

The Ames Astrogram

Communication for the Information Technology Age

November 19, 2001

Ames dedicates site for new Carl Sagan Center

"Our loyalties are to the species and the planet. We speak for Earth. Our obligation to survive is owed not just to ourselves but also to the Cosmos, ancient and vast, from which we spring."

— Carl Sagan

Carl Sagan, who began the quest to unlock the mysteries and potential for life in the cosmos during a lifetime of contributions as an astronomer, biologist, writer, educator and inspiring visionary, was honored this month during a dedication ceremony on the site of 'The Carl Sagan Center for the Study of Life in the Cosmos.'

NASA officials dedicated the site honoring the late internationally renowned astronomer during a festive ceremony at Ames on Nov. 9, 2001. The ceremony was held on an approximately seven-acre site located at the corner of McCord and Edquiba avenues in the planned NASA Research Park. The date of the dedication was particularly significant, since Nov. 9 would have been Sagan's 67th birthday.

NASA Administrator Daniel S. Goldin, who had planned to be present to dedicate the site, suffered a debilitating back injury only days prior to the event and was unable to attend. Instead, a video of Goldin expressing his regrets and extending his best wishes was shown to the capacity audience assembled in a large, elegantly decorated tent.

Deputy Center Director William Berry served as the master of ceremonies for the event, which featured remarks by Center Director Dr. Henry McDonald; Sagan's widow, Ann Druyan; Frank Drake, chairman of the board of the SETI Institute; Louis Friedman, executive director of the Planetary Society that was co-founded by Sagan; Donald Fulop, vice president of business development for Lockheed Martin Space Operations, Houston; and M.R.C. Green-

wood, chancellor of the University of California at Santa Cruz.

"Carl was an incredible visionary, and now his legacy can be preserved and advanced by a 21st century research and education laboratory committed to enhancing our understanding of life in the universe and furthering the cause of space exploration for all time," Goldin said. "There can't be a more fitting title for a center than The Carl Sagan Center for the Study of Life in the Cosmos," he

sense of wonder; one without the other is not enough," she said.

"The Sagan Center will be a huge step forward toward our goal of developing a world-class, shared-use research and development campus in association with academia,



Special guest Ann Druyan gazes at the brass plaque honoring her late husband that will mark the cornerstone of the new Sagan Center.

photos by Dominic Hart

added. "What a wonderful way to celebrate the life of such a talented individual, a man of such passion and intelligence. So let's celebrate the unbelievable contributions that Carl Sagan made in the past and even more important, the incredible contributions to humanity that this center is going to make over the decades ahead."

"No honor would have meant more to Carl than this," said Ann Druyan, his wife and collaborator for 20 years. "He loved NASA, cherished his relationship with Ames, and dreamed that we, as a civilization, would turn our genius to the deep questions of life in the cosmos. This center will be a temple of questioning that will embody the things that made Carl great--both his skepticism and his



Center Director McDonald reflects on the nature of the occasion and the man being honored during the recent Sagan Center dedication event.

industry and non-profits," said McDonald. "I believe that, in retrospect, we will come to view this day as one of the most significant in the evolution of Ames Research Center and establishment of the NASA Research Park (NRP), one that set the tone for the next 20 to 30 years and beyond," he said.

Drake, a longtime friend who knew Sagan for more than 40 years, recounted several memorable encounters with Sagan that occurred over the course of his lengthy friendship with the charismatic astronomer who served on the SETI Institute's board of trustees.

In one incident that occurred during the filming of a segment series at the world-famous Arecibo observatory in Puerto Rico for Sagan's acclaimed 'Cosmos' television series, Drake was asked to stand in for Sagan, who had been called away from the filming.

"In that scene, I think it was either episode 11 or 12, you see Carl walking along the rim of the telescope wearing a black coat and it looks just like him, but it's me," Drake said. Whenever he and other scientists traveled around the world, Drake said people would always ask if they knew Carl Sagan. "Carl has influenced more people than you can possibly imagine," he said.

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Center Briefs

NASA bulldozer rovers could get the scoop on Mars

Tiny bulldozer rovers may some day dish up the dirt and pack it in on Mars. The scoop-and-dump design of a prototype bulldozer rover being developed by NASA engineers mimics that of a bulldozer and dump truck.

Unlike a life-size bulldozer and dump truck, which can weigh several thousand pounds, these rovers are lightweight, intelligent and can work without an operator at the wheel. Yet they have the same capabilities, relative to their size, as their heavy-duty counterparts.

Robotics engineers think the basic research on these bulldozing rovers may support future missions to look for life or sustain a human presence.

NASA helps North Carolina map potential flood zones

NASA scientists have teamed up with researchers in North Carolina in an effort to get relief for the people who find themselves under siege each year by floodwaters spawned by strong Atlantic hurricanes.

The storms bring high winds, storm surges and heavy rains, and the resulting floods force massive evacuations, threatening the lives of thousands of residents.

Using instruments on satellites and airplanes, NASA provides data used to create highly accurate maps of suspected flood zones that can help the state's emergency management services better prepare for future storms.

NASA publishes fifth volume of 'Exploring the Unknown'

NASA has just published 'Exploring the Cosmos,' the fifth volume of 'Exploring the Unknown,' an ongoing series of reference books essential for anyone interested in the history and development of the U.S. civil space program.

Selected documents of interest to those involved in both space history and space policy are grouped into three thematic chapters with an introductory essay for each subject. Chapter one is devoted to the origins and early organization of space science; chapter two covers NASA's planetary exploration efforts; and the third chapter details space-based astronomy and astrophysics.

The book is for sale from the U.S. Superintendent of Documents and from the NASA Information Center. Details on ordering the volume are available at: <http://history.nasa.gov/what.html>

NASA Why? Files TV wins first Emmy

An innovative NASA educational television series, the 'NASA Why? Files,' that reaches millions of elementary students around the world, was recognized on Nov. 2 by the National Academy of the Television Arts and Sciences with an Emmy for 'Best Children's Series.' The series is produced by the Office of Education at NASA's Langley Research Center, Hampton, Va.

SAFETY SNAPSHOTS



This feature is one in a series intended to inform the Ames community about facets of Ames' safety and environmental programs.

Fire Protection

PROFILE

Hazards at NASA Ames Research Center can pack a pretty sophisticated wallop due to the type of high-end research activities we are engaged in. This is in addition to the everyday garden-variety type of hazards associated with typical office and industrial operations. In the case of buildings, new Ames facilities are designed to meet the uniform building code, national fire codes for common hazards and NASA requirements for special hazards. These standards specify safeguards such as fire-resistive construction, protected exitways, alarms and fire-suppression systems. The purpose of these construction standards is to provide for safe presence and movement of personnel and to help assure mission success and property integrity.

