



A quarterly electronic publication from the

NASA Scientific and Technical Information (STI) Program

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April 2001

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...From the NASA STI Program's Principal Center



NASA STI Help Desk's QuickSearch Service is a Winner

The NASA STI Help Desk receives regular requests for NASA videos from many companies for all kinds of projects. Frequently, customers are unsure what video footage might be appropriate for a particular project. In these cases, the NASA STI Help Desk provides a QuickSearch service to locate STI materials that meet a specific need. The process starts with a customer phone interview, a list of requirements, and a project description submitted by phone, e-mail or fax. Help Desk staff then executes a customized database search to identify the required materials and provide the search output via e-mail or fax. During the month of March, the STI Help Desk completed several successful QuickSearches for video production companies. Two of these are presented in this issue of the STI Bulletin.

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Company A is a non-profit company which contacted the STI Help Desk for assistance in identifying NASA videos about the first American woman to fly in space as part of a video to encourage girls to study math, science and engineering. The requester started off with a simple request for footage on Sally Ride, primarily because that is the only female astronaut name well known to her. The STI Help Desk staff suggested a QuickSearch on a wide range of topics. Staff cross-referenced several searches to locate footage of women and minorities by name, project, and task. The QuickSearch produced a customized list of about 20 videos to provide the stock footage for the production.

The list included tapes with footage of NASA crews discussing their early decisions to study science and aerospace, actual on-orbit satellite servicing, research activities, shuttle operations and other topics depicting women and minorities in all kinds of roles as astronauts, mission specialists, and researchers/ engineers. One video was originally produced by JSC to highlight the work of black, Hispanic and female engineering and aeronautics professionals and their projects. The customer was delighted with the search results and ordered several BETA tapes. In fact, she was so pleased with the wide range of footage and topics available that her non-profit company will probably submit additional proposals to their funding source to do other documentaries on similar topics.

Company B is a video production company which requested a QuickSearch to help identify footage for a well-known healthcare company producing a presentation for a professional conference. They want to convey a sense of long-term commitment, transition, perseverance, adventure, risk, challenge, achievement and human endeavor in the face of great obstacles. Their idea was to convey these themes using NASA and its space exploration program as a metaphor. The NASA STI Help Desk provided a QuickSearch to convey these themes using images of galaxies, nebulae, Mars exploration, space shuttle liftoff, on-orbit satellite servicing, and the Challenger disaster and NASA's subsequent return to space.

The NASA STI Help Desk has had several requests and video orders from companies, not ordinarily considered to be in space-related activities, which want to use NASA footage for similar purposes, such as motivational speeches, company education/ training, and personnel development.

NASA STI Help Desk staff can perform QuickSearches to locate technical reports, video footage, websites, and Internet documents for NASA and non-NASA customers. If you want to request a QuickSearch for any information, contact the NASA STI Help Desk at (301) 621-0390 or help@sti.nasa.gov.

CENDI User Education Working Group Sponsors Demonstration of National Library of Medicine Retrieval and Indexing Systems

On March 1, 2001, CASI staff attended a tour of the National Library of Medicine (NLM) and a demonstration of their retrieval and indexing systems. The program, sponsored by the CENDI User Education Working Group, was part of a continuing effort to promote education, awareness, and networking among the CENDI agency members. (CENDI is an interagency, cooperative organization comprised of various federal-agency scientific and technical information managers.)

The demonstrated systems included the NLM Gateway, the application of Unified Medical Language System (UMLS) to information retrieval, and a Web-based Indexing System. The NLM Gateway supports fast cross-database searching. With this system, multiple NLM databases such as MEDLINE, OldMEDLINE, MEDLINEplus, AIDS Conference Abstracts, and LOCATORplus can be searched with a single query, 24 hours a day, 7 days a week.

A component of the UMLS is an extensive metathesaurus containing over 100,000 concepts classified into more than 134 basic concept types. This vocabulary resource works with NLM's PubMed (<http://www.ncbi.nlm.nih.gov/entrez/query>) and Gateway (<http://gateway.nlm.nih.gov>) search interfaces to expand a user's query statement.

