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ELACHI NAMED NEW JPL DIRECTOR

By Mark Whalen

Veteran JPL engineer, scientist and manager Dr. Charles Elachi has been named to succeed Dr. Edward Stone as director of the Laboratory.

Caltech President Dr. David Baltimore announced to JPL employees Jan. 31 that Elachi would take over for Stone effective May 1.

The eighth director in JPL's history, Elachi has served as director for space and Earth science programs since 1994. He has served in a variety of research and management positions since joining the Laboratory in 1971.

Elachi recalled a vivid memory of his inspiration to explore space: as an 11-year-old boy in his native Lebanon he read about the 1958 launch of Explorer 1—the first U.S. spacecraft—“at a place called JPL somewhere in California,” 43 years to the day of his announced appointment.

“I want to thank all of you,” he told the von Kármán Auditorium audience. “In one way or another, each and every JPL employee has had some effect on my career, and it always has been a positive impact. In many ways.

“Since Explorer 1, JPL has inspired millions of people around the world with our adventures and our discoveries. We have brought into reality what were only dreams, including mine.”

Baltimore said the Caltech search committee screened 74 candidates for the director's job, interviewed seven and recommended four finalists. “The committee and I jointly considered the finalists and enthusiastically settled on Charles, with (NASA Administrator) Dan Goldin's concurrence.

“We have not merely anointed the prince of JPL,” Baltimore said. “We were prepared to take an outside candidate if he or she proved superior. It's simply that Charles provided insurmountable competition to any other candidate because of his knowledge of the Lab, his remarkable accomplishments in science, his commitment to the mission of JPL, his intelligence, and his ability to convey the Lab's opportunities and achievements to its many different constituencies.

“One could easily say that Charles has devoted his professional life preparing himself for the truly awesome job of director.”

Stone, who was named JPL director in January 1991, will return to full-time teaching and research at Caltech, where he has taught since 1967. The David Morrisroe Professor of Physics at the Pasadena campus, Stone was project scientist for the Voyager mission, a project that launched twin spacecraft in 1977 and sent them on a 12-year tour of the outer solar system, flying past the giant planets Jupiter, Saturn, Uranus and Neptune.

“Ed Stone is leaving his position of JPL director after 10 years of incredible dedication to the Lab's mission,” Baltimore noted. “The people of the world view their solar system and their own planet differently than before Ed took the reins at JPL.”

Said Stone: “When I think about JPL, I think of one word: innovation. Charles Elachi is an innovator, and what attribute is more required to lead JPL in the 21st century? Innovation is a very unpredictable process, he said, “and all the better to have someone like Charles, who knows how to create a clear path, a clear direction that guides this sometimes chaotic process.” Stone also pointed to Elachi's leadership in radar mapping, interferometry and innovative management. Elachi worked with Stone to create the Infrared Processing and Analysis Center (IPAC) at Caltech, which became the data center for JPL's successful infrared astronomy satellite (IRAS). IPAC, Stone said, “became a model for NASA, and opened a new pathway of partnership with campus that also includes the SIRTf science center and a new interferometry science center. These are just a few examples of Charles' leadership that I've admired and relied upon and makes me so excited about his appointment.

“I know he will bring to the job not only his keen sense of innovation, but



Bob Brown / JPL Photos

“To be the director of JPL is a tremendous honor. Together we will create the Explorer 1's of the 21st century.”

— Charles Elachi, the next JPL director



also his boundless energy and enthusiasm.”

The 53-year-old Elachi, an acknowledged leader in the field of remote sensing,

is perhaps best known for his role in the development of a series of imaging radar systems for the space shuttle that allowed scientists to see through clouds that blanket Earth. It even penetrates the top layer of soil in arid regions, revealing hints of what lies below the surface.

Elachi served as principal investigator on numerous NASA research and development studies and flight projects. He is currently team leader of the Cassini Titan radar experiment and a co-investigator on the Rosetta comet nucleus sounder experiment. He is the author of more than 200 publications on space and planetary exploration, Earth observation from space, active microwave remote sensing, wave propagation and scattering, electromagnetic theory, lasers and integrated optics, and he holds several patents in those fields. In addition, he has authored three textbooks on remote sensing. He has taught “The Physics of Remote Sensing” at Caltech since 1982. At the age of 42, Elachi was one of the youngest researchers to be elected to the National Academy of Engineering.