CLOSEUP

Occasionally, you will hear the wail of sirens and the roar of heavy engines followed by a sudden blur of yellow-suited professionals at the scene of smoke or just uncertainty. This happens many times a year as the Moffett Fire Department rolls to the scene of an emergency response. A few of these events involve structural fires but most are medical emergencies.

How do we maintain fire safety at Ames? Ed Munyak, Ames fire protection engineer, said that Moffett's old and historic facilities provide a special, yet familiar, challenge. His many years of fire protection experience give him the perspective to resolve safety hazards in old buildings constructed according to outdated codes and to protect against the unique hazards of Ames operations and experiments. Since the government is self-insured (no insurance premiums but also no reimbursement for property damage), protection must be robust and reliable.

Three important issues for all employees to remember about fire safety are:

- be sensitive to energy sources;
- maintain the safety systems that protect you; and,
- be familiar with escape routes, the regular ones and all alternatives.

For more information about the Ames fire protection program, talk with your supervisor. You can also review the Ames Health & Safety Manual, Chapter 20: Fire Protection. The QH web site is located at: <http://q.arc.nasa.gov>, or call the Ames Health and Safety Office at ext. 4-5602.

Fourth annual Holiday Ball to be held on Dec. 8

The Ames Ballroom Dance Club is hosting its fourth annual Holiday Ball on Dec. 8. The fun and lively evening will include DJ music, showcase dancers, door prizes and lots of great hors d'oeuvres.

Stop by the ticket table at the Ames Mega Bites cafeteria Tuesdays through Thursdays, Nov. 20, 21, 27, 28, 29 and Dec. 4 and 5, or contact Steve Thomas at ext. 4-1023, no later than Dec. 5.

Holiday Food and Toy Drive
Supporting Sacred Heart Community Services
December 3 thru December 14
 All Ames Mail handlers are now wrapped to say hello and drop off in the Ames Mega Bites Café between Monday, December 3 and Friday, December 14. Your support is greatly appreciated! For more information, contact Angela Ortega at ext. 4-1733.
 Sponsored by the Ames Exchange



Planning your holiday buffett

Too busy to cook during the holidays? Having a department or group party? Let Ames' Mega Bites cook your holiday turkey or buffet. They offer a full buffet menu or can just cook a turkey with potatoes and/or a vegetable. You can also order pies for that special occasion.

Holiday buffett menu: turkey w/cranberry sauce and gravy; ham; garlic mashed potatoes; string beans; stuffing; rolls, coffee, assorted sodas; dessert (pumpkin or pecan pie); \$20 per person. One whole turkey, cooked, \$45 (sliced, \$5 extra.) Serves approximately 40. One whole cooked ham, \$55 (sliced, \$5 extra.) Serves approximately 50. Garlic mashed potatoes, \$1 per person. Vegetable, \$1 per person. Pie choices are: pumpkin, apple, cherry and pecan.

All that is required is 72 hours notification. If you would like to place an order or you have any questions, email jhorner@mail.arc.nasa.gov or email kmcintyre@mail.arc.nasa.gov

The differences between culture and race

How many times have we confused someone from one country with someone from another? Does it make a difference, even if they speak the same languages in both countries? It most certainly does. While the two might share a common language, their customs and the manner in which they use certain words are, in all likelihood, vastly different. Within the borders of any given country, even here, there are countless microcosms of culture and language. A person from New York City and a person from El Paso, Texas for example, might have drastically different perceptions of each other and the manner in which they communicate, even though they speak the same language.

This uniqueness of culture holds true for the rest of the world as well. Part of the pride that people enjoy in their culture derives from the things that are exclusive to it. To assume that a person is from a particular place, based solely on appearance or language, is to overlook those qualities that are important to that person's culture and distinguish theirs from others.

When two people meet and are clearly from very different backgrounds, for example, one might ask the other where he/she is from. The response that one might expect is a country outside of the U.S., but when the response is Hoboken, N.J. or the like, it might seem unusual. The person that they are addressing the question to might also be offended that the first thing someone

wants to know about them concerns their race. So, when is it appropriate to ask about someone's culture? It really depends on the individual. On one extreme, a person might prefer not to discuss their cultural background, instead concerning themselves with being assessed on their personality or ability, assuming that their background may sway opinions and perceptions. They may also simply not feel it relevant to discuss something as personal as their culture with those they are not familiar with. On the other extreme, one might find people who are eager to discuss their cultural background freely and openly.

The most appropriate way of introducing the subject is to take the time to get to know the people that we are talking to. If we let the first thing we know about a person be their roots, they might assume that we are gathering an impression of them before we have a chance to know them personally. Whatever information we get from them should be of substance, which will allow us to walk away from the conversation with an impression of that person individually. Embracing the strengths within our differences is a means of expressing respect for the people and consequently the cultures that make up this wonderful country and magnify the force of our combined abilities.

BY AMES' EQUAL OPPORTUNITY PROGRAMS OFFICE

Ames Director visits mail services operation



photo by Dominic Hart

Center Director Harry McDonald made a visit to the Ames mail handling facility in Bldg. 255 on Oct. 25 to speak with mail handlers, inspect the center's mail handling procedures in the light of recent terrorist activity, and offer reassurance and support for those performing this vital center operation and delivery service. Shown here in foreground (left to right) McDonald and his Executive Assistant Jack Boyd chat with Logistics Branch chief Paul Pinaula and mail room contract supervisor Gregory Bennett. In background, left to right, brothers Christopher Cook (with hat) and Michael Cook; both are deaf and work at Ames as mail carriers.

NASA smart surgical probe to begin clinical tests

A revolutionary early breast cancer-detection tool based on NASA technology began human clinical trials recently after receiving the go-ahead from the Food and Drug Administration.

Dublin, California-based BioLuminate Inc., the start-up company licensed by NASA to develop, produce and market the 'Smart Surgical Probe,' began human testing on volunteer patients at the University of California (UC) Medical Center in Davis and at the University of California, San Francisco (UCSF). The Smart Surgical Probe originally was developed by Dr. Robert Mah at Ames.

"This device is being developed to make real-time, detailed interpretations of breast tissue at the tip of the needle," said Mah. "The instrument may allow health care providers to make expert, accurate diagnoses as well as to suggest proper, individualized treatment, even for patients in remote areas," he said. The probe is a small, disposable needle with multiple sensors. This technology and resulting product may enable physicians to diagnose tumors without surgery, thereby dramatically reducing the number of unnecessary breast biopsies women undergo annually.