An extended afternoon demonstration addressed the details of NLM's recently implemented Web-based Indexing System. The system was established to support offsite indexing of technical literature, and includes a fully interactive workstation with up-to-date access to the various authority files used for subject indexing. The

demonstration covered system capabilities, workflow management, performance characteristics, and indexer assessment of the system.

In addition, the attendees toured the Library facilities. General information about NLM services and programs is available on the NLM home page at www.nlm.nih.gov.

New STI Publishing Tools Project

Bill von Ofenheim, of NASA Langley Research Center's Data Analysis and Imaging Branch, will be the project and technical lead on a new STI focus, called the STI Publishing Tools Project. This project involves further expansion of the new Machine-Aided Indexing (MAI) tool, development of XML or other tagged templates for publishing and linking data to the STI Database, linking of existing tools, such as the NASA Thesaurus, subject terms, and Report Documentation Page (RDP) to the templates, and other technology analysis functions. Bill currently functions as the technical lead for the NASA Image eXchange (NIX) and has been instrumental, along with NASA's Center for AeroSpace Information's Michael Genuardi, in the development of the web version of NASA's MAI.

STI Outreach and Visibility

The Agency-wide STI Program will be exhibiting at the following conferences for FY 01:

- AIAA's Global Air and Space 2001, May 7-9, 2001, Arlington, VA
- Special Libraries Association (SLA), June 9-14, 2001, San Antonio, TX
- AIAA's Joint Propulsion, July 8-11, Salt Lake City, UT
- 2001 MAPLD International, Sept. 11-13, Laurel, MD

For more information, you may contact Jutta Schmidt at the NASA Center for AeroSpace Information at jschmidt@sti.nasa.gov.

STI to attend 2001 Global Air & Space Conference

Representatives from the NASA STI program's Center for AeroSpace Information (CASI) will be attending the 2001 Global Air & Space Conference, an event held in Arlington, Virginia from May 7th through May 9th, 2001. Sponsored by the American Institute of Aeronautics and Astronautics (AIAA), Global Air & Space also features contributions from co-sponsors such as the Aerospace Industries Association, the Aviation Week Group, and Pratt & Whitney.

Global Air & Space 2001 will provide STI with the opportunity to meet government decision-makers and to have widespread access to domestic and international aerospace technology leaders. Participants of this conference represent all facets of aerospace business within government and industry.

The focus of this year's event will be on discussing and debating industry trends, government policies and regulations, market conditions, exploring new business opportunities, and evaluating trade issues critical to conducting business in the world marketplace.

In addition to increasing the overall exposure of the STI program, CASI will actively participate in the communication of aerospace information with some of the world's foremost technology leaders. Through this exchange, NASA STI and CASI will accumulate a wealth of knowledge on how to continue serving the information needs of the modern aerospace marketplace.

For more information on Global Air & Space and NASA STI's involvement in this conference, please contact Jutta Schmidt (jschmidt@sti.nasa.gov) or (301) 621-0182) or Tim Richards (trichards@sti.nasa.gov) or (301) 621-0246).



...STI Program Plan

In part, the NASA STI Program states, "The NASA Scientific and Technical Information Program is an integral part of NASA's future. The program supports the Agency's missions to communicate scientific knowledge and understanding to help transfer NASA's research and development to the aerospace and academic communities.... By ensuring a fast, two-way process of internal and external information exchange, the STI Program helps NASA avoid duplication of research, time, and cost and to make its wealth of information available to benefit its customers.... Each Center is responsible for acquiring, tracking, and producing, or having produced, NASA STI related to their Center mission; and for ensuring that Center STI reaches the STI Database [at the NASA Center for AeroSpace Information]."

