News & Notes

National Aeronautics and Space Administration

NASA HISTORY PROGRAM OFFICE
Office of Communications

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From the Chief Historian

I won't sugarcoat it—these are challenging times. As I write this we have just seen the passage of a continuing resolution to fund the National Aeronautics and Space Administration (NASA) for the remainder of this fiscal year. The fallout for our history program is not yet clear, but we are likely to continue to have to operate with fewer resources. The picture for fiscal year 2012 is not any more promising. Moreover, the end of Space Shuttle operations accompanied by continued political wrangling over NASA's mission (and budget) leaves many NASA-philes with an intense feeling of unease about the future. While those political debates will take a while to unfold, we can be certain that when we conduct our history program review at Glenn Research Center in early June, all of us involved in NASA history work will need to take a hard look at what we are currently doing. Living up to our mandate derived from the Space Act to preserve NASA's history, stimulate historical research on NASA's accomplishments, and communicate all of that to the public will require creativity and flexibility.

However, I've been encouraged by some oral histories that have come across my desk lately. During a similar period of turmoil (especially for the human spaceflight program) in 1970, with the Apollo program drawing to a close and the fate of future projects unclear, NASA Administrator Tom Paine sat down with our first historian, Gene Emme, for a series of "current oral history" interviews. These

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Computers in Spaceflight, the e-book

By Dr. Armando Fox, *fox@cs.berkeley.edu*

As a computer science professor who is also interested in the history of computing and the American space program, a couple of years ago I became very interested in the history of computers used in space exploration. I was looking for an overview that followed the history of computing hand in hand with the history of the American space program so I could understand how the two fields affected each other. After some Googling I was thrilled to discover *Computers in Spaceflight: The NASA Experience* on the NASA history site—exactly the kind of full-length, detailed overview I'd been looking for, complete with embedded images.

Only one problem: the book was offered only as a set of 20 or 30 separate HTML pages with embedded images. I couldn't read it in bed or on the train (at least not comfortably), and I couldn't read it at all unless connected to the Internet. It wasn't available as a physical book, since probably one person in one hundred thousand cares about *Computers in Spaceflight,* and you can't price a physical book competitively for such a small audience.

Then I had a thought. I was an early adopter and big fan of the Amazon Kindle e-book reader. Wasn't there a free service on Amazon's site that converted HTML files to Kindle format? Of course, *Computers in*

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In This Issue:

From the Chief Historian (continued)

documents are a treasure trove of insights into the past. (My thanks to Marcia Smith for calling them to my attention.) While reading these interviews I've had to chuckle over the striking similarities in the problems and processes then and now. For example, take this comment by Dr. Paine on his participation in a science student luncheon hosted by a senator who had cast a key vote against the NASA budget the day before: "Well, I accepted the invitation with the idea that he might be embarrassed and vote for us. But, he was a great deal more brass than that, it didn't bother him at all." As the old French aphorism goes: The more it changes, the more it's the same thing. That thought, and the chance to get a glimpse at what our leaders thought in similar circumstances 40 years ago, fills me with hope and confidence that we'll find the needed creativity and flexibility to survive the current challenges and thrive in the future.

In the meantime, Godspeed.

William P. Barry
Chief Historian

Computers in Spaceflight, the e-book (continued)

Spaceflight consisted of many HTML pages and separate images, but I devised a simple program that downloaded all of them and did some minor surgery to convert them into a single big HTML file that I could submit to Amazon's Kindle-conversion site. (For the geeks among you, I used cURL, Ruby, and the Hpricot XML parsing library.) Steve Garber was very excited about my story and we got into an e-mail conversation about how the NASA History Program Office might make more publications available as e-books.

E-books are terrific for niche audiences. The cost of distributing them is nearly zero. Just as digital music distribution made it possible for independent artists to reach their audiences by removing financial barriers, e-book technology makes it possible to reach smaller audiences who enthusiastically embrace very specialized publications. Indeed, I have a number of esoteric documents related to the history of computing, many scraped from the Internet just like *Computers in Spaceflight* and subjected to similar preprocessing so I could read them on my Kindle. The situation applies equally well to textbooks, a type of publication I deal with frequently. Even though many textbooks are written by academics who make very modest if any royalties, textbook prices remain fairly high because the audience for them is limited. I expect e-textbooks to shake this up in the next few years.

If you're the creator or curator of book-like content that might be of interest to other geeks, consider "liberating" it by making it available in a format that is either an open e-book format, like ePub, or a "source" format from which conversion is easy, like Microsoft Word, TeX, or even plain ASCII/Unicode. (Steve Garber eventually provided me with a Microsoft Word version of *Computers in Spaceflight*, allowing

Formats and Readers
Supporting Software

Format Reader	PDF	ePub	Mobipocket
Amazon Kindle 2, DX	Yes	No	Yes
Apple OS Devices	Yes	Yes	Yes*
Barnes & Noble Nook	Yes	Yes	No
Sony Reader	Yes	Yes	No

*May need to install an application to read the file or use third-party software to convert it into a readable format for some devices.

Other notes: The Kindle and Nook readers do not really have proprietary formats, but variants of Mobi and ePub with a digital rights management layer, so would have the same limitations and features in terms of formatting. Google has chosen ePub as the format for releasing public domain books in Google Books

me to use the off-the-shelf commercial application Mobipocket Creator to convert them to Kindle format.) Contrary to what you might expect, PDF is a poor choice because the structure cannot be recovered from the content and it's difficult to reformat/reflow the material to different size screens or for different choices of font size (most e-book devices allow the human reader to increase or decrease the font size, or to view the book in either portrait or landscape orientation). HTML is better since it preserves some structure, but it is still not the best choice because the available structure and appearance information is impoverished compared to other formats.