Smart Probe's sensors begin gathering information the moment the needle is inserted into tissue. Computer software eventually will compare the real-time measurements to a set of known, archived parameters that indicate the presence or absence of cancer, and display the results on a computer screen.

Over 200 patients who are scheduled for a surgical biopsy will be invited to volunteer to be tested with the Smart Probe prior to their medical procedure. Recorded data then will be used to 'teach' the probe to distinguish cancerous tissue from benign.

"With the knowledge gained from this study, we will be able to develop the first 'commercial' prototype. That prototype will be used in our next clinical study, which will involve nearly 10,000 women," said BioLuminate President and CEO Richard Hular. "The data we acquire each time the needle is inserted into a suspicious lesion later confirmed to be cancerous enables us to teach the computer to become more accurate and recognize cancerous tissue on its own."

Every week in the United States, approximately 18,000 surgical breast biopsies are performed on women with suspicious breast lesions that later are determined to be benign. By taking the Ames Smart Probe and developing it further in collaboration with the Lawrence Livermore National Labora-

tory, Livermore, Calif., BioLuminate hopes to produce a real-time-measurement instrument that will reduce the need for unnecessary surgery. "If we are successful, the probe will significantly improve women's health care, and could potentially reduce annual health care costs," said Hular.

"With BioLuminate, we have taken the multi-sensor NASA concept, selected new optical sensor technology and packaged it into a thin needle-sized instrument that can pinpoint whether a tumor in the breast is cancerous or benign," said John Marion, Lawrence Livermore National Laboratory's principal investigator for the Smart Probe.

"The BioLuminate needle offers the potential to improve localization of cancer tissue, eliminate removal of tissue and the associated complications and, most importantly, get more accurate information for diagnosis," said Lydia Howell, M.D., director of cytology and professor of pathology at UC Davis. "The information obtained by the needle also has the potential to be useful in predicting how a cancer may behave. The needle may be able to not only distinguish benign lumps from cancerous lumps, but also to distinguish which cancers are more aggressive so the patient can receive stron-

ger therapies."

"This is an exciting technology that has immediate and future promise to improve the treatment of breast cancer," said Laura Esserman, M.D., MBA, director of the Carol Franc Buck Breast Care Center at the UCSF Comprehensive Cancer Center. "I also am excited by the possibility that this technology would help us to evaluate the presence of residual disease at the time of surgical excision, thereby reducing the need for additional surgery for women who are being treated using breast conservation."

On Oct. 29 and 30, BioLuminate's Smart Surgical Probe was showcased at the "Medtech Insight" IN3 East Fall 2001 conference in New York City. At approximately the same time, human testing began at UC Davis Medical Center.

"The commercialization of this NASA technology is an outstanding example of applying space research technology to bring health care benefits down to Earth," noted Phil Herlth, of the Ames Commercial Technology Office.

BY VICTORIA KUSHNIR ▲

Fall Fun Walk and Run draws crowd



photo by Dominic Hart

Participants in the Ames two-mile Fall Fun Walk and Run event sprint from the start line during the Oct. 23 spectacle. Over 350 participants completed the course. Greg Laughlin, the first place male runner, completed the two miles in 11:42 minutes. Adriane Steinacker, the first place female runner, completed the course in 13:12 minutes.

Ames employees dress up for the 'spooktacular' occasion

Ames employees dressed up on Halloween, many of them entering the Ames Halloween costume contest sponsored by the Ames Exchange. The Exchange also sponsored a pumpkin carving contest. Both events were held in the Ames Mega Bites cafeteria.



photos by Tom Trower



NASA software 'builds' facilities in virtual world

Virtual reality software developed to help explore Mars may help contractors 'build' complex industrial facilities, even before breaking ground.

The Mars Map virtual reality software guided NASA scientists through the 1997 Mars Pathfinder mission by allowing scientists and operations personnel to command and control remote robotic spacecraft within a virtual environment. The 3-D imaging software was developed at Ames. San José-based Reality Capture Technologies, Inc. (RCT), which recently received a license for further development of the platform, has made this part of its integrated life-cycle information-management platform.

"RCT's software platform enables fast-track design and construction at lower risk and reduced costs," said Reality Capture Technologies CEO Dr. Ted Blackmon. "It is a highly advanced, computer-integrated management tool that reduces rework and schedule and cost overruns on complex construction projects."

One of RCT's first software modules enables engineers to complete construction sequences and test various aspects in virtual reality before building an actual structure. By fusing software systems used during the design stage with those used during construction, RCT provides virtual access to a construction site and permits project personnel to manage, assess, control and respond to changes in complex construction projects more effectively.

"RCT's products help our customers to deliver their products to market sooner and facilitate ongoing maintenance of a production plant," Blackmon said. "This translates directly into increased revenue potential and lower operating costs for our customers and has a positive effect on a corporation's bottom-line profitability."

An Ames science team originally developed Mars Map to create a photographic-quality rendering system. Mars Map allowed researchers to better understand the surface of Mars and perform more effective science by providing an accurate visual representation of the planetary terrain.

"The Mars Pathfinder mission was the first test of this new class of photo-realistic virtual reality systems," said Dr. Michael Sims of Ames, who managed the Mars Map development team. "Mars Map made a big difference in our understanding of Mars during Pathfinder, and made us realize that this technology could be an extremely powerful tool for the rendering of the world."

"RCT uniquely addresses the link between various stages of a facility's 'life-cycle,' leveraging information generated during the design stage through construction and subsequently into operations and maintenance," said Blackmon. "By leveraging advanced software originally developed at NASA for the space program, we are able to effectively 'bridge the islands of automation' that exist

in the engineering/construction/operations industry today, and interconnect traditionally stand-alone software systems into an end-to-end distributed computing platform."

"This company is a resident of the Ames Technology Commercialization Center, a technology incubator located in San José,"

said Phil Herlth of Ames' Commercial Technology Office. "This successful transfer of the software demonstrates how NASA's commercial technology offices perform their mission of maximizing NASA's research efforts.

BY VICTORIA KUSHNIR ▲

Ames dedicates Carl Sagan Center

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Drake recalled that Sagan was very concerned with the question of whether or not there was life in the universe.

"This question of 'are we alone in space' was of the utmost importance," Drake said. And the new Carl Sagan Center bears on that question. It rises above the importance of

Bingham, agreed. "The lab represents an unprecedented, futuristic venue for scientific collaboration," she said. "It will be open to the broad scientific community and is specifically designed to increase the interplay of scientists in fields for which there is no obvious common ground. A modular design contains the planned laboratories but also provides flexibility for change and evolution," she added.

