

March 20, 1998

## Jason attracts major student participation

### 13,000 kids expected at Ames

Oceans of Earth and Beyond — JASON Project IX will take an estimated 13,000 students from the Bay Area on a virtual expedition to some of the most interesting underwater locations in the world. The ninth project in the series focuses on an interactive study of life within the structure of several ocean environments, including Bermuda and the Guaymas Basin in the Sea of Cortez.

Through satellite imagery and internet interactivity, students will begin their journey by joining a JASON scientific team on a "trip" to the Monterey Bay's kelp forests and deep ocean environments. From there, they will go on to explore a variety of other underwater regimes.

This year's program started in October with the first in a succession of JASON teacher training workshops at Ames Research Center, one of the

Project's Primary Interactive network (PIN) sites. To date, more than 330 Northern California teachers from 53 different school districts have been trained in the program's interdisciplinary curriculum, which focuses on

oceanography, biology, mathematics,

art, literature and geography.

One of this year's highlights is a pilot program called JASON@School. Once logged-on to a school's internet connection, students can use this new device to prepare for the expedition using specially-designed, hands-on classroom exercises, field work, and computer activities from actual JASON lesson plans.



Local science teachers practice the protocols for aquatic studies during JASON IX training last November at Ames Research Center.

"Students are personally involved and they are really excited!" raved Tina Riolo, an 8th grade science

teacher from J.W. Fair Middle School in San Jose. "They pay more attention to the science involved with the activities because it's live and they can actually

communicate with real scientists."

During the 11-day JASON expedition, five live 60-minute televised broadcasts will be produced each day at 7 a.m., 8:30 a.m., 10 a.m., 11:30 a.m., and 1 p.m. Following the broadcasts, students will assemble at "JASON Harbor" in historic Hangar One to

continue working with JASON activities. Volunteers from EDS/HDS Corporation

and Team NASA will assist students in dissecting (dead) squid, trying on diving equipment, playing tug-of-war with kelp strands, building coral reefs, surfing the JASON homepage, studying about Jacques Cousteau, and more.

"This is a good example of a partnership between Government and the corporate world designed to bring quality education to thousands of students in the Bay Area," said Thomas Clausen, education officer in Ames' Office of External Affairs.

With JASON IX, students also receive a dynamic and vital part of the scientific research experience through

the use of the JASON Online systems. These enable students and teachers to access news and discussion groups to compare and share data with other



EDS volunteers assist students in creating a JASON mural during JASON VIII outside the Visitor's Center.

participating classes.

The JASON Project, named after the Greek mythological character who reclaimed the Golden Fleece, embodies Robert Ballard's goal of showing kids that science and technology can be exciting and accessible. Ballard, a member of this year's Monterey Bay expedition, found the wreckage of the sunken Titanic in 1985, and started the project after he received 15,000 letters from kids who wanted to know every detail of his discovery. The rest is history — and a valuable learning and educational experience for thousands of students and their teachers.

BY LISA MARIE GONZALES

## Ames hosts Lunar Prospector conference on March 5

*Scientists discuss mission's early results and progress*



Upper photo shows Principal Investigator (PI) Dr. Alan Binder, Lunar Research Institute, Gilroy; Co-I Dr. Alex Konopliv, Doppler Gravity Experiment, Jet Propulsion Lab, Pasadena; Co-I Dr. William Feldman, Spectrometer Lead, Los Alamos National Lab; and Scott Hubbard, NASA Lunar Prospector Mission Manager, Ames Research Center.

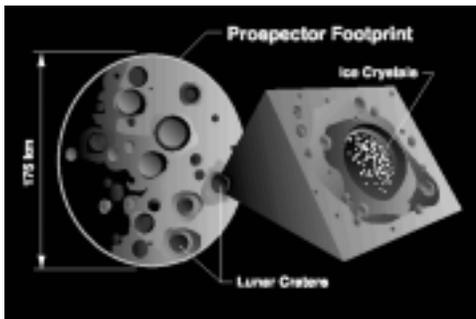


Photos by Cesar Acosta

### Prospector's Footprint

Prospector's neutron spectrometer can sense water ice (hydrogen) down to a depth of a half-meter (a couple of feet).

According to previous estimates of the scientific community, the lunar soil has been effectively "gardened" to a depth of 2 meters by meteoritic impacts over the past 2 billion years. Thus, water could theoretically be present



that is up to 2 meters deep. What Lunar Prospector scientists can't yet determine is exactly how many craters at the north and south poles contain the estimated 10 to 300 million tons of water ice measured by the neutron spectrometer. Further data analyses, as well as data from another of Prospector's instruments, the gamma ray spectrometer, will help mission scientists

sort out the precise distribution and magnitude of lunar ice. The most informative results are expected to be gleaned in just under a year, when the spacecraft begins its extended mission and dips down into a very low orbit of 10 kilometers above the lunar surface. This will enable the instruments to gather extremely high resolution data.

### Old Glory's Moon

Alchemists QuickSilver, Leaden Orb, Companion In Our Sky -

Mirror of Diana, Strewn With Joy -

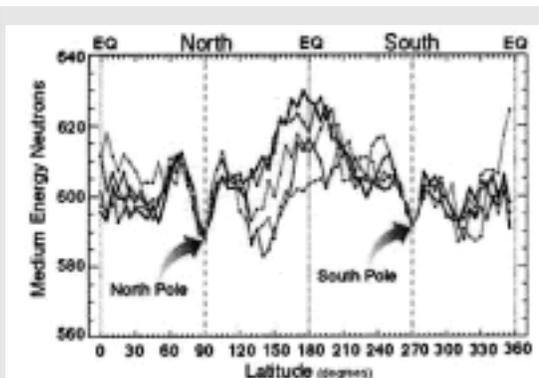
Many Kings Ransoms Some Earthlings Did Pay -

They Journeyed To You For A Short Stay -

They Planted Their Calling Card In Homage Of You -

Its a Beauty Indeed, In Red, White and Blue!

