the search for the Spice Islands—and Magellan was not one of them. This is obviously an unacceptable level of risk today, especially in pursuit of something as mundane as spices (even though the economic value of cloves was analogous to that of oil today). But it points out that the acceptance of risk changes with time and culture. And, as one participant pointed out, exploration is a spice more valuable than cloves.

Other speakers described the risks of looking for life in extreme environments, whether in water under the Antarctic ice, inside lava tubes, in deep caves, or in high-altitude lakes in the Andes exceeding elevations of 20,000 feet. NASA's Nathalie Cabrol described the harrowing experience of diving without oxygen in these icy lakes, with her heart rate lowering to 39 beats per minute. She pointed out that, in addition to being valuable for astrobiology, the data are also valuable for heart research. These explorers daily consider the risk and payoff equation in a most personal way. One of the continual themes of the conference was that too much focus on a goal can cause safety to be compromised. High-altitude mountaineer Ed Viesturs recounted how, on one of his expeditions to the top of Mt. Everest, he decided to turn back due to looming bad weather. Eight others, only 300 meters from the summit, pressed ahead and perished. Emotion should not play a role in a risk decision, nor should "groupthink," Viesturs cautioned, and to the extent possible, explorers should avoid putting themselves in a position where these factors can dominate.

Sylvia Earle, founder and chair of Deep Ocean Exploration and Research, Inc., and veteran of numerous deep-sea dives, expressed her belief that we have become too risk-averse as a society. She pointed out that the Mariana Trench—the Everest of the ocean—had not been visited since 1960. Only 5 percent of the oceans, the home of 97 percent of life on Earth, has been explored. She emphasized that we should be more concerned about *not* taking the risk, concluding that "what is really at risk is our future." In this regard, 15th-century Ming China, which pulled back from exploration and suffered the consequences of diminished vitality for centuries afterward, was mentioned more than once. Jean Michel Cousteau

pointed out that NASA was created to pioneer the future and that it should serve not only as a generator of new knowledge, but also as a generator of national vitality. He reminded the audience of a meeting at NASA Headquarters between his father, Jacques Cousteau, and Wernher von Braun; curiosity animated them, he said, and it should animate us now. James Cameron, relating his experiences in filming *Titanic* and in other ventures, concluded that the historical success of nations rests on balancing risks and rewards. Still, he added, "you have to be willing to accept the idea of failure . . . failure is part of exploration."

Risks in space exploration were covered by a variety of speakers, including Steve Squyres (Principal Investigator for the Mars Exploration Rover Mission), Jim Garvin (NASA Chief Scientist for Mars and the Moon), John Mather (Senior Project Scientist for the James Webb Space Telescope), and John Grunsfeld, who spoke about the decision to cancel the Shuttle servicing missions for the Hubble Space Telescope.

The meeting was memorable for many reasons, not least because a 6.0 earthquake shook the auditorium on the second day. Most people (including Administrator O'Keefe) kept their seats. But a few—having calculated that the risk was too great—headed for the back door! It was a poignant reminder that risk can be subjective and a choice of the most personal kind.

Throughout the meeting, it struck me that "risk and exploration" was a subject ripe for historical lessons, as are so many other areas of NASA's activities. I hope some of you will ponder the possibilities. Meanwhile, on the subject of exploration, on the 46th anniversary of the founding of NASA on 1 October 1958, the History Office launched the first of a series of essays on "Why We Explore." It can be found on the exploration page of NASA's Web site (*http://www.nasa.gov/newvision*). I invite your comments and your participation.

Steve Dick

An Interview with NASA Chief Historian Steven J. Dick (continued)

evolved. My research also starkly exhibits the differences among three levels of history: that deriving from the printed record, the archival record, and "what really happened in history," sometimes hinted at in oral histories, but in many cases forever inaccessible.

How has your long service at the Naval Observatory prepared you for this position?
During my 25-year tenure I worked both as an astronomer and a historian at the Observatory. So I knew the Observatory from the inside, but constantly strove to keep an objective attitude.

What is the working interrelationship between the NASA History Office Headquarters and the several Centers, and is historical work decentralized?
The relationship with the 10 Field Centers is not supervisory, but rather guiding and coordinating. We have quarterly telecons with history staff, and an annual meeting at one of the Centers. Some Centers are stronger than others in history, and one of my goals is to strengthen history at all the Centers. Accordingly, we have drafted a NASA Policy Directive on history, which among other things gives guidance for history functions at the Centers.

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An Interview with NASA Chief Historian Steven J. Dick (continued)

What have you found to be your greatest program challenge thus far?
The NASA History Office encompasses a broad array of activities, ranging from book contracts and our own research and writing to organizing conferences and answering historical inquiries. In addition our audiences are many and varied, including the general public and scholars. And we are called upon to answer internal inquiries and to provide input for policy decisions. I am a strong proponent for history being both scholarly and useful. So my greatest challenge has been not only to keep up with these many activities, but also to manage them and steer them in new and positive directions.

Do you plan any new history initiatives or programs?
We have developed a five-year strategic plan leading up to NASA's 50th anniversary in 2008. We have added "societal implications of space exploration" to our portfolio and will support that with book projects and conferences. We plan a conference on "critical issues in the history of space exploration," such as motivations for spaceflight, human vs. robotic issues, and NASA's external relations nationally and internationally. And we will have conferences on the occasion of the 50th anniversary of the Space Age in 2007 and NASA's 50th anniversary.

How can we promote good working relationships between archivists and historians?
I'm a great fan of archivists because I have used archives at NARA [National Archives and Records Administration] and elsewhere, and of course the NASA Historical Reference Collection is an important part of our work. Historians and archivists have different goals and duties, but each needs the other. The best thing we can do is communicate our needs effectively.

How has your program been affected by recent NASA setbacks and successes, and by presidential and congressional involvement?
We at NASA are all excited by the new space exploration vision to go to the Moon and Mars. There is a realization that if those programs are going to be funded adequately, the public will need to know what is in it for them. The Aldridge Commission charged with implementing the new plan said exactly that. The History Office is in a unique position to study how the public has benefited from the last 45 years of space exploration, not in a public relations way, but applying the rigorous tools of historical analysis.

In what ways does the History Office seek to reach the general public?
The societal implications study will address that. Our History Office Web site (*http://history.nasa.gov*) receives upwards of 3 million hits per month. And I would like to see our books reach a wider audience. We need constantly to remember that the taxpayers pay our bills.

How do you prioritize topics for new publications?
In the past there has been an emphasis on human spaceflight. I would like to see research in areas that have not been adequately addressed. For example, the history of space science, Earth science, and life sciences at NASA has received little attention. Studies of the relations between NASA and the Department of Defense, international relations, and relations with industry are ripe for study. And again I return to the need for broad studies of the impact of space exploration on society.

What has been the reception of the oral history program, and are transcripts available online?
We have a fantastic array of oral histories available, many done through our oral history program at Johnson Space Center. Some transcripts are online, and these transcripts plus an index are available at *http://www.jsc.nasa.gov/history/oral_histories/oral_histories.htm.* More oral histories are housed in the NASA History Office at Headquarters, and an inventory is available upon request.

For what project types or situations do you employ contract historians in your program?
Normally we employ contract historians in response to requests for proposals that we issue on a variety of topics. The two most recent ones are a history of NASA's planetary protection program and a general history of NASA's role in aeronautics since 1958. We also consider unsolicited proposals, though our budget for that is limited.

Does your office gather data on current space programs such as the Mars landing missions?
This is one of the challenges in an agency where so much is happening—how to capture current history. So far we have not devised a systematic way for doing that. But it should be done, and I would be interested in hearing what other agency history offices do in that area.