To that end, each NASA Center executes the STI Program mission and objectives by way of a team of individuals that applies professional publishing standards to all scientific and technical information passing through its doors. Whether the information will result in a document to be distributed through the traditional print and mail process or an electronic document available on the Internet--or both--the team is responsible for making it happen, going through the process step-by-step with each customer. For information about the STI Program at any NASA Center, visit <http://www.sti.nasa.gov>.

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...From the NASA History Office



New NASA History Publications

We are pleased to announce the publication of the newest book in the NASA History Series. This reference work, *Apollo by the Numbers: A Statistical Reference* (Washington, DC: NASA SP-2000-4029, 2000), was compiled by Richard W. Orloff. This work is a unique collection of valuable statistical information about Project Apollo. It includes a chapter (about 20 pages each) for Apollo 1 through Apollo 17. There are several data tables for each mission, plus a 50-page section with additional statistics and tables that merge data for each mission so you can easily make comparisons. Tables include launch and ascent data, fuel consumption, stage impact locations, very detailed mission timelines, and much more. This book is for sale for \$40.00 (domestic postpaid or \$50.00 abroad), from the U.S. Superintendent of Documents. By mail: U.S. Government Printing Office, Documents Warehouse, 8610 Cherry Lane, Laurel, MD 20707. By phone: (202) 512-1707 ext.: 30273. By fax: (202) 512-1657. Order stock number 033-000-01236-5. One can also obtain this book via the GPO Website: <http://bookstore.gpo.gov/index.html>. This book also may be purchased from the NASA Information Center, Code CMI-1, NASA Headquarters, 300 E Street SW, Room 1H23, Washington, DC 20546-0001, (202) 358-0000. Order NASA SP-2000-4029.

We are also pleased to announce that one of the most popular books in the NASA History Series, *Moonport: A History of Apollo Launch Facilities and Operations* (NASA SP-4204, 1978), by Charles D. Benson and William Barnaby Faherty, is being reissued in a two-volume paperback format by the University Press of Florida. The two volumes are *Gateway to the Moon: Building the Kennedy Space Center Launch Complex* and *Moon Launch! A History of the Saturn-Apollo Launch Operations*.

Gateway to the Moon includes the first half of *Moonport* and presents the definitive history of the origins, design, and construction of the lunar launch facilities at Kennedy Space Center, the terrestrial site of one of the greatest national adventures of the 20th century, humanity's first trips to the Moon. *Moon Launch!* is essentially the second half of *Moonport* dealing with the actual operational aspects of Apollo. The University Press of Florida's on-line catalog for *Gateway to the Moon* is located at http://www.upf.com/Spring2001/benson_gateway.html and *Moon Launch!* is located at http://www.upf.com/Spring2001/benson_launch.html. Each book sells for \$24.95.

Long out of print, *Moonport* is one of the most requested books in the NASA History Series and so we are especially delighted that it will soon be available in a paperback edition. *Moonport* is also available on-line at the URL: <http://www.hq.nasa.gov/office/pao/History/SP-4204/cover.html>. Although this reprint of the book will soon be available, our on-line version of the original edition will remain accessible on the World Wide Web.

We are pleased to note that the recent illustrated history of the Ames Research Center, *Atmosphere of Freedom: Sixty Years at NASA Ames Research Center* (NASA SP-2000-4314), is now available on-line. It is available in a .PDF format for downloading at <http://history.arc.nasa.gov:80/@mosphere.html> on the World Wide Web. Written by Glenn E. Bugos, this detailed and fully illustrated history of the NASA Ames Research Center describes its organizational structure, research culture, institutional leadership, major facilities and research programs from its founding in 1939 through 1999. The first chapter discusses Ames' origins as the NACA's second laboratory, and wind tunnel construction and the development of aerodynamic theory from subsonic to supersonic to hypersonic flight. Chapter two discusses Ames' transition into NASA, its contributions to the Apollo program, exobiology, simulator construction, and the Pioneer series of planetary explorers. The third chapter describes Ames' positioning in NASA's Shuttle era, roughly 1970 to 1990. Specifically, it covers the growth of research expertise in gravitational biology and planetary sciences, Earth observation and infrared astronomy, tilt rotor aircraft and helicopter design, air safety and flight research, thermal protection systems and planetary probes, computational fluid dynamics and intelligent systems. The fourth chapter describes Ames' renaissance since 1990 in the era of "faster, better, cheaper," and specifically its work in information technology and astrobiology and its relationships with larger communities. An appendix summarizes the life and work of Joseph Sweetman Ames, for whom the Center is named.