And if you're at any level a geek—and that means having a passionate interest in something that perhaps is not quite mainstream—you should run, not walk, to get an e-book reader. Given how much material is already online and how many new independent authors are now self-publishing digitally, it'll change the way you approach reading.

The NASA History Program Office would like to thank our guest writer, Dr. Armando Fox, for his thoughtful article. Any recommendations within this article express the views of the author and do not represent an endorsement by NASA.

News from Headquarters and the Centers

Headquarters

In early spring the History Program Office hosted a group of U.S. Senate archivists for a visit. The group calls themselves CHARM (Capitol Hill Archivists and Record Managers) and has been active for nearly 10 years. They represented the Senate Historical Office as well as several Senators' personal offices and

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committees. Chief Archivist Jane Odom, a Capitol Hill alumna herself, provided the group with a tour of the Library, Information Center, History Program Office (and archives), and Photo Department, as well as a trip to the roof for a photo opportunity. During their stop in the History Program Office, they were welcomed by the NASA Chief Historian and several individuals from the Office of Legislative and Intergovernmental Affairs.

In the Headquarters Archives, we like to say that reference requests are our bread and butter. During one recent week, the archival staff responded to requests for information on NASA funding, 1958–1978; biographical info on former NASA employees; launch-escape systems for Gemini and the Space Shuttle; a Mars meteorite that fueled the life on Mars debate; the production of lunar maps; contractor workforce studies; the Apollo 11 and 17 missions; Mercury astronaut selection criteria; the Gemini space pencil; the *Liberty Bell 7* hatch problem; *Freedom 7*; and propulsion technology. There is always an interesting question being asked. And almost always, we are able to provide an answer or at least a referral.

The NASA Web page that hosts the speeches of the Administrator and the Deputy Administrator (available online at *http://www.nasa.gov/news/speeches/admin/index.html*) now features a link to take interested individuals to the historical speeches of former Administrators, 1958–2009, that are hosted on our History Program Office Web site.

Efforts are ongoing by the contract archivists to preserve our hardcopy Historical Reference Collection by photocopying deteriorating news clippings, replacing worn folders and then updating abstracts of folder contents. The current focus is on files containing information on Earth science, satellites and space probes, and human spaceflight. Work has begun on the processing of a large collection of legislative affairs material and an even larger audiovisual collection, as well as the development

of a database containing reference questions and answers. The appraisal of boxes of records on loan from the Federal Records Center is ongoing with historically valuable items from those boxes being photocopied to add to our collection.

The review of photo dates in the Great Images in NASA (GRIN) database has been completed. This was an effort to make sure the dates are accurate after some errors were discovered.

Our hardcopy collection of NASA budget submissions' chronological history, 1959–90, was recently scanned. The PDFs will be placed in our internal database and also hosted on the NASA Headquarters Library Web site.

Ames Research Center (ARC)

People around Ames continue to make history. Thomas Alderete and John Dusterberry made a video history of the Vertical Motion Simulator and posted it on the NASA Ames YouTube channel. Geoff Briggs of the Center for Mars Exploration built a series of concept maps that are useful in teaching the history of space science. Those who download the CmapTools software from the Web site of the Institute for Human and Machine Cognition (IHMC) at *http://cmap.ihmc.us/*, can view the concept maps at the IHMC Space Exploration Web page (located at *http://electra.ihmc.us/*).

In historic preservation news, a Historic American Engineering Record was completed for one of the earliest tunnels at Ames, the 7- by 10-foot wind tunnel #2, which is now demolished. The 2- by 2-foot supersonic wind tunnel was also slated for destruction, and the History Program Office secured documents and artifacts from that facility. And we are delighted to see that President Obama's budget includes funds to re-skin the iconic Hangar One for future use.

We welcome Holly Thomason, a graduate student in San Jose State University's School of Library and Information Science, who joins us as a spring archives intern. Holly is processing a large collection of heliophysics research files accumulated by the late solar astronomer John D. Mihalov (Accession 2005-024). We also welcome Karen Moze into the role of the Ames Records Management Officer, and who thus plays an important role in preserving the history of the Center.

Acquisitions of note by History Program Office Archivist April Gage include lunar mission records and a painting from the former Soviet Union (see images on next page). She acquired Lunar Prospector project records, which promise to provide deep insight into the management of the mission. April also worked with Dan Andrews, Steven Ord, Ken Galal, Kim Ennico Smith, Tony Colaprete, and other members of the Lunar CRater Observation and Sensing Satellite (LCROSS) team to identify and acquire artifacts and mission records not bound for the National Archives and Records Administration (NARA). She acquired several artifacts and 40 gigabytes of files, including publicly released videos and animations, the LCROSS song "Water on the Moon" by John Marmie, presentations, press releases, a memory book, and banners signed by the team's families. Some files detail the team's social media campaign.