*submitted by local resident Walter C. Cambra, M.A., in response to Lunar Prospector's success.*



This graph shows the water signature (marked) at the North and South lunar poles. The dips not marked are the result of solar wind - implanted hydrogen (not water) in the Moon's equatorial regions. Water can not exist at the Moon's equator due to the thin lunar atmosphere in combination with sunlight and high temperatures. Solar winds are not sufficient in the polar regions to account for the amount of hydrogen (hence, water ice) detected.

## More evidence points to impact as dinosaur killer

Two new impact crater sites in Belize and Mexico add further evidence to the hypothesis that an asteroid or comet collided with Earth about 65 million years ago, subsequently killing off the dinosaurs and many other species on the planet.

Researchers Adriana Ocampo of NASA's Jet Propulsion Laboratory (JPL), Pasadena, Calif., and Kevin Pope of Geo Eco Arc Research, La Canada-Flintridge, Calif., led an international team that discovered the two new sites during a recent expedition

sponsored by NASA's Exobiology Program and The Planetary Society, Pasadena, Calif.

"We discovered an important new site in Alvaro Obregon, Mexico, about 140 miles (230 kilometers) from the rim of the Chicxulub crater.

This crater was formed when a 6-to-8-mile diameter (10-to-14-kilometer diameter) asteroid or comet collided with Earth," Ocampo said.

"The site contains two layers of material, or ejecta, thrown out by the impact that flowed across the surface like a thick fluid, known as fluidized ejecta lobes," added Pope.

"This is the closest surface exposure of ejecta to the Chicxulub crater that has yet been found and the best example known on Earth from a really big impact crater."

Centered on the coast of Yucatan, Mexico, the Chicxulub crater is estimated to be about 120 miles (200 kilometers) in diameter. The impact 65 million years ago kicked up a global cloud of dust and sulfur gases that blocked sunlight from penetrating through the atmosphere and sent Earth into a decade of near-freezing temperatures. The drop in temperature and related environmental effects are thought to have brought about the demise of the dinosaurs and about 75 percent of the other species on Earth.

The Earth orbits the Sun within a swarm of so-called near-Earth objects,

whether they are comets or asteroids, yet the science of detecting and tracking them is still relatively young. Only a handful of astronomers around the world search for these objects, and they estimate that currently only about one-tenth of the population of near-Earth objects has been detected. Chicxulub is the only impact event that has been correlated with mass extinctions to date. The site has been dated geologically to the boundary between the Cretaceous and Tertiary periods, also known as the



*Asteroid Ida*

K/T boundary. Local geologist Brian Holland of Punta Gorda, Belize, guided the expedition to another new ejecta site about 290 miles (480 kilometers) from the crater rim.

This Belize site contains tiny spheres of altered green glass, called tektites. Tektites are rocks that have been melted to glass by the severe heat of an impact. Expedition member Jan Smit of Free University, Amsterdam, noted that the Belize tektites were similar to those found in Haiti and northern Mexico. This finding links the stratigraphy of the Belize sites to the more distant Caribbean and Mexican ejecta sites.

Alfred Fischer of the University of Southern California, Michael Gibson of the University of Tennessee at Martin, and Jaime Urrutia and Francisco Vega of the National Autonomous University

of Mexico helped the team collect 900 pounds (400 kilograms) of samples, including drill cores, for paleomagnetic studies. They also collected fossils from the site to help date the deposits and add new pieces to the puzzle of what happened at Chicxulub 65 million years ago.

Impact ejecta is very rare on Earth, but covers much of the surface of Mars because Mars' surface has remained stable and unchanged for billions of years, thus preserving debris from these

rare impact events. Also, such fluidized ejecta lobes have never been observed directly on Earth before and can serve as an excellent laboratory for studying the ejecta lobes surrounding many Martian craters.

"The discovery of these new ejecta sites is very exciting," said team co-leader Ocampo. "It is like seeing a bit of Mars on Earth."

The exact nature of these ejecta lobes on Mars remains a mystery, Ocampo noted. Some scientists think they were created by an abundance of water in the Martian crust, which turned the ejecta into a muddy, molasses-like material. Others suggest the fluidized ejecta lobes were enabled by a much thicker atmosphere in Mars' early history. As flying ejecta from an impact event flew through the Martian atmosphere, it was reduced by friction to a very dense, turbulent cloud of debris, which also flowed like water. Study of the Chicxulub fluidized ejecta may help settle this debate and shed new light on theories that the Martian surface may once have been more hospitable for life.

Volunteers who assisted The Planetary Society and the scientists in the field have posted their photographs of the expedition on The Planetary Society web site at the following URL: <http://planetary.org>. Information about and images of newly discovered near-Earth objects found by JPL's ongoing Near-Earth Asteroid Tracking (NEAT) program are available at: <http://huey.jpl.nasa.gov/~spravdo/neat.html>

Ocampo and Pope's research was funded in part by the Exobiology Program of NASA's Office of Space Science, Washington, DC. NASA's Jet Propulsion Laboratory is a division of the California Institute of Technology, Pasadena, Calif.

## Asteroid to whiz by Earth in 30 years

A mile-wide asteroid will pass close by Earth in late 2028; there is no risk that it will collide with the Earth. Scientists expect to spend the next several years revising their calculations of the asteroid's path, which should also take it past the Earth by several hundred thousand miles. Ames provides a general discussion of the issues on the "Asteroid and Comet Impact Hazards" web site. The URL is: <http://ccf.arc.nasa.gov/sst/>. NASA and the U.S. Air Force maintain a "Near-Earth Asteroid Tracking" project.

## Briefs

### First female shuttle commander

Astronaut Eileen M. Collins (Lt. Col., USAF) will become the first woman to command a Space Shuttle when Columbia launches on the STS-93 mission in December.

