

March 26, 1999

# SPACE CENTER Roundup

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## Stellar employees receive Rotary awards

### *Kraft accepts National Space Trophy*

**F**ORMER JSC DIRECTOR Dr. Christopher Kraft Jr., who was instrumental in overseeing this nation's human space flight programs, received the National Space Trophy at a March 12 black-tie celebration at Space Center Houston.

Several JSC employees received Stellar Awards from the non-profit Rotary National Award for Space Achievement Foundation, established in 1985 by the Space Center Rotary Club to recognize individuals who have made outstanding achievements in space, creating a greater public awareness of the benefits of space exploration.

Kraft was cited for his "unique contributions as a key architect of the nation's space program, specifically in the areas of leading, planning, and operational control of manned space programs in the Mercury, Gemini, Apollo, Skylab, Apollo-Soyuz Test Project and the space shuttle."

Veteran journalist Walter Cronkite received the organization's prestigious Corona Award in recognition of his distinguished lifetime of achievement in the field of space.

Cronkite came to be regarded as an authority on America's space program, reporting on the first two decades of this country's manned space missions from Alan Shepard's first flight in 1961, and the Apollo 11 moon landing in 1969, to the experimental flights of the space

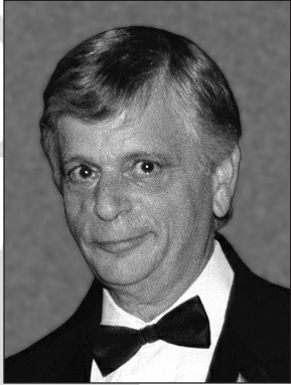
and development for the International Space Station assembly and maintenance activities.

JSC's Donna Fender, project manager for the TransHab Project, received a Stellar Award for her team leadership, persistence, and determination to

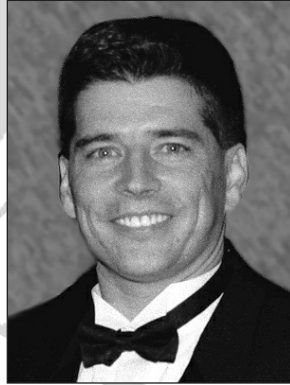
the Mars TransHab design and space shuttle meteoroid and orbital debris damage assessment.

Also receiving Stellar Awards were Dr. Steven Huybrechts of the U.S. Air Force Research Laboratory, for his work in the development of revolutionary space

structures that will greatly reduce cost and enhance the capability of future launch of space systems; Tom Hoffman of Thiokol, for exceptional technical



Jay Greene



John Curry



Greg Harbaugh



Donna Fender



Linda Bromley

shuttle Enterprise in July 1977 and the fall of Skylab in July 1979.

Other award recipients included JSC's Jay Greene who received a Stellar Award for his managerial excellence during the planning, development, and operation of hardware and software for the International Space Station.

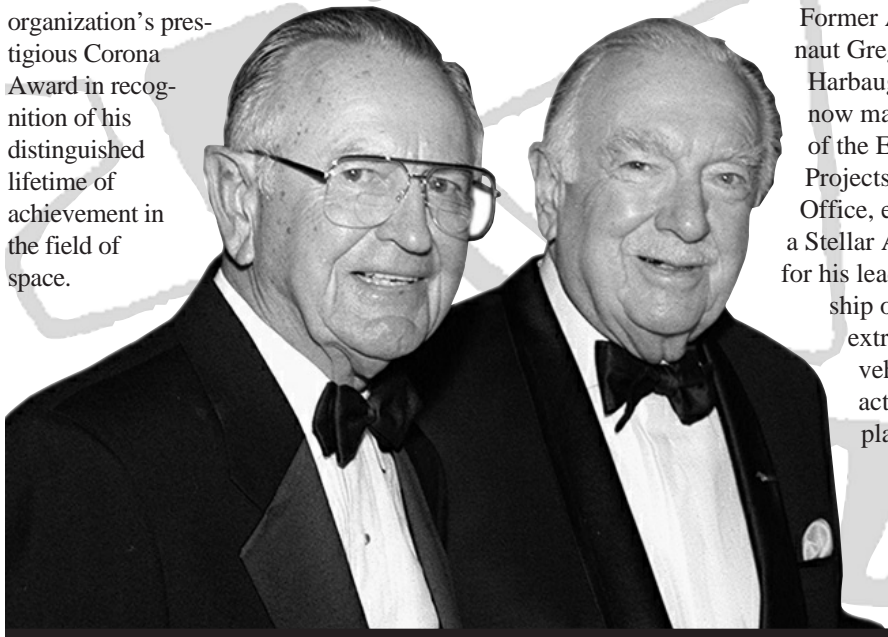
JSC Flight Director John Curry was honored for his outstanding initiative in establishing the Houston Support Group at the Russian Mission Control Center in Moscow.