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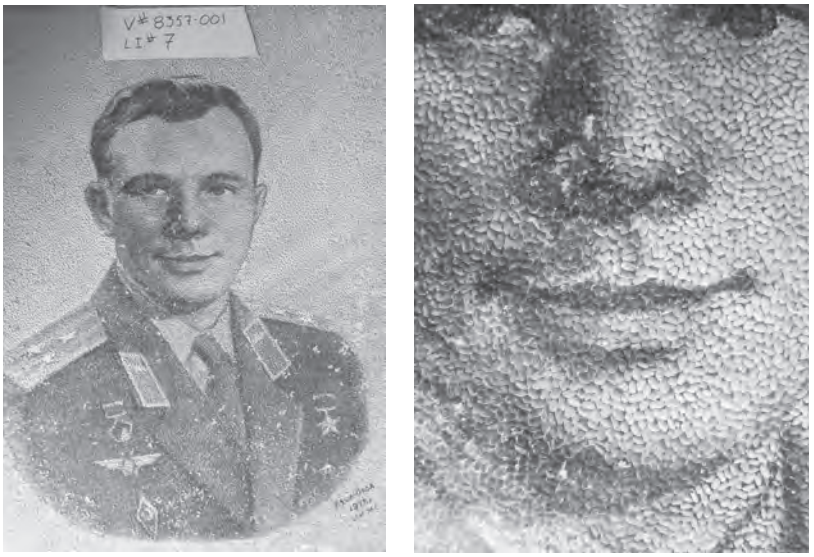
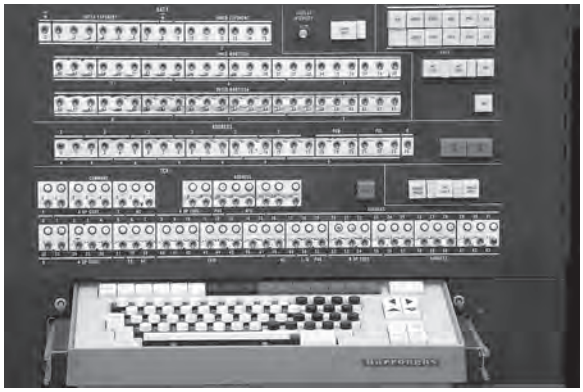
News from Headquarters and the Centers (continued)



This stunning pointillist-like portrait of cosmonaut Yuri Gagarin, made entirely of colored or painted rice, recently found its way to the Ames History Office. It was a gift from the former Soviet Union to the U.S. Apollo-Soyuz astronauts during their tour of the U.S.S.R. in 1975. We are exploring conservation options and hope to uncover more information about its origin. According to an article in Britain's *The Independent*, a Yuri Gagarin museum in Russia houses a colored rice portrait created by Kazakh herdsmen. Perhaps there's a connection?

Jack Boyd was featured in the fall 2010 volume of *ASK Magazine*, in an article that crystallized his many years of hard-won experience. Jack is shown here with Deputy Administrator Lori Garver on her recent visit to NASA Ames.



The Computer History Museum opened its new exhibit *Revolution: The First 2000 Years of Computing*. Among the artifacts prominently woven into that history are the ILLIAC IV massively parallelsupercomputer, the Apollo Guidance Computer, and the SGI IRIS workstation for which NASA Ames was the launch customer.

Four esteemed Ames scientists—(from left) Patricia Cowings, Melissa Kirven-Brooks, George Cooper, and Ray Gilstrap—placed their careers in historical context, as part of the Ames celebration of Black History Month.

As part of ongoing preservation efforts, April completed a survey of the cellulose acetate film base material in all collections. She identified 131 items, the bulk of which were 16-millimeter film reels, and tested them all for basic acetate decomposition. Two percent of the collection reached the autocatalytic stage of "vinegar syndrome" and this film was quarantined. Fortunately, the History Program Office had recently digitized some of the collection. The remaining film is deteriorating but still in good condition. One-third of this material was relocated to a more stable storage environment and rehoused in vented archival canisters. Plans for future efforts include further rehousing and digitization, retesting, and locating a better storage environment.

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Dryden Flight Research Center (DFRC)

Curtis Peebles's *Eleven Seconds Into the Unknown: A History of the Hyper-X Program* was released by the American Institute of Aeronautics and Astronautics (AIAA) in February 2011. Part of the AIAA's *Library of Flight Series*, the book provides a comprehensive look at the long, drawn-out history of NASA's—and industry's—quest for hypersonic flight with an air-breathing source of propulsion. The book is available from the AIAA at *http://www.aiaa.org/content.cfm?pageid=360&id=1871*.

His current project, a history of NASA's intelligent flight control systems research, underscores a marked contrast in the Agency's long history. His previous book on the "lost X-planes," aircraft largely overlooked but still significant in their own right, revealed a not so surprising focus on aerodynamics. The current project indicates how dramatic the shift in flight research has been; involving primarily two different F-15s, the research has dealt with systems and cared nothing about aerodynamics. Books like Gene Waltman's *Black Magic and Gremlins* (SP-2000-4520) have touched on this from another angle, but the transition is especially stark when contrasting Curtis's most recent and current works.

Peter Merlin attended the Aerospace Medical Association's 82nd annual meeting, held in Anchorage, Alaska, from 8–12 May, where he presented findings from his most recent book, *Human Factors in Aerospace Mishaps* (forthcoming from NASA).

His current book looks at mishaps involving Remotely Piloted Vehicles and Unmanned Aerial Vehicles. The first half of the book is a series of case studies of accidents, such as Aurora Flight Sciences' Perseus B that came down on U.S. 40 just east of Barstow, California. "There was evidently a big rig and a motor home that swerved to miss it," California Highway Patrol Officer Mitch Cox said. "Other than that it didn't hit anything or cause any damage." The second half of the book looks at the role human factors have played in causing or making possible such accidents. The book's two portions are not directly linked in as much as some crashes (the Aerovironment Helios, for example) have been traced to mechanical or engineering factors.

Christian Gelzer is in the midst of oral history interviews for two projects. The first is a video history of the Center's mate-demate device (MDD), a structure built to load (and unload) orbiters onto the Boeing 747 Shuttle carrier aircraft. NASA commissioned the design and construction of two full MDDs (at Dryden and Kennedy Space Center) and two lesser devices, an Orbiter Loading Facility (OLF) at Vandenberg AFB, and a mobile derrick-and-crane MDD, first erected at the Marshall Space Flight Center (in 1976), that was transported to the White Sands Missile Range, New Mexico, and set up at the Northrop Airstrip in 1979. The OLF at Vandenberg was moved to Plant 42 in Palmdale, California, when the Air Force cancelled plans to launch orbiters from that West Coast base.