Your planned conferences sound exciting. How do you hope they will enhance your program goals?
Historians are in a unique position to provide perspective, both to their agencies and to the general public. By sponsoring the broad conferences mentioned above, we will do first-class scholarly work, reach a wide audience, and hopefully inform policy decisions.

How have technological tools affected the Office's work, and how will work processes change in the near future?
There is no doubt that the Web is the most effective way of reaching a wide audience. We are working to completely revise our Web site. E-mail has also revolutionized our office in terms of answering public inquiries. There are more of them, but more efficiently answered.

NEWS FROM HEADQUARTERS AND THE CENTERS

Headquarters

Nadine Andreassen, Steven Dick, Jane Odom, and Anthony Springer are working on an exhibit that will be displayed at NASA's first home, The Dolley Madison House. Nadine Andreassen is planning a book signing for *Exploring the Unknown, Volume VI, Space and Earth Science*, edited by John M. Logsdon with Stephen J. Garber, Roger D. Launius, and Ray A. Williamson. Our History Program Review is scheduled for 5–7 April 2005 at Lyndon B. Johnson Space Center.

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News from Headquarters and the Centers (continued)

This month, Colin Fries finished processing and describing the Office of Space Sciences (OSS)/Office of Space Sciences and Applications (OSSA) collection, approximately 7 cubic feet in 22 boxes.

Steve Garber is participating in a part-time science and technology policy fellowship program run by the Commerce Department. This ComSci program brings together a small group of people from various executive-branch agencies for nine months. Program participants have the opportunity to select top-level speakers on a broad variety of science and technology topics, to make site visits in the Washington, DC, area, and to take a week-long field trip. In addition to the various books and monographs he is helping to shepherd through the publication process, he is also enjoying the opportunity to help produce several new video documentaries for the History Office. In particular, keep an eye out for the upcoming *Of Atoms and Ashes*, a documentary that Jim Polaczynski created about NASA Glenn Research Center's Plum Brook nuclear reactor facility.

John Hargenrader has been processing the files of the Office of Personnel. The material covers the time period from 1958 through 2004 and is primarily composed of news clippings, cartoons, press releases, internal news publications, NASA Management Instructions (NMIs), and some photographs. An important feature of this material is how NASA personnel dealt with the post-Apollo downsizing and shifting of resources to the Space Shuttle and other programs. Reductions In Force (RIFs) and early retirement options were offered at various times to employees of NASA and other federal agencies. This material provides some context on NASA employees' reactions, concerns, and methods of coping with these career-related challenges. Although NASA has always been at the forefront of science and technology, these social impacts on NASA as a federal agency deserve historical attention.

Jane Odom attended the Society of American Archivists' annual meeting in Boston in early August, where she attended sessions on privacy versus access, standards development, digital preservation, and eBay and the proliferation of archival theft, among other issues. She is continuing to appraise for historical value a collection of subject files, ca. 1984–99, donated by Louise Alstork upon her retirement, as well as a collection of space station materials, ca. 1960–79, donated by author Dennis Jenkins. Jane and her archival standards workgroup members (Nora Blackmun, Elaine Liston, and Leilani Marshall) are continuing their study of archival practices and procedures Agencywide. A final report will be issued when the study is complete. To date, the results from the reference and access portion of the study have been compiled. If any Center historian or archivist wishes to have an advance copy, contact Jane. Additionally, Jane is providing direction to the interns on a variety of projects and will begin working closely with a University of Maryland graduate student, Rob Jenson, as he joins the History Office for a 50-hour archival practicum.

Jennifer Troxell has been promoted to International Programs Specialist in the Office of External Relations. She is working to support Aeronautics and Exploration Systems as the External Relations team lead for Canada, Italy, and the United Kingdom. She also coordinates the Aeronautics and Exploration Systems–related activities in Hungry, Denmark, Finland, Sweden, Norway, Africa, the Middle East, Belgium, the Netherlands, Luxembourg, and Austria. Jennifer left the History Office in September 2004. She would like to thank all of the folks in the History Office, Headquarters, and the Centers for their

guidance, assistance, and friendship. She may still be contacted at 202-358-0724 or *Jennifer.L.Troxell@nasa.gov*.

Special thanks to Jennifer Troxell for her dedication and hard work for the Headquarters History Office. Good luck and best wishes in your new job!

The NASA History Office welcomes aboard four new interns this semester:

Rebecca Anderson is a junior at the University of California at Davis majoring in English and political science. She is helping prepare for publication a manuscript entitled *NASA and the Environment: the Case of Ozone Depletion*, by W. Henry Lambright, as well as the second volume of *The Wind and Beyond: A Documentary Journey into the History of Aerodynamics in America*, edited by James R. Hansen.

Giny Cheong, a graduate student at George Mason University, is studying to get her master of arts degree in American history and is interning at the History Office. She is helping to prepare for publication volume 1 of *Rockets and People*, a translation of the memoirs of Russian space pioneer Boris Chertok. She is also helping with the NASA History Web site.

Rob Jenson, a graduate student in the College of Information Studies at the University of Maryland, has joined our staff recently and is working on an archives practicum with Jane Odom. He is processing of the papers of John L. Sloop, an engineer involved with advanced research and propulsion for NASA (and the National Advisory Committee for Aeronautics, or NACA) for 30 years. The Sloop papers, dated 1945–78, contain chronological correspondence files, notes, speeches, reports, photographs, interviews, and other items. This material will be very useful to researchers once this collection is thoroughly arranged and described.

Michael Peacock, a junior at the University of Pennsylvania studying international relations, is spending the semester in Washington, DC. He is helping to prepare for publication a manuscript written by former Deputy Administrator Robert Seamans entitled *Manned Lunar Landing: The Tough Decisions.* He is also working with the Office of Public Affairs and NASA's Glenn Research Center to facilitate wider distribution of a documentary entitled *Of Ashes and Atoms* by Jim Polaczynski about the NASA Plum Brook Station Reactor Facility.

Ames Research Center

NASA Ames Celebrates 65th Anniversary

On 20 December 2004, Ames Research Center will celebrate the 65th anniversary of its founding. At the new NASA Ames Exploration Center, the public will be treated to displays on Ames history and showings of an Ames history video prepared by the Public Affairs Office video team. Public lectures will highlight Ames's contributions to the Cassini-Huygens mission, as well as research in robotics, information technology, aeronautics, and space science. G. Scott Hubbard, Ames Center Director, will talk about what to anticipate during the next 65 years of Ames history.

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News from Headquarters and the Centers (continued)

It was on 20 December 1939 that Russell Robinson lead a NACA work crew in turning the first shovel of dirt on the corner of Moffett Field that would become the NACA Ames Aeronautical Laboratory. In January of 1940, the first NACA engineers began to arrive at Ames to plan and construct the world's greatest collection of wind tunnels. To mark the anniversary of the peopling of Ames, and all that those people have accomplished since then, the Center will also host a luncheon celebration for all employees on 19 January 2005. Jack Boyd and Scott Hubbard will talk about the past and future of Ames. After 65 years, NASA Ames is a Center still going strong.

Dryden Flight Research Center

Michael H. Gorn attended the American Institute of Aeronautics and Astronautics (AIAA) annual meeting in Providence, Rhode Island, on 17 August 2004 and received the 2004 Gardner-Lasser Aerospace History Literature Award for *Expanding the Envelope: Flight Research at NACA and NASA* (University Press of Kentucky, 2001). The award is presented annually by the AIAA for the best original contribution to the field of aeronautical or astronautical nonfiction historical literature published in the last five years that deals with the science and technology of aeronautics and astronautics or their impact on society.