As currently planned, the Sagan Center will consist of three 30,000-square-foot laboratory modules, with the potential to add a fourth at a later date, and a 30,000-square-foot public gallery exhibition area and a 500-



The distinguished guests pose with the unveiled cornerstone following the recent Sagan Center ceremony.

just another science laboratory."

The Carl Sagan Center site dedication came after months of work, according to officials. NASA Ames Research Center and Lockheed Martin representatives signed a historic agreement on March 22, 2001, after working for over 15 months on potential areas for research and technical collaborations. The agreement committed both sides to initiating the development of a collaborative research facility and office complex in the NRP in order to pursue collaborations with NASA and other NRP partners, especially the University of California.

"We're delighted that, with this site dedication ceremony, we move another step closer to making the Sagan Center a reality," said Lockheed Martin's Fulop. "It is fitting that this 21st century laboratory be named for the 20th century's most articulate and passionate advocate of space exploration. The Sagan Center, the product of an innovative public-private sector partnership, will attract and promote collaborative research and development among its partners in industry, academia and NASA."

NASA Ames Associate Director and manager of the laboratory facility design, Nancy



Sagan's widow, Ann Druyan, addresses the crowd at the recent dedication event.

seat auditorium.

"The Carl Sagan Center will provide an exceptional opportunity for leading-edge, multi-disciplinary research in support of NASA's mission to understand 'are we alone in the universe?'" said NASA Ames Deputy Director for Research Scott Hubbard. "Scientists will conduct both basic and applied work that will further our understanding of life's origins, evolution and future. Researchers will integrate new findings in nanotechnology, biology and information technology to develop new miniature tools for sample analysis and data understanding," he said.

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Noted astrobiologist receives MacArthur fellowship

Astrobiologist Dr. Chris Chyba -- who lectured just last month at the Ames-co-sponsored astronomy lecture series at Foothill College -- was awarded the prestigious MacArthur Foundation Fellowship last month.



Dr. Chris Chyba

The so-called 'genius' award, one of 23 granted each year by the Chicago-based MacArthur Foundation, honors individuals "who show exceptional merit and the promise of continued and enhanced creative work." The award carries no obligations and the recipients are urged to "follow their own creative, intellectual and professional inclinations."

On Oct. 10, Chyba spoke on 'Life in the Universe: Is it Just Around the Corner?' to a near-capacity crowd at Foothill's Smithwick Theater. Afterward, he fielded audience questions ranging from "are there UFO's?" to "please give me a layman's description of Einstein's Cosmological Constant." An edited videotape of the lecture will be available this month on the Ames Astrobiology Integration Office web site at: <http://www.astrobiology.arc.nasa.gov>

Chyba was once a student of astronomer Carl Sagan at Cornell University. He currently holds the Carl Sagan Chair for the Study of Life in the Universe at the SETI

Institute. His work there focuses on the presence of life in the solar system, especially on Jupiter's moon, Europa. As director of SETI's Center for the Study of Life in the Universe, Chyba oversees over three dozen cosmic biology research projects at home and abroad.

Chyba recently led the science definition team for NASA's orbital reconnaissance of Europa that will look for a liquid ocean there and determine potential landing sites for future NASA lander missions.

In addition to his astrobiology work, Chyba has long been involved with issues of biological terrorism, public health and nuclear nonproliferation. He co-directs the Stanford University Center for International Security and Cooperation (CISAC) and is an associate professor of geological and environ-

mental sciences. Since Sept. 11, Chyba has written editorials on bioterrorism, international security and related issues in The New York Times and other publications.

The second lecture in the astronomy/astrobiology lecture series at Foothill College, sponsored by Ames, Foothill College, the SETI Institute and the Astronomical Society of the Pacific, took place on Nov. 14 at 7:00 p.m., featuring Dr. Lynn Cominsky of Sonoma State University discussing 'Exploding Stars/Blazing Galaxies and Giant Black

Holes: The Extreme Universe of Gamma Ray Astronomy.'

BY KATHLEEN BURTON ▲

Hernandez Engineering Inc. names new CFO

Hernandez Engineering, Inc. (HEI) of Houston, recently named Kevin M. Denny its Chief Financial Officer (CFO). Denny has been with the engineering and technical services company for 12 years. During that time, he served as the contracts and procurement manager and was responsible for all contract and subcontract formulation, negotiation and administration activities, as well as leading a multi-million dollar a year



Kevin Denny

procurement organization.

Denny holds a bachelor's degree in biomedical engineering from Texas A&M University and a master's degree in finance from the University of Houston. He has over 20 years experience in the engineering and financial aspects of manned spaceflight operations.

VPP STAR Tip:

"The warm relationship between personnel at the VPP sites and their governmental evaluators is a strong contrast to the business stereotype of OSHA as intrusive, unreasonable, and distinctly unhelpful.."

...Margaret Richardson, in Preparing for the Voluntary Protection Programs, Copyright @ 1999 by John Wiley & Sons, Inc. Reprinted by permission of John Wiley & Sons, Inc.

United States Senate

WASHINGTON, DC 20510

November 5, 2001

The Honorable Dan Goldin
 Administrator
 National Aeronautics and Space Administration
 Washington, DC 20546-0001

Dear Mr. Administrator:

We are writing to express our strong support and to urge your continued support for the NASA Ames Research Center at Moffett Field, California. NASA Ames has a well-established record as a federal research laboratory and is critical to the long-term research and development success of California and the nation. Under your guidance, NASA Ames has emerged in recent years at the forefront of information technology, biotechnology and nanotechnology research. Much of this success is due to the Center's expert staff, and to its innovative collaborations with high-tech companies and universities in the Silicon Valley, as well as your visionary leadership and support.

The important work of NASA Ames scientists continues with such major programs as SOFIA, also known as the world's largest flying observatory, and the Centrifuge, which will serve as the core biological research facility for the International Space Station. NASA Ames researchers, together with the FAA and industry, are essential to developing the information technology tools that will untangle our crowded airspace.

We urge you to provide continued support and funding for the future-oriented programs at Ames. Its demonstrated ability to leverage the resources of world-class companies and universities will provide the American taxpayer with the greatest outcome for their dollars and assure NASA of its continued world leadership in the 21st Century.

