News & Notes

NASA HISTORY DIVISION
OFFICE OF EXTERNAL RELATIONS

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From the Chief Historian

The International Astronautical Congress (IAC) is an annual event where the entire gamut of space exploration activities, from space science and human spaceflight to the search for extraterrestrial intelligence, is represented. Held this year in Valencia, Spain, from 2–6 October, the meeting provided numerous opportunities for the exchange of ideas among the leaders of the world's space agencies, the global aerospace industry, and professionals involved in exploration. Under this year's theme, "bringing space closer to people," the meeting included sessions on the societal impact of spaceflight, which was the subject of a recent conference sponsored by the National Aeronautics and Space Administration (NASA) and the National Air and Space Museum (NASM) history divisions (*http://history.nasa.gov/socimpactonf/index.html*). By reporting on our conference held in September in Washington, DC, my colleagues and I provided a foundation for a broader international discussion on the societal impact of spaceflight.

The historical profession is represented at the IAC every year, and this year was no exception. Some 35 history papers were presented, again with a very broad range. Of particular interest to me were papers by L. Parker Temple on Project EMILY, a Thor IRBM deployment in the United Kingdom from 1959 to 1963 with lessons learned applied to other space projects; Hirotaka Watanabe on project Apollo as a case study of international competition and cooperation; John Mankins on the history of NASA's office of Advanced Research and Technology; Anne Coleman and Charles Lundquist on the oral history tradition at the University of Alabama in Huntsville (complete with videos of Willy Ley and Werhner von

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Societal Impact of Spaceflight Conference: A View from the Audience

—by Matthew Shindell, University of California, San Diego

The recent conference on the "Societal Impact of Spaceflight," cosponsored by the NASA History Division and the National Air and Space Museum's Department of Space History in Washington, DC, 19–21 September 2006, provided a unique opportunity for those engaged in the history of spaceflight to reflect on the impacts of spaceflight and space technology on all aspects of life in the space age. As NASA Chief Historian Steve Dick pointed out in his opening address, NASA had not evaluated its societal impacts in any organized, scholarly way since the early 1960s.

In the 1960s, spaceflight was a relatively new endeavor. The resultant volume of this early work, *The Railroad and the Space Program: A Study in Historical Analogy* (Bruce Mazlish, ed., MIT Press, 1965), largely relied on the comparison of the promises of space technology with what was at the time perhaps the best-examined historical case study. It was as much a treatise on the promising methodology of historical analogy as it was a prediction of what impacts spaceflight might have. Read today, the volume is still an engaging collection of essays by recognized pioneers in the study of technology in the 20th century, including Leo Marx, Thomas Hughes, and Mazlish himself. These scholars pointed the way for a generation of historians and sociologists of science and

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technology. The book's contents, however, are now dated. They have been eclipsed by the actual (and ongoing) history of space technology.

The achievements of modern nations in space are legion, and the technology is pervasive. As presenter David J. Whalen pointed out, there are today more than 250 communications satellites (communications satellites being Kennedy's less-remembered 1962 space-related promise to the American people) in orbit around Earth at any given time. Crowded and stacked into 180 designated slots, many of these satellites provide civilian services that range from television programming to various navigational uses of the Global Positioning System (GPS) (even though GPS remains central to military operations, its effects on the civilian population are so evident as to hardly need mentioning). And as Jet Propulsion Laboratory (JPL) historian Erik Conway noted, Earth-observing satellites have not only changed our understanding of our planet in fundamental ways, they have altered our day-to-day relationship with the environment, from short-term weather prediction and storm tracking to long-term studies of climate change. The session on the "Commercial and Economic Impact" of spaceflight provided every reason to believe that spaceflight's impact on the private sector has been of an incredible scale. Space technology has become an essential part of modern infrastructure—national and global, military and civilian. It is only fitting at this point in time for NASA to engage in some evaluative work.

But the conference amounted to much more than a straightforward chronicling of space achievements and their impacts on society. With new history comes new problems. One thing that was evident in many presentations was the difficulty of actually tracing and evaluating the impacts of space technology on society using the existing scholarship. Taken as a whole, the presentations pointed out (sometimes tacitly and sometimes explicitly) that though spaceflight has undoubtedly impacted society and though NASA historians have so far succeeded quite well in telling the stories of the scientific, technological, and administrative achievements that have led to these impacts, existing work is inadequate for describing the place of NASA in culture or society at large. This work also seems to have its limits when it comes to discussing the impacts of culture and society on the very work of space exploration, even while it seems to indicate that impacts do flow in more than one direction. This conference provided spaceflight scholars the opportunity to engage in some evaluation of their own enterprise.

Roger Lanius, for example, in his introduction to the session on "Turning Points," raised questions about one of the mainstays of space history. The concept of a turning point has shaped spaceflight historians' discussions of events like the launch of Sputnik and the American Moon landings. However, Lanius pointed out, a turning point is an artificial construct created by the historian as a shorthand for discussing historical change. These

constructs may obscure as much as they illuminate. Upon historical examination, turning points are often found to be vague and imprecise. More significantly, they serve as markers that influence the way historians frame the stories they tell, placing some events in the foreground and often leading to a progressive story that makes the present seem to be the natural conclusion of key events of the past. According to Lanius, this can leave other important events unexamined; they are relegated to the background of history (or, worse still, ignored). As a corrective measure, Lanius suggested that historians examine turning points as moments of continuity, not just change. He also suggested that background events in spaceflight history, such as the assassination of John F. Kennedy, should be examined as possible moments of discontinuity. In this way, historians can avoid the construction of a confining master narrative. Launius's discussion set the stage for some very interesting evaluations of turning points in the history of U.S., Soviet, and Chinese spaceflight.

Erik Conway, in his introduction to the session "Application Satellites, the Environment, and National Security," also pointed to possible problems in the way NASA historians have framed achievements in space. According to Conway, satellite exploration has been unduly eclipsed by human achievements in space. Conceptions of exploration such as Jackson Turner's now discredited "frontier thesis," which posited that the culture of the American West was forged by human interaction with and movement into the unexplored frontier, have led historians of spaceflight to place too much emphasis on manned missions. By Conway's account, and those of the speakers in his session, satellites have had a far greater effect on everyday life than have astronauts. But relative to numerous histories of manned missions, the history of Earth-observing satellites remains untold. Conway charged NASA historians with the task of bringing this realization to the light of policymakers and the public.

Conway is not the only historian critical of the place of the frontier in American narratives about the past and future presence of humans in space. Although American proponents of spaceflight have often drawn upon the idea of exploration as a defining American activity, historians of exploration have been moving away from such a conception since the 1960s. Following the cue of the historian of exploration William Goetzmann, other historians of exploration have come to see their subject as a process that extends existing cultural concerns. In the session on "Cultural Impact," Asif Siddiqi pointed out that space narratives are constructed along cultural and national lines. Cultural assumptions embedded in institutions, values, artifacts, and norms frame the way in which space exploration is undertaken and perceived. In the session on "Ideology and Space Advocacy," Linda Billings and Taylor Dark took a similar perspective, addressing the influence of the "frontier thesis" and ideas of American progress on the way in which Americans explain their activities in space.

The most explicit call for new approaches in NASA history came in the session on "Social Impact." In his introduction to the section, Glen Asner voiced concern over the degree to which the methods employed in studies of spaceflight could really answer the question of societal impact. To date, these studies have focused primarily on policy, technology, programs, and missions. Asner and the other speakers in this session advocated the introduction of the methods of the social historian. These methods would allow historians to tell the stories not only of the politicians, intellectuals, scientists, and other social leaders,

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Societal Impact of Spaceflight Conference: A View from the Audience (continued)

but of social groups that previously have had little voice in the history of spaceflight. It is in the relationship between spaceflight and everyday life "on the ground," they argued, that societal impacts can be found. Focusing on NASA during and after the Civil Rights movement, issues of race, sex, the material culture of space memorabilia, and the relationship between NASA Centers and their surrounding communities, these scholars showed that there is a rich social text waiting to be read.

