

In January 2008, the new Desktop and Network Services subcontract will go into effect, providing JPL personnel with improved technical support and computer hardware replenishment and maintenance. Chief Information Officer Jim Rinaldi discusses the benefits of the new arrangement.

HOW DID THIS EFFORT COME ABOUT?

Our current desktop services contract with Lockheed Martin Information Technologies expires at the end of 2007. We wanted to take the opportunity, through the new contract, to improve service where we can, and be responsive to our users' needs while operating in the most cost-effective way. We're limiting ourselves if we don't change from the old techniques.

IS THERE A NEW DESKTOP SERVICES VENDOR?

Following a strong competition for the next subcontract, Lockheed Martin was selected. We're excited about our new subcontract. The new subcontract is not an extension of the current one but is a completely new fixed-price, performance-based subcontract with a three-year base period and award term options for two two-year periods and a final three-year period, totaling a possible 10-year subcontract. Not only will Lockheed Martin's performance be measured for the award term periods but there is also a new set of monthly metrics that they will have to meet. Under this new subcontract, the Office of the CIO will have a better handle on what the true cost of ownership will be, enabling us to provide the Lab with cost savings over time.

Small business participation is also part of the contract; Lockheed has several subcontractors to support them, which is important for us and NASA to meet our small-business goals.

WHAT ARE THE ADVANTAGES OF THE NEW DEAL FOR JPL?

This change allows us to take our services to the next level, whether it's consolidation of our services, faster adoption of new technologies, more synergy among the technologies, providing and servicing low-end to high-end devices and taking ownership of problems. Overall, it will be a more cohesive way of doing information technology for the entire JPL community; there will be no more services fragmented all over the place.

Also, Lockheed is building a local data center at Woodbury, which gives us the ability to acquire capacity rather than more equipment, to host applications and websites, and provide for large-scale data storage. We buy a lot of servers and

definitely have a lot of excess capacity due to our fragmented IT environment, so we will put data management in the experts' hands.

WHAT NEW SERVICES WILL BE PROVIDED?

There are four major upgrades we will support. The one that might impact the most people is the adoption of the Unified Service Desk to replace the Help Desk. Callers will be greeted by a live voice and won't be passed off to too many hands. The idea is to offer a single point of contact wherever possible.

A Microsoft Office upgrade with a new user interface and functionality will be coming up in the next "core build" in early 2008. This is planned for release for Windows users in mid-January; the Macintosh version is still undergoing pre-release tests.

Part of the Microsoft upgrade involves the new Unified Messaging service, which will combine e-mail, calendaring (currently Meeting Maker), instant messaging, newsgroups and list services. This will be functional across all platforms—Windows users will access Microsoft Outlook, Macintosh users will access Entourage and Unix and Linux customers will use Evolution. And there will be improved support for items such as BlackBerry and Treo.

Employees will have two options for their desktop support, both of which will include personal file storage for data backup. Most people will probably use the "developer desktop," which will provide lots of flexibility, particularly when we roll out new applications. The "managed desktop" will be fully operated by the contractor, in terms of hardware, software and backup capabilities.

WHAT ABOUT COSTS TO INDIVIDUAL CUSTOMERS? WILL ALL SERVICES GO UP IN PRICE, OR DO YOU SEE SAVINGS IN SOME AREAS OF THIS TRANSITION?

Rates should be relatively flat the first year. After that we will work for rate reductions across the board.

One nice aspect of this is that users will have only one charge for Unified Service Desk support, rather than a charge for each computer as under the expiring contract.

The bottom line is we really want the service as good or better than before, to provide the tools and support our staff needs. We want quality, not just lower costs.

WHAT CHANGES WILL PEOPLE NOTICE WHEN THEY RETURN TO WORK JAN. 2?

It's probably more a communications change than a physical change. I don't expect the transition to be disruptive or dramatic. We'll try to make it as seamless as possible. There might be some hiccups; we don't think that on the first day it will be perfect. Some things will get done faster, like consolidation of the help desk capability. JPL will adopt the technology incrementally, and I think people can pick up new software quickly.

WHAT'S BEEN THE REACTION FROM THE JPL COMMUNITY DURING THIS TRANSITION PERIOD?