Sincerely,



Barbara Boxer
 United States Senator



Dianne Feinstein
 United States Senator

Ames dedicates site for new Carl Sagan Center

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"A genomics and microbiology laboratory will be used to understand the fundamental processes of living systems drawn from a variety of different environments," Hubbard added. "A new biosensors facility will enable development of devices to study the fingerprints of life, both here on Earth and on other planets. Tiny devices that mimic or replicate the processes in living systems will emerge from the nanotechnology laboratory," Hubbard predicted.

"We are planning the UCSC Silicon Valley Center for research, education and community service to be located in the NRP," said University of California at Santa Cruz chancellor Greenwood. "We are very excited about becoming the primary research collaboration partner in the new Sagan Center facility with industry and NASA."

The event was covered by a host of news media organizations, including KGO-TV Channel 7, KNTV-TV Channel 11, Tech TV, the San Francisco Chronicle, the San José Mercury News, Astronomy magazine and the Palo Alto Weekly. Additional news coverage was provided by Nature magazine, KGO news radio, KLIV news radio, and the Mountain View Voice. Following the dedication ceremony, the assembled guests enjoyed lunch served at tables covered in silver tablecloths adorned with pictures of the planets in the cosmos.

The laboratory project is permitted under the Environmental Assessment conducted under Ames' 1994 Comprehensive Use Plan (CUP). As proposed, the project, including a new office complex, could include approximately 700,000 square feet of new construction in the NRP on more than 21 acres. The laboratory itself would comprise approximately 120,000 square feet. Other NRP partners are participating in an environmental entitlement process called an Environmental Impact Statement (EIS) that NASA is currently conducting. The EIS, once adopted, would permit new construction, in addition to that allowed by the 1994 CUP.

BY MICHAEL MEWHINNEY 

VPP update - what's in your pipes?

During the Ames VPP preliminary assessment, OSHA provided input on ways we could improve our health and safety program. Some of OSHA's recommendations were related to infrastructure. Highly visible, yet clearly unidentified, piping systems garnered much of OSHA's attention.

OSHA regulations require labeling of piping. Why? There are very real hazards posed with certain pipe transfer systems. This could be due to the material they contain or the pressure they are under. These pipes must be labeled as to the contents and intended direction of flow. These requirements apply to Ames and are documented in ASME A13.1-1996, Scheme for the Identification of Piping Systems. Examples of hazards related to materials in piping systems at Ames include:

1. chemical reactivity (e.g., propane, butane, hydrogen gas),

2. chemical toxicity (e.g., acids),
3. radioactive materials,
4. pressurization hazards (e.g., air, other compressed gas), and
5. thermal hazards (e.g., steam, hot fluids, cryogenic materials).

A review of some piping systems at Ames has revealed that a number of them are not adequately labeled. To better protect maintenance and facilities personnel from these hazards, Ames managers and the Plant Engineering Branch are working together to label piping systems. Additionally, Ames is modifying documents that address pipe labeling including contract specifications and the Ames Safety and Health Manual. If you have questions about pipe labeling, contact Ernie Jennings (Code FEF) at ext. 4-6023, Steve Frankel (Code JFP) at ext. 4-4214 or Michael Hulet (Code QH) at ext. 4-0268.

Ames senior managers receive Presidential Rank awards

Two members of the senior management team at Ames have been selected for Presidential Rank awards, an honor for outstanding leadership reserved for a select group of executives in the federal government.

Deputy Center Director William E. Berry was named to the rank of Distinguished Executive. Dr. Steven F. Zornetzer, chief of the Office of Information Sciences and Technology, received the Meritorious Executive award.

"I am very proud and gratified that the outstanding leadership of Bill Berry and Steve Zornetzer has been recognized by the President with these prestigious awards," said Ames Director Dr. Henry McDonald. "Both have proven themselves to be outstanding, dedicated leaders who are extremely deserving of these awards."

President George W. Bush announced the names of the award recipients last month at Constitution Hall in Washington, D.C. The awards will be presented during a ceremony next spring. In his remarks, Bush noted that although the honorees' work covers a variety of areas and issues, "They share some things in common: an outstanding work ethic, commitment to public service and pride in a job well done."

Berry, who began his career at Ames in 1966, has served as the center's Deputy Director since November 1997 and serves as Ames' Chief Operating Officer. He was recognized for his efforts to make Ames more effective and to create a new vision for its future. Among other contributions, the President's award recognizes him as the driving force in the development of the NASA Research Park, a first-of-its-kind research and development center.

Berry conceived and is implementing a joint economic development plan with other federal agencies, community leaders, major universities and the private and non-profit sectors to transform the former Navy facilities and land at Moffett Field into a world-renowned, federally owned research and development complex. It is an innovation whereby the federal government has invited a consortium of institutions of higher learning and the leading elements of private industry in Silicon Valley to join in a concerted, cooperative effort to create a stimulating environment for basic and applied research in the nation's leading technological area.

The broad range of interests found at Ames, featuring information technology and biotechnology, will serve as the foundation for this new approach in continuing the advance of science and technology. NASA Administrator Daniel Goldin has stated, "The

innovations and scientific discoveries of the future will not come from NASA, industry or universities alone. They will come from us working together...NASA Ames, which has critical R&D responsibilities in information technology, biotechnology and nanotechnology, is partnering with one of the world's best public higher education systems."

Berry earned a bachelor's degree in mechanical engineering from Drexel University. He has a master's degree in management through Stanford University's Sloan Fellowship program in 1986 and received a Meritorious Rank in 1996. He was recognized with a NASA Outstanding Leadership Medal in 1998.

Zornetzer, who earned a doctorate degree in biological sciences from the University of California, Irvine, is an internationally recognized leader in revolutionary, information technology-based approaches to aerospace and space exploration missions. His expertise ranges from basic research in cognitive, perceptual and neural sciences to biological information processing, molecular biology, genetic engineering and biomedical science. Before joining NASA in 1997, he headed the Personnel Optimization and Biomolecular Science and Technology Department for the Office of Naval Research, where he was widely recognized for his leadership and vision. He received a Meritorious Rank in 1991.

Zornetzer led Ames' efforts in radical

technological change in aircraft development, with oversight of the Intelligent Flight Controller, neural network software that can adapt and reconfigure itself in response to structural changes in the aircraft. This software also allows rapid prototyping of radical new aircraft designs in half the time of existing technology.

He oversaw development of the Surface Movement Advisor (SMA) program, which aids airport ground controllers in better managing taxiways and gate access for greater airport capacity and safer operation. The prototype has been installed at the Hartsfield International Airport in Atlanta and is saving approximately \$20 million per year.

