National Aeronautics and Space Administration

NRP Post

A publication of NASA Research Park

Peace

Fall 2008

NASA photo by Dominic Hart

"NASA is proud to be a part of aviation history today as the airship returns to Moffett Field on its 75th anniversary," said Ames Director S. Pete Worden, opening the Diamond Jubilee Ceremony.

Ames and Airship Ventures Celebrate Moffett Field's 75th Anniversary and Airship's Return

On Nov. 21, 2008, NASA Ames and Airship Ventures, a NRP Partner, celebrated Moffett Field's 75th Anniversary and the return of the "Lighter-than-Air" airship to Moffett Federal Airfield. Hundreds of Ames employees and the general public attended the 1930s era celebration that featured great sounds of jazz music, a vintage car display and members of the Bay Area Art Deco Society dressed in 1930s fashion.

Ames Center Director S. Pete Worden opened the program highlighting Moffett Field's creation for lighter-than-air aviation led by U.S. Navy Admiral William Moffett, and the development of Hangar One to house the 785-foot USS Macon airship in 1933. Hangar One is now a historical monument planned for reuse.

Worden noted that future collaboration with Airship Ventures will utilize lighter-than-air technologies for NASA's remote sensing and atmospheric research, and contribute to the development of cleaner and more efficient transportation for tourism. Alexandra and Brian Hall, the founders of Airship Ventures, told their personal stories of passion for aviation and aerospace, and how they formed Airship Ventures.

"We've been humbled and amazed by the warm welcome given our airship," said Alex Hall. "We want the community to be as proud of this airship as they have been of the Navy airships that were based here."

Keynote speakers included NASA Ames' historian Jack Boyd; Ret. U.S. Marine Corps Col. William Moffett III, grandson of U.S. Navy Adm. Moffett; Congresswoman Zoe Loefgren; and City of Mountain View and Sunnyvale council members. Many shared personal memories of Moffett Field's history and all expressed congratulations and excitement to Alex and Brian Hall for achieving their vision of returning the first lighter-than-air vehicle to the Bay Area since 1935.

The program included Wolfgang Von Zeppelin, great-great-grandnephew of airship pioneer Count Ferdinand Von Zeppelin, Thomas Brandt, CEO of Zeppelin Luftshifftechnik, Rolf Schutte, Consul General of Germany and Hiroyuki Watanabe, President, Nippon Airship Corporation. Also attending were honorary dignitaries with connections to World War II airship operations, including former pilots.

To conclude the event, Brian Hall announced Chris Humphrey as the winner -- from more than 1,500 entries -- of the contest to name the airship. Chris revealed the airship's name -- Eureka, which means 'I found it!' The tethered airship, moving elegantly in the light wind during the program, then flew into the clear blue sky, amazing all who saw it for the first time.

NASA collaborates with more than 50 academia, industry and non-profit entities in the NRP to stimulate innovation and education in science and research disciplines critical to

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Photo by Roger Cain

Airship Ventures' 246-foot-long Zeppelin over San Francisco, CA

NASA Ames Team Wins the San Jose Business Journal "Deal of the Year" Award for Google Lease

One of the largest development deals struck in Silicon Valley in the past year will affect the way the nation's space agency enacts public-private partnerships well into the future.

The first phase of construction of the Google Inc. campus on 42.2 undeveloped acres at NASA Ames Research Center isn't scheduled to begin until 2013, but infrastructure work will start in mid-2009. Ames' team involved in the lengthy and complicated lease process are being asked to guide other NASA facilities in such ventures.

Photo by Christine Nolasco

NRP dealmakers (L to R): Mark Beskind, Trish Morrissey, Geoff Lee, Mejghan Haider, Michael Marlaire, Larry Singer, David Shiver

The multiyear, multiphase development project was announced jointly by Google and NASA in June. The project began in 2005, when NASA and the publicly traded company announced plans to collaborate on a number of research and development projects. The agreement included plans for collaboration in large-scale data management, massively distributed computing, the convergence of biotech, information technology and nanotechnology, and encouraging an entrepreneurial space industry.

"The campus lease agreement calls for Google to build as much as 1.2 million square feet of office and research space at Ames. Under the lease terms, Google must commence the first phase of construction by the end of 2013. A second phase is to commence by 2018 and a third by 2022. In addition to the office and research space, Google plans to construct housing and numerous amenity spaces, including dining, sports and fitness and a child-care center, as well as conference space and parking structures," said NASA project manager Mejghan Haider.

Google will complete three infrastructure projects prior to the first phase of office construction. In the first, Google will submit designs for a water tank that holds as much as three days' worth of water in case of a natural disaster, and the company will select a contractor for that project by mid-2009.

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NRP Welcomes New Tenants

International Network Solutions, Inc.
Building 19, Aug. 1 and Building 554, Oct. 1

KleenSpeed Technologies, Inc.
Building 554, Sept. 1

Planetary Ventures LLC (Google)
Ground Lease, May 14

75th Anniversary continued from front page

space exploration. Airship Ventures, which brought the first airship to fly over the United States in more than 70 years, is one of NASA's newest NRP partners. Three of only 12 remaining airship hangars in the U.S. are at Moffett Field.

