



After a gap of six years, NASA returned to human spaceflight in 1981 with the advent of the Space Shuttle.

The Shuttle's first mission took place April 12-14, 1981, with John Young and Robert Crippen ushering in the new era of reusable launch vehicles.

On STS-6, Story Musgrave and Donald Peterson conducted the first spacewalk to test new spacesuits and work in the orbiter's cargo bay.

Sally Ride became the first American woman to fly in space during STS-7 in 1983.

The Shuttle was originally intended to fly up to 50 missions per year, but it was soon realized that the Shuttle systems were much too complex technologically to achieve such an ambitious flight schedule.

## STS-95 milestones



VEHICLE: Discovery  
 LOCATION: OPF Bay 2  
 TARGET KSC LAUNCH DATE: Oct. 29, 2 p.m.  
 TARGET KSC LANDING DATE: Nov. 7, 12:04 p.m.  
 MISSION DURATION: 8 days, 22 hours, 4 minutes  
 CREW: Brown, Lindsey, Parazynski, Robinson, Duque, Makai, Glenn  
 ORBITAL ALTITUDE and INCLINATION: 300 nautical miles/28.45 degrees  
 TARGET ROLLOVER TO VAB: Sept. 14  
 TARGET ROLLOUT TO PAD 39B: Sept. 21

# Spaceport News

America's gateway to the universe. Leading the world in preparing and launching missions to Earth and beyond.

John F. Kennedy Space Center

## "Opportunity" is spelled: KUSP

by Anita Barrett

What will the workforce of the 21st century look like? In a report issued by the Commonwealth of Pennsylvania, technical workers make up the fastest growing occupational group in the country (increasing 57 percent from 1979 to 1992) and are projected to grow 32 percent more by the year 2000.

A look at the NASA Strategic Plan will confirm the role of technology and the need for employees who can support the Agency's goals.

Will KSC be able to do that? The answer is yes, with the help of programs like the Kennedy Undergraduate Studies Program, or KUSP.

"Continual learning is a concept we try to instill in all our employees," states Frank Nesbit, NASA's training and development officer. "The advantage to the organization of programs like the KUSP is that it provides an internal source of qualified candidates for occupations for which there is a continu-

ing future need that require an academic degree as a condition of employment, such as engineers and accountants, and for which we've experienced recruitment or retention problems."

For five years, KUSP has been preparing NASA employees to meet those future needs.

According to Jim Norman, employee development lead, "taking two courses per semester, 25 to 30 employees each year have taken advantage of KUSP to improve their knowledge and potentially their careers. In that time, several have completed the program and received undergraduate degrees."

Attractive features of the program are that tuition and books are paid for, employees may use up to four hours a week of duty time to attend classes and, once a student achieves Senior status, he or she may be assigned to an organization that performs the type of work for which he or she is pursuing a degree, so the students can be

exposed to projects and assignments they can be expected to perform after graduation.

Vera Love, who is pursuing a computer science and engineering degree, has worked at KSC for eight years. She is a quality assurance specialist.

Love saw KUSP as an opportunity to give more to NASA, herself and her children.

"I work in the CLCS [Checkout and Launch Control System] all around engineers," said Love. "I enjoy it, but don't fully understand everything in the field and so would like to expand my knowledge. I am happy and flattered that I was accepted."

Love is currently attending Daytona Beach Community College and plans to go to the University of Central Florida in Daytona for her final two years.

Another KUSP participant, Truemilla Johnson, has taken a slightly different route to the same

(See KUSP, Page 4)

## KSC sponsors conference

by Anita Barrett

NASA Occupational Health professionals from across the country gathered in Orlando the week of Aug. 24 to attend a conference, "Benchmarking for Excellence." The annual event was sponsored by KSC's Lead Center Occupational Health Program office. Presentations during the week included an update on International Space Station by William Bates Jr., chief of staff of the Space Station Program Office, Johnson Space Center.

The opening session of the conference on Aug. 25 featured Irene Long, M.D., director of

(See Health, Page 5)

## On the road to America's spaceport



U.S. Rep. Dave Weldon and KSC Director Roy Bridges, left to right. The sign was erected by Department of Transportation workers on the north shoulder of State Road 528 between State Road 3 and U.S. 1.

