



Galileo gang

The crew of STS-34 brings home a photographic record of its mission to dispatch Galileo to Jupiter. Photos on Page 3.



Play-by-play

Space Center Houston launches its Mission Status Center to give visitors timely updates on space missions. Story on Page 4.

Space News Roundup

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Excellence award goes to Lockheed

A JSC contractor, Lockheed Engineering and Sciences Co. (LESC) of Houston, is the 1988-89 recipient of the NASA Excellence Award for Quality and Productivity.

NASA Deputy Administrator J.R. Thompson announced the selection Tuesday night at the sixth annual NASA/Contractors Conference in Huntsville, Ala. He said that, for well over 23 years, LESCO has applied the highest level of talent, proficiency and consistency in supporting all the major manned space flight programs.

LESCO was structured to provide high-technology engineering, science, management and technical support for government programs. The award reads that LESCO has continually improved operations, primarily as a support contractor for JSC, and that the company has a long track record of sustained excellent performance, coupled with continuing innovative programs—setting the standard for the service industry as a leader in quality and productivity.

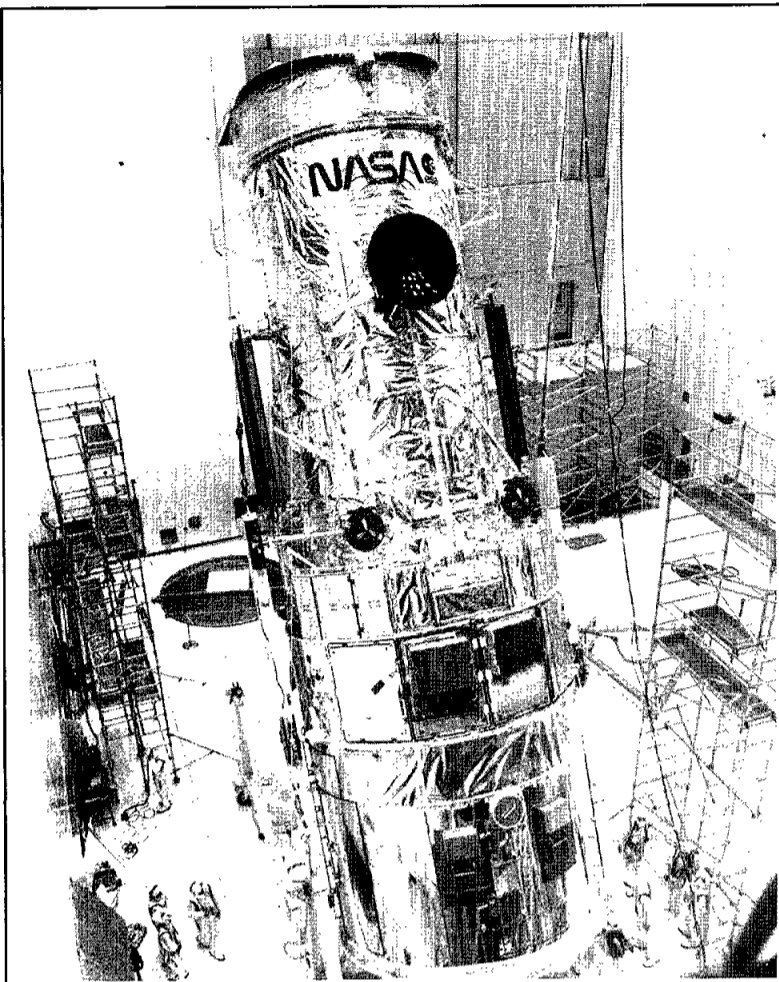
LESCO was selected by the NASA Quality and Productivity Steering Committee and endorsed by the administrator based on review of the findings report and recommendations of the Excellence Award Evaluation Committee.

Three other JSC contractors were among the finalists: Barrios Technology Inc., Houston; Computer Sciences Corp., Houston; and Rockwell International, Space Transportation Division, Downey, Calif. Other finalists were: Bendix Field Engineering Corp., Columbia, Md.; Boeing Computer Support Services (CMS), Huntsville, Ala.; EG&G Florida Inc., Kennedy Space Center, Fla.; and Grumman Technical Services Division, Titusville, Fla.