Collins will be joined on the flight deck by Pilot Jeffrey S. Ashby (Cmdr., USN) and Mission Specialists Steven A. Hawley, Ph.D., and Catherine G. "Cady" Coleman, Ph.D (Major, USAF). CNES Astronaut Michel Tognini (Col., French Air Force) was named to the crew on Nov. 12.

Selected as an astronaut in 1990, Collins has served as a pilot on her two previous space flights. Her first space flight was STS-63 in Feb. '95 as Discovery approached to within 30 ft of Mir, in a dress rehearsal for the first Shuttle/Mir docking. In May '97, she visited the Mir space station as pilot on board Atlantis for the sixth Shuttle/Mir docking mission, delivering Astronaut Mike Foale and returning Jerry Lininger to Earth.

During the five-day mission, the STS-93 crew will deploy the Advanced X-ray Astrophysics Facility Imaging System (AXAF), which will conduct comprehensive studies of the universe. AXAF will be the most advanced X-ray telescope ever flown.

### Hubble reveals asteroids

Astronomers have stumbled on an unusual asteroid hunting ground: the thousands of images stored in the Hubble Space Telescope archive.

The hunt, by Robin Evans and Karl Stapelfeldt of NASA's Jet Propulsion Laboratory, Pasadena, CA, has yielded a sizable catch of small asteroids -- about 100. Their preliminary analysis suggests that a total population of 300,000 small asteroids -- essentially rocks just over half a mile to two miles wide (1-3 kilometers) -- are orbiting between Mars and Jupiter in a band of space debris known as the main belt.

Currently, there are 8,319 confirmed main-belt asteroids whose orbits have been measured, and about the same number have been sighted but not confirmed. The Hubble archives represent a newly taped information resource which could help scientists more precisely estimate the risk the asteroids pose to Earth.

### X-38 passes flight test

The first unpowered X-38 atmospheric test vehicle was dropped from under the wing of a NASA B-52 aircraft at Dryden's Flight Research Center, Edwards, Calif., on March 12. The test focused on the use of the X-38's parafoil parachute, which deployed as planned within seconds after the vehicle's release from the B-52 and guided the test craft to landing.

Atmospheric drop tests of the X-38 will continue for the next two years using three increasingly complex test vehicles. In 2000, an unpowered space test vehicle is planned to be deployed from a Space Shuttle and descend to a landing. The X-38 emergency crew return "lifeboat" vehicle is targeted to begin operations aboard the International Space Station in 2003.

## Kids use Internet to learn about airplane design

A NASA project called Aero Design Team Online is using the Internet to help students learn about airplane design.

Students and the general public can visit a website (<http://quest.arc.nasa.gov/aero/>) to find out how aeronautical engineers use airplane models, wind tunnels, supercomputers, simulators and other tools during the airplane design cycle. The project continues through May, although plans are underway to extend it into the summer.

"We're teaching about airplane design through the lives of people who are doing the work," said Ames' Susan Lee. "For example, we're following a wind tunnel test of a model of a future supersonic airliner."

In addition, kids ask questions via e-mail; learn how an airplane flies; see pictures of aircraft; and participate in Internet chats with people from teams that design and test airplanes. During Internet chats, youngsters use computers to converse with mentors by typing questions and reading responses and dialogue via the World Wide Web.

Teachers can visit the teachers' "lounge" on the website. Various educational materials including aeronautics lesson plans can be found in the lounge. The plans list creative ways to bring the Aero Design Team Online project into the classroom. Educators

also have Internet chats with other teachers, describing classroom problems and solutions.

"NASA is providing the website because the agency has a mandate to help teachers and students understand NASA research in aeronautics. The website gives knowledge to students that they can apply to their studies," said Ames' Educational Group Leader Garth Hull of the Office of External Affairs.

"The Internet gives our engineers an effective tool to interact with audiences we normally would not reach. We hope that, by using this resource, these students will be better prepared to see vocational opportunities and become better informed citizens," he added.

Another segment of the on-line project will follow the progress of astronauts training in the largest vertical motion simulator in the world, located at Ames, Lee said. "They are practicing their Shuttle landings with a new simulator program that includes global positioning," said Lee.

The project is one in a suite of online offerings from NASA's Quest Project at URL <http://quest.arc.nasa.gov>. These interactive projects connect students with NASA employees to inspire the students to pursue high-tech careers.

BY JOHN BLUCK

## Ames offers wireless modems slighter bigger than pagers

Ames computer users can now get pocket-sized, wireless computer modems that weigh just ounces and can access Ames computer systems from locations throughout the Bay Area and from various parts of the United States. The new modems can also remotely connect to any Internet-attached computer.

The Ames Wireless Large Area Network team recently announced that Ames customers can acquire the miniature modems by submitting service requests to Code II, WirelessLAN Service, Mail Stop 233-6, attention, WANG/INET.

"I've been very busy acquiring the modems for customers since we let Ames people know we could get them," wireless modem LAN project manager Lilly Compton said.

"The reason they are so popular is because they work with calculator-sized computers," she said. "We support personal digital assistants like the

Newton and Palm Pilot as well as the Hewlett Packard 300LX, 320LX, 360LX and the 620LX computers



old modem

new modem



photos by Tom Trower

that run on Windows 95, Windows CE and Macintosh OS 7.1 to 8.0."

The new modems will also work with some UNIX computers, according to Compton.

Another advantage of the new

continued on page 8

## Women's Outreach Initiative

### There's Space in My Life...

NASA's research and technology is not just about distant galaxies, astronauts and supersonic aircraft. The science and engineering that make NASA's programs possible touch our lives every day.

This influence is most apparent in the field of medicine where innovative thinking has made it possible to adapt deep space technology to understanding, detecting and treating cancer. NASA's research is designed to learn how to live and work in space. Its application, however, often hits much closer to home.

Entitled "There's Space in My Life...", the initiative presents information in a non-technical, straight-forward way, centered around topics of particular interest to women and their families: health, family, safety, home and garden, travel and leisure time, and the mysteries of Earth and the universe.