Founders Alex and Brian Hall leased Hangar 2 and Building 20 under NASA's Enhanced Use Leasing authority on October 1, 2008. Hangar 2 is used to store and perform maintenance on the airship and Building 20, in historic Shenandoah Plaza at NRP, is Airship Ventures' corporate office, guest terminal and event facility. The Zeppelin NT airship incorporates modern aviation technologies, provides exciting passenger trips, and is available for unprecedented marketing opportunities. The airship will provide guests with breathtaking views across the San Francisco Bay Area and close aerial views of the Silicon Valley, with future locations being planned. For info and to book flights visit: www.airshipventures.com.

The airship's arrival at Moffett Field comes at a celebrated time in the airfield's history. In 1933, the United States Government commissioned Sunnyvale Naval Air Station,

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Photo by Diane Farrar

New NRP Partner KleenSpeed Chairman Timothy Collins (c) with THRUXAR electric race car at the Nov. 21 Diamond Jubilee exhibits. KleenSpeed is an advanced R&D firm focusing on scalable electric propulsion systems for transportation

Tibion Wins Silicon Valley Emerging Technology Award (ETA) for Medical Devices

Tibion's Robotic Knee Offers More Than Support

Photo courtesy of Tibion

Tibion PowerKnee in action

Dec. 5 - Silicon Valley / San Jose Business Journal - by Janet Rae-Dupree

Remember Steve Austin, the Six Million Dollar Man of 1970s television fame? Today's bionics can't rebuild him yet, but it can make him better, stronger and (recover) faster.

The initial goal of Tibion Corp., the winner in the medical devices category, is to use new bionic technologies to help knee surgery patients regain strength and mobility faster than they could through traditional physical therapy. Using a newly patented linear motion motor as well as an embedded computer and sensors, researchers at Tibion have developed a therapeutic knee brace that robotically enhances the wearer's movements.

Based at NASA Research Park at Moffett Field since 2003, the startup also is working with space travel researchers to develop bionic enhancements that may prevent muscle atrophy during long stretches in microgravity. The company's PowerKnee also has shown promise in helping stroke patients recover as well as helping elderly people with weak joints stand, sit, climb stairs and walk.

Tibion, which has raised about $4 million in venture capital to date, expects to bring the first of its products to market in 2009.

-- Dec. 5 Business Wire --

"It is an honor to be recognized as an innovator in technology among medical device companies," said Kern Bhugra, CEO and co-founder of Tibion. "With this technology, we have the potential to profoundly impact the lives of patients dealing with loss of muscle function due to surgery, stroke, or chronic diseases such as multiple sclerosis."

The ETA program was created by the Silicon Valley/San Jose Business Journal to recognize the innovations and significant accomplishments of technology-oriented companies in Silicon Valley. Tibion, along with winners in additional categories, was recognized at an awards ceremony at the Computer History Museum in Mountain View, CA, on December 4.

Intrinsyx Technologies Receives NASA Ames 2008 Award for Small Business Subcontractor of the Year

By Kathleen Burton

Intrinsyx's SWIA Award

Gleaming on the long conference table of Intrinsyx Technologies' sunny office in Bldg. 19 is a small glass obelisk inscribed with the words: "NASA Ames Research Center/Small Business Subcontractor of the Year Award".

President and CEO Arshad Mian just returned from a trip to NASA Headquarters to accept the Small Business Industry Award (SWIA) from NASA Deputy Administrator Shana Dale on November 18.

"It was a very positive experience," Mian said, noting that the company is a subcontractor to Lockheed-Martin. "We briefed a group including Dale, Glenn Delgado, NASA Director of Small Business Programs, and other representatives from NASA Centers and outside businesses."

The award acknowledged Intrinsyx' excellence in its support of all aspects of the Constellation Data Systems Projects at NASA Ames including: systems engineering, requirements management, enterprise architecture, IT security, semantic modeling and software development for a large number of enterprise applications. Intrinsyx is also solely responsible for developing the Security Operations Center (SOC) Incident Management System implementation. In September 2008, two Intrinsyx personnel received an Ames Honor Award for their work on the Security Operations Center.

L to R: NASA Deputy Administrator, Shana Dale (outgoing); Intrinsyx Technologies Corporation President, Arshad Mian; and NASA Assistant Administrator - Office of Small Business Programs, Glenn Delgado

Intrinsyx is also developing collaboration tools and data warehousing solutions for the Ames Aeronautics Division. Intrinsyx Technologies Corporation provides innovative engineering & information technology solutions and services to Federal, State and Commercial clients. For info: www.intrinsyx.com or Mike Schultz at 650-210-9220.

Intelligent Systems Research and Development Support Contract Goes to Stinger Ghaffarian Technologies (SGT, Inc.)

Greenbelt, MD – SGT, Inc., a leading provider of Science, Engineering, IT, and Program Management Services announced September 29 it was awarded the Intelligent Systems Research and Development Support (ISRDS) contract to provide direct support to the Intelligent Systems Division of the Exploration Technology Directorate at NASA Ames Research Center.

Photo by Christine Nolasco

Dr. Joy Colucci, SGT VP of West Coast Operations and Dr. Michael Redmon, ISRDS Program Manager

NASA Ames conducts scientific research, develops technologies, builds applications and infuses and deploys advanced information systems technology into NASA missions and other federal projects. Under the ISRDS Contract, SGT will support activities in Autonomous Systems and Robotics, Collaborative and Assistant Systems, Discovery and Systems Health, Robust Software Engineering and Software Systems Engineering. SGT's ISRDS Program Manager is Dr. Michael Redmon.

"SGT has tremendous pride in our ability to deliver complete, balanced and technically sound approaches to meet our customer's technical requirements," said Dr. Joy Colucci, SGT VP of West Coast Operations. "SGT is committed to partnering with NASA Ames in support of its important role in research."