Atmosphere of Freedom is also available for public purchase as a book. It is for sale for \$39.00 (domestic postpaid), \$48.75 (non-U.S.) from the U.S. Superintendent of Documents. By Mail: Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954. FAX: (202) 512-2250. Phone: (202) 512-1800 (7:30 a.m.-4:30 p.m. Eastern time). You may also order this book on-line at: <http://bookstore.gpo.gov/index.html> on the Web, stock number 033-000-01225-0.

The NASA History Division is pleased to announce the availability of a two-CD set containing pdf versions of all the Mercury, Gemini, and Apollo air-to-ground transcripts. Entitled *Mercury, Gemini, and Apollo Mission Transcripts: The Complete Air-to-Ground Transmissions* (NASA SP-2000-4602), this CD-ROM set captures in pdf format all of the voice transmission recordings between Mission Control and the Mercury, Gemini, and Apollo missions (through Apollo 17) in space. The CD set will run on both Mac and PC platforms and will require Windows 95 or higher operating system.

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Interested readers may obtain a copy of this publication by sending a self-addressed 9x12" envelope with appropriate postage for 15 ounces (typically \$3.95 within the U.S., \$5.05 for Canada, and \$11 for overseas -international customers are asked to purchase U.S. postage through an outlet such as <http://www.stampsonline.com>) to the NASA History Office, Code ZH, Washington, DC 20546.

Flight Research: Problems Encountered and What They Should Teach Us (NASA SP-2001-4522) is Monograph in Aerospace History Number 22. *Flight Research* was written by Milton O. Thompson, with a background section by J.D. Hunley. The text of this monograph originated as an untitled rough draft that Thompson wrote in approximately 1974 (before his death in 1993). Hunley has edited this insightful work and provided some explanatory background for readers who are not so familiar with what is now known as NASA's Dryden Flight Research Center in Edwards, California. Thompson was a flight engineer and a test pilot on programs such as the X-15 and the lifting bodies. Interested readers may obtain a copy of this publication by sending a self-addressed 9x12" envelope with appropriate postage for 15 ounces (typically \$3.95 within the U.S., \$5.05 for Canada, and \$11 for overseas -international customers are asked to purchase U.S. postage through an outlet such as <http://www.stampsonline.com>) to the NASA History Office, Code ZH, Washington, DC 20546.

Humans to Mars: Fifty Years of Mission Planning, 1950-2000 (NASA SP-2001-4521) is Monograph in Aerospace History Number 21. *Humans to Mars* was written by David S.F. Portree. Mars has long held a fascination for those interested in astronomy and space flight and over the last half century, a great number of plans have been devised to send astronauts to Mars. Daunting logistical and physical problems still remain, however. How long would it take to get there? How would we carry the necessary supplies? After surviving a long journey, what would astronauts do once they arrived on Mars? In addressing such important questions, Portree looks at a representative sampling of the many humans to Mars plans. Interested readers may obtain a copy of this publication by sending a self-addressed 9x12" envelope with appropriate postage or 15 ounces (typically \$3.95 within the U.S., \$5.05 for Canada, and \$11 for overseas -international customers are asked to purchase U.S. postage through an outlet such as <http://www.stampsonline.com>) to the NASA History Office, Code ZH, Washington, DC 20546.