For the next three months, Elachi has delegated the day-to-day operations of SESPd to Larry Simmons, SESPd deputy director.

“This will allow me the time to listen to your dreams and ambitions,” he told JPL staff, adding that he plans to meet with all employees, in small groups, “to better understand the challenges and opportunities that we all face. I want to be sure I'm aware of the tools and resources you need to achieve your commitments and your dreams.

“I also plan to meet with our NASA customers, other NASA centers, university and industrial partners, because they are all key elements to accomplishing the 30 missions Dan Goldin has challenged us to do over the next decade.

Elachi told his fellow JPLers, “I think we have the best jobs in the world—and we even get paid for it. Exploring the solar system and the universe is a great privilege. To be the director of JPL is a tremendous honor. Together, we will create the Explorer 1's of the 21st century. Because there are lots of 11-year-old girls and boys out there who want to follow in our footsteps.”

Newly appointed JPL Director Dr. Charles Elachi acknowledges the standing ovation he received upon the announcement by Caltech President Dr. David Baltimore. Center: Elachi is congratulated by NASA Administrator Daniel Goldin. Bottom: Deputy Director Larry Dumas (left), Goldin and Baltimore.

News Briefs



Dr. Eileen Theilig

Theilig is new Galileo manager

DR. EILENE THEILIG has been named new project manager of the Galileo mission.

Theilig has worked on the Galileo team for 11 years and has served as deputy project manager since April 2000. She has supervised teams of engineers responsible for Galileo's health and for commands sent to the long-lived spacecraft, which was launched in 1989. Theilig received two NASA Exceptional Achievement Awards for that team leadership.

Theilig assumes the project manager post that had been held since 1998 by Jim Erickson, who has become mission manager for rovers that JPL plans to send to Mars in 2003.

Galileo will next fly close to Callisto, the outermost of Jupiter's four large moons, on May 25. Two flybys of the intensely volcanic moon Io are planned for the second half of 2001.

"I've always been mindful of the long line of people whose efforts have made Galileo a success," Theilig said. "The current team continues the tradition of overcoming technical challenges to achieve first-class science. We still have exciting new science ahead of us."

A native of Houston, Theilig holds a doctorate in geology with a concentration in planetary studies from Arizona State University.

Graf to manage 2005 Mars orbiter

JAMES GRAF has been named manager of JPL's Mars Reconnaissance Orbiter mission.

Proposed for launch in August 2005, the mission will conduct remote sensing of the planet's surface to identify evidence of past or present water and will help identify safe and scientifically exciting landing sites for future robotic and perhaps someday human missions. The Reconnaissance Orbiter will also establish a telecommunications link for future missions.

"The imager on board the spacecraft should be able to resolve ground features to a resolution considerably higher than anything we've done before," Graf noted. "For instance, we should be able to identify rocks down to two-thirds of a meter in diameter [about two feet]."

Graf previously managed the Quick Scatterometer mission (QuikSCAT) and the development of its SeaWinds radar



James Graf

instrument. Graf has been with JPL for 25 years. He has a bachelor's degree in science and engineering from Princeton University, New Jersey, and a master's in mechanical engineering from Colorado State University.

DMIE team seeks input for redesign

The DMIE Information System user interface is being redesigned, and the DMIE team seeks input from users across the Lab community to ensure a more user-friendly interface and improved usability.

Team members are currently on a "road show" to present recent DMIE enhancements and showcase new ideas planned for near-term implementation.

The demonstration by team lead DARIA TOPOUSIS and system engineer ANN BERNATH runs approximately 1 1/2 hours. To schedule an appearance for an established meeting or to arrange a special demonstration, contact Topousis at ext. 4-0870.

Non-exempt timekeeping goes live

JPL's New Business Systems Finance team has delivered additional functionality to the online timekeeping system to serve JPL's non-exempt timekeeping community.

At the NBS Community Web site, <http://nbs>, non-exempt employees can now access the online system under the JPL Employee Work Toolkit.

To sign up for training, refer to ongoing classes at <http://hr/et>.

Blood drive coming up

The next JPL/Red Cross blood drive will be held in von Kármán Auditorium Feb. 20 from 10 a.m. to 4 p.m. and Feb. 21 from 7 a.m. to 1 p.m.