Gorn continues as Acting Chief of the Dryden Office of Public Affairs, Commercialization, and Public Outreach (of which History, Photo, Graphics, Video, and Technical Publications are part).

Unconventional, Contrary, and Ugly: The Story of the Lunar Landing Research Vehicle, which Christian Gelzer edited, should be with the Government Printing Office (GPO) as you read this. The book recounts the history of the Lunar Landing Research Vehicle (LLRV) from its inception through its service as a training tool at the Manned Spacecraft Center. Its three authors worked as engineers on the program, and their book is geared to both the aficionado and the educated reader. Lane Wallace's *Nose Up: High Angle-of-Attack and Thrust Vectoring Research at NASA Dryden, 1979–2001* is a look at 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). Less technical than the LLRV monograph, it will nonetheless appeal to the knowledgeable reader as well as the novice. We expect to send *Nose High* to the publisher by year's end. Christian also reviewed two new compilations of aviation history for the *Journal of Transport History*.

Christian has taken over the editing and expansion of a new edition of *Flights of Discovery*, which will also have new photographs. The new edition of this popular history is planned to coincide with the 60th anniversary of Dryden Flight Research Center in 2006. Christian also has begun research for a biography of Paul Bikle, the first Director of the NASA Flight Research Center at Edwards Air Force Base (AFB). (Bikle was the second Chief of the High Speed Flight Research Station, but within a month of his assuming his duties, the Station became a NASA Center.) If you have pertinent materials or interviewees you can loan or recommend, please let him know.

Peter Merlin recently spent a week at the National Archives in Laguna Niguel identifying and copying documents from Dryden that were originally sent to the repository. His focus continues to be the first and second decades of NACA flight research projects here at Edwards.

He continues to work on *A Place Like No Other: Images of Flight Research,* along with Ted Huetter. This book will include dozens of unique photographs illustrating the history of Dryden from 1946 to the present. Detailed captions and supplementary text will give the reader an overview of the Center's accomplishments during nearly six decades of aeronautical and aerospace research.

In conjunction with Dr. Greg Bendrick, Peter has been working on a monograph tentatively titled "Human Factors in Aircraft Mishaps," which explores the role of human factors leading to aircraft accidents.

Curtis Peebles is beginning a year-long assignment to document Dryden's X-43 hypersonic flight research project. The documentation phase will include the collection of written and pictorial materials, as well as extensive interviews. From this will come a formal history of the project that Curtis will write.

He is also finishing up the second volume of *The Spoken Word: Beyond the Sky*. This volume covers the period of the 1960s and such projects as the X-15, Lifting Bodies, and the Lunar Landing Research Vehicle. The book is in the hands of outside readers, and it should be ready for final editing by the end of October.

Glenn Research Center

From Glenn to Goddard and Back Again: A History Co-op's Journey

By Anne Burke

Many co-ops only get to experience NASA at one Center. As a co-op in the history office at Glenn Research Center, I was very excited to learn that while at school at the University of Maryland, it would be possible for me to do a detail at Goddard Space Flight Center. I have many goals for myself and my work during this exciting opportunity, but the most important is to contribute to the "One NASA" idea. By spending a semester working at Goddard, I hope to engage in a great deal of knowledge sharing and exchanging. I have already found a number of instances in which my experiences at Glenn enabled me to contribute useful information to projects at Goddard. I had the chance to contribute not only to history-related activities, but also to knowledge and records management. I am working closely with Jane Riddle on a project to make our historical phone books searchable. This not only will help in locating biographical information, but also will help us to track the many organizational changes over the years. There may also be the possibility of assisting Ed Rogers, our Knowledge Architect, in outlining the steps in getting a book published for the NASA History Series. I am also hoping to find out more about how Goddard handles documentation for its historic buildings—something than Glenn works hard to do and is constantly looking for more ways to improve. Additionally, I will be

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working closely with the records management staff in the continued development of a vital records program at Goddard. This is an area in which I hope to gain expertise in order to aid Glenn in developing a similar program. So far it has been a wonderful experience in inter-Center relationship building. I hope that even in a small way, it will help to contribute to a NASA culture of knowledge sharing.

New Employee Records Management Training

By Paige C. Lucas-Stannard

At Glenn Research Center, History and Records Management functions are directed by the same office, and this is beneficial to both programs. On the one hand, consistent and well-maintained records are the heart of the history program; on the other hand, successful use of records in a history project, like the recent publication of *NASA's Nuclear Frontier*: *The Plum Brook Reactor Facility* by historian Dr. Mark Bowles and Glenn archivist Robert Arrighi, gives credibility to the records management process. In order to promote the history program and to gain employee acceptance of the importance of records management, we recently began holding training sessions during New Employee Orientation Day. Each new and transferring employee to Glenn goes through a one-day orientation that covers topics from benefits and security to safety and ethics. The records management portion of the orientation, created in conjunction with NARA, is brief and deals with the concept of records management, the laws governing federal records, and the benefit of quality record keeping to the Center, the employee, and the general public. The focus is intentionally kept general since employees will participate in records management to differing degrees based on their position. Another important part of the training is letting new employees know who their Division Records Representative is; this individual will be their primary contact for further information about records management in their work area. In addition to this practical information, new employees learn about some of the history projects and books that have been published. Overall, the training has been a wonderful success. Employees' knowledge of their responsibilities regarding records management has increased, and these first-day employees get excited about the importance of the work they will do at NASA and its potential for long-term, historic significance. If you would like more information about the New Employee Records Management Training or copies of our training materials, please feel free to contact me: *Paige.C.Lucas-Stannard@nasa.gov.*

Jet Propulsion Laboratory

Erik Conway started work at the Jet Propulsion Laboratory (JPL) on 13 September as the new historian. His near-term goals are to help the Chief Archivist, Mike Hooks, develop a collections policy and a prioritization scheme for processing the backlog of material in the archives and to revive JPL's oral history program. In the somewhat longer term, he intends to build a publication program with a mixture of scholarly publications in the Monographs in Aerospace History series.

A new JPL history is nearing publication at Yale University Press. It was written by Peter Westwick under the supervision of Daniel Kevles, formerly of California Institute of

Technology and now at Yale University. The study builds on Clayton Koppes's 1982 history of the Lab from its founding to the 1970s. Westwick is also beginning to organize an effort to locate and document collections relevant to aerospace history in California. Several aerospace historians in California, including Conway, will be participating in a discussion group to help steer the program.

JPL Archives Move

Michael Hooks, Chief Archivist, is pleased to announce that the JPL Archives are once again managed and operated by the Jet Propulsion Laboratory rather than a contractor. The core collection of archival materials was moved to the Laboratory in September and is available for research. These materials pertain to the Mars projects and other flight projects, as well as to the Office of the Director. In addition, a valuable collection of photographic negatives and photograph albums are now stored on site. The remainder of the collection is stored in a climate-controlled area provided under contract with an offsite vendor. Michael will be working with Erik Conway to identify and collect additional historical material.

Research inquiries are to be directed to Michael Hooks at *Michael.Q.Hooks@jpl.nasa.gov* (818-354-8804) or Julie Cooper (archivist) at *Julie.A.Cooper@jpl.nasa.gov* (818-354-1844). The Archives catalog is available online at *http://beacon.jpl.nasa.gov*.