NASA History Website Updates:

The fifteenth anniversary of the Challenger accident, STS-51L, took place on January 28, 2001. The NASA History Division updated its World Wide Web site on STS-51L, Challenger, because of this anniversary. The URL is:

<http://www.hq.nasa.gov/office/pao/History/sts51l.html>

Links on this page include a series of significant NASA sites containing information about the mission and the accident. These include the following:

1. STS-51L Challenger Mission Profile
2. Sequence of Major Events of the Challenger Accident
3. Image library of the STS-51L Challenger mission at Johnson Space Center.
4. Movie clips of the STS-51L Challenger mission, from the Kennedy Space Center
5. Press Kit: volunteer Rich Orloff has scanned this pre-launch document in regular and high-resolution formats
6. Report of the Presidential Commission on the Space Shuttle Challenger Accident, chaired by William P. Rogers.
7. NASA's Actions to Implement the Rogers Commission Recommendations.
8. A description of modifications to the Solid Rocket Boosters from the On-line Space Shuttle Reference Manual.
9. *A Challenger Bibliography*: This is chapter 7 of the Space Shuttle bibliography published in 1992.
10. The fate of Challenger's crew: Dr. Joseph P. Kerwin's investigation tried to determine the cause of the crew's deaths. His report and the accompanying press release are available.
11. The transcript from the mission's voice recorder, which operated from T-2:05 until the accident.
12. Biographical Information on the Challenger Crew.
13. NASA Spacelink Information on the Challenger Accident.
14. NASA Shuttle Web site on STS-51L.
15. NASA Administrator's Statement, on the Tenth Anniversary of the Challenger Accident.

In addition, we have created links to numerous other sites on the web relating to the Challenger accident. Items included in this listing include:

1. Richard Feynman's Appendix to the Rogers Commission Report on the Space Shuttle Challenger Accident
2. President Reagan's Speech on the Challenger Disaster, January 28, 1986
3. President Reagan's Eulogy: Remarks at a memorial service held in Houston following the Challenger disaster, January 31, 1986
4. *Life Magazine* on Challenger
5. *Challenger Remembered*: A brief montage of images and sounds from the Challenger accident, from the CNN video vault

6. *Houston Chronicle's* Remembrance of the Challenger Disaster, January 28, 1986 7. "An Analysis of the Challenger Accident" by Mark Haisler and Robert Throop, from the University of Texas at Austin, Mechanical Engineering Department
8. "The Challenger Disaster" by Josh Madeira and Nick Rutherford and Robert Throop from the Bowdoin University, Physics Department
9. A case study in engineering ethics on the Challenger accident, from the Departments of Philosophy and Mechanical Engineering at Texas A&M University
10. "The Challenger Shuttle Disaster: A Failure in Decision Support System and Human Factors Management"
11. "A Disaster in Engineering: The Challenger Shuttle Disaster"
12. Roger Boisjoly on the Challenger Disaster
13. Davinder Mahal's Challenger page
14. Challenger Learning Center Homepage

We hope this material will be useful in reflecting on and analyzing this significant event in the history of space flight. The Challenger accident remains the most tragic episode in the evolution of NASA and it is important to understand how and why it took place. These materials may help in this process of understanding.

Readers of this site may be interested to learn about our revised space policy documents page at <http://history.nasa.gov/spdocs.html> on the Web. We have added a number of historical reports from various task forces and the like and reorganized the chronological layout for easier browsing. This page also has links to fairly current policy reports such as those on Mars spacecraft management, "faster, better, cheaper," and the NASA Integrated Action Team, as well as a quick link to a similar Office of Policy and Plans page. We plan to add further reports in the future.

We are pleased to announce that the Aeronautics and Space Report of the President, Fiscal Year 1999 Activities is now in the process of being printed and will be available for distribution by mid-February. There is also a complete on-line version available from <http://history.nasa.gov/presrep.htm> on the Web.

Anyone interested in viewing the NASA History Office's report for calendar year 2000 may do so at <http://history.nasa.gov/2000.pdf> on the Web.