Presidential Rank awards are bestowed each year on a small group of the government's Senior Executive Service (SES). There are two categories of awards, Distinguished Executives and Meritorious Executives. Award winners are chosen through a rigorous selection process after being nominated by the head of their agency, evaluated by boards of private citizens, and approved by the President. The evaluation criteria focus on the executive's leadership in producing results.

Only 1 percent of SES members receives the rank of Distinguished Executive for sustained extraordinary accomplishment. The Meritorious Executive award is given for long-term accomplishments. Only 5 percent of career SES members may receive the award.

BY ANN HUTCHISON ▲

Ames Internal staff briefing set

NASA Ames Research Center has scheduled an internal staff briefing to receive comments from employees on the Draft Environmental Impact Statement (DEIS) for the NASA Ames Development Plan at NASA Ames.

The initial meeting will be held on Dec. 3 from 1:00 p.m. to 4:00 p.m. at the Moffett Training and Conference Center. Additional meetings will be held at the following times and locations:

- Dec. 10, 1:00 – 4:00 p.m., Building 3
- Dec. 11, 1:00 – 4:00 p.m., Building 223
- Dec. 12, 6:00 – 9:30 p.m., Mtn. View City Council
- Dec. 13, 6:00 – 9:30 p.m., Sunnyvale City Council

In addition to verbal comments given during the meetings listed above, the public is invited to submit written comments to NASA Ames Research Center by Jan. 15, 2002. Comments should be submitted to:

Ms. Sandy Olliges
NASA Ames Research Center
Mail Stop 218-1
Moffett Field, CA 94035-1000
Or

e-mail to: researchpark@arc.nasa.gov

For more information, please contact Mike Mewhinney at ext. 4-9000.

1,024 supercomputer improves climate predications

NASA scientists are now able to evaluate the global impact of natural and human-induced activities on climate and better predict probable climate patterns in the future, thanks to the world's first 1,024-processor supercomputer.

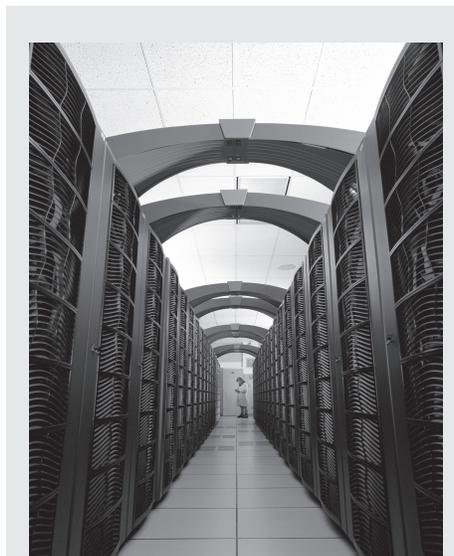
The newly installed 1,024-processor machine at Ames, along with a 512-processor supercomputer at NASA's Goddard Space Flight Center, Greenbelt, Md., are producing a 10-fold improvement in Earth science applications. Scientists say the performance gains achieved on these supercomputing systems will allow the United States to develop objective policies for large, future industrial activities, such as urban planning, and for examining alternative plans for urban development. The supercomputers -- SGI™ Origin™ 3800 machines -- also can portray current climate more quantitatively and simulate future global warming scenarios.

"The new 1024-processor SGI Origin 3800 supercomputer at Ames will lead to faster and better development of climate models for the Earth science community, government and industry," said William Feiereisen, chief of the NASA Advanced Supercomputing (NAS) division at Ames. "We have improved our ability to merge observed data and simulation by a factor of 10 with considerably greater increases in the core climate solver. Such a substantial increase in performance allows Earth scientists to complete climate simulations in days, rather than months, leading to a better understanding of how human activity has changed climate patterns."

For the past three years, Ames and SGI have been testing the limits of single-system-image shared memory, in which all processors share the supercomputer's memory as if it were a single entity, to improve performance significantly over other clustered architectures. A series of joint research agreements between SGI and NASA Ames has resulted in SGI expanding the original SGI Origin 2000 product offering from 128 to 512 CPUs, and most recently from 512 to 1,024 CPUs for the SGI Origin 3000 product line.

"The new techniques have demonstrated a development path that will allow us to move forward to 100-times performance improvements over the next few years," said James Taft, co-director of the Advanced Computing Technologies Group at Ames. "At these performance levels, we can begin to execute climate simulations at truly high resolution, while taking advantage of the huge data streams emerging from the latest Earth resources satellites."

To improve the prediction capabilities of the climate models, the 1,024-processor SGI Origin 3800 supercomputer at Ames assimilates thousands of gigabytes of observational data from the whole Earth to create a database for verifying the physics of the computer model. Ames then backs up a few years and runs the climate model to see how good its predictions are. The computer models then can be adjusted to improve their accuracy for future predictions.



The world's first 1,024-processor supercomputer, newly installed at Ames, allows NASA scientists to evaluate the global impact of natural and human-induced activities on climate and better predict probable climate patterns in the future.

A memorandum of agreement with Ames placed a separate 512-processor SGI Origin 3800 supercomputer at NASA Goddard, which is only the second site in the world to put an SGI Origin 3800 of this type into production.

"This collaboration between Goddard and Ames to acquire the latest supercomputing technology grants NASA scientists a significant new capability for understanding the intricacies of our planet's climate system," said Dr. Ghassem Asrar, Associate Administrator for the Office of Earth Sciences, NASA Headquarters, Washington, D.C. "For instance, the Goddard Institute for Space Studies has been able to complete in two months research that would have taken six months on their previous computing platform. This latest supercomputing technology will grant NASA scientists a significant new capability

for understanding the intricacies of our planet's climate system and being able to simulate them," Asrar added.

The primary user of the new SGI Origin 3800 supercomputer is Goddard's Data Assimilation Office (DAO), which is preparing for the Aqua satellite by building NASA's next-generation software for incorporating observations into global climate models. Data assimilation uses observations from satellites and other sources to define the physical processes that make up weather and climate.

"With the SGI Origin 3800, NASA will more than double the amount of data it ingests to 800,000 observations each day," said Dr. Richard B. Rood, DAO senior scientist and acting director of the NASA-NOAA Joint Center for Satellite Data Assimilation. "We will also integrate assimilation systems for several satellites so that, like the real Earth, the impact of one type of data will be felt by another type of data."

The SGI Origin 3800's processing power, along with the multi-level parallelism (MLP) software developed by Taft, which takes advantage of its unique memory design, will enable the DAO climate models to run more than four times faster and at double the resolution. Climate models divide the globe into a grid of stacked boxes, solving the relevant equations in each box and then assembling the full results. With a box only 1/2-degree wide (or 30 miles over the continental United States), the model will more faithfully represent atmospheric conditions worldwide for periods as long as 15 years.