Over the past 50 years, NASA has produced wonderfully detailed studies that document the history of spaceflight. Despite the richness of these studies, the history of spaceflight has been primarily a history from within, focusing largely on the interests and concerns of NASA and the spaceflight community. The proceedings of this conference (along with the proceedings the NASA History Division's "Critical Issues in the History of Spaceflight" workshop) do well to highlight both the strengths and the shortcomings of NASA history to date. These recent attempts to push the boundaries of space history provide a catalogue of both the capabilities and the limitations of NASA history when it comes to questions of a social or cultural nature. They also highlight the many promising new directions for research in NASA history, and even a few hints at what methods might be employed to fill in the gaps of this history. If one day, like the 1965 volume, the publication that will emerge from the "Societal Impact of Spaceflight Conference" is eclipsed by the work to come, it will be because these scholars established a firm foundation from which to work and provided a set of tools with which to move ahead.

From the Chief Historian (continued)

Braun); and Michael Gruntman on the technical and cultural history of the word "cosmonautics" as compared to "astronautics." These papers, among others, will be published in the American Astronautical Society's (AAS) history series, which has published the International Astronautical Congress history papers since 1985. These volumes are available for purchase at *http://www.univelt.com/home.mv*.

A highlight of the history lectures was the plenary session by Roger Malina, the son of Jet Propulsion Laboratory (JPL) founder Frank Malina. Roger has been very active in the International Astronautical Foundation (IAF) over the years. From his father, Roger inherited not only his interest in space but also a deep interest in its social and cultural context. He currently chairs the International Academy of Astronautics Commission on Space Activities and Society and for two decades has worked to bring professionals from the arts and culture into the activities of the astronautics community. He has held a series of workshops on Space Exploration and the Arts, including one during the Valencia meeting. Roger's lecture on his father, "Frank J. Malina: Astronautical Pioneer Dedicated to International Cooperation and the Peaceful Uses of Outer Space," was a personal history with many family anecdotes in addition to the technical history. Both father and son are discussed in *Astroturf: The Private Life of Rocket Science* (Walker and Company: New York, 2005). The author of that book, M. G. Lord, gave the closing lecture at the NASA/NASM conference on the "Societal Impact of Spaceflight."

In another history-related event, Michael Gruntman, chair of astronautics at the University of Southern California, was awarded the Academy's 2006 Luigi Napolitano Prize for his book *Blazing the Trail: The Early History of Spacecraft and Rocketry* (Reston, Virginia: American Institute of Aeronautics and Astronautics, 2004). The award was presented at a dinner of the International Academy of Astronautics on 1 October, just before the opening of the congress.

In addition to the historical papers, many of the scientific lectures at the congress were of great interest to historians. To give only one example, Ed Stone, Voyager project scientist, gave a rousing and emotionally powerful rendition of the journeys of Voyagers 1 and 2. Complete with beautiful imagery and personal reminiscences, Stone recounted those epic journeys to Jupiter, Saturn, Uranus, and Neptune. Half of the lecture was devoted to what the Voyagers are telling us even now, three decades later. Renamed the Voyager Interstellar Mission in 1989, these spacecraft last took images in 1990. But as the humanmade objects that have traveled the farthest distance from Earth, they continue to relay important data. On 16 December 2004, Voyager 1 crossed what is known as the "termination shock," at 94 astronomical units from Earth (94 times Earth's distance from the Sun). The termination shock is where the speed of the solar wind drops abruptly as the interstellar wind begins to dominate. Voyager 1 is now at 101 astronomical units, about 10 billion miles from the Sun, while the more slowly traveling Voyager 2 is at 81 astronomical units. The former planet Pluto, by contrast, is at about 50 astronomical units. (For my take on that demotion, see my essay at *http://www.nasa.gov/mission_pages/exploration/whyweexplore/index.html*.) The Voyagers may have enough electrical power to last through the year 2020. Like the Mars Exploration Rovers, now exceeding their expected lifetimes by a factor of 10, the Voyagers are gifts that keep on giving.

Finally, as many of you have heard, this year's Nobel Prize in Physics was awarded to and shared by NASA scientists John Mather and George Smoot, currently at Lawrence Berkeley Lab, for their results obtained with NASA's Cosmic Background Explorer (COBE) satellite. In 1992, COBE detected the variations in the remnants of the Big Bang to 1 part in 100,000, results that have since been refined by the Wilkinson Microwave Anisotropy Probe (WMAP) satellite. These variations basically provide the blueprint for the universe we see today. Smoot told his story (with Keay Davidson) in his book *Wrinkles in Time* (1993), and Mather has more recently told his story in his own book *The Very First Light* (1996). The award of the Nobel Prize to these scientists serves to remind us that NASA continues to make history in many ways.

Steve Dick

NEWS FROM HEADQUARTERS AND THE CENTERS

Headquarters

Nadine Andreassen coordinated the "Societal Impact of Spaceflight" conference and dinner in September. She attended the Society for the History of Technology annual meeting in October and managed the NASA History Division book display for the meeting. She coordinated with others to ensure that NASA history publications were displayed at the History of Science Society meeting in November. She also prepared for the History Division move to the 7th floor of NASA Headquarters, sent out all recent History Division publications for book review, and started planning for next year's History Division Annual Meeting and Training at Dryden Flight Research Center.

Glen Asner delivered an overview presentation in September on the social impact of spaceflight at the History Division's "Societal Impact" conference. In October, Glen attended the George Mason University Short Course on the U.S. Government Space Sector in Arlington, Virginia, and chaired a session on "Technology and Play" at the Society for the History of Technology annual meeting in Las Vegas, Nevada.

Matt Barrow, our fall intern, worked on the biographical appendix for *Exploring the Unknown, Volume 7*, reviewed copyedits for the new edition of *Databooks*, and submitted and confirmed cataloging in publication data to the Library of Congress.

Colin Fries continued the ongoing task of scanning and adding our *Current News* collection to the electronic database; he recently completed scanning articles from 1976. He finished arranging testimony and articles on the Space Act received from the Office of the General Counsel and appraised sources used for the upcoming hypersonics history written by Tom Heppenheimer. Colin also fact-checked a draft of two new International Space Station (ISS) reference books for historical accuracy for the ISS technical liaison. He is currently arranging, describing, and appraising for historical value a box of recently declassified material on a variety of subjects.

Steve Garber took an excellent weeklong statistics class at the United States Department of Agriculture graduate school in Washington, DC. He welcomes Matt Barrow, a senior at Virginia Polytechnic Institute and State University (Virginia Tech) who is double majoring in history and psychology, as our fall intern.

John Hargenradar continued to scan and add *Current News* articles to the database, and is currently concentrating on news clips from 1988. He has completed the preservation photocopying of all the news clippings in the Skylab human spaceflight files and continues to work on the Apollo and Apollo Soyuz Test Project material. He is working on digitizing a small collection of NASA Headquarters Public Affairs Office Shuttle/Station files.

While Colin and John deal with the majority of researchers who phone, e-mail, or visit in person, Jane Odom continues to acquire and appraise new material for the Historical Reference Collection. Some recent additions include material on the Space Station, NASA culture, and sources for several *Exploring the Unknown* volumes. Jane answers reference

requests, including Freedom of Information Act requests, and facilitates clearing international visitors who wish to come and conduct research. Additionally, she is supervising an intern who assists her with a variety of arrangement and description tasks. Jane has been working with the IT staff on a database service request and has recently joined the Headquarters declassification team.

Ames Research Center (ARC)

Jack Boyd and Glenn Bugos presented a paper at the Space 2006 meeting of the American Institute of Aeronautics and Astronautics (AIAA) on 21 October. Titled "A Technology Base Built for Space Exploration," it explored how NASA Ames has crafted its palette of technical capabilities over the past 65 years. NASA Ames test pilot G. Warren Hall completed a comment draft of his history of the Convair CV-990 and its role in the history of airborne sciences at NASA Ames.