JPL's Occupational Health Services Office said the Red Cross is currently experiencing a shortage of O negative-type blood and is holding only 5 percent of its desired inventory. However, the organization still seeks donations of all blood types.

Signup sheets for the blood drive are available at Occupational Health Services' home page at http://eis.jpl.nasa.gov/medical/blood_form.html prior to the blood drive. If you have not signed up ahead of time or wish to change your appointment, call the Pasadena Red Cross at (626) 799-0841, ext. 630.

The JPL Library's popular story series got off to a rousing start for the new year as former Laboratory Director Dr. William Pickering delighted a packed house Jan. 18 with tales of the old days.

The 90-year-old Pickering, who served as JPL director from 1954-76, led the Laboratory into the space age. Previously, JPL had developed guided missiles and associated technologies for the U.S. Army.

After initial rocket research, the laboratory that was to become JPL "evolved from understanding liquid or solid propellant fuel to solving many problems about how

increase its scope," he said, "to build a structure strong enough to go a long way and include a guidance system."

In the late 1940s, the Army asked the Lab to mass-produce these rockets. Pickering quipped that he told then Lab-director Louis Dunn "we'll have to hire two or three more people."

The current era of space exploration began with the creation of NASA in 1958.

"The history of the Lab shows us that the focus on payload, not rockets, worked out well," he said.

JPL grew rapidly under Pickering. "When we started with NASA, I was told flat-out that I couldn't have more than 2,000 people," he said, drawing laughter from the audience of veteran JPLers as well as relative newcomers. "But when we got to 2,500, they gave up."

Under Pickering's direction, JPL supervised the Ranger missions, which returned the first closeup high-resolution pictures of the moon; the Mariner missions to Mars and Venus; and the first gravity-assist mission to Mercury, via Venus. JPL also designed the Viking orbiters to Mars and designed and built the Voyager spacecraft that visited the outer planets.

The next in the Library story series will be held Feb. 15 at 4 p.m.

to make rockets," Pickering said. He oversaw the Lab's development of the Women's Army Corps (WAC) Corporal—many of which went straight up for about 200,000 feet and were used for atmospheric research. "Then the Lab had to

Special Events Calendar

Ongoing Support Groups

Alcoholics Anonymous—Meeting at 11:30 a.m. Mondays, Tuesdays, Thursdays (women only) and Fridays. Call Occupational Health Services at ext. 4-3319.

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 in Building 111-117. Call the JPL Employee Assistance Program at 4-3680.

Gay, Lesbian and Bisexual Support Group—Meets the first and third Fridays of the month at noon in Building 111-117. 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 in Building 167-111. Call Greg Hickey at ext. 4-0776.

Senior Caregivers Support Group—Meets the first Tuesday of the month in Building 167-111. For information, call the Employee Assistance Program at ext. 4-3680.

Sunday, February 4

Chamber Music—The Juilliard String Quartet will perform at 3:30 p.m. in Caltech's Beckman Auditorium. Tickets are \$27, \$23, \$19 and \$15. Call (626) 395-4652.

Monday, February 5

Examining Gender Differences—The Advisory Council for Women will sponsor a workshop at noon in von Kármán Auditorium to help people bring more humor, play and creativity into their professional and personal lives. New-age dilemmas such as the difference between "just kidding" and sexual harassment—and universal truths including the fact that men and women use identical words and mean different things—will be addressed.

Tuesday, February 6

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

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

Wednesday, February 7

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

Friday, February 9

Celtic Music—Harpist and storyteller Patrick Ball will appear at 8 p.m. in Caltech's Dabney Lounge. Tickets are \$12 for adults, \$4 for children under 12. Call (626) 395-4652.

Cyrano De Bergerac—To be presented by the Aquila Theatre Company of London at 8 p.m. in Caltech's Beckman Auditorium. Tickets are \$15 for adults, \$10 for youth. Call (626) 395-4652.

Saturday, February 10

A Guided Tour of *Much Ado About Nothing*—This production, designed for youth and their families, will be presented by the Aquila Theatre Company of London at 2 p.m. in Caltech's Beckman Auditorium. Tickets are \$10 for adults, \$5 for youth. Call (626) 395-4652.

Sunday, February 11

Chamber Music—Enrique Gonzalez-Medina will perform at 3:30 p.m. in Caltech's Dabney Lounge. Admission is free. Call (626) 395-4652.

Tuesday, February 13

Caltech Credit Union Annual Meeting—Beckman Auditorium will

host, with refreshments at 4:45 p.m. and the meeting at 5:30. All in attendance will receive a gift, and all credit union members will be eligible for a prize drawing at the end of the meeting.

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

Online Project Libraries—Manson Yew of Section 389 will discuss DocuShare software, which offers a vast array of features designed to make it easy to store, manage and share information on the Web. Held at noon in von Kármán Auditorium. Slides from this talk will be available on the Web from the "ICIS Noontime Talks & Events" link in the "News & Events" section of the ICIS home page at <http://icis.jpl.nasa.gov>.

The Day the Earth Stood Still—The 1951 science fiction film about an alien who lands on Earth and tells people they must live peacefully or be destroyed as a danger to other planets will be shown at 7:30 p.m. in Caltech's Baxter Lecture Hall. A panel discussion will follow. Part of *The Universe*, a contemporary and historical look at science and art involving eight Pasadena institutions. Free admission. Call (626) 395-4652.

Tues., Feb. 13—Wed., Feb. 14

Investment Advice—TIAA/CREF will hold one-on-one counseling sessions from 9 a.m. to 3 p.m. in T1720-131. For an appointment, call (877) 209-3140, ext. 2614.

Wednesday, February 14

Investment Education—Fidelity will present a workshop on topics such as debt management, advantages of tax-deferred savings, compounding, and starting investments early. To be held from 2 to 4 p.m. in the 167 conference room.

JPL Amateur Radio Club—Meeting at noon in Building 238-543.

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

JPL 2001 Lecture Series—Stardust Project Manager Tom Duxbury will speak at 11 a.m. in von Kármán Auditorium.

Valentine Dinner-Dance—For JPL Athenaeum members. Seatings are from 5:30 to 9 p.m. on the half hour. A four-course prix fixe menu includes filet mignon, rack of lamb, duck and baby salmon; dancing until 11 p.m. For reservations, call Barbara Buckley at Caltech, (626) 395-8262.

Thursday, February 15

JPL Stories—Robert Staehle, former Pluto Express Preproject Manager and currently with the Europa Orbiter Project, will present "The Toughest Part of the Road to Pluto is the Part From Here to Washington," at 4 p.m. in the Library, Building 111-104.

Retirement Plans—A TIAA/CREF workshop will assist newly eligible participants in completing forms and making investment choices at noon in T1720-137.

"Understanding Your Child During the Middle School Years"—Diane Lucus of Dana Middle School in Arcadia will lead a discussion from the perspective of a teacher who has specialized in working with children of this age group. To be held at noon in the 167 cafeteria, northeast corner.

Friday, February 16

Caltech-Occidental Concert Band—A free concert will be held in Occidental's Thorne Hall at 8 p.m. Call (323) 259-2785.

Pickering opens Library story series for the year

By Mark Whalen



Former JPL Director Dr. William Pickering kicked off the Library's story series for the year.

THE OLD WAY OF DOING BUSINESS

*Reestablishment of tech shops
a boon to the Laboratory*

By Gia Scafidi

The good old days of quick-fix and do-it-yourself technician work are back. Offering better on-site customer service and hands-on convenience to all engineers, researchers and technicians producing non-flight parts, a network of five technician support shops has recently been reestablished throughout the Laboratory by a collaborative effort of JPL's technical divisions.

"These new smaller shops are an integrated extension of JPL's Building 170 Fabrication Facility," said Bill Revere, manager of the Mechanical Prototype and Hardware Fabrication Section 357. "With multiple locations, they allow Section 357 to better serve the needs of our many customers."

"The tech shops recreate the historical essence of the Laboratory," said Curtis Tucker, deputy manager of Section 357. "They provide accessibility to all projects, big and small, and allow engineers and researchers to do their own inexpensive machining, while improving time utilization of JPL personnel and facilities."

Currently, four technician shops are operating (buildings 103-114, 233-118, 288-101 and 306-129). According to Tucker, the 238-105 shop is still tentative.

Regular business hours are from 7:30 a.m. to 3:30 p.m., except for the 306 shop, which is operating on a trial 24-hour, 7-days-per-week basis, using after-hours card access. "If this 24/7 schedule proves successful, other shops will transition," said Tucker.