Former Astronaut Gregory Harbaugh, now manager of the EVA Projects Office, earned a Stellar Award for his leadership of the extra-vehicular activity planning

demonstrate the feasibility of the TransHab inflatable vehicle concept.

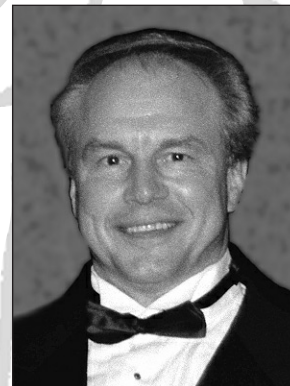
JSC's Linda Bromley, project manager for the International Space Station Early Communications System, was honored with a Stellar Award for her outstanding leadership and management of this critical space station project.

leadership in propellant, structural, and safety-related issues for the space shuttle solid rocket motors; Tom Dougherty of Lockheed Martin, for managing the NASA Discovery Lunar Prospector team, which accomplished a highly successful mission to the moon for science data collection; Earl Eastabrooks of United Space Alliance,



JSC Photo S99-04917 by Nick Nelms

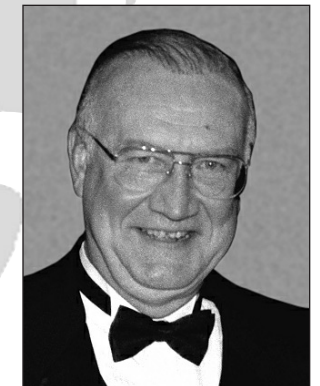
Former JSC Director Dr. Christopher Kraft, left, and veteran journalist Walter Cronkite enjoy the limelight at the gala dinner where they received top awards from the Rotary National Award for Space Achievement Foundation. Kraft received the organization's National Space Trophy, while Cronkite was honored with the Corona Award.



Dr. Phil Stepaniak



Chris Hansen



Dr. William Schneider

Flight Surgeon Dr. Phil Stepaniak earned a Stellar Award for his pioneering efforts in aerospace medicine and for his work on STS-95, which paved the way for future space flight geriatric research.

JSC's Chris Hansen received a Stellar Award for structural design and analysis of space flight hardware, including the space shuttle crew seat redesign, orbiter landing gear, and the International Space Station Interim Control Module.

And Dr. William Schneider received a Stellar Award for his enduring leadership at JSC and for technical direction of

for providing critical Mission Control Center software verification, integrated training, and valuable support to the Simulation Supervisor Office; and Paul Ledoux of Boeing, for his expertise in material and process engineering and for managerial support of nearly all major NASA programs since Apollo.

Four teams received Stellar Awards: JSC's TransHab Development team, the Motorola Iridium System team, the United States Air Force Space Maneuver Vehicle team, and the Thiokol Solar Thermal Propulsion team. ■



Robot, geologist perform tests for future explorations.

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Rainforest: a wet and wild adventure.

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# STS-95 crew, station team to receive awards

**F**OR THE FIRST TIME a single organization – NASA – will lay claim to two of the space industry's top awards in the same year. The Douglas Morrow Public Outreach Award and the United States Space Foundation Space Achievement Award will be presented to separate NASA teams April 5 during ceremonies marking the opening of the 15th National Space Symposium.

Each year the Morrow Award is presented to an individual, organization or team judged to have made the single most significant contribution to public understanding and awareness of U.S. space endeavors – civil, commercial or national security. This year's recipient is the crew of shuttle mission STS-95.

The return to flight of space pioneer Sen. John Glenn (D-Ohio), Spain's first astronaut Pedro Duque and a number of unique mission elements combined to focus the most significant worldwide media and public attention on space in recent memory.

The United States Space Foundation Space Achievement Award, presented annually to an individual, team or organization for lifetime achievement or a landmark technical accomplishment, will go to the NASA-Boeing International Space Station team.

The joining together in space of the first orbital station elements signaled the beginning of a new era in human space flight and the culmination of more than a decade of challenging engineering effort on the ground.