Leilani Marshall recently mentored three interns who explored the wide range of archival activities in the NASA Ames History Office. Kevin Fleming from the School of Library and Information Science at San Jose State University (SJSU) has focused on surveying the papers of Elliott Levinthal pertaining to his work with the Viking Lander Imaging Team. Thomas Follett from the history department at SJSU and Danielle Lopez, a high school student with the California Academic Partnership Program, focused on cataloguing the History Office artifact collections.

April Gage has completed a redesign of the NASA Ames Historic Preservation Web site (*http://historicproperties.arc.nasa.gov*). Using materials compiled by Keith Venter and Mike Makinnen, the NASA Ames historic preservation officers, this site presents a history of Moffett Field and documents on the NASA Ames historic preservation plan, building reuse guidelines, the 523 forms on each facility at NASA Ames, and a wealth of other materials on the physical development of NASA Ames and Moffett Field.

Dryden Flight Research Center (DFRC)

Christian Gelzer wrote a paper for the AIAA Space 2006 conference, in San Jose, California, titled "Before We Landed There We Tested Here: The Lunar Landing Research Vehicle." On the same general topic, he also assembled and chaired a symposium on the Lunar Landing Research Vehicle (LLRV) that took place at Dryden on 5 October. The speakers included the three authors of the recently released NASA monograph *Unconventional, Contrary, and Ugly: the Lunar Landing Research Vehicle*, Cal Jarvis, Gene Matranga, and Wayne Ottinger. Joining the authors with comments on their own experiences were the two surviving LLRV pilots, Don Mallick and Jack Kluever. To receive a copy of the monograph, please send a self-addressed, priority mail, stamped envelope to:

History Office, NASA DFRC
Building 4839
4800 Lilly Drive
Edwards, CA 93523

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News from Headquarters and the Centers (continued)

Curtis Peebles continues work on the X-43 lessons-learned text book. The second half of a two-part article on the X-43 system, "The Road to Mach 10: A History of the X-43A Hypersonic Flight Test Program at NASA Dryden: Toward the Future," will appear in the February edition of the spaceflight journal *Quest*. Curtis also delivered a paper at the AIAA Space 2006 conference in San Jose, titled "The X-43A Fin Actuation System Problem: Reliability in Shades of Gray."

Peter Merlin delivered a paper titled "Free Enterprise: Contributions of the Approach and Landing Test (ALT) Program to the Development of the Space Shuttle Orbiter" at the AIAA Space 2006 conference in San Jose this past September. He continues to work on a lessons-learned monograph on the SR-71 and Dryden's role in improving such things as its engine controls. Peter, Curtis, and Christian contributed information for storyboards in the Visitor's Center for new displays. The three also played various roles in the preparation of the static display of the Center's last SR-71, a display that now includes an engine and two start carts.

Glenn Research Center (GRC)

On 23 September 2006, over 100 retirees of Glenn's Plum Brook Station gathered for their 4th reunion. The history program directly contributed to the event. Around 200 historic images were gathered and used to create two PowerPoint slideshows—one on the history of NASA's work at Plum Brook and one on the ordnance works at Plum Brook during World War II. A 16-millimeter film from the mid-1960s, *The Plum Brook Story*, was digitized and packaged on a DVD with the two PowerPoint displays for the event. In addition, author Mark Bowles signed copies of his recent NASA history series publication, *Science in Flux: NASA's Nuclear Program at Plum Brook Station, 1955–2005* (NASA SP-2006-4317).

Mario Busacca and Barb Naylor from the Kennedy Space Center, with consultants Joan Deming and Trish Slovinac, visited Glenn as part of their effort to identify facilities that contributed to the development of the Space Shuttle. Archivists Bob Arrighi (RSIS) and Nora Blackman (RSIS) completed background research on NASA Lewis' Shuttle contributions; assembled documents and photos for the team to study; created CD-ROMs with images, articles, and other information; and took the group on tours of the 10 by 10 and 8 by 6 supersonic wind tunnels, the ballistics lab, the former rocket engine test facility site, the engine research building, and the space power facility.

Nora Blackman (RSIS) conducted research into several areas of Glenn Research Center history, including Center contributions to the Space Shuttle program, the NASA Wind Energy Program Office, the B-2 test facility at Plum Brook Station, and the iconic Guerin House. In addition to this work for NASA patrons, she has provided responses to inquiries made by writers from *InFlight Magazine*, *Quest*, and production companies serving the National Geographic Channel.

Interesting accessions from the past quarter include a gift of autographed first-day covers and other Center-related ephemera from philatelist Elwood Witt. According to Witt, his purchase of the Ed Huston collection turned up several items that are, in his opinion,

worth more in the context of Center history than on the auction block. Huston was a long-time GRC employee and a prolific autograph collector. He used his proximity to high-profile projects and everyday NASA events to gather autographs and memorabilia documenting his career. Two such items donated by Witt are a first-day cover inscribed and signed: "To Ed-/John Glenn," with a 4-cent Project Mercury stamp affixed and post-marked Cape Canaveral, Florida, 20 February 1962, and an admission ticket to a presentation given to Lewis employees on Wednesday, 18 July 1979, which featured Dr. Judith Resnik speaking on the roll of the mission specialist on the Space Shuttle. Dr. Resnik autographed the ticket.

Processing continues apace on the Center director's office files, with the focus now on the records from the 1970s-era directors Bruce Lundin (1969–1977), Bernard Lubarsky (1977–1978, acting), and John F. McCarthy (1978–1982). Most of the post-Apollo years at the Center have yet to be critically examined by historians, making the task of appraising, arranging, and describing these materials and identifying additional record sources outside the archives of paramount importance. One welcome by-product of this processing project has been the identification of a significant range of material that may be eligible for high-speed scanning, thereby increasing access to and use of this information.

The Glenn History Program is proud to announce the release of a new publication in the NASA History series, *Science in Flux: NASA's Nuclear Program at Plum Brook Station, 1955–2005*, by Dr. Mark Bowles. The book was awarded the 2005 American Institute of Aeronautics and Astronautics History Manuscript Award. The book has been well received by Glenn employees. A lunch-and-learn lecture in the Glenn Technical Library, followed by a book signing, was held on 18 October.

Goddard Space Flight Center (GSFC)

The Goddard Library's abstract to the Library and Information Technology Association (LITA) has been accepted for publication in the LITA guide called *Making Library Websites Usable*. The Goddard Library will also present a poster session to the Gray Literature Conference in New Orleans, Louisiana, this December. The library staff has attended pause-and-learn workshops and has been holding similar lessons-learned sessions in the library lounge each Wednesday.

The digital preservation team continued to add new Goddard project images with enhanced metadata to the Image and Movie Archive of Goddard's Earth and Space Sciences (IMAGES) database and new terms to the Swift records in the digital asset system.

To support Goddard's knowledge-management efforts, a team is compiling a metadata registry at the library. Goddard librarians also are collaborating with engineers and scientists to update and integrate taxonomies for the various semantic Web projects on ontologies as everyday knowledge bases.

Goddard librarians continue to develop a pilot of the Landsat Legacy public Web site, as well as a Landsat history video. Wallops librarians continue to scan balloon documents to add to this valuable historical collection.

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News from Headquarters and the Centers (continued)

Jet Propulsion Laboratory (JPL)

On 20 July, JPL held a celebration in its Von Karman auditorium for the 30th anniversary of the first Viking landing on Mars. The celebration was accompanied by the unveiling of a new Web site hosting video interviews with Viking personnel completed earlier this year. This Web site and the videos are the work of the Mars public engagement organization with a great deal of assistance from the Viking veterans. The resulting site represents an innovative use of Web media for both public outreach and public history. The Mars program deserves our thanks for supporting activities like this.