It's been curious; some people get emotional about things like this. But for the most part, people have an open mind about the changes we're making. We understand we can't please everybody. But we do want to make sure people trust what we say.

I appreciate the support I've been given, both by upper management and from people Labwide. We are taking all input into consideration.

There have been some critics but most of the feedback we've received has been very constructive. We want the Laboratory to be pleased, not for IT to be pleased. It's the function people want to get right, not necessarily how it's delivered.

WHERE CAN EMPLOYEES GO FOR MORE INFORMATION?

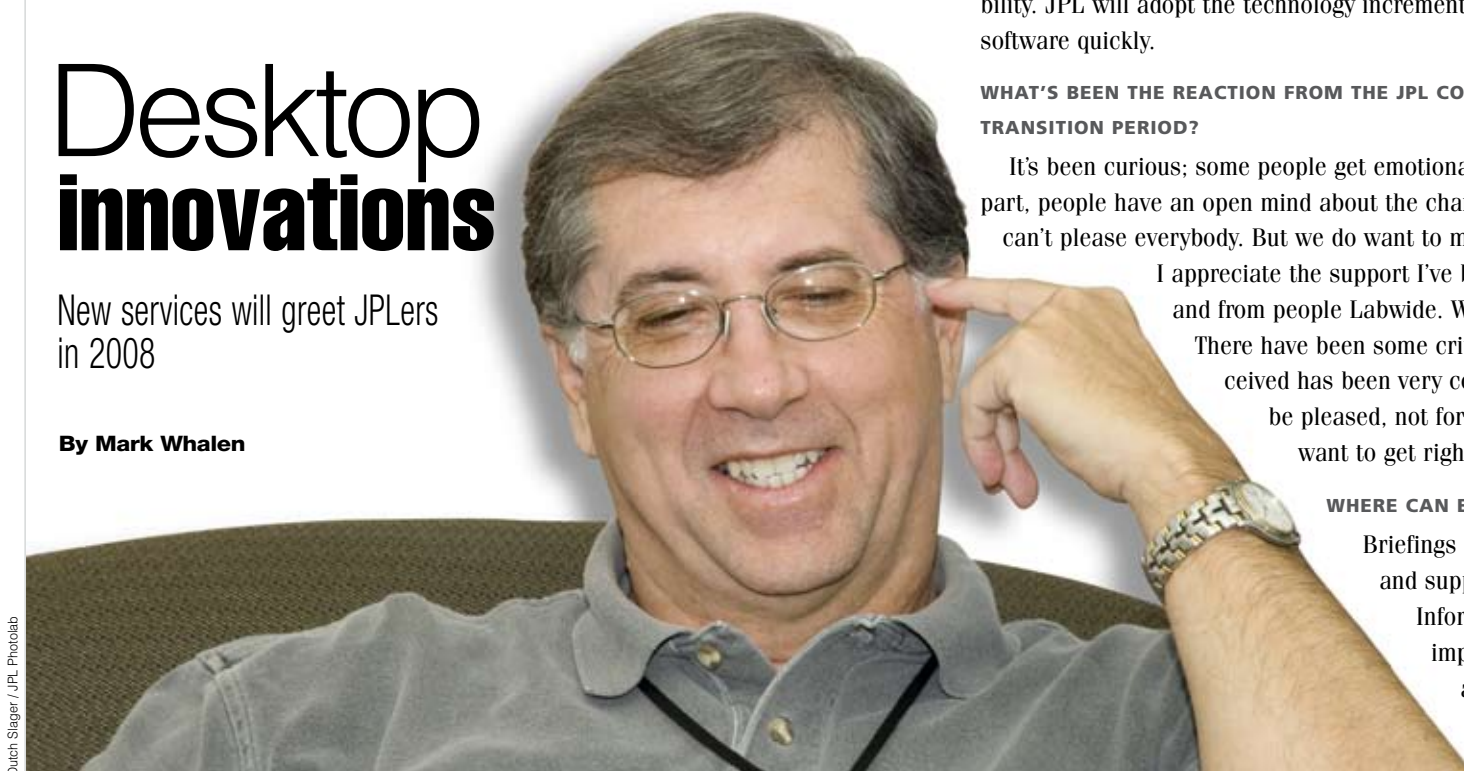
Briefings on various aspects of the new IT services and support will be held Dec. 3, 13 and 17.