Widely regarded as one of the premier annual space policy and programs forums anywhere in the world, the National Space Symposium runs April 5-8. Update speaker and program information, and convenient on-line registration can be found at <http://www.spacesymposium.org> or call the Space Foundation toll free at (800) 691-4000. ■

# Employees earn Space Act Awards

**L**AST YEAR, NASA Headquarters recognized the work of a number of JSC employees with Space Act monetary awards. The awards were presented during a recent ceremony. The following is a list of recipients.

## TECH BRIEF AWARDS (\$150)

*Robert O. Shelton*

- ◆ Pattern Interpretation and Recognition Application Toolkit Environment
- ◆ Internet Knowledge Robot
- ◆ SIMON-School Internet Manager Over Networks

*Robert L. Shuler Jr.*

- ◆ High Speed Binary Image Correlator
- ◆ SEV Tolerant Flip Flops
- ◆ Optimized Laplacian of Gaussian Computation

*George A. Salazar*

*Dena S. Haynes*

- ◆ Compact Enclosure for Rugged PC-Based Embedded Systems

*G. Dickey Arndt*

- ◆ Locating Concealed Objects Using Spectral Signatures

*Thomas J. Goodwin*

- ◆ Production of 1-25diOH Vitamin D3, Erythropoietin and Other Products

*Richard L. Sauer*

- ◆ Solid Phase Extraction of Polar Compounds in Water

*William C. Schneider*

*Chin H. Lin*

*Horacio M. De La Fuente*

*Gregg A. Edeen*

*James D. Lester*

*Linda F. Hess*

*Kriss J. Kennedy*

*Richard H. Malecki*

- ◆ Advanced Structural/Inflatable Hybrid Spacecraft Habitation Module

*Duane L. Pierson*

- ◆ Nucleic Acid Stability Solution
- ◆ Low Voltage Plate Spreader
- ◆ Fungal Growth Chamber

*Dennis R. Morrison*

- ◆ In Situ Activation of Microcapsules
- ◆ Protein Crystal Encapsulation Process
- ◆ Microencapsulation and Electrostatic Processing Device
- ◆ Low-Shear Microencapsulation & Electrostatic Coating Process
- ◆ Externally Triggered Microcapsules

*Robert G. Brown*

*Yuan-Chyau Chang*

*Steven L. Rickman*

- ◆ Passive Radiative Cooler for Space Applications

*Thomas A. Sullivan*

- ◆ Fuels Containing Methane or Natural Gas in Solution and Methods for their Use

*Joseph J. Kosmo Jr.*

- ◆ Simulated Planetary Landscapes for use in Laboratories

*Gautam D. Badhwar*

- ◆ Small Active Radiation Monitor

*Daniel Feedback*

- ◆ Centrifuge-Operated Slide Staining Technology

*Jeanne L. Crews*

*Eric L. Christiansen*

- ◆ Technique for Enhancing the Protection Capability of Simple Aluminum Meteoroid/Orbital Shield

## PATENT APPLICATION AWARDS (\$250)

*Duane L. Pierson*

- ◆ Neutrophil Screening Assay Using Two Color Flow Cytometry

*Richard L. Sauer*

- ◆ Ammonia Monitor

*Carl W. Hohmann*

*Maureen L. Dutton*

*Douglas W. Harrington*

- ◆ Automated Propellant Blending

*G. Dickey Arndt*

- ◆ Proximate Object Locating and Tracking System

*Dennis R. Morrison*

- ◆ In Situ Activation of Microcapsules
- ◆ Microencapsulated Bioactive Agents
- ◆ Microencapsulation and Electrostatic Processing Device
- ◆ Microencapsulation and Electrostatic Processing Method
- ◆ Externally Triggered Microcapsules

*G. Dickey Arndt*

*Patrick W. Fink*

- ◆ Endothelium Preserving Microwave Treatment for Atherosclerosis

*Thomas J. Goodwin*

- ◆ Production of Functional Proteins: Balance of Shear Stress and Gravity

## SPACE ACT BOARD AWARDS

*Kelley J. Cyr*

*Richard D. Whitlock*

- ◆ Online Cost Models (\$1,000)

*Anthony D. Griffith*

*Huyen-Anh V. Ly*

- ◆ High Volume Data Management (\$500)

*Craig A. Davidson*

- ◆ Ground Isolation Circuit for Isolating a Transmission Line from Ground Interference (\$500)

## HONORABLE MENTION – SOFTWARE OF THE YEAR AWARD

*Reynaldo J. Gomez*

- ◆ Overset Tools for CFD Analysis (\$600)



JSC Photo S99-02949 by Benny Benavides

# Women conquering the future

By Carla Burnett

**T**HE PROMINENT WOMEN pictured at left are proud to be part of NASA's history. They are among the 67 women who have completed JSC's Office Education Program, also known as the Student Programs for Achievements in Careers and Education, and/or the Worker-Trainee Opportunity Program.