Over the summer, Eric Conway continued to work on his Mars robotics history. He is currently working on Mars Pathfinder, doing extensive interviewing with participants, and integrating the project's activities with related goings-on in the Mars science community and the political environment of the Space Exploration Initiative. During the next quarter, he will be completing interviews for Mars Observer and will begin to examine the reconstruction of NASA's Mars program after the Mars Observer loss.

Eric has also been working on a new history Web site for JPL. The first segment of it, covering the lab's founding and early years, went online at the end of October. The Halloween season is traditionally when JPL celebrates its foundation, stemming from when Frank Malina and his "suicide squad" carried out their first rocket motor tests on 31 October 1936. The Web site will be comprehensive, covering both flight projects and institutional changes over the period from 1936 to about 2000. The site's debut coincided with our 70th anniversary, which was celebrated with a weeklong series of events the third week of the month.

Eric has finalized an article on the Deep Space 1 mission and submitted it to *Quest* for consideration. His article on space oceanography, "Drowning in Data," is under consideration at *Historical Studies of the Physical and Biological Sciences*. He also has been conducting an oral history series with Charles Kohlhase, a retired JPL navigator and mission operations specialist whose last task was mission design for the Cassini/Huygens mission to Saturn. Finally, he wrote and presented a paper on robotic space exploration at the "Societal Impact of Spaceflight" conference in September 2006.

Johnson Space Center (JSC)

In mid-September, Jennifer Ross-Nazzal and Rebecca Wright from the NASA Johnson Space Center History Office took the opportunity to participate in a conference sponsored by the East Texas Historical Association. Dr. Ross-Nazzal chaired the panel discussion "Two Texas Communities Forever Changed by NASA." Rebecca, who facilitated the 2003 oral history project on the *Columbia* recovery effort, presented findings from this effort in a paper titled "Disaster to Recovery: How East Texas Assisted NASA's Return to Flight."

Sandra Johnson, the production coordinator for the JSC History Office, returned from a national workshop sponsored by the Kentucky History Center with vital information about changing methodologies involving digital recording and preservation. After lengthy discussions with experts in this field, Sandra is now developing techniques to meet the new

recommended digital archiving standards. Her effort will include transferring more than 500 audio recordings housed in the JSC History Collection to ensure their integrity for the next decades and to prepare the historic recordings for future format changes.

With a colleague from Baylor University's Institute of Oral History, Sandra and Rebecca facilitated a workshop on how to conduct oral history in October. They shared their experiences and methods during a full-day session at the annual meeting of the Oral History Association in Little Rock, Arkansas.

Marshall Space Flight Center (MSFC)

Pulitzer Prize-winning author Diane McWhorter is conducting research in the Marshall Center archives for a new book she is writing about Huntsville, Alabama.

McWhorter won a Pulitzer Prize in 2002 for general nonfiction for her book *Carry Me Home: Birmingham, Alabama, the Climactic Battle of the Civil Rights Revolution*. Originally from Birmingham, she now lives in New York City.

Carry Me Home has been called a major work of history and investigative journalism. It is also a personal memoir and a dramatic account of the Civil Rights era's climactic battle in Birmingham, as the movement led by Dr. Martin Luther King, Jr., and others brought down the institutions of segregation.

McWhorter says her new book will cover the Cold War arms and space race. She calls the development of the Saturn V rocket under Wernher von Braun "the spine" of the book. "Diane has used the Marshall archive to find numerous reports and articles about the Saturn V. She has also used it to locate articles about life in Huntsville during the Wernher Von Braun era," said Marshall Center Historian Mike Wright.

Intrigued by Alabama as a focal point for civil rights and the space race, she sees Huntsville as "an international story." Though she has found that many people outside the state have heard of von Braun, they are typically amazed to learn that he and his German "rocket team" were based in Huntsville. "There is something of a disconnect between von Braun and Alabama," she said. McWhorter says the new book will deal with social as well as technical history. It will deal with all of Huntsville, including NASA, the Army, Senator John Sparkman, old Huntsville, as well as civil rights.

"I have always had this project in the back of my mind," says McWhorter, who has made two trips and is planning a third to the archives at the Marshall Center.

McWhorter was educated at Wellesley College and is a long-time contributor to the *New York Times* and writes for the Op-Ed page of *USA Today*. Her articles about race, politics, and culture have also appeared in *Slate*, *The Nation*, *People*, *Talk*, *American Scholar*, and other publications.

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News from Headquarters and the Centers (continued)

Stennis Space Center (SSC)

NASA Stennis Space Center marked an historic moment in the life of the Nation's largest rocket engine test complex Friday, 29 September: The final Space Shuttle main engine (SSME) test was conducted on its A-1 Test Stand. The A-1 Test Stand was also the site of SSC's first test on an SSME, conducted in 1975. While SSC will continue testing SSMEs on its A-2 Test Stand through the end of the Space Shuttle program in 2010, A-1 began a new chapter in October. It will be temporarily decommissioned to convert it for testing the J-2X engine, which will power the second stage of NASA's new crew launch vehicle, the Ares I. The J-2X will also power the Earth-departure stage of the new cargo launch vehicle, Ares V. In an effort to record this historic event, the History Office is planning an oral history project to interview employees involved with the final test and those who will be involved in the upcoming testing. The staff is also documenting this event by collecting all video footage, photos, and news coverage of the final test.

ARCHIVAL UPDATE

Highlights from the Society of American Archivists' Annual Meeting in Washington, DC, August 2006

—by Jane H. Odom, Leilani Marshall, April Gage, Barbara Amago, and Shelly H. Kelly

The Society of American Archivists' (SAA) annual meeting, held in Washington, DC, in early August, drew more than 2,100 archivists, making it the largest-ever meeting of archivists in the United States. The conference was jointly sponsored by the SAA, the National Association of Government Archives and Records Administrators (NAGARA), and the Council on State Archives (CoSA). The six-day event included a number of interesting sessions as well as preconference workshops. Each day of sessions started with a plenary speaker invited by the sponsoring organizations. Guest speakers included Cokie Roberts from National Public Radio and Brian Lamb from C-SPAN, both of whom described their interest, use, and advocacy of archives. The Archivist of the United States, SAA and CoSA presidents, and the state archivist of Mississippi, representing NAGARA, also addressed the meeting. Among the numerous opportunities for networking were receptions held on two different nights at the National Archives and the National Museum of American History. The conference attendees included five individuals from NASA: Jane Odom from Headquarters, Leilani Marshall and April Gage from Ames Research Center, Barbara Amago from Jet Propulsion Laboratory, and Shelly Kelly from the University of Houston–Clear Lake, where the Johnson Space Center history collection is maintained. Below, each describes his or her experiences.

Jane Odom attended a session on "The Role of National Archives of the United States in Nominations to the Supreme Court: The John Roberts and Samuel Alito Experience." A panel of archives administrators discussed the extraordinary measures that the National Archives took in 2005 to make Federal records in Washington and presidential records in California available before the hearings on the nominations of Judges Roberts and Alito to the Supreme Court. They offered a compelling account of what it was like for a team

of archivists to be at the center of the storm for access to records. They described the voluminous number of boxes pertinent to the request as well as the review process the materials went through. The panel detailed the intense interest by the White House, Congress, media, and the general public in this matter and the National Archives' response. A similar talk was given on 11 October 2006 at the annual Archives Fair, held at the National Archives in Washington, DC.