Johnson Space Center

The Johnson Space Center (JSC) History Office continues the process of transferring archived reel-to-reel tapes to CD-ROMs. This past fiscal year, approximately 35 hours of audiotape was transferred; 22 hours' worth of these is currently being transcribed. The selected reels feature interviews conducted from the mid-1960s through the early 1970s. Voices on the tapes include Abe Silverstein, George Low, Charles "Doc" Stark Draper, and many other aerospace pioneers. More than 450 tapes have been transferred as part of this ongoing project; another 30 hours' worth is scheduled for transfer during this upcoming fiscal year. Information on how to access these materials can be found at *http://www.jsc.nasa.gov/history*.

The oral history project team begins its ninth year at JSC and begins a new project for the NASA Headquarters History Office. The team will be documenting the history of Micro-Electromechanical Systems (MEMS) to identify and highlight the societal, scientific, and technological benefits of this technology. Their interviews bring them to Ames Research Center to talk with those associated with this project more than 30 years ago.

Along with conducting oral history sessions for the JSC oral history project, the team is preparing for the Texas State Historical Association/Texas Oral History Association annual conference. The team members will be presenting a paper as part of a session discussing how federal institutions affect local communities. The conference is scheduled for March 2005 in Fort Worth, Texas.

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News from Headquarters and the Centers (continued)

The Center's history office continues its preparations for the annual NASA History Review meeting set for 5–7 April 2005.

Kennedy Space Center

The KSC Archives suffered minor damage in the stack area during the recent hurricane season when water leaked from the east wall. Initial water damage occurred during Hurricane Frances on 4 and 5 September. Additional water seeped in during Hurricane Jeanne on 25 and 26 September. Ceiling tiles were water-soaked, but fortunately, none fell on the collections below. Plastic covered the archival boxes on the east range of shelves and prevented damage to those materials. Several boxes on the floor were damaged from standing water. The boxes contained copies of John Glenn's Mercury flight results; these were extra copies made for the press on the occasion of his STS-95 flight. The damaged copies were discarded. A small collection of unprocessed photos donated by a contractor (that is, non-NASA photos) was damaged. Additionally, there were some old reel-to-reel films in plastic containers; these survived because of the durability of the containers.

Marshall Space Flight Center

Jonathan Baggs has been named as a historian in the History Archives at George C. Marshall Space Flight Center, supporting Marshall historian Mike Wright.

Mr. Baggs has been a professional writer for 18 years, working as a technical editor for a Fortune 500 company and as a newspaper journalist. He joined the Marshall Center team with AI Signal Research, Inc., in 2000 as a media relations specialist before being named editor of the Center's weekly *Marshall Star* newsletter.

He is a founding member of White Star Consulting, LLC, a firm offering analysis for the preservation, interpretation, and mitigation of endangered historical sites. He has contributed to articles appearing in nationally recognized journals and coauthored a photographic history of the Tennessee Valley.

Mr. Baggs is the recipient of awards for journalism, preservation, and interpretative history, as well as several NASA awards. He also serves as a consultant for acquisitions and interpretation for the Old State Bank board of directors in Decatur, Alabama.

Mr. Baggs received a bachelor's degree in English and political science from the University of North Alabama in 1984.

"I'm excited at the prospect of helping the present and next generation access and understand NASA's rich history of exploration," Baggs said. "As the son of an engineer who was a charter member of Marshall, it is a history that literally has always been a part of me."

Baggs can be reached at the Marshall Center's History Archives at 1-256-544-1256.

Stennis Space Center

Stennis Space Center Marks Historic Events

NASA's John C. Stennis Space Center (SSC) celebrated two events of historic significance this summer: the 35th anniversary of the Apollo 11 mission's first lunar landing and a visit to SSC by astronauts from NASA's Mercury and Apollo programs.

On 20 July, SSC's visitor center opened a new Apollo exhibit and planted a "Moon Tree." The exhibit traced the history of the Apollo program and included news coverage and photos from that mission, a Moon rock, and Apollo-era spacesuits.

The Moon Tree planted at the visitor center is a sycamore descended from seeds carried to the Moon and back by Apollo 14 astronaut and longtime Mississippi Coast resident Stuart Roosa. Inspired by his days as a smoke jumper with the U.S. Forest Service, Roosa carried nearly 500 seeds in his personal kit as an experiment. Upon their return to Earth, the seeds were sprouted at U.S. Forest Service stations in Gulfport, Mississippi, and Placerville, California. The resulting seedlings were planted in locations across the United States.

Children from SSC's Astro Camp planted the sapling. SSC also presented Moon Tree saplings to several Mississippi and Louisiana garden clubs for planting across the SSC region.

SSC also conducted a history roundtable discussion, moderated by University of Southern Mississippi professor Dr. Charles Bolton with SSC employees Annette Moran, Prentice Carte, Gloria Jordan, and Charlotte Holmes, who have worked at SSC since the 1960s. The group's discussion reflected on SSC's role in the Apollo 11 mission and how it affected the surrounding communities, their thoughts on Apollo 11's achievements, and their views on the Vision for Space Exploration.

Mercury astronauts Scott Carpenter and Gordon Cooper, Mercury/Apollo astronaut Walter M. Schirra, and Apollo astronaut Al Worden visited SSC on 23 and 27 August to talk to employees about their missions and their role in the Astronaut Scholarship Foundation. The astronauts also expressed their views on the Vision for Space Exploration.

The astronauts support the Astronaut Scholarship Foundation to inspire the next generation of explorers and to help the United States retain its world leadership in science and technology. An annual amount of $170,000 is awarded to 17 college students who perform exceptionally well in science and engineering.

Archival Update

Neat Stuff About the "Right Stuff"

By Kent Carter, Regional Administrator, National Archives and Records Administration, Southwest Region

A frustrated NASA engineer supposedly once said that if all the paperwork the Agency generated were piled up, the stack would reach the Moon long before an Apollo spacecraft ever did. Researchers are often looking for one document from that stack and wonder how to even begin to find it. Many of the records created by NASA are now in the custody of the National Archives and Records Administration (NARA), and those files contain a great deal of neat stuff about the right stuff.

Records of federal agencies that have enough research value to warrant their permanent preservation are generally transferred to the legal custody of NARA when they are 25 to 30 years old. To date, NASA records spanning more than 5,000 cubic feet have made that transition, and almost all of them are open to researchers. Records that NASA has yet to offer for legal transfer, along with all of its files that have only temporary value, either are stored by NASA in its various Centers or are sent to NARA but remain in NASA's legal custody and can be used only with the Agency's permission. As of 1 August 1997, NARA is storing a total of 112,547 cubic feet of NASA records in eight locations; the volume of records appraised as having permanent value totals more than 26,000 cubic feet. Archivists generally speak in terms of cubic feet rather than number of pages because they are constantly looking for enough room to store everything. A 1-cubic-foot box holds between two and three thousand pages of textual material, so there are probably more than 22,000,000 pages of material being stored. If the 112,547 boxes were stacked up, they would only reach a fraction of the way to the Moon, but they still represent a huge haystack if a researcher is looking for even a few large needles.

The first step in the search is to determine where the records of any given NASA unit are being stored and who controls access to them. The problem is complicated by the fact that records from some NASA Centers have ended up in several locations. Fortunately, the National Archives Guide provides descriptions of the records that are in NARA's legal custody, and the guide is available at *http://www.nara.gov* on the Web. The only finding aids for NASA-owned records that are stored at NARA facilities are the original transmittal forms (SF-135s) and an "O-1" report generated by NARA that gives just a very a brief description of each shipment. Researchers should contact the Records Officer at NASA Headquarters for information about access to any of these records.