Desire and perseverance were contributing factors in helping these women successfully complete these critical foundation programs. According to SPACE experts Nancy Garrick of JSC and Barbara Rumbaugh of Universities Space Research Association, "SPACE provides clerical job opportunities for youths from communities surrounding JSC. Students work at JSC part-time during vacation periods and full-time in the summer. The selection criteria include TAAS scores, grade point averages, attendance, basic office skills, and economic need. This USRA-administered program affords the students valuable life and work experience along with economic support to stay in school and graduate."

According to Garrick, "The WTO Program is a one-year training program designed to provide low-skilled clerical employees with the opportunity to become productive office clerks through classroom and on-the-job training. Historically, this program

has served as the primary avenue for retaining our higher quality OE students. The last class of students graduated in 1994."

Many former OE and WTO women have successfully pursued educational and promotional opportunities after completing these outstanding programs.

"I was very fortunate to take part in the Office Education Program," says Karla Smith. "In my job as a transportation specialist, I am responsible for coordinating travel to Russia for NASA civil servants and contractor employees needing to support training activities, meetings, reviews, and tests in Moscow and/or Star City, Russia. As a result of the Office Education Program, I have become more confident in myself, which is saying a great deal for someone who was extremely shy. Without this program, I would not be where I am today. I am very thankful to have taken part in such a wonderful program."

Mirella Barron shares some of her accomplishments since completing the OE and WTO programs. "My first day at JSC was June 18, 1990, and I was assigned as a summer aid to the Aircraft Systems Quality Assurance Branch. I continued as an OE student and then completed the WTO Program. These programs gave me the motivation and the skills to grow within our NASA environment. I received the Space Flight Awareness Award in May 1996 and the Marilyn Bocking Award in July 1997."

We salute all the prominent and prestigious women of JSC and encourage them to continue conquering the future for centuries to come. ■



# Robotic rover, spacesuited geologist work together

**N**ASA RECENTLY TESTED a remotely operated planetary rover and an advanced prototype spacesuit in southern California to see how robots and humans might someday work best together to explore other planets.

A team of scientists and engineers from JSC and Ames Research Center conducted the first field test involving the Russian-built Marsokhod and a geologist wearing a NASA advanced prototype spacesuit February 22-25. Dubbed the Astronaut-Rover Interaction for Planetary Surface Exploration (ASRO) experiment, the four-day primary science mission was conducted in the Mojave Desert, east of Los Angeles; a public demonstration was held on February 27.

JSC provided the spacesuit, visual-tracking software, and associated human space exploration expertise, while the rover activity was led by Ames. Together, the team was able to take the first steps in developing

a synergistic relationship between the two types of explorers.

"NASA envisions future planetary surface space walks to be a cooperative effort, with robots assisting humans to increase productivity during these time-limited excursions away from the base station," said Robert Yowell of the Extravehicular Activity Projects Office at JSC.

The ASRO Project should improve the safety and performance of human surface operations, and therefore help minimize the cost of human planetary missions. Specifically, the team hopes to learn how the rover and the astronauts can collaborate in various operational tasks, leading to recommendations for improving the designs of future advanced spacesuits and rovers.

"The test is part of a continuing NASA effort to better identify the challenges facing future human explorers of other worlds, and the technologies that will be needed to meet those challenges,"

explained Joyce Carpenter, deputy manager of the JSC Exploration Office. "While we are in the early stages of learning how to explore other planets, NASA has not identified any specific human missions beyond Earth's orbit."

NASA acquired the Marsokhod rover from Russia and equipped it with improved avionics, computers and science instruments. It features six titanium wheels, a robotic arm to pick up soil samples and stereo video cameras mounted on a pan-and-tilt platform to transmit live images of the field test via a

satellite back to scientists at Ames. The 165-pound rover is three feet wide and 4.5 feet long, with a mast that extends about 4.5 feet high to hold the cameras.