Leilani Marshall attended a session titled "Developing an Open-Source and Standards-Compliant Descriptive Tool for Lone Arrangers." The name "lone arrangers" was coined many years ago in the archival profession to describe those archivists who typically work in one-person repositories. The new online descriptive tool for archives, introduced in this session, offers help to small repositories in publishing finding aids and digital images collections online. It is especially attractive to archivists with limited knowledge of Encoded Archival Description (EAD) or other electronic description systems. Called "Archon," this free, open-source software developed by the University of Illinois-Urbana Champaign is a tool for managing descriptive information about archival materials and publishing it on the Web. Easy-to-use, Web-based forms allow archivists to create and publish finding aids for their collections. The software also includes a digital library component that is quite usable, although it is still under development. The idea behind Archon is to input the data once and then to output it numerous times in many forms. At this point, data about collections is input in simple forms and output in HTML, EAD, and Machine-Readable Cataloging (MARC), allowing for ease of data transfer between institutions. The digital library component provides a form for data entry such as title, date of creation, and creator. Once the metadata is entered, an image file can be attached to the record allowing the metadata and the image to be viewed together. The Archon system is still being developed and is currently in version 1.0. The system requires a blank Microsoft SQL Server database and a Web server (of any type) running Hypertext Preprocessor (PHP) 5.0 or higher. For more information, see the Archon Web site at *http://www.archon.org/index.php*.

April Gage attended a session titled "More Product in the Image Archives: Applying Minimal Processing Guidelines to Visual Materials Collections." Given the abundance of NASA-generated photographic material that ultimately requires the attention of NASA archivists, this session held great importance for the NASA archival program. The speakers analyzed whether archivists Mark Greene and Dennis Meissner's minimal processing guidelines could apply to visual materials collections. (Greene and Meissner's article, "More Product, Less Process: Revamping Traditional Archival Processing," can be found in *American Archivist*, Fall/Winter 2005.) The panel concluded that it is both feasible and desirable to process photographic collections at various levels of intensity and followed with a discussion of viable practices of minimal processing. Helena Zinkham presented a set of metrics she developed for the Library of Congress to guide decisions about the amount of processing to undertake for each collection. Using Zinkham's system, collections are examined in terms of use, value, and viability. The use criterion addresses the number and type of user groups who might benefit from a given collection, how much of it will be used, and how often. The value criterion determines the importance of the material in a collection (e.g., informational or evidential value). The viability criterion assesses a collection's fitness for purpose, based on a cost/benefit analysis (e.g., preservation

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Archival Update (continued)

needs, such as extensive reformatting). Zinkham explained that simple ratings of low, medium, and high can be assigned to each of the three criteria. She then walked the group through sample scenarios to demonstrate how the library applies these metrics to actual collections. After establishing how to assess a collection's processing needs, Zinkham explained how to prioritize projects. If anyone would like a copy of Zinkham's session handout, titled "Use, Value, Viability: Criteria for Choosing Effective Processing Levels for Visual Materials," contact the NASA Ames History Office at 650-604-6430 or *lmarshall@mail.arc.nasa.gov*.

A first-time attendee at the SAA meeting, Barbara Amago was very impressed with the quality of the sessions, despite the oppressive Washington heat. The highlights of the meeting for Barbara included visiting the National Archives and having the historical importance of records preservation brought home so dramatically, meeting her counterparts at NASA and some of the other Federally Funded Research and Development Centers (FFRDCs), hearing first-hand accounts of how archivists were able to help small Gulf Coast communities rescue their vital records in the aftermath of Hurricane Katrina, discussing the impact of limited access to government records, and hearing about the role records managers and archivists have played in bringing down crooked politicians (yes, there was even a session devoted to that topic). Barbara found the main issues that permeated the conference this year—emergency preparedness, access, and advocacy—to be timely and helpful. The "gold" mined at the conference included many practical ideas that can be applied in the real world of limited resources and unlimited unprocessed collections.

Shelly Kelly attended two sessions, one on utilizing volunteers and the other on intern programs. Many people volunteer to make a difference doing something in which they believe. Graduate students and alumni make excellent volunteers and bring new viewpoints and energy into archives. In order to develop effective volunteers, staff must assign them specific project work plans with appropriate levels of responsibility, training, and recognition. Archivists who are considering setting up a volunteer program might wish to study the formal organization and structure of the National Archives and Records Administration (NARA) Volunteer Program, which has 156 volunteers and requires a minimum commitment of 100 hours per year for two years. Some people consider volunteering as a means to enhance their own jobs to learn a new skill set, and/or try out a new profession and determine their levels of interest. Volunteering helps people to acquire references, build networks, and become team players. Another opportunity to recruit staff for an archive is through internships. An internship is a temporary, practical learning experience in a professional setting, often connected to an educational program. A well-rounded program prepares students for the profession, allows supervisors to mentor young professionals while getting the necessary work completed, and provides the student with the opportunity to see an archive in action. The key to a successful internship is having a specific, interesting project and having direct communication among the faculty advisor, the archives supervisor, and the student. When the faculty member and supervisor work together, they can create a positive learning experience for the student.

Overall, it was a successful annual meeting, despite the searing heat. Mark your calendar now: Next year's Society of American Archivist conference is scheduled for Chicago in late August. We hope even more of our NASA colleagues will attend in 2007.

OTHER HISTORY NEWS

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

NASM's Division of Space History curators and fellows continue to receive awards and publish and present papers at a rapid pace. Recent publications, papers, awards, and other activities of DSH staff include the following:

The Society for the History of Technology has awarded Martin Collins its 2006 IEEE Life Members' Prize in Electrical History for his article "One World...One Telephone: Iridium, One Look at the Making of a Global Age," published in September 2005. The annual prize recognizes the best paper in electrical history published during the previous year and comes with a cash prize and certificate presented at the annual meeting of the Society for the History of Technology.

Department of Space History Chairman Roger Launius has just published with Richard H. Buenneke, Richard DalBello, and R. Cargill Hall a monograph entitled *National Space Policy: Does it Matter?* (Washington, DC: The George Marshall Institute, 2006). The publication is the result of a roundtable discussion that took place at the National Press Club in Washington, DC, on 12 May 2006. Launius has also published "Interpreting the Moon Landings: Project Apollo and the Historians," *Technology in Society 22* (September 2006: 225–55.) By focusing on the key book-length studies of the Apollo program that landed American astronauts on the Moon in the 1960s and 1970s, this essay evaluates the historiography about Apollo.

Jim David has just published "Astronaut Photography and the Intelligence Community: Who Saw What?" *Space Policy 22* (August 2006: 185–93.) It argues that while NASA's astronaut photography benefited a wide range of civilian interests, it also conflicted directly with the critical national security requirement to protect the National Reconnaissance Program from public disclosure or compromise.

Valerie Neal worked with a team from NASA and United Space Alliance from 11 to 22 September 2006 to reinstall wing leading edge panels and main landing gear doors on the Space Shuttle *Enterprise*, which is on display at the Udvar-Hazy Center, Dulles International Airport, Virginia. The wing leading edge was removed from *Enterprise* following the *Columbia* accident in 2003 and was used to help determine the causes of the mission loss.

American Astronautical Society (AAS) *Explorer*

The American Astronautical Society's History Committee recently published its inaugural newsletter. Named *Explorer*, the newsletter provides History Committee members with an opportunity to report on their recent and current activities and near-term plans, including publications and conference activities. The newsletter focuses on issues of specific interest to the History Committee, such as the group's editorial support for an ABC-CLIO encyclopedia of spaceflight history and the annual Emme award of the AAS. Michael L. Ciancone, the chair of the AAS History Committee, is responsible for bringing the newsletter into existence. To receive *Explorer* via e-mail, send a message to:

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Other History News (continued)

michael.l.ciancone@nasa.gov. You will receive confirmation that your e-mail address has been added to the AAS History Committee's electronic e-mail list for the newsletter. The September 2006, Volume 1, Number 1 edition of *Explorer* is available at *http://www.astronautical.org/AASexplorer.pdf*.