Of special interest are a chronological list of highlights of the contributions women have made to America's space and aeronautics program, such as NASA's first female Space Shuttle commander, Lt. Col. Eileen M. Collins (USAF); NASA research and technology is to detect and treat heart disease; and various NASA technology used in many types of medical research affecting women.

The URL for this site is: <http://www.nasa.gov/family/index.html>.

For more information, contact the Women's Outreach Initiative at: [women@hq.nasa.gov](mailto:women@hq.nasa.gov). They welcome your feedback.

### Judges needed for science engineering fair

The Santa Clara Valley Science and Engineering Fair (SCVSEF) will be held on March 25, from 12 noon to 4 p.m. Over 250 judges will be needed to judge the anticipated 800 students who will be participating in the science fair. People with a background in the biological sciences are particularly needed.

If you are interested and can volunteer your time, please sign up at the SCVSEF web site: [http://www.scvsef.org/form\\_ju.html](http://www.scvsef.org/form_ju.html)

## Vice President visits bay area on March 12



Left photo: Vice President Gore exits Air Force 2 at Moffett Field with Congresswoman Zoe Lofgren (San Jose).

Vice President Gore (photo to right) with Russian Prime Minister Chernomyrdin wave goodbye to a Moffett crowd March 12. The Vice President and Prime Minister visited Lockheed Martin Missiles & Space, San Jose State and CISCO Systems. The get together in Silicon Valley was part of the Gore-Chernomyrdin Commission's annual meeting.



photos by Sue Bowling

## Seminar presented by Dr. Scott Parazynski

Dr. Scott Parazynski related his experiences of the STS-86 mission which delivered David Wolfe to the Russian Space Station Mir and returned Michael Foale. He spoke to a packed auditorium on March 6, telling of life aboard Mir, the trials of living and working in space, and the relationship between American astronauts and Russian cosmonauts.

In addition to the seminar, Dr. Parazynski returned an Ames Research Center Astrobiology flag that he had carried during the mission.

Dr. Scott Parazynski is assigned to the upcoming STS-95 mission which will include Senator John Glenn.



photo by Sue Bowling

Malcolm Cohen of Code SLR signs the framed photograph of the launch of the STS-86 mission while Dr. Scott Parazynski answers informal questions from the audience.

## Bone marrow registry drive

--sponsored by the Santa Clara County Fire Dpt.

Date: Sunday, March 29th  
Time: 10 a.m. - 3 p.m.  
Place: Campbell Community Center,  
Building Q

You need to be in good health, and between the ages of 18 and 60 years old. You will be donating two tablespoons of blood. Minorities are desperately needed!

For more information, contact Laralee Gubler at (408) 577-2151.

## Tom Snyder retires after nearly 36 years of service

C. Thomas (Tom) Snyder, Director of the National Rotorcraft Technology Center (NRTC) at Ames, is retiring on March 28 after nearly 36 years of distinguished service to NASA and the aerospace community.

An "office open house" will be held for Snyder on Thurs., March 26, from 3-5 p.m. in his office in N-207 and a retirement dinner will be held April 2 starting at 6 p.m., at the Sunnyvale Hilton. Contact Hope Wilden at ext. 4-5069 or John Davis at ext. 4-5375 for more information.

Snyder began his NASA career in 1962 as an aerospace engineer in the Flight Systems and Simulation Research Branch at Ames. In his early career between 1962 and 1974, Snyder was an active researcher in aircraft flight dynamics, authoring numerous technical reports and papers on such topics as direct-lift control, windshear effects, ground effects, supersonic transport flight characteristics, certification considerations for supersonic cruise aircraft, two-segment noise-abatement approach procedures, and minimum longitudinal stability requirements for transport aircraft.

In 1974, Snyder was promoted to Chief of the Flight Systems Research Division, a position he held until 1980. From 1980 to 1985, he served as Director of Aeronautics and Flight Systems.

From 1985 to 1994, he served as Director of Aerospace Systems at Ames, NASA's lead center for rotorcraft technology. There he was responsible for directing a broad program of research and technology development on advanced aircraft concepts and systems with an emphasis on rotorcraft technology, and on human-machine system integration and automated systems for both aeronautical and space vehicles. He also had operational responsibility for the National Full-Scale Aerodynamics Complex (NFAC) and major simulation facilities.

He has been working since mid

1994 establishing and nurturing the development of the NRTC. The NRTC is a partnership between NASA, the U.S. Army, the U.S. Navy, and the Federal

Aviation Administration (FAA). University partners include Georgia Tech, the University of Maryland and Penn State, and industry partners include Boeing, Bell, and Sikorsky corporations.

"We're sort of a resident agency for the rotorcraft industry," Snyder said. "We've established an incredible network between the rotorcraft industry, the university community and the federal government," he added. "It's

really a collaborative atmosphere of trust that is producing incredible results."

Snyder said among his memorable accomplishments during his early NASA career was to be among the first to work in the Flight Simulator for Advanced Aircraft and the Vertical Motion Simulator at Ames as a researcher for a joint NASA/FAA/US/European supersonic transport program. The results of that research provided airworthiness certification criteria which later were applied to the Concorde supersonic passenger aircraft.

Another career highlight for Snyder was the upgrade of the NFAC. Snyder said working with Ames employees was a pleasure, particularly Seth Anderson, his first Branch Chief. "I still remember reporting for duty when I got my job at Ames, and Seth coming up to greet me when I arrived," he said.

Snyder received a B.S. degree in Aeronautical Engineering from Wichita State University in 1962, an M.S. degree in Aeronautics and Astronautics from Stanford University in 1969, and the degree of Engineer in Aeronautics and Astronautics from Stanford in 1976.