NASA History Receives Award

We are delighted to report that a recent book in the NASA History Series, *Exploring the Unknown: Selected Documents in the History of the U.S. Civil Space Program, Vol. IV: Accessing Space* (NASA SP-4407, 1999), received the Thomas Jefferson Prize from the Society for History in the Federal Government on March 15, 2001. This prize is awarded annually recognizing excellence in documentary editions and research tools. It recognizes the editorial team of a documentary history project publishing either a single volume or one or more volumes in a project that contributes significantly to understanding of the history of the Federal government. The editors of this volume are John M. Logsdon, general editor, with Ray A. Williamson, Roger D. Launius, Russell J. Acker, Stephen J. Garber, and Jonathan L. Friedman.

This is the fourth volume in an ongoing series of reference books that are useful for those interested in both space history and space policy. The documents are grouped into four thematic chapters with an introductory essay for each subject. Chapter one is devoted to the Saturn V launch vehicle, chapter two covers the Space Shuttle, the third chapter details commercializing space transportation, and the fourth chapter explores future space transportation possibilities. Ray A. Williamson is the author of the introductory essays for the first two chapters. John M. Logsdon and Craig R. Reed wrote the introductory essay for the third chapter, and Ivan Bekey did this for the fourth chapter.

The work publishes 134 key documents on the history of launch vehicles. It emphasizes NASA's development of the Saturn 5 Moon rocket, the Space Shuttle as a launch vehicle, the commercialization of space transportation, and the development of Shuttle follow-on launch systems such as the National Aerospace Plane (NASP) and the X-33. Each document is introduced by a headnote providing context, bibliographical information, and background information necessary to understand the document. Includes an Index and a Biographical Appendix.

How to order: For sale for \$55.00 (domestic postpaid), \$68.75 (non-U.S.) from the U.S. Superintendent of Documents. By Mail: Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954. FAX: (202) 512-2250. Phone: (202) 512-1800 (7:30 a.m. - 4:30 p.m. Eastern time). Order stock number 033-000-01219-5.

This book also may be purchased from the NASA Information Center, Code CMI-1, NASA Headquarters, 300 E Street SW, Room 1H23, Washington, DC 20546-0001, (202) 358-0000. Order NASA SP-4407, Volume IV.



...The NASA Commercial Technology Program *An Overview*



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The NASA Commercial Technology Program encompasses a national network of specialized centers and organizations that assist U.S. businesses and industry in accessing, utilizing and commercializing NASA-funded research and technology. The organizations work closely with each other to provide a full range of technology transfer and commercialization services and assistance. The NASA Commercial Technology Network (NCTN) consists of the Commercial Technology Organizations at each of the NASA field centers, the Jet Propulsion Laboratory, the National Technology Transfer Center (NTTC), the six Regional Technology Transfer Centers (RTTCs), NASA Tech Briefs, UNISPHERE, and other specialized organizations and services. All are dedicated to fostering dual-use technology partnerships and the transfer and commercialization of NASA-sponsored research and technology.

The NCTN provides access to a wide variety of information resources that can be searched and consulted for research and technology, patents, technical expertise, and R&D facilities, as well as for technology partnering, licensing, and commercialization opportunities. In addition to serving as an integrated information resource, the NCTN is developing into an electronic marketplace for NASA-sponsored technology, facilitating communications, transactions, and partnerships between NASA and the U.S. private sector.

Visit the NCTN website at <http://nctn.hq.nasa.gov> for more information on the NASA Commercial Technology Program and the members of its network.



...From NASA's *Spinoff* Magazine



About *Spinoff*

NASA's premier publication, *Spinoff*, annually features over 40 companies that have successfully utilized NASA technology in commercial products and processes. Each year NASA distributes tens of thousands of *Spinoffs* through trade shows, conferences, and special requests. The *Spinoff* web site, located at <http://www.sti.nasa.gov/tto>, contains a searchable database, which includes an entry for every article ever featured. If you are familiar with companies that have successfully commercialized NASA technology and may be interested in this unique opportunity, please contact the *Spinoff* editors, Ms. Sarah Sheehan, (sanderson@sti.nasa.gov or (301) 621-0244) or Ms. Rhiana Podraza, (rpodraza@sti.nasa.gov or (301) 621-0242).

