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Spaceport News

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John F. Kennedy Space Center

Mission update

Mission: NEAR expendable vehicle launch on a McDonnell Douglas Delta II rocket

Launch date, time: Feb. 16, 3:53 p.m. from Launch Complex 17, Pad B, Cape Canaveral Air Station

Mission synopsis: The Near Earth Asteroid Rendezvous (NEAR) will measure the composition and structure of the asteroid Eros and provide fundamental information about objects that make close encounter with Earth.

Mission: STS-75 on Columbia

Launch date, time: Feb. 22, 3:18 p.m. from Launch Pad 39B

Synopsis: The seven-member international STS-75 crew will conduct scientific investigations with both the Tethered Satellite System-1R (TSS-1R) and United States Microgravity Payload-3 (USMP-3) primary payloads during the 75th Space Shuttle mission.

Landing date, time: March 7, 7:32 a.m. at Kennedy Space Center's Shuttle Landing Facility

THE STS-75 flight crew poses at the 195-foot level of Launch Pad 39B during Terminal Countdown Demonstration Test (TCDT) activities. They are, front from left, Payload Commander Franklin Chang-Diaz, Mission Specialists Claude Nicollier and Maurizio Cheli and Payload Specialist Umberto Guidoni. In back from left are Mission Commander Andrew Allen, Mission Specialist Jeffrey Hoffman, and Pilot Scott "Doc" Horowitz.

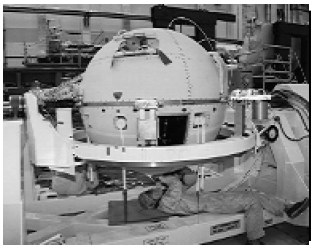
Tethered satellite, USMP payloads to fly again on the STS-75 mission

By Chuck Weirauch

Experiments that could lead to a new way to generate electrical power in space, provide new insights into physical science and possibly lead to improved manufacturing processes and products on Earth will be the highlights of the STS-75 mission. At press time the mission was scheduled to lift off from Launch Pad 39B between 3:18 p.m. and 5:48 p.m. EST on Feb. 22.

During the 13-day, 16-hour space flight, the seven-member international crew will conduct scientific investigations with both Tethered Satellite System-

(See STS-75, Page 6)



THE SATELLITE element of the Teathered Satellite System--1R is processed at KSC last summer.

THE UNITED STATES Microgravity Payload-3 pