

SPECIAL ISSUE

Charles Elachi  
takes the helm at JPL



Director  
Elachi's  
2020  
vision

By Angela McGahan

“Our mission is to  
explore the Earth,  
our solar system,  
and the universe  
that lies beyond, and  
share the adventure  
of discovery with  
the public.”

— Dr. Charles Elachi

ON MAY 2, JPL'S NEW DIRECTOR, DR. CHARLES ELACHI, PRESENTED THE VISION THAT WILL TAKE THE LAB INTO THE NEXT GENERATION OF SPACE EXPLORATION.

Elachi's vision incorporates the comments and ideas voiced during his three months of meetings with JPL employees, and builds on a course set by Elachi's predecessors.

Elachi told a standing-room only crowd in von Kármán Auditorium that where once JPL's challenge was to explore the planets in our solar system, the challenge today is to explore and understand the planets in our solar system, and to expand the frontier of space exploration to discover and understand neighboring solar systems as well as our own. To maintain the Lab's cutting-edge legacy in space exploration, Elachi stressed sharing the knowledge and adventure of space exploration with the most important audience—the American public.

In the next 10 years, JPL plans to launch close to 25 missions, and some 25 payload packages. In order to accomplish these goals, Elachi announced a reorganization and a restructuring of the Laboratory. He stated five reasons for the reorganization: to ensure mission success, to promote program development and execution, to increase support for technology and science, to achieve administrative excellence, and to build the interplanetary network and information systems of the future.

The program directorates will be organized around mission areas of Earth, Solar System, Astronomy and Physics, and Interplanetary Network. Elachi noted the advantages of this approach. “The missions will have a permanent home base for support, and this reduces the number of hand-offs of projects from one directorate to another,” he said.

Dr. Firouz Naderi will lead the Solar System Exploration Programs Directorate, which will be in charge of developing concepts for JPL's solar system exploration missions. Naderi will also continue to hold his current position leading the Mars Exploration Program Office. The newly created Planetary Flight Projects Directorate, which will design, build and fly planetary spacecraft, will be headed by Chris Jones. Larry Simmons will direct a new Astronomy and Physics Directorate. This organization will oversee JPL's spacecraft and instruments that explore the influence of the sun within our solar system or that look out beyond the solar system. A new Earth Science and Technology Directorate will be headed by Dr. Diane Evans. In addition to Earth sciences missions, this organization will conduct JPL's work for non-NASA sponsors, including other federal agencies such as the Department of Defense.

Elachi believes that innovations in technology and science best prosper when they are tied to missions. His plan calls for a Chief Technologist in addition to the existing position of Chief Scientist to serve in the Director's Office. This newly created position will be held as an additional duty by Dr. Barbara Wilson. Dr. Thomas Prince will join JPL as the Laboratory's Chief Scientist. A professor of astronomy at Caltech, Prince is the NASA mission scientist for the Laser Interferometer Space Antenna (LISA) project. He succeeds Dr. Moustafa Chahine, who will remain at JPL to conduct research.

In addition to the director's staff, each of the program directorates will also have a chief technologist and chief scientist. These directorates

will be responsible for the projects and programs as well as for the associated science and technology.

Thomas Gavin has been appointed to the new position of JPL Associate Director for Flight Projects and Mission Success. This position was created to emphasize the importance of project execution, and Gavin will oversee JPL's development of flight systems and associated engineering infrastructure.

Also continuing on the Executive Council will be Dr. Harry Detweiler, who heads the Office of Safety and Mission Success, and Caltech General Counsel Harry Yohalem. Two external relations executives who previously served as ex-officio members of the Executive Council will now become full members—Blaine Baggett, executive manager of the Office of Communications and Education, and Dr. Richard O'Toole, manager of the Office of Legislative and International Affairs.

The Telecommunications and Mission Operations Directorate (TMOD) has been renamed the Interplanetary Network and Information Systems Directorate, and will continue to be headed by Gael Squibb. JPL's Institutional Computing and Information Systems (ICIS) office will become part of this directorate.

To streamline administration procedures, a new directorate has been formed. JPL's financial management, business operations, administrative support and human resources organizations will be consolidated into a new Business Operations and Human Resources Directorate, headed by Chief Financial Officer Fred McNutt. Susan Henry will be McNutt's deputy and will continue to serve on the Executive Council.

Perhaps the most fundamental change, and one that Elachi believes will contribute toward creating future generations of experienced senior managers for the Lab, is that Executive Council members will be appointed for defined terms of three to five years. At the end of the term, each Executive Council member will be considered for a reassignment or extension. In addition, Elachi has instituted Management Councils, which will be comprised of EC members and selected employees. The Management Councils will act as a reviewing authority before forwarding issues to the full EC. To review the new organizational chart, log on to [www.jpl.nasa.gov/dailyplanet](http://www.jpl.nasa.gov/dailyplanet).

The new organizational structure and new faces in Executive Council are poised to take the Lab into the next 20 years, and to find the answers to what Elachi calls “irresistible questions” of how the universe began, how it evolved, how life began, and, are we alone in the universe? Because, as Elachi states, “JPL exists to envision and to create the future, to continue to do what has never been done before, and to go where no one has gone before.”

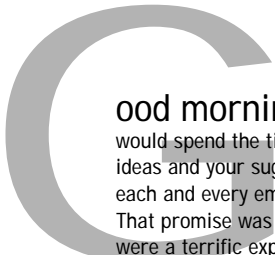
Above: Bob Brown / JPL Photo Lab



AD: Additional Duty

DD: Deputy Director





ood morning. Three months ago I promised you that I would spend the time between then and today listening to your ideas and your suggestions. I told you then that I would provide each and every employee the opportunity to meet with me. That promise was fulfilled as of two days ago. The dialogues were a terrific experience and I enjoyed them very much. In fact, I enjoyed it so much, I'm repeating this commitment for the coming year.

I learned a great deal from our dialogues. You gave me a lot to think about. I especially appreciated your thoughts regarding what needs to be done differently to help us excel in our work. I was reassured—actually I was inspired—to hear that your passions and mine are the same. We share the common desire that JPL remains the world's leading organization for robotic space exploration.

Vision

So how can we assure ourselves of world leadership? Where are we headed? And as many of you asked of me, how do I envision JPL's future?

What I can tell you is that we will continue the tradition of excellence and boldness that characterizes both of our parent institutions: NASA and Caltech. We will continue to do what has never been done before and to go where no one has gone before.

Easily said. Not so easily done. But that's why JPL exists: to envision and then create the future.

When Bill Pickering, the first Director of JPL in the NASA era, was asked in the late '50s what was his vision for JPL, his answer was "To explore the planets of our solar system." He, Bruce Murray, Lew Allen, Ed Stone and all past JPL employees have left us an unbelievable legacy. We are acknowledged world-wide as the people and the place that opened the planetary frontier to humankind.

For today and tomorrow we have to build on Pickering's vision. Where once the challenge was to explore the planets of our solar system, we now want to understand these places. And in addition to exploring and understanding our solar system, we want to discover neighboring solar systems and explore them too.

And understand them not just for ourselves, but share this knowledge, share the excitement and adventure of space exploration with those who pay the bills—the American public.

When I think of the future, I cannot help but think of the next generation. The next generation of rockets, spacecraft and instruments. The next generation of JPLers and JPL's leadership. And, of course, the next generation of challenges and discoveries.

In the next 20 years, I like to think of it as JPL's 2020 vision. We want to answer fundamental questions that resonate with people from all walks of life. How did the universe begin? How has it evolved? What will be its fate? How did life begin? And are we alone in the universe? Answering these questions involves not only the expansion of our physical frontier, but also our intellectual frontier.

Our role in finding answers to these deep questions requires us to explore and understand the biological, physical and chemical evolution of our and neighboring solar systems. Expanding into these physical and intellectual frontiers means we will be probing and exploring thousands of stars in our neighborhood, eventually detecting and imaging other blue dots out there that are similar to our own planet.

We want to do all these things, first of all, because the questions are simply irresistible. But we also want to find these answers so that we can apply that knowledge to understand the evolution and dynamics of our own planet—to become better stewards of our home for today and for the generations to come.

The Territory Ahead

This first decade of the 21st century will be an amazing time for us. The territory ahead of us is breathtaking. The missions required to get there are bold. They are audacious. And they are plentiful. In the next 10 to 15 years there are some 25 flight missions to be launched and some 25 payload packages. JPL is going to be a very busy place. The days ahead will require a new generation of spacecraft and instruments, new technology and new software. In the next 10 to 15 years we intend to:

- Establish permanent robotic presence on and around Mars
- Probe below the surface of Europa
- Explore Titan and the Saturnian system
- Bring back samples from comets, asteroids, Mars and the solar wind
- Visit the far reaches of the solar system, Pluto and the Kuiper belt and the immediate neighborhood of our sun
- Map the infrared sky and image the disks around stars—so we can shed light on how the universe evolved
- Search for planets around neighboring stars
- Establish the interplanetary Internet of the future
- Shed light on the fundamental drivers behind the dynamics of our restless Earth: our oceans and atmosphere, and literally earthshaking phenomena like volcanoes and earthquakes
- And probe into the fundamental laws of physics by using the space environment and searching for gravitational waves.

An Environment To Excel

These missions require the best in the world, and that is you. Each and every one of you. These missions require us to be leaders in technology, science, engineering, business administration, services, management, and communications with the public.

We need not only to be leaders in what we do but also in how we do our missions. In this limited budget environment we have to be efficient and nimble. And we must be affordable without compromising safety or mission success.

Now, let me address what we will be doing to help in creating the environment in which you can continue to excel.

From what you told me, a solid foundation is already in place:

- You and your colleagues are the best and you have extraordinary talents (I guess we are the best so there's no reason to be humble)
- You are excited about and dedicated to your work
- You are rightfully proud of being at JPL, for you know you are engaged in work the rest of the world can only dream about
- We have a solid base of experienced people
- We have a very exciting set of challenges ahead of us

There were a lot of very good ideas, and we do have a number of serious issues that need to be addressed. As we all know,

space exploration is a tough business. Space is a harsh and unforgiving environment. You don't get many second chances. And we have to succeed in our current missions in order to realize the future I have just described.

There's not much we can do about changing the unforgiving environment of space. But we do have it in our power to influence the environment here at the Laboratory. We have it in our power to create an environment that helps all of us to excel. I've listened to your ideas about what needs to change. And I am in agreement with many of them. And those we are going to act on.

Let me begin by touching on two questions that were frequently asked: "Should we worry about other organizations doing some of the planetary missions?" and "Are we going to be doing in-house work or do all contract work?"

My answer is very simple. Our role is like that of Lewis and Clark. We are discovering the passages and routes where others will follow. We should not worry that others want to do what we have done, that they will follow us. Of course they will! In fact, we want them to, because we are going to be exploring the next frontier.

At the same time, I assure you that we will always have at least one in-house flight project in development, at least one in-house flight project in definition, and a set of in-house flight instruments and, with the support of our contractors, we will be responsible for operating all of our missions.

Thus, the vast majority of you will always be working on in-house, hands-on work. NASA wants us to stay the best and attract the best, and to keep hands-on experience so we can be successful in all our responsibilities.

However, we should not forget that NASA has entrusted us with major elements of the national space exploration program. We have to step up to manage and coordinate a wide spectrum of missions that cannot all be done in-house. So, we will engage our industrial partners on many of our missions, and our academic partners in all of our missions. We will focus our in-house efforts on pioneering missions and instruments. We will acquire from industry what industry can do well. And make no mistake about it: it is as important to put top-quality JPL talents on our contract work because we are ultimately responsible. We have the responsibility of making sure all our NASA missions are successful. In addition, we can always learn from our partners.

Infrastructure

From many of you I have heard that you are concerned about our technical infrastructure. I share this concern and plan to provide more support for upgrades.

Of course, to do this requires money. In fact, many of the needs you identified can only be answered with additional funding. We don't have a printing machine for new money. But we can undertake a review of how we spend the dollars we do control—our burden funds. In the next three months we're going to take a long hard look at the burden budget, conduct a zero-based review, and in some areas we may reprioritize within our burden budget rates. This will require us to make tough choices because we have to live within our means and make sure our projects stay affordable. Lower priorities will drop off.

Rules and Procedures

I also heard from many that you are being overloaded by rules, procedures and processes. This tendency to regulate—even over-regulate—is common to any large institution. But we experience them as barnacles that slow down an otherwise fast-moving ship.

Do not mistake what I am about to say. We have to be realists about rules and procedures. We want to be ISO-certified because it is the right thing. We will follow our contractual agreements and the laws. Good rules and procedures are legitimately there because they are the essence of our past experience and help ensure that we will be successful in the future.

As many of you know, we created DMIE—Design and Maintain the Institutional Environment—to try to simplify our life. But in many cases it's not turned out that way. And we need to do something about it.

We are going to restructure ownership of our rules, procedures and processes. In the recent past we have had a triangular ownership of these important documents by a combination of Line Managers, Project/Program Managers and Process Owners. I am directing that all needed processes will be assigned to either a line or Project/Program manager for ownership. They will have the option to assign them to someone in their organization, but they will be held responsible for the outcome.

We are going to reexamine all the rules in DMIE and make sure to only keep the necessary ones. We are going to make them simple, clear, understandable and easily accessible. Although process owners will develop rules and procedures, only the deputy director and associate directors have final approval on rules that have a wide impact on employees.

In return, I expect the rules that remain on the books will be strictly followed.

We will start making these changes now. Rome wasn't built in a single day, and neither was DMIE. So, it is going to take some time to do this. But I expect to report back later this summer that a simpler system is well underway.

There have also been questions about my support of process-based management. I have consistently answered that JPL has always had processes. We just didn't call it "PBM." At its heart, the "process" philosophy requires that we always look at the full cycle of any job, from beginning to end, and ask, "What have we learned from past experiences and how might we do it better next time?" That's just good business practice. However, processes are put in place to help people do their job, not the other way. We rely on people—you—to do the job right using these processes.

Engineers, Scientists and Technologists

From the engineers, scientists and technologists, I heard that many people move into management just to get a promotion and associated benefits, such as on-Lab parking. Also, I heard that the slotting system does not give the opportunity for promotion on a regular basis to acknowledge people growth and expanded contribution.