"These advances will reduce uncertainties in the climate assessments that are an essential ingredient of the U.S. Global Change Research Program," Rood noted.

BY MICHAEL MEWHINNEY ▲

Ames' workplace injury/illness report

Two civil servants and four contractors reported to the health unit in October with work-related illnesses or injuries. First aid was given in two cases; none of the cases resulted in any lost work time.

Event Calendar

Model HO/HON3 Railroad Train Club at Moffett

Field in Bldg. 126, across from the south end of Hangar One. Work nights are usually Friday nights, 7:30 p.m. to 9:30 p.m. Play time is Sundays, 2 p.m. to 4 p.m. Call John Donovan (408) 735-4954 (W) or (408) 281-2899 (H).

Jetstream Toastmasters, Mondays, 12 noon to 1 p.m., N-269/Rm. 179. Guests welcome. POC: Samson Cheung at ext. 4-2875 or Lich Tran at ext. 4-5997.

Ames Bowling League, starts Sept 4. Palo Alto Bowl on Tues nights. Seeking full-time bowlers and substitutes. Pre-league meeting at Palo Alto Bowl on Tues, August 28 at 6 p.m. Questions to sign up: Mike Liu at ext. 4-1132.

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

Ames Child Care Center Board of Directors Mtg, Every other Thursday (check website for meeting dates: <http://acc.arc.nasa.gov>), 12 noon to 2 p.m., N-269, Rm. 201. POC: Joan Walton, ext 4-2005.

Ames Federal Employees Union (AFEU) meeting, Nov. 21, 12 p.m. to 1 p.m., Bldg. 19, Rm 1042. Info at: <http://www.afeu.org>. POC: Marianne Mosher at ext. 4-4055.

Native American Advisory Committee mtg, Nov. 27, 12 noon to 1 p.m., Building 19, Rm 1096. POC: Mike Liu at ext. 4-1132.

Ames Contractor Council Mtg, Dec 5, 11 a.m., N-200, Comm. Rm. POC: Paul Chaplin at ext. 4-3262.

Environmental, Health and Safety Monthly Information Forum, Dec 6, 8:30 a.m. to 9:30 a.m., Bldg. 19/Rm 1040. URL: <http://q.arc.nasa.gov/qe/events/EHSseries/> POC: Julie Quanz at ext. 4-6810.

Nat'l Association of Retired Federal Employees, (NARFE), Dec. 7, S. J. Chapter #50 mtg, 9:30 a.m., Harry's Hoffbrau, 390 Saratoga Avenue, San José (cross St. Kiely near Stevens Creek). Lunch at 11 a.m. Senior special, followed by Christmas program. POC: Earl Keener (408) 241-4459 or NARFE 1-800-627-3394.

Ames Amateur Radio Club, Dec 20, 12 noon, N-T28 (across from N-255). POC: Michael Wright, KG6BFK, at ext. 4-6262. URL: <http://hamradio.arc.nasa.gov>

Ames Classifieds

Ads for the next issue should be sent to astrogram@mail.arc.nasa.gov by the first Friday following publication of the present issue 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.

Housing

3 bd/1.5 ba, 2-story twnhse on Luz Avenue, San José. Freshly painted inside, dishwasher, gas heat, w/w carpet, outside child play area/large patio. 1 car port. Easy access to H101/680/280. \$259K. Azucena (408) 559-2881.

Shared housing on SV/MV border: \$850 rent (utils inc.) 2 bd/2ba, spacious closets, priv. bthrm, fireplace, D/W, priv. patio, covered parking. Complex includes: pool, BBQ area, sauna, guesths. Female student/prof'l preferred. Apartment is available 11/23/01. Call (650) 903-0815.

Quiet, shaded 1bd/1ba condo for rent between Ames and downtown Mtn View. Front and rear patios, lots of greens, carport, plenty of guest parking. Amenities: clubhouse, pool, hot tub, tennis courts, enclosed bicycle storage, laundry room. \$1,500/mo plus deposit, N/S, restrictions on pets. Available Dec. 1. Call (408) 224-6879.

Master bdrm in quiet, Willow Glen (San José) neighborhood house for rent. Shared housing with two professional males. Unfurnished bdrm has own bthrm, spacious closet and locking door. Street parking and limited storage available. Rent is \$650/mo. with \$250 dep, plus 1/3 utils. Avail: 1st week in Dec. Call (408) 723-2115.

Los Altos-Tyndall St, Condo, 2bd/2ba, Quiet, lovely, vaulted ceilings, fireplace, \$1,900. Call (650) 969-5867/207-6625.

Santa Clara duplex for rent, 1bd/1ba, 2 car garage, FP, bkyrd w/BBQ. sm pet allowed. 10 mls. from Ames. \$1,100/mo plus utils. Avail. Dec. 1. Connie (408) 246-5295.

Miscellaneous

Fine art prints of the universe and space. Purchased from Novagraphics. Some in original wrappings. Some ready for hanging. All signed and numbered. Individually priced from \$65 to \$300. Shirley (408) 777-8048.

PC scanner, Scanport SQ300 parallel port, flatbed, 300dpi/600dpi, 36bit color, for win95/98/NT, inc software & cables, works great, \$115. Call (408) 295-2160.

Canon BJC-6000 photo printer (1440x720dpi) with manual & software with (6) full ink tanks and spare black cartridge. 1yr old in great condition; example photos available, \$75. Call (408) 295-2160.

Walker, NOVA, exc. con, junior size, green, with hand brakes and seat. \$200 or B/O. Grace Ann (408) 732-7080.

Garrard record changer turntable. Might need a little work. Free. Call (408) 945-3917.

Aquarium (55-gallon) \$99. Two (2) Emperor power filters (the big ones: 400 gph, normally \$75 a piece) free two (2) lighting/hoods (24" each, normally \$15 a piece) free; two (2) 20w power glo fluorescent bulb 24" (normally \$10 a piece) free; Four large freshwater fish (normally \$30 per fish) free. Call (408) 296-8182 home.

One twin size futon w/black metal frame and white mattress, and a mountain bike color blue. Very good condition. Mark (650) 279-7094.

Transportation

'70 VW convertible classic, original owner, no smog needed; transmission ok; needs work on top & possibly engine. \$1,600. Esther or Art (650) 961-2732.