Headed to KSC? Now you can simply jump on Kennedy Space Center Highway. State Road 528 (also known as the Bee Line) was officially renamed by the state legislature earlier this year, and a new sign was unveiled Aug. 27 at a roadside ceremony attended by the KSC Space Man,

# Don't be shy! Speak up and join the KSC Speakers Bureau!

by Lora Bartman

You have the necessary skills to give a dynamic, meaningful presentation: education, experience, success. The only problem is your gripping fear of speaking in public.

Relax; you're not alone. According to one consultant, fear of public speaking is the number one phobia in the country.

But that's not the case for the seasoned professionals of Kennedy Space Center's Speakers Bureau. Even novices find themselves at ease with the ready-made scripts and audiovisual aids available through the bureau.

Formed in 1977 as an outreach program, the goal of the bureau was "to educate the public about what NASA had accomplished and how their dollars were being spent on the space program," explained KSC Speakers Bureau Coordinator Bennie Bell.

In 1992, the outreach program officially became the Speakers Bureau.

In 1997, Speakers Bureau volunteers completed about 300 engagements that reached more than 80,000 people in the southeastern United States and Puerto Rico.

Aeronautics, the Kennedy Space Center, Shuttle processing and launch, payloads, robotics, spinoffs, biomedical research and new technologies in development at NASA are but a few of the subjects offered as presentation topics.

Bell receives roughly 10 requests

a day.

"I get requests from small groups like Brownie and Boy Scout troupes all the way up to major corporations and government agencies," said Bell. "I try my best to fill all the requests."

The challenge for Bell is trying to find individuals who are willing to give up some of their time. But for others, it's getting over the fear of speaking to more than just a handful of people.

## Committed to space

Sue Dickinson, lead for KSC's Comprehensive Master Plan development, worked at the center for nine years before getting involved with the Speakers Bureau.

As 1994's Federal Woman of the Year, she was asked to speak at Take Your Daughters to Work Day.

"It was in a huge theater at the Visitors Complex," recalled Dickinson. "I was a little intimidated by the size and all the people, but when it was over, my fear of public speaking was cured."

What Dickinson didn't realize was the impact she had made on her audience.

Attendees began to spread the word to others about Dickinson's presentation, and calls began coming in to Bell's office requesting her as a speaker.

"I never intended to do it," laughed Dickinson. "I sort of fell into it and I hit the ground running."

She now speaks about once a



Kids are never shy about speaking up. This girl tests a microphone after one of Steve Van Meter's presentations held at Hurlburt Field Air Force Base, Fort Walton Beach.

month to retired women's groups, teachers, secretaries and school girls.

"My topics vary depending on the group, but I try to emphasize the important role women play at NASA," she noted.

Dickinson takes her speeches very seriously, doing research and checking facts on every topic.

"The speaking engagements are a lot of fun and very rewarding, but there is still the pressure to properly represent NASA and KSC," she explained. "Being a speaker takes commitment and the willingness to give extra time and sacrificing weekends. But it can be extremely rewarding.

"People are fascinated by what we do at KSC," she noted.

"When I come back to work, I'm energized and I realize how much I love my job."

Phil Whitaker retired in 1984 after working in Procurement for 20 years. He first came back on board at KSC as a part-time employee for the Public Affairs Office, working in the office and giving tours for the Visitors Complex.

Later, he became a member of a volunteer corps of NASA retirees that assist with special events.

Whitaker's transition into the Speakers Bureau was a smooth one. As a member and officer of a fraternal organization, he was accustomed to public speaking.

As a Speakers Bureau member, he talks to retired persons, as well as fraternal and other organizations two or three times a month.

A large portion of Whitaker's audience are people who have never been exposed to the space program.

**(See Speakers, Page 3)**



As a participant in KSC's Speakers Bureau, NASA Robotics Specialist Steve Van Meter (center) addresses groups of all ages about KSC's robotics program.

# Speakers ...

*(Continued from Page 2)*

"I try to stay away from the technical aspect of NASA," said Whitaker. "I focus on how the public benefits from the space program."

His topics range from spinoffs and the interplanetary exploration of space to the Mars Rover.

"I try to put these things into terms the general public can understand," said Whitaker.