The NARA building in College Park, Maryland, holds the bulk of the records whose legal custody has been transferred to NARA. This includes correspondence, technical reports, minutes from committee meetings, and related material created by NASA's predecessor, the National Advisory Committee for Aeronautics (1915–58), as well as various correspondence and reports accumulated in NASA Headquarters through 1960. The NACA records include a great deal of information about the design and testing of military aircraft, information that has been heavily used by researchers. There are also miscellaneous office files of Homer Newell, who was a NASA Associate Administrator from 1965 to 1974.

The College Park facility is also the home of 54 boxes of "Correspondence and Other Records of the Director of the Goddard Space Flight Center, 1954–66" and 11 boxes of Langley Research Center records. The Langley material includes some general unclassified and and formerly classified correspondence (1915–58), speeches, and office files of Walter T. Boney, who served as Assistant to the Executive Secretary. There are also historical notes, press clippings, and photos relating to other NACA Centers (1916–58), as well as reports on European aviation (1920–51) that were prepared by John Jay Ide, a NACA technical assistant who was attached to the U.S. Embassy in Paris.

The Naval Research Laboratory has transferred 84 cubic feet of its records to NARA's legal custody; the records now reside at the College Park facility. This material covers the period from 1955 to 1959 and includes correspondence, progress reports, press releases, articles, speeches, contract case files, and some technical drawings and photographs. Project Vanguard produced some spectacular failures before its first successful launch, and these are documented in the records NARA has, as well as the investigation of the accident involving the Delta 24 attempt to launch an unpiloted ionosphere satellite from Cape Kennedy on 19 March 1964. The College Park facility holds 17 feet of correspondence and technical reports that relate to the investigation of that incident.

Records relating to the Apollo 204 and *Challenger* STS-51L spaceflight accidents have been transferred to NARA's legal custody and are available for use by researchers in College Park. The facility holds about 200 cubic feet of records created by the Apollo 204 Review Board that investigated the fire that killed Gus Grissom, Ed White, and Roger Chaffee on 27 January 1967. This material includes the Board's central correspondence files, records impounded after the accident, the working papers and technical reports of each of the 21 panels, some correspondence files of Frank Borman (an astronaut and member of the Board), and the Board's final report. There are also some press clippings, 10 reels of motion picture film, 400 photographs, 66 sound recordings, and 4 unidentified electrical components. Records of the Presidential Commission on the Space Shuttle Accident (also known as the Rogers Commission), which was established to investigate the *Challenger* accident, have been transferred to NARA and include 600 video recordings of network television coverage of the explosion. David Pfeiffer (301-837-2052) is the person to contact for information about all of the records described above.

Many researchers are interested in still and motion pictures, along with sound recordings, and they will find the bulk of these types of records at the NARA facility in College Park. There are 428 reels of motion pictures from the NASA Aeronautics and Space Reports series (1965–80) and 59 reels on various topics and flights including *The Eagle Has Landed: The Flight of Apollo 11*. NARA has custody of 278 sound recordings, including one reel of transmissions from Sputnik. There are 42,212 photographic prints, negatives, and transparencies, as well as 3,193 lantern slides and 11 posters that depict activities, facilities, equipment, and people. On 19 February 1997, NASA transferred the original still and motion picture in-flight imagery from the Mercury (13 rolls) and Gemini (31 rolls) missions to NARA. Les Waffen (301-837-0510) is the person to contact for information about all audiovisual records.

More than 47,000 cubic feet of records from NASA Headquarters and Goddard Space Flight Center are still in NASA's legal custody but are stored at NARA's Washington

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Archival Update (continued)

National Record Center in Suitland, Maryland. Within this group, records spanning over 21,000 cubic feet have been appraised as permanent and will eventually join the material in College Park.

Although many of NASA's records are in College Park or Suitland, not all of the neat stuff is in Maryland. The National Archives–Mid-Atlantic Region center located in Philadelphia has legal custody of 350 cubic feet of records from Langley Research Center that cover the period from 1918 to 1992 and include research and administrative correspondence, publications, and reports, along with some blueprints, charts, and photographs. The Philadelphia center also stores 113 cubic feet of NASA records from Langley of which 32 cubic feet is appraised as permanent. Kellee Blake, Gina Williams, and Dave Roland (215-305-2003) are the people to contact for information about records in Philadelphia.

The National Archives–Southeast Region center in Atlanta has legal custody of records from George C. Marshall Space Flight Center and Kennedy Space Center. The bulk of the Marshall records are subject files of Center management (1957–75) and research and development case files (1962–74) that pertain to various projects including Nova, Nuclear Engine for Rocket Vehicle Application (NERVA), Saturn, and Skylab. There are also some speech files of Wernher von Braun (1954–58) and some of his foreign correspondence files (1958–66). Atlanta also has records of the Manpower Office at Marshall that relate to the alien scientist program (1958–71), as well as some charts, diagrams, and photographs.

The Kennedy Space Center records in NARA's legal custody in Atlanta include correspondence, management issuances, news releases, publications, training plans, transcripts of speeches, and various project files (1959–93). There are about 500 engineering drawings and 16,560 negatives and photographs relating to Mercury, Gemini, Apollo, and other projects. Atlanta also has some records (1936–64) of a NACA Subcommittee on Lightning Hazards to Aircraft.

There are 17,120 cubic feet of NASA-owned records from Marshall and Kennedy stored in Atlanta, of which 671 cubic feet has been appraised as permanent. Dr. Charlie Reeves (404-763-7065) is the person to contact for information about records in Atlanta.

The National Archives–Great Lakes Region facility in Chicago has legal custody of 163 cubic feet of records from the Lewis Flight Propulsion Laboratory in Cleveland (later Lewis Research Center and now Glenn Research Center). These include records on the NERVA project (1961–72) and correspondence, reports, studies, test notebooks, and related material pertaining to other projects. Chicago also has copies of lectures and speeches given by Lewis staff members, along with a few engineering drawings and photographs. There are no NASA-owned records stored in Chicago, but the NARA facility in Dayton, which is also part of the Great Lakes Region, holds 2 cubic feet of Lewis records. Peter Bunce (773-948-9009) is the person to contact for information about records in Chicago or Dayton.

The National Archives–Pacific Southwest Region facility in Laguna Niguel (near Los Angeles) has legal custody of 195 cubic feet of records from Dryden Flight Research Center at Edwards Air Force Base, which was, arguably, the home of the "right stuff." This material covers the period from 1946 to 1959 and includes photos and the original pilot's

notes, flight logs, and reports of the flights of the X-1 and other research aircraft. There are similar records and photos for the X-2 through X-5 and autographed photos of some X-15 pilots, including Neil Armstrong. The Center also has 17 feet of records of the NACA's Western Operations Office, established at Moffett Field in 1939 and later transferred to NASA. This includes subject files (1939–62), organizational history files (1959–67), technical memoranda (1940–62), and records of Edwin P. Hartman (1940–56), who served as Coordinator of Research. There are also research and development project files from JPL in Pasadena that cover the period from 1971 to 1985 and relate to the Galileo, Halley, Mariner, Ulysses, and Venus missions. The center in Laguna Niguel stores 8,580 cubic feet of NASA-owned records from JPL. Paul Wormser (714-360-2640) is the person to contact for information about records at Laguna Niguel.

The National Archives–Pacific Sierra Region facility located in San Francisco has legal custody of 1,022 cubic feet of records from Ames Research Center (1939–71) that document both theoretical and applied research and testing in areas such as aerodynamics, airframe problems, flight simulation, high-performance aircraft technology, satellite reentry, and wing de-icing. The records include correspondence, data sheets, minutes of meetings, specifications, and technical reports with some artwork, engineering drawings, and photographs. There are records relating to wind tunnel tests of the P-38 and P-51 and development of spacecraft such as Pioneer and Voyager. The center in San Francisco stores 20,241 cubic feet of NASA-owned records from Ames, of which 1,904 cubic feet has been appraised as permanent. Dan Nealand (650-238-2478) is the person to contact for information about records at San Francisco.