"Each of these firms has demonstrated admirable performance in attaining a level of quality and productivity that commands our respect and deep appreciation," said George Rodney, NASA associate administrator for safety, reliability, maintainability and quality assurance.

Award criteria, developed by NASA in conjunction with the American Society for Quality Control, Milwaukee, Wis., were used to judge nominees on performance achievements and improvements in customer satisfaction, quality and productivity levels. Emphasis also was placed on management commitment, goals and measures, communication.

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NASA Photo

The Hubble Space Telescope is lifted into the vertical position in Kennedy Space Center's Vertical Processing Facility. The telescope, which will be able to view 97 percent of the known universe from orbit, was powered up Oct. 28.

Hubble Space Telescope powered up for testing

The Hubble Space Telescope (HST) has passed a significant milestone toward launch with the first "power-up" of the spacecraft at Kennedy Space Center.

The power-up initiates a series of functional checks of onboard science instruments and systems which are scheduled to continue through the end of January.

Power was applied to the telescope via satellite from the HST control facility at Lockheed in Sunnyvale, Calif., at 11:15 a.m. CDT on Oct. 28. The link terminates at a 30-foot receiving antenna especially installed at KSC's Vertical Processing Facility to support the upcoming telescope testing. A return data stream confirmed to controllers that the power was on, and that the satellite link will be returning test data to Sunnyvale during a total of 35 scheduled test days.

Undergoing performance evaluation are five science instru-

ments, the telescope's pointing control system, fine guidance sensors, the communications and data handling system with associated tape recorders, and the power system.

In addition, another 12 days of tests are scheduled with the HST Payload Operations Control Center at Goddard Space Flight Center. They will directly simulate on-orbit activity using the telescope via the satellite link.

Finally, the telescope will undergo the routine tests for payloads flown on the space shuttle, verifying its readiness to be integrated with the space shuttle *Discovery*. These tests will take about four days.

Based on the current manifest, the Hubble Space Telescope is scheduled to be transported to the launch pad on March 9, 1990; placed in the payload bay of *Discovery* on March 12; and launched no earlier than March 26.

Congress OKs \$12.4 billion NASA budget

By Kelly Humphries

Congress gave final approval this week to a \$12.4 billion 1990 budget for NASA, an 11.9 percent increase over last year's budget but 6.7 percent less than President George Bush requested.

The U.S. Senate gave final approval to the conference committee compromise on the HUD and independent agencies budget that includes NASA funding last week, and the House of Representatives approved the bill on Tuesday. It now goes to President Bush, who is expected to sign it next week.

"It is too soon to tell the specific impacts of this budget on the programs at JSC," said Wayne Draper, the center's comptroller. JSC received \$1.9 billion of last year's NASA budget.

"We are very concerned, however, with the apparent reduction the center will be required to take in institutional base operations. It appears that the approved budget in this area is \$20 million less than our submitted requirements. We are still in the process of evaluating the potential impacts of this reduction."

Institutional base operations are

those that provide for the operation and maintenance of the center.

NASA has been operating under continuing resolutions since Oct. 1, the beginning of the 1990 fiscal year, said Rick Arbuthnot, special assistant for external affairs to the JSC comptroller.

The budget includes \$1.8 billion for Space Station *Freedom*, which is double the \$900 million that was received in 1989. It allows \$4.5 billion for space flight control and data communication, which is made up primarily of space shuttle spending. Research and program management received a total of \$1.9 billion.

Construction of facilities received \$592 million, Arbuthnot said. The NASA budget contains provisions for construction money transfers of up to \$85 million to the shuttle program, \$67 million to research and program management and \$25 million to the National Aerospace Plane.

The research and program management portion of the budget includes money for a 3.6 percent salary increase for civil servants that will take effect Jan. 1, 1990.

Discovery shaping up for November mission

By Kyle Herring

Preparations for *Discovery's* 10th space mission continue to proceed smoothly toward a launch no earlier than Nov. 20 from Kennedy Space Center's launch pad 39A.

Monday marked the successful conclusion of the Terminal Countdown Demonstration Test with a simulated engine cutoff at the T-4 second mark at about 10:04 a.m. CST. The STS-33 flight crew—Commander Fred Gregory, Pilot John Blaha and Mission Specialists Sonny Carter, Story Musgrave and Kathy Thornton—returned to JSC that afternoon and will not return to the launch site until three days before launch.

Shuttle managers will meet at

Kennedy on Monday and Tuesday for the Flight Readiness Review to assess the readiness of all shuttle components for the STS-33 mission. An official launch date is expected to be announced at the conclusion of the review Tuesday.

Operations to load the hypergolic propellants aboard *Discovery* began this week and the pad was cleared of all nonessential personnel while nitrogen tetroxide and monomethylhydrazine were loaded in the orbital maneuvering system and reaction control system storage tanks.

Also during this operation, hydrazine was loaded for *Discovery's* auxiliary power units and for the solid

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Germany heads orbiter projects

Colonna says g'day mate to JSC for two years

By Kyle Herring

Escaping from the everyday, Richard Colonna, manager of the Orbiter and GFE Projects Office, is headed for the outback to become NASA's representative in Australia. He will be replaced by Dan Germany, deputy manager of the office since 1987.

Effective at the conclusion of *Discovery's* Defense Department mission later this month, Germany will be acting manager of the orbiter project until Headquarters makes his assignment permanent.

Colonna said he will be leaving the job in the capable hands of Germany. He "will make a very fine project manager," Colonna said, adding that "he'll put his own personal touch" on the job and "be able to make

improvements. I'm confident he'll keep the project on track."

In his new position as NASA's representative to Australia, Colonna will be based in Canberra for two years and work with the space community there. Assigned to NASA Headquarters, he will be the chief liaison between Australia and NASA's Jet Propulsion Laboratory for tracking station activity in the region, including the Deep Space Network activity at Tidbinbilla and the Parkes Observatory.

As manager of the orbiter office, Germany will be responsible for management of all hardware and software projects for each orbiter. This includes technical and business activities associated

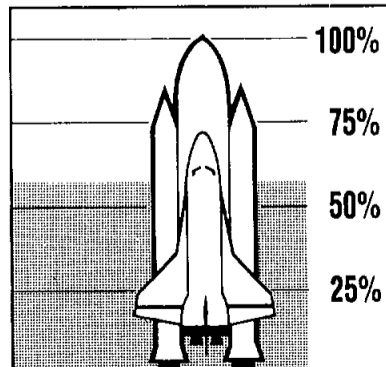
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Colonna



Germany



TOTAL GOAL: \$275,000



Payload specialists appointed for two Spacelab missions

Two Spacelab payload specialists have been appointed by Dr. Lennard A. Fisk, NASA's associate administrator for space science and applications.

Dr. Millie Hughes-Fulford will be a prime payload specialist for Spacelab Life Sciences-1 (SLS-1) and Dr. Stanley N. Koszelak will serve as the U.S. backup payload specialist for Spacelab-J.

Hughes-Fulford, 43, previously assigned to SLS-2 as the prime payload specialist, has been reassigned to SLS-1 to replace Dr. Robert W. Phillips, 60. Phillips is stepping down because he did not meet the