The spacesuit is constructed primarily of fabric, with ball bearings that allow the wearer to move more easily when the suit is inflated to 3.75 pounds per square inch above the local pressure, as it would be on the

Moon or Mars. A self-contained liquid air backpack provides life support, cooling, communications and power. The suit and backpack have a weight of about 150 pounds on Earth. ■



JSC geologist Dean Eppler wears a spacesuit during the test. The Marsokhod served as a scout and videographer, transmitting advance images of the site and the geologist's activities back to Ames and JSC.

JSC Photo S99-3981 by Mark Sowa

## New energy-saving systems to be installed at JSC

**J**SC HAS SELECTED Honeywell Inc. to survey and install energy-saving heating, ventilation, air-conditioning, and lighting systems in 147 buildings across the center. The contract was awarded through a U.S. Department of Energy Savings Performance Contract (Super ESPC) delivery order and is valued at approximately \$43 million over its 23-year term. It is the largest delivery order to date against any DOE Super ESPC.

Through a procurement process called energy-saving performance contracting, Honeywell will replace existing energy

systems with new equipment and cutting-edge energy management technology. The cost of the replacement systems, about \$20 million, will be paid for by the savings reaped from the new, more energy-efficient systems. No additional tax dollars will be spent.

Phase one of this multiphase performance contract includes installing energy-efficient lighting and compressed air systems, reducing water consumption and improving air-conditioning controls at JSC, the Sonny Carter Training Facility, and Ellington Field. Installation of the user-friendly Honeywell

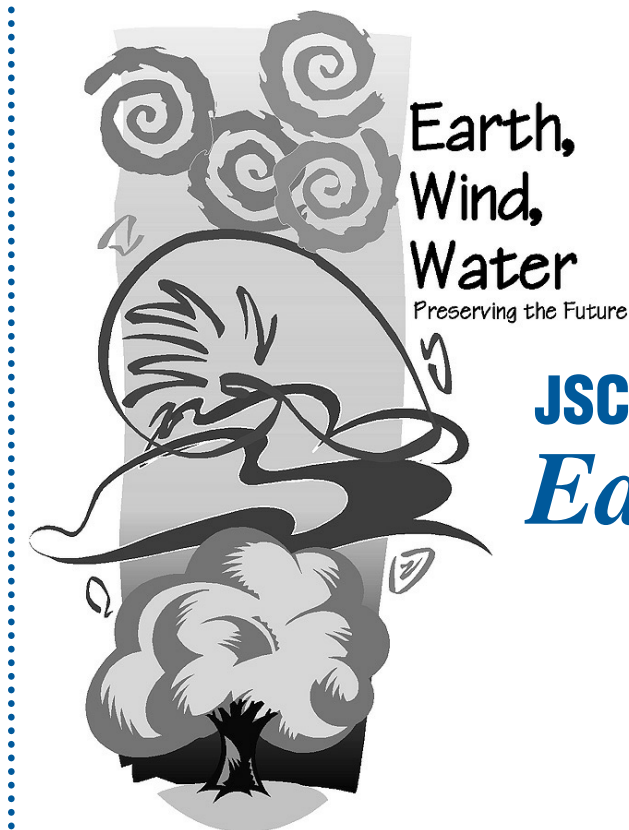
Excel Facility Integrator System, an Energy Management Control System, will enhance JSC's ability to cost-effectively monitor and manage the site environment, and thereby improve comfort for JSC personnel.

The lighting retrofit began in Bldg. 45 the week of March 8 and lighting work in Bldg. 1 will start the first week of April. Installation of the remaining energy-saving equipment was scheduled for March 22. There will be an overall 15-month installation period for this project.

Secretary of Energy Bill Richardson summed up the energy-saving performance

contract process: "The private sector does the work, the federal manager gets a smaller energy bill, and we all get enhanced energy security and a cleaner environment."

Super ESPCs are a product of the U.S. Department of Energy's Federal Energy Management Program, which offers technical and contractual assistance to government agencies that choose renewable energy and more efficient building technologies to meet legislative mandates for lower energy consumption and reduced greenhouse gas emissions. ■



**Earth,  
Wind,  
Water**  
Preserving the Future

## JSC to celebrate Earth Day

**W**ORLDWIDE EARTH DAY is just around the corner, and JSC is in the planning stages of a celebration for employees. The 1999 JSC Earth Day event will be celebrated April 22 with exhibits at the Gilruth Center and tours of the newly planted "conservationscape" on the south side of Bldg. 30. The theme of this year's event is "Earth, Wind and Air: Preserving the Future."

