National Aeronautics and Space Administration, Ames Research Center, Moffett Field, CA
January 2006

Astrogram

Scott Hubbard to hold Carl Sagan Chair at SETI Institute

Ames Center Director G. Scott Hubbard recently announced his decision to accept a new assignment as holder of the Carl Sagan Chair for the Study of Life in the Universe at the SETI Institute in Mountain View, Calif.

In this prestigious position, Hubbard will work to strengthen the SETI Institute's capability, visibility and support for its research into the origin of life, and how it might be found on other worlds, in the planets and moons of our solar system or beyond.

"My new position at the SETI Institute allows me to return to the research arena and pursue a lifelong interest in the search for life in the Universe and its origins on Earth," Hubbard explained. "I believe this field, that we know as astrobiology, is both the scientific heart of the exploration vision and the most exciting area of research today. We have a chance to learn things that, only a generation ago, would have seemed beyond our capabilities."

"Scott is the perfect candidate for the Carl Sagan Chair," remarked Thomas Pierson, chief executive officer of the SETI Institute. "He has a solid background in the relevant sciences and has proven himself to be an effective and widely admired leader. As the holder of the Carl Sagan Chair, Scott will be engaged with many audiences, furthering their understanding about science and its potential for new discoveries. Scott will bring both expertise and enthusiasm to this task and will be a terrific representative for the Institute both domestically and internationally," Pierson added.

Hubbard began his career at NASA Ames in 1987, and has served as the center director since 2002. As director, Hubbard substantially reorganized the center, streamlined operations and continued a 10-year center transformation to astrobiology and advanced technology in which he played a significant role.

Hubbard is known for his innovative approach to collaborations between government, academia and the private sector, exemplified by the award-winning NASA Research Park development

continued on page 12

To my friends and colleagues at Ames,

It has been both a pleasure and an honor to work with you and to serve as the Ames center director. You represent the best of the Agency, we've accomplished many things together that I'm extremely proud of, and I know you will continue to play creative and critically important roles as NASA turns the Vision for Space Exploration into reality. It seems only fitting that my new position at the SETI Institute will allow me to promote and advance a research discipline that we began here at Ames - astrobiology. Holding the Carl Sagan Chair for the Study of Life in the Universe will provide opportunities to bring this exciting and ultimately profound line of research to the attention of academia and the public and to increase the participation of private organizations in this work. I want to thank you all for your support and dedication.

- G. Scott Hubbard

NASA photo by Tom Trower

G. Scott Hubbard

NASA marks Vision for Space Exploration anniversary

The following is a statement by NASA Administrator Michael Griffin on the second anniversary of President Bush's announcement of the Vision for Space Exploration, a plan to return to the moon, travel to Mars and destinations beyond.

"Two years ago this week, President Bush committed our nation to the Vision for Space Exploration. This Vision commits America to a journey of discovery and exploration with new and exciting plans to return astronauts to the moon. From there, to voyage to Mars and beyond, while continuing to engage in groundbreaking space science and pioneering advances in innovation, creativity and technology.

Together with the partnerships we have in the International Space Station program, our nation has the tremendous opportunity and solemn responsibility to lead the way toward the dawn of a new space age."

-- Stardust brings back valuable data, see centerspread, pages 6 - 9, for details --

Ames reaches out to its 'family' at Stennis

Families and individuals at NASA Ames have been reaching out to those in need at Stennis Space Center, to provide support in the wake of Hurricane Katrina. To date, 47 connections have been made between Ames and Stennis, in an 'adopt a family' concept.

This is not an official NASA program and involves no NASA funding; it is based on personal connections and support that is typically being provided through networks of Ames' employees, friends and families. Many of the participants from Ames are forming long-distance friendships with their Stennis families that may be lasting, as it is expected that the recovery efforts will span months or even years.

Ames 'Families-Helping-Families' participants with a shipment of items for Katrina families at Stennis. Left to right in photo, back row: Maria Elena Lopez, Vivian Torres, John Garcia, Lynette Forsman, Barbara Chenier, Gail James, Monica Mendoza, John Wallace, B J Navarro, Jeff Scargle, Sylvia Longchamps, Claudio Martinez, Julia Rivera, Mike Otto, Yvonne Pendleton, Wendy Dolci, Marion Legg. In front: Patricia Montes Gregory and Venoncia Braxton.

A variety of gifts and monetary donations have been provided to the Stennis families. In December, a substantial shipment was sent from Ames to Stennis, through personal donations.

To find out more and to sign up for the 'Families-Helping-Families' effort, visit the Internet: http://spacescience.arc.nasa.gov/katrina/

BY WENDY DOLCI

Ames Contractor Council honors 2005 president Linda McCahon

At its annual business meeting on Jan. 11, the Ames Contractor Council (ACC) recognized and thanked outgoing President Linda McCahon (Infonetics) for her year of service in 2005. She was presented with a certificate of appreciation.

Highlights of the year included achievement of non-profit status, creation of the historic calendar as a major fundraiser and education programs support. NASA liaison to the ACC, Acting Deputy Center Director Steve Zornetzer, as well as Meredith Moore, special assistant to the deputy center director, joined the council in expressing appreciation.

Members of the 2005 ACC board and newly elected officers for 2006. Left to right are: Chris Johnson of MEI Technologies (2006 vice president); Faten Mansour of PAIC (2006 secretary); Doreen Cohen of Planners Collaborative (2006 president); Linda McCahon of Infonetics (2005 president); Paul Chaplin of SAIC (2006 director); Kathleen Starmer of SAIC (2006 treasurer); and Marla Arcadi of ELORET (2006 director). Not present were 2006 directors Anita Fogtman (SAIC) and Paul Kutler (retired).

The council develops and maintains an open dialog with senior center management, provides a mechanism for center management to communicate vital information directly to contractors in a timely manner, provides a forum to raise issues that affect the contractor community, creates a mechanism to address issues affecting the contractor community and provides centerwide recognition for excellent contractor employee performance.

For more information about the Ames Contractor Council, visit: http://contractorcouncil.arc.nasa.gov/about.html

BY DOREEN COHEN

Fourth Astrobiology Science Conference set for March

The Fourth Astrobiology Science Conference (AbSciCon) 2006 will be held March 26-30 in Washington, D.C., at the Ronald Reagan Building and International Trade Center (located on the Web at www.itcdc.com).

All are invited to join the astrobiology community at this exceptional facility that lies in the heart of Washington, just off the mall, blocks from the White House and with easy access to all areas of the city via the Metro.

The meeting will be held when the cherry blossoms are nearing their peak at the Tidal Basin. A private evening tour and reception are scheduled at the Smithsonian's Natural History Museum, site of the United States meteorite collection.

The History of AbSciCon

NASA Ames and the NASA Astrobiology Institute (NAI) hosted the first three Astrobiology Science Conferences. The sessions were based on themes, such as 'Water the Sine Qua Non of Life.' Each session was led by invited plenary speakers and followed by contributed talks selected for their topical excitement from over 370 submitted abstracts.

The many excellent posters attracted viewers during special poster times, lunches and evenings.

In the second meeting, the format was enhanced by overview talks in disciplines for those who wanted a refreshing way to get 'up to speed' outside their area of expertise. From cosmology to human intelligence, the AbSciCon covers the intellectual breadth of astrobiology.

AbSciCon 2006 builds on the successes of these previous meetings. Astrobiology is a novel approach to the scientific study of the living universe. It seeks to understand the origin and evolution of life on Earth, to determine if life exists elsewhere in the universe and to predict the future of life on Earth and in the rest of the universe.

To this end, it relies on the diversity of disciplines and has inspired new meta-disciplines. Abstracts are solicited on all topics that span the enormous range of astrobiological themes.

The meeting format will include a limited number of plenary talks that will complement a larger number of oral presentations in parallel thematic sessions.

As has always been the case at previous AbSciCons, the poster sessions, including the NAI-sponsored student poster competition, will continue to be a particularly important and successful venue for the exchange of scientific ideas.

Visit the Internet at http://abscicon2006.arc.nasa.gov to obtain the latest AbSciCon 2006 information.

BY SHIRLEY BERTHOLD

NASA commercial success stories featured in Spinoff 2005

The annual issue of NASA Spinoff is hot off the presses and available for Ames employees. The Spinoff publication documents successful partnerships from the NASA technology transfer and commercialization program. Many stories describe new products on the market in the area of health, environment, information technology and safety.