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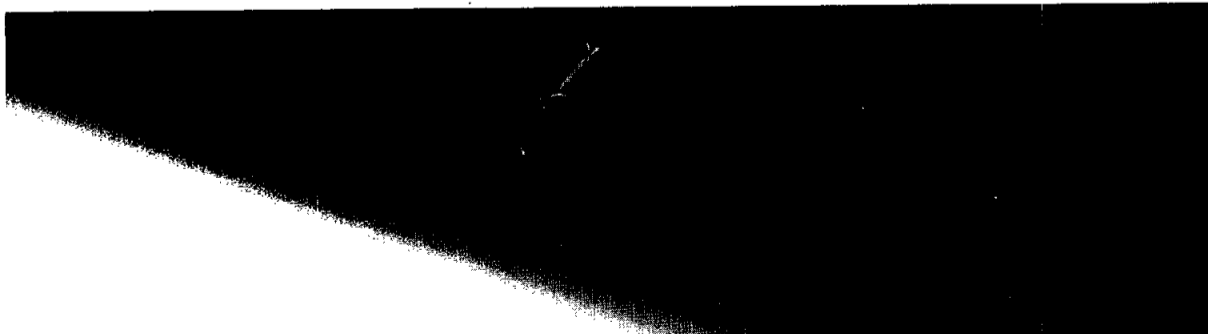
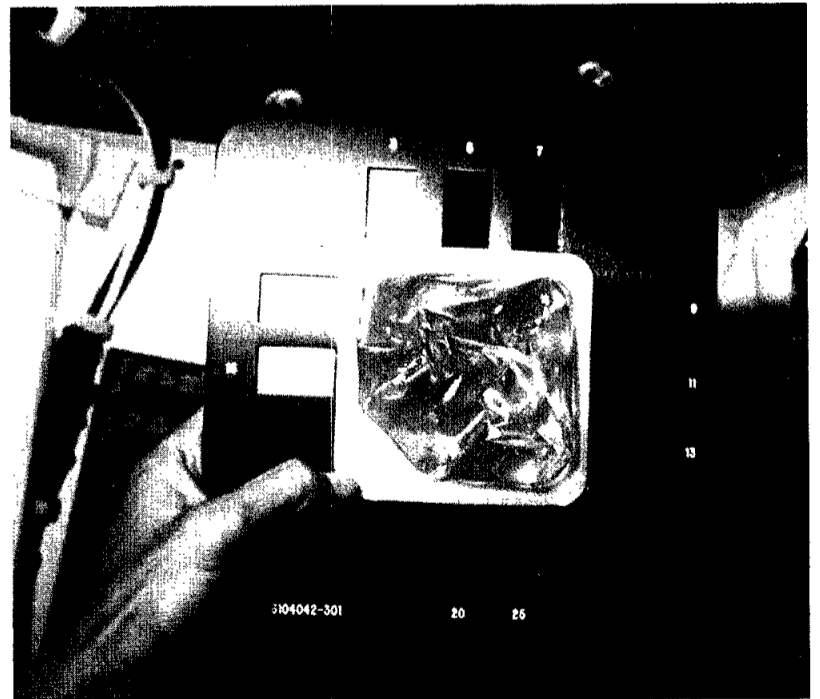


P.C. RAT PATROL

Onboard photography reveals 'stowaway'

Shuttle crews have taken rats into space before, but this time the rascally rodent was of the stuffed variety. P.C. Rat, the STS-34 mascot, was carried on the Galileo mission in honor of the crew's Shuttle Mission Simulator (SMS) training team. It was named after the simulated "ratty communications" the crew sometimes had to deal with in the SMS. Clockwise from above: 1) Mission Specialist Franklin Chang-Diaz holds P.C. Rat as he and (from left) Commander Don Williams, Mission Specialists Ellen Baker and Shannon Lucid,

and Pilot Mike McCulley pose for a crew portrait; 2) Baker and McCulley appear to enjoy their first meal in zero-gravity; 3) an experiment module helps the crew test the iodine content of *Atlantis'* fuel-cell produced water; 4) Lucid dons sunglasses as she and Baker prepare for their roles in Galileo's deployment; 5) Williams takes a seat at his command station; 6) the spent external tank reflects earthshine as it falls toward Earth; and 7) Baker fulfills her role as physician by monitoring Chang-Diaz' blood flow.



Hardee heads NSTS Avionics Office

S. Nat Hardee Jr. has been appointed manager of the National Space Transportation System (NSTS) Avionics Office.

Hardee, who previously was manager of the Reconfiguration Management Office in the Mission Operations Directorate (MOD), is now responsible for space shuttle integrated avionics and flight software.

He replaces Jack Boykin, who has been doubling as acting manager of the Avionics Office since his September appointment as deputy manager of the NSTS Engineering Integration Office.

Hardee came to JSC in 1964 as a co-op, and had worked in several areas of the science directorate—the Space Physics Division, Lunar

JSC People

Missions Office, Science Mission Support Division, Planetary and Earth Sciences Division and Science Payloads Division. He was hardware/software manager for the remote manipulator system and payloads in the Orbiter Project Office before joining MOD.