I have asked Human Resources to re-examine our promotion and slotting system by mid-July and come up with options that will directly address these issues. This will include assessing career levels and benefits as well as the dual path for individual

contributors and managers. I assure you that these issues will be thoughtfully considered and acted upon for the administrative as well as technical jobs.

Group Supervisors

From the technical group supervisors, I heard that you are overburdened by non-technical, unfunded mandates. We're going to change this. When you are requested to do any significant non-technical activity, we intend to provide you with the resources needed, funding and/or personnel, to minimize this extra demand on your time.

In return, I expect you to be engaged and take full responsibility for the quality of the work of each and every member of your group.

Project Managers

I heard from project managers that you are being buried by reviews. We are already working with NASA to reduce the number of reviews and streamlining them, and I am encouraged by the response. In return, I expect you to always request and encourage peer reviews by experts in line management, and engage the Section and Division Managers in your activities.

Line Managers

Even though the project managers have the full and complete responsibility and accountability for their project, I also hold each and every line manager responsible for the activity and quality of work done by any member of their organization. To help the mutual engagements between projects and line, I am restarting Monday afternoon Director Review and Discussion with required attendance by Division Managers, Program Managers, appropriate Project Managers and Executive Council members.

Business Administration

I also heard from project managers that they need more support from the Business Administration Divisions, who are already overworked. To address this, we are going to find them more billets and funding. In addition we are going to make a special effort to develop career paths and opportunities in our business operations and administration areas, so you can grow in your career at JPL and attract the best people and retain them.

In return, I challenge everyone who works in support of our projects to simplify and streamline your processes, always think customer satisfaction, and make your services the envy of any organization.

We want to be number one in everything we do, be it technical or administrative, because we are one team and depend on each other to succeed.

Management Communication

Everywhere I heard that you want more communication with Senior Management. As I have already said, I am going to walk the talk by promising that for the next 12 months, I will provide the opportunity to every employee to meet with me at least once. On top of that, I am committing to meeting with each Group Supervisor at least once every six months, and each Section Manager once a quarter. I am also dedicating a half-day each week for lab visits. And I expect every Executive Council member to do better than me in their own organization. And they have given their commitment to do so.

I also want to encourage lateral communication, particularly to regularly brief the business operations side of the house on our missions and technical achievements so they can fully share with our adventure. And to walk the talk, I have committed to give all interested administrative personnel a presentation on our spaceborne imaging radar activities on June 12 at 2 p.m., here in *von Kármán*.

Communicating With the Public

Communicating effectively among us is essential. So is sharing the adventure and knowledge of what we do with the nation. This must and will be a priority for all of us. Just over two years ago, JPL created the Office of Communications and Education to coordinate our many communications activities. This has been a huge undertaking that requires a big shift in our thinking about how to engage the public. NASA has been most supportive in their endorsement of this approach and are encouraged by the results so far.

JPL and the





And some of their innovations are being done expressly for you—which gives me the chance to make a plug for the “Daily Planet,” JPL’s brand-new daily electronic newspaper. In fact, today marks the inaugural edition of this e-publication. If you were at your computer right now, you could go to [www.jpl.nasa.gov/dailyplanet](http://www.jpl.nasa.gov/dailyplanet) and watch a video stream of this address—live.

When I met with our JPL educators, media specialists and outreachers, they expressed just one overriding concern: they want to enlist the entire Lab to help them do a better job of communicating with the public. And we are going to help them. I expect every project and every program to support our efforts to consolidate our messages in thematic approaches. Because when we do, everyone and every project at JPL will reap the benefits.

Other Issues

There are other important issues that you brought up, which when addressed, will help in creating an environment for success. I intend to aggressively work in finding solutions to all of them. They include:

- Supporting researchers and protecting our core competencies
- Providing opportunities for more exchange with universities
- Developing more training and mentoring programs, and capturing the knowledge base
- Simplifying the flow of funding from sponsor to the proposer
- Examining our benefits to address the evolving needs of our employees such as health care, maternity leave, and child care
- Improved desktop computer service
- Of course, we will keep looking at parking.

Some of these are going to take some time, but I promise you they will be getting my attention and that of the rest of senior management. And I promise you that we will be relentless until they are all addressed.

My final point about creating an environment to excel has to do with all of our services.

Without trying to give a plug to any particular car rental company, I am continually struck by the quality of their process and service. I order a rental car by phone, show up at their lot, and there is a sign with my name telling me where my car is waiting for me—not me waiting for the car—and all of the paperwork has already been done. I don’t even have to sign anything to get the car out of the lot, just show my I.D. When I return it, a person comes to me with a handheld terminal, prints the bill and hands it to me in less than 1 minute. Now, that’s a process. And that’s service. I am sure a lot of thinking went on to set up this process, and I am sure a lot of work goes on behind the scenes, but it is on the provider’s side, not the customer’s side. And to acknowledge this good service, numerous times I called or wrote a personal note to the company’s president thanking and recognizing individuals who were particularly helpful. And that’s the kind of process—the kind of service—I want everyone to strive for in supporting our projects, programs and employees, and I expect the users to pro-actively acknowledge good service. I expect from each one of you to always ask yourself, “How can I do my job better today than yesterday?” Because that’s the only way we can stay at the forefront and ahead of everyone else. It is not easy to be the leader. As a matter of fact, it is very hard and it requires the best. But that is why you are here.

Values

I want to turn now to say a few words about values. We have articulated our important values to be innovation. quality. integrity and openness. These are not changing. In fact, I want to stress them more. And for today I want to touch on just one of them: Openness, in its broadest sense. For me, openness includes respect for others, treating each other professionally and as members of one family, open to ideas and people of different backgrounds, and be fully at ease to share problems and concerns with colleagues and management because they will always be anxious to listen and help.

During a meeting with one of the teams in Division 35, Mary Reaves told me about what she recently has been missing the most about her work. She told me she misses the feeling of the “JPL Family” that she has gotten to love and cherish during her 25 years at JPL—that good and open feeling that we were all one. Well, Mary, we should all work hard to keep the JPL family environment strong. This is our Lab. It is here because of all of us.

My goal is very simple. It is to have each employee every

morning look forward to coming here to work with his or her JPL family, and every evening to look forward to going home to their personal family to tell them about the exciting work they did on that day.

One important way to create this sense of family is to keep breaking down the barriers that can divide us. Too often people view the Lab as being composed of camps—the line vs. the projects, the technical side vs. the administrative side of the house. Before long, this way of thinking erodes into “us vs. them.” You have heard of “It takes a village.” In our case it takes a laboratory—this entire laboratory—to get us to Saturn, to Mars, and to all the places in the universe we want to go.

I expect professionalism out of everyone. It doesn’t matter what you do. You’re here because you are or you want to be the best. I expect every employee, regardless of what you do, to be treated with the respect you deserve. You should have no fear to say what you think or what you are concerned about, as long as it is professionally done.

Another way of making sure everyone is a member of the JPL family is to be open to diversity. As any biologist will tell you, our world teems with diversity. It is what makes our world so vibrant and interesting a place. And as any historian will tell you, it is the diversity of people coming from many places and cultures that has helped make our nation such an extraordinary place.

Diversity also makes JPL a better place. Diversity gives rise to new and different ideas. And the next generation of space missions will need new and different ideas. We should continue to do more to make use of the talents of women and minorities at the Lab so that they know they are a part of the JPL family. And we must redouble our efforts to recruit more members of these groups to be part of the JPL family.

Organization

I realize that many have heard that there are plans afoot to reorganize part of the Lab. This is true. Your senior management has been hard at work looking for ways to better group our resources in more streamlined ways so we can be ahead of the future. We are doing it for five very important reasons.

- Ensure mission success
- Promote program development and execution
- Increase support for technology and science
- Achieve administrative excellence
- Build the interplanetary network and information systems of the future

Mission Success and Program Execution

As I’ve already said, over the next 10 years, we have about 25 missions to be launched and about 25 payload packages. This requires a lot of attention from our most experienced people and we need to broaden the base of people experienced in multi-projects and program management. To emphasize the importance of project execution, we are creating the position of Associate Director for Flight Projects and Mission Success in the Director’s Office. In addition, the program directorates will be organized around similar mission areas of Earth, Solar System, and Astronomy and Physics and will contain all the corresponding activities: science, technology, mission formulation, implementation and operation. The missions will now have a permanent home base for support and we significantly reduce the number of hand-offs from directorate to directorate.

I’ll have more to say on this in a few moments.

Increase Support for Technology and Science

Our innovations in technology and science will best prosper when they are tied to missions. That’s where the funding is. That’s where the necessities are. And if necessity is the mother of invention, it only makes sense to bring technologists and scientists closer to our programs and projects. There will be a Chief Technologist as well as a Chief Scientist working with me in the Director’s Office. There will also be a chief technologist and chief scientist for each of the program directorates. These directorates will be responsible for the projects and programs as well as for the associated science and technology.

I realize there may be questions about our Defense work. Our relationship with key Department of Defense agencies has always been of value to NASA and to JPL. Our Defense work in recent years has shifted to be mostly in advanced technology, which is essential for our overall mission. It is my plan that JPL continues

to proactively work with DoD as well as other agencies such as the National Science Foundation, the National Oceanic and Atmospheric Administration and the National Institutes of Health, and to continue to be an important national asset to create and transfer technology. We will do this work with the same quality of excellence as all of our work.

Interplanetary Internet and Information Systems

Besides listening to all of you, I also spoke to people outside of JPL who shared their advice with me. I often asked: “What is the most unique thing about JPL? What capabilities, what assets do we have that can be found nowhere else?”

I heard many answers. But one that kept coming up was the Deep Space Network. We now need to create the next generation of the Deep Space Network. And that requires creating the interplanetary Internet of the next 20 years. This is a very exciting challenge. The DSN will be the backbone for this network, and the spacecraft we will have across the solar system and around Earth are information nodes that will interconnect to our network across the Lab and to the World Wide Web.

Administrative Excellence

I’ve spoken already about streamlining our administrative procedures. To help in this, we’re combining all of our business operations, administrative support, and human resources into one directorate. I believe that this combination will result in synergies that will lead to better support for the Laboratory as a whole.

And to all of you who work in the many non-technical jobs that support our missions, I know much is asked of you. And I know that it must be tough at times when the spotlight is always on the mission and the science. You don’t get many CNN crews interested in doing stories about accounting, procurement, the benefits package, or the like. But your work is absolutely vital. You are an integral part of our team and you are essential for all of us to be successful in our joint adventure.

I know you all want to see the org chart. But I want to stress that org charts are just a way of grouping our resources. What really matters is what people in those boxes do and how they lead or are led. I want to announce a fundamental change that I believe will help us create future generations of experienced senior managers for JPL:

- All Executive Council members will be appointed for a defined term, three to five years. At the end of the term, each EC member will be considered for reassignment. There may be a need for them to become a project manager, division manager, program manager, or promoted to be just a scientist or technologist. In other cases, the appointment may be extended if it is critical for the Lab’s operation. This will allow us to expand the experience of our senior managers and to regularly bring fresh ideas to the leadership of the Lab.

Let me illustrate the importance to JPL of this approach. One of our most critical projects is the Mars ’07 Lander, because it will shape the future of JPL through the next decade in Mars exploration. This project’s leadership requires the best that JPL can offer in management, system engineering, and technology experience. So, I called on Mike Sander, who has my highest respect because of his broad experience, to accept moving up from the Executive Council to take this challenge. So, the message is that JPL leadership is not only in the Executive Council but also in our senior project, program and division managers.

So, now let us look at the organization chart. [*Editor’s note: see page 7.*] In addition, most of the EC business will be conducted by four management councils that will broaden the engagement of employees by having a number of members in addition to EC members. [*Note: a chart showing the EC management councils is online at <http://www.jpl.nasa.gov/dailyplanet>.*]

In closing, I want to thank you for your patience. I know I have presented a lot of information (but unlike the President, you only get one chance at an inaugural speech in this job). And I also want to thank you for all the kind words of support you have expressed to me as I begin this new adventure at JPL. It is an honor and a privilege to have the opportunity to lead the laboratory and be your director. And I promise you I am going to give this job all that I have.

As we enter the 21st century, a tremendous era of space exploration is ahead of us. I am confident that together we’ll make history like our predecessors did. Together we will be the pride of Caltech, NASA and the nation. It won’t be all roses, of course, but the rewards are worth it. Ahead of us will be both rewarding and challenging moments. That’s the nature of being pioneers and explorers. Explorers are always venturing out from safe harbors and sailing out in new directions. We are the pioneers who sail the uncharted waters of space for our nation. We are the explorers who build cosmic sextants that point the way to new understanding about the universe and ourselves. Be bold. Be audacious. Be proud. Demand excellence from yourself and others.

And when you think of the future, remember the Next Generation. The next generation of rockets, spacecraft and instruments. The next generation of JPL’s history that we together will create. And the next generation of discoveries that await us out there in the heavens. Thank you.

# THE NEXT GENERATION



*“Reach for the Stars, and Bring the Heavens to Earth”*

Over the next decade, JPL will:

- Establish a permanent robotic presence on and around Mars
- Probe deep below the surface of Europa
- Explore Titan and the Saturnian system
- Bring samples from comets, asteroids, Mars and the solar winds
- Visit the far reaches of the solar system — Pluto and the Kuiper belt and the immediate neighborhood of our sun

- Map the infrared sky and image the disks around stars to learn how the Universe evolved
- Search for planets around neighboring stars
- Establish the interplanetary Internet of the future
- Shed light on the fundamental drivers behind the dynamics of our Earth: oceans and atmosphere, volcanoes and earthquakes
- Probe into the fundamental laws of physics by using the space environment and searching for gravitational wave







# elcome, Director Elachi

JPL welcomed 30-year Laboratory veteran Dr. Charles Elachi as its eighth director on May 1. The pictures below are a small sample of the director's experiences as a leading engineer and scientist, his travels that have taken him around the world in pursuit of research for JPL, and his personal and JPL families.

*Clockwise, from top: Elachi hosting Jacques Cousteau (1980) and Great Britain's Prince Andrew (1989) during JPL visits; on skis with daughter Lauren, with daughter Joanna and on vacation with wife Valerie and Lauren; a radar mapping trip to Anchorage, Alaska with retired JPLer Elmer MacMillin; the future director as a Caltech student in 1970; and a 1976 visit to the Grand Canyon with JPLers Diane Evans and Tom Farr (right). Bottom picture shows Elachi (third from left in back row) with a group of JPLers at the groundbreaking for Building 300 in the mid-1980s. In front row, from left, are Jim Rasmussen, Walter E. Brown, Mike Kobrick and Evans; in back are Tam Antoine, Dan Held, Elachi, Richard Mathison, Ed Caro, Farr and Martin Ruzek.*



*Photos courtesy Charles Elachi*

Take a look at  
JPL's new online  
news source

<http://www.jpl.nasa.gov/dailyplanet>



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## JPLers' kids have their day

More than 500 visit Lab to be with mom, dad

By Mark Whalen

Kids and parents gather around JPL's Dr. Yoseph Bar-Cohen as he demonstrates an ultrasonic drill during Take Your Child to Work Day April 26. Bar-Cohen also demonstrated a robotic arm (front of table) and android head. Below: Mabel Wong, left, daughter of Cynthia Wong of Section 389, and Christina Cheung, daughter of Kar-Ming Cheung of Section 331, work on their rocket-propelled rovers.



Bob Brown / JPL Photo Lab

**a** record turnout of almost 550 children of JPL employees took the day off from school April 26 for the annual Take Your Child to Work Day as they got a glimpse of how mom and dad spend their time at the Laboratory.

Grandparents, aunts, uncles, brothers, sisters, family friends and others also got involved in escorting the 9- to 17-year-old girls and boys to their workplaces and to a number of special activities on Lab. "We had a wonderful and successful Bring Your Child to Work Day," said Tania Geddes of the Human Resources Directorate, one of the event's organizers. "I saw excitement in the eyes of the children who visited us and their questions were filled with curiosity and enthusiasm. We did reach our goal of sparking the children's interest in science and engineering. "I want to thank the scientists, engineers volunteers and committee members who participated to make this a successful event," she added. Kids' activities included the construction of an "interactive rover," fashioned out of sticks, styrofoam and balloons. JPL's Asian American Council provided the materials and help. In addition, Dr. Yoseph Bar Cohen and Giovanni Pioggia demonstrated an ultrasonic drill, robotic arm and android head, all under development in JPL's Nondestructive Evaluation and Advance Actuators Lab; Connie Gennaro coordinated a Mars rover demo; and Bernardo Lopez and Alfonso Feria explained the workings of the Inflatable Structures Lab.

"My son, Ryan, and I had a wonderful time. It was extremely well planned and organized," said Swen Williams of Section 212. "Ryan was excited to learn about the important and extensive contributions that JPL has made to our world. Although Ryan has enjoyed science from exposure to it in school, he told me that he appreciates it even more after witnessing some of the amazing things that come about from the research and development performed by JPL. "The presentations were particularly well done and interesting," he added. "Our warm thanks to JPL for promoting and participating in this national event that exposes children to the workplace and the education and career choices that they will soon be facing. Ryan says that he's looking forward to returning next year." "My two daughters very much enjoyed the opportunity to see where their mother and father work," said Byron Yetter of Section 920, whose wife, Karen, also works on Lab, in Section 368. "My daughters were both also very impressed that a place like JPL would take the time and the effort to do so many things 'just for them.' They woke up the next morning still talking about being run over by the 'Mars Rover.'"

## Open house coming next weekend

JPL's annual Open House will be held on Saturday and Sunday, May 19 and 20, from 9 a.m. to 5 p.m. The event is attended to full capacity every year, and this year should be no exception. This year's theme is "JPL 2001: A Space Odyssey," and for thousands of people from around the country this event provides an opportunity to go behind the scenes at the Lab. JPL's Open House is a free, fun-filled, family event that has a little of everything for space enthusiasts, from virtual flying lessons to building a spacecraft, or having a picture taken in infrared light. For non-space buffs, it is an opportunity to look inside a NASA center and discover more about some of the latest technological advancements. Everyone will have the chance to meet with scientists and engineers who will staff booths to answer questions about current and future missions. Parking for visitors will be provided free near the Oak Grove main gate and on the eastern boundary of JPL, accessible from Windsor Avenue via the Arroyo Boulevard exit off the 210 Freeway. Trams will run non-stop between all lots and JPL's main gate. Air-conditioned buses with tour guides will move people to and from different locations around the facility. The Public Services Office is the primary coordinator for JPL's Open House and if you are willing to volunteer your services please call ext. 4-0112. The event will be Web-cast live on Saturday from 11 to noon, accessible at [www.jpl.nasa.gov/webcast/openhouse](http://www.jpl.nasa.gov/webcast/openhouse). For more information, pictures and maps, log on to <http://www.jpl.nasa.gov/open-house/index.html>.

Bob Brown / JPL Photo Lab



## Lab aids emergency vehicle warning system

By Carolina Martinez

A Monrovia fire truck speeds through an intersection during a demonstration of the early warning system. The lighted icon at top of the display warns drivers that an emergency vehicle is approaching.



Frank Semeraro



The city of Monrovia has successfully tested an emergency vehicle intersection early warning system that will alert drivers to approaching emergency vehicles to reduce the potential for traffic collisions. E-VIEWS Safety Systems Inc. designed the system with assistance from JPL's Technology Affiliates Program. Monrovia plans to install transponders in 20 police and 10 fire emergency vehicles and the installation of visual display boards on traffic signal mast-arms above the centers of eight city intersections. The transponders will communicate via

microwave with receivers on the display boards. As the emergency vehicle approaches the intersections, the police officer or firefighter activates the transponder, which automatically turns the traffic light to yellow, then red, for cross traffic. The intersections' visual warning display signs will also be activated and approaching drivers will see bright flashing vehicle warning symbols on the displays, informing them of the direction from which emergency traffic is approaching, from as far as 1,067 meters (3,500 feet) out. The lighted icons will appear to move across the displays synchronized with the actual emergency vehicle's movement.



# News Briefs

## Builder selected to add DSN antenna

NASA has selected a builder to add an advanced dish antenna, 34 meters in diameter (112 feet), near Madrid, Spain, one of the three sites of the Deep Space Network.

“We are getting ready for a crunch period beginning in November 2003,” said RICH MILLER, head of DSN planning and commitments at JPL. In late 2003 and early 2004, the United States, Europe and Japan will each have missions arriving at Mars, two other spacecraft will be encountering comets, and a third comet mission will launch. Several other missions will have continuing communication needs.

NASA has selected Schwartz-Hautmont Construcciones Metalicas S.A. of Tarragona, Spain, as the successful bidder to build a new antenna to be completed at Madrid by November 2003. The antenna is the biggest piece in about \$54 million worth of improvements that NASA's Office of Space Science, Office of Space Flight, and Space Operations Management Office have set as priorities for increasing the DSN's capabilities by late 2003. Other parts of the plan would improve the capabilities of existing antennas at all three of the networks tracking complexes: Madrid; Canberra, Australia; and Goldstone, near Barstow.

## Blood drive coming mid-May

The next JPL/Red Cross Blood Drive, will be held in von Karman Auditorium on May 15 from 10 a.m. to 4 p.m. and May 16 from 7 a.m. to 1 p.m.

The Red Cross is experiencing a shortage of O-negative blood. However, all blood types are needed.

Sign-up sheets will be available prior to the blood drive at Occupational Health Services, Building 310-202, and on their home page, [http://eis/medical/blood\\_form.html](http://eis/medical/blood_form.html). Last-minute signups are available at von Karman Auditorium, but be prepared to wait a little longer if you do not have an

appointment. To change an appointment, call the Pasadena Red Cross, (626) 799-0841, ext. 630.

## Architect program deadline nears

Friday, May 25 is the last day to apply for the two-year JPL Mission Architect Development Program internship. The name of the program, formerly known as the Architect Development Program, recently has changed to include the word “mission,” distinguishing it from the new CSMISS Software Architect Program, begun this year.

To apply for the MADP internship, submit a resume and a one- or two-page letter of interest stating why you would be a good candidate for the program, with concurrence by your division manager, to Maria Raygoza, human resources staffing, mail stop T-1720C. Candidates and their division managers should also retain copies. For more information, visit the MADP Web site at <http://eis/adp>.

## Ethics Office offers training

The next ethics training class available to all personnel is scheduled for Tuesday, May 22 from 3 to 4pm in Building 180-101.

A list of training sessions is available online at <http://hr/et>. One-hour sessions are offered monthly or can be arranged for group presentations. Call MARTHA AVINA, ext. 4-3154.

## Mission assurance event at Glenn

NASA's Office of Safety and Mission Assurance is sponsoring the annual Assurance Technology Conference May 30–31 at Glenn Research Center.

The event, which will provide a forum for technical interchange among NASA safety and mission assurance personnel, will focus on cutting-edge and unique technical advances in providing mission assurance services, tools and processes to the agency's enterprise initiatives. For information, call CHUCK BARNES at ext. 4-4467.

# Special Events Calendar

## Ongoing Support Groups

Alcoholics Anonymous—Meetings are available. Call the Employee Assistance Program at ext. 4-3680 for time and location.

Codependents Anonymous—Meeting at noon every Wednesday. Call Occupational Health Services at ext. 4-3319.

End of Life Issues and Bereavement—Meets the second Monday of the month at noon. For location, call the JPL Employee Assistance Program at ext. 4-3680.

Gay, Lesbian and Bisexual Support Group—Meets the first and third Fridays of the month at noon in Building 125-133. Call the Employee Assistance Program at ext. 4-3680 or Randy Herrera at ext. 3-0664.

Parent Support Group—Meets the third Thursday of the month at noon. For location, call the JPL Employee Assistance Program at ext. 4-3680.

Senior Caregivers Support Group—Meets the the first Tuesday of the month. For time and location, call the JPL Employee Assistance Program at ext. 4-3680.

## Friday, May 11

Von Kármán Lecture Series—Blaine Baggett, executive manager of JPL's Office of Communications and Education, will present “The Beginnings of a Legacy: Stories from JPL's Early



Years,” at 7 p.m. in The Forum at Pasadena City College, 1570 E. Colorado Blvd. Open to the public.

## Saturday, May 12

Bandorama—The Caltech Jazz Bands and Concert Band will present a concert of jazz and classical music at 8 p.m. in Beckman Auditorium. Special laser effects will be used to highlight a performance of Handel's “Royal Fireworks Music.” Admission is free. Call (626) 395-4652.

## Tuesday, May 15

Investment Advice—TIAA/CREF will hold one-on-one counseling sessions from 9 a.m. to 3 p.m. in T-1720. For an appointment, call (877) 209-3140, ext. 2614, or log on to [www.tiaa-cref.org](http://www.tiaa-cref.org).

JPL Hiking+ Club—Meeting at noon in Building 303-209.

## Wednesday, May 16

Investment Advice—Fidelity and TIAA/CREF will hold one-on-one counseling sessions from 9 a.m. to 3 p.m. in T-1720. To schedule an appointment with Fidelity, call (800) 642-7131. For TIAA/CREF, call (877) 209-3140, ext. 2614, or log on to [www.tiaa-cref.org](http://www.tiaa-cref.org).

JPL Stories—Former JPL Deputy Director Peter Lyman will describe

some of the lesser-known experiences and close calls during his years at the Lab with “A Broken Shroud, a Leaky Valve, and Much, Much More” at 4 p.m.

in the Library, west end of Building 111-104. Call Teresa Bailey at ext. 4-9233.

Music On the Mall—Incendio ([www.incendiomusic.com](http://www.incendiomusic.com)) will perform a blend of world music featuring rumba flamenco, guitars and Middle East-influenced world-fusion beginning at noon. A raffle will be held at 12:35 p.m.; winner must be present to win.

## Thursday, May 17

Parent Support Group—Dr. Larry Brooks, a local clinical psychologist who specializes in working with children, adolescents and families, will lead a discussion called “The Effects of Divorce on Children” from noon to 1 p.m. in Building 180-703. Call Gregory Hickey at ext. 4-0776.

## Saturday, May 19

Folk Music—Singers Cathy Barton and Dave Para, whose music features traditions of Missouri and the Ozarks, will perform at 8 p.m. in Caltech's Winnett Lounge. Tickets are \$12 for adults, \$4 for kids under 12. Call (626) 395-4652.

Spring Concert—The Caltech Men's and Women's Glee clubs will be joined by the Caltech-Occidental Chamber Orchestra at 8 p.m. in Ramo Auditorium. Admission is free. Call (626) 395-4652.

## Tuesday, May 22

Investment Advice—Fidelity will hold one-on-one counseling sessions from 9 a.m. to 3 p.m. in T-1720.

TIAA/CREF Investment Workshops—Several sessions will be held in Building 180-101. The discussion from 10 a.m. to noon will focus on historical stock performance, performance difference of growth and value stock, diversity among stocks and bonds, and how to approach correction and recoveries sanely. From noon to 1 p.m., employees newly eligible to participate in the retirement plan can enroll. Investment options and assistance in completing enrollment forms will be available. From 1 to 3 p.m., learn about identifying and prioritizing your personal financial goals, deciding which TIAA-CREF products will help you meet those goals, and creating an allocation your assets among these products that makes the most sense for you.

## Wednesday, May 23

JPL Toastmasters Club—Meeting at 5:30 p.m. in the Building 167 conference room. Guests welcome. Call Jim Raney at ext. 4-6301.

“The Coming Revolution in Photography”—Caltech professor emeritus of engineering and applied science Dr. Carver Mead will speak at 8 p.m. in Beckman Auditorium. Admission is free. Call (626) 395-4652.

## Friday, May 25; Sunday, May 27

Piano Concerts—Caltech pianist-in-residence James Boyk will perform in Dabney Lounge at 8 p.m. Friday and at 2:30 p.m. Sunday. Admission is free. Call (626) 395-4652.

# Award for Excellence

A May 2 awards ceremony honored the following recipients of the 2001 Award for Excellence:

**Exceptional Business Operations, Individual:** Antonio Fonseca, Robin Moncada, Sheryl Rinker, Aram Yagubian; **Team:** *Contractor Labor Electronic Invoicing System Process Action Team.*

**Exceptional Leadership, Individual:** Teresa Bailey, Michael Hecht, Thomas Livermore, Anthony Martin, Marc Rayman, Carolyn Stevens.

**Exceptional Quality, Individual:** Maurice Argoud, Kay Ferrari, Lorraine Johnson, Taifun O'Reilly, Kenneth Peters; Randii Wessen; **Team:** *Plane -*

*tary Photojournal Team, Space Place Web Site Team, SRTM Real Time Science Team, SSV Animation Team.*

**Exceptional Technical Excellence, Individual:** Alberto Behar, Guy Beutelshcies, Duane Bindschadler, Scott Bryant, Joseph Lewis, John Waters, Brian Wilcox; **Team:** *Deep Space 1 Rescue Team, DSN Command Replace - ment Team, Fuel Cell Team, GPS Software Team, Keck Interferometer Development Team, SWAT LO Develop - ment Team.*

For pictures of the honorees and descriptions of their awards, log on to <http://eis/sec614/reward>.

# Info fair helps communicators spread the word



JPL staff check out posters and displays in the Library during the Information Fair.

The April 26 Information Providers Fair sponsored by the Library, Archives, and Records Section provided a learning and networking event for visitors and participants alike. The theme for the fair—Connecting Knowledge: Celebrating the Power of Networking—reflected the fair's purpose of bringing together and sharing the diverse information resources and services available at JPL.

In his opening remarks, Institutional Associate Director Kirk Dawson was highly supportive of the event and recognized its importance. “Clearly, in order to be successful, JPL has to recognize that the information we need is widely distributed throughout the Laboratory, and to make that available requires something like the JPL Information Providers network. As the Lab gets more and more complicated with more projects, more information and new technology, this is a prime way to making sure people can get at what they need to do their job.”

The fair included 27 poster sessions and 10 online demonstrations that provided insights into the resources and services of 23 organizations. “An estimated 300 to 350 visitors attended, and the information providers were engaged non-stop in discussions about their services and resources,” noted Teresa Bailey of the JPL Library, one of the event's organizers.

For more information visit the fair Web site at <http://beacon/infoindex.html> or call Bailey at ext. 4-9233.

# Corrections

A photo caption on page 4 in the May 4 issue of Universe misidentified Great Britain's Prince Andrew.

In the April 27 issue, the list of employees who retired in April contained misspellings of the names of retirees George Jaivin and Catherine Magnano.

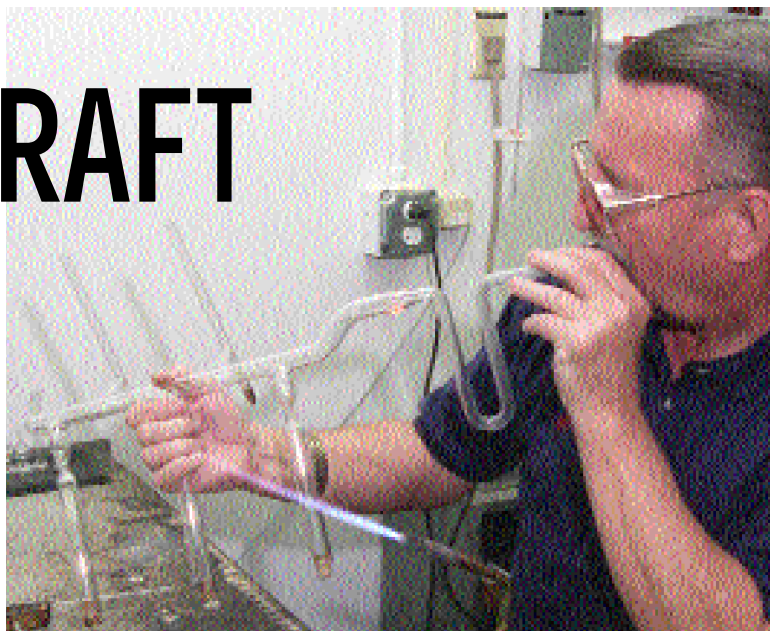
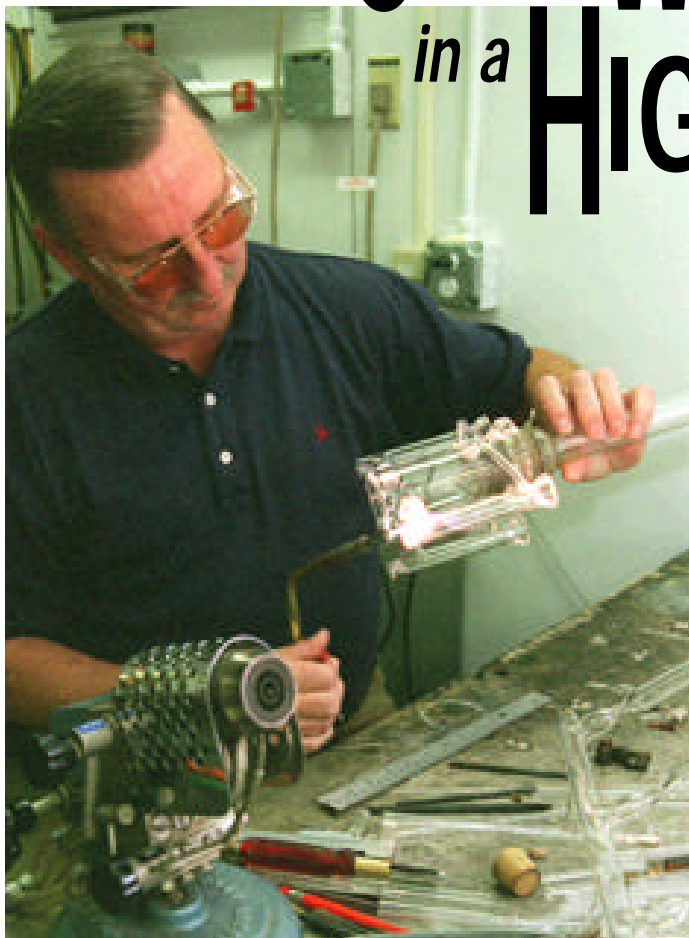




*JPL glassblower provides a vital service to Lab scientists and researchers*

# An OLD-WORLD CRAFT in a HIGH-TECH WORLD

*By Gia Scafidi*



Photos by Bob Brown / JPL Photo Lab

*Above, below right: Juergen Linke uses a flame on glass to help form his creations.*

*At above right, he smooths out glass connections on a vacuum manifold.*

*Top: a condenser, used for purification distillations.*

researchers and scientists. With torch in hand, he provides quick services and modifications to glassware used in numerous disciplines, including photochemistry, vacuum systems, biochemistry, spacecraft instrumentation and fuel cell research.

"Juergen's glassware makes our research possible," said Stanley Sander, enior research scientist in JPL's Chemical Kinetics and Photochemistry Group. "A lot of the chemical reactions we carry out in our lab studies of atmospheric chemistry require specialized glassware, including some very exotic designs made from both Pyrex and quartz. In my discussions with colleagues from laboratories all over the world, I find that Juergen is one of the few people who has both the skills and experience to construct the specialized apparatus required for this research."

"At JPL, scientists and researchers come to me with an idea; we discuss it; resolve a plan; and I create it," explained Linke. "When I can buy it, I buy it. When it's not available, then that's my time to show off."

And rightfully so.

A natural glassblower, Linke started blowing glass in 1955, at the ripe young age of 15. He spent a year and a half at an occupational college in Berlin, Germany, his birthplace, where he learned neon and quartz glassblowing. It wasn't long before Linke's skill led to a three-and-a-half-year-apprenticeship position with a large German glass company.

"I remembered a friend whose family had a glass shop," Linke recalls. "It was clean and warm, and a job not everyone had. So, I took it." After this he was hired to blow glass for the University of Berlin, and simultaneously earned a master's degree in scientific glass blowing.

"The best part about glassblowing is that there are no rules. You can't have too heavy a hand and you have to be somewhat creative. But other than that, you just develop a certain feel and find your way," noted Linke. "The first six months usually tell if you have what it takes."

Since his early glassblowing days, Linke's talent and experience have taken him through different countries and unique

**F**or the past 25 years, Juergen Linke has worked his wonders in JPL's glass shop.

Meshing old-world craftsman skills with modern space technology, Linke transforms his creative energy into unique glassware for JPL and Caltech

work environments. In 1967, he worked for a mid-size glass company in El Monte. After being laid off in 1969, he moved to Guadalajara, Jalisco, Mexico for three years with his wife. In Mexico, he blew glass for researchers and taught the art to chemistry students. Eventually, he made his way back to the states, and began working at JPL in 1976. Linke also blows glass for researchers at Edwards Air Force Base, northeast of Los Angeles.

"Our work would almost be impossible without Juergen's considerable talent," said Dr. Chris Webster, lead scientist for Atmospheric Chemistry in Division 32. "The fluidity of his design provides a custom-built interface between our high-tech miniaturized planetary instrumentation and the pre-flight laboratory calibration resources."

Over the years, Linke's talent and experience have saved the Laboratory a significant amount of time and money that would have otherwise been spent on contracting jobs out to the glass industry.

"Having a glassblower is like having a fire fighter," said Edward Cohen, principal scientist in JPL's Atmospheric Chemistry Group. "When you need one, you need one right now." Over the years, when the Lab considered eliminating

**"Our work would almost be impossible without Juergen's considerable talent."**

— Dr. Chris Webster, lead scientist for Atmospheric Chemistry in Division 32

the glass blower position, Cohen and others sent memos urging the administration to keep Juergen on. "I can't stress enough how important it is to have him here."

Despite the value and importance, Linke sees old trades, such as his, being lost to modern technology.

"In 20 to 50 years, the glassblowers will be gone," he said. He noted the importance of companies taking the time and money to train younger people in the craftsman trades.

On a smaller scale, Linke tries to do his part.

"I give everyone the opportunity to learn," he said. "Many people spend their lunches in my glass shop. They practice and practice and practice. And then one day they just get it."





# Lab hosts student robot competition

With JPL's help, a group of about 100 students last month engaged in a spirited competition of robots that they proudly designed, built and programmed.

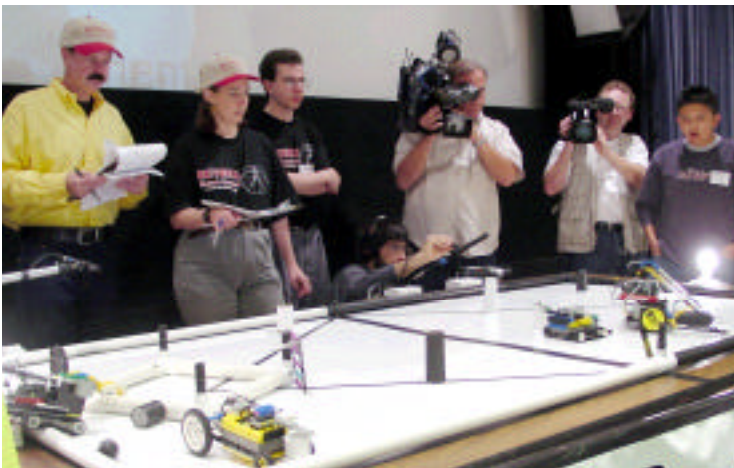
Eleven teams of Southern California middle- and high-school students came to JPL April 29 to test the skills of the the robots they had built over the preceding six weeks.

The robots were made out of Legos, and programmed in "C" language to operate autonomously, said event organizer Dr. Ben Smith, manager of JPL's Autonomy Program, who noted that 14 JPL engineers and computer scientists helped the students. On a table-top field, the robots moved balls from tubes into a nest. "The students had a really fun time, the parents and teachers thought it

was a great experience, and it generated a lot of excitement in robotics and autonomy," Smith said. "The most frequent comment I heard was, 'I want to do this again next year!'"

The winning team in this regional was Gabrielino High School of San Gabriel, whose robot had a hook design that grabbed the nest and dragged it back to their side. Jordan High School's Team-1 came in second, and the MAST Academy from San Diego came in third. These teams all received a trophy and a grant from the American Association of Artificial Intelligence to travel to Seattle to compete in the national Botball competition in August.

Smith thanked the volunteers who gave up their Sunday to make the event a big success. The event was



Judges and onlookers check out the Botball competition held at JPL April 29.

co-sponsored by the NASA Robotics Autonomy Technology Program, the JPL Autonomy Program, the Center

for Space Mission Information and Software Systems and the Mars Technology Program.



Take a look at JPL's new online news source

<http://www.jpl.nasa.gov/dailyplanet>



View this and previous issues of Universe online

<http://universe.jpl.nasa.gov>

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**Notice to Advertisers**  
Advertising is available for JPL and Caltech employees, contractors and retirees and their families. No more than two ads of up to 60 words each will be published for each advertiser. Items may be combined within one submission.

Ads must be submitted on ad cards, available at the ERC and the Universe office, Bldg. 186-118, or via e-mail to [universe@jpl.nasa.gov](mailto:universe@jpl.nasa.gov). Ads are due at 2 p.m. on the Monday after publication for the following issue. All housing and vehicle advertisements require that the qualifying person(s) placing the ad be listed as an owner on the ownership documents.

## Passings

**RICHARD MOULDER**, 61, a program manager in Section 360, died April 16 from complications of diabetes at his home in Utah. Moulder had worked at the Lab since 1973. He is survived by ex-wife Ellen and children Faxon, Mark and Maureen. Services were private.

**JOSEPH GANINO**, 60, staff assistant in the Technology and Applications Programs Directorate, died of a heart attack April 17. Ganino had worked at JPL since 1992. He is survived by his wife, Kathryn, sons John and Anthony, daughters Ann Frishmuth and Lisa Levesque, and seven grandchildren. Memorial services were held at Assumption of Blessed Virgin Mary Church in Pasadena.

**JOHN PORTER**, 74, a retired member of the technical staff in Section 290, died of cardiac arrest April 19. Porter worked at the Lab from 1951-87. He is survived by his wife, Mary, three children, 11 grandchildren and two great grandchildren. Services were held at Rose Hills Park in Whittier.

## Letters

The family of Joe Ganino wishes to thank all those at JPL who attended the memorial service on Monday, 23 April and/or sent wonderful flowers, cards, or donations in his memory. We will always remember the kind words that honored Joe's hard work and dedication. You were his other "family." May God bless you and your families.

Kathy, Anne, John, Lisa and Tony Ganino

On behalf of my family and myself, I would like to thank the ERC for the lovely plant sent to commemorate the sudden passing of my father. Our grief was eased by the kind thoughts, prayers and support we received from friends in Section 215 and co-workers at JPL.

Marlene Link

On behalf of my family, I would like to thank all my fellow employees for their support and sympathy cards, and JPL for the beautiful flowers following the passing of my mother-in-law on April 21.

John Beedy and family

My husband Arnie and I wish to thank my co-workers on the MER Project for their support and expressions of concern and sympathy during the recent passing of Arnie's mother. Thank you to the ERC for the lovely plant.

Christine Preheim

## Classifieds

### For Sale

AIR CONDITIONER, Kenmore, window mounted, cools liv. rm. or bdrm. used 1 summer, bought new for \$600, sell \$475/obo. 626/792-8272. AIR CONDITIONER, Fedders, fits windows up to 39" wide, 10,000 BTU unit, clean, exc. cond., 10 months old, still under warranty, \$260. 626/796-4218. BABY ACCESSORIES, car seats, bassinet, clothing, shoes, etc; HOME FURNISHINGS, lamps, artificial plant, exercise bike, cardio-glide, oriental furn., pictures, stools, curtains, rugs, artifacts, vases, bedding, pillows, clothes, nice interior door. 626/398-1988. BABY ITEMS: high chair, vg cond.; bassinet, as new; stroller, vg cond.; changing table, as new, light salmon pine wood. 626/584-1164, Muriel. BABY/TODDLER ITEMS: exersaucer, \$25; girl's tricycle, \$25; toddler activity center & table, \$10; wooden puzzles & toys, almost new clothes & shoes for toddler & infant girls, reasonably priced. 626/798-6248. BICYCLES, Schwinn, men's and women's, 10 spd., exc. cond., \$250/both/obo; CAMERA, Pentax 35 mm SLR Super ME, new black body 50 mm 1.4, 80-200 zoom and 28 mm lenses, 2 flashes, auto winder, equipment case, exc. cond., \$300. 626/793-7879. BUNK BED, split-level top is twin, bottom is full matr., blue metal, almost new, used 8 mo., twin mattress included, \$99. 249-4561. CAMPSITE, at El Capitan, north of Santa Barbara, June 1-3, \$30. 956-1744, Barbara. CHINA CABINET, vg cond., \$100. 323/550-8701. CHINA CABINET, 1950s Drexel mahogany, e-mail for photo [lelson@altavista.com](mailto:lelson@altavista.com), \$800 cash and carry. 353-9367. COFFEE, Kona, top of the line, 100% pure/ sun dried, hand-picked from top-qual. trees, rich, dark roast, limited supply, discounted 45% at intro. price of \$21/lb. 626/584-9632. COMPUTER SYSTEM, P2 350, 256 MB RAM, IBM 8.4 GB HDD, 52X CD ROM, monitor, keyboard, mouse, \$400/obo. 626/379-4509. DESK, antique mahogany, roll top desk and chair, \$1,500; TABLES, 2 custom rod iron indoor/outdoor, with heavy glass top \$2,500; COUCH, sectional, beige, almost new, \$250; COFFEE TABLE, \$75; TABLES, 4 stacked, \$200; BAR CART, \$150; TOYS, child's bike, etc, best offer. 248-8853. DESK, golden oak, real wood, 60" x 32", two regular drawers plus one file drawer in each pedestal; FILE, 2-drawer lateral, golden oak, matches desk, \$150/set, will sell separately. 891-6836, Steve. DESK & CHAIR, Steelcase, wood laminate top, side board for computer or typewriter, high back, black leather chair, \$300/all. 790-4028. DISHWASHER, Sears Kenmore, old but works perfectly, pick up in Canyon Country, \$75. 653-2000, Stan. DRUM SET, beginners, almost new, \$275/ obo. 790-3667. FURNITURE: prices reduced, antique din. rm. set, qn.-sz. bedrm. set, modern liv. rm. set, antique Eastlake side chair, <http://home.earthlink.net/~elrey10> for pictures, info., prices. 909/482-4425. GOLF BALLS, used, money goes to pet rescue organiz., \$.25/ball or donation. 626/792-8272. GPS, Garman GPS III, moving map display, exc. cond., little use, \$200. 626/793-7879. KITCHEN CABINET, with stainless steel sink, chrome faucet and spray, white Formica, with 3 doors and 1 drawer, 39" H x 52" W x 26" D, \$65. 626/798-0329. LOVE SEAT, early Am. style, blue, \$50. 626/797-5387. MASSAGE CHAIR, like new, Earthlite's "The Travelor," w/carrying case and video, normally sells for \$489, sell \$389. 893-3108, lv. msg. OVEN, convection, GE Profile, under counter or in wall, 30" wide, 220V, exc. cond., pick up in Canyon Country, \$500. 653-2000, Stan. REFRIGERATOR, GE Hotpoint, \$100, clean, works great, self defrost freezer. 626/446-7736 or 626/287-9433. ROTISSERIE, elec., w/extras, cooks great healthy meals, cost \$300, sell \$100; PAINT SPRAYER, Campbell-Hausfeld, airless, w/ gun, recently refurb., nds. hose & tip, \$100; TAPE BACKUP UNIT, Iomega, 2 GB/tape w/5 new tapes, parallel port, \$70. 352-0075. TABLE, dinette, square glass top 5' x 5' w/ metal feet & 4 matching chairs, \$800/obo; BAR STOOLS, 4 matching, metal frame, all in superb cond., \$400/obo. 626/398-3480. TELESCOPE, 36" x 2.4", Polaris by Meade, non-tracking, like new, rarely used, many lenses, all in original box, \$100/obo. 661/251-7616, Ben. TELEVISION, Mitsubishi big screen, 50", beautiful wood cabinet, projection type, stereo sound, \$850. 790-1893.

TENT, Sportsmen, heavy canvas, all-weather, 3-man umbrella type, \$200+ value, \$75; RECORD PLAYER, 3-speed, works, \$10; RADIO, am/fm, two external walnut cabined speakers, \$15. 626/793-1895. TEXTBOOKS, vintage, math, science, foreign language, 1920-50, \$5/ea. 952-7472. TRAIN SET, wood, 27 pieces, older style, may be Brio, \$30. 626/303-1927. VIDEO MIXING CONSOLE, Panasonic AV-12 for editing together two VHS/S-VHS or Hi-8 sources into a single professional tape, very nice, lots of features, \$2,500 new, sell \$250; VHS-VCR, Magnavox, portable, with docking station and older style video camera, camera works fine, VCR needs cleaning/ adjustment, \$25; SCANNER, sheet feed, gray scale parallel port, \$20. 352-0075. WASHER, Whirlpool, compact automatic, moveable/portable installation, exc. cond., 18 months old, ideal for apartment/condo, cost \$500, sell for \$250/obo. 626/796-4218.

### Vehicles/Accessories

CADILLAC Fleetwood, 55K orig. miles, looks and runs like new, \$4,000. 626/289-6802. '93 CHEVROLET Astro Van XLT, teal green, Dutch doors, seats 8, AM/FM cassette. p/s, p/b, power seat on driver's side, 110K miles, \$3,500/obo. 562/923-5301. '86 CHEVROLET S-10 Blazer, 4 X 4, 129,000 mi., 1 owner, a/c, pwr. windows/locks steering, trailer hookap, roof rack, tilt steering, cruise cont., runs gd, everything working, gd tires, passed last emission test, \$2,900. 661/513-9079. '99 DODGE Dakota sport truck, single cab, liner & cover, 20K mi., \$14,000/obo. 634-6510. '94 FORD Explorer Sport, 5 spd., 4 w/d, 96K mi., black, gray leather, all power, 10 disk CD, alarm, alloy wheels, 5 new tires, \$7,500/obo. 323/655-5864. '92 FORD 250 XLT, with camper shell, only 29,600 miles, 4 spd. stick, trailer package, dual tanks, CB radio and more, exc. cond., \$12,500/obo. 626/398-0539, Tom. '91 FORD T-Bird, auto V6, 120K miles, white w/red interior, gd. tires, fully equipped, auto seat belts, well maint., \$5,800. 241-1774. '91 FORD T-Bird, V8, 34,600 mi., new front brakes, tires and battery, int. and ext. in vg cond., drive to appreciate performance, \$4,200. 951-3467. '89 FORD Ranger XLT, King Cab, w/camper shell, carpeted adjustable insert, V6, 2.9L eng., a/c, pwr. steering/windows/doors, tow pkg., am/fm/cass., cruise control, tilt wheel, well maintained, exc. cond., 80K mi., \$4,500/obo. 626/791-7645. '86 FORD F250, 1 owner, 107K mi., new tires, complete towing package, over/under, newer shell, air shocks, dual tanks, \$4,000. 310/374-2366, Dan or leeredondo@visto.com. '90 HOLIDAY RAMBLER travel trailer, 33', all new tires, awnings, a/c, extra clean, \$6,000. 310/374-2366, Dan or leeredondo@visto.com. '00 LINCOLN LS, black ext./gray int., 28K mi., V6, sport pkg., \$25,500. 363-2410. '91 LINCOLN Mark VII, only 69K mi., exc. cond., beautiful, must see, \$5,000. 542-4152. '87 NISSAN 300 ZX, 160,000 miles, black, a/c, automatic, sunroof, good cond., fun car, \$2,900/obo. 545-9435 or 521-3673, cell. '95 SATURN SL Sedan, 5 spd., white exterior, gray interior, a/c, 74,000 miles, exc. running cond., good physical cond., mileage 27 city, 37 freeway, am/fm/tape, no accidents, \$3,900/obo. 957-5742. '92 TOYOTA Camry SE, V6, 5 spd., 3.0 litre, 115K mi., one owner, fair cond., sunroof, power windows, locks, cruise control, alloys, \$4,500/obo. 626/794-8720, Andy. '93 VOLVO 240 wagon, 81K miles, teal green metallic, automatic, a/c, am/fm/cassette, 3rd seat, roof rack, great family car, just had 80K service, new brakes, Blue Book is \$13,500; sell \$12,000. 626/791-4206. '86 VW Golf, 5 spd., runs great, exc. gas mileage, 152K mi., \$1,100/obo. 626/683-7018. '74 VW Thing, classic summer cruiser, 1776 engine, full roll-bar, \$3,250. 626/446-7736 or 626/287-9433. '70 VW Bug, parts car, straight body, good glass, engine & transmission, \$300. 626/446-7736 or 626/287-9433

### Wanted

DRAFTING TABLE, for young college student studying graphic arts, economical and compact preferable. 996-6518, Catherine. MARS ROVERS, Mattel, for Board of Education Awards, need approx. 24 but will buy less. 248-1038, Gordon. SPACE INFORMATION/memorabilia from U.S. & other countries, past & present. 790-8523, Marc Rayman. VOLLEYBALL PLAYERS, coed, all levels of play, Tues. nts. 8-10 p.m. at Eagle Rock High School, \$3/night. 956-1744, Barbara.

### For Rent

ARCADIA, furnished guest house, utilities included, laundry facilities, no pets, must be non-smokers, \$650, 626/441-0041, Kris. EAGLE ROCK house, large 2 bd. + office, hill-top, garage, yd., view, wood floors, f/p, a/c, fridge, stove, microwave, laundry rm, totally remodeled, gated, 5849 Buena Vista Terrace, LA 90042, \$1,450 + sec., 1st & last. 790-1893. LA CANADA/FLINTRIDGE, sep.sm. rm. w/ba., a/c, partially furn., gated, sep. entr., temp. OK, close to JPL, very priv., \$150/wkly. 790-1893. PASADENA, lg. studio apt. w/sep. living area, sep. kitch. & ba., fully furn., close to Caltech & PCC, \$750 + utilities. 626/351-9641. PASADENA, fully furn. room, sep. entrance, share kitchen and ba., close to Caltech and PCC, \$495, utilities included. 626/351-9641. PASADENA, 1915 Craftsman bungalow, 2 bd., 2 ba., near Lake and Woodbury, large lr/dr, f/p, laundry, att. 1-car garage/shop, large private courtyard. 626/794-8726.

### Real Estate

EAST PASADENA, exc. townhouse/condo, desirable loc.: 2 bd., 1 full, 2 x .75 ba., 2 f/p, lg. liv. rm, lg. dining/sitting area, sun-room: 2-car gar., end unit, priv. entry: park-like grounds, pool, sauna, Jacz.; all baths, kitch. newly remodeled: all new plumbing fixtures, tiles, granite in kitch., new carpets & wood floors throughout: must see, \$265,000. 626/798-2987. MONTROSE, 5 min./JPL, 3-level townhouse, 8 yrs. old, 1,900 sq. ft., 3 + 2.5, incl. lg. master suite, Jacz. tub, very lg. gourm. kitch. w/granite counters + breakfast nook, 2 sky lites, alarm syst., lg. 2-car attached gar., exc. view + exc. neighborhood, new roof, \$319,000. 249-0453. SANTA MONICA MOUNTAINS, 20 acres, Malibu address, valley view, ocean horizon, good well water, commercial elec., cross streets are Mullholland and Davis Rd., sell as 1 unit only, \$495,000. 626/797-1673. TUJUNGA, move-in cond., 2 story, 3 bd., 2 full ba., large country kitchen, f/p, cent. air, built in '80, RV access, cute yard w/covered patio, 2-car attached garage, built-in speakers, \$228,888. 848-9977 ext. 323, agent.

### Vacation Rentals

BIG BEAR cabin, quiet area, walk to village, two bedroom, sleeps 8, completely furnished, TV/VCP, f/p, \$75/night. 249-8515. BIG BEAR LAKEFRONT lux. townhome, 2 decks, tennis pool/spa, nr. skiing, beaut. master bdrm. suite, sleeps 6. 949/786-6548. CAMBRIA, ocean front house, sleeps up to 4, excellent view. 248-8853. HAWAII, Kona, ocean front on Keauhou Bay, house & guest house comfortably slp. 6, 3 bd., 2 ba., rustic, relaxing, beautiful: swim-ring, snorkeling, fishing, spectac. vw: near restaur., golf, other attractions. 626/584-9632. HAWAII, Maui condo, NW coast on beach w/ocean view, 25 ft. fr. surf, 1 bd. w/loft, compl. furn., phone, color TV, VCR, mcrow., d/w, pool, priv. lanai, slps. 4, 4/15-12/14 \$105/nt./2, 12/15-4/14 \$120/nt./2, \$10/nt. add'l person. 949/348-8047. LAKE ARROWHEAD house, small 4 bd., 2 1/2 ba., sleeps 10, quiet, secluded, relaxing, woody area of Cedar Glen, [http://www.highcountrysrents.com/cedar\\_run.html](http://www.highcountrysrents.com/cedar_run.html) for pictures/rates, JPLers book directly with owner for 2 weekends get 1 + cleaning fees, \$370/weekend. 626/403-0446, owner. MAMMOTH, Chamonix condo, 2 bd., 2 full ba., sleeps 6, fully eq'pd elec. kitch incl. micro-wave & extras, f/p & wood, color TV, VCR, cable, FM stereo, pool sun area, o/d Jacz., sauna, game, rec. & laundry rms, play & BBQ areas, conv. to lifts, hiking, shops, summer events, daily/ weekly rates, summer rates thru Oct. 249-8524. MAMMOTH, Courchevel, fully equipped unit, 2 bd., 2 ba., sleeps 6, summer rates for summer activities, fishing, mountain biking, hiking. 661/255-7958. MAMMOTH, Snowcreek, 2 bd., 2ba., + loft, sleeps 6-8, fully equipped kitchen incl. micro-wave, d/w, cable TV/VCR, phone, balcony w/view to mtns, Jacuzzi, sauna, streams, fishponds, close to Mammoth Creek, JPL discount. 626/798-9222 or 626/794-0455. OCEANSIDE condo, beachside. fully furn. 2 bd., 2 ba, f/p, full kitch., quiet, relaxing, beautiful setting, BBQ, pool, spa, game rm., grt ocean vw., easy walk to pier and restaur., slps 6, 2-nt. min., avail. weekly or monthly. 909/981-7492, Jim or Darlene, [dfhaug@yahoo.com](mailto:dfhaug@yahoo.com). OCEANSIDE, on the sand, charming 1 bd. condo, panoramic view, walk to pier or harbor, pool, spa, game rm., sleeps 4. 949/786-6548. PACIFIC GROVE hse, 3 bd., 2 ba., f/p, cable TV/VCR, stereo/CD, well-eqpd kit w/microw, beaut. furn, close to golf, bches, 17 Mile Dr., Aquar., Cannery Row, JPL discnt. 626/441-3265.



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## Lab names new deputy director

Air Force general to succeed Dumas

*a*n Air Force general who leads one of the United States' largest organizations responsible for developing and fielding military space missions has been selected to become deputy director of JPL.

Lt. Gen. Eugene Tattini, 58, commander of the Space and Missile Systems Center at Los Angeles Air Force Base, will join JPL in early July, announced JPL Director Dr. Charles Elachi. Tattini will succeed Larry Dumas, who is retiring after serving as deputy director for the past nine years.

"Gene Tattini's extensive experience and accomplishments in managing the development and deployment of space systems make him a superb choice to help lead the Laboratory into the new century," Elachi said. "He brings to JPL a keen management ability and great depth in working with the aerospace community."

Tattini, who in moving to the Laboratory will retire from the Air Force after nearly 36 years of service, has spent a total of 12 years at the Space and Missile Systems Center managing the research, design, development and acquisition of launch systems and satellites.

"This is a natural transition for me," Tattini said. "Military space and civil space have many similarities, and the business practices, management and engineering are essentially the same."

"Gene emerged very clearly and early as a great match for JPL," said Dr. William Jenkins, Caltech's executive vice president for

administration who led the nationwide search to fill the position. "He stood out not only in his skills and experience, but in his values—his non-bureaucratic, commonsense approach to management and leadership."

After assessing numerous candidates, a search committee interviewed and unanimously recommended Tattini for the position, Elachi noted. To allow a broad assessment of the candidates, Tattini was next interviewed by a group of employees (Mary Bothwell, Leslie Livesay, Chad Edwards and David Atkinson), by Tom Gavin, Deputy Director Larry Dumas, Caltech President Dr. David Baltimore and Elachi.

After a transition period that is still being finalized, Tattini will succeed Dumas as deputy director sometime in August. "I look forward to introducing him to you in the near future, for I know that upon meeting him, you will be as excited about this appointment as all of us were on the search committee," Elachi said.

Born in Madison, Wisconsin, Tattini graduated from Hampton (Virginia) High School in 1961. A distinguished graduate of the Reserve Officer Training Corps program at the University of Illinois, he entered the Air Force as a second lieutenant in 1965. During his Air Force career, he has served in various space, acquisitions and logistics assignments.



Eugene Tattini

Tattini holds a bachelor's degree in industrial management from the University of Illinois and a master's degree in business administration from Oklahoma City University. His major Air Force awards and decorations include the Distinguished Service Medal, the Legion of Merit with oak leaf cluster, the Meritorious Service Medal with three oak leaf clusters, the Air Force Commendation Medal and the Humanitarian Service Medal.

Tattini and his wife, Jene, have two grown daughters.

## Record crowds for Lab's open house

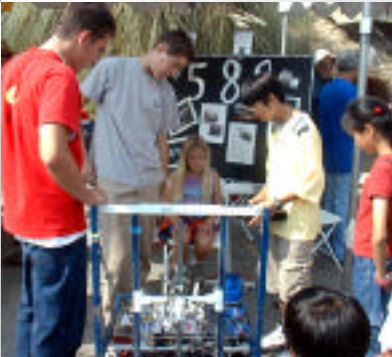
62,500 pack JPL for two-day showcase

*Visitors to JPL's Open House May 19 and 20 enjoyed a variety of exhibits and activities, as evidenced in this sample of photos. Clockwise, from near right: one of the telescopes provided by the Telescopes In Education Project; a number of experimental rovers in the Mars Yard; students from Tehachapi High School who worked with JPL engineers for a robotics competition explain the machines to younger kids; an eight-wheeled rover rolls over a family; Christine Johnson of Mars outreach discusses Mars Odyssey with a visitor; and kids have fun at the Child Educational Center's booth.*



## Open House

2001



JPL 2001  
A Space Odyssey



# News Briefs



The cratered surface of Callisto as previously imaged by Galileo. The spacecraft was scheduled to fly by the Jovian moon again on May 25.



## Interns named for software architect program



Dr. Elizabeth McKenney



Marek Tuszynski



Scott Morgan



Dr. Yu-Wen Tung

JPL's Center for Space Mission Information and Software Systems has announced the participants selected for the 2001 Software Architect Program. They are Dr. Elizabeth McKenney (Section 383), Scott Morgan (333), and Marek Tuszynski (345). Dr. Yu-Wen Tung (368) is an alternate.

The program is a half-time, one-year paid internship intended to help train JPL's next generation of software architects, system engineers and managers. Participants will receive instruction in concepts, principles and state-of-the-art methods in software architectures. On-the-job training and mentoring will take place in a variety of organizations to expose participants to JPL software architectures and mission domains and to foster communication and cooperation among them.

McKenney is currently software lead for System Testbed 3 of the Space Interferometry Mission. She has a Ph.D. from Caltech in mechanical engineering, and has been with JPL for five years.

Morgan is project element manager for the DSN Antenna Renewal and Sustaining work area, and a technical group supervisor. He has a master's degree in computer engineering from USC, and has been with JPL since 1984.

Tuszynski is software lead for the real-time control subsystem for the Space Interferometry Mission. He has a master's degree in applied mathematics from Cal State Northridge, and is a 13-year JPL veteran.

Tung is a software task lead on the Mission Data System. Tung has a Ph.D. in computer engineering from USC, and has been with JPL for 10 years.

### Galileo Callisto flyby scheduled

On a third and final tour of duty in the Jovian system, JPL's dauntless Galileo spacecraft was scheduled on Friday, May 25 to make its closest pass yet to Jupiter's outermost large moon.

The orbiter was set to skim over Callisto at an altitude of about 123 kilometers, or 76 miles, at 4:24 a.m. PDT. If Callisto were the size of a baseball, that would be just a nickel's thickness away.

Mission managers expect the pull of the moon's gravity to alter Galileo's orbit around Jupiter. "The main reason we're flying so close to Callisto is to set up flybys of Io," said Galileo Project Manager DR. EILENE THEILIG. Io is an intensely volcanic moon closer to Jupiter that continually resurfaces itself with fiery eruptions.

Galileo will pass over polar regions of Io in August and October to help scientists determine if the seething and violent moon generates its own magnetic field. "Since we have to go close to Callisto anyway to get to Io, we'll take advantage of the opportunity for studying Callisto," said Project Scientist DR. TORRENCE JOHNSON.

Unlike the planet's other large moons, Callisto, which is about as big as the planet Mercury, appears to be inactive and still bears craters billions of years old.

"Callisto is sort of the ugly duckling of the moons, but it's the one we need to look at to get the bombardment history of the Jovian system," Johnson added. "The craters on Callisto are the visible record of what sizes of comets and other objects have pelted Jupiter and its moons with what frequency over the past 4 billion years."

For more information on the Callisto flyby and the overall Galileo mission, log on to <http://galileo.jpl.nasa.gov>.

### New JPL Web site debuts

To coincide with JPL's Open House last weekend, the Laboratory debuted an updated and redesigned Web site at <http://www.jpl.nasa.gov>.

In addition to highlighting news of JPL's missions and research, the site links to ongoing activities in the Lab's Earth, Solar System, Stars and Galaxies, and Technology theme areas, where feature stories on JPL engineers, scientists and technologists will appear periodically. An image and video archive is included within each theme area.

Other features include educational and fun activities for kids. Regularly

updated areas will be "Favorite Images" and "This Day in Space History."

JPL staff are welcome to submit their favorite space images to Senior Internet Producer SUSAN REICHLEY, manager of the site, for consideration. In addition, she said, "one of our goals is to create more videos, and we plan more Webcasts as well."

### Rideshare Program honored

JPL's Rideshare Program was recently recognized for its efforts by Southern California Rideshare, a regional organization chartered with promoting alternate modes of transportation.

JOHN MIRANDA, employee transportation coordinator, and DEAN OISBOID of Human Resources received an award in the Innovation category for conducting the Laboratory's annual average vehicle ridership survey electronically. In addition, JPL Vanpool #1 (originating from Orange County) also received an award for their tenacity and longevity in being one of the longest-running vanpools in Southern California. An awards ceremony was held May 2 at the Los Angeles Equestrian Center.

### Troy High takes second in nationals

The JPL-sponsored Troy High School (Fullerton) team, which won a regional competition in the National Science Bowl held on Lab in February, took second place overall in the national competition on May 7, scoring a science research trip to Australia this summer.

North Hollywood High School won the national competition.

Twelve teams from the original 61 competed at the Department of Energy competition in Washington, DC. Each of the 12 finalists received \$1,000 for their school's science department.

### Indian dance class starting at Caltech

A beginners' class in Indian dance is being organized at Caltech and JPL staff are welcome to attend.

Graduate student DEEPSHIKHA DATTA seeks students for the class, for which no previous dance experience is required. It will teach the basic movements of Odissi, an Indian classical dance form, as well as other dances.

The class will be held once a week and the timing will be fixed to either a weekday evening or a weekend morning, depending on which is convenient for most people.

For enrollment or other information, e-mail to [datta@its.caltech.edu](mailto:datta@its.caltech.edu).

## Special Events Calendar

### Ongoing Support Groups

Alcoholics Anonymous—Meetings are available. Call the Employee Assistance Program at ext. 4-3680 for time and location.

Codependents Anonymous—Meeting at noon every Wednesday. Call Occupational Health Services at ext. 4-3319.

End of Life Issues and Bereavement—Meets the second Monday of the month at noon. For location, call the Employee Assistance Program at ext. 4-3680.

Gay, Lesbian and Bisexual Support Group—Meets the first and third Fridays of the month at noon in Building 125-133. Call the Employee Assistance Program at ext. 4-3680 or Randy Herrera at ext. 3-0664.

Parent Support Group—Meets the third Thursday of the month at noon. For location, call the Employee Assistance Program at ext. 4-3680.

Senior Caregivers Support Group—Meets the first Tuesday of the month. For time and location, call the Employee Assistance Program at ext. 4-3680.

### Fri., May 25; Sun., May 27

Piano Concerts—Caltech pianist-in-residence James Boyk will perform in Dabney Lounge at 8 p.m. Friday and at 2:30 p.m. Sunday. Admission is free. Call (626) 395-4652.

### Thursday, May 31

JPL Golf Club—Meeting at noon in Building 306-302.

### Friday, June 1

Ethics Training—Held from 1 to 2 p.m. in Building 180-101 and available to all personnel. A list of training ses-

sions is available online at <http://hr/et>. One-hour sessions are offered monthly or can be arranged for group presentations. Call Martha Avina, ext. 4-3154.

### Saturday, June 2

"California Liver Walk 2001"—A team of JPL staff is being formed for participation or sponsorship in an event that seeks to raise dollars to help find a cure for hepatitis and other liver diseases. Held at Burton Chace Park in Marina del Rey. Call Holli Leonard, ext. 4-5589 or (818) 608-4287 or Sharon Maupin, ext. 3-0636.

Caltech Ballroom Dance Club—A free Ballroom, Latin, and Swing party will be held in Dabney Lounge from 8 p.m. to midnight. A free Salsa lesson will be offered at 8 p.m.

### Tuesday, June 5

JPL Gamers Club—Meeting at noon in Building 301-227.

JPL Genealogy Club—Meeting at noon in Building 301-271.

### Wednesday, June 6

Associated Retirees of JPL/Caltech Board—Meeting at 10 a.m. at the Caltech Credit Union, 528 Foothill Blvd., La Cañada.

### Thursday, June 7

JPL Gun Club—Meeting at noon in Building 183-328.

JPL Stories—Jim Burke, the first Ranger project manager, will present "First to the Moon! Ranger and Luna" at 4 p.m. in the Library, west end of Building 111-104. He'll describe how the United States and the Soviets tried, failed and finally succeeded in the early days of the moon race. Call Teresa Bailey at ext. 4-9233.

Nguyen, Stephen Noland, Rajesh Patel, Alice Stanboli, Carol Stanley, Jan Yoshimizu.

**Division 640:** Teresa Bailey, Stephen Benskin, Jack Dawson, David Deats, William Edmiston, Eric Hines, Dave Klein, Carol Lachata, Elaine Lowrie, Robert Powers, Ed Sewall, Jean Stalrit, Fred Thibodeaux, Thara Tongvanit, Corinna Whitehurst, Thomas Wynne.

**Division 660:** Charles Boles.

**Contractors:** Anwar Akhtar, Sam Chu, Corbin Miller, Robert Saul.

**The following employees received NOVA's in April:**

**Section 313:** Erik Bailey, Louise Hamlin, Otfried Liepack, Daniel Limonadi, Gerald Snyder, Jason Willis.

**Section 323:** Sherri Akbari.

**Section 333:** Javier Bautista, Mark Fiore, Arthur Freiley.

**Section 386:** Brett Ramaker.

**Section 388:** Rafael Alanis, David Hodges, Paul Johnston.

**Section 642:** Michael Wright.

**Section 708:** Karen Piggee.

**Contractors:** Harry Beasor, Ariel Chua, Rigoberto Falcon, Brian Hewes, Michael Macloskey, Joseph Pangan, Eugenio Rodriguez.

Pearline Johnson, Eunice Lau, Donald Lehr, Albert Nakata, Deanna Rowe, Ronald Steinkraus.

**25 years:** Kristine Blom, James Breckinridge, Marcoanto Chavez, Craig Cheetham, Katrina Evans, Carl Franck, Mary Kunstler, Thomas Lockhart, Thomas May, Timothy O'Donnell, Edward Wong, Bobbie Woo.

**20 years:** Beatriz Abu-Ata, Edmund Baroth, Juan Bautista, Leslie Berridge, Martin Buehler, Frank Carsey, Thomas Fouser, Mark James, Leslie Lowes, Edward Miller, Mary Sue O'Brien, James Okuno, Don Potter, Michael Rafferty, Theresa Rafter, John Repar, Laif Swanson, Elsa Waters, Richard Weidner, Donald Wilson.

## Service awards

**The following JPL employees were recently honored for 20 or more years of service:**

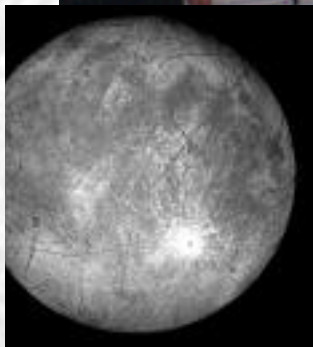
**45 years:** Robert Ryan.

**40 years:** Richard Denning, Nancy Short, Edward Smith, Larry Whitcanack.

**35 years:** David Fulton, Donald Germann, G. Joy Hodges, Donald Kurtz, Gloria Lawler, Hartwell Long, J.C. Mahoney, Dennis Ross, George Sweeney.

**30 years:** John Beckman, William Edmiston, John Ekelund, Daniel Erickson, Susan Foster, Adrian Hooke,





# SIR ARTHUR C. CLARKE

*Dr. Richard Doyle, manager of JPL's Information Technologies and Software Systems Division (360), recently visited celebrated science fiction author Sir Arthur C. Clarke at Clarke's home in Colombo, Sri Lanka. The author of more than 60 books, the 83-year-old Clarke is perhaps best known for the classic 2001: A Space Odyssey. Doyle had been corresponding with Clarke for about five years, and the opportunity to visit him grew out of that correspondence. Doyle shares the experience with Universe.*



Author of  
2001: A  
Space  
Odyssey  
visits  
with JPL's  
Doyle

**QUESTION** *How did your opportunity to visit Clarke come about?*

**A** The initial contact goes back to late 1996, when Guy Man and I were organizing a workshop on Highly Autonomous Systems. The timing was such that our workshop lined up with birthday celebrations for HAL, the intelligent computer from 2001. This led naturally to the idea that Arthur would be the perfect speaker for our symposium. We found a way to contact him over the Web, and he graciously agreed. Even then, he was restricting his travel, but he provided a videotaped banquet speech that was a huge hit. Ever since then, I've had the privilege to keep up a correspondence with him.

**QUESTION** *What were some topics from your correspondence?*

**A:** Arthur is very aware of and very supportive of NASA activities, and has a particular interest in the Jovian moon Europa. Sometimes he would have a thought or question about a new Europa or Mars image or other result from one of our missions, and I would refer him to scientists here or elsewhere, or to our mission people. Occasionally, I would help one of our flight projects make contact with him so that they could include him in an activity they were planning. Galileo and Cassini have both worked with him recently. I came to understand how much Arthur values having these contact points and that he was getting as much out of our correspondence as I was. He's certainly known many people at JPL over the years, all the way up to our Directors, but he's had fewer contact points here in recent years. I felt good knowing I was helping to bridge a gap for him. Like a lot of JPLers, I grew up reading his science fiction. More than that, his work influenced me in ultimately choosing space exploration as a career.

**QUESTION** *What led up to your visit?*

**A** Little by little, I became connected with a network of people who correspond with Arthur, some of whom have visited him in Sri Lanka, and I learned how that would work. It became clear that Arthur very much enjoys these visits. So it simply came down to picking some dates, and just making it happen. Arthur has a steady stream of visitors from all over the world. Just to give a couple of examples, Buzz Aldrin was there a week or two before I was, and while I was there, a production company showed up to film him for his presentation at this year's Academy Awards. It was amusing to travel almost all the way around the world and then find Hollywood in Sri Lanka.

**QUESTION** *How long were you in Sri Lanka and how much time did you spend with Arthur?*

**A** I was there for a total of eight days, and spent parts of four days with him.

**QUESTION** *What did you talk about?*

**A** It was an amazing potpourri of topics, very wide-ranging, and very stimulating. We spent some time going through some of the

recent Mars Global Surveyor images. There is the provocative "sandworm" image, showing an elongated, seemingly translucent tube that even exhibits specular reflection. One theory I've heard about this structure is that it may be an analogue of a lava tube, formed from rapidly flowing water underground, which froze on the outside while water continued to flow inside. Later, erosion exposed the tube to the surface, now emptied. The "worm" even shows segments, which are probably just sand dune patterns. I'm no planetary geologist, and I may have garbled that description, hopefully not too badly. We also talked about extremophiles, and implications for the search for life off our planet. It was fun to speculate that simple life at least may turn out to be the rule, rather than the exception, wherever the basic ingredients of life are found, perhaps even in our solar system. We talked about, at the time, the imminent splashdown of Mir. We bounced around ideas for science fiction stories, which was great fun for me. I learned about plans to fly his DNA into space. I could go on and on.

**QUESTION** *What is a day in the life of Arthur C. Clarke like?*

**A** From what I could see, each day is quite full. He has many projects going on and correspondents and connections all around the world. He conducts all his own e-mail correspondence, not an easy task. He has several staff to support him. Virtually every day he receives a visitor. He stays very informed both through the Internet and via BBC broadcasts, on television and short-wave radio. He takes a rest after lunch. Once, I was invited to simply hang out in his office while he rested. That too was an amazing experience, just perusing his bookshelves. A couple of volumes that stick out in my memory are the original works of Percival Lowell on Mars, drawings of canals and all. Arthur usually takes a short driving tour through Colombo in the late afternoon. He owns a red Mercedes, which I came to understand is something of an icon in the city. He is most definitely the First Citizen of Sri Lanka. Everyone loves and honors him.

**QUESTION** *What is Sri Lanka like?*

**A** A very exotic place. There is a civil war going on, but I never felt threatened, although there is intense security all around the country, particularly at the airport. I've been to other places where I felt more at risk; Kashmir, for example. I had the opportunity to do some touring of Sri Lanka while I was there and it is a beautiful country. I visited an ancient city called Sigiriya with some very impressive engineering and technology from about 500 A.D., some of which is still operating. This place was an inspiration for Arthur's book *The Fountains of Paradise*. I also visited an elephant orphanage—think of the Wildlife Waystation [in the Angeles National Forest], but for elephants only. I also visited a famous Buddhist temple in Kandy, a botanical garden, and the tea country, which is truly breathtaking. I can see how the island had the name Serendip, referring to the unexpected good fortune of finding a paradise along the otherwise arduous eastern sea routes.

**QUESTION** *Would you visit Arthur again?*

**A** I'd love to, and I believe Arthur would be happy to receive other visitors from JPL. He is a very gracious host.

**"Like a lot of JPLers,  
I grew up reading  
his science fiction.  
More than that,  
his work influenced  
me in ultimately  
choosing space  
exploration as a  
career."**

— Dr. Richard Doyle,  
on Arthur C. Clarke



# JPLers run, walk for cancer research



Members of JPL's Advisory Council for Women led other JPLers in a May 12 fundraising effort to raise awareness and critical funds for research on breast and ovarian cancer.

More than 80 Laboratory staff members, families and friends participated in the Revlon Run/Walk for Women, a five-kilometer (three-mile) event held in the USC area that began and ended at the Los Angeles Memorial Coliseum.

Overall, about 60,000 people participated in the L.A. event. ACW member and participant Deborah Watson of Section 261 noted that past Revlon Run/Walks in Los Angeles and New York have raised more than \$17 million for cancer research, counseling and outreach programs.

"JPL's participation in the run/walk is a testament to the caring of its employees to give of themselves to fight this disease," she said.

Watson said some JPL participants had personal connections to the fight against breast cancer. Some sported signs that included statements such as "12-year survivor" and "I'm walking in support of my mom."

## Passings

**ALLEN WOLFE**, 77, who retired as chief engineer for flight projects in 1989 after a 37-year JPL career, died of cardiac arrest May 7.

Wolfe served as payload instrumentation engineer on Explorer 1, spacecraft system manager for the Ranger lunar program, orbiter manager for the Viking spacecraft to Mars and deputy project manager for the Galileo mission. He was also a member of the Cassini review board.

Wolfe received NASA's Outstanding Leadership and Exceptional Service medals as well as the agency's Public Service Award.

He is survived by his wife, Georgiana, daughters Kathy and Terri, and grandsons Byron and Keith. Services were held May 12 at St. George's Episcopal Church in La Cañada.



Allen Wolfe

## Classifieds

### For Sale

BIKE, mountain, 21 spd., Shimano equipped, extra height handlebars, nearly new, used little, cost \$135 new, sacrifice \$85. 661/297-0219.

BIKE, Royce Union BMX, orange & blue, ORYG brakes, great cond., \$90. 626/797-3202, Andy.

BIKE, Schwinn Frontier, black, good cond., Shimano brakes, \$50. 626/797-3202, Andy.

BUNKBED, twin, red metal, vg cond., \$75. 909/621-3203.

CAMPSITE at El Capitan, north of Santa Barbara, June 1-3, \$30. 956-1744, Barbara.

COMPUTER, 1000 MHz AMD T-bird processor, 30GB HD, 128MB PC133 SDRAM, ATI Xpert 2000 32MB video, built-in sound, 56K modem, 52x CD-ROM/floppy dr., ATX case, 300W power supply, Win98 OS; tons of Adobe, Microsoft, Macromedia software; bare system only: \$900. 626/797-3813 eves., Benjie, or e-mail benjields@hotmail.com.

COLLECTIBLES: dinner plates, vintage 1945, six 10 1/2 inch, Gladding-McBean, Franciscanware, apple pattern, \$110; pipe threading equip., Armstrong, 3 dies, \$35; reflex speaker enclosure, very lg., finished blond base, 4.5 cu. ft. with 12-inch speaker, \$38. 626/793-1895.

COMPUTER HUTCH, compact, \$25. 352-3588.

COMPUTER TABLE, "IKEA Krister," lacquered steel, requires assembly, W 34 5/8 x D 33 1/8 x H 31 1/8" (88 x 84 x 79 cm), brand-new cond., \$50/obo. 626/379-4509, Jeff.

COMPUTER TABLE, rosewood, w/keyboard tray, \$50; SOFA, dk. green, sm. floral print, gd. cond., \$50; LADDER, wooden, \$15. 626/355-5662.

DESK/CHAIR, antique mahogany, rolltop, \$1,500; TABLES, 2 custom, rod iron indoor/outdoor, w/heavy glass top, \$2,500; COUCH, sectional, beige, almost new, \$250; COFFEE TABLE, \$75; TABLES, 4 stacked, \$200; BAR CART, \$150; TOYS, child's bike, etc, best offer. 248-8853.

DISHWASHER, Sears Kenmore, old but works perfectly, pick up in Canyon Country, \$75. 653-2000, Stan.

DRYER, Whirlpool, 3 cycle, end-of-cycle signal, hvly duty, 7.3 cu. ft., perfect for student/condo or apt., energy saver, \$50/obo. 772-9623, after 6 p.m., Tuan.

EXERCISER, Health Rider, complete with owner's manual, video instructions and video workouts, exc. cond., \$250/obo. 949/348-8047.

FURNITURE: wrought iron kitch. table w/glass top + 4 matching chairs, 2 yrs. old, perf. cond., \$350/obo; 2 sm. wooden (oak?) shelves, \$30/ea.; 2 night stands, \$30 ea./obo. 626/792-2216.

OLYMPICS TICKETS, 2002 Salt Lake, call for events & price details. 562/420-2313.

OVEN, convection by Décor, self cleaning, electric 220V, white, wall mount, \$150/obo. 626/584-9632.

OVEN, convection, GE Profile, under counter or in wall, 30" wide, 220V, exc. cond., pick up in Canyon Country, \$450. 653-2000, Stan.

TABLE, dinette, square glass top, 5' x 5' w/metal feet and 4 matching chairs, \$750/obo; BAR STOOLS, four matching, metal frame, all in superb condition, \$350/obo. 626/398-3480.

TABLE, kitch. set, Ethan Allen, maple, 48" dia., + 2 leaves & 4 captain's chairs, \$300. 626/355-0989.

WASHER/DRYER, large, Kenmore, bought last year, great cond., almost brand new, \$600/obo. 353-9859, Sara.

WASHER/DRYER, Kenmore electric, good cond., \$150. 909/931-9433.

WASHER, GE, \$150; DRYER, \$150, similar but do not match exactly, white. 790-6185.

WASHER, Whirlpool, convertible, 2 spd., 6 cycle, 6.8 cu. ft., perfect for student/condo, or apt. resident, hook-up to kitchen sink, energy saver, \$50/obo. 772-9623, 6 p.m., Tuan.

WINE RACK, black wrought iron, lockable, holds 60+ bottles in 18 x18" footprint, \$200. 626/281-2179, Mike.

**Vehicles/Accessories**

'81 BMW 320i, clean, runs great, 5 spd., gd. tires, sun roof. \$1,200. 353-8648.

'87 CADILLAC Fleetwood, very clean, looks and runs like new, full pwr. leather seats, 56K orig. mi., built-in phone, \$3,700. 626/289-6802.

'94 DODGE Grand Caravan Sport SE, V6, 3.3 L, 25 mpg, loaded, p/s, p/b, p/win & locks, front and rear air, c/c, tilt wheel, roof rack, am/fm, cass., privacy glass, quad seats, alloy wheels, 119K mi., \$5,200. 626/355-7086.

'84 DODGE D-50, pickup truck, vg cond., auto trans, bedliner, shell, very clean, all maint. records on file, new tires, new carburetor, 139.5K, orig. owner, \$2,000. 626/332-2682.

'97 FORD Mustang, red, 44K mi., auto, pwr. win/dr, sporty looking, \$11,250. 626/856-8723.

'96 FORD Escort LX, exc. cond., 5 spd., 2 dr., 57,000 mi., a/c, am/fm/cassette, \$5,900/obo. 909/980-3508.

'96 FORD Explorer XLT, only 48K mi., exc. cond., all leather, auto, all elec., pwr. windows/locks/seats, c/c, 6 cyl., roof rack, front & rear a/c, alloy wheels, loaded, \$14,900. 310/451-5919.

'94 FORD Explorer Sport, 5 spd., 4 w/d, 96K mi., black, gray leather, all power, 10-disk CD,

alarm, alloy wheels, 5 new tires, \$7,500/obo. 323/655-5864.

'89 FORD Ranger XLT King Cab, w/camper shell, carpet kit, V6, 2.9 L eng., a/c, pwr. steering/windows/doors, tow pkg., am/fm/cass., c/c, tilt wheel, well maintained, exc. cond., 80K mi., \$4,300/obo. 626/791-7645.

'68 FORD Mustang, California Edition, 289, V8, 2-dr. coupe, in family for nearly 30 years, running condition, make offer. 626/577-7027.

'90 HONDA Accord, white w/burgundy inter., 4 dr., auto., gd cond., all pwr., alarm, 196K mi., must sell, \$5,500/obo. 388-8309, Jennifer.

'71 HONDA CL-350 motorcycle, 7,500 orig. mi., needs work, \$250/obo. 626/577-7027.

'87 HONDA LX, 125,000 miles, 5 spd., orig. owner, \$2,100. 626/791-1581.

'87 HONDA Civic, 2-door hatchback; '83 Accord, 2-door LX hatchback, both running, good basic transportation. 626/403-0446.

'96 JEEP Grand Cherokee Limited, 4 x 4, V8, loaded, 80K fwy. miles, tow package, char. gold, exc. cond., always garaged, non-smoker, \$12,900/obo. 957-5382.

'95 LEXUS Sport Coupe 400, 59,500 mi., Nakamichi stereo system with 12 CD changer, loaded, exc. cond., starting bid \$23,500. 626/821-9622.

'97 MAZDA Miata MX-5, 12,200 mi., Montego blue, black top & upholstery, a/c, alloy whls., pwr steering/windows/mirrors, leather whl., Eclipse am/fm/cd, Clifford alarm, exc. cond., especially rear window, alw. garaged, \$14,500. 626/304-0217, days or 626/578-0662, eves.

'90 MERCURY Sable, V6, 120,000 mi., loaded, good shape, \$1,400. 626/791-1581.

'75 MGB, smog exempt, runs, good top; needs engine, brake, body work; happy car needs happy home, \$800/obo. 818/645-2489 or 310/823-2663.

'85 Motorhome, 21', class C, Chevy 350, very clean, new upholstery, low mi., rebuilt eng., new tires/roof/dash a/c, refriger, stove, microwave, etc., must see, \$9,500/obo. 248-7097.

SPARE TIRE for Jeep Cherokee, brand new Michelin P215/70R15, mounted on Laredo wheel w/tan cover, \$125. 626/281-2179, Mike.

STORAGE BIN, Yakima rooftop for car/truck, \$100. 909/931-9433.

'89 SUBARU GL, gd. cond., just passed smog chk., starting price \$2,000/obo. 626/792-2216.

'96 TOYOTA Previa, good condition, 108,000 miles, my family has outgrown it, \$12,000/obo. 541-0131, Gary or Sue.

WHEELS, 4 alloy, "Baja" type, 15" x 8", 6 bolt for 4 x 4 mini-pickup, \$100. 909/624-7392.

'86 VW Golf, 5 spd., runs great, exc. gas mileage, 152K mi., \$1,100/obo. 626/683-7018.

### Wanted

HOUSE OR APARTMENT for rent, 1 or 2 bdrms., open to variety of areas within about a 20-mile radius of JPL. 626/345-1798, LaSonta.

HOUSE RENTAL for visiting scientist from Germany with family, seeks furnished, close to JPL, Pasadena, Arcadia, Monrovia, from 7/16 to 8/19/01. 248-8591.

HOUSEMATE to share 3 bd., 2 ba. house in San Gabriel, an easy 9 miles to JPL, \$500, all amenities included. 626/281-2179, Mike.

HOUSING, furnished, for visiting faculty (singles, couples, families) for 10 weeks, June-Aug.; contact Petra in the Educational Affairs Office at ext. 4-0726.

RV, to rent for summer trip to Mt. Rushmore, family of 5 + dog, need for 11-12 days, prefer 25+ feet, class C or class A, newer homes preferred, mechanical breakdown insurance a must. 661/297-0219.

SHOPPERS: Elks Ladies Auxiliary sponsors "Shop Till You Drop," May 30, 5:30-8:30 p.m., Arcadia Lodge, 27 W. Huntington Dr., no admission; handbags, scarves, jewelry, summer fashions from Nordstrom, Macy's, Robinson's-May, 50-70% off store prices, sz. 4-24, proceeds to disabled children in Calif./Hawaii.

SPACE INFORMATION/memorabilia from U.S. & other countries, past & present. 790-8523, Marc Rayman.

VOLLEYBALL PLAYERS, coed, all levels of play, Tues. nights 8-10 at Eagle Rock High School, \$3/night. 956-1744, Barbara.

WINNEBAGO Rialta, 1998-2002. 626/850-4378.

### Lost & Found

*Lost:* FISHING HAT, during Open House, Sun., May 20, betw. 11 a.m.-2:30 p.m.; Tommy Hilfiger, reversible; colors: tan on one side, red on the other. 626/850-4378, Barbara.

*Found:* JACKET, Building 180, 9th floor, call to describe/claim. Ext. 3-1940, Vi.

### Free

COMPUTER, Mac Plus, includes printer, must pick up. 352-3588.

DOG, female shepherd mix, friendly, 1 yr. old, knows many commands, black/brn/white. 909/598-9734, Ralph.

### For Rent

ALTADENA, furn. house 2 miles/JPL; 2 bd., den/possible 3rd bedroom, f/p, granite kitch.,

a/c; park-like setting, quiet st.; gardener, water, trash incl.; avail. June 22 for 12 mo., \$1,400/mo. 626/798-0226.

ALTADENA, lg. furn. room, w/cable TV, priv. ba., priv. off-street parking, also share 3 bd., 2 1/2 ba. quiet hilltop house, central a/c, kitchen with d/w, pool, lg. garden, patios, view, 11 min. to JPL, avail. by 7/1, only to smoking-tolerant, JPL empl./contr., temp. OK, \$485, incl. util. 626/794-1050, after 7 p.m., Harry.

EAST PASADENA apt., 1 bd., .75 ba., 1 carport & street pkg., incl. water/trash, no smoke/pets, carpet, blinds, stove, f/p, balcony, \$950 + \$950 sec. dep., avail. 6/1, 1-yr. lease. 949/481-4982.

PASADENA condo, short-term lease (3 to 12 mo.), 1,000 sq. ft., fully furn. 1 bd., 1 block from Caltech, patio, laundry, shared garage, avail. 7/1, \$1,300 (util. incl). 626/285-0730.

PASADENA, room in a furn. 2-bd. apt., near Lake Ave. district, treetop and mtn. view surroundings, tree-lined st., nr. shopping, PCC, Caltech; underground secured parking, laundry facility, pool, util. paid, female pre-ferred, \$500. 626/796-8982, or 626/399-6072, cell.

SOUTH PASADENA, completely furnished studio apt, 1718 Huntington Dr. between Milan and Marengo, utilities paid, car space, a/c, one level, laundry, no pets, non-smoker \$750. 626/792-9053, Ray.

SYLMAR, spacious 4 bd., 3.5 ba., + den & bonus rm., gated community w/pool, rent to own, mtn. view, 20 mi. from JPL, 2,500 sq. ft., fenced & landscaped, \$1,995. 626/584-6526, Fred.

### Real Estate

EAGLE ROCK, funicular access to very private, beautiful 1938 architect's home, 3 bd., 2 ba., 1,835 sq. ft., on about an acre lot, views from the Eagle Rock, over downtown to Griffith Pk. with a glimpse of the ocean, 10 min. to JPL, more details at [www.hightowerpress.com](http://www.hightowerpress.com), \$465,000. 323/547-4920 for appointment.

MONTROSE, 5 min./JPL, 3-level townhouse, 8 yrs. old, 1,900 sq. ft., 3 + 2.5, incl. lg. master suite, Jacz. tub, very lg. gourm. kitch. w/granite counters + breakfast nook, 2 sky lites, alarm syst., lg. 2-car attached gar., exc. view + exc. neighborhood, new roof, \$319,000. 249-0453.

### Vacation Rentals

BIG BEAR cabin, quiet area near village, 2 bd., sleeps 8, completely furnished, \$75/night. 249-8515.

BIG BEAR LAKEFRONT, luxury townhome, 2 decks, tennis, pool/spa, beautiful master bd. suite, slps. 6. 949/786-6548.

CAMBRIA, ocean front house, sleeps up to 4, excellent view. 248-8853.

HAWAII, Kona, ocean front on Keauhou Bay, house and guest house comfortably sleep 6, 3 bd., 2 ba., rustic, relaxing and beautiful, swimming, snorkeling, fishing, spectacular view, near restaurants, golf and other attractions. 626/584-9632.

HAWAII, Maui condo, NW coast on beach w/ocean view, 25 ft. fr. surf, 1 bd. w/loft, compl. furn., phone, color TV, VCR, mcroww., d/w, pool, priv. lanai, slps. 4, 4/15-12/14 \$105/nt./2, 12/15-4/14 \$120/nt./2, \$10/nt. add'l person. 949/348-8047.

LAKE ARROWHEAD house, small 4 bd., 2.5 ba., slps 10, quiet, secluded, relaxing, woody Cedar Glen area, [www.highbcountryrents.com/cedar\\_run.html](http://www.highbcountryrents.com/cedar_run.html) for pics/rates, JPLers book directly w/owner for 2 weekends get 1 + cleaning fees, \$370/weekend. 626/403-0446, owner.

MAMMOTH, Chamonix condo, 2 bd., 2 full ba., slps. 6, fully eqpd elec. kitch. incl. microw. & extras, f/p & wood, color TV/VCR, FM stereo, pool/sun, play & BBQ areas, o/d Jacz., game, rec., laundry rms., conv. to hiking, lifts, shops, spec. events, daily/weekly rates. 249-8524.

MAMMOTH, Courchevel, fully eqpd condo, 2 bd., 2 ba., slps 6, summer rates for summer activities, fishing, mtn biking, hiking. 661/255-7958.

MAMMOTH, Snowcreek, 2 bd., 2 ba., + loft, slps 6-8, fully eqpd elec. kitch. incl. microw., d/w, cable TV, VCR, phone, balcony w/view to mtns., Jacz., sauna, streams, fishponds, close to Mammoth Creek, JPL disc. 626/798-9222 or 626/794-0455.

OCEANSIDE, on the sand, charming 1-bd. condo, panoramic view, walk to pier or harbor, pool, spa, game rm., sleeps 4. 949/786-6548.

OCEANSIDE condo, fully furn., 2 bd., 2 ba., f/p, full kitch.; quiet, relaxing, beautiful beach-side setting.; BBQ, pool, spa, game rm, great ocean view, easy walk to pier/restaur., sleeps 6, 2-nt min.; avail. weekly or monthly. 909/981-7492, Jim or Darlene or e-mail dfhaug@yahoo.com.

PACIFIC GROVE hse, 3 bd., 2 ba., f/p, cable, TV/VCR, stereo/CD, well-eqpd kitch. w/microw., beaut. furn, close to golf, bches, 17 mile Dr., Aquarium, Cannery Row, JPL discnt. 626/441-3265.

ROSARITO BEACH condo, 2 bd., 2 ba., ocean view, pool, tennis, short walk to beach on priv. rd., 18-hole golf course 6 mi. away, priv. secure parking. 626/794-3906.

SANTA FE, N.M.: escape L.A. for the summer, fully furnished home avail. 6/15-9/15, \$1,600/mo. 626/794-6142.



Classified ads will be available the day before Universe is published, at <http://www.jpl.nasa.gov/dailyplanet>

JPL's new online news source



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*Mark Whalen*

**Design & Layout**  
*Adriane Jach, Audrey Riethle/  
Design Services*

**Chief Photographer**  
*Bob Brown/Photo Lab*

**Advertising**  
*Susan Braunheim-Kalogerakos*

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For change of address, contact your section office (on-Lab personnel) or Xerox Business Services, (626) 844-4102 (retirees and others).

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Advertising is available for JPL and Caltech employees, contractors and retirees and their families. No more than two ads of up to 60 words each will be published for each advertiser. Items may be combined within one submission. Ads must be submitted on ad cards, available at the ERC and the Universe office, Bldg. 186-118, or via e-mail to [universe@jpl.nasa.gov](mailto:universe@jpl.nasa.gov). Ads are due at 2 p.m. on the Monday after publication for the following issue.

All housing and vehicle advertisements require that the qualifying person(s) placing the ad be listed as an owner on the ownership documents.