Snyder served as President and Chairman of the Board of the American Helicopter Society in 1993-94 and

1994-95, respectively. He is a Fellow of the American Institute of Aeronautics and Astronautics and the American Helicopter Society (AHS). He has received numerous achievement awards, with the most prestigious being the Dr. Hugh L. Dryden Memorial Fellowship from the National Space Club in 1972, the NASA Exceptional Service Medal in 1986, and the Presidential Rank of Meritorious Executive in the Senior Executive Service in 1991. During his retirement, Snyder said he plans to remodel his house in Los Gatos where he and his wife, Sibyl, have lived for the past 34 years. He also plans to spend more time with his family, including his four sons, Phil, Tim, Steve and Todd, and his grandson.

Snyder said that he's going to miss working at Ames and especially the people he's worked with over the years. "The people here at Ames are terrific to work with," Snyder said. "I've been an airplane lover all my life and it's been a great career for me. I don't think I'd do anything differently if I had the opportunity to do it all over again."

BY MICHAEL MEWHINNEY

## Reminder: Astronomers needed!

Be a visiting astronomer in Bay Area schools and community centers in 1998-99. The Astronomical Society of the Pacific is seeking amateur and professional astronomers and advanced astronomy students to participate in Project ASTRO.

During the school year, visiting astronomers can help to lead hands-on activities, serve as a resource for teachers, organize evening observing sessions, create a school astronomy club, present auditorium programs, arrange field trips or assist with science fair projects.

The '98-'99 training workshop is scheduled for Fri., Aug. 14 through Sat., Aug. 15, at the San Mateo County Office of Education, Redwood City.

The first application deadline (for preferred placement) is April 11, although applications will be accepted after this date. To request an application call (415) 337-1100, ext. 101 or e-mail [astro@aspsky.org](mailto:astro@aspsky.org). For more information contact Nicole Taddune, Bay Area Coordinator, at the Astronomical Society of the Pacific, (415) 337-1100, ext. 101 or visit their web site at [www.aspsky.org](http://www.aspsky.org). Project ASTRO is funded by the National Science Foundation.



C. Thomas (Tom) Snyder

## Jetstream Toastmasters celebrates 40th anniversary

Jetstream Toastmasters Club 2624 celebrated its 40th anniversary on March 9th at a festive gathering of current and former members. Jack Boyd, Executive Assistant from Ames, spoke about the value of training in public speaking. Toastmasters Anne Hu, Division Governor, and Carolyn Bafia, Area Governor, congratulated the club on its long history and the contribution it has made in people's lives. Guy Ferry, a long-time member of Jetstream, presented an entertaining history of the club.

During its 40-year history, over a thousand employees from Ames Research Center and Moffett Field Naval Air Station as well as non-employees from nearby neighborhoods have enjoyed the benefits of membership in Jetstream. It is a member club of Toastmasters International, founded in 1927 by Ralph C. Smedley. Today, there are over 8,000 member clubs

around the world in more than 50 countries. Toastmasters helps men and women learn the arts of speaking, listening and thinking in order to

promote self-actualization, enhance leadership potential, foster human understanding and contribute to the betterment of humankind.

Currently, Jetstream has a membership of 30. The club is open to anyone over 18. Members have different levels of experience, from a few months to over 20 years. Though a majority of the Club's members come from Ames, members come from every walk of life. Members share the desire to improve their public speaking, communication and leadership skills.

Many members practice what they learned in professional seminars in Toastmasters meeting. A nonprofit

organization, Toastmasters presents its own workshops. These are given by fellow members who volunteer their time. As a consequence, these seminars are a learning experience for those giving the seminars as well as those taking them.

The Toastmasters environment is mutually-supportive. For many people public speaking is their biggest fear. To address this issue, Toastmasters has a strong mentoring program. Members choose to have a mentor assigned to them who coaches them on their speeches. Mentoring

requires that any feedback a member gives another, is constructive and positive. This in itself is an important communication skill.

The meeting is divided into four basic parts. During Table Topics, members practice "thinking on their feet." When asked a question about something in everyday life, they give a one-minute extemporaneous reply.

Observing how others handle their questions is as educational as the experience of answering.

The second part of the meeting consists of prepared speeches.

Typically, three speeches ranging from 5 to 7 minutes long are given. In the third part of the meeting, Evaluation, evaluators provide two-minute oral evaluations of each speech. The experience of being an evaluator also develops one's listening skills. The fourth part of the meeting uses Robert's Rules of Order to conduct club business.



photo by Tom Trower  
Carolyn Bafia, Area Governor



photo by Silvano Colombano  
Left to right: Etta Rosamond, Oliver Howell (rising), & Guy Ferry

Jetstream Toastmasters meets weekly on Mondays in N-269, Rm. 179 from 12 noon to 1:00 p.m. If you are curious to see a Jetstream meeting, please come! Guests are always welcome; don't forget to bring your lunch. For those interested in membership, dues are \$25 biannually with a one-time \$20 fee to cover the starter set of manuals.

Jetstream currently conducts a SpeechCraft seminar covering the following topics: Organize a Speech, Analyze the Audience, Vocal Variety, Effective Gestures, Choosing a Topic, Connecting with your Audience, How to Evaluate, and Introducing a Speaker.

For questions about the seminar or about the club, call Club President Karen Wark at ext. 4-5426 or VP of Education, Jenny Kahn at ext. 4-6987.

BY CONNIE ALLEN & ANDY GOFORTH

## NASA-wide Search Engine Broadens Access to Agency Web

Caught in the NASA Web? Can't find that one piece of information that will finish your report?

The NASA Headquarters homepage now offers Internet users the ability to search the hundreds of web servers across all NASA Centers. The NASA-wide search engine -- developed by Boeing Information Services and NASA HQs Code CI for Code P -- has just been released. It indexes publicly accessible NASA documents (360,000 and growing), and provides users with the ability to search by Center, date and other variables. (By design, NASA-only and Center-only documents are not available through the search engine.). The permanent URL for the "Simple Search" page is:

<http://www.nasa.gov/search/index.html>

Click on "Search with Options" to fine tune your search.

For your convenience, the search engine will be permanently accessible via the bottom (navigational) links from all [www.nasa.gov](http://www.nasa.gov) pages.

# Ames Scientist awarded Dirac medal

Dr. Timothy J. Lee of the Ames Computational Chemistry Branch (Code STC), has been selected as this year's recipient of the Dirac medal. The award is given annually to "the most outstanding theoretically oriented chemist in the world under the age of 40," by the World Association for Theoretically Oriented Chemists (WATOC). 1998 is the first year that the medal has been presented.

Lee is being recognized for his outstanding contributions to the development of electronic structure methods and the application of these to important chemical problems in rovibrational spectroscopy and the atmospheric sciences. According to the organization, Lee was selected

from among a "very strong" international field of 13 nominated candidates. Lee will be recognized at the 1999 WATOC international conference in London, England.

The recipient of the Dirac medal is determined by a vote of the WATOC scientific board and WATOC fellows, composed of distinguished theoretical chemists from around the world. About one-third of the voting members reside in the United States, including two

chemistry Nobel laureates.

Lee graduated with a B.S. in chemistry from the Colorado School of Mines in 1982. He attended graduate school at the University of California, Berkeley, receiving a Ph.D. in physical (theoretical) chemistry in 1986. After 21 months of postdoctoral work at the University of Cambridge, England, Lee began work at Ames Research Center in September 1988 as a contract employee with ELORET. He became a civil servant in February 1989.



Dr. Timothy Lee

Lee has more than 135 scientific publications in peer-reviewed journals to his credit and, in a recent compilation by the Institute for

Scientific Information, was ranked as one of the top 400 most-cited chemists in the world for the period from 1981 to 1997. He currently serves on the editorial board of three journals, and has been guest editor for three journal "special issues."

Even as a student, Lee was active in both the mathematical development of electronic structure methods and their application to interesting chemical problems. Since arriving at Ames, his development work has mainly focused on

the coupled-cluster and perturbation theories of electron correlation. With various collaborators, he has formulated useful diagnostics, efficient analytical gradient methods, elegant and efficient open-shell and relativistic approaches, and, most recently, novel techniques for the study of excited electronic states.

Over the past eight years, his studies have shown the remarkable accuracy that is now attainable using state-of-the-art computational chemistry methods. His applications work has centered on atmospheric chemistry and theoretical rovibrational spectroscopy, with an emphasis on the detailed characterization of new compounds and chemical reactions of interest in stratospheric ozone depletion chemistry. These studies have filled in the gaps in experimental data (in many cases, no data was available) and, in several cases, misinterpretations of experimental results have been corrected. Lee's work in theoretical rovibrational spectroscopy, along with his principal collaborators Dr. Christopher Dateo of ELORET, Dr. Jan Martin of the Weizmann Institute of Science, and Dr. Peter Taylor of UCSD, has also led to a number of important scientific breakthroughs.

The Dirac award is named for Paul Adrien Maurice Dirac, a British theoretical physicist, who helped lay the foundation of quantum mechanics. His most notable contribution was weaving Einstein's theory of relativity into relativistic quantum mechanics. For this work, Dirac shared the Nobel Prize for physics with Erwin Schrödinger in 1933.

BY LINDA BROWN

## Wireless modems

*continued from page 4*

modems is that they hold a charge 50 to 100 percent longer than older wireless modems.

The service cost for the new, pocket-sized SE modems for the remainder of this fiscal year is about \$800 per unit. The cost covers equipment, software and unlimited connectivity until Sept. 30. The cost to continue an established service next fiscal year will be about \$500.

The 33.6 kbaud modems have a liquid crystal display that provides easy-to-understand readouts about being "in range," signal strength, network registration, data flow and other

information.

The current service area for wireless modem users includes Ames, most of the greater San Francisco Bay area, and other parts of the country, including regions within two miles of airports in Chicago, Los Angeles, New York, greater metropolitan Washington, DC and other major cities. Some hotels also have installed support for the modems. Coverage areas and maps are on the Internet at: <http://www.ricochet.net>.

Interested parties may telephone Compton at ext. 4-0852 or send an email to: [wirelesslan@mail.arc.nasa.gov](mailto:wirelesslan@mail.arc.nasa.gov)

BY JOHN BLUCK

## Correction

Entries and supporting material for submissions for the '98 Software of the Year Award must be submitted by Fri., April 17, (no exceptions).

# Events & Classifieds

## Calendar

**Jetstream Toastmasters**, Mondays, 12 noon to 1 p.m., N-269/Rm. 179. Guests welcome. POC: Jenny Kahn at ext. 4-6987 or Pam Walatka at ext. 4-4461.

**Ames Child Care Center Board of Directors Meeting**, Tuesdays, 12 noon to 1 p.m., N-213/Rm. 220. POC: Lisa Reid, ext. 4-2260.

**Native American Advisory Committee Meeting**, Mar. 24, 12 noon to 1 p.m., Ames Café. POC: Mike Liu at ext. 4-1132.

**Retirement Planning**, March 25, 11:30 a.m. to 12:30 p.m. It's a Matter of Attitude (EAP Brown Bag Talk), N-258, Rm. 127. POC: Miriam Glazer, ext. 4-5172.

**Hispanic Advisory Committee for Employees**, Apr. 2, 11:45 a.m. to 12:30 p.m., N-239/Rm. 177. POC: Carlos Torrez, ext. 4-5797.

**Ames African American Advisory Group Meeting**, Apr. 2, 11:30 a.m. to 12:30 p.m., N-241/Rm. 237. POC: Antoinette Price, ext. 4-4270 & Mary Buford Howard, ext. 4-5095.

**Environmental, Health & Safety Monthly Information Forum**, Apr. 2, 8:30 a.m. to 9:30 a.m., Bldg. 19/Rm. 1078. POC: Linda Urabel at ext. 4-0924.