Simanton information management leader

Donald F. Simanton has been appointed assistant director for

information resources management (IRM) in the Mission Support Directorate.

Simanton will be responsible for carrying out the Mission Support Directorate's responsibilities for managing information, especially that which can be processed on institutional equipment such as personal or mainframe computers and their connecting networks.

Simanton will represent JSC on the NASA Automated Information Management Council, and will continue as chairman of the IRM Steering Committee and JSC's computer security officer.

Simanton previously was chief of the Data Processing Systems Division. He has been with JSC since 1966, working in all phases of

data processing, operations, applications development, systems analysis and systems engineering.

Liput new systems development deputy

James J. Liput has been named deputy chief of the Systems Development and Simulation Division in the Engineering Directorate.

Liput fills the vacancy created when Irvin Burtzloff became division chief after the retirement of Pat Kurten.

Liput, who joined JSC in 1964, served in the Structures and



Hardee



Simanton



Liput

Mechanics Division, the Lunar Surface Project Office, the Avionics Systems Engineering Division and the Shuttle Avionics Integration Division, which was renamed the Systems Development and Simulation Division. He has been manager of the Resident ALSEP Project Office, senior integration engineer and test manager for the SAIL Project Office, chief of the Avionics Integration Branch and head of the Project Integration Office.



JSC Photo by Scott Wickes

HALLOWEEN HILARITY—A professional "ghostbuster" puts on a show for children of JSC employees at Monday's Children's Halloween Party in the Gilruth Recreation Center. The kids were treated to magic, games and treats as well.

Space Center Houston plans status center

Space Center Houston unveiled plans Thursday for a Mission Status Center that will provide visitors a rare behind-the-scenes view of astronauts and NASA flight controllers at work.

The unveiling by the Manned Space Flight Education Foundation Inc. (MSFEFI) at the

JSC's Gilruth Recreation Center was accompanied by the announcement that Southwestern Bell Corp. has become the first official sponsor of the \$50 million "experience center" to be built just west of JSC's main gate.

Harold S. Stall, JSC's public affairs director and MSFEFI president, said the Mission Status Center will display live video from Kennedy Space

Center launch pads, JSC's Mission Control Center and space. Voice communication between the astronauts and Mission Control will be monitored continuously, he said, and a briefing officer will provide "play-by-play" explanation of events as they unfold.

Southwestern Bell Vice President Cliff Eason announced his company's \$1.5 million commitment.

Stall said construction of Space Center Houston is expected to begin in February. The center, designed by Walt Disney Imagineering, is expected to open to the public in the summer of 1991, said General Manager Vance Ablott.



Child Care Center plans garage sale

JSC Child Care Center volunteers are holding a garage sale from 9 a.m.-4 p.m. Nov. 18, at the Gilruth Recreation Center, new pavilion area. The garage sale is open to all employees and the public.

Proceeds from the sale will help raise the initial operating funds the employee facility must have prior to its planned May 1, 1990, opening.

Employees with items to donate to the sale may contact the following: Estella Gillette x33077; Mike Evans x37667; Jessie Gilmore, 32739; Mary

Allen, 33087; or Mary Lee Meider, x39862, to arrange for pickup. It is also possible to arrange pickup of larger items, such as furniture and appliances, by calling one of the contact people. Donated items also may be dropped off at the Gilruth Recreation Center, from 9 a.m.-2 p.m., on Nov. 10 and 11.

Volunteers to work during the garage sale also are needed. Anyone who wishes to help the child care center with donations of sale items, or to volunteer their time, or both, is urged to call today.



Space conference open to JSC employees

JSC employees are invited, as work schedules permit, to visit the third annual SPACE: Technology, Commerce and Communications Conference and Exposition. The conference is scheduled for Nov. 14-16 at the George R. Brown Convention Center in downtown Houston.

This year, both JSC civil service and contractor employees will be granted free admission to the exhibition area of the conference, using their NASA badge or government identification for admission. Exhibit hours are: 11 a.m.-7 p.m. Nov. 14; 10 a.m.-5 p.m. Nov.

15; and 10 a.m.-3 p.m. Nov. 16.