The exhibits at the Gilruth will be open from 10 a.m. - 1:30 p.m. Exhibitors will answer questions about earth

friendly options for gardening, landscaping, recycling, wildlife and lots of other topics. As usual there will be lots of giveaways and door prizes. Astronauts will be available to sign autographs from 10 a.m. - 1 p.m.

Experts from Clean Water for Armand Bayou will be giving tours of the conservationscape on the hour from 10 a.m. - 2 p.m. Everyone who takes the tour will be given a bedding plant similar to those planted at Bldg. 30, while supplies last.

To help advertise JSC's Earth Day 1999 celebration, the Earth Day Planning Committee is sponsoring a

children's poster contest. Children between the ages of 2 and 16 can enter an original poster demonstrating the Earth Day theme. Winners will be selected in four age categories. The winning posters will be displayed in selected lobbies the week before Earth Day. For complete poster contest rules, contact Cindi Watson at x37242 or Terri Blackwelder at x37247 or look for the Earth Day homepage on the Center Operations homepage early in April.

JSC civil servant and contractor employees and families are invited to join other local federal agencies in the Texas Land Board's Texas beach cleanup on April 24 from 8:30 a.m. - noon at Galveston Island. Anyone interested in helping clean up a couple of miles of Galveston Beach can meet at the Sea-Arama parking lot in Galveston at 8:30 a.m. Look for the U.S. Environmental Protection Agency reserved beach area between 89th Street and West Beach. A free hot dog lunch will be provided or bring a picnic lunch and join other federal employees on the beach for lunch and volleyball. Look for more information on the Earth Day homepage or call Ramone Harper at 281/983-2235.

For more information on Earth Day, call Jo Kines at x33218. ■



# Students, teachers participate in wet, wild adventure

**M**ORE THAN 5,300 STUDENTS converged on the Johnson Space Center during the first two weeks of March to participate in the JASON X Project in the Teague Auditorium, sponsored by JSC's Education and Community Support Branch.

Area students and teachers participated in the live telepresence broadcasts titled "Rainforest: A Wet and Wild Adventure." JSC served as

a primary interactive network site for the telecasts.

The JASON Project is a year-round scientific expedition designed to excite students in science and technology. It was founded in 1989 by Dr. Robert Ballard, after his discovery of the R.M.S. *Titanic*. This year's JASON X Project is designed to study flora and fauna in Peru's Amazon rainforest.

Each year, several students and teachers are selected to accompany Ballard on the JASON Project expedition as argonauts.

These special ambassadors help the

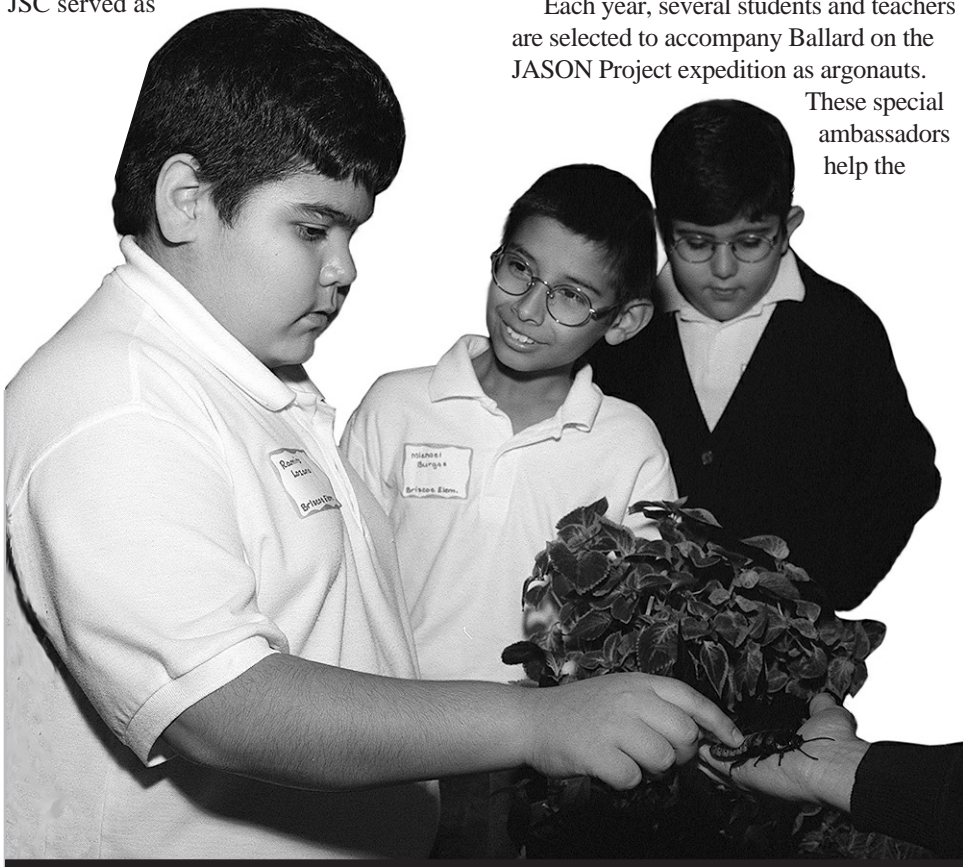
scientists on site with their research and explain ongoing activities to the telepresence audience.