The first use of Dryden's MDD came in 1977, for the Shuttle approach and landing tests (ALT). Joe D'Agostino, Dryden's first Shuttle manager, recalled when they first mated the orbiter and the 747: "[When] we lifted *Enterprise* during the ALT program it took a considerable amount of time, which is to be expected with a new

operation. We had a technical problem. The operation lasted almost 14 hours. We got it to the point where we were ready to lower *Enterprise* onto the 747 and we learned the orbiter didn't fit. To make it fit we moved the forward strut on the 747. It was nerve-wracking."

NASA plans to disassemble the Dryden MDD starting in 2012.

And Christian has been interviewing Dryden employees, current and retired, for the next volume of *The Spoken Word: Recollections in Dryden History* that is to roughly coincide with the Space Shuttle program's conclusion.

Glenn Research Center (GRC)

On 27 January, Dr. Mark Bowles received the 2010 AIAA Historical Manuscript Award for his book *The Apollo of Aeronautics: NASA's Aircraft Energy Efficiency Program, 1973–1987* at a local chapter meeting. He spoke to the group about the book and the history of the Aircraft Energy Efficiency Program—drawing many parallels to today's challenges in energy conservation. The audience had many questions and all received signed copies of the book. This is Dr. Bowles's third AIAA Historical Manuscript Award, winning previously in 2005 for *Science In Flux* on the NASA Plum Brook Reactor Facility, and in 2004 with Dr. Virginia Dawson for *Taming Liquid Hydrogen* on the Centaur Upper Stage Rocket Program.

From left to right: Dr. George Williams, Dr. Mark Bowles, and Jim Gilland.

Kathy Zona, Tori Woods, Gary Nolan, Bob Arrighi, and Jim Lucic recently won a 2011 Blue Pencil and Gold Screen Award for the *Lessons of a Widowmaker* interactive Web site from the National Association of Government Communicators. The Web site contains educational material about the Black Widow, the Widowmaker, and Betty Joe aircraft, which is available online at *http://www.nasa.gov/externalflash/aero/*.

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The Glenn Research Center History Office is pleased to announce the release of a new Web site capturing the history of the Propulsions Systems Labs 1 and 2. These facilities underwent demolition in the summer of 2010 and this Web site is part of a larger historic mitigation process. The site includes a complete history of the facility and some of the work completed there as told through narrative, photographs, videos and original documents. It can be viewed online at *http://pslhistory.grc.nasa.gov/.* Thanks to the hard work of archivist Bob Arrighi (Wyle Information Systems, LLC) and the Logistics and Technical Information Division's Information Technology Services group for completing this highly informative Web site.

Jet Propulsion Laboratory (JPL)

At JPL, the Library, Archives and Records Section proudly reports that Charlene Nichols achieved her certification as an archivist from the Academy of Certified Archivists, joining Julie Cooper in holding this certification. Teresa Bailey took on an additional duty at JPL, becoming the Freedom of Information Act (FOIA) Liaison. Teresa will be the internal JPL point of contact with Dennis Mahon, the JPL FOIA Public Liaison Officer in the NASA Management Office. In addition, we welcome Robert Powers as the new Library and Archives Group Supervisor. Robert has been a Senior Technical Librarian at JPL for 10 years.

The new "How to Find" guide is available on the Archives and Records Section's Web site at *https://beacon.jpl.nasa.gov/how-to-find*. Each October, the JPL Archives celebrates Archives Month (which is promoted by the Society of American Archivists). In October 2009, the JPL Archives created a physical exhibit about ways to find different kinds of historical information. That physical exhibit started us down the path of creating a better printed/electronic guide to navigating the various historical resources at JPL. The information was displayed as four categories or research topics: People and Organizations, Missions and Projects, Photos and Multimedia, and Buildings and Facilities.

Johnson Space Center (JSC)

The JSC History Office continues its audio digitization efforts by rescuing at-risk audio reel-to-reel tapes presently housed in the JSC History Collection. The latest focus is on audio recordings from the Apollo-Soyuz Test Project (ASTP) collection recorded between 1973 and 1975. The subjects include ASTP development testing, U.S. and U.S.S.R. joint activities and ceremonies, ASTP exhibit information at the Paris Air Show, as well as a Swedish recording of the Soviet Soyuz 14. These tapes are part of the historical materials currently on loan from NARA. The original audio reels will be returned to the NARA facility in Fort Worth, Texas, next year. The digital audio files will remain in the JSC History Collection in Houston, Texas.

The Organization of American Historians held its national conference in Houston in March. JSC Historian Jennifer Ross-Nazzal participated in a roundtable discussion on "Practicing History and Careers in the Federal Government." She was joined by representatives of the U.S. Department of State, the U.S. Customs and Immigration Service, the U.S. Marine Corps, and the National Air and Space

Museum. Jennifer also serves on the American Historical Association/NASA Fellowship in Aerospace History Committee.

Jennifer Ross-Nazzal also recently published *Winning the West for Women: the Life of Suffragist Emma Smith DeVoe*. In 1856, the eight-year-old Emma Smith became inspired by Susan B. Anthony and chose to devote her life to the women's suffrage movement. Jennifer holds the unique distinction of being an excellent scholar of both women's history and space history. For more information of her new book, please visit the publisher's Web site at *http://www.washington.edu/uwpress/search/books/ROSWIN.html.*

Stennis Space Center (SSC)

Stennis Space Center is moving ahead in supporting Orbital Sciences Corporation's testing of Aerojet's AJ26 engines for commercial cargo flights to the International Space Station (ISS).

Orbital plans to launch the first of eight scheduled unpiloted cargo missions to the ISS in early 2012. Key steps already have been taken toward that goal as Orbital has successfully tested Aerojet AJ26 engines that will power the first stage of their Taurus II rocket.

Tests of the engines were performed by a team of Orbital, Aerojet, and Stennis engineers at NASA's south Mississippi test facility. The AJ26 engine test series began last fall. The latest test was conducted on 19 March on the E-1 Test Stand.