Information about these presentations and implementation of the subcontract are available at our transition site at <http://ocio.jpl.nasa.gov/transition>. ■

Desktop innovations

New services will greet JPLers
in 2008

By Mark Whalen



Constellation assignments announced



The Athlete rover.

JPL is playing a major role in NASA's plans to return to the moon in the next decade.

The agency announced in late October the assignments for each of the NASA centers in the Constellation Program, which is working to send astronauts to the moon to set up a lunar outpost to prepare for human exploration farther into the solar system. The new assignments cover elements of the lunar lander and lunar surface operations.

"JPL is broadly engaged in this huge challenge for NASA and we can definitely make significant contributions to make it successful," said Mike Sander, manager of the Laboratory's Exploration Systems and Technology Office.

Many people from JPL are playing key roles in Constellation and in shaping strategy and architecture for returning to the moon. "We are building on an existing foundation," noted Garry Burdick, deputy manager of the Exploration Systems and Technology Office. "This type of work is where the Lab's strengths come into play and where our capabilities can best help NASA." He said each of the technical divisions would play a role, with about 200 full-time equivalents currently involved in Constellation work.

The Lab is providing program integration services for Constellation, including support for safety, reliability and quality assurance; systems engineering and integration; and test and evaluation.

NASA said JPL will be a major player in Constellation's lunar architecture work; former JPL Chief Engineer Brian Muirhead is leading one of the teams. The Laboratory will provide significant support to the lunar lander, including spacecraft design, guidance, navigation and control, life-support systems and avionics support.

For lunar surface systems work, JPL is currently leading the technology development for the All-Terrain Hex-Limbed Extra-Terrestrial Explorer (Athlete), which the agency said could potentially carry heavy elements on the lunar surface. The Lab will also support life-support systems on the lunar surface systems as well as local element communications.

JPL's expertise in navigation will support the Lunar Crater Observation and Sensing Satellite. The Lab also leads the Advanced Environmental Monitoring and Control project, which develops technologies that sense hazards and provide information to control systems that help maintain a safe environment for astronauts in future exploration of the solar system. To that end, JPL is building two instruments for delivery to the International Space Station—the Electronic Nose and Vehicle Cabin Atmosphere Monitor.

Other work underway includes completing the Diviner Lunar Radiometer Experiment aboard the Lunar Reconnaissance Orbiter, which will map the entire lunar surface's temperature to identify cold traps and potential ice deposits, and the International Space Station crew exploration vehicle interface adapter.

JPL will also support the development of the advanced thermal protection system for the Orion crew exploration vehicle, and leads the systems engineering process for mission operations development, Burdick noted. Counting technical work on Orion, he said, another 100 full-time equivalents could contribute.

NASA said assignments for the Ares V rocket and lunar lander will ramp up in fiscal year 2011, with surface system assignments in fiscal year 2012. While these decisions will result in budget and personnel allocations at the centers, detailed estimates will not be available until after prime contractors are formally selected for the work.

"We have been significant players in systems engineering for the Constellation level 2 program," Sander said. "This (the lunar program) will be an additional area for our contributions. We've learned over the last several years the importance of building relationships and bridges of trust between centers, which will be a key to our success in this hard endeavor." ■

Lab to lead innovative partnerships

By Debora Wolfenbarger, JPL Innovative Partnerships Program

Four JPL-led projects were among 38 partnerships selected for seed funds under NASA's Innovative Partnerships Program to develop key technologies critically needed for the agency's mission. The projects will address technology barriers with cost-shared, joint-development programs.

The partnerships span 30 states and include nine universities, 23 small- to medium-sized businesses, 17 large corporations and participation by all 10 NASA centers.

The JPL selected projects are as follows:

Advanced High-Pressure Electrolysis System Development For NASA's Exploration Systems Program. S.R. Narayanan of the Electrochemical Technologies Group will lead this partnership with Hamilton-Sundstrand, Glenn Research Center and Johnson Space Center. This effort will develop an electrolyzer prototype that generates hydrogen and oxygen from water at high pressure. The NASA Exploration Program needs electrolyzers for regenerative fuel cells, life support and propellant storage that operate at higher pressures and efficiencies than are available commercially. Hamilton-Sundstrand will provide the high-pressure stack, JPL will provide the advanced membrane-electrode assemblies, Glenn will perform the testing and Johnson Space Center will support the design of the high-pressure stack.

Helium Superpressure Balloon Technology Validation Experiments. Led by Jeffery Hall of the Robotic Hardware Systems Group in collaboration with Near Space Corp., this partnership will demonstrate aerial deployment and inflation of a superpressure balloon, an enabling technology for Titan, Venus and Mars aerobot missions. Near Space will fabricate and launch the balloon, and JPL will provide the inflation system and flight instrumentation.

Low-Temperature, Long-Life, Compliant Wheels For the Lunar Surface and Beyond. Jaret Matthews of the Robotic Hardware Systems Group will lead this partnership with Michelin, Clemson University, the University of Hawaii at Hilo and the Pacific International Space Center for Exploration Systems. This effort will advance the Michelin Tweel technology to operate over extremes of lunar temperatures.

This non-pneumatic yet compliant wheel promises a significant improvement over Apollo in terms of range, performance and tolerance to lunar temperatures. The wheels will be demonstrated on the Athlete rover at the Pisces center in Hawaii.

Risk Reduction Testing of the Astromesh Reflector In Support of Earth Science Missions. Mark Thomson of the Advanced Deployable Structures Group will lead this partnership with Northrop Grumman Space Technology to validate analytical models used to predict on-orbit thermoelastic deformation of the Next Generation Space Telescope's AstroMesh reflector. Deployable mesh microwave reflectors are an enabling technology for the top three decadal survey Earth science missions: Deformation, Ecosystem Structure and Dynamics of Ice; Extended Ocean Vector Winds Mission; and Soil Moisture Active Passive Mission. Thermal deformations result in performance degradation of the highly sensitive radar and radiometric measurements. An accurate thermal model will allow scientists to know whether the distortions can be ignored or compensated for to maintain the required sensitivity. The Next Generation Space Telescope will provide a flightworthy, 5-meter-aperture (16-foot) mesh reflector, model validation and test support. JPL will provide the 25-foot space simulator, test setup, instrumentation and metrology, and will perform thermal vacuum testing.

The one-year projects will involve collaboration among three principal partners: a NASA partnership manager at a field center; a co-principal investigator within a NASA program or project office; and an external co-principal investigator from the private sector, academia or other government laboratory.

An important element of the fund is the leveraging of financial resources because of contributions from all three partners. NASA's Innovative Partnerships Program is contributing \$9 million in funding from its Technology Transfer Partnerships budget; \$13 million is being provided by NASA sources in programs, projects or field centers; and \$12 million will come from external partners for a total combined financial commitment of \$34 million.

The mission of the Innovative Partnerships Program is to provide leveraged technology for NASA's mission directorates, programs and projects through investments and technology partnerships with industry, academia, government agencies and national laboratories. ■

State of the Lab

More challenges ahead

With 19 spacecraft and seven major instruments already in flight, JPL is looking forward to another challenging and fulfilling year, Lab Director Charles Elachi told employees at his semiannual State of the Lab address Nov. 6.

As the Lab prepares to celebrate the 50th anniversary of spaceflight in January, Elachi pointed out the steady progression in missions JPL has undertaken for NASA since Explorer 1, the first American satellite. Since the early 1990s, JPL has had at least five spacecraft flying every year; by the end of the decade, eight JPL missions were active. Since then, the spike has turned dramatically upward, with the Laboratory currently managing about one-third of NASA's current 58 missions in flight.

"People forget what a challenge it is to operate our missions," Elachi told the von Kármán Auditorium audience. "It's absolutely amazing what all of you have accomplished over the last 50 years."

Elachi highlighted near-term strategic goals for the Lab's directorates and programmatic areas.

Plans for the solar system exploration area include Juno, a Jupiter orbiter slated for launch in 2011. The fate of JPL's Discovery Program proposal for Grail, an Earth-orbiting satellite, should be known by December; a future Dis-

covery competition will start in 2009. Late next year, an announcement of opportunity is planned for a New Frontiers Program competition.