The SGT ISRDS Team includes Perot Government Systems, Mission Critical Technologies, ASANI Solutions, Craig Technologies, and Carnegie Mellon University. ISRDS is a Cost-Plus-Fixed-Fee (CPFF) contract with a maximum potential of five years of performance. The maximum contract value, including options, is $300M.

SGT, Inc. is a privately held company headquartered in Greenbelt, MD providing aerospace engineering, earth and planetary science modeling and analysis, information systems and project management, operational support and technical services to NASA, NOAA, USGS and other government and commercial organizations. SGT, Inc. joined NRP in Dec. 2007.
For more information visit: http://www.sgt-inc.com/

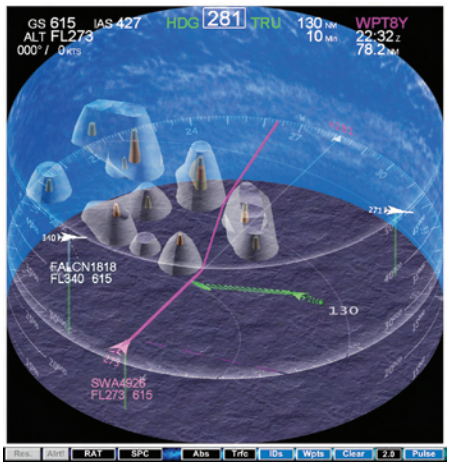
GaryAir Partners with Ames' Flight Deck Display Research Lab (FDDRL)

By Dave Guerrieri

You may have seen a small aircraft at Yuri's night, or the Sally Ride Science Festival, and wondered – how is this relevant to NASA?

Before it became well known as a space agency, NASA's roots were in aviation, as the National Advisory Committee for Aeronautics (NACA). NACA began as an emergency measure in 1915 during World War I to promote industry/academic/government coordination on war-related projects.

NACA's purpose was "to supervise and direct the scientific study of the problems of flight with a view to their practical solution, and to determine the problems which should be experimentally attacked and to discuss their solution and their application to practical questions."



The flight deck display of a prototype NextGen-equipped aircraft maneuvering around hazardous weather. Image courtesy of FDDRL

In the early 1920s NACA adopted a new and more ambitious mission: to promote military and civilian aviation through applied research that looked beyond current needs. This mission still exists today at NASA, although its notoriety is somewhat dwarfed by the space program.

Today's United States' air transportation system is complicated and overwhelmed with demand -- especially at large airports and higher altitudes where transport category jet aircraft fly. To alleviate complexity and overcrowding, one approach is to return to the simpler days of the barnstormers, who picked up passengers at remote strips and took one or two of them at a time for a ride.

In 2005 NASA's promotion of this concept culminated in the Small Aircraft Transportation System (SATS). A few technologies developed from SATS, and Federal Aviation Administration (FAA) studies with bush pilots in Alaska, are now ready to be implemented throughout the country.

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Kentucky Space Celebrates Successful Launch

On Oct. 11, 2008, at 09:56 PDT, a rocket carrying a payload built by students from Kentucky Space was launched outside Mojave, CA. Designated Prospector 12A, the mission was a sub-orbital test flight to verify liquid fueled propulsion technologies being developed by Garvey Spacecraft. Kentucky students designed and built the payload to measure details of the rocket's trajectory in flight. The payload was successfully recovered and analysis of the flight data continues.

Prospector 12 Flight Test Team, Mojave Desert

Kentucky Space students worked with Garvey Spacecraft engineers, and students and faculty from California State University Long Beach and Stanford University on Oct. 10 to integrate the Kentucky payload atop the 23.8 foot, 25 inch diameter rocket.

The rocket launched from the edge of the Koehn Dry Lake Bed, 25 miles northeast of Mojave, CA. Analysis of the data recovered from the computers on-board the Kentucky payload shows very detailed information on the performance and trajectory of the rocket. The payload included an inertial measurement unit (IMU) consisting of accelerometers and gyroscopes on three axes that allowed the motion of the rocket in 3-dimensions to be precisely measured. With this data the students were able to recover details of the motion of the rocket throughout its flight with a sub-millisecond resolution. This mission marked another milestone for Kentucky Space, and provided students with invaluable hands-on experience as they develop technologies for future sub-orbital and orbital space missions.

Kentucky Space Consortium members are: University of Kentucky, Morehead State University, University of Louisville, Murray State University, Western Kentucky University, Kentucky Community and Technical College System, Kentucky Space Grant Consortium, Belcan, Kentucky Council on Postsecondary Education, Kentucky Science and Engineering Foundation and Kentucky Science and Technology Corporation (KSTC) Managing Partner.

Prospector 12 launch, Oct. 11, 2008

KSTC has been a NRP Partner four years.

For more information visit http://www.kentuckyspace.com

reQall Shines at Stanford Summit CEO Showcase

Dr. Sunil Vemuri at CEO Showcase, Summit at Standford

Photo by Diane Farrar

reQall, Inc. was selected by Always On as one of "100 hottest companies breaking out of the pack in 2008" and presented July 23 at the Summit at Stanford.

reQall is a voice operated "virtual assistant" software program that makes it easy to capture, retrieve, and share ideas and tasks —- anywhere, anytime. reQall was created by Qtech Inc., a NASA Research Park partner since 2004.