Front cover of the 2005 Annual Spinoff.

As stated by Michael Griffin, NASA administrator, in the forward section of this issue, "These innovations demonstrate that a vigorous space exploration program has and will continue to provide the American public with an impressive technological return on investment."

This year, five technologies and partnership success stories are based on Ames-developed technology.

For your own free copy, contact Lisa Williams at e-mail Lisa.M.Williams-1@nasa.gov or call ext. 4-2954. The five Ames-related technologies and partnerships featured in the publication are:

Forty-year Old Foam Springs Back With New Benefits

Temperature-sensitive foam applications ranging from football helmets to medical applications are highlighted.

Inertial Motion-Tracking Technology for Virtual 3-D

InterSense Inc. ongoing partnerships with NASA to develop next generation virtual reality applications are presented.

Water and Air Measures Make 'PureSense'

PureSense Inc. is highlighted in its work to secure a safe environment for all

A Search Engine That's Aware of Your Needs

Stottler Henke Inc. works with SBIR to create software for manageable searching of NASA databases

Software of Seismic Proportions Promotes Enjoyable Learning

Seismic Entertainment, "Inside NASA" film creators discuss the journey from idea to film release.

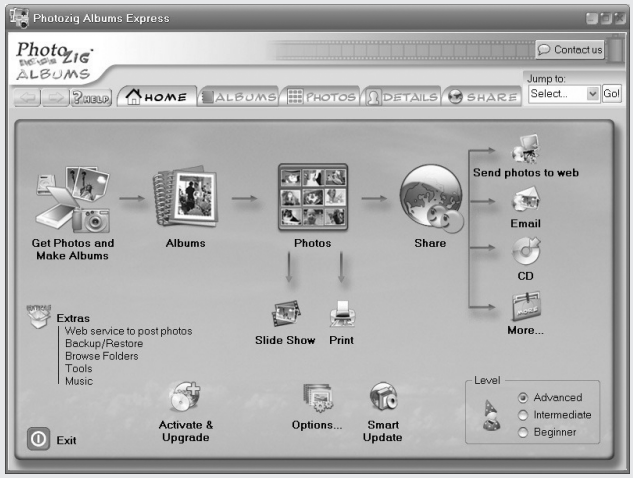
BY LISA WILLIAMS

Photozig: a picture is worth a thousand words

Photozig Inc., an industry partner in NASA Research Park (NRP) since 2002, develops innovative software solutions and applications for digital photography, with federal funding and in cooperation with academic centers of excellence such as Stanford University, UC Davis, UCLA, UCSF and the University of Illinois.

The Photozig team, left to right: Luis Dib, chief software architect; Jim Whitney, multimedia engineer; Francisco Imai, color imaging scientist; Bruno Kajiyama, CEO; and David LeDrew, multimedia designer.

"Photozig is dedicated to creating easy, simple and powerful solutions for organizing and sharing digital photos and video data," said Bruno Kajiyama, CEO of Photozig. "We are introducing our first product to the market -- Photozig Albums, a complete solution for managing digital photos and short videos on the desktop computer with Web connectivity," he said.



Screen snapshot of the Photozig Web site.

"Our software has a rich set of features, allowing efficient control of your digital assets. You can easily transfer photos / short videos from your camera, index albums and photos with categories and tags, drag / drop images from web browser to desktop, create slideshows or screensavers with photos / video / music, enhance images, e-mail, send to the Web, create photo blogs, exchange full resolution images, burn a CD, backup and much more, " Kajiyama said.

Photozig chose NRP because of the research environment, proximity to NASA and potential access to NASA technology. Kajiyama believes that NASA represents for humanity the dream of exploring and discovering more about our universe. He admires NASA's dedicated personnel, their talent, and technological achievements.

Photozig is interested in collaborative projects related to digital image management / enhancement, digital photo broadcast and spectral imaging. Photozig software, for example, could enable astronauts to post photo album blogs in near real time during missions, sharing experiences with their families, the educational community and the world.

Kajiyama loves spending time with his family and playing with his 17-month son. He also enjoys skiing, traveling, filming and taking pictures.

More information is available at www.photozig.com or by e-mailing info@photozig.com.

BY DIANE FARRAR

Senate staffer Kevin Bargo tours Ames

Thermo-Physics Facilities Branch Chief Joe Hartman (left) explains the dynamics of the ArcJet Facility to visiting Senate Budget Committee staffer Kevin Bargo (center) and NASA legislative liaison Joan Salute.

NASA photo by Tom Trower

Astrogram story guidelines

The Astrogram staff encourages employees to write stories about events and activities in their respective work areas, which provides Astrogram readers with a fresh perspective. To allow us to include as many stories as possible, we ask that writers follow these guidelines for stories:

Word limits:
Feature articles / news releases: 500 words
Around the Center (Ames-related): 250 words
Obituaries: 200 words
Upcoming events / calendar items: 50 words

Timeliness:

For upcoming events, please submit items at least 1 month in advance. For completed events, please submit articles no more than 2 weeks after completion of the event, activity, conference, etc. Items are due to the editor by the 10th of each month. If that date falls on a weekend or holiday, then the next business day becomes the due date.

Writing tips:

Please review the following writing tips to familiarize yourself with our writing style and guidelines. Be sure to include who you want listed as the author / byline. If you have questions, please contact the Astrogram editor at astrogram@mail.arc.nasa.gov

Types of stories:

The most common kinds of stories published in the Astrogram are news stories and feature stories.

News stories:

• Tell the basics - who, what, where, when, how and why.

• News stories are meant to inform rather than entertain.

• Don't use creative writing - provide just the facts. News stories, like feature stories, can highlight, explain and share, but they are meant to be short and to the point.

• Use the active rather than passive voice.

• Write for a general audience and avoid jargon and technical terms as much as possible.

Feature stories:

• Serve as great opportunities to: Highlight a person, organization or project; offer a behind-the-scenes look and tell a 'story' rather than present a straight-news article.

• They are less time-critical than are news stories.

• They allow readers to relate to the experiences, feelings, lessons learned or achievements of others.

• Feature stories allow you to write creatively without using 'puff' words or putting yourself into the story.

For feature articles about Ames projects, keep the following in mind:

• Remember, this is a feature story and not a term paper - make your story interesting and not overly technical.

• Refrain from using jargon - tell the reader what it is you are doing in everyday language.

• Spell out all acronyms on first reference and then put the acronym after it only if it is used again in the article.

• Discuss the genesis and purpose of the project and the primary benefits derived from it and to Ames and NASA.

• Discuss how the project fits into other key programs and how it supports the NASA mission, if appropriate.

• Explain what happened to make the project a success.

• Include timelines as to when the project began, key milestones reached, when the project concluded, etc.

• Discuss the role of key figures on the project.

• Discuss potential spin-offs, future uses, and the next steps to be taken, if appropriate.

• Add any other interesting news about the project.

• Add quotes from key individuals.

For the human interest, 'personality profile' story:

• Make your story interesting and not overly technical. Refrain from using jargon.

• Spell out all acronyms on first reference and then put the acronym after it ONLY if it is used again in the article.

• Include some background about the person's title, years of service, responsibilities at Ames, awards, commendations, etc.

• Discuss outside interests (for example: community involvement, hobbies, sports).

• Include particular items of note (inventions, patents, publications, conference presentations).

• Include other interesting background about the individual.

• Add quotes from the person and other sources who work with or supervise the person.

• Be sure to indicate who is to be listed as the author or the story.

BY THE ASTROGRAM EDITORIAL BOARD

Ames' improves anti-spam services

Spam is not just a nuisance; it's a drain on IT resources and worker productivity. One report puts the cost at $87 billion to the U.S. economy annually. Another shows the average employee loses eight days per year dealing with spam. It is occasionally offensive and some messages are designed to fool the recipient into giving out IDs and passwords to bank accounts or similar systems (called phishing).

The Applied Information Technology Division (Code JT) has implemented a new anti-spam service that offers improved defense against spam, adult content and phishing attacks. Since its implementation in September 2005, users have reported a significant reduction in spam reducing the need and time spent to maintain and filter unsolicited commercial e-mail.