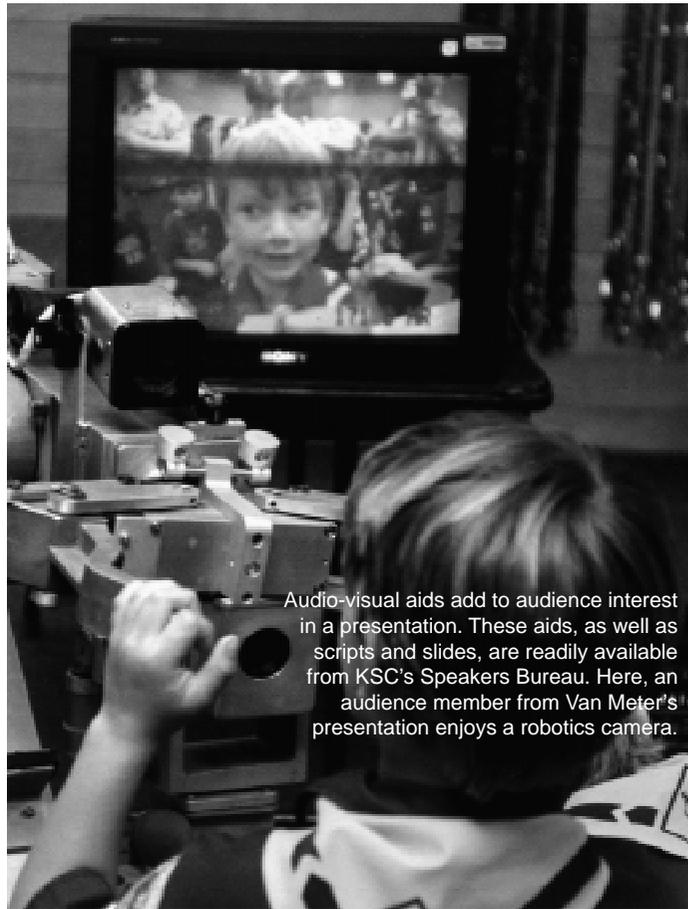
Whitaker describes himself as a man on a mission, educating the public and dedicating his time to NASA.

"As a speaker, my job is to inform people that it's impossible to spend a dime in space. But it's beneficial to all of us to spend a dime on space," he asserted.

## Untapped potential

"For NASA employees, speaking engagements are treated as official NASA business," said Bell. "The only requirement is a willingness to give up a few hours of your time."

"You never know what you are capable of



Audio-visual aids add to audience interest in a presentation. These aids, as well as scripts and slides, are readily available from KSC's Speakers Bureau. Here, an audience member from Van Meter's presentation enjoys a robotics camera.

until you give it a try," she continued. "None of the 100 Speakers Bureau volunteers are professional speakers. These volunteers are your coworkers, all dedicated to the same goal: educating the public."

If you are interested in volunteering, contact Bennie Bell at 867-2107. While the majority of speakers in the bureau are NASA employees, some contractors can participate also. Bennie Bell can provide the details on contractor participation.



Kids and robotics appear to be a natural hit, but the Speakers Bureau also offers crowd-pleasing scripts on wildlife, the International Space Station, a KSC overview, NASA spin-off technology and more. Contact Bennie Bell at 867-2107 to sign up and share with others the wonders of space and KSC.

## A unifying milestone

The first major U.S.-built piece of the International Space Station reached a significant milestone last week that moved it closer to its rendezvous in space with the first Russian-built element.

During an Acceptance Review Board meeting at KSC, top-level Boeing and NASA managers reviewed and certified the engineering performed on the connecting module and its two pressurized mating adapters that are scheduled for launch on Dec. 3. The board's approval means that final launch preparations can now begin.

The module called Unity that was built by The Boeing Company will be deployed from the Shuttle's payload bay to join the first Russian element, Zarya. The Russian element is scheduled to be launched from Baikonur on a Proton rocket on Nov. 20.

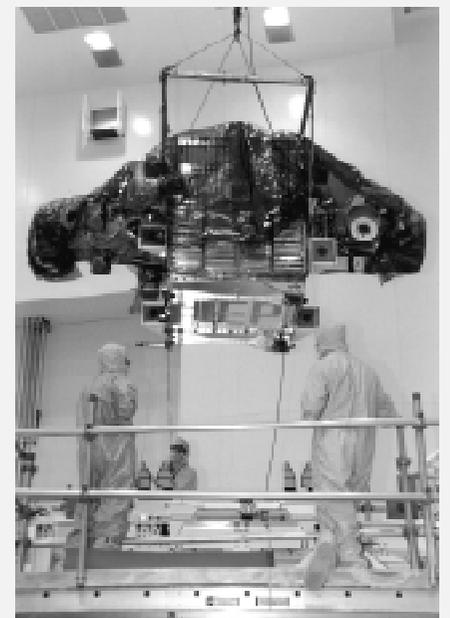
Among the NASA officials accepting the hardware was Randy Brinkley, NASA space station program manager.