Many of us who once worked for what is now the Lyndon B. Johnson Space Center (formerly Manned Spaceflight Center) believe that Houston has a claim to being home of the "right stuff," and it certainly produced some neat stuff. The National Archives–Southwest Region facility located in Fort Worth, Texas, has legal custody of 711 cubic feet of records that cover the period from the establishment of the Space Task Group at Langley in 1958 to 1988. This collection includes the subject files (1958–70) maintained by Dr. Robert R. Gilruth, the Director of the Manned Spacecraft Center (MSC), and his special assistant Paul E. Purser from 1958 to 1964. All of these reports, correspondence, studies, minutes of meetings, and presentations made to Congress and higher NASA management contain a wealth of information about the development of all piloted space programs, including many that never got off the ground such as Project Dynasoar and the Manned Orbiting Laboratory.

A great deal of the other material relates to the administration of MSC/JSC, but there are also records from many of the program offices, including reference files on Projects Mercury and Gemini that were maintained by Warren North and the Flight Crew Operations Directorate. The facility also holds 9 cubic feet of records relating to the Apollo 13 accident investigation, including technical reports and a few drawings and photographs. Eleven cubic feet of reference files on Project Mercury that were assembled by Marshall also ended up as part of the records transferred by JSC to NARA and include many technical reports and drawings.

The JSC History Office assembled a number of excellent collections of material on various projects and then loaned them to the Woodson Research Center at Rice University. The collections on Mercury (39 cubic feet) and Gemini (94 cubic feet) were later transferred to the NARA facility in Fort Worth and are open to researchers. These collections provide an excellent consolidated source of information about those programs and include flight plans,

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Archival Update (continued)

mission rules, air-to-ground transcripts, postmission technical reports, press releases, and reports on press conferences. There are also many technical reports about flight hardware and procedures that sometimes include drawings and photographs. The collections on Apollo, Skylab, the Apollo-Soyuz Test Project, and the Shuttle are still at Rice University.

The NARA facility in Fort Worth stores 18,486 cubic feet of NASA-owned records from JSC, 2,555 of which has been appraised as permanent. This material includes the "flight data files" from Apollos 8 to 17 that include the flight plans, checklists, timelines, start charts, and lunar maps that were carried to the Moon and back. Many of them still have the small strips of Velcro that were used to stick them to the walls of the command module so that they would not float away. Kent Carter (817-831-5644) is the person to contact for information about records in Fort Worth.

Not every one of the 22,000,000 pages is fascinating reading. Many are the typical administrative correspondence and reports generated by every federal bureaucracy, but any researcher interested in the U.S. space program could spend years going through the material and probably find some neat stuff about the "right stuff" in almost every box.

Other History News

Clinton Library and Museum

The Clinton Presidential Center will open the William J. Clinton Library and Museum on 18 November in Little Rock, Arkansas. For more information, please visit *http://www.clintonpresidentialcenter.org/index.htm.*

National Museum of the American Indian

The Smithsonian celebrated the grand opening of the National Museum of the American Indian on 21 September 2004 with the First Americans Festival and Native Nations Procession. The museum seeks to foster a deeper understanding of Native American culture and honor the numerous tribes throughout the Americas. Please visit the grand-opening Web site at *http://www.nmai.si.edu/opening/index.html* and the main Web site at *http://www.nmai.si.edu/index_nmai.cfm*.

National Air and Space Museum

The new Division of Space History (DSH) curator, Margaret L. Weitekamp, reported to the National Air and Space Museum (NASM) on 23 August 2004. Dr. Weitekamp holds a Ph.D. in history from Cornell University and has been teaching at Hobart and William Smith College in Geneva, New York. She is the author of the forthcoming *Right Stuff,*

Wrong Sex: America's First Women in Space Program, to be published by the Johns Hopkins University Press in January 2005. Dr. Weitekamp will be responsible for the social and cultural history collection of NASM. Dr. Weitekamp may be reached at *weitekampm@nasm.si.edu* or 202-633-2316.

The Lindbergh Chair of Aerospace History for 2004–05 is Dr. John Krige, Kranzberg Professor in the School of History, Technology, and Society at the Georgia Institute of Technology. He may be reached at *krigeg@nasm.si.edu* or 202-633-2415.

Paul Ceruzzi, DSH curator, gave a paper entitled "Internet Alley: High Technology in Northern Virginia, 1957–2000," at the 31st International Symposium of the International Committee for the History of Technology (ICOHTEC) in Bochum, Germany, 17–21 August 2004. DSH curator David H. DeVorkin coauthored *The Hubble Space Telescope: Imaging the Universe* (Washington, DC: National Geographic, July 2004) with Robert W. Smith. This beautifully illustrated book relates the origins and history of this scientific instrument and analyzes the imagery that emerged from its nearly 15 years of use.

David H. DeVorkin also presented three lectures in the summer of 2004: "Public Response to the 1882 Transit of Venus," Dibner Lecture, Smithsonian Institution, Washington, DC, 3 June 2004; "SAO During the Whipple Years: Project Celescope," at "The New Astronomy: Opening the Electromagnetic Window and Expanding Our View of Earth" conference honoring Woody Sullivan on his 60th birthday, University of Washington, Seattle, 16 June 2004; and "'A Monthly Classification of the State of Astronomy': Henry Norris Russell's Column for *Scientific American*," presentation at the History of Science Three Society Meeting, Halifax, Nova Scotia, August 2004.

The NASM DSH and collections staffs have made excellent progress in the summer of 2004 on the preservation work for the Space Shuttle *Enterprise*. In late July, NASA removed three of the inner window sets from the cockpit in order to study long-term effects on the frames. The six outer windows have now been cleaned inside and out. The sides of the payload bay have also been sanded. The paint had really cracked and flaked there, and what remained is being removed. This work is tricky because the payload bay doors are flight-rated spares for the Shuttle fleet. The doors are made of a composite structure about a quarter-inch thick with a 0.005-inch-thick layer of aluminum sheet on top (basically thick aluminum foil). The original paint is polyurethane, but years ago, it was covered with a latex white. All of that has to be delicately removed by what is essentially a heat gun and gentle putty-knife operation, but it is coming off. The main landing gear doors and the wing leading-edge sections that were removed for the *Columbia* accident investigation should be coming back next month. By the end of September, we finished the restoration work for the *Enterprise* with the exception of the reinstallation of the Orbital Maneuvering System pods.

The preservation work on *Enterprise* is the pacing item for the proposed 1 November 2004 opening of the James S. McDonnell Space Hangar, a football-field-sized addition at NASM's new Udvar-Hazy Center. This hangar will feature well over 100 large artifacts from the museum's space collection and highlight the areas of human spaceflight, rocketry, space sciences, and satellite applications. Two rockets will flank the entry to the McDonnell Space Hangar, a cutaway version of a Redstone rocket and a Corporal missile with launch apparatus. In the human spaceflight exhibit area, in addition to a flight-ready Mercury spacecraft and the Gemini VII flown spacecraft, visitors will be able to view, and

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Other History News (continued)

even walk under, a Saturn V instrument ring. Close by, an Apollo "boilerplate" capsule will be displayed with a flotation collar that was designed to inflate to turn the capsule right side up if it happened to make an ocean landing upside down. Across the hangar, in the rocketry section, visitors will have viewing access to the enormous F-1 and J-2 engines from the Saturn V rocket, a developmental M-1 engine, and a variety of other missile and rocket engines. Beyond just engines, the section will contain artifacts such as a Poseidon C-3 missile, a Pegasus launch vehicle, and other rare missile technology from both the United States and Germany. The satellite applications and space sciences sections will also hold the ATS-1 and ATS-6 communications satellites, an Agena-B upper stage, and a variety of launch computers in the satellite application exhibit area. Across from that, visitors will get a fascinating look at space science artifacts such as a suite of 20 scientific satellites and probes, a full-scale model of Mariner 10, an engineering model of the Mars Pathfinder lander and Sojourner rover, and parts of the Apollo Telescope Mount.