The new service uses advanced machine learning techniques to analyze more than 100,000 attributes in every e-mail, providing extreme confidence in identifying spam messages. With this new service, JT provides improved virus and spam protection including better spam identification and user management options.

While most users will simply rejoice over the reduction in spam, we have provided options for advanced users. Advanced users may opt into the self-managed group that allow them to manage their own quarantine areas, change between mild, medium and aggressive spam filtering rules and manage their own personal safe lists and blocked sender lists. (These user management options are only available for those using the mail.arc.nasa.gov system.) However, 95 percent of Ames users will find that the current default configuration is more than adequate to meet their needs.

An anti-spam town hall meeting sponsored by the Applied Information Technology Division was held in October of 2005. If you missed the meeting, you may visit the outreach Web site at http://apptech.arc.nasa.gov/outreach.cfm to download a copy of the slides.

For more information regarding this service, see FAQ on http://amesemail.arc.nasa.gov/faq.cfm.

BY ELIZABETH TU

Stardust returns with a 'stellar' show and valuable information

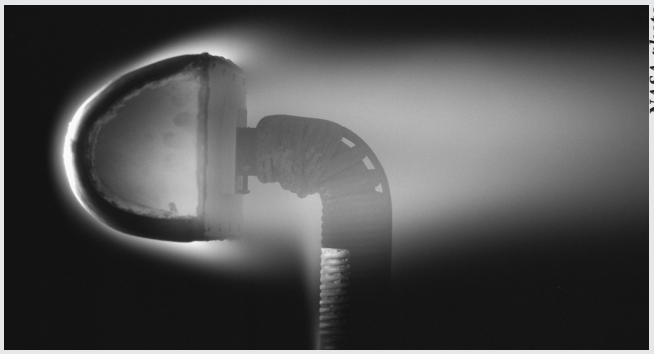
To monitor the fireball-like return of the Stardust sample capsule to Earth, a team of researchers left Ames on NASA's DC-8 aircraft.

NASA photo by Eric James

Principal investigator Peter Jenniskens (SETI Institute) (seated) and Mike Koop of the San Jose Astronomical Association acquiring data from a high-resolution spectrometer on board the DC-8 that departed Ames to observe the re-entry of the Stardust capsule on Jan. 15.

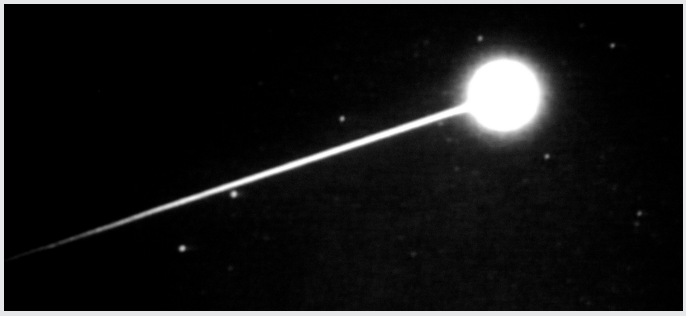
While the airplane circled over Nevada in the early morning darkness, the team tracked and observed the capsule as it plunged into Earth's atmosphere 10 times faster than a speeding bullet. Finally, the capsule parachuted down and was safely collected in a desert in Utah. The capsule's precious cargo included thousands of particles from the comet Wild 2 and interstellar particles that the Stardust spacecraft had captured with its specialized 'arm.'

The researchers on the DC-8 assessed the performance of Stardust's carbon-based, ablative heat shield, developed at NASA Ames.



NASA photo

Demonstration of the Ames-developed heatshield used on the Stardust capsule.

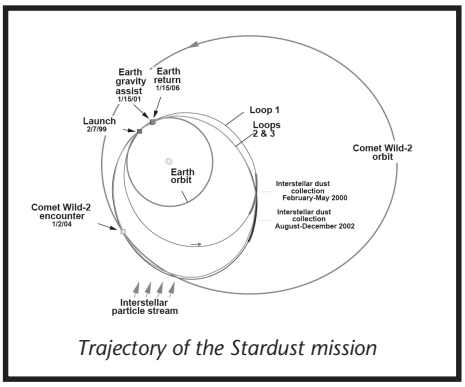


NASA photo based on video by Mike Taylor, Utah State University

The Stardust capsule as it re-enters Earth's atmosphere on Jan. 15. Photo taken from the DC-8 that departed from Ames to observer the re-entry of the spacecraft.

The scientists aboard the DC-8 took measurements of the shield's surface temperature and rate of ablation during the capsule's high-speed flight. The team also measured the capsule's re-entry shock emission brightness, light of which contributes to heating the surface.

BY JOHN BLUCK



Trajectory of the Stardust mission

NASA photo

NASA used a McDonnell Douglas DC-8 aircraft to observe the re-entry of the Stardust capsule on Jan. 15. The aircraft, based at the University of North Dakota, Grand Forks, collects data for many experiments in support of scientific projects serving the world scientific community. Included in this community are NASA, federal, state, academic and foreign scientists. Data gathered by the DC-8 at flight altitude and by remote sensing have been used for scientific studies in archaeology, ecology, geography, hydrology, meteorology, oceanography, volcanology, atmospheric chemistry, soil science and biology.

Sandford e-mails family, friends and colleagues about Stardust

NASA Ames astrophysicists Scott Sandford is a member of the Stardust mission's science team that will be analyzing the comet dust and interstellar particles that were captured when the Stardust spacecraft flew through some of Comet Wild-2's dust in 2004. Sandford was the only member of the science team to also be on the recovery team when the capsule landed in Utah on Jan. 15, 2006. He has accompanied the capsule from Utah to Johnson Space Center, Houston, where it was opened in a clean room and the particles assessed. Sandford has been sending e-mails about his historic Stardust experiences to family, friends and colleagues. Here are some excerpts from these messages.

NASA photo

Scientists study the Stardust sample return particles (center) that were captured by Stardust's specialized 'arm' and remained enveloped within the Aerogel substance inside the spacecraft's interior.

Jan. 13, 7:02 a.m. MST:

The recovery team has pretty much finished up all its preparations, and we are now mostly taking it easy and saving our energy for 3 a.m. MST on Sunday (Jan. 15). All our gear has been checked out and is ready for use.

We got some snow and ice last night, but it was largely gone by the end of the day, and it is unlikely to have caused any problems with water in the landing ellipse. There is apparently another storm due on Sunday, but the hopes are that it won't really arrive until we are already finished recovering the sample return capsule (SRC).

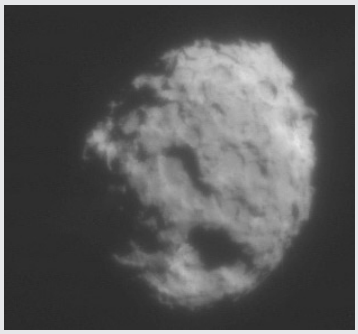
The usual herds of deer and antelope are wandering the area, including between the buildings in English Village where we spend our nights. I am particularly enjoying hearing the coyotes sing every night, something I heard frequently growing up in New Mexico, but that you don't get much of in the San Francisco Bay area!

Jan. 13, 5:11 p.m. MST:

The building was'locked down' so that we know everything will be ready and waiting for us when we re-gather tomorrow evening to start the actual recovery operations.

We don't reassemble at the Avery complex for the recovery until around midnight. We'll then receive a briefing, get into our warm weather gear, load things into trucks and helicopters, etc., in preparation for the 3 a.m. MST re-entry of the sample return capsule.

The helicopters did some practice flights today and made a point of checking out the ground conditions in a number of locations within the landing ellipse, including the target point. They reported that the ground is muddy, but mostly free of standing water. We don't want the SRC to land in deep water, as water and our sampling aerogel don't play well together.



NASA photo by NASA/JPL.

Comet Wild 2, taken by the Stardust navigation camera during the spacecraft's closest approach to the comet on Jan. 2, 2004. The image was taken within a distance of 500 kilometers (about 311 miles) of the comet's nucleus with a 10-millisecond exposure.

The weather folks are telling us that a new storm is expected to blow in at just about the time we would begin the recovery process. This will play a factor in the decision as to whether we recover the SRC using helicopters or ground vehicles. Helicopters are preferred since they allow us to do the recovery more quickly and minimize our exposure to any UXO (unexploded ordnance) on the range.