"The node was not named Unity by chance," Brinkley said. "The name represents all of the hard work by the Boeing teams and the NASA teams. This has been a great joint effort."

As Unity and Zarya move closer to launch, more than a half-dozen major pieces of U.S. and foreign-built hardware are being processed in KSC's Space Station Processing Facility. Those pieces represent key elements of the project, including power supplies, laboratory research space and storage.

## A Spartan payload

The Spartan solar-observing deployable spacecraft is moved onto a workstand in the Multi-Payload Processing Facility at KSC. Spartan, a small, Shuttle-launched and -retrieved satellite whose mission is to study the Sun, is one of the STS-95 payloads. The satellite consists of two telescopes: the Ultraviolet Coronal Spectrometer and the White Light Coronagraph. Measurements have to be made from space rather than from the ground due to atmospheric interference. The results will provide new insight into the unknown source of energy that heats the solar corona and accelerates the solar wind particles.





## Counting down to STS-95

Left, STS-95 Mission Specialists Stephen Robinson and Pedro Duque, with the European Space Agency, take part in the Crew Equipment Interface Test (CEIT) — in the Orbiter Processing Facility Bay 2 — on Sept. 2, which gives astronauts an opportunity for a hands-on look at the payloads they will be working with on orbit. The launch of the STS-95 mission, aboard the Space Shuttle Discovery, is scheduled for Oct. 29 from Launch Pad 39B.



Above, from left, Payload Specialists Chiaki Mukai, with the National Space Development Agency of Japan, and John Glenn Jr., along with Mission Commander Curtis Brown Jr. take part in middeck orientation during CEIT.

At left, Payload Specialist John Glenn Jr. signs his autograph for Mathew and Alexandria Taraboletti at the picnic that traditionally follows CEIT. Standing behind are parents Mark Taraboletti, an engineer with United Space Alliance (USA), and Eva Taraboletti, an orbiter integrity clerk with USA.

## KUSP ...

*(Continued from Page 1)*

end. She has worked at KSC for 14 years, first in the Safety Office and now is a personnel assistant.

"I work with computers every day doing data entry. I want to become more familiar with the field and become an engineer," says Johnson.

She already has 18 hours toward academic requirements and 15 toward vocational, many earned at Brevard Community College on her own over the years.

"I decided it was about time and a great opportunity [to focus on one goal]," she says. "My 'baby' is 18 and so I have no real commitments for my time at home."

On the other hand, Love is a single mother who has two school-age children at home. She sees an additional opportunity with KUSP.

"My children are young and bright and I want them to have that

learning environment at home, to understand how important it is, for them and for me," said Love.

Benefits for NASA include providing an internal source of qualified candidates for occupations where supply does not meet demand and the retention of employees with an experienced

knowledge base.

In fact, according to a survey by George Mason University and the Potomac Knowledge Way, the overwhelming majority (89 percent) of those surveyed said they would be more likely to stay with an employer that paid for all or part of an employee's continuing education.

"The report confirms similar results from informal research and focus groups that we have conducted over the past six months," said Fred Bollerer, president and CEO of the Potomac

Knowledge Way, a leadership organization focused on information technology.

The survey polled 400 college graduates between the ages of 30 and 55 who had been out of school at least 10 years and are currently employed. The survey had a margin of error of +/- 5 percentage points.

Within the current group of KUSP participants, seven are pursuing degrees in computer science or computer engineering, one aerospace engineering, five electrical engineering, four mechanical engineering, three environmental engineering, two industrial engineering, and seven accounting.

Participation in KUSP is available to full-time, permanent career NASA employees at KSC, and acceptance is determined by a competitive process. For more information about KUSP, contact Gwen Lewis at 867-2737 or Jim Norman at 867-2728.