The initial two engines will be delivered to Orbital at the Wallops Flight Facility launch site in Virginia for integration with the Taurus II's first-stage core.

A team of engineers from NASA's John C. Stennis Space Center, Orbital Sciences Corporation, and Aerojet conducts a successful test of an Aerojet AJ26 rocket engine on 19 March. Stennis is testing AJ26 engines for Orbital Sciences to power commercial cargo missions to the International Space Station.

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Orbital is developing its Taurus II's cargo logistics system under the joint Commercial Orbital Transportation Services demonstration project with NASA, and is scheduled to carry out its ISS cargo resupply missions under the Commercial Resupply Services contract.

Stennis has launched a celebration of its 50th anniversary, which will culminate this fall in commemoration of NASA's announcement of plans to build the rocket engine test facility in Hancock County, Mississippi, on 25 October 1961.

Stennis's special 50th anniversary logo celebrates the south Mississippi site as a unique federal city that has helped power the nation's space dreams for five decades.

Five decades after that announcement, Stennis has grown into the nation's largest rocket engine test facility. Originally built to test the massive Saturn rocket engines and stages needed to carry humans to the Moon, Stennis has grown into a unique federal city, home to more than 30 federal, state, academic, and private organizations and several technology-based companies. These companies and agencies share the cost of owning and operating the facility, making it more cost-effective for each entity to accomplish its independent mission.

However, rocket engine testing remains the primary mission focus at Stennis. The facility tested every main engine used in more than 130 Space Shuttle flights. It now is preparing three stands to test next-generation rocket engines that will carry humans beyond low-Earth orbit into deep space.

In addition, the facility has embraced the call for NASA to work with private companies to enable commercial space travel. In 1998, Stennis partnered with Pratt & Whitney Rocketdyne to test RS-68 engines used for Delta IV rocket launches; and last year, it partnered with Orbital to test Aerojet AJ26 rocket engines that will power commercial cargo flights to the ISS.

Recent Publications

NASA Forthcoming Publications

Psychology of Space Exploration: Contemporary Research in Historical Perspective (NASA SP 2011-4411), edited by Douglas A. Vakoch, will be released by July 2011.

NASA Publications Reprinted by Dover Publications

The Partnership: A NASA History of the Apollo-Soyuz Test Project, by Edward Clinton Ezell and Linda Neuman Ezell (Dover Publications, January 2011). The 1975 Apollo-Soyuz Test Project (ASTP) was the first joint U.S.-Soviet spaceflight, in which teams from the two nations met in orbit to test an international docking system and conduct both collaborative and independent studies. This authorized NASA history features many fascinating interviews with participants as well as firsthand observations of ASTP activities. The book was originally published as NASA SP-4209 in 1978.

National Defense University Press Publication

Toward a Theory of Spacepower: Selected Essays, edited by Charles D. Lutes and Peter L. Hays with Vincent A. Manzo, Lisa M. Yambrick, and M. Elaine Bunn (National Defense University Press, March 2011). This book emerged from the symposium "Towards a Theory of Spacepower: The Influence of Spacepower on History and Implications for the Future" held in April 2007 by the National Defense University's Institute for National Strategic Studies.

Commercially Published Works

Compiled by Chris Gamble

Electronic Media

ST/SPACE/57: Highlights in Space 2010, by the United Nations Office for Outer Space Affairs (United Nations; Vienna, Austria, 2011). Report in electronic format (PDF, hard copies are available upon request) reviewing the latest developments in space science, technology, space applications, international collaboration, and space law for the year 2010.

Books

Advancing Aeronautical Safety: A Review of NASA's Aviation Safety-Related Research Programs, by The National Academies Press (December 2010). Congress requested this review of NASA's aviation safety-related research programs, seeking an assessment of whether the programs have well-defined, prioritized, and appropriate research objectives; whether resources have been allocated appropriately among these objectives; whether the programs are well coordinated

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with the safety research programs of the Federal Aviation Administration; and whether suitable mechanisms are in place for transitioning the research results into operational technologies and procedures and certification activities in a timely manner. This report contains findings and recommendations with respect to each of the main aspects of the review sought by Congress.

International Space Station Research: Accomplishments and Challenges, edited by Nicole M. Calhoun (Nova Science Publishers, March 2011). This book focuses on the experimental results collected to date on the International Space Station, including scientific publications from studies that are based on operational data.

Jagdgeschwader 400: Germany's Elite Rocket Fighters, by Stephen Ransom and Hans-Hermann Cammann (Osprey Publishing, December 2010). The Jagdgeschwader 400 group was formed for the sole purpose of flying one of the world's most revolutionary aircraft, the rocket-powered Me 163. The introduction of jet-powered aircraft demanded massive changes in training, equipment, servicing and tactics, all of which are described and examined in this essential analysis of the story of the Me 163 in frontline service with Erprobungskommando 16 and Jagdgeschwader 400.

A Kansan Conquers the Cosmos: Or, "Spaced Out All My Life!" by Alan Glines (iUniverse.com, November 2010). This book presents the story of Alan Glines, who began working with NASA in 1966 and was part of Mission Control during the height of the space program. Full of fun and excitement, Glines's autobiography offers a first-person glimpse into four decades in the field of aerospace.

Cosmic Biology: How Life Could Evolve on Other Worlds, by Louis N. Irwin and Dirk Schulze-Makuch (Springer-Praxis, December 2010). What are the possible life-forms that might exist in our solar system and how might they have evolved? This book on the possibilities for alien life addresses the intrinsic interest that we have about life on other worlds—reinforcing some of our assumptions and reshaping others. It introduces new possibilities of the issue overall, particularly the enormous range of environments and planetary conditions within which life might evolve.