Calls for Papers and Announcements

Smithsonian Institution History Conference

The program committee of "Making Science Global: Reconsidering the Social and Intellectual Implications of the International Polar and Geophysical Years" invites papers for a possible two-day conference at the Smithsonian Institution, 31 October–1 November 2007, examining the impetus for (and the impact upon) science, society, and culture of the International Polar Years (IPY) of 1882–1883 and 1932–1933 and the International Geophysical Year (IGY) of 1957–1958, as well as how this perspective might be useful for planners of the current IPY in 2007–2008. We intend to explore the origins of these efforts, their political dimensions, and their consequences. Themes might include the place of the poles in human imagination, discipline formation, cultural nationalism, politics, and transnationality prior to and after 1882; the emergence of the modern geosciences in the first half of the 20th century; the uses of new technologies to explore the poles; and changing assessments of the nature of human cultures in high latitudes. Papers addressing the International Geophysical Year might examine its role in the Cold War and the extent to which multidisciplinarity and multinational cooperation and competition shaped the geosciences and contributed to environmental awareness. Pending funding, the conference will be held in Washington, DC, immediately prior to the History of Science Society meeting in 2007. International scholars and graduate students seeking exposure to the history of the geosciences are particularly welcome. We hope that the papers will merit publication. Proposals for papers should include a title and abstract, as well as a curriculum vita (CV). DEADLINE: 31 December 2007. Please send these electronically to David DeVorkin at *devorkind@si.edu*, Roger Launius at *launiusR@si.edu*, and James Fleming at *jfleming@colby.edu*.

The Society for History in the Federal Government (SHFG) Annual Conference

SHFG invites the submission of proposals for papers and other types of presentations at its annual conference, "Current Challenges and New Directions in Federal History." The conference will be held in March 2007 (exact date and location to be announced). Proposals for complete sessions and individual papers are welcome from historians, archivists, curators, librarians, and others engaged in the study of Federal history in its broadest context. The conference theme includes an examination of the research and activities currently underway in Federal government history programs. It will also showcase innovative ideas for making Federal history meaningful to the general public as well as to government agencies. Proposals connecting Federal history to current historiographical debates are also welcome. Topics for proposed sessions include the role of the Federal government in medical history; museum activities and displays; the African-American

experience, the Native American experience, national security, the current crisis in Iraq; the Washington, DC, flood of 2006; declassification and "reclassification" of Federal records; history "outreach" programs; and history on the World Wide Web. Submissions on other topics will also be considered. Graduate students are encouraged to submit proposals for presentations. Additionally, a roundtable discussion on how to get a job as a Federal historian is planned. The conference will conclude with the annual meeting of the society, which all members are welcome to attend. Session or individual paper proposals should be sent to *shfgannualconference@yahoo.com*. The deadline for submissions is 15 December 2006. Any specific questions can be directed to the conference's executive director Bill Williams at *billwms50@gmail.com* or by telephone at 301-688-2336.

International Committee for the History of Technology (ICOHTEC) Symposium

ICOHTEC invites paper proposals for its 34th symposium, which will be held in Copenhagen, Denmark, 14–19 August 2007. "Fashioning Technology: Design from Imagination to Practice" is the symposium's general theme. The deadline for proposals is 15 January 2007. For more information on symposium subthemes and proposal requirements, please visit the ICOHTEC Web site at *http://www.icohtec2007.dk*.

National Air and Space Museum (NASM) Fellowship Opportunities

The National Air and Space Museum, Smithsonian Institution, Washington, DC, provides four residential fellowships to support research in aerospace history: the Daniel and Florence Guggenheim Fellowship for predoctoral and recent postdoctoral scholars; the A. Verville Fellowship, open to academic and nonacademic historians; the Ramsey Fellowship in Naval Aviation History, which is similarly open; and the Charles A. Lindbergh Chair in Aerospace History, an appointment (up to one year) to a senior scholar who is researching and writing on a topic in aerospace history. The application deadline for all fellowships is 15 January 2007, and successful applicants will be notified in mid-April. The Guggenheims, Verville, and Ramsey are open for the 2007–2008 academic year. The Lindbergh appointments are presently filled through the 2007–2008 academic year. Applications submitted for the next Lindbergh, still due on 15 January 2007, are for the 2008–2009 academic year. The Guggenheims are for appointments from three months to one year. The Verville, Ramsey, and Lindbergh appointments typically vary from nine months to one year. Further information can be found on the museum Web site: *http://www.nasm.si.edu/getinvolved/fellow/index.cfm*.

Lemelson Center Fellowships

The Jerome and Dorothy Lemelson Center for the Study of Invention and Innovation at the Smithsonian Institution's National Museum of American History offers fellowships to scholars and professionals who are pre- or postdoctoral candidates or who have completed advanced professional training. The Lemelson Center Fellows Program supports projects that present creative approaches to the study of invention and innovation in American society.

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Calls for Papers and Announcements (continued)

These include, but are not limited to, historical research and documentation projects resulting in publications, exhibitions, educational initiatives, and multimedia products. The fellowship program provides access to the Smithsonian Institution's vast artifact and archival collections, as well as the expertise of the institution's research staff. Fellowships are awarded for a maximum of 10 weeks and carry a prorated stipend. The deadline for applications for 2007 is 15 January 2007. For details, see *http://invention.smithsonian.org/fellowships* or e-mail Maggie Dennis, National Museum of American History, at *dennism@si.edu*.

Space Studies Board (SSB) Research Associate Position

The Space Studies Board of the National Academies has an open position for a Research Associate. The SSB provides an independent, authoritative forum for information and advice on all aspects of space science and applications. The board conducts advisory studies and program assessments; facilitates international research coordination; and promotes communications on space science and science policy among the research community, the Federal government, and the interested public. The Research Associate develops pertinent background research that contributes to a greater understanding of conditions, issues, and trends impacting on a wide range of space-related programs and projects, subjects, and topics; drafts background papers; creates and maintains online resources for committees and boards; attends outside meetings and congressional hearings, as needed, and writes summaries of what transpired; prepares data for use in summaries and fact sheets; locates citations and graphics for committee reports; edits report material developed by committee members and senior staff; and responds to inquiries about study activities and increases public awareness of studies. The Research Associate may assist with administrative duties related to programs and projects. Basic requirements include a bachelor's degree in space-related science, policy, aerospace engineering, or a related field or equivalent knowledge with three years of related professional experience. Other desirable qualities include: ability to solve intellectual problems of appreciable variety and complexity using originality and ingenuity; ability to exercise appreciable latitude for independent judgment and action; experience working in complex environments with a high degree of organizational effectiveness; ability to work successfully in a team environment; ability to develop relationships with board and committee members, coworkers, and employees in other National Academies' departments; and excellent written and oral skills. A master's degree in space-related science, policy, aerospace engineering, or a related field is desired. For additional information on the position, see *http://nationalacademies.wfrecruiter.com/jobs_details1.asp?Job_id=77725&Page_Id=5911&Published=1*.

Virginia Tech STS Faculty Position

The Virginia Polytechnic Institute and State University seeks an Assistant Professor in the Department of Science and Technology in Society (STS). The successful candidate must have a demonstrable interdisciplinary background as well as familiarity with historical methods. S/he must be able to teach the STS graduate program's core courses in the history of science and/or technology. We especially encourage applications from candidates who will help us build upon existing connections with other units in the university. We have special interests in 20th-century science and technology, globalization, politics of

science and technology, minorities and underrepresented groups in science and technology, engineering studies, energy, and the environment. The candidate will be expected to teach three semester courses per year, undergraduate and graduate, with usual advising, service, and research responsibilities. Evidence of a strong research program and teaching experience required. Salary is commensurate with experience. Ph.D. in STS or related field must be completed by August 2007. Candidates can find information about our programs, faculty, and course descriptions at *http://www.sts.vt.edu*. Interested candidates should apply online at *http://www.jobs.vt.edu* and refer to posting 061086. As part of your online application, please attach a CV, evidence of teaching ability (use other doc field), and a writing sample (use other doc 2 field). In addition, please send three letters of reference to:

Ellsworth Fuhrman, Chair
Department of Science and Technology in Society
133 Lane Hall
Virginia Tech
Blacksburg, VA 24061-0247
540-231-8966

CONTRACTS

History of the Scientific Exploration of Earth and Space (HSEES)

In celebration of NASA's upcoming 50th anniversary, scholarly histories of NASA's activities in the scientific exploration of Earth and space are solicited by this History of the Scientific Exploration of Earth and Space program element. The International Geophysical Year (IGY) of 1957–1958 marked the beginning of the space age and the birth of NASA; it ushered in a half-century of unprecedented achievement in our scientific exploration of Earth and space. The concurrence of the International Polar Year (IPY) in 2007–2009 and the International Heliophysical Year (IHY) in 2007–2008 also provides a unique opportunity to examine the scientific advances that have occurred in the nearly 50 years since the establishment of NASA on 1 October 1958.