This year, Deer Park Independent School District student argonaut Rosa Robledo left Houston February 22 on her way to the Peruvian rainforest. On March 2, all 625 students and teachers from her school, Deepwater Middle School, were in attendance in the Teague for the JASON broadcast.

From oceans to rainforests, from volcanoes to outer space, the JASON Project explores Earth in search of answers to questions such as "What are the Earth's dynamic systems?" to "How do these systems affect life on Earth?" to "What technologies do we use to study these systems and why?" Each year, JASON mounts a major scientific expedition that examines one or more of Earth's physical systems. Teams of teachers and students visit JSC annually as part of their "expedition."

The JASON Project XI expedition, "Going to Extremes," will feature the International Space Station and will originate from JSC during early March 2000. ■

**Students attending the JASON Project X live broadcasts in JSC's Teague Auditorium got an up close and personal look at hissing cockroaches. Insects and several examples of flora and fauna found in the Earth's rainforests were exhibited. Students studied the rainforests and conducted some of the same experiments shown in the live programs.**



JSC Photo S99-03632 by Benny Benavides

# 21st annual FOD Chili Cookoff set

**J**SC WILL HOST its 21st annual FOD Chili Cookoff from 9 a.m.-6 p.m. May 1 at the Gilruth Recreation Center picnic area.

Sixty-two teams from JSC, NASA contractors and related organizations have signed up for the event, according to cookoff co-chair Sandy Griffin.

Trophies will be awarded for the best chili, people's choice and showmanship. Each team is required to cook at least four gallons of chili. The fee for each team is \$45. Call Griffin at 483-1056 to sign up, or e-mail [sandra.griffin1@jsc.nasa.gov](mailto:sandra.griffin1@jsc.nasa.gov). The deadline for team sign-up is April 16.

Tickets cost \$3 through April 23 and \$4 after that date and during the day of the cookoff. Children under 3 are admitted free. Tickets include admission, chili tasting, beverages, live bands, skits, games and other festivities. Tickets may be purchased through team captains or at the Exchange Stores in Bldgs. 3 and 11 starting April 12.

Team captains will meet in late March to pick up cookoff details and instructions. Captains also are encouraged to attend the April 21 chili clinic at the Gilruth Recreation Center picnic area at 4:30 p.m., featuring a champion chili cookoff winner from the Chili Cookoff World Championships in Terlingua, Texas. ■

# Employees empowered for safety: Civil servants, contractor employees attend VPP conference

By Dee Ann Haney

**T**HE 1999 REGION VI Voluntary Protection Programs Participants Association annual conference was held March 1-3 in Austin. The theme of the conference was "'Capitolizing' on the Future." Region VI is comprised of Texas, New Mexico, Louisiana, Arkansas, and Oklahoma.

About 70 JSC civil servants and 90 contractor employees attended the conference including JSC team members Tim DeLong, Brown and Root; Dee Ann Haney, Lockheed Martin; Sonia Fontenot, SPACEHAB; Elmer "Bubba" Johnson, NA; Julie Strawn, Kelsey Seybold and Paul Savage, United Space Alliance.

Guest speakers for the opening general session included John Miles of OSHA, Pete DeLeeuw, CEO, Sterling Chemicals, and Joe Mundy, president and chairman of The Mundy Companies.

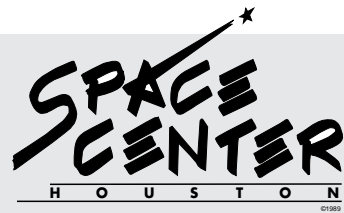
Workshops were offered in the afternoon. General sessions were structured for first-time conference attendees and in many cases dealt with specific OSHA regulations. General sessions included "Confined Space Entry," "Hazard Recognition," "Innovative Safety Meetings," and "Respiratory Protection." Advanced sessions generally targeted sites that are trying to maintain viable VPP programs. Advanced sessions included "Maintaining OSHA VPP" and "Employee Participation."