**Ames Contractor Council Meeting**, Apr. 8, 11 a.m., N-200/Comm. Rm. POC: Greg Marshall at ext. 4-4673.

**Professional Administrative Council (PAC) Meeting**, Apr. 9, 10:30 a.m. to 11:30 a.m., bldg/rm TDB. POC: Janette Rocha, ext. 4-3371.

**Ames Sailing Club Meeting**, Apr. 9, 11:30 a.m. to 1 p.m., N-262/Rm. 100. POC: Greg Sherwood at ext. 4-0429.

**Ames Multicultural Leadership Council Meeting**, Apr. 15, 11:30 a.m. to 1 p.m., Galileo Rm./Ames Café. POC: David Morse at ext. 4-4724 or Sheila Johnson at ext. 4-5054.

**NFFE local 997 Union General Meeting**, Apr. 15, 11:30 a.m. to 12:30 p.m., Bldg. 19/Rm. 1040. POC: Marianne Mosher at ext. 4-4055.

**Ames Amateur Radio Club**, Apr. 16, 12 noon, N-260/conf. rm. POC: Walt Miller, AJ6T at ext. 4-4558.

**Ames Asian American Pacific Islander Advisory Group Meeting**, Apr. 16, 11:30 a.m. to 1 p.m., N-213/Rm. 261. POC: Daryl Wong at 4-6889 or Brett Vu at ext. 4-0911.

**Java Users Group Meeting**, Apr. 21, 1 p.m., to 2:30 p.m., N-258/NAS auditorium, POC: Sharon Marcacci, ext. 4-1059.

## Ames Classifieds

Ads for the next issue should be sent to [astrogram@mail.arc.nasa.gov](mailto:astrogram@mail.arc.nasa.gov) by the Monday following publication of the present issue.

Ads must involve personal needs or items; no commercial/third-party ads. Ads will run on space-available basis only. First-time ads are given priority. Ads must include home phone numbers. Ames extensions will be accepted for carpool and lost and found ads only. Ads need to be resubmitted for each issue.

### Housing

For Rent: 4 Plex. Mtn. View (near El Camino & Hwy 85). 2 bd/1 ba. Large, bright upstairs unit. AEK. Enclosed garage & second parking space on property. Priv. storage closet. Central laundry rm. No pets. NS. \$250/mo. + \$1350 security dep. Avail. April 1. Call (650) 948-1532.

Beautiful Saratoga studio, easy access to Hwy 85. Studio attached to sgl. family residence. Has its own separate entrance. Includes patio area, WD, sm. fridge and four burner stove. \$800/mo. Available around 4/25. Lv. msg. at (408) 370-6800.

Share 3 bd/2 ba home in Sunnyvale. Furnished rm, full access to amenities. \$450/mo + 1/3 utilities. NS. no pets. Near Hwy 85 and Homestead, 10 mins from Ames. Avail. 4/7. (408) 730-0686.

Temp. housing needed for college faculty participating in the NASA-ASEE Summer Faculty Fellowship Prog. at Ames. House sit or sublease. Home, condo or apartment. Approx. dates from early June to late Aug. Call Melinda Francis at (650) 723-3328 or 723-0279 (fax) or email [mfrancis@forsythe.stanford.edu](mailto:mfrancis@forsythe.stanford.edu)

Two rooms for rent for price of one, in culdesac home w/priv. rms + bath. Campbell school district, lg. bk yard, new carpet/paint, WD, garage. NS, M or F, no drugs, clean, prof., \$774/ mo. + dep. + half utils. Call Tom at (408) 369-9718, eves.

### Transportation

'78 23ft Delta Motorhome, Class C Dodge chassis, 440 V-8, Generator, Roof, Air, Awning, 39K miles, Exc. cond, \$9,000 or B/O. (408) 323-0327.

'82 Honda Prelude, new tires, 5spd, sun roof, runs gd, 109Kmi., gd transportation car, seats nd help. \$800, As ls. (650) 369-0578 eves., (650) 969-2078 days.

'84 Subaru GL Wagon, 4dr, 4WD. Runs Good. Many extras. Registered 'til Feb. '99 and passed smog. \$1,200 or B/O. Call Jeff at (408) 267-1435.

'88 Cadillac El Dorado, Gold series, 120k, lots new. \$5500 or B/O. Call Bob at (408) 736-4039.

'89 Plymouth Grand Voyager LE, 3.0 V6, auto, low miles, AC, pwr strg & windows, remote security sys w/auto dr lock, cruise control, AM/FM/Cass, tint windows, one owner, exc. cond. \$9,500. Call Brian at (510)489-7055.

'90 Dodge Colt, 54k mi, AC, new brakes and AC/Alt. belts, exc. cond. \$2,900. (650)-969-9075 or (408) 725-2558.

### Astrogram deadlines

All Ames employees are invited to submit articles relating to Ames projects and activities for publication in the *Astrogram*. When you submit stories or ads for publication, make sure to check the publication deadline and submit your material by e-mail to [astrogram@mail.arc.nasa.gov](mailto:astrogram@mail.arc.nasa.gov) on or before the deadline. Stories should be sent as enclosures in MS Word.

If you have questions about items for publication, contact the editor at the above email address.

DEADLINE	PUBLICATION
MON., MAR. 23	FRI., APR. 3
MON., APR. 6	FRI., APR. 17
MON., APR. 20	FRI., MAY 1

'95 GMC Jimmy, 2-dr, 4WD, 75k miles, \$17K or B/O. Call Lewis at 408-323-8412.

'96 Jeep Sport, 30k miles. Below blue book. Also '96 250 Polaris Quad. Like new. Call Bill at (650) 259-7946.

### Miscellaneous

Moving/storage boxes cheap! Gd. cond. Small, medium, large, x-large, wardrobe and file boxes at half U-Haul price. Call Fred at (408)362-1765 or [fmjones@earthlink.net](mailto:fmjones@earthlink.net)

Golden Retriever Puppies A.K.C w/registration papers, seven weeks old, five male, five female. Family raised. \$400. (408) 725-2415.