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

A secondary objective is to extend the spirit of exploration and discovery embodied in past NASA science missions and to help attract and educate the next generation of scientists

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Contracts (continued)

and engineers. This opportunity is a coordinated program with the NASA History Division and funded by the Science Mission Directorate. It is part of a coordinated set of education, public outreach, and historical research activities in relation to IPY, IHY, and NASA's 50th anniversary.

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

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

The short announcement of HSEES is at *http://nspires.nasaprs.com/external/viewrepositorydocument/70449/Amendment%2019.pdf*.

Detailed information about the normal procedures for Notices of Intent (NOIs) and the submission of proposals are included in the Summary of Solicitation at *http://nspires.nasaprs.com/external/viewrepositorydocument/32140/Summary_of_Solicitation_Amend19.pdf*. NOIs are optional, but if submitted, are due 15 December. The NOI cover page will be available on or before 15 November. A link to the future NOI cover page form is located at *https://nspires.nasaprs.com/external/member/proposals/selectSolicitation.do?method=init&orderBy=title&sortOrder=ASC*.

PUBLICATIONS

Forthcoming NASA Publications

Flights of Discovery: The History of the Dryden Flight Research Center, by Lane E. Wallace. This history of the first 50 years at the NASA Dryden Flight Research Center captures the spirit of the role flight research has played in aeronautical research and development and provides insightful accounts of most of the major flight research projects from 1946 to 1996. The second edition is on schedule for publication in late 2006, in time for the Center's 60th anniversary.

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

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

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

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

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

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

Non-NASA Books

Blind Landings: Low Visibility Operations in American Aviation, 1918–1958 (Baltimore: Johns Hopkins University Press, 2006), by Erik M. Conway. When darkness falls, storms rage, fog settles, or lights fail, pilots are forced to make "instrument landings," relying on technology and training to guide them through what is typically the most dangerous part of any flight. In this original study, Erik M. Conway recounts one of the most important stories in aviation history: the evolution of aircraft landing aids that make landing safe and routine in almost all weather conditions.

Black Cat Press and Apogee Books have begun a collaborative venture that will bring back into print the classic fiction that helped launch the space age. Some titles will be published independently while others will be available from both Black Cat and Apogee. Among the many titles already available are *The Mars Project*, a previously unpublished science fiction novel written by Wernher von Braun in the early 1950s; *Edison's Conquest of Mars*, by Garrett P. Serviss; a new, unabridged translation of Jules Verne's *From the Earth to the Moon* (including the sequel, *Around the Moon*); *Voyage to the Moon*, by George Tucker; *The Moon-Maker*, by Arthur Train and Robert Wood; and *By Rocket to the Moon*, by Otto Willi Gail. So far, the earliest title is *A Voyage to Cacklogallinia*, which had been originally published in 1727. Most of the Black Cat/Apogee books contain the original, contemporary illustrations as well as special appendices by the editors. To purchase these books, see *http://www.black-cat-press.com* and *http://www.cgpublishing.com/Books/ScienceFiction.html*.

AEROSPACE HISTORY IN THE NEWS

NASA Goddard Scientist wins Nobel Prize in Physics

—by Matthew Barrow

On 3 October 2006, the Royal Swedish Academy of Sciences awarded NASA's John C. Mather of Goddard Space Flight Center the Nobel Prize in Physics for his work on the origins of the universe. Dr. Mather will split the $1.37 million prize with corecipient Dr. George F. Smoot of the University of California, Berkeley.

The astrophysics community recognized the importance of Dr. Mather's work from the moment he presented his results at a meeting of the American Astronomical Society in 1990. Presenting his analysis of 9 minutes of data returned from the Cosmic Background Explorer (COBE) satellite, Dr. Mather received a rare standing ovation from the roomful of usually dispassionate astronomers. In what some have called "the most important discovery of the century, if not of all time," COBE returned data from the far reaches of the universe that showed a spectrum of radiation, called blackbody radiation, that is consistent within parts per million of the predictions of the Big Bang theory. The data from COBE is the most decisive evidence to date for the Big Bang theory. Dr. Mather played a key role in the direction and design of COBE, which was built at Goddard and launched by NASA in 1989.

The three instruments that the satellite carried searched for the cosmic infrared background radiation, mapped the cosmic radiation sensitively, and compared the spectrum of the cosmic microwave background radiation with a precise blackbody, respectively, with each instrument returning a major cosmological discovery. COBE observed that the cosmic microwave background, the afterglow of the Big Bang, has a temperature of approximately -455°F. This measurement matched the predictions of the Big Bang theory and at the same time indicated that almost all of the radiant energy of the universe was released within the first year following the Big Bang. COBE also observed slight temperature variations, which point to density differences that gave rise to the stars and galaxies we see today.

(Left to right) Dr. Edward Weiler, Director of the NASA Goddard Space Flight Center, and Ms. Shana Dale, NASA Deputy Administrator, congratulate Dr. John C. Mather on 3 October 2006 for his 2006 Nobel Prize in Physics.

Photo Credit: NASA/Bill Ingalls.
http://www.nasa.gov/vision/universe/starsgalaxies/mather_nobel_photos.html

The COBE project is representative of the world-class scientific research that NASA has supported for several decades. Mather is the first NASA civil servant to win the Nobel Prize. For more information about Mather, COBE, and the Nobel Prize, see *http://nobelprize.org/nobel_prizes/physics/laureates/2006/press.html; http://lambda.gsfc.nasa.gov/product/cobe/; The Very First Light: The True Inside Story of the Journey Back to the Dawn of the Universe*, by John C. Mather and John Boslough (BasicBooks, 1996); and *The First Three Minutes, 2nd edition*, by S. Weinberg (BasicBooks, 1993).

Passing of James A. Van Allen

Pioneering astrophysicist James A. Van Allen passed away on 9 August 2006 at the age of 91. A leader in space physics throughout his long career, he is best know for his discovery in 1958 of the radiation belts, now known as Van Allen belts, that circle Earth.

Dr. James A. Van Allen, center, designed and built the instrument on *Explorer* that discovered the radiation belts that circle Earth. At left is Dr. William H. Pickering, former director of JPL, which built and operated the satellite. At right is Dr. Wernher von Braun, leader of the Army's Redstone Arsenal team, which built the first stage Redstone rocket that launched *Explorer 1*.

Center: JPL • Center Number: P8485
GRIN DataBase Number: GPN-2000-000478

Born in Mount Pleasant, Iowa, in 1914, Van Allen graduated from Iowa Wesleyan College in 1935 and received an M.S. in 1936 and Ph.D. in 1939 from the University of Iowa. Following school, Van Allen accepted employment with the Department of Terrestrial Magnetism at the Carnegie Institution of Washington, where he studied photodisintegration.