A free task and time management application, reQall integrates mobile devices -- via voice messaging -- with email, web, text messaging, IM, online calendars and RSS feeds to create a unified memory tool. reQall is available as a web-based application or as a download for the Apple iPhone or the RIM BlackBerry smartphone. (from Wikipedia)

"reQall works with any phone via a toll-free number, but downloadable applications on the iPhone and Blackberry allow it to shine," said Chief Product Officer Vemuri. Vemuri introduced reQall noting it was his birthday - near Apollo 11's landing date - and that he was named after Apollo Astronaut Neil Armstrong, the first man to walk on the moon.

The July 22 - 24 Summit at Stanford convened experts from Silicon Valley and the global technology industry to cut strategic deals, invest in and build the next generation of startup companies. The CEO Showcase featured over 78 private company CEOs from entertainment, media, on-demand computing and green tech who pitched their technologies and market strategies. Google, Salesforce.com, Skype, YouTube, Blue Lithium and Quigo presented in past years while still privately held startups. For more information visit: www.reQall.com

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In the second, Google will design and construct a 7.37-acre park on the south part of its planned campus, where it will build housing in the future. The third project has Google designing and building a security gate.

The initial 40-year lease allows for periodic rent adjustments. Following the initial 40 years, Google has an option to extend the lease for three 10-year terms, while two additional 10-year terms must be jointly agreed upon by NASA and Google.

Carnegie Mellon Silicon Valley Grads Toss Hats at NASA Research Park

By Sylvia Leong

On August 9, 2008, Carnegie Mellon Silicon Valley campus celebrated its sixth annual commencement ceremony. Forty-four graduates walked during the ceremony and received graduate degrees in Software Engineering.

Photo courtesy of Carnegie Mellon

August 9 graduation ceremony at Building 23, NASA Research Park

Guy Kawasaki, founding partner of Garage Technology Ventures, delivered the keynote address. He addressed the graduates and audience with a speech entitled, "How to Kick @$$!", a top ten list of tips for doing well in technology, business and life.

Minh Nguyen, winner of the Outstanding Service Award from the university, gives Carnegie Mellon credit for teaching him the importance of team building and soft skills.

"Understanding the importance of these skills, and honing them throughout my two years, has helped me not only professionally, but personally as well," said Nguyen. "Defining team charters and meeting processes, having meeting agendas with specific goals, and avoiding pitfalls when working in remote teams are things that I've been able to apply to both my professional and non-profit work. As a result, I'm able to build high-performing and successful teams."

The Class of 2008 presented the campus with a class gift - the Carnegie Mellon Silicon Valley Fence. The fence has been constructed and placed behind Building 23, in the courtyard area, and serves as a west coast version of Carnegie Mellon Pittsburgh campus' Fence - a certain fence that traditionally is painted and re-painted by students and student groups to advertise events or send messages to the entire campus community. The Carnegie Mellon Silicon Valley Fence was painted and dedicated to the late Professor Randy Pausch, whose "Last Lecture" became an Internet sensation, an international media story and a best-selling book now published in 35 languages.

Located in the heart of Silicon Valley, Carnegie Mellon Silicon Valley continues the tradition of offering world-class graduate programs in software engineering, software management, information technology, and innovation. A team-oriented, project-based curriculum provides the opportunity to learn invaluable skills and apply them successfully. For more information on the graduate programs, contact Sylvia Leong, admissions@sv.cmu.edu or 650-335-2808.

Sylvia Leong, Director of Admissions, CMU Silicon Valley
NASA Research Park, Building 23 (MS 23-11)
Join our Facebook group:
http://www.facebook.com/home.php?#/pages/mountain-view-CA/Carnegie-Mellon-Silicon-Valley/36021521184
or visit out website: http://sv.cmu.edu

Photo courtesy of Carnegie Mellon

The MS Software Engineering, Program Management graduates pose with their class gift - the Carnegie Mellon Silicon Valley Fence

CMIL's MAX Goes to the Arctic Alone

by Diane Farrar

MAX the rover went to the Arctic alone, without his instruction manual. Scientists and teachers found him friendly and hardy.

"CMIL's (Carnegie Mellon Innovation Lab) intelligent rover is designed for ease of use in the field, like a geologist's hammer. Everyone was able to easily use the MAX rover due to its well designed and intuitive control system. The rover operated well over the rocky terrain...", said Dr. Khalid Al Ali, father of MAX and Director of Research at Carnegie Mellon University Silicon Valley Campus.

MAX continued on next page

MAX continued from previous page

NASA's Spaceward Bound expedition to Axel Heiberg Island in the Canandian High Arctic (July-August 2008) proved the "laptop on wheels" can be run with almost no training and very little guidance.

NASA photo by Paul Langston

L to R: Ritchie Lee, Dr. Chris McKay, Andrew Klofas and Dr. Khalid Al-Ali at Carnegie Mellon Silicon Valley in NASA Research Park

MAX excels in exploring fragile terrains. Previously tested in the Atacama (Chile) and Mojave (California) deserts, MAX does his job without leaving tracks. MAX explored the Mojave Desert without crushing delicate microbial communities in the soil's crust. Able to explore regions that are dangerous to humans, he can also explore regions where humans are dangerous to the environment.