Golf clubs for ladies, Wilson metal RH. 1-3-5 woods - 3-9 irons-PW-SW-putter. Purchased from Moffett Field pro-shop teacher. Paid \$150, sell \$100. Bag included. (650) 968-8650.

Beautiful wedding gown, size 10, pd. \$1,500, asking \$550. (408) 733-1906.

Leer Custom Standard Size Truck Shell w/flip-up locking side windows. Carpet lined inside, exc. cond. Two years old. Cobalt Blue color. \$1,000. (510) 651-7196.

Two CD racks, metal towers, glossy black, hold 60 each. Like new. \$25 ea. O/B. Trek hybrid bike, 18 spd, grip shift, new tires. \$100 B/O. Very nice. Call Bob at (408) 733-2746.

Sofa, love seat, pillows, lamp and picture, all matching pastel splash, new cond., \$175; Tent, six person, excellent, \$75. (650) 964-8079.

5 Sun Valley lift tickets valid any time during '98 season; 30% off face value. (650) 854-7955.

Black persian lamb coat, size 8-10. \$175 B/O. Exc. cond. (650) 961-7581.

Rooster & hen, (408) 773-1927.

## Ames retirements

Name	Date	Code
Marie Ko	3/14/98	AAC
Victor C. Stevens	3/31/98	AAL
Donald R. Sutherland	4/1/98	AOW
Victor Corsiglia	4/3/98	APA
Demo J. Giulianetti	4/3/98	APT
Gregory W. Condon	4/3/98	AFC
Bob Reutter	4/3/98	AOS

8 Day/7 Night Florida/Bahamas Vacation & Cruise Pkg. Free rental car in Florida; Bonus trips (free hotel) to Cancun, Mexico & Las Vegas. Includes a 5 min promo. video. \$598 entire pkg. for one couple. Ret. value \$1238 to \$1736. Travel to Florida at own cost, plus Port Tax for cruise portion. Call Nathalie at (408) 245-6433.

David Clark Headset H10-20 exc. cond. \$190; RayBan pilot sunglasses \$80; Jepperson CR2 Computer \$10; Zelco flexible flashlight \$10. Call Nathalie at (650) 969-7827.

For Sale: Fire Opal Cluster ring w/diamonds. Beautiful, nearly new. \$350. Will bring to work to show. (510) 581-2076.

Jetski, '96 Sea-doo GTX, well maint, low hrs, exc. cond. Trailer + extras. \$6500. Call John at (510) 790-1509.

Baby crib w/mattress and accessories. White, never used. \$85. (408) 733-1906.

### Vacation rental

So. Lake Tahoe home rental. 10 min. from casinos and skiing. Sleeps 14, 4bd/2ba. Fireplace, cableTV. Rates: \$450 per week. \$200 wkend. \$75 per day. Holidays \$100 per day. (408)-248-4861.

Lake Tahoe-Squaw Valley Townhse, 3br/2ba, View of slopes, close to lifts. Wkend \$400, midwk \$150 night. Includes linens, firewd, cleaning service. (650) 968-4155, or email: [DBMcKellar@aol.com](mailto:DBMcKellar@aol.com).

### Car pool

Carpool partner wanted who works 7:00 a.m. to 3:30 p.m. Commute between Leigh Avenue near Camden in San Jose to Moffett Field. Ext. 4-1131.

Lkg. for persons to rideshare from Fairfield area, Mon. thru Fri. Work hrs: 6:30 a.m. to 3:30 p.m. Call Jim at ext. 4-3825.

### Lost & Found

Found on March 4 in vicinity of N-234A item of ladies jewelry. Please contact Frank Hetherington at ext. 4-5389 to identify and claim.

## Activities/Training

### NASA Ames Exchange presents: "A Day at the Park"

SF Giants vs. Milwaukee Brewers at 3 Com Park  
Date: Sunday, April 26  
Cost: \$5.00

Price includes hot dog, chips & soda prior to game at Tailgate Party. Free game cap to ticketholders.

Call ext. 4-5412 to order tickets by April 10.

### Chair exercise class

Tuesday, March 31 at 12 noon at the NASA Ames Fitness Center (Bld. 221) - No Cost

Learn how a few minutes of exercise from your chair everyday can improve your posture, relieve muscle tension, tone your muscles, and improve flexibility.

Nancy Dunagan (M.A. Exercise Physiology) will show you how to tone up from your chair. You will be given materials to take back to the office and use. Wear slacks and comfortable clothing to class.

Space is limited to the first 25 who call Nancy Dunagan at ext. 4-5804 to reserve a chair.

### Project Management training opportunity

The Program/Project Management Initiative announces the third Project Management Shared Experiences Program (PMSEP).

Theme: Creative Approaches in Project Mgt

When: April 20-24

Location: Ramada Inn, Hagerstown, MD

The purpose of this program is to provide a forum for understanding key initiatives influencing NASA project management, and to learn about state-of-the-art project management tools and techniques used by other agencies and industry. The target audience are personnel with at least five years of project management experience and expected involvement in project management for the next five years. GS 13-SES

The topics will be: NASA Strategic Plan, Space Station lessons learned, performance measurement, tools and techniques, virtual meetings, NASA and Capitol Hill, program development, Mars Program, and NASA best practices.

If you are interested in attending, please contact immediately: Sherry Douglas at (202) 554-8677, ext. 27.

### Secretaries' Day Workshop, April 22

Double Tree Hotel, San Jose, 8:00 a.m. to 12 noon. Contractors are welcome on a space available basis.

Please submit your ARC 301 to Gail James by April 8. No training applications will be accepted at the door. POC: Gail James at ext. 4-5472.

### JASON IX Open house for Ames employees and guests

11:30 a.m. Saturday, March 21  
7 a.m. Monday, March 23  
7 a.m. Friday, March 27

For more info, contact Lisa Marie Gonzales at ext. 4-2046

### THE AMES *Astrogram*

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Managing Editor.....David Morse  
Editor.....Astrid Terlep

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