Studies are underway for a flagship mission to the Titan/Saturnian system or the Europa/Jovian system, missions Elachi termed as "a continuation of the Voyager, Galileo and Cassini series." More detailed studies are forthcoming for 2009, and Elachi thinks in the next 15 years JPL could be doing both missions.

Elachi characterized JPL's continuous and permanent presence on Mars as the equivalent of permanent stations in the Antarctica. The two Mars Exploration Rovers, along with the Odyssey and Reconnaissance orbiters, will be joined by the Phoenix lander in May 2008. With NASA's strategy evolving from following the water to searching for habitability and life, the success of Phoenix and Mars Science Laboratory (launching in 2009) will affect the future of the program.

Elachi noted an ongoing scientific debate as to whether a Mars sample return is the next major step versus sending missions to the planet at every opportunity, or about every two years. If sample return is the decision, he said, "I'm sure we'll have an invigorating and exciting program. On the other hand, we might have to miss an opportunity to accumulate enough money to do a sample return." Such a mission, he said, would begin no later than 2016 and would require several elements, including orbiters and rovers. "This is a very challenging mission but it's the kind of thing we would love to do here."

Elachi noted that JPL will be in "very good shape" over the long term in both the Mars and other planetary programs, with about half of the Laboratory's staff working in these areas.

One of the hottest topics these days, the director said, is Earth science. "There is no doubt in my mind that there will be positive change in this area in the next couple of years," Elachi said. Particularly in areas of global change, "This is not only a science issue, but a utilitarian issue. In the public eye, NASA can play a significant role in providing solid science data for policymakers to make their decisions. JPL's role will be to make sure we develop the critical measurements related to our planet, based on a solid scientific basis."

For the full text of this article, log on to <http://dailyplanet/onlab/elachi-nov-all-hands.php>. ■

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Lab will lead research studies

JPL personnel have been selected as principal investigators or co-investigators in recent awards for two NASA science programs.

The Lab will participate in lead or co-lead positions on more than a dozen studies recently announced by NASA for its Research Opportunities in Space and Earth Sciences program.

Five studies that include JPL leadership under the Astronomy and Physics Research and Analysis category were selected: "Electron Collisions with Highly Charged Ions: Basic Astrophysical Phenomena and Measurement of Absolute Collision Strengths," Ara Chutjian, principal investigator; "Distributed Antenna-Coupled Transition Edge Sensors for Far Infrared Imaging and Polarimetry," Peter Day, principal investigator; "Stratospheric Terahertz Observatory: A Long Duration Balloon Experiment to Under-

stand the Life Cycle of the Interstellar Medium," Jonathan Kawamura, lead co-investigator (principal investigator at the University of Arizona); "Antarctic Impulsive Transient Antenna," lead JPL co-investigator Kurt Liewer (principal investigator at the University of Hawaii); "Extremely Large Optical/Ultraviolet Microwave Kinetic Inductance Detector Focal Plane Arrays," Benjamin Mazin, principal investigator.

Three JPL studies were selected under Planetary Instrument Definition and Development: "A Radiation Tolerant Detector Design for NASA Planetary Applications," Shouleh Nikzad, lead co-investigator (principal investigator at Rochester Institute of Technology); "Ultra-thin Silicon Detectors for Energetic Particle Studies in Planetary Environments," Mark

Wiedenbeck, lead co-investigator (principal investigator is Ed Stone, Caltech); "A Miniaturized Sensor for Electrical Field Measurements in Dusty Environments," Harold Kirkham, lead co-investigator (principal investigator at the University of Michigan).

Under Stardust Sample Analysis, two studies will have JPL leadership: "Experimentally Determined Thermal Calibrations of Fine Particle Capture in Aerogel," Steven Jones, principal investigator; "Reproduction of Impact Features and Projectile Residues of Stardust," Jones, lead co-investigator (principal investigator at Johnson Space Center).

Two were selected under Planetary Astronomy: "Evolution of Giant Anticyclonic Storms in Jupiter," Glenn Orton, principal investigator; "Ground-Based Spectroscopy of Mars: Sulfates and Polar Hood Clouds," Diana Blaney, principal investigator.