PUBLICATIONS

New NASA Publications

Exploring the Unknown: Selected Documents in the History of the U.S. Civil Space Program, Volume VI: Space and Earth Science (NASA SP-2004-4407), edited by John M. Logsdon with Stephen J. Garber, Roger D. Launius, and Ray A. Williamson. This volume covers space history and space policy in four thematic chapters. Essays discuss the solar physics from space, space physics, life sciences in space, and the Earth Observing System. The domestic sales price is $43.00 plus shipping. Please order by contacting the NASA Center for Aerospace Information at 7121 Standard Drive, Hanover, MD 21076, 301-621-0390, or by visiting their Web site at *https://www.sti.nasa.gov/cgi-bin/ordersti.pl*. Please mention the title, volume number, and Document ID # 20040095359.

Forthcoming NASA Publications

Centennial of Flight Web Site DVD-ROM. This DVD-ROM is a static version of the large, informative Web site that was created for the 17 December 2003 anniversary of the first Wright brothers flight. The DVD-ROM is due out in early fall 2004.

Low-Cost Innovation in Spaceflight: The Near Earth Asteroid Rendezvous (NEAR) Shoemaker Mission, by Howard E. McCurdy. This well-written review examines the managerial history of the successful NEAR mission. The monograph should be published in fall 2004.

Nose Up: High Angle-of-Attack and Thrust Vectoring Research at NASA Dryden, 1979–2001, by Lane Wallace. This monograph examines three different programs that explored high-angle-of-attack flight: the F-18 High Alpha Research Vehicle, the X-31, and

the F-15 Advanced Controls Technology for Integrated Vehicles. The monograph should be out in fall 2004.

Shared Voyage: Learning and Unlearning from Remarkable Projects, by Alex Laufer, Todd Post, and Ed Hoffman. This book details four case studies (two NASA, two Department of Defense) in aerospace project leadership using an innovative "storytelling" approach that is highly readable. This manuscript should be published in fall 2004.

Unconventional, Contrary, and Ugly: The Story of the Lunar Landing Research Vehicle, by Gene Matranga, Wayne Ottinger, and Cal Jarvis. This monograph recounts the history of the Lunar Landing Research Vehicle from its inception through its service as a training tool at the Manned Spaceflight Center (now Johnson Space Center). This well-illustrated monograph should be published in fall 2004.

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 early 2005.

New Non-NASA Publications

The First Space Race: Launching the World's First Satellites, by Matt Bille and Erika Lishock. This book from the Texas A&M University Press examines both sides of the technological rivalry between the United States and the Soviet Union. For more information, please see *http://www.tamu.edu/upress/BOOKS/2004/bille.htm*.

How NASA Learned To Fly in Space, by David Harland. This book from Apogee Books explores the growth of NASA and the significant contributions made by the Gemini missions in allowing travel to the Moon. For more information, please visit *http://www.cgpublishing.com/hownasa.htm*.

Mars—The NASA Mission Reports, Volume 2. This book from Apogee Books includes a DVD-V/DVD-ROM. This volume discusses the Mars Exploration Rovers, Mars Global Surveyor, and Mars Odyssey missions. The DVD includes interviews, animations, images, audio broadcasts, and video. For more information, please visit *http://www.cgpublishing.com/mars2.htm*.

Rocket Science, a three-disc DVD set, was produced by the Innovative Distribution Network. The television documentary was broadcast in Canada and illustrates the history of spaceflight. For more information, please visit *http://www.amazon.com/exec/obidos/tg/detail/-/B0002IQE1Y/104-8596690-0459130?v=glance&s=dvd&vi=tech-info*.

Space: A Journey to Our Future, by Roger D. Launius (San Diego, CA: Tehabi Books). This is a companion to the traveling exhibit by the same name. For more information about the exhibit, please visit *http://www.spaceexhibit.com/*.

Space Tourism: Do You Want To Go? by John Spencer and Karen L. Rugg. This book from Apogee Books explores the potentials of the space tourism movement for people and industries. For more information, please visit *http://www.cgpublishing.com/tourism.htm*.

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Publications (continued)

New NASA Web Sites

One Giant Leap for Mankind: The 35th Anniversary of Apollo 11, authored by Michael Makara and designed by James Gitlin. The site is active and available at *http://history.nasa.gov/ap11-35ann/index.htm*. This informative Web site commemorates the efforts and success of the dedicated people that worked on Apollo 11.

Exploring the Unknown: Selected Documents in the History of the U.S. Civil Space Program, Volume VI: Space and Earth Science, edited by John M. Logsdon with Stephen J. Garber, Roger D. Launius, and Ray A. Williamson. The Web version of this book is now available at *http://history.nasa.gov/SP-4407/vol6/vol6.pdf*. This volume covers space history and space policy in four thematic chapters. Essays discuss the solar physics from space, space physics, life sciences in space, and the Earth Observing System.

New Non-NASA Web Sites

Apollo: The Behind-the-Scenes Story of One of Humankind's Greatest Achievements, by Charles Murray and Catherine B. Cox. This site is now available at *http://www.apollostory.com.* This site includes images, Mission Control broadcasts, and information about the book by the same name.

Call for Papers

ABC-CLIO welcomes authors for *Space Exploration and Humanity,* an encyclopedia dedicated to exploring events, individuals, issues, and the impact of human spaceflight endeavors. The six areas explored will be human spaceflight and microgravity science, astronomy and Earth science, military applications, space and society, technology and engineering, and civilian and commercial applications. The History Committee of the American Astronautical Society (AAS) will serve as the editorial board on the encyclopedia, which will be published by ABC-CLIO. For more information on becoming an author for this publication, please e-mail Dr. Stephen B. Johnson at *sjohnson@space.edu* or call 719-487-9833.

AAS's bimonthly *Space Times* magazine welcomes feature-length and opinion/editorial articles that offer a fresh perspective and insight on topics of current and historical relevance in space science, technology, exploration, and policy. The magazine also includes reviews of recently published space-related books. For more information or to submit an abstract, please contact Amy Kaminski, editor, at *amypkaminski@yahoo.com*. Contents of previous issues are posted on AAS's site, *http://www.astronautical.org*.

Praeger Publishers plans a new series, Moving Through History: Transportation and Society, about the social history of transportation, machinery, and travel. The publisher desires proposals for manuscripts that fit within the series and target undergraduates and other interested readers. For further information, please contact Guillaume de Syon, series editor, at *gdesyon@alb.edu* or *guillaume.desyon@fandm.edu*.

A new project to document the history of the aerospace industry in southern California is getting under way. It is a product of a new collaboration between USC and the Huntington Library called the Institute on California and the West (directed by William Deverell); it will aim to collect primary material and oral histories in a regional center for aerospace history. It will avoid duplicating existing collections but will try to document the complex and substantial historical connections between aerospace and the southern California region. The project will start this year with several meetings of a working group of local scholars to identify promising archival and research avenues. For information on the working group or the initiative itself, please contact Peter Westwick at *westwick@hss.caltech.edu*.