To receive a printed copy of *Spinoff*, please contact the National Technology Transfer Center (NTTC) at (800) 678-6882, or visit the NTTC web site at <http://www.nttc.edu>.

Special Feature: Excerpts from the Technology Commercialization Handbook

*This document may also be found online at
http://www.nctn.hq.nasa.gov/division/commtechhandbook3_19.pdf

NASA Commercial Technology Network

Recognizing the challenge that technology commercialization represents, the NASA Commercial Technology Network (NCTN) was established to assist NASA programs, projects, researchers, contractors, grantees and recipients. The NCTN is dedicated to the timely transfer of scientific advances and technologies resulting from NASA's aeronautics and space programs and other Federal Research and Development (R&D) to commercial applications throughout the United States economy. The key NCTN components are:

NASA Center Commercial Technology Offices;
Regional Technology Transfer Centers (RTTCs);
National Technology Transfer Center (NTTC);
Technology/Business Incubators; and
NASA TechTracS-an agency-wide technology transfer commercialization management system.

NASA Field Centers

Each NASA Center has a Commercial Technology Office to coordinate and manage a full range of technology commercialization activities, including new technology reporting, technical assistance, cooperative projects, and industry outreach. Points of contacts follow:

Ames Research Center
650-604-0893
<http://ctoserver.arc.nasa.gov>

Dryden Flight Research Center
<http://www.dfrc.nasa.gov/TechTransfer/TechTransfer.html>

Glenn Research Center
216-433-3484
<http://cto.grc.nasa.gov>

Goddard Space Flight Center
301-286-5810
<http://techtransfer.gsfc.nasa.gov>

Jet Propulsion Lab
818-354-2577
<http://techtransfer.jpl.nasa.gov>

Johnson Space Center
281-483-0474
<http://technology.jsc.nasa.gov>

Kennedy Space Center
407-867-6224
<http://technology.ksc.nasa.gov>

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Langley Research Center
757-864-6006
<http://tech-transfer.larc.nasa.gov>

Marshall Space Flight Center
256-544-4266
<http://www.nasasolutions.com>

NASA Headquarters
202-358-2320
<http://www.nctn.hq.nasa.gov/index.html>

Stennis Space Flight Center
228-688-1914
<http://technology.ssc.nasa.gov>

Regional Technology Transfer Centers

NASA's six Regional Technology Transfer Centers (RTTCs) help U.S. firms access, assess and acquire NASA and other federally funded technologies for commercial and industrial applications. As part of the national network, the RTTCs are aligned with the six Federal Laboratory Consortium regions.

Operating since January 1992, the RTTCs have developed a regional network that involves more than 70 affiliated organizations at the state and local levels, enabling them to provide invaluable assistance to U.S. companies. RTTC services include technology sourcing, technology/market analysis and the development of technology transfer and commercialization projects and agreements. The RTTCs provide technical, commercial and general assistance to several thousand customers every year.

**National Technology Transfer Center
(NTTC)**
1-800-678-6882
<http://www.nttc.edu>

**Northeast RTTC
Regional Technology Transfer Center**
508-870-0042
<http://www.ctc.org>

**Southeast RTTC
Regional Technology Transfer Center**
352-294-7822
<http://www.4stac.org>

**Midwest RTTC
Regional Technology Transfer Center**
440-486-2233
<http://www.battelle.org/glitec>

**Far West RTTC
Regional Technology Transfer Center**
213-743-2353
<http://www.usc.edu/dept/engineering/TTC>

**Mid-Atlantic RTTC
Regional Technology Transfer Center**
412-383-2500

**Mid-Continent RTTC
Regional Technology Transfer Center**
409-845-8762

The National Technology Transfer Center

The National Technology Transfer Center (NTTC) enhances U.S. industry's economic competitiveness by linking it to NASA and federal technological resources. Located at Wheeling Jesuit University in Wheeling, West Virginia, NTTC has been part of the NASA Commercial Technology Network since 1991.