Under Concept Studies for Lunar Sortie Science Opportunities, "Radio Observatory for Lunar Sortie Science" was selected; lead co-investigator is Dayton Jones, with the principal investigator at Goddard Space Flight Center. In the Planetary Atmospheres category, "Electron-Impact Cross Sections for Models of Ultraviolet Observations of the Outer Planets by Cassini and Hubble Space Telescope," was selected, with Isik Kanik as principal investigator.

For more information on the program, visit <http://proposals-dev.jpl.nasa.gov/Smallproposals>.

The Laboratory was also recently awarded nine of the of 29 proposals selected for NASA's Making Earth System Data Records for Use in Research Environments (Measures) program. JPL personnel are listed as principal investigator or co-investigator on 38 percent of the funded proposals.

Continued on page 4

News Briefs



John Baker

Safety center lauds JPL effort

A NASA team led by JPL received honors at a recent leadership meeting held at NASA Langley.

JPL's John Baker accepted a Group Achievement Award on behalf of the team, which was recognized for "technical excellence in the investigation into the merits of water versus land landings for the Crew Exploration Vehicle."

The award was bestowed by the NASA Engineering and Safety Center and recognized individuals and teams for their contributions to critical technical assessments over the past year.

The Orion Crew Exploration Vehicle will ferry astronauts to and from the surface of the moon by the

end of the next decade. A key technical question has been whether to aim for water or land landings upon return to Earth. The team's work will aid in that decision.

The Group Achievement Awards honor a group of employees comprising government and non-government personnel for outstanding accomplishment through the coordination of individual efforts that have contributed substantially to the accomplishment of the safety center's mission.

This is the fourth year that the safety center has recognized employees and NASA partners for outstanding contributions to the safety center-sponsored activities and to encourage critical examination of engineering problems.

Passings



Walter Larkin

Walter Larkin, 83, retired Tracking and Data Acquisition manager, died Aug. 17.

Larkin joined JPL in 1956. He worked in guidance and telemetry for the Army Corporal and Sergeant missile developments in New Mexico until 1957, and was a member of the launch team for the nation's first satellite, Explorer 1, in January 1958.

He served as director for the Deep Space Network's Goldstone tracking complex development and operations from 1959-69. From 1963-69, under Larkin's direction, Goldstone tracked the Ranger and Surveyor series to the moon and the Mariner fly-bys of Mars and Venus.

Larkin served as tracking and data acquisition representative to the Deep Space Network stations in Australia and South Africa from 1969-78 and 1982-85. He retired in 1987.

Larkin is survived by sons Craig, Blake and Brian; daughters Kathleen, Maureen and Barbara; and nine grandchildren.

Adeline "Dee" Worthington, 91, a retired administrative assistant who worked at the Lab for 40 years, died Oct. 17.

Worthington is survived by her brother Arthur Quatro, children Thomas, Michael, Richard and Janet, and six grandchildren.

Joe Koukol, 91, retired Division 33 manager, died Oct. 18.

Koukol joined JPL in 1950 and worked on the design of guidance and telemetry for the Corporal and Sergeant programs. He then was responsible for the development and

building of the tracking station in Puerto Rico that received the data from Explorer 1. He later worked in the development of radio and telemetry for the Ranger and Mariner projects, and then served as a group supervisor, section manager and ultimately as division manager for the Telecommunications Division. He retired from JPL in 1976.

Koukol is survived by his wife, Irene; children Lynne Kligen, Bob Koukol and Kathy Spofford, Patti and Cy Dolce; grandchildren Jimmy Kligen, Scott and Brian Koukol, Olivia Hampton and Michelle Weiss; and great grandson Parker Hampton.

Services were held Nov. 2 at Forest Lawn in Glendale.

Virginia Taylor, a retired administrative secretary, died Oct. 19.

Taylor worked at the Lab from 1953 to 1979. She is survived by her son, Tom. No services were held.

Mary Tucker, a Deep Space Network employee for 11 years, died Oct. 23.