Jan. 15, 6:30 a.m. MST:

I'm back at Avery and the SRC is currently being taken apart to get at the sample canister. The field conditions were VERY muddy, but no water got in the SRC and the SRC itself didn't get too muddy (our boots on the other hand...)

The recovery went almost perfectly. Finding the SRC took a little longer than we had anticipated. It also took us longer to complete recovery because the SRC did a few minor bounces, followed by a short roll, before coming to a stop on its side when it landed. That required we do more environmental sampling than we practiced.

Jan. 16, 9:46 a.m. MST:

Sorry for the long delay, but I was up 39 hours straight dealing with the recovery and then washing and organizing gear, followed by watching the disassembly of the canister from the back shield and the heat shield. After that I caught some much-needed sleep.

The recovery went perfectly, but a little slower than in practice, in part because it took a little longer to locate the sample return capsule than expected, and in part because we took more environmental samples than expected. The SRC hit the ground with some transverse velocity due to the wind, so it made a few small bounces and ended up on its rim. Once on its rim, it rolled in a wobbly fashion for a short distance and then did a little spiral and stopped on its side (kind of like a top at the end of its spin). The impact marks were all quite shallow, so it looked like it had a pretty gentle landing.

We sampled all along the track. The sticky mud sucked some fine grain material off the heat and back shields. As a result, the mud had a hard time adhering to the SRC and the SRC itself had relatively little mud on it (less than ended up on me!)

Jan. 18, 2:36 p.m. CST, e-mail sent from Johnson Space Center, Houston:

Yesterday was a very long day. I was up at 4:30 a.m. MST to go down to the Avery complex in preparation for flying down to JSC. We loaded up all the sample return capsule gear and related hardware onto a flatbed truck and transported it to a waiting C-130 Hercules provided courtesy of the

continued on page 8

Sandford e-mails family, friends and colleagues about Stardust

continued from page 7

Wyoming National Guard.

Loading the plane was cold work (colder than the recovery, so of course my nice, warm recovery parka was stowed in the gear). The Herc flight was similar to my experiences with Herc in Antarctica, noisy with alternating hot and cold locations. Seating was the typical hammock webbing.

We got a police escort all the way to JSC; police cars took turns dashing ahead of us so they could block all the intersections, so we never had to stop at lights. If we'd added a brass band it would have made a lovely parade!

We arrived at the curatorial building at JSC, and there was a nice little crowd of people there to greet us and give enthusiastic applause (one of the only times in all of this that I got a little choked up). The SRC components were all loaded into the Space Exposed Hardware (SEH) clean room, and then I escorted the canister up to the Stardust clean room. There the Lockheed team opened the canister and exposed the aerogel tray for the first time. Every aerogel tile is still in place!!! By and large the tiles are in amazingly good shape.

The science team entered the clean room at this point, and we safely transferred the sample tray to its holding fixture in the clean room. This was a nerve-wracking step but was completed with only a few tiny pieces of loose aerogel falling from the tray (into waiting clean trays.)

It immediately became obvious that we have lots of wonderful samples. There are many impacts that are EASILY visible to the naked eye! In some cases you can even see the particles. Presumably, we have even more, smaller 10-20 micron grains in the aerogel. It looks like we have succeeded well beyond our wildest hopes! I am not sure if it is good clean room protocol to hug each other, but there was a lot of it going on for the first 10 minutes or so. We then got organized and began systematically photographing the cometary tiles. I helped with this until about 6:30 p.m. CST when my many days of irregular sleep and meals started to tell, when I turned my job over to Andrew Westphal.

Jan. 20, 9:15 a.m. CST

The day after the canister got to Johnson Space Center, Houston, Mike Zolensky and I picked up a number of small fragments of aerogel that were lying on the avionics deck and sampling arm of the sample return capsule. These are all probably small pieces of the front of some of the cometary aerogel cells that broke off after the sample trays were stowed subsequent to the comet flyby. It isn't clear when they came off, but given the rough and tumble life of the SRC (re-entry, hitting the ground at ~10 mph, etc.), I am surprised we didn't see more loose aerogel. The entire Stardust system worked amazingly well. Members of the team have been examining these small chips (the largest is only about 1 cm on a side and a few mm thick) and have already found multiple tracks and particles. This bodes very well for the contents of the full cells in the sampling tray. At this morning's science team meeting we decided to begin to extract these particles and use them to begin distributions to some of our preliminary examination team (PET) members.

Much of yesterday was spent experimenting with the lighting conditions on the cometary tray in the automated scan platform. We want to optically scan a significant number of cells to get a good sense of what the collected dust population looks like in terms of track types, sizes, etc. So far, we are having some minor difficulties getting really good images due to our inability to light the samples from the side (the tray frame gets in the way) and because we get a lot of reflections off the frame and the aluminum foils that hold the cells.

Nonetheless, we are getting good enough images to take us to the next step, which is to select the first, few cells for extraction. If all goes well, I think we will be extract our first cell this afternoon, but we may not get to it until tomorrow morning. We want our first cell to be "run of the mill." Cells with more exceptional particles will wait until we have proven all our extraction techniques work well.

Last night the extended Stardust team, at least those members who are in Houston, had a celebratory dinner in the Gilruth Center. We've all made good friends during the many years of the mission, and it was nice to take a moment to relax in each other's company.

During the celebration we made a point of remembering the many, many, many people who have played key roles in the success of the mission but were unable to be present.

Kudos to all of you out there who have helped make this mission a reality. It is my sincere hope that I will get to work with these folks more in the future. Say, here's an idea - how about we do another sample mission!

Cheers!

Scott

continued on page 9

Sandford to discuss Stardust, Hayabusa sample return missions

The Silicon Valley Astronomy Lecture Series presents a lecture co-sponsored by NASA Ames, Foothill College Astronomy Program, SETI Institute and Astronomical Society of the Pacific. Astronomer Scott Sandford of NASA Ames will give a non-technical, illustrated talk on: 'The Stardust and Hayabusa Missions.' Details below.

Date: Wednesday, March 1
Time: 7 p.m.
Place: Smithwick Theater
Foothill College
El Monte Road and
Freeway 280,
in Los Altos Hills

The event is free and open to the public.Parking on campus costs $2.

Call the series hot-line at (650) 949-7888 for more information and driving directions.

There are currently two active spacecraft missions designed to return samples to Earth from small bodies in our solar system. Stardust recently returned samples from the comet Wild-2 and Hayabusa will attempt to return samples from the asteroid Itokawa.

Sandford will discuss the scientific goals of the Stardust and Hayabusa missions and provide an overview of their designs and flights to date. He will also show some of the exciting data returned by these spacecraft during their encounters with their target objects.

In addition, in the case of Stardust, he will talk about some of the preliminary findings from the comet samples returned to Earth recently.

No background in science will be required for this talk.

Sandford, an expert on meteorites and the material between the planets, is a senior member of Ames' Astrochemistry Laboratory and is co-investigator on the Stardust and Hayabusa missions. He received his Ph.D. in physics from Washington University, St. Louis.

Aerogel helps scientists unravel mysteries of comets

Strange stuff called 'aerogel' that looks like a semi-transparent, blue cloud, but that is solid, carried captured comet dust to Earth on Jan. 15, landing in a Utah desert.

In January 2004, the Stardust spacecraft flew within 147 miles (236 kilometers) of the comet Wild 2 (VILT-TWO) and survived the high-speed impact of millions of dust particles and small rocks up to nearly two-tenths of an inch (one-half centimeter) across. With its tennis-racket-shaped collector extended, Stardust captured thousands of comet particles in the see-through aerogel, which includes silica and oxygen.