Discussing the Kennedy Undergraduate Studies Program (KUSP) are, standing, left to right, Jim Norman and Frank Nesbit. Seated left to right are Gwen Lewis, Truemilla Johnson and Gwen Love.

## Health ...

(Continued from Page 1)

KSC's Biomedical Office, and guest speakers KSC Director Roy Bridges and Arnauld Nicogossian, M.D., associate administrator of NASA's Office of Life and Microgravity Sciences and Applications (OLMSA), in Washington, D.C.

Dr. Long reviewed the accomplishments of the KSC office in the past year: developing a web site to link all the Occupational Health professionals across the Agency, revising the Occupational Health program assessment process (ISO compatible), initiating several new interagency agreements to provide consistent and standardized services to all NASA field centers and starting a new benchmarking activity to look at the best practices across federal agencies.

Bridges said that one of KSC's key guiding principles is safety and health first, noting that the Super Safety Day held in July at KSC was an example of his commitment to safety first. He further mentioned that along with keeping people injury free, keeping them healthy was equally important.

He added that we need effective techniques to get people to eat right, exercise, avoid poor choices such as drugs, and to identify and manage stress and stated, "Good choices make good health."

Capping the opening session was the key speaker, Dr. Nicogossian. His presentation included the OLMSA response to NASA's mission, Human Exploration and Development of Space (HEDS) and its goals. He presented highlights of accomplishments in the area, "Looking After Health on Earth and in Space," which included cancer tissue growth; a telemedicine instrumentation pack; Everest expedition and Ecuador/Andes online surgery consult; and study of bone loss and muscle atrophy in space which can be applied to aging on Earth.

He also briefly addressed goals for the next millennium, stating that if NASA's vision for the 21st century is exploration into intergalactic space, then research would be required into replicating human senses for a virtual presence, or "human-on-a-chip."

## September employees of the month



Honored in September: From left, back row, are Glenn Perez, Space Station Hardware Integration Office; Luke Setzer, Payload Processing; Ken Mathews, Logistics Operations; and Eric Smith, Engineering Development. In front are, left to right, Rose Rayfield, Public Affairs Office; Aneta Ott, Administration Office; Suzanne Stuckey, Office of Chief Counsel; and Annette Dittmer, Office of the Chief Financial Officer. Not shown are Scott Thorpe, Checkout and Launch Control System Office; David Fowler, Safety and Mission Assurance; Clark Sims, Installation Operations; and Avis Upton, Shuttle Processing.

Such technological advances, he stressed, would benefit workers' health and productivity on the ground and in space.

Dr. Long and her staff are already planning next year's conference in June with the Ames Research Center as the hosting field center.

### Human Exploration and Development of Space (HEDS) Goals

- Explore the role of gravity in physical, chemical and biological processes;
- Continue to open and develop the space frontier, including development and assembly of ISS and provision of safe access to space;
- Prepare to conduct human missions of exploration;
- Aggressively seek investment from the private sector, including increasing the affordability of space operations through privatization.

## Colorectal cancer screening in September

Did you know that cancer of the colon and rectum is the third leading cause of male and female cancer deaths in the United States?

Colon cancer has a good chance of being cured if found early enough.

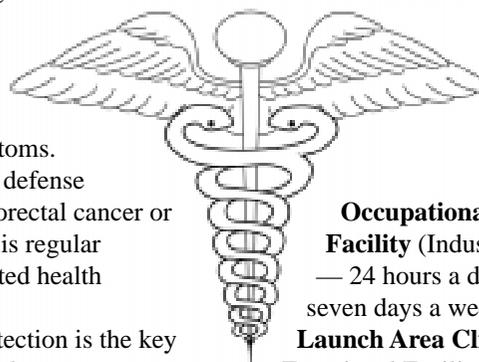
Unfortunately, there are very few early symptoms.

The best defense against colorectal cancer or any cancer is regular cancer-related health checkups.

Early detection is the key to successful treatment.

Screening for colorectal cancer with hemoccult slides will be offered to all KSC and Cape Canaveral Air Station employees in the month of September.

Kits containing the hemoccult slides, special instructions for correct use, a questionnaire and general information are available at all medical facilities on the following schedule, or upon request to Carol Roth at 867-3414 (BOC-005).