'86 Buick Century Limited, 4 dr, 78.5 K mls, V-6, automatic trans, AC, PW, PS, PDL, AM/FM cassette, leather, cruise, tilt. Runs good, clean interior, no dents. Needs paint, headliner torn. \$1,400. John (408) 732-1391.

'87 Chevrolet Suburban Silverado 4WD 3/4 ton with largest brakes, 350, trans and oil cooler. Great tow car. 180K excellent mechanicals, good interior/exterior \$4,700 or B/O. Fritz (510) 623-1825.

'88 Merkur Scorpio 4 door, black, sunroof, PS, PB, PW, auto, radio and tape, 140K mls, runs well, \$1,700. Mike (650) 323-4800 or email at: mike4926@aol.com

'92 Toyota Camry V6 LE, exc. cond., one owner, auto, A/C, ABS, new Michelins, 109K mls., \$6,800. Call (925) 962-9602.

'92 Ford Aerostar van, all wheel drive, A/C, CD player, brakes, exhaust sys, trans. new in 2001-\$3,800 or B/O. Call (707) 337-3600 day; (707) 253-1999 night.

'93 Honda CB750 Nighthawk, blue, 21K mls, excellent condition, never dropped, windshield, helmet, gloves, tools included. \$2,750. Call (408) 249-3220.

'93 BMW 850 Ci V12, \$27,000. Approx 82K mls, New tires, dual side-by-side A/C, dual 8-way pwr htd lthr seats, ster cass/6 CD chgr, crus. cntrl, snrf, elect keyless access, automatic/"manual sport mode" trans, fast, great handling, Call (408) 285-9616.

'93 Nissan 240SX, charcoal gray, 5spd, A/C, killer stereo, low miles, single owner, excellent condition. Asking \$6,799 or B/O. Howard (408) 924-0722.

'94 Honda Civic Ex 2dr Cpe, blk, 96,400 mls, 5 speed, A/C, power windows, sunroof, new CV boots/joints, bra, alarm, lock-tranics only dealer serviced, \$5,000 or B/O. Melissa (408) 921-8874.

'94 Chevy S10 pickup, teal, enginer is a 4 cyl, 2.0 ltr. Trans: 5 spd manual. Frnt whl drive. 127K mls, equipment: pwr steering, alm cruise cntrl, new Michelin tires, premium sound CD player, AM/FM stereo. Asking \$4,300. Dave (408) 772-8469.

'98 Ford Ranger XLT, ext cab, automatic, V6 3.0, AC, Vista camper shell, carpet kit, AM/FM ster, cassette, 25K mls, \$12,000. Deanna (408) 260-1180 between 5-9 p.m.

'98 Nissan pickup truck, fully loaded, 30K mls, \$8,000 or B/O. Waleska (650) 625-8980 after 4 p.m.

'99 Chevrolet Suburban LT 2500 ton, \$32,000, 454 cu V8, elect. actuated 4X4 & limited slip posi, "all power", ABS, 32K mls, new tires, dual A/C (front/rear), dual 8-way pwr htd seats (front), 8 passgr lthr seating, ster cass/CD, crus cntrl, tow pkg, security sys, balance of new vehicle warranty, (6 mos to 36,000 mls). Call (408) 285-9616.

'00 Chevy Impala sedan, fully loaded, w/LS package. Assume lease, 20 mos left. Bob (408) 736-4039.

Car Pool

Monterey/Salinas to Ames. 5 days per week, 7 a.m. to 4 p.m. workday, responsible people. Bob at ext. 4-2523 or Morrow at ext. 4-0379.

U.C./Fremont/Newark Carpool: Existing 3 person carpool would like to add fourth. Leave park & ride lot at Ardenwood and 84 at 6 a.m.; leave Ames at 4:00pm. Flexible driving arrangements. Mark ext. 4-0102 or mfulton@mail.arc.nasa.gov.

Ames Public Radio

1700 KHz AM radio -- information announcements and emergency instructions, when appropriate, for Ames employees. The emergency information phone number for Ames is (650) 604-9999.

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. Check centerwide emails for special sales and events. Make your reservations for Chase Park.

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-223 (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.

NASA Swim Center (N108) 603-8025

New winter hours are in effect. For info call Tana Wilson at ext. 3-8025.

Vacation Opportunities

Lake Tahoe Squaw Valley twnhse, 3bd/2ba, balcony view, horseback riding, hiking, biking, golf, river rafting, tennis, ice skating and more. Summer rates. Call (650) 968-4155, DBMcKellar@aol.com

South Lake Tahoe cottage w/wood fireplace and hot tub. Rates from \$50 to \$130 per night. Call (650) 967-7659 or (650) 704-7732.

Vacation rental, Bass Lake CA 14 mls south of Yosemite. 3 bd/1.5 ba, TV, VCR, MW, fireplace, charcoal BBQ, priv. boat dock, great lake view. Sleeps 8. \$1,050/wk. Call (559) 642-3600 or (650) 390-9668.

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

Class of 2000 Astronauts visits Ames

Fourteen members of the Class of 2000 astronauts, who graduated in January of this year, visited and toured Ames on Nov. 1. The class visits each NASA center to get a sense of how each center impacts their role at NASA.

Among other stops, they visited the 80 x 120 foot wind tunnel and the CVSRF cockpit 747 cab simulator. Seven of the total class of 16 graduates are pilots.

photos by Dominic Hart



Above: Astronaut class of 2000 graduate class members, Karen Nyberg (facing camera) and Alvin Drew (far right) learn about runway independent aircraft at the Ames 80 x 120 foot wind tunnel.

Doug Hurley, 2000 astronaut graduate is seen here in the cockpit of the 747 cab simulator at Ames' Crew Vehicle System Research Facility.

AIAA dinner meeting set

The American Institute of Aeronautics and Astronautics (AIAA) San Francisco Section monthly dinner programs will present: 'Six Decades of Contributions to NACA/NASA Missions' by John W. Boyd of NASA Ames. The date is set for Nov. 29, at 6:30 p.m. to 9:00 p.m. at the Wyndham Garden Hotel in Sunnyvale.

For reservations, you can visit the online reservation site at: <http://www.aiaa-sf.org/> or send an email at: fzuniga@mail.arc.nasa.gov. RSVPs must be submitted by Nov. 26.

Astrogram deadlines

All Ames employees are invited to submit articles relating to Ames projects and activities for publication in the *Astrogram*. When submitting stories or ads for publication, submit your material, along with any questions, in MS word by e-mail to: astrogram@mail.arc.nasa.gov on or before the deadline.

Deadline:
Fri, Nov. 23
Fri, Dec. 7

Publication:
Mon, Dec. 3
Mon, Dec. 17



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