In April 1942, Van Allen moved to the Applied Physics Laboratory at Johns Hopkins University, where he worked to develop a rugged vacuum tube. He also helped to develop proximity fuzes for weapons used in the war, especially for antiaircraft projectiles used by the U.S. Navy. By the fall of 1942, he had been commissioned as an officer in the Navy and was sent to the Pacific Theater of Operations to field test and complete operational requirements for the proximity fuzes. Upon completing his assignments in World War II, Van Allen returned to civilian life and began working in high- altitude research, first for the Applied Physics Laboratory and, after 1950, at the University of Iowa.

Van Allen's career took an important turn in 1955 when he and several other American scientists developed proposals for the launch of a scientific satellite as part of the research program conducted during the International Geophysical Year (IGY) of 1957–1958. After the success of the Soviet Union with Sputnik 1, Van Allen's *Explorer* spacecraft was approved for launch on a Redstone rocket. It flew on 31 January 1958, and returned enormously important scientific data about the radiation belts circling Earth. Van Allen became a celebrity because of the success of that mission, and he went on to other important scientific projects in space. In one way or another, Van Allen was involved in the first four *Explorer* probes, the first Pioneers, several Mariner efforts, and the orbiting geophysical observatory.

Having served as the head of the University of Iowa Department of Physics and Astronomy since 1951, Van Allen retired in 1985 and was named Carver Professor of Physics, Emeritus, See James A. Van Allen, *Origins of Magnetospheric Physics* (Washington, DC: Smithsonian Institution Press, 1983); David E. Newton, "James A. Van Allen," in Emily J. McMurray, ed., *Notable Twentieth-Century Scientists* (New York: Gale Research Inc., 1995, 2070–72); "James A. Van Allen," biographical file, NASA Historical Reference Collection, NASA History Division, NASA Headquarters, Washington, DC. For a NASA tribute to Van Allen, see *http://www.nasa.gov/vision/universe/features/james_van_allen.html*.

Upcoming Meetings and Events

4–6 December 2006, the American Institute of Aeronautics and Astronautics (AIAA) will be hosting the 2nd Space Exploration Conference called "Implementing the Vision" at the George R. Brown Convention Center in Houston, Texas. For registration information, see *http://www.aiaa.org/content. cfm?pageid=230&lumeetingid=1487*.

4–7 January 2007, the American Historical Association will hold its 121st Annual Meeting in Atlanta, Georgia. For more information about the meeting, see *http://www.historians.org/annual/2007/index.cfm*.

5–10 January 2007, the 209th Meeting of the American Astronomical Society will be held jointly with the Historical Astronomy Division, the High Energy Astrophysics Division, and the American Association of Physics Teachers at Washington State Convention and Trade Center in Seattle, Washington. For more information, see *http://www.aas.org/*.

8–11 January 2007, the American Institute of Aeronautics and Astronautics will hold its 45th AIAA Aerospace Sciences Meeting and Exhibit in Reno, Nevada, at the Grand Sierra Resort Hotel. For additional meeting and registration information, see *http://www.aiaa.org/content.cfm?pageid=230&lumeetingid=1064*.

14–17 February 2007, the Southwest/Texas Popular Culture/American Culture Association annual meeting will be held at the Hyatt Regency Albuquerque, New Mexico. For further details regarding the conference, see *http://www.h-net. org/~swpca/*.

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

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

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

1–4 April 2007, the 2007 Mutual Concerns of Air and Space Museums Seminar will be held in at the San Diego Air and Space Museum in San Diego, California. For detailed information on the seminar, see *http://www.nasm.si.edu/getinvolved/mutualconcerns/*.

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

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

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

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

19–22 April 2007, the 4th annual Cultural Studies Association Conference will be held at George Mason University in Arlington, Virginia. The conference this year will feature plenaries on the culture of science and technology, cultural studies and the social sciences, and global cities and citizenship. For more information, see *http://www.csaus.pitt.edu/frame_home.htm.*

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

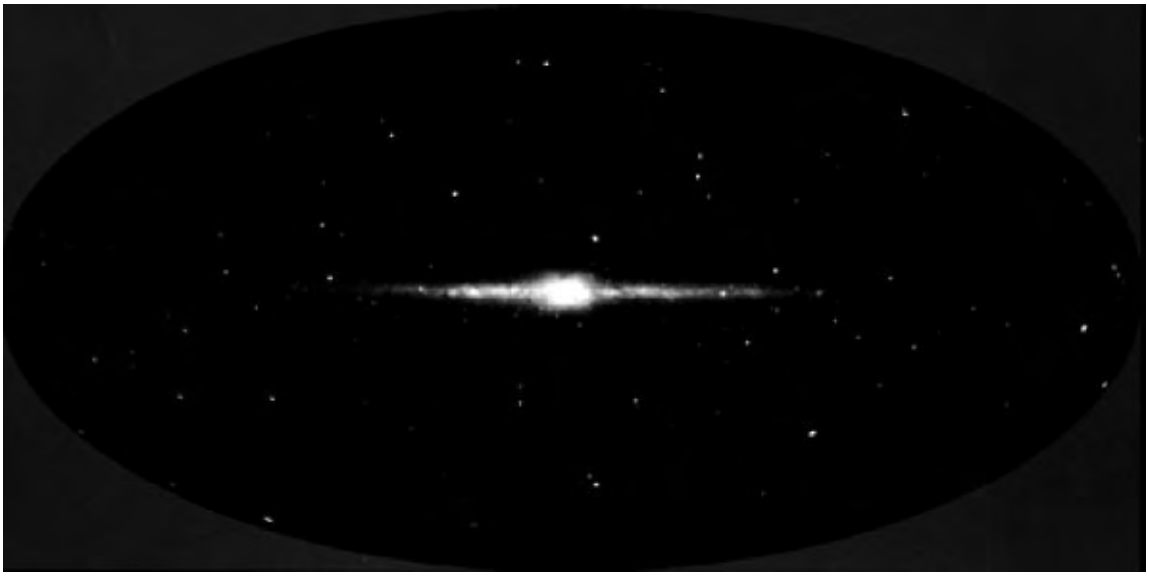
15–16 May 2007, the Chemical Heritage Foundation will host the E. N. Brandt Oral History Conference in Philadelphia, Pennsylvania. For more information, see *http://www.chemheritage.org/events/event-nav3.html*.

1–2 June 2007, the Business History Conference will hold its annual conference at Case Western Reserve University in Cleveland, Ohio. The theme of the conference is "Entrepreneurial Communities." For more information, see *http://www.h-net.org/~business/bhcweb/annmeet/call07.html.*

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

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

IMAGES IN SPACE HISTORY



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COBE's View of the Milky Way

From its orbit around Earth, the Goddard Space Flight Center's (GSFC) Cosmic Background Explorer (COBE) captured this edge-on view of our Milky Way galaxy in infrared light, a form of radiation that humans cannot see but can feel in the form of heat, as part of its mission to test the "Big Bang" theory of the creation of the universe. The theory, first proposed in 1927 by Belgian cosmologist Georges Lematre, holds that the universe began as an incredibly dense "primeval atom" that exploded with tremendous force, unleashing matter and space at the speeds of light. In addition to providing support for the Big Bang theory, the satellite discovered that the cosmic background radiation had been produced in the Big Bang just as scientists originally speculated. The satellite's data even discovered the primordial temperature and density fluctuations that eventually gave rise to the Milky Way and other large-scale objects found in space today.

Dr. John C. Mather, Senior Astrophysicist in the Observational Cosmology Laboratory at NASA's Goddard Space Flight Center, led the effort to develop the proposal for COBE in the mid-1970s, served as the study scientist for COBE at GSFC between 1976 and 1988, and then served as project scientist for COBE from 1988 to 1998. The Royal Swedish Academy of Sciences acknowledged the significance of the scientific discoveries obtained with COBE when it announced the award of the 2006 Nobel Prize in Physics to Dr. Mather and his collaborator, Dr. George F. Smoot, of the Lawrence Berkeley National Laboratory.

CONTACT INFORMATION AND CREDITS

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

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

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