**Occupational Health Facility** (Industrial Area) — 24 hours a day, seven days a week

**Launch Area Clinic** (Multi-Functional Facility) — Monday through Friday, 8 a.m. to 4:30 p.m.  
**Cape Area Clinic, Cape Canaveral Air Station** — Monday through Friday, 7 a.m. to 3:30 p.m.



## Up close and professional

The KSC worker on the lower left applies red paint to the wing while the worker on the right fills in the blue field to the NASA insignia they are painting on the Vehicle Assembly Building (VAB). The logo, affectionately known as the "meatball," will measure 110 feet by 132 feet. The meatball was created by James Modarelli, now retired from NASA's Lewis Research Center in Ohio. "I chose the main elements from the seal — the sphere, representing a planet; stars, representing space; the wing, representing aeronautics; and an orbiting spacecraft," said Modarelli. Workers, suspended on platforms from the top of the 525-foot-high VAB, are using rollers and brushes to do the painting. In addition to the logo, the American flag is being repainted on the other side of the VAB. The painting honors NASA's 40th anniversary on Oct. 1 and is expected to be complete in mid-September.

### VAB = Vertical ... ambient ... and big!

The VAB is one of the largest buildings in the world. It was originally built for assembly of Apollo/Saturn vehicles and was later modified to support Space Shuttle operations. The VAB covers eight acres, and it is 525 feet tall, 716 feet long and 518 feet wide. It encloses 129,428,000 cubic feet of space.

Just how big is that? A few points of comparison include:

- Height:** VAB = 525 feet vs. Statue of Liberty = 305 feet
  - Volume:** VAB = 129,428,000 cubic feet vs. Pentagon = 77,025,000 cubic feet
- The VAB equals 3.75 Empire State Buildings.

The building uses 98,590 tons of steel; 65,000 cubic yards of concrete; 4,225 open-end steel pipe piles 16 inches in diameter that were driven 160 feet into bedrock; 10,000 tons of air conditioning with 125 ventilators; 71 cranes, including two 250-ton bridge cranes; 1,085,000-square-foot insulated aluminum panels; and 70,000-square-foot plastic panels.

There are four High Bay doors, and each opening is 456 feet high. The north entry to the transfer aisle was widened 40 feet to permit entry of the Orbiter, and slotted at the center to accommodate its verticle stabilizer.

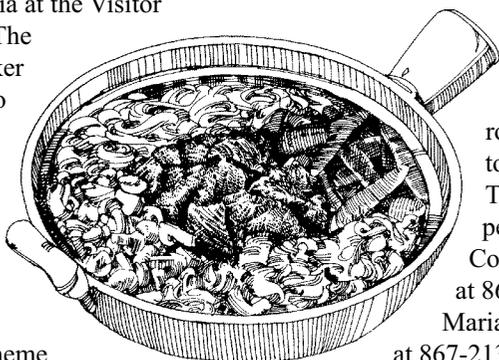
The flag was originally painted on the VAB in 1976 and measures 209 feet by 110 feet in size. Each strip on the flag is as big as the tour buses used to transport visitors around KSC.



### Hispanic group's annual luncheon to be held

The Hispanic Employment Program Working Group will hold its fourteenth annual "Meet your Directors' Luncheon" on Friday Sept. 25 at 11:30 a.m. at the Lunch Pad cafeteria at the Visitor Complex. The guest speaker is Alphonso Diaz, director of the Goddard Space Flight Center.

for this year's observance of Hispanic Heritage Month is "Hispanics: Shaping the Future." KSC employees will sing traditional Spanish songs. The menu



will consist of paella, roast pork, beans and rice, roasted corn, tortillas and salad. The tickets are \$9 per person.

Contact Rey Diaz at 867-1160 or Maria Lopez-Tellado at 867-2133.

KSC's theme



John F. Kennedy Space Center

## Spaceport News

Spaceport News is an official publication of the Kennedy Space Center and is published on alternate Fridays by the Public Affairs Office in the interest of KSC civil service and contractor employees.

Contributions are welcome and should be submitted two weeks before publication to the Media Services Branch, AB-F1. E-mail submissions can be sent to Susan.Maurer-1@ksc.nasa.gov

Managing editor..... Bruce Buckingham  
Editor..... Susan Maurer

Editorial support provided by Sherikon Space Systems Inc. Writers Group.  
NASA at KSC is on the Internet at <http://www.ksc.nasa.gov>

USGPO: 633-112/80014



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