CONTRACTS

New NASA History Projects Under Way

Dr. Robert Ferguson has begun research for a scholarly book-length manuscript on the history of NASA's aeronautics program since 1958. The NASA History Office is administering this project jointly with the Aeronautics Research Mission Directorate. This history project will build upon Roger E. Bilstein's *Testing Aircraft, Exploring Space* (Johns Hopkins New Series in NASA History, 2003) to focus on NASA's aeronautics contributions to the nation and to the worldwide technology base since the Agency's inception in 1958.

In addition, Dr. Michael Meltzer has started work on a scholarly book-length manuscript on the history of NASA's biological planetary protection efforts. A joint project with NASA's Science Mission Directorate, this history will cover the evolution of policy, science, and technology regarding the issues of forward and backward contamination (having biological material from Earth disturb biological matter on another celestial body and vice versa).

Upcoming Contracts

The first of several upcoming NASA history contracts is for a scholarly book-length manuscript on the history of NASA's life sciences research and programs. The book shall focus 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 should build upon the existing literature on this subject, such as *The Human Factor: Biomedicine in the Manned Space Program to 1980*, by John A. Pitts. The NASA History Division will administer this project jointly with the Office of Biological and Physical Research, Bioastronautics Research Division.

The second upcoming contract is to revise, augment, and update the NASA contractor report *Keeping Track: A History of the GSFC Tracking and Data Acquisition Networks: 1957–1991*, edited by Kathleen Morgan and Frank Mintz. The final product should be a scholarly manuscript on the history of NASA's Spaceflight Tracking and Data Network.

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Contracts (continued)

The book will focus on the time period from 1957 to the present, with special emphasis on 1991 and later. The NASA History Division will administer this project jointly with the Space Communications Office within the Space Operations Mission Directorate.

Finally, we expect to advertise a contract for a highly experienced project editor and translator to produce for publication selected highlights from the diaries of Vasiliy Mishin and Konstantin Feokstikov. These handwritten diaries of two Soviet space pioneers are in Russian and have not been published in English. Copies of the Mishin diaries, consisting of several thousand pages, and the Feokstikov diaries, consisting of several hundred pages, are available at the NASA History Office. The contractor should select and translate the most important portions of the diaries, adding editorial context for the diarists' often cryptic references. The NASA History Division will administer this project.

Upcoming Meetings/Events

MBL-Dibner Seminar in the History of Biology, Cosponsored by the NASA History Office

2005 Topic: Cosmic Evolution and Astrobiology
15–22 May 2005
Marine Biological Laboratory, Woods Hole, Massachusetts

This is an intensive, one-week seminar with annually varying topics. It is designed for advanced graduate students, younger scholars, and also more established researchers in biology and the history and philosophy of biology. The course is limited to approximately 20 participants, including discussion leaders.

The topic for 2005 is "Cosmic Evolution and Astrobiology." In the 1960s, fueled by the Space Age and NASA patronage, the new discipline of exobiology began to emerge. It was created from a combination of at least four very different areas of scientific research: planetary science, planetary systems science, the Search for Extraterrestrial Intelligence, and origins and evolution of life. The new discipline was driven especially by the search for life on Mars culminating with the Viking missions in 1976. In the post-Viking era, funding for exobiology supported far-reaching research, including Margulis's work on cell symbiosis; Woese's work on the third domain of organisms now known as Archaea; Barghoorn and Schopf's work on Earth's earliest fossils; Lovelock's Gaia hypothesis; and Alvarez, Raup, and Sepkoski's work on mass extinctions. In the mid-1990s, exobiology was revived under the name astrobiology, fed by the intense excitement surrounding the discovery of planetary systems, the controversy over the Martian meteorite, the possibility of an ocean on Europa, research on life in extreme environments, developments in molecular evolutionary biology and molecular phylogenetics, and progress in origins of life research, along with other developments, like the biotech revolution culminating in the

Human Genome Project. This led to the formation of the NASA Astrobiology Institute, a virtual institute consisting of 16 "teams"—including the MBL's Astrobiology Program—engaged in a wide variety of work on "the living universe."

The course will take a historical approach to exploring how the interdisciplinary field of astrobiology emerged, how astrobiology has affected origins of life research, and how astrobiology fits into the larger conceptual scheme of cosmic evolution. How does the emergence of astrobiology compare to the emergence of other subdisciplines in biology? Are there historical lessons astrobiologists can learn in their quest for a universal biology? Discussions will be led by invited biologists, historians, and philosophers. Readings and questions to ponder will be circulated in advance.

The MBL-Dibner Seminar in the History of Biology has been supported since 1989 by the Dibner Fund and the Dibner Institute. Additional funding has been provided for this year's topic by NASA.

For more information about the seminar in general, past topics, and updates concerning this year's topic, along with the application form, please visit the course's Web site at *http://dibinst.mit.edu/DIBNER/DIBNER/DIConferences/WoodsHole/WoodsHoleHome.htm.*

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James Strick, Franklin and Marshall College

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At the Octagon Museum, the Art Institute of Chicago and the Aeronautics Research Mission Directorate of the National Aeronautics and Space Administration present *Aerospace Design: The Art of Engineering from NASA's Aeronautical Research* through 5 December 2004. The exhibition explores the history of aeronautically engineered forms relating to architecture and design and includes 65 artifacts from NASA's colle tion. For more information, please visit *http://www.archfoundation.org/octagon/exhibitions/.*

From 2 to 3 December 2004, the Knowledge Foundation will sponsor the 6th International Symposium on "New Developments in Identification of Microorganisms and Chemicals" in Arlington, Virginia. Please visit *http://www.knowledgefoundation.com* for more information.

From 10 to 13 January 2005, the American Institute of Aeronautics and Astronautics will host the 43rd Aerospace Sciences Meeting and Exhibit at the Reno Hilton in Reno, Nevada. For more information, please visit *http://www.aiaa.org/* on the Web.

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Upcoming Meetings/Events (continued)

From 26 to 28 January 2005, a special partnership between the Dwight D. Eisenhower Memorial Commission and the Industrial College of the Armed Forces will celebrate Eisenhower's legacy with "Dwight D. Eisenhower and National Security for the 21st Century" at Fort McNair, Washington, DC. For more information, please visit *http://www.ndu.edu/icaf/ike/*.

From 30 January to 1 February 2005, the American Institute of Aeronautics and Astronautics will host the first Space Exploration Conference: "Continuing the Voyage of Discovery" in Orlando, Florida. For more information, please visit *http://www.aiaa.org/* on the Web.

From 15 to 16 February 2005, AIAA will hold Defense 2005 at the Ronald Reagan Building and International Trade Center in Washington, DC. For more information, please visit *http://www.aiaa.org/* on the Web.

From 11 to 15 April 2005, AIAA will hold the 3rd Missile Defense Conference and Exhibit at the Ronald Reagan Building and International Trade Center in Washington, DC. For more information, please visit *http://www.aiaa.org/* on the Web.

On 11 May 2005, the 2005 Aerospace Spotlight Awards Gala will be held at the Grand Hyatt Washington in Washington, DC. For more information about this event, please visit *http://www.aiaa.org/* on the Web.

Contact Information and Credits

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Do you have more questions about NASA history in general? Please check out our NASA History Office Home Page at *http://history.nasa.gov* on the Web. For information about doing research in the NASA History Office, 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 Giny Cheong, newsletter editor and compiler, at *gcheong@hq.nasa.gov* or call 202-358-5125.

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To extend life to there,
To find life beyond.

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To explore the universe and search for life,
To inspire the next generation of explorers

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