Featured speakers during the next day's general session included former Houston Oilers' Head Coach Bum Phillips and former quarterback Dan Pastorini; and Paula White of OSHA. Workshop sessions were offered in the afternoon. A hospitality reception held that evening gave everyone an opportunity to meet and interact with OSHA representatives and employees from other VPP certified sites.

March 3 included one final workshop session. The closing session featured a report from Lee Ann Elliot, executive director, national VPPPA. The guest speaker was Cactus Pryor.

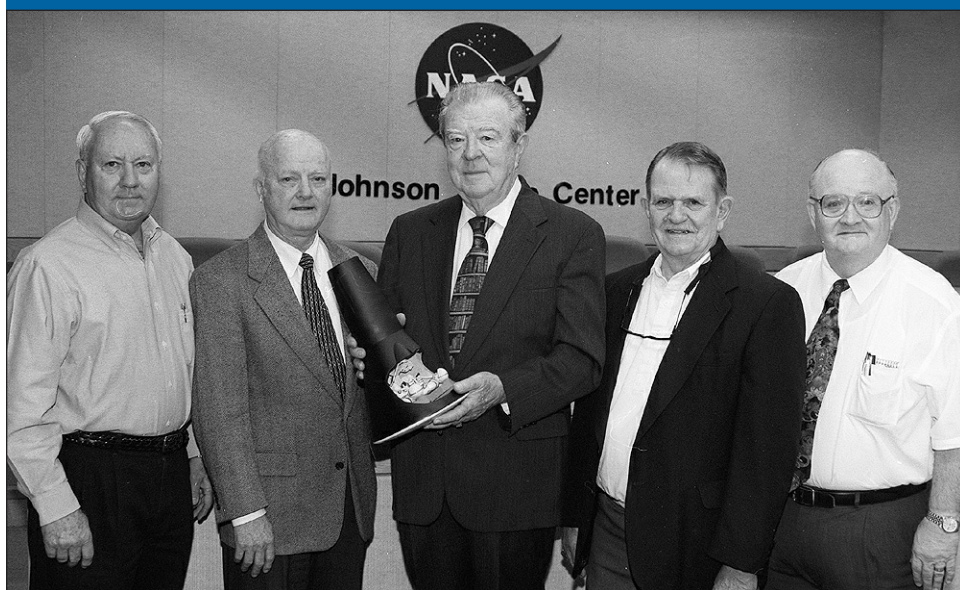
I know there are many of you who wonder why we at JSC need to achieve VPP and what is in it for you. First, there is a direct correlation between a site initiating and achieving VPP, and a drop in accidents/injuries. Since 1985, when combined measurements were first used to aggregate the VPP results in terms of individual industry averages, lost workday case rates have stayed more than 50 percent below the industry averages as a group. This is important because we want all employees to go home from work in the same condition in which they arrived. Another key benefit of these conferences is the chance to work with and learn from other VPP participants through the VPPPA. Programs, policies, and procedures are available by mentoring with other sites that have already achieved VPP. ■

# Space Center Houston extends courtesy visits for retirees



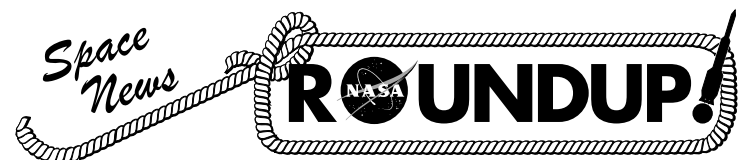
Civil service retirees from NASA are now eligible for free visits to Space Center Houston (for themselves only). At your next visit to SCH please identify yourself and display your retiree badge to the SCH staff, and they will add a bar-code strip to the back of the badge, permitting you unlimited free visits to SCH.

# Former Gemini manager visits JSC



JSC Photo S99-03021 by James Blair

**CHARLES "CHUCK" MATHEWS**, manager of the Gemini Program at JSC in the mid-1960s, visited the center recently to participate in the JSC Oral History Project. While in Houston he was able to visit with many of his old friends in the JSC Chapter of the NASA Alumni League. Reminiscing about the engineering challenges of the Gemini spacecraft are, from left, NAL members John Kaltenbach, Chester Vaughan, chair of the Houston NAL Chapter, Mathews (holding Gemini model), Guy Thibodaux, and Norman Chaffee.



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