Free shuttle bus service from JSC (loading on Ave. D south of the Visitors Center) to the Convention Center and return will be available at the following times: departing JSC on the hour on Nov. 14 from 10 a.m.-4 p.m., on Nov. 15 from 9 a.m.-3 p.m., and on Nov. 16 from 9 a.m.-1 p.m.

The buses will depart the Convention Center back to JSC on the hour on Nov. 14 from noon-6 p.m., on Nov. 15 from 10 a.m.-4 p.m., and on Nov. 16 from 9 a.m.-1 p.m.

The theme of the three-day conference is "Space Business: Charting the Course into the 1990's." The event is cosponsored by The Space Foundation, SPACE Magazine, and Washington Technology.

About eighty speakers are scheduled. Keynote speeches will be delivered by NASA Deputy Administrator J.R. Thompson, Nov. 14; JSC Director Aaron Cohen, Nov. 15; and Donald Beall, chairman, Rockwell International Corp., Nov. 16.

For more information, contact John McLeaish, 480-7445, or Roseann Tully, 862-7174.

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Germany takes Orbiter and GFE Project Office reins

(Continued from Page 1) with systems development; vehicle production and modifications; ground support equipment development; avionics software development and mission configuration; crew equipment, flight preparation and maintenance; and engineering support for orbiter operations.

Germany said his goal will be to establish "a management process that's going to allow us to fly once

a month as well as maintain a continuing evolving hardware design to meet the needs of the 1990s and the 21st century."

Colonna has been manager of the office since 1985. He was a member of the Space Task Group formed after the National Space Act of 1958.

Germany said Colonna's leadership is going to be missed. "As the Orbiter and GFE Projects Office's number one quarterback for the last

four years, Dick has guided the project and program through a very tumultuous period (that is, through the 51-L accident and the recovery period). His leadership is going to be missed and his personal dedication is something that I hope we can all exemplify."

Colonna has held positions with increasing responsibility with the Manned Spacecraft Center, then JSC since 1962. Some of those jobs

included working on Project Mercury, Apollo, Skylab and the Space Shuttle Program. Colonna began his career in aerospace as an engineer in North American Aviation's Structures Group in 1956.

Germany has been with NASA for more than 29 years, beginning his career in 1960 at the Marshall Space Flight Center. He directed the Orbiter Programs Division in the Shuttle Transportation System Office at

NASA Headquarters from 1978 to 1981.

Germany moved to Houston and JSC as assistant manager in the Orbiter Projects Office before becoming manager of the Shuttle Flight Equipment Office from 1983 to 1985.

Prior to becoming deputy manager of the orbiter office, he was deputy manager of the Space Station Projects Office.

Payload specialists assigned

(Continued from Page 1) medical standards for a payload specialist. He will continue his duties as an SLS-1 mission support team member.

Hughes-Fulford is an associate professor of biochemistry at the University of California Medical Center, San Francisco, and a medical researcher at the Veterans Administration Medical Center there.

SLS-1 is the first mission to use Spacelab as a biological research facility. The 20 scientific investiga-

tions onboard will help answer critical questions about the way humans adapt to microgravity and readapt to Earth's gravity.

Koszelak, 36, is an assistant research biochemist at the University of California at Riverside.

SLS-1 is scheduled to fly in August 1990 and is managed by JSC for NASA's Office of Space Science and Applications (OSSA). Spacelab-J, scheduled to fly in June 1991, is managed by Marshall Space Flight Center for OSSA.

Space News Roundup

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Editor Kelly Humphries
Associate Editor Linda Copley

Discovery hydraulic power unit replaced

(Continued from Page 1) rocket boosters' hydraulic power units. One of the two hydraulic power units on the left hand solid rocket booster was replaced last week after it was discovered that the unit came

from a lot that produced at least one unit with a cracked housing.

This unit was scheduled to be hot fired after the propellant loading operation which was expected to continue through this morning.

Excellence award goes to JSC contractor

(Continued from Page 1) igation, health and safety, work force training, award recognition and subcontractor involvement.

Key goals of the NASA Excellence

Award are to institutionalize quality and productivity practices, not only throughout NASA and the agency's contractors, but also the rest of the industrial world.