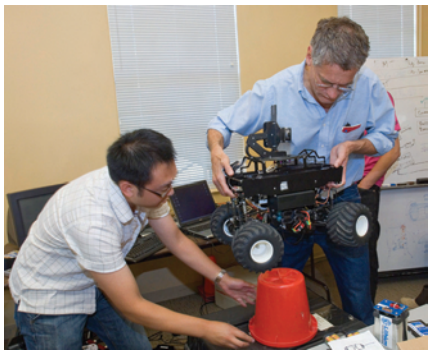
Spaceward Bound, developed by NASA Ames Research Center's Education Division, is a participatory expedition designed to engage students and teachers. This field trip was comprised of NASA scientists and teachers from California, New York and Canada studying microbes living in the high Arctic permafrost. Scientists believe in Mars early history it may have been home to life in places similar to Earth's icy polar regions.

MAX is the first commercial off-the-shelf rover to travel to the Arctic and the Atacama Desert. The Arctic expedition was the first for MAX without CMIL sending a trained engineer, or training an expedition participant prior to the trip.

MAX, designed for cost, utility and viability, was born and raised in a "NASA Research Park made" company – Senseta.

"We began in 2003 with a blank sheet of paper, created a rover, and spun off a company.

"Our plan now is to select and install science instruments on MAX, said Al-Ali.



Dr. Chris McKay receives an introduction to MAX from Ritchie Lee prior to departure to the Arctic. McKay is Deputy Program Scientist for NASA's Constellation Program to return to the moon and establish a lunar base.

NASA photo by Paul Langston

Photo courtesey of Carnegie Mellon

MAX 5R in front of Canadian Arctic Glacier

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Technology based on Global Positioning System (GPS) allows aircraft to broadcast their position to each other directly, enabling their operation in remote areas where it is too expensive to provide radar coverage.

This capability, along with the need to accommodate new types of airspace users such as unmanned systems and commercial spaceflight, is revolutionary. Former Transportation Secretary Norm Mineta promoted collaboration between all federal agencies using U.S. airspace and the private sector, to share information and avoid duplicating efforts.

So NASA combined forces with six federal agencies (FAA; Departments of Defense, Transportation, Commerce and Homeland Security; and the President's Office of Science and Technology) to ensure an efficient and cost-effective roll out of this new system -- the Next Generation Air Transportation System, or NextGen.

NRP Partner GaryAir is an aviation services company. GaryAir's collaboration with NextGen is a good fit for NASA Research Park, and advances Ames' (formerly a NACA center) vision for public-private partnerships.

GaryAir and Ames' Flight Deck Display Research Laboratory (FDDRL) have a Non-Reimbursable Space Act Agreement allowing GaryAir to provide usability data to NASA based on flying FDDRL's 4-dimensional NextGen flight display. The display allows a pilot to see much of the same information that air traffic controllers see; and in some cases, such as hazardous weather, to see even more. The software, called an Electronic Flight Bag, runs on standard equipment very inexpensive to operate. It is little more than a standard Microsoft Tablet computer with a pen-enabled screen that the pilot can use to operate the display, rather than buttons or a keyboard.

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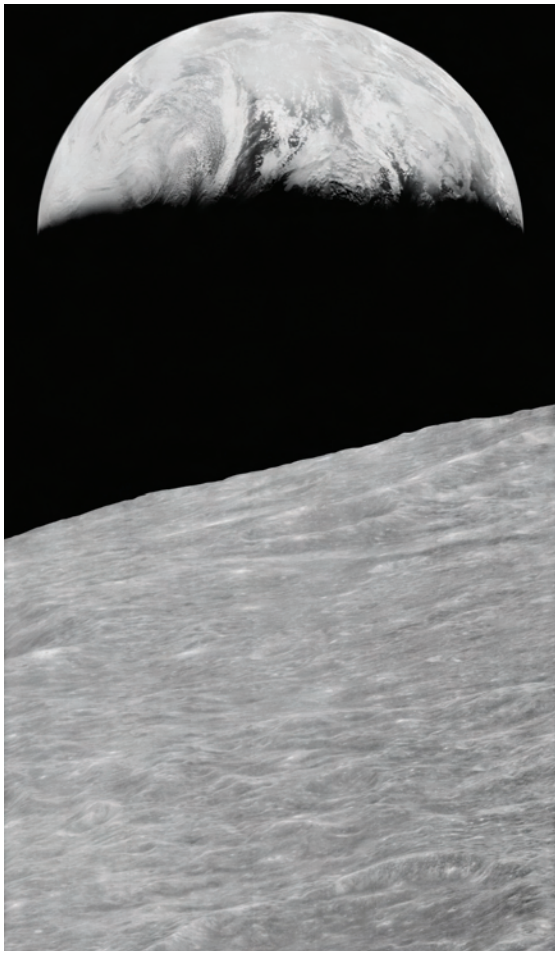
Historic Lunar Orbiter Image Recovery at NASA Research Park

MOFFETT FIELD, Calif.—NASA released this newly restored 42-year-old image of Earth on Nov. 13. The Lunar Orbiter 1 spacecraft took the iconic photograph of Earth rising above the lunar surface in 1966. Using refurbished machinery and modern digital technology, NASA produced the image at a much higher resolution than was possible when it was originally taken.

The data may help the next generation of explorers as NASA prepares to return to the moon.

"We are in a renaissance of lunar exploration, this time the whole world is going forward," said Ames Center Director S. Pete Worden.

In the late 1960s, NASA sent five Lunar Orbiter missions to photograph the surface of the moon and analyze landing sites for Apollo missions. Data were recorded on large magnetic tapes and transferred to photographic film for scientific analysis. When these images were first retrieved from lunar orbit, only a portion of their true resolution was available because of the limited technology available.