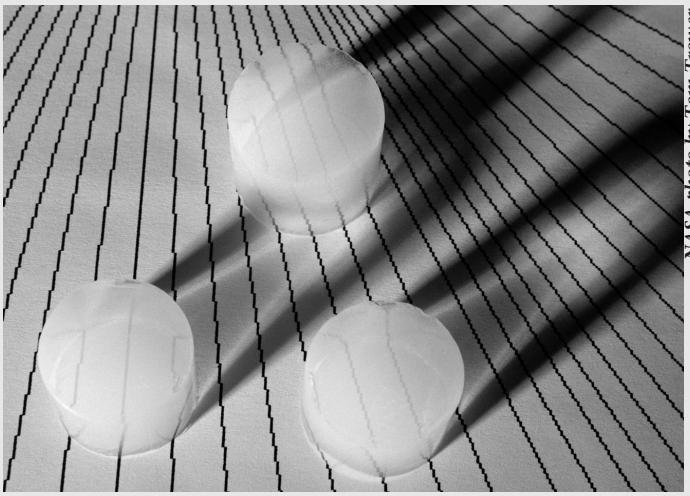
"It's a little bit like collecting BBs by shooting them into styrofoam. Some of the grains are likely to have exotic isotopic ratios that will give us an indication that we're looking at materials that aren't as old as the solar system, but that are, in fact, older than the solar system," said Scott Sandford, an astrophysicist and Stardust mission co-investigator at Ames.

Another mission objective was to expose the spacecraft to the interstellar dust stream for 150 days to grab particles. After collecting them, the aerogel collector retracted into the spacecraft's capsule. Stardust will be the first mission to capture and return a substantial sample from outside Earth's moon system.

Making sure that precious comet and interstellar particles imbedded in the aerogel are not affected by earthly contaminants was an important task to complete before the Stardust spacecraft was launched on Feb. 7, 1999, from Cape Canaveral Air Station, Florida. aboard a Delta II rocket.

"Under Dr. Sandford's guidance, I performed the lab analysis of the aerogel using infrared (IR) light to determine the level of organic contamination," said Max Bernstein, a scientist at NASA Ames. "These and other preliminary lab tests ultimately led the Stardust aerogel development team to devise a bake-vacuum-bake cycle to reduce the carbon content in aerogel," Bernstein said.

"Aerogel is made mostly of sand (silica), and what we're interested in is the organic material in the cometary samples," Bernstein said. "We measured organic contamination in aerogel early on. We raised a concern, and Peter Tsou and the aerogel team at the Jet Propulsion Laboratory in Pasadena, Calif., devised a method to reduce carbon content in aerogel by a factor of 10."



NASA photo by Tom Trower

Aerogel, sample shown above, is a new concept for spacecraft tiles that can be used on Earth to make efficient, vacuum-like insulation for refrigerators, furnaces and automobile catalytic converters. The new material is similar to that used for the tiles on the Space Shuttle to protect the vehicle from the heat generated during reentry into Earth's atmosphere. However, the new tiles have a layer of aerogel, or `solid smoke,' mixed into the tile's air spaces. This works like a vacuum layer because it's a great insulator, insulating spacecraft from 10 to 100 times better than today's tiles.

Infrared light that astronomers use to detect organic molecules in space also can be used to measure organic molecules in the laboratory. In their laboratory, Ames scientists shined IR light though a piece of an early batch of test aerogel, and they saw organic contamination. Because infrared is light that is not visible to the human eye, scientists use special detectors to 'see' IR. If scientists detect a specific IR color scheme, they can tell that a specific molecular fragment is moving and is present in the sample of material they are examining.

"If you understand that color scheme, then when you make the measurement, you can say, 'ah hah, I spotted colors corresponding to a carbon-hydrogen motion, so there must be carbons and hydrogen in the aerogel, not just silicon and oxygen,'" Bernstein explained. "Thanks in part to our measurements, we now have cleaner aerogel, which is flying on the Stardust spacecraft."

In cooperation with Bernstein, graduate student Maegan K. Spencer of Stanford University, Stanford, Calif., is conducting more sophisticated aerogel organic contamination tests in the laboratories of Stanford Professor Richard Zare.

The returning Stardust capsule struck Earth's atmosphere at eight miles (12.8 kilometers) per second - more than 10 times faster than a speeding bullet. That is fast enough to go from San Francisco to Los Angeles in only one minute. The 101-pound (45.7 kilogram) conical object hurtled through the atmosphere and slowed before the spacecraft finally parachuted down to Earth in a Utah dry lake. The landing occured on Sunday, Jan. 15, at about 3 a.m. MST, in a restricted area - the Utah Test and Training Range, located southwest of Salt Lake City.

"There will be a team of scientists at Johnson Space Center who will assess what we actually got back from the comet so we can verify we did get a useful sample," Sandford said. "A small portion of the samples will then be used to make a preliminary study of the returned material. After the preliminary examination is complete, all the samples will be made available to the general scientific community for more detailed study. My guess is people will be asking for and working on these samples for decades to come."

BY JOHN BLUCK

Sandford e-mails

continued from page 8

The Stardust mission was the first to return a sample from outside Earth's moon system. Scientists believe the captured cometary material likely contains ancient pre-solar, interstellar grains and remnant material form the formation of the solar system. According to scientists, analysis of these celestial specks may well yield important insights into the evolution of the sun, its planets and possibly even the origin of life.

The Stardust spacecraft was launched on Feb. 7, 1999, from Cape Canaveral Air Station, Fla., aboard a Delta II rocket. For more information about Stardust, visit: http://stardust.jpl.nasa.gov, http://www.astro.washington.edu/brownlee and http://www.nasa.gov/centers/ames/multimedia/audio/sdust/sdust.html

COMPILED BY JOHN BLUCK AND SCOTT SANDFORD

A pioneer in technical services, Virgil Force, passes away

Virgil P. Force passed away on Dec. 17, 2005, with his loving daughter and care taker, Jackie Schuarzenbach, at his side. He was 87.

Virgil Force

Born in Cass County, Ill., Force joined the Navy and graduated from the Navel School in San Diego in November 1944. He ended up being stationed at Moffett Field.

After leaving the Navy, he went to work at Ames (NACA) as a research and development model maker. Most of the projects in those days were wind tunnel models and Force, a gifted craftsman, contributed to the success of many early flight programs such as the SST Project.

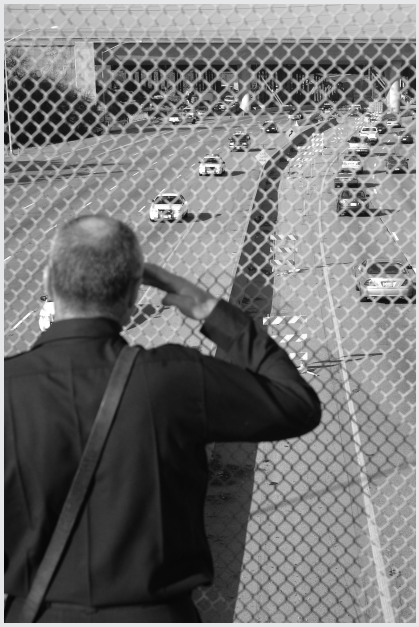
With the dawning of the space age, and the birth of NASA in 1958, there were new technology challenges. Force was instrumental in finding new materials and developing new processes to meet these challenges.

Force worked on many early space flight programs. Most notably, he worked with the astronauts to develop a body and face restraint system, making plaster casts of their faces. He worked on the first prototype models of the AX-5 hard space suit with researcher H.C. (Vic) Vykukal. Force's talent and creativity inspired his fellow craftsmen and earned the respect of the researchers he worked with.

Force was married to his loving wife Sarah until her death in January 1994. He leaves his five children behind, four daughters and one son, along with 10 grand children and eight great grand children.

BY MANUEL FONTES

Paying tribute



NASA photo by Jonas Dino

Ames employees pay their respects as the funeral procession for slain East Palo Alto Officer Richard May passes under the Moffett Field Blvd. overpass on Jan. 12.

Ask the 'Protective Services Wizard'

Guidelines for foreign national visits to Ames

Question:

Could you please describe the procedural requirements and program guidelines for foreign national visits at Ames?

Answer:

Over the last few years, NASA Headquarters has issued revised NASA procedural requirements and guidelines implementing significant changes to the foreign national visits program.

As an Ames employee, it is imperative that you understand these requirements and guidelines in order to make this a successful and effective process.

Ames Research Center has been assigned the responsibility of coordinating and approving / disapproving requests for foreign national access to Ames facilities, information, material and technology, provided they conform to U.S. national security, nonproliferation and foreign policies, U.S. export control regulations and the visit is "of concrete benefit to NASA and the United States".

Only a branch chief or higher can sponsor requests for foreign national visitors (i.e., a foreign national is anyone who is not a U.S. citizen and this includes permanent residents).