"I could not do my job without these shops," said Jeff Schroeder, senior technical assistant in Section 346. "A lot of the work done in these shops is the stuff that doesn't really get noticed but is absolutely crucial to projects." A JPLer for 22 years, Schroeder enjoys the independence and convenience associated with the technician shops.

Each shop, set up within 500 feet of every research lab and engineering facility, is run by a lead machinist during regular business hours. The machinist selectively carries out quick-order jobs (less than four hours) that JPLers bring in and ensures the safety of "do-it-yourselfers."

"Ninety percent of the lead machinists' workload will consist of quick-order jobs," explained Tucker. "This eases the load off the main shop and covers the cost of the lead machinists."

If a lead machinist cannot complete a quick-order job in his shop he will send it to JPL's main technician shop, noted Tucker. Once completed, the job will be brought back to the satellite shop within the time quoted, all in an effort to promote convenience and save time. "These tech shops come to you," he said.

For those who wish to do their own machining, they "need not be highly proficient, but must be knowledgeable."

A \$25-per-hour fee, chargeable to an account number, covers the cost of equipment maintenance and expendables. Hands-on folks must bring their own materials.

All first-time users are required to take a 15-minute safety and proficiency check. After that, "You're basically on your own using some of the best fabrication equipment and the best technical support JPL has to offer," said Tucker.

Each technician shop offers customers a variety of maintained tools and machinery, including lathes, mills, grinders and shears, and some even house-unique pieces of equipment. "The only real difference is that the main shop has large, computer-operated

machine tools that require extensive user training," noted Tucker. "The smaller technician shops have hand-operated tools that most people generally know how to use."

If a special tool or machine is needed, lead machinists can either arrange for them to be brought to their specific shops or direct someone to the appropriate location.

Jo Voeltz, lead machinist for the Building 306 technician shop and senior engineer support in Section 357, is confident that the shops will catch on. "These shops make people's jobs easier," he said. "I enjoy working directly with the engineers and technicians, and any kind of needed modification can be done quickly here."

"The shops are absolutely wonderful," said David Rosing, mechanical project elemental manager for the Spectral Test Bed Instrument Project. "They allow engineers and designers to talk directly with machinists, which unleashes limitless creativity. It's a total win-win situation for JPL."

Rosing noted the difficulties that arise when an engineer designs a part that, on occasion, a machinist just can't make. He said the tech shops help alleviate this obstacle. "The sooner the engineer and machinist get together, the sooner they work it out and the sooner solutions come about."

Forty years ago, a dozen do-it-yourself technician shops expedited JPL's research and development workload. In 1997, however, after NASA ordered major cutbacks, only two remained—the Building 288 tech shop and one in Building 168.

According to Tucker, the 288 shop was the "best-kept secret on Lab," while the 168 shop ceased to be a "tech" shop, becoming more of a precision micro-machining shop dedicated to the unique needs of Division 38 and other customers.

"With a reduced workforce, fewer shops and an increase in the number of projects at JPL, the majority of machining work [up to 75 percent] had to be handled by farming work out to industry," noted Revere. "This increased turnaround time and placed restrictions on the way researchers interacted with the machinists."

As a result, JPL's main technician shop had to struggle with handling quick orders and emergencies, while meeting the needs of researchers and engineers.

The network of technician shops changes all that.

"These shops belong to all of JPL and we hope that everyone will give them a try," said Tucker.

Tucker noted that the biggest challenge in reestablishing the shops has been getting the word out. He invites all JPLers to check them out, even if they don't have a job to complete. "We want it known that these shops are a Lab resource available to everyone."



Bob Brown / JPL Photo

Above: Jeff Schroeder drills small holes uses a milling machine with electronic readouts for accuracy, as shop supervisor Larry McCain (left and Section 357 deputy manager Curtis Tucker look on. Top left: Nick Alvarado, lead machinist in the Building 103-114 tech shop, works on a precision lathe used to make circular cuts and grooves in metal. Bottom left: Senior mechanical engineer James Moore works on a delay line for the Keck interferometer in the Building 306 tech shop.



Bob Brown / JPL Photo



Richard Hasegawa / JPL Photo

"A lot of the work done in these shops is the stuff that doesn't really get noticed but is absolutely crucial to projects."

— Jeff Schroeder, Section 346