NASA's historic and newly restored image of Earth rising taken in 1966 by the Lunar Orbiter 1 Spacecraft

The Lunar Image Recovery Project team at the former McDonald's (Bldg. 596) at NASA Research Park is converting analog data from 48,000 lbs. of original 2" tapes from the Lunar Orbiters into digital form, and reconstructing the images.

"This is an unprecedented opportunity to see how the moon has changed in 40 plus years," said Greg Schmidt of NASA's Lunar Science Institute, who is hosting this project. These are still the highest resolution images taken of the lunar surface. This resolution will be matched by the Lunar Recognizance Orbiter (LRO), scheduled for launch April 2009, Schmidt said.

International Space University students attending the 2009 Space Studies summer session at NASA Research Park plan to set up labs to compare Lunar Orbiter data with the new LRO data.

The restored high quality Lunar Orbiter will provide a baseline to measure changes that have occurred on the moon since the 1960s. This could help mission planners assess the long-term risk to lunar inhabitants from small meteor impacts, and establish longitude and latitude lines for lunar mapping.

The processed Lunar Orbiter images are submitted to the Planetary Data System, managed by NASA Headquarters in cooperation with NASA's Jet Propulsion Laboratory, and are calibrated with standard mapping coordinates from the U.S. Geological Survey's Astrogeology Research Program in Flagstaff, AZ. NASA Research Park Partner International Network Solutions, Inc. provided infrastructure to transmit this imagery.

"This effort was made possible by the vision and dedication of Apollo-era NASA employees, independent researchers, and a true veteran team of engineers and young students," said Dennis Wingo, the image recovery program lead for the project.

NASA's Exploration Systems Mission Directorate and Innovative Partnerships Program Office in Washington provided initial funding for the project. Engineering and logistics for the project team were provided by Wingo of SkyCorp, Inc., Huntsville, Ala., with donated services by Keith Cowing from SpaceRef Interactive, Inc., Reston, Va., under the auspices of Alliance of Commercial Enterprises and Education for Space, and the NASA Lunar Science Institute.

Images will be made available when they are fully processed and calibrated. The intent of this project is to facilitate, wherever possible, the broadest dissemination and public use of these images.

To view the image and for more information about the Lunar Orbiter Image Recovery Project visit:
http://www.nasa.gov/topics/moonmars/features/LOIRP
and http://www.moonviews.com

For more information about NASA's exploration program, visit:
http://www.nasa.gov/exploration

The Future Comes to NASA

Partners Support International Space University Coming to NASA Research Park

By Lindsey Yee

On June 29, 2009, NRP will open its doors to the International Space University's (ISU) Space Studies Program (SSP).

L to R: Lisa Soohoo, ISU Project Support, Lindsey Yee, SGT, Inc. Project Coordinator; Joy Colucci, SGT, Inc. VP West Coast Operations; Lauren Fletcher ,Ames Space Science Division; Jessica Cullers, Ames Small Spacecraft Division

NRP Partner SGT, Inc. is organizing the ISU opening ceremony to welcome an international cadre of professors and graduate students to ISU's summer session to be held June-Aug. 2009 at NRP.

Current plans call for a line up of notable speakers, a welcome video from NASA's International Space Station crew, music, multimedia, exhibits and VIP receptions.

NASA and the International Space University will welcome students from over 25 countries for a nine week program covering diverse disciplines related to space exploration and the space economy. These areas include space science, space engineering, systems engineering, space policy and law, business and management, and space and society.

NRP and SGT, Inc. are collaborating with several Silicon Valley companies and notable universities to enhance the value of the summer program. *Contact:* Joy Colucci, VP West Coast Operations SGT, Inc., jcolucci@sgt-inc.com, 650 - 965-8616

Additional partner support includes International Network Solutions, Inc.'s collaboration with Ames Network and Communications Branch to provide WIFI 24/7 for all ISU participants. *Contact:* Andrew Gold, CEO, INET, Inc. agold@intnetworksolutions.com, 831-224-4595

Also, NRP Partner Planners Collaborative is leading the Hospitality Team to make all guests for the ISU experience - participants, staff, faculty, alums, partners, friends or family - feel especially welcome. *Contact:* Jennifer Kremer, Planners Collaborative, Jennifer.L.Kremer@nasa.gov, 650-604-4052

"Sometimes it is the smallest detail that makes a visitor feel welcome, and I appreciate all NRP Partners' support," said Donald James, ISU Project Manager.

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"The convergence of PCs and Internet in other industries, like phones and television, is making its way to aviation," said Dave Guerrieri, GaryAir Vice President for Business Development.

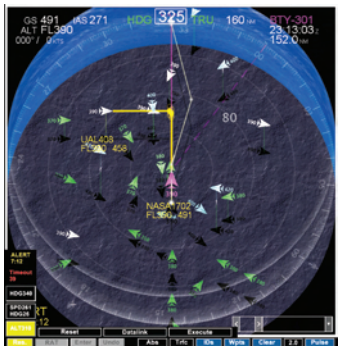

Image courtesy of FDDRL

Nextgen predicts probable route conflict more than 7 minutes in advance, giving pilots more time to think strategically

Walter Johnson, FDDRL's Principal Investigator, is delighted that a NRP partnership enables cooperation with a local airline utilizing its repositioning flights for free test time in real world conditions. "GaryAir provides the perspective of the low-altitude, small aircraft operator in our human factors and usability studies. We have done many studies involving large airlines, most notably simulation studies with UPS, but our experience with smaller operators has been limited until now," he said.