Voyages of Discovery: The Missions of the Space Shuttle Discovery, by Robert A. Adamcik (Apogee Prime, December 2010). *Voyages of Discovery* is a very straightforward narrative history of the most storied orbiter in the Space Shuttle fleet. Written with a minimum of technical jargon, it puts the reader on *Discovery*'s flight deck during some of the most important missions of the Space Shuttle era from satellite retrieval and the deployment of the Hubble Space Telescope to construction of the International Space Station and the return to flight after two tragic losses.

John F. Kennedy and the Race to the Moon, by John Logsdon (Palgrave Macmillan, December 2010). This study, based on extensive research in primary documents and archival interviews with key members of the Kennedy administration, is the definitive examination of John Kennedy's role in sending Americans to the Moon.

Maple Leaf in Space: Canada's Astronauts, by John Melady (Dundurn Press, January 2011). Marc Garneau, Roberta Bondar, Julie Payette, Robert Thirsk, Chris Hadfield, and, more recently, Guy Laliberté, the founder of Cirque de Soleil, all have one thing in common: they're some of the very few Canadians who have been in space. *Maple Leaf in Space* showcases these amazing Canadians who have ventured off our planet and delivers some of the thrill of what that's like.

Cape Canaveral: America's Spaceport, by Donald D. Spencer (Schiffer Publishing, January 2011). Through 318 images the book illustrates how the space program transformed Cape Canaveral from a traditional citrus production and tourist area into the world's most influential high-tech space center in the nation.

Mitigation of Hazardous Comets and Asteroids, edited by Michael J. S. Belton, Thomas H. Morgan, Nalin H. Samarasinha, and Donald K. Yeomans (Cambridge University Press, March 2011). This book, which was first published in 2004, collects the latest thoughts and ideas of scientists concerned with mitigating the threat of hazardous asteroids and comets. It reviews knowledge of the population of potential colliders, including their numbers, locations, orbits, and how warning times might be improved. Difficulties of operating in space near, or on the surface of, very low-mass objects are examined and the book concludes with a discussion of the problems faced in communicating the nature of the impact hazard to the public.

Reusable Space Transportation Systems, by Heribert Kuczera and Peter W. Sacher (Springer-Praxis, January 2011). In *Reusable Space Transportation Systems*, the authors review the past 20 years in which concepts for reusable space transportation systems have been evaluated in Europe and elsewhere, including technological studies and assessments, and developments of the essential technologies needed for the design and construction of such transportation systems.

Reopening the Space Frontier, by John Hickman (Common Ground Publishing, November 2010). This book explains the international legal and political economic barriers to the renewed exploration, development, and settlement of celestial bodies like the Moon and Mars. The author also argues that international competition rather than international cooperation is what motivated states to open terrestrial frontiers for centuries, and that motivation will have to be harnessed again for our species to permanently occupy other worlds of the solar system.

Searching for Extraterrestrial Intelligence: SETI Past, Present, and Future, by H. Paul Shuch (Springer-Praxis, March 2011). This book is a collection of essays written by the very scientists and engineers who have led, and continue to lead, the scientific quest known as SETI, the search for extraterrestrial intelligence. The book reviews the major projects undertaken during the first 50 years of SETI science and the results of that research. Then the present-day science and technology is discussed in detail, providing the technical background to contemporary SETI instruments. Finally, the book looks ahead to the possible directions that SETI will take in the next 50 years.

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Recent Publications (continued)

Space and the American Imagination, by Howard E. McCurdy (The Johns Hopkins University Press, second edition; January 2011). People dreamed of cosmic exploration—winged spaceships and lunar voyages as well as space stations and robot astronauts—long before it actually happened. The book traces the emergence of space travel in the popular mind, its expression in science fiction, and its influence on national space programs. Fully revised and updated since its original publication in 1997, Space and the American Imagination includes a reworked introduction and conclusion and new chapters on robotics and space commerce.

Blogging the Moon, by Paul D. Spudis (Apogee Prime, February 2011). In keeping with his call for a strong U.S. human space program, Paul Spudis outlines and explains the importance of creating a sustainable space program through the use of the Moon's resources to create new capabilities to live and work in space and move humanity off the planet. These essays and reader comments are compiled in this book.

A New International Strategic Context for Space Policies, by Bertrand de Montluc (Nova Science Publishers, March 2011). Both military and civilian components of space technologies are used for modern countries or nations anxious to develop rapidly as well as to structure their identity as autonomous states. This idea recently drew some major powers to think about means of limitations for others, rather than themselves, based on the strategic advantages provided by the mastering of space systems (launchers and satellites), paving the way for a possible weaponization of space. This book describes the panorama of a new strategic international environment for space.

Space and Security: A Reference Handbook, by Peter L. Hays (ABC-CLIO, March 2011). This book examines how the United States has developed and implemented policies designed to use space capabilities to enhance national security, providing a clear and complete evaluation of the origins and motivations for U.S. national security space policies and activities.

From Space to Earth: The Laboratory and Marketplace, by Berndt Feuerbacher and Ernst Messerschmid (Schiffer Publishing, January 2011). While early spaceflights were mainly nationalistic demonstrations of power, today a wide range of scientific or technological objectives are carried out in space through international cooperation. Commercial missions are also funded by the private sector. Space is now a scientific laboratory, a marketplace, and a workplace. This book describes the latest developments in spaceflight and looks toward humanity's future beyond Earth.

Apollo 12—On the Ocean of Storms, by David M. Harland (Springer-Praxis, March 2011). With its two moonwalks, deployment of a geophysical station and geological sampling, Apollo 12 did what many had hoped would be achieved by the first men to land on the Moon. This is the first time in 40 years that the story of the Apollo 12 mission to the Moon has been told in its entirety, using official documents, flight transcripts, and post-mission debriefing to recreate the drama.