NTTC fosters NASA and federal technology transfer with U.S. businesses through its National Gateway. This service provides businesses with rapid access to NASA and other federal technologies, expertise and facilities. NTTC's on-line services support the National Gateway. It maintains information on solicitations

for programs, including the Small Business Innovation Research (SBIR) program, the Small Business Technology Transfer (STTR) program and the Advanced Technologies Program (ATP).

More information about National Gateway, training courses and other services are available at the NTTC's World Wide Web site at URL: <http://www.nttc.edu> or telephone 1-800-678-6882.

NASA Technology Business Incubators

A technology/business incubator is a facility designed and operated to nurture the development of new or early-stage business enterprises or "client firms" of the incubator. The client firms generally are tenants physically present in the incubator facility for a period of time up to about two years. However, client firms of the incubator are not necessarily physically located or co-located within the incubator. The incubator must have a physical facility where client firms can obtain ordinary and necessary business services on-site and in which client firms are provided office, conference, laboratory, and/or other physical space on a fee or other basis under well-defined terms.

NASA incubators are technology-based and provide small high technology firms in the start-up phase with a wide array of support services necessary to commercially apply NASA-developed technology. Accordingly, the incubator will provide client firms with services for an affordable fee or other basis, which include assistance with:

- Access to laboratory and other technical resources for purposes of engineering prototyping, production prototyping, testing, analysis, and other essential R&D support, product development, and accessing other technical expertise.
 - Business plan development.
 - Market research and market analysis.
 - Establishing initial manufacturing operations.
 - Establishing product distribution and other sales operations.
 - Access to business consulting, legal, accounting, tax, insurance, and other financial expertise to include networking with non-institutional private investors, venture capitalists, and within the money markets and capital markets sectors.
 - Free or low cost access in the start-up phase to necessary business office and manufacturing operations equipment and facilities.
 - Access to training, particularly with regard to business plan development, venture analysis, management and organization techniques, computer skills, computer financial accounting and other business systems design, networking in sectors critical to the client firm's business operations, regulatory compliance, and available information resources relevant to the client firm's particular business.
 - Access to free or low-cost college and university scientific, engineering, and business development expertise.
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Electronic Network/NASATechTracS

One of the key goals in the *Agenda for Change* was to use the Internet/Intranet in an innovative fashion to support the NASA commercial technology mission. In 1994, the Electronic Network was established as a single NASA interface that provides:

- an *integrated information resource* for NASA technology commercialization that is freely available to the U.S. public and industry;
- an *electronic marketplace and marketing means* for NASA technology, facilitating communications and partnering with U.S. firms and industry; and,
- an *Intranet* for the management and operation of the Commercial Technology Program.

One of the Electronic Network's core components is NASATechTracS. NASATechTracS is the agency-wide technology commercialization data and process management system. Every Center's Commercial Technology Office has a NASATechTracS system.

NASA Commercial Technology Network: This site provides the viewer with information on moving technology from the lab to the marketplace.

URL: <http://www.nctn.hq.nasa.gov>

NASATechTracS Tech Finder: This site provides the viewer with a database containing a wealth of information on technologies developed by NASA that may have commercial potential and benefits.

URL: <http://technology.nasa.gov>

1996 NASA Strategic Plan - This site provides the strategic outlook for NASA.

URL: <http://www.hq.nasa.gov/office/nsp/NSPTOC.html>.

NASA Tech Briefs - This site provides the viewer the ability to subscribe to Tech Briefs, search NASA briefs archived over the last 20 years, review resource reports, technical support packages and NASA patent abstracts.

URL: <http://www.nasatech.com>

Aerospace Technology Innovation: This site provides on-line information on NASA projects and opportunities in the areas of technology commercialization, aerospace technology development and the commercial development of space.

URL: <http://nctn.hq.nasa.gov/innovation/index.html>.

NASA Spinoffs: This web site contains information on NASA technologies that have been successfully commercialized by private industry companies.

URL: <http://www.sti.nasa.gov/tto>.