GaryAir, in its association with the Personal Air Transportation Alliance representing early adopters of SATS technology, participates in the NextGen Institute's Net-Centric Operations Working Group. Mr. Guerrieri, co-chair of the Infrastructure Standing Committee, hopes to encourage a flexible air-ground communications system that can take best advantage of commercial developments through the use of emerging global wireless standards such as Mobile WiMax and IMT-Advanced.

"I hope we involve more traditionally non-aviation private industry telecommunications equipment providers, such as Intel, Qualcomm and others, in aviation systems. The most successful government programs in the recent past -- Internet and GPS -- work well and cost little because they work for everyone, not just a small group of users. I would like to see this concept applied to aviation communications systems. I hope we can encourage a global wireless communications standard that accommodates air-air and air-ground operations as well as terrestrial use," Guerrieri concluded.

For more info: http://www.informart.com/GaryAir/

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which was later renamed Naval Air Station Moffett Field. The station's original mission was to serve as a home base for the Navy dirigible, the USS Macon, as part of the Navy's lighter-than-air aviation program. Later, the National Advisory Committee for Aeronautics established what would eventually become NASA Ames Research Center, adjacent to the naval air station. Moffett Field was closed as a military base on July 1, 1994, and NASA Ames took over supervision of Moffett Field's many facilities, including two runways and three aircraft hangars. NASA now operates Moffett Field as part of NASA Ames Research Center. Adaptive re-use of historic buildings is implemented by NASA at NASA Research Park (NRP) established in 2002.

A Challenging Golf Experience at Your Doorstep

By Betty Larson and David Morse

If you haven't had the opportunity to play the Golf Club at Moffett Field yet, it's definitely worth looking into. NASA on-site contractors, partners, federal employees and the military can call ahead to learn access options and request tee times.

A major redesign has thoroughly transformed the old course. The uniformly flat fairways, offering little more than a "walk in the park," have been replaced by a course offering variety, fun and a real golf challenge.

Aerial view of redesigned Golf Club at Moffett

The Ames Exchange Council invested 18 months of renovation to modernize and upgrade the old course, which now features meandering fairways, large sand features and elevated tees. There is a terrific practice area designed to improve your putting and chipping game, and several new car paths. What hasn't changed are the spectacular views and vast array of birds and animals that make the place a veritable wildlife preserve.

Playing the Golf Club at Moffett has never been easier -- simply call ahead to the Golf Shop at (650) 603-8026 for information and to make arrangements. You'll be surprised at the course's old-world affordability -- fees range from an incredibly low super twilight rate of $10, to $32 during peak weekend hours. Whenever you play, the 6,517-yard, par 72 course is sure to delight you and your sponsored guests.

The golf course is the perfect venue for recreational activity -- a golf tournament or league, a bucket of balls at the driving range, putting contest, barbeque, luncheon or after-work social. The course can host groups as large as 144 golfers for shotgun tournaments and fundraisers. Special events can be booked up to one year in advance by calling Sales and Marketing Director, Betty Larson, at (650) 254-1808.

Aerial view of Tee Minus One Clubhouse at the Golf Club at Moffeff Field

The full-service venue includes the 18-hole course, electric golf carts, restaurant, bar, Golf Shop, outdoor deck and driving range. The Golf Shop has an excellent selection of merchandise at very reasonable prices. The merchandise includes men's and women's golf clubs, putters, apparel, shoes, golf balls and accessories and NASA-logo items. Demo and used clubs are available for rent, and a golf club repair service is offered.

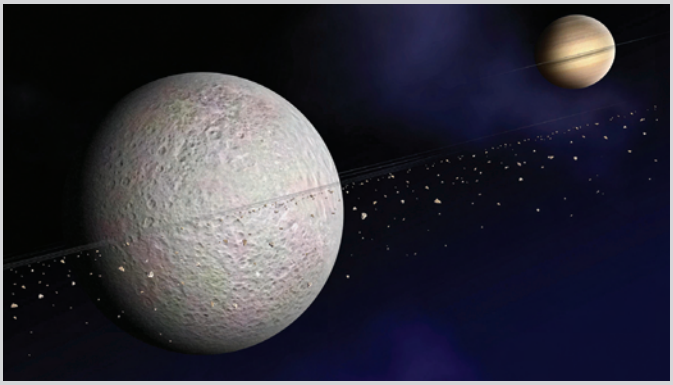
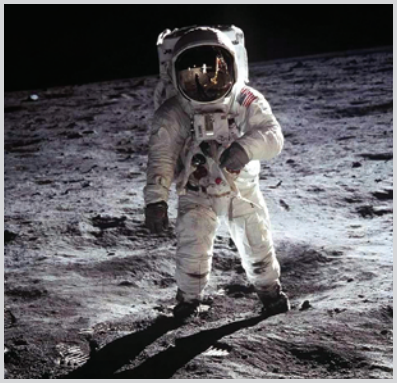
For relaxing, the golf course dining room looks out on the practice area and tenth-hole tee. It can be reserved for after-work events for up to 100 people, as can the outdoor deck and gas barbeque for larger parties. The grill offers a varied menu and is open for breakfast, lunch and snacks. The bar serves beer, wine, cocktails and appetizers.