The Kaguya Lunar Atlas: The Moon in High Resolution, by Motomaro Shirao and Charles A. Wood (Springer, March 2011). In late 2007, the Japanese Space Exploration Agency (JAXA) placed the Kaguya/Selene spacecraft in orbit around the Moon to probe its surface and interior. But unlike previous lunar orbiters, Kaguya carries a high-definition television (HDTV) camera sent beyond low-Earth orbit. What makes these images so much more engaging than standard vertical view lunar photography is that they are taken looking obliquely along the flight path. Thus, they show the Moon as it would be seen by an astronaut looking through a porthole window while orbiting only 100 kilometers above the lunar surface. Each page features a HDTV image with a map of the entire Moon on the upper left showing where the image is located. On the upper right is a 100- to 150-word description.

Drifting on Alien Winds: Exploring the Atmospheres and Weather of Other Worlds, by Michael Carroll (Springer, February 2011). The book introduces the inventors, engineers, and scientists who struggled to launch the first probes that would help us to understand the atmospheres of other worlds. The untold stories of early engineering feats and failures, from small Soviet Venus balloons to advanced studies of blimps and airplanes for Mars and Titan, are showcased here with spectacular spacecraft images and stunning original paintings by the author.

Saturn IB News Reference, by Robert Godwin (Apogee Prime, March 2011). This is a reprint of the rare original contractor book published in the 1960s to demonstrate the full capabilities of NASA's first giant launch vehicle. Packed with details about this rocket, the book includes 142 pages of diagrams and illustrations with full details about contractors and hardware. It comes with a DVD.

The Edge of Time: The Authoritative Biography of Kalpana Chawla, by Jean-Pierre Harrison (Harrison Publishing, 2011). The biography of STS-107 astronaut Kalpana Chawla written by her husband.

Eleven Seconds into the Unknown: A History of the Hyper-X Program, by Curtis Peebles (AIAA, April 2011). This is a sequel to the author's first book on the X-43A/Hyper-X project, *Road to Mach 10: Lessons Learned from the X-43A Flight Research Program*. The Hyper-X program involved the efforts of numerous governmental and commercial organizations, each with its own culture, experience, and tradition. A central theme of the Hyper-X story is how these disparate groups and organizations became a unified team working toward a common goal. Making the team's task more difficult was the technological, political, and funding challenges during nearly 50 years of scramjet development.

Aurora 7: The Three Orbits of M. Scott Carpenter: The NASA Mission Reports, edited by Steve Whitfield (Collector's Guide Publishing, Inc., March 2011). On 24 May 1962, *Aurora 7*, carrying Scott Carpenter leapt off the launch pad aboard the Atlas missile and soared into Earth orbit. *Aurora 7: The NASA Mission Reports* is the story of America's second human orbital spaceflight told by the man who flew it from his original reports.

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Recent Publications (continued)

Spacesuit: Fashioning Apollo, by Nicholas de Monchaux (The MIT Press, March 2011). When Neil Armstrong and Buzz Aldrin stepped onto the lunar surface in July of 1969, they wore spacesuits made by Playtex. This book is the story of those spacesuits. It is a story of the Playtex Corporation's triumph over the military-industrial complex—a victory of elegant softness over engineered hardness, of adaptation over cybernetics.

Martian Summer: The Phoenix Mission, Cowboy Spacemen, and the Search for Life on the Red Planet, by Andrew Kessler (Pegasus Books, April 2011). The Phoenix Mars mission was the first robotic probe ever sent to the Martian arctic. In the summer of 2008, Andrew Kessler spent three months in mission control with 130 top scientists and engineers as they explored Mars. This story is a human drama about modern-day Magellans battling politics, temperamental robots, and the bizarre world of daily life in mission control.

The History Program Office gives sincere thanks to volunteer Chris Gamble, who compiles this section for us every quarter. Please note that the descriptions have been derived by Chris from promotional material and do not represent an endorsement by NASA.

Online Resources

An effort is underway to add another 500 speeches of key officials to our public Headquarters Historical Reference Collection page available online at the following *https://mira.hq.nasa.gov/history/.* The key officials include Associate, Assistant, and Deputy Assistant Administrators; Center Directors; Program Managers; and others. Over the last several months, a few additional Administrator/Deputy Administrator speeches and the Mercury-Redstone 3 press kit from 1961 have been added to this Web site.

The Glenn Research Center history of the Propulsions Systems Labs 1 and 2 (mentioned earlier) through narrative, photographs, videos, and original documents can be viewed online at *http://pslhistory.grc.nasa.gov/.*

Other Sites of Interest

The San Diego Air & Space Museum recently used the latest digitizing technology to recover film footage of Yuri Gagarin's arrival at Ringway Airport (now Manchester Airport) and greeting by the president of the foundry worker's union in Manchester, England, on 12 July 1961. This film of his first visit outside the Soviet bloc broke when being screened and the remnants almost got thrown away when the union offices closed. The museum used its new high-definition film digitizer and has published the result as a free educational opportunity to learn about a historic moment when East met West. The entire section of the film fragment, including the aircraft landing, and alternate views can be seen online at *http://www.*

youtube.com/watch?v=UvhYhMZ4X48. For more information on the San Diego Air & Space Museum, please visit *http://www.sandiegoairandspace.org.*

Other Aerospace History News

National Air and Space Museum (NASM)

Compiled by Michael Neufeld

On 31 January 2011, Paul Ceruzzi became Chair of the Space History Division. Michael Neufeld rotated out after his four-year term. Bob van der Linden will continue for another four-year term as Chair of Aeronautics Division.