Requests for foreign national visitors may be disapproved unless submitted at least 20 business days in advance of the visit start date.

Visitors from designated countries require advanced submission of two calendar months.

For on-site users, visit the Ames Web site on the Internet at https://arcapps.arc.nasa.gov/ to submit a request.

For further details, visit the Ames International Visits Office Web site at http://jp.arc.nasa.gov/SM/IVC_office.html or for immediate assistance with the request process and location, call the International Visits Office at ext. 4-5434, or at ext. 4-1677.

The Lamica saga - a multi-generational family working at Ames

There are several good books that have been written about the history of Ames, but for eyewitness accounts sit down with Joe and Ron Lamica, two members of a three-generation legacy that has racked up over 200 years of service at Ames and Moffett Field.

The Lamica saga begins with Clement Gilbert Lamica, Sr., (Gilbert, Sr.). In January 1942, he was raising horses on property along El Camino Real in Mountain View and repairing pinball machines and similar devices for businesses from Redwood City to San Jose. He was 36, married with five children and had served in the US 11th Mounted 'Black Horse' cavalry stationed at Fort Ord. NACA's Ames Aeronautical Laboratory had just completed building the 7-foot-by-10-foot and the 16-foot wind tunnels along with the electrical substation to provide power for the tunnels. It was gearing up to direct all of its efforts to provide better aircraft designs for the American military. Gilbert, Sr. was hired in 1942 to support the maintenance of the critical substation. He spent 38 years at Ames supporting the electrical substation and other center facilities, retiring in 1979.

The 1959 Flight Research Branch:. Violet Shaw is the second woman from the left in the first row. Gus Brunner is the last man in the first row.

In 1944, Clement Gilbert Lamica, Jr. (Gilbert, Jr. aka Pancho) at the age of just 17 joined his dad at Ames, working in the machine shops building models for the wind tunnels and arcjets and then helping to install them. He worked at Ames for 37 years, less a couple of years he spent with the Army in Korea.

In 1951, Gilbert, Jr. was joined in the machine shops at Ames by his brother Joe. Joe did a good deal of work on wind tunnels, including the 6-foot wind tunnel with Jack Boyd and the 2-foot wind tunnel, as well as working on the unitary. He retired as chief of the Mechanical Operations Branch in 1989, after a career of 38 years, including four with the Naval Air Corp in Korea and Vietnam. Some of the highlights of Joe's career were getting the 2-foot wind tunnel working in the 1970s and working on the F-14 wing root shape problem -- the air-flow was separating and producing high drag and turbulence. Joe came up with the fillet design that solved the problem. Joe became an Ames Associate the year he retired and continues to serve in that capacity. He is working on completing a computerized inventory of all models, unique tools, etc., developed by the Mechanical Operations Branch in its various forms and seeing that they are provided their proper place in the history of Ames.

Violet Shaw was hired in 1956 as a computational technician for NACA by Gus Brunner, becoming part of his team in Hanger N211. Not long after she was hired, she was asked to serve as the receptionist for the visiting chest X-ray trailer. One client was Joe Lamica. A mutual attraction developed and they married in 1957. Vi left in 1960 to raise the family. In 1978, she came back to work at NASA until her retirement in 1996.

In 1975, Gilbert, Jr.'s son, Ronald, was in the De Anza College trade program, studying to be a machine tool tech and planning a cross-country trip on his motorcycle. His dad strongly suggested that he get a job instead, so he interviewed at Ames, was hired under the student program and started learning all aspects of the machine shop, eventually becoming a journeyman. On Jan. 20 of 1978, just a weekend before he was to become a permanent NASA employee, Ron was hit by a car while riding his motorcycle. He lost his leg in the accident. "One of those things, it's life," he says philosophically and grins. "I still ride." In June 1978, he became a permanent NASA employee. Over the years, Ron became proficient in CAD/CAM for the numerical controlled machines in the machine shop, supporting the manufacture of various aerodynamic and sculptured surfaces. Later he managed the planning office and worked on Project Reliance. Some of the highlights of Ron's continuing career at Ames include his presentation to the NASA Administrator (Dan Goldin) and 400 contractor representatives in Washington, D.C. on Project Reliance, which is a study to retain manufacturing skills at all NASA centers instead of consolidating it to a single center. He also remembers his work on the STAR Model (a Boeing 777 semi-span) with project lead Tom Gilbertson and his entire crew, as well as his work with Tom Dixon from NASA Headquarters on the centennial museum display of NASA wind tunnel models. Ron still carries his dad's brass wind tunnel tag. This tag was used by the wind tunnel workers to identify who was in the wind tunnel so it wouldn't be run while they were inside. Joe still carries his tag also.


Gilbert, Jr.'s retirement party,from left to right: Gilbert, Jr., Joe, Marge (Gilbert, Jr.'s wife) and Gilbert, Sr.

Two of Joe's sons have also worked at Ames. Michael spent 10 years working in the mail room and William spent three years in the fabrication shop apprentice program. Finally, we have Joe and Gilbert, Jr.'s brother Richard. He went to work for the United States Post Office in Mountain View, retiring as the postmaster of the Moffett Field Post Office after 40 years of service.

BY LARRY MANNING AND VALERIE ADAMSKI

Events Calendar

Ames Amateur Radio Club, third Thursday of each month, 12 noon, N-T28 (across from N-255). POC: Michael Wright, KG6BFK, at ext. 4-6262.

Ames Ballroom Dance Club. Classes on Tuesdays. Beginning classes meet at 5:15 p.m. Higher-level class meets at 5:50 p.m. Held in Bldg. 944, the Rec. Center. POC: Helen Hwang at helen.hwang@nasa.gov, ext. 4-1368.

Ames Bicycling Club Inaugural meeting on Jan. 18, 2006 in Bldg. 245, Room 215, 11:00 a.m. to 12:00 p.m. Thereafter every 3rd Wednesday of the month 11:00 a.m. to12:00 p.m. in Building 245 auditorium. POC: Julie Nottage at jnottage@mail.arc.nasa.gov or ext. 4-3711. By-laws of Ames Bicycling Club can be found at: http://zen.arc.nasa.gov, the link is under the picture.

Ames Bowling League, Palo Alto Bowl on Tuesday nights. Seeking full-time bowlers and substitutes. Questions to sign up: Mike Liu at ext. 4-1132.

Ames Child Care Center Board of Directors Mtg, every other Thursday (check Web site for meeting dates: http://accc.arc.nasa.gov), 12 noon to 1:30 p.m., N-210, Rm. 205. POC: Cheryl Quinn, ext 4-5793.

Ames Contractor Council Mtg, first Wednesday each month, 11 a.m., N-200, Comm. Rm. POC: Linda McCahon, ext. 4-1891.

Ames Diabetics (AAD), 1st & 3rd Weds, 12 noon to 1 p.m., at Ames Mega Bites, Sun room. Support group discusses news affecting diabetics. POC: Bob Mohlenhoff, ext. 4-2523/e-mail at: bmohlenhoff@mail.arc.nasa.gov.

Ames Federal Employees Union (AFEU) Mtg, third Wednesday of ea. month, 12 p.m. to 1 p.m., Bldg. 221, Rm 104. Guests welcome. Info at: http://www.afeu.org. POC: Marianne Mosher, ext. 4-4055.

Ames Mac Support Group Mtg, third Tuesday of ea. month, 11:30 a.m.to 1 p.m., Bldg. N262, Rm 180. POC: Tony ext. 4-0340.

Ames Model Aircraft Club, flying radio-controlled aircraft at the north end of Parsons Ave. on weekend mornings. POC: Mark Sumich, ext. 4-6193.

Ames Sailing Club Mtg, second Thursday of ea. month (Feb through Nov), from 12:00 p.m. -1:00 p.m. in Bldg. N-262, Rm 100. URL: http://sail.arc.nasa.gov/. POC: Becky Hooey, ext. 4-2399.

Environmental Forum, first Thursday of each month, 8:30 a.m. to 9:30 a.m., Bldg. 221/Rm 155. URL: http://q.arc.nasa.gov/qe/events/EHSseries/ POC: Stacy St. Louis at ext. 4-6810.