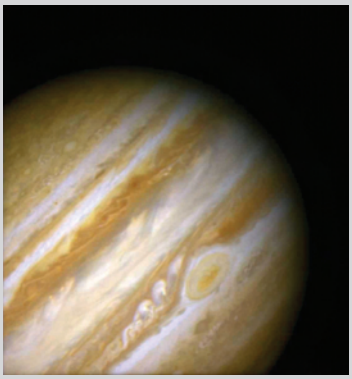
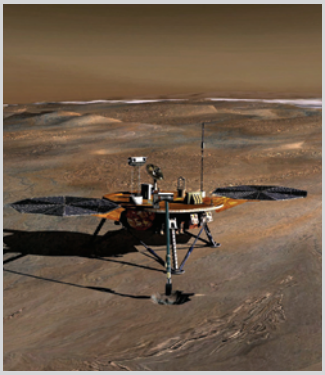
Consider a visit to the Golf Club at Moffett Field soon. General manager Mike Hill and the entire staff are friendly and accommodating. You don't want to miss the exciting golf experience right at your doorstep.

A new Thursday after-work, 9-hole scramble for employees, contractors and partners is being planned – we'd like to see you there!

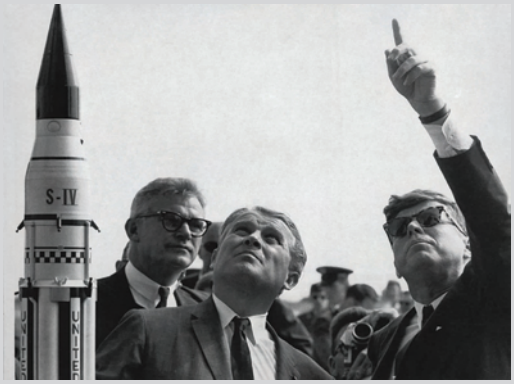
Golf Shop at Tee Minus One Clubhouse

NASA Celebrates 50 years of Discovery



In 1958 President Dwight D. Eisenhower, resisting competition from military agencies wanting command of the new United States' space agency, established NASA on Oct. 1 as an independent agency reporting directly to Congress. The National Aeronautics and Space Act of 1958 provided for research into problems of flight, within and outside the Earth's atmosphere, and other purposes.

The Space Act dedicated NASA's legacy of discovery from exploring space to peaceful purposes and the benefit of all mankind, and required the widest possible dissemination of new knowledge.

Within fourteen years, twelve American men, Apollo Astronauts, walked the surface of the Moon. NASA's men and women launched intelligent spacecraft to map our inner solar system, and in 1976 landed the Mars Vikings, the first of many robot explorers, on Mars. The Viking Life Detection experiment, managed by Ames, was the first experiment performed on another planet.

R. T. Jones, an Ames genius, designed (in 1945) the sweptback wing for all high speed aircraft. With the world's best collection of wind tunnels, Ames aeronautic researchers broke ground in every flight regime - subsonic, transonic, supersonic, and hypersonic. Ames created the blunt body concept used on all spacecraft to survive planetary reentry, and the lifting body design.

NASA's mechanical emissaries successfully mapped the solar system's inner rocky planets Mercury, veiled Venus, Mars and our Moon. NASA launched Pioneers 10 & 11 to trail blaze through the asteroid belt, with mission control at Ames. After the first flybys of Jupiter and Saturn, Pioneer 10 was the first human-made object to leave the solar system. Advanced Voyager spacecraft later returned close up images of Jupiter, Saturn, Uranus and Neptune, discovering numerous jovian and saturnian moons, during the Golden Age of Planetary Exploration. We observed the cosmic background radiation - a relic of the big bang - and peering back in time, determined the age of our universe.

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NASA launched the reusable space shuttles and planned the International Space Station, to be built with this Space Transportation System. International teams of men and women now permanently occupy Freedom, an orbiting scientific outpost, and have for more than a decade, buoyed by life science research including fundamental discoveries on bone loss and muscle atrophy in microgravity at Ames.

We dropped a probe into giant Jupiter, "splatted" down on Saturn's methane shrouded moon Titan, landed on an asteroid and Stardust brought home comet dust after a 5 billion kilometer journey. We returned to Mars with an array of small rovers that uncovered geologic evidence of standing seas on early Mars. We know where the ground water is in our solar system. Following the water, our scientists search for fossil records of a 'second genesis" to help crack the elusive origin of life mystery.

Daily the Hubble Space Telescope reveals the magnificent immensity of our galactic neighborhood. We understand the life cycle of stars and know that when stars form, solar system formation is a common occurrence. University and other teams have now discovered more than 200 extra solar planets. We track the formation of heavy, life forming elements in the death throes/fusion explosions of supernova. We observe organic molecules across interstellar space. We understand the evolution of planetary atmospheres -- greenhouse gases, ozone depletion and global climate change -- thanks to NASA. We map fires, storms, global rainfall patterns, ocean temperature and coastal health.

Ames deep roots in aeronautics supported Mercury, Gemini, Apollo and space shuttle missions, the development of thermal protection systems, simulation technology and the V-22 Osprey tilt rotor aircraft. Aircraft are faster, safer, quieter, with better air traffic management and advanced de-icing techniques. A team including NASA's Ames and Langley researchers recently received the 2007 Collier Trophy for developing the Automatic Dependent Surveillance-Broadcast (ADS-B) that uses Global Positioning System satellite information (rather than radar) to give pilots and controllers highly accurate traffic data, as well as displays that update in real time.

In 1998, the Ames managed Lunar Prospector mission, NASA's first Moon mission in 25 years, discovered water at the lunar pole. Now we are planning to return to the Moon, this time to stay.
-Editor

"...We came in Peace for all Mankind"
Apollo 11 Plaque, July 1969

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