Tucker is survived by her husband, Charles, son Frank and daughter Jean. A memorial service was held Nov 2. In lieu of flowers, donations can be made to the Alzheimers Association.

Orlando Figueroa, 82, retired from Section 622, died Oct. 24.

Figueroa worked at JPL from 1964 to 1990. He is survived by his wife, Myrna and daughter Brenda Deshon.



Ron Slusser

Ron Slusser, 63, an engineer from the Deep Space Network Mission Commitments Office, died Oct. 26.

Slusser, a member of the Deep Space Network's Future Missions Group, had been at JPL since 1968. He is survived by his parents.

Research *Continued from page 3*

Funding for the five-year proposals with JPL leadership totals about \$36.8 million. Proposals were submitted by NASA centers, federal agencies, universities and industry.

Proposals for the program provide or add to mature data records needed for NASA Earth System research and, potentially, product science tools and services capabilities; apply Earth Science Directorate principles regarding community involvement, product life cycle planning and standards and interfaces for interoperability and exchange of data and information; and support ongoing data system evolution efforts through participation in one or more Earth science working groups, which include standards and interfaces, technology infusion, architecture and reuse and metrics planning and reporting.

Here are the winning proposals with JPL principal investigators:

"A Multi-Sensor Water Vapor Climate Data Record Using Cloud Classification," Eric Fetzer; "Ice Velocity and Mapping of the Great Ice Sheets: Antarctica," Eric Rignot; "Solid

Earth Science Earth System Data Record System," Frank Webb; "The Definitive Merged Global Digital Topographic Data Set," Michael Kobrick; "An Inundated Wetlands Earth System Data Record: Global Monitoring of Wetland Extent and Dynamics," Kyle McDonald; "Global Ozone Chemistry and Related Trace Gas Data Records for the Stratosphere," Lucien Froidevaux; "Earth System Data Record of Small-Scale Kinematics of Arctic Ocean Sea Ice," Ron Kwok; "Multi-sensor Ultra High Resolution Global Sea Surface Temperature Field," Toshio Chin; "An Earth Science Data Record of Changes in Earth Masses from Grace, Champ and Other Satellites," Victor Zlotnicki.

The two proposals with JPL co-investigators are "An Earth System Data Record for Land Surface Freeze/Thaw State: Quantifying Terrestrial Water Mobility Constraints to Global Ecosystem Processes," Kyle McDonald; and "Integrated Multi-Mission Ocean Altimeter Data For Climate Research," Shailen Desai and Shannon Brown. ■

Letters

My family and I would like to thank our JPL friends and colleagues for their kind words and show of support through my father's illness and recent passing. The plants, cards, thoughts and prayers made a big difference for us through this difficult time. Your warmth and kindness will long be remembered. Jim and I feel blessed to be a part of this JPL family.

Jim and Suzanne Oyama

My family and I would like to thank all of my colleagues in Section 388 and elsewhere around the Lab for their support and sympathies after the passing of my father, John. My mother, brothers, wife and I appreciate your thoughtfulness. Thanks also to JPL for the beautiful plant.

Joe Jacob

My family and I would like to express our deep appreciation for all the cards, flowers, gift and kind words of sympathy after the passing of our dear mother overseas. I also thank JPL for the beautiful orchid plant. Your prayers, support and thoughtfulness have meant so much to us during this difficult time. May God bless you all.

Lientje Zheng and family

On behalf of my mom, sisters, our spouses, his grandchildren and great grandson I would like to express our heartfelt thanks for all of the cards, kind words, flowers, contributions of all types and condolences by all in the JPL extended family on the passing of my dad, Joe Koukol. I especially would like to thank members of the Biotechnology and Planetary Protection Group, Section 352, Mars Program Office, Institutional Special Projects Office, members of the MSL Project and his former colleagues who have been extremely supportive of me and my family during this time. The outpouring of support, both professionally and personally from many diverse parts of JPL, reminds me of how fortunate we all are to work with such a wonderful colligation of people. We also very much appreciate and thank JPL for the beautiful plant, which is a treasured remembrance of my dad's love of nature and life.

Bob Koukol

Retirees

The following JPL employees retired in December:

Gary Bruner, 31 years, Section 352; **John Bulharowski**, 19 years, Section 3824.

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