The Hispanic Advisory Committee for Excellence (HACE) Mtg, first Thurs of month in N255 room 101C from 11:45 a.m. to 12:45 p.m. POC: Eric Kristich at ext. 4-5137 and Mark Leon at ext. 4-6498.

Jetstream Toastmasters, Mondays, 12 p.m. to 1 p.m., N-269/Rm.179. POC: Bob Hilton at ext. 4-2909, bhilton@mail.arc.nasa.gov.

National Association of Retired Federal Employees, (NARFE). Former and current federal employees. Your only contact with Congress. Join to protect your federal retirement. Chptr #50 will then meet on the first Fri. of each month at HomeTown Buffet, 2670 El Camino (at Kiely), S. Clara, 11 a.m. lunch. POC Earl Keener (408) 241-4459 or NARFE 1-800-627-3394.

Native American Advisory Committee Mtg, fourth Tues each month, 12 noon to 1 p.m., Bldg. 19, Rm 1096. POC: Mike Liu at ext. 4-1132.

Ames named in 'Best Workplaces for Commuters'

NASA Ames Research Center has been designated by the U.S. Environmental Protection Agency on its nation-wide list of 'Best Workplaces for Commuters."

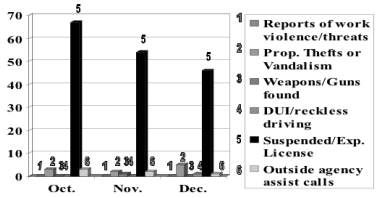
Best Workplaces for Commuters is a voluntary program that nationally recognizes excellence in employer-provided commuter benefits. NASA Ames was recognized for this award because of its commitment to offer a wide range of innovative benefits to employees, including subsidized transit passes, membership in carpool matching programs, offering telework options and providing free rides to/from mass transit on the Ames shuttle bus.

To learn more about Ames Commute Alternatives Program, visit http://jf.arc.nasa.gov/NASA_Only/acap/index.html.

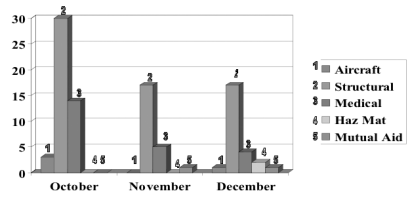
Protective Services monthly activity

A statistical summary of activities of the Protective Services Division's Security/Law Enforcement and Fire Protection Services units for the month of Dec 2005 is shown below.

Security/Law Enforcement Activity



Fire Protection Activity



Hubbard to hold position at SETI

continued from front page

and the only NASA University Affiliated Research Center. He was directly responsible for the Ames Project Columbia, one of the world's fastest supercomputers. The system was conceived, designed and brought on line in a record 120 days. In the fall of 2005, he announced a collaboration with Ames' famous neighbor Google Inc., that allows the Internet search company to build up to 1 million square feet of new research collaboration laboratory and office space and ensures an extensive research partnership between the two entities.

From February to September 2003, he served full time as the sole NASA representative on the Columbia Accident Investigation Board at the request of NASA Administrator Sean O'Keefe. He directed impact testing analysis that established the definitive physical cause of the loss of the space shuttle Columbia.

Another significant accomplishment that occurred during Hubbard's tenure was the November 2005 announcement by NASA Headquarters that NASA Ames had been assigned management of the Robotic Lunar Exploration Program.

"The Robotic Lunar Exploration Program is a critical element of NASA's Vision for Space Exploration," said Exploration Systems Mission Directorate Associate Administrator Dr. Scott Horowitz at the time of the announcement.

Hubbard also secured significant roles for Ames in the development of the space shuttle's replacement, the Crew Exploration Vehicle (CEV) and the new Crew Launch Vehicle (CLV). These roles include leading a multi-center team to develop a thermal protection system for the CEV and designing, developing and implementing the launch mission systems and the command-and-control capability for the CEV and the CLV, and designing, developing and managing

continued on page 14

Ames Classifieds

Ads for the next issue should be sent to *astrogram@mail.arc.nasa.gov* and must be resubmitted for each issue. Ads must involve personal needs or items; (no commercial/third-party ads) and will run on a space-available basis only. First-time ads are given priority. Ads must include home phone numbers; Ames extensions and email addresses will be accepted for carpool and lost and found ads only. Due to the volume of material received, we are unable to verify the accuracy of the statements made in the ads. Caveat emptor!

Housing

Room available for rent in house in mid town Palo Alto, with kitchen, laundry, and pool, $500 plus $50 toward utils, for a quiet, neat, stable and conscientious person or couple. E-mail jims@eos.arc.nasa.gov; ham call wb6yoy.

Furnished housing needed for visiting German researcher (and his wife and small house-trained dog). Visiting Ames April 1 through July 31, 2006. Chris Blanken at (408) 733-7234.

Large room for rent in Newark, private entrance, own bathroom and kitchen. All utilities paid except telephone. Close to all stores, malls, and freeways. $500. Call Jim (510) 828-0315.

Good sized room in 4 bd/2 ba home, excellent, quiet Mtn View area close to Ames. W/D, microwave, wire/wireless cable modem. Tidy person and nonsmoker. Easy access to Ames, H85, 237, & 101. $475 plus dep. and share utils. Avail. March 1, possibly sooner. Call (650) 964-1900.

Miscellaneous

The Ames Cat Network needs help finding homes for cats trapped at Moffett. They range from feral to abandoned/lost pets. Tested, altered and inoculated. Call Iris at ext. 4-5824 if you or someone you know are interested in fostering or adopting a cat.

Oak high chair. Fits up to table like a chair; does not have its own tray. Your child can sit at the table like a big kid. Will e-mail photo if interested. $40. Call (650) 255-3377.

Pioneer 6-disc CD player with (8) extra changer cartridges! Black finish, works perfectly, $35. Call (408) 295-2160.

Novara 16 inch red bike. Used for about one year; in great condition. Will e-mail photo if interested. $60. Call (650) 255-3377.

Child's rocking chair. Light wood with a teddy bear printed padded seat and back. Looks new. Will e-mail photo if interested. $40. Call (650) 255-3377.

1/2 share in Skylane C182A, $24,000. New paint and recent annual. New fuel bladders. Good condition. Basic IFR panel. Can base at LVK, 4Q5, TCY, possibly elsewhere. Key Dismukes (408) 938-0455.

Waterbed - King size, Universal, canopy, pedestal with drawers - beautiful, large, wood frame waterbed, with newish wave free mattress. Moving sale. $800 or B/O. Barry Cunningham (510) 793-4457 or e-mail EZrdrdad@comcast.net

Jet Performance chip state 1 part #294055 for 1994 Chev truck/SUV. RAY (408) 269-4736.

Automotive

'91 Acura Legend LS 4dr sedan. Very clean. Well maintained. 160K mls. White w/tan leather interior. Alpine in-dash cd player w/premium aftermarket speakers. Recently installed: Yokohama AVS db S2 tires, Brembo front rotors, front and rear brake pads. Koyo radiator, 150K service, all performed by certified Acura technician. Needs about a quart of oil between changes. Otherwise, runs great. $2,800. David (510) 387-2453.

'98 Isuzu Rodeo. Good condition, A/C, power steering, windows and door locks. Tilt wheel, cruise control, dual front air bags, roof rack, alloy wheels, silver paint, body has no dent. $4,950. Ricky (510) 396-9149.

Exchange Information

Information about products, services and opportunities provided to the employee and contractor community by the Ames Exchange Council. Visit the web site at: http://exchange.arc.nasa.gov

Beyond Galileo N-235 (8 a.m. to 2 p.m.) ext. 4-6873

Ask about NASA customized gifts for special occasions.

Mega Bites N-235 (6 a.m. to 2 p.m.) ext. 4-5969

See daily menu at: http://exchange.arc.nasa.gov

Visitor Center Gift Shop N-943 (10 a.m. to 4:00 p.m.) ext. 4-5412

NASA logo merchandise, souvenirs, toys, gifts and educational items.

Tickets, etc...(N-235, 8 a.m. to 2 p.m.) ext. 4-6873

Check web site for discounts to local attractions, http://exchange.arc.nasa.gov and click on tickets.

NASA Lodge (N-19) 603-7100

Open 7 days a week, 7:00 a.m. to 10 p.m. Rates from $40 - $50.

Ames Swim Center (N-109) 603-8025

Ames Swim Center, 25 meter swimming pool open and heated year round. (80-82 degrees) Lap swim: Mon, Weds, Fri, 10 a.m. to 1 p.m. and 3-6 Tues to Thurs 10 a.m. to 1 p.m. and 4 p.m. to 7 p.m. Seasonal recreation swim; swim lessons. Locker rooms w/sauna and shower facility. Open to all civil servants and contractors. Location: Bldg. 109 across the street from the tennis courts. Fees vary depending on activity. POC: Tana Windhorst, ext. 3-8025; e-mail: tw4lsb@aol.com

Vacation Opportunities

Lake Tahoe-Squaw Valley Townhouse, 3bd/2ba. View of slopes, close to lifts. Per night: $250, plus $145 cleaning fee. Two night minimum. Includes linens, propane fireplace, fully equipped. Call (650) 968-4155, DBMcKellar@aol.com

South Lake Tahoe cottage w/wood fireplace, hot tub. Rates $50 to $130 per night. Call (650) 967-7659.

Vacation rental, Bass Lake, 4 mls south of Yosemite. 3bd/1.5 ba, TV, VCR, MW, frplc, BBQ, priv. boat dock. Sleeps 8. $1,050/wk. Call (559) 642-3600 or (650) 390-9668.

Big Sur vacation rental, secluded 4bd/2ba house in canyon setting. Fully eqpd kitchen. Access to priv. beach. Tub in patio gdn. Halfway between Carmel and Big Sur. $175/night for 2; $225 for 4 and $250 for more, plus $150 cleaning dep. Call (650) 328-4427.

Tahoe Donner vacation home, 2 bd/2ba. trees, deck. Access to pools, spa, golf, horseback riding, $280 wkend, $650 week. Call (408) 739-9134.

Pine Mountain Lake vacation home. Access to golf, tennis, lake, swimming, horseback riding, walk to beach. Three bedrooms/sleeps 10. $100/night. Call (408) 799-4052 or (831) 623-4054.

Incline Village: Forest Pines, Lake Tahoe condo, 3 bd/2ba, sleeps 8. Fireplace, TV/VCR/DVD, MW, W/D, jacuzzi, sauna, pool. Walk to Lake, close to ski areas. Visit Web page for pictures: http://www.ACruiseStore.com. $120/night low season, $155/night high season (holidays higher) plus $156 cleaning fee and 12% Nevada room tax. Charlie (650) 366-1873.

Disneyland area vacation rental home, 2 bd/1ba. Nearing completion completely remodeled w/new furniture. Sleeps 6 (queen bed, bunk beds, sleeper sofa). Air hockey and football tables. Introductory rate $600/wk, once completed rate will be $1000/wk. Security deposit and $100 cleaning fee required. Call (925) 846-2781.

New York, 5th Ave. One fully furnished bedroom in 24 hour security bldg. overlooking Washington Square Park, $1,000/wk or $3,000/mo. negotiable. Call (650) 349-0238.

Paris/France: Fully furnished studio, 5th Arr, Latin Quarter, Notre Dame and Ile-St. Louis., $1,400/wk. negotiable. Call (650) 349-0238.

Santa Cruz townhouse, 2 bedrooms plus study, 2 baths, decks, totally furnished, 3 blocks from beach, available July, August, September; $1,600 per month. Call (831) 423-5777 (H) or (831) 277-8476 (C).

West Maui vacation at Kahana Falls, across street from beach. Thanksgiving week 19-26 Nov 05, $630/wk. 1bd/2 ba, w/d, fk. For 2 adults, 0 to 2 kids. Call (650) 962-1314 after Aug 7.

San Francisco, Donatello Hotel, small, deluxe hotel, one block from Union Square, 5 nights available to be scheduled either together or individually, $125 per night. Call Barry Cunningham (510) 793-4457 or e-mail EZrdrdad@comcast.net

Vacation rental. Ferndale - The Victorian Village. Victorian home on Main Street a short stroll to the Village which has been designated as a state historical landmark. Enjoy the many holiday activities which include a Christmas parade and lighting of America's tallest living Christmas tree. Four bedrooms (sleeps approx. six), two full baths, large kitchen, dining room, parlor w/fireplace, enclosed desk w/hot tub. For info call (707) 983-9514.

Monterey Bay vacation rental at Pajaro Dunes, 20 miles south of Santa Cruz, 3bd/2ba beach house with distinctive architecture. Beautiful ocean and valley views, only 150 ft from the beach, first-class tennis courts. $500/wkend, $200/addl night, including cleaning by the maid service when you depart. Call (408) 252-7260.

Lake Tahoe cabin rental in Agate Bay, North Shore. 4bd/3ba tri-level, AEK, cable TVs, fireplace, BBQ, deck, sleeps 10. Closest skiing is Northstar, Alpine and Squaw. Rates are $375 a weekend, $1,000 a week. Call (408) 867-4656.

Montana, new lodge and B&B offers hunting, fishing, family reunions, retreats. 6 bedrooms with spectacular views of the Clark Fork River. Call or e-mail for a brochure, prices and hunting deadlines (406) 360-6464 or sambernhardt@msn.com

Astrogram deadlines

Please submit articles, calendar and classified advertisements to astrogram@mail.arc.nasa.gov no later than the 10th of each month. If this falls on the weekend or holiday, then the following business day becomes the deadline.

For Astrogram questions, contact Astrid Terlep at the aforementioned e-mail address or ext. 4-3347.

Ames emergency announcements

To hear the centerwide status recording, call (650) 604-9999 for information announcements and emergency instructions for Ames employees. You can also listen to 1700 KHz AM radio for the same information.

The NASA family remembers

On Jan. 26, the NASA family observed a Day of Remembrance to celebrate and honor our NASA colleagues and friends who gave their lives in service to NASA and the nation in the cause of exploration and discovery.

In observance of the NASA Day of Remembrance, the U.S. flag was flown at half-staff at all NASA centers. On this day we remember the Apollo 1 astronauts - Gus Grissom, Roger Chaffee and Ed White -- who perished in a fire on the launch pad during a training exercise on Jan. 27, 1967.

We also remember the crew of the space shuttle Challenger - Dick Scobee, Michael Smith, Judy Resnick, Ellison Onizuka, Ronald McNair, Gregory Jarvis and the first-to-be teacher in space, Christa McAuliffe, who perished just

more than a minute after lift-off on Jan. 28, 1986.

And we honor the crew of STS-107 - Rick Husband, Willie McCool, Michael Anderson, Ilan Ramon, Kalpana Chawla, David Brown and Laurel Clark - who died just minutes before completing its mission aboard the space shuttle Columbia on Feb. 1, 2003.

Unfortunately, there are many others, less well known perhaps than these astronauts but no less valued, who have lost their lives while pursuing America's dream of exploring space. Let us always be vigilant and determined as we continue to pursue their, and our, journey to explore the cosmos.

Scott Hubbard to hold Carl Sagan Chair at SETI Institute

continued from front page

the integrated systems health management capability for the CEV's ground processing and automation, among others.

To further increase new business at Ames, Hubbard established a new business office and named Wendy Dolci to lead it. The new office is tasked with identifying new business opportunities and boosting revenue to the center by attracting new business partners.

Hubbard also is credited with opening communication channels to keep Ames employees better informed. He held a number of "Inside the Director's Studio" forums and created a new radio program, KARC, that allowed him to share commentary and news items with his audience.

The recipient of numerous awards and honors, Hubbard has been given seven NASA medals: three for 'Outstanding Leadership;' three for 'Exceptional Achievement;' and for his contributions to the Columbia accident investigation, NASA's highest honor, the Distinguished Service Medal. He has been awarded 'Laurels' by Aviation Week magazine three times. Hubbard is an elected member of the International Academy of Astronautics; a Fellow of the American Institute of Aeronautics and Astronautics and recipient of the Von Kármán medal in astronautics, the IAA engineering science award and an honorary doctorate from the Polytechnic University of Madrid. He also is the author of more than 50 scientific papers on research and technology.

Hubbard will assume his new job effective Feb. 15, 2006. Marvin "Chris" Christensen will serve as the acting director until a replacement is identified.

BY LAURA LEWIS

Astrogram

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