Roger D. Launius, Space History Division, just published "History of Civil Space Activity and Power" on pages 179–214 in *Toward a Theory of Spacepower: Selected Essays*, edited by Charles D. Lutes and Peter L. Hays, with Vincent A. Manzo, Lisa M. Yambrick, and M. Elaine Bunn (National Defense University Press, March 2011). Launius gave two papers at the AIAA Aerospace Sciences Meeting in January 2011 titled, "Envisioning the Earth: Conceptions of this Planet from the Flat Earth to Gaia" and "Escaping Earth: Human Spaceflight as Religion." He also served as program chair for the annual meeting of the National Council on Public History in Pensacola, Florida, 6–10 April 2011. Finally, his study written with Dennis R. Jenkins, "Coming Home: Reentry and Recovery from Space," received the 2011 AIAA History Manuscript Prize.

Jennifer Levasseur, Space History Division, participated in the panel "Roundtable Discussion on Practicing History and Careers in the Federal Government," on 19 March at the Organization of American Historians conference in Houston, Texas. The panel, organized by Jennifer Ross-Nazzal, JSC Historian, provided a look at the variety of opportunities and responsibilities in federal history and offered career advice to the audience. She also made a report to the annual Mutual Concerns of Air and Space Museums Conference in Dayton, Ohio, on 10 April regarding an effort to create an online community for air and space museums. This session, a follow-up to a plenary session at last year's conference, brought together all those involved in a working group who spent the year examining possible formats, audiences, and benefits of a virtual community.

At the annual meeting of the Society for History in the Federal Government at College Park, Maryland, on 31 March, three staff members, or fellows, from the Space History Division gave papers: James David, "BYEMAN, CREAM, DAFF, DINAR, IVORY, SPOKE . . . . What Are Codewords and What Do They Mean?"; Thomas Lassman, "Historicizing Weapon Systems Acquisition in the U.S. Army: The Case of the Advanced Attack Helicopter, 1964–1985"; and Ashok Maharaj, "The United States and the Evolution of India's Space Program."

Newsletter Reader Survey

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- Federal or state employee
- Academic institution
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Upcoming Meetings

The annual conference for the American Libraries Association will be held **23–29 June 2011** in New Orleans, Louisiana. Please see *http://www.ala.org/ala/conferencesevents/upcoming/index.cfm* for more details.

The 75th annual meeting for the Society of American Archivists will be held **22–27 August 2011** in Chicago, Illinois. See *http://www2.archivists.org/conference/2011/chicago* for more details.

The Oral History Association's annual meeting, "Memories of Conflict and Disaster: Oral History and the Politics of Truth, Trauma, and Reconciliation," will be held **12–16 October 2011** in Denver, Colorado. Please see *http://www.oralhistory.org/annual-meeting/* for more details.

The annual meetings for the Society for the History of Technology, History of Science Society, and the Society for the Social Studies of Science will be held **3–6 November 2011** in Cleveland, Ohio. Please see *http://www.historyoftechnology.org/annual_meeting.html*, *http://www.hssonline.org/Meeting/*, and *http://www.4sonline.org/meeting* for more details.

The Sixth Eilene M. Galloway Symposium on Critical Issues in Space Law will be held **1 December 2011** at the Cosmos Club in Washington, DC. Please contact *spacelaw@olemiss.edu* for more details.

The annual meeting of the American Historical Association will be held **5–8 January 2012** in Chicago, Illinois. Please see *http://www.historians.org/annual/next.htm* for more details.

The American Library Association's midwinter meeting will be held **20–24 January 2012** in Dallas, Texas. Please see *http://www.ala.org/ala/conferencesevents/upcoming/index.cfm* for more details.

Obituary

Dr. Baruch Samuel Blumberg

Dr. Baruch "Barry" Samuel Blumberg passed away on 5 April 2011. He discovered the hepatitis B virus and showed its connection to liver cancer in 1967, which led to developing the vaccine with Dr. Irving Millman in 1969. Blumberg shared the Nobel Prize in Medicine in 1976 with D. Carleton Gajdusek for their work on the origins and spread of infectious viral diseases. He later became the founding director of the NASA Astrobiology Institute at NASA's Ames Research Center from 1999 to 2002.

Blumberg graduated with his M.D. from Columbia University's College of Physicians and Surgeons in 1951 and Ph.D. from Oxford University's Balliol College in 1957. He also served as a Navy deck officer in World War II, member of the Fox Chase Cancer Center in Philadelphia since 1964, University Professor of Medicine and Anthropology at the University of Pennsylvania since 1977, and president of the American Philosophical Society since 2005.

For more information about Baruch Blumberg, visit *http://www.nasa.gov/topics/people/features/baruch_blumberg.html*.

Image in Aerospace History

President John F. Kennedy (center), Vice President Lyndon B. Johnson (left), and Speaker of the House Sam T. Rayburn (right). (*http://grin.hq.nasa.gov/ABSTRACTS/GPN-2000-001658.html* or *http://history.nasa.gov/moondec.html)*

On 25 May 1961, President John F. Kennedy delivered his "Special Message to the Congress on Urgent National Needs" speech before a joint session of Congress, stating:

> First, I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the Moon and returning him safely to the Earth. No single space project in this period will be more impressive to mankind, or more important for the long-range exploration of space; and none will be so difficult or expensive to accomplish. We propose to accelerate the development of the appropriate lunar spacecraft. We propose to develop alternate liquid and solid fuel boosters, much larger than any now being developed, until certain which is superior. We propose additional funds for other engine development and for unmanned explorations—explorations which are particularly important for one purpose which this nation will never overlook: the survival of the man who first makes this daring flight. But in a very real sense, it will not be one man going to the Moon—if we make this judgment affirmatively, it will be an entire nation. For all of us must work to put him there.

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Do you have more questions about NASA history in general? Please check out our NASA History Program Office Home Page at *http://history.nasa.gov* on the Web. For information about doing research in the NASA History Program 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, at *giny.cheong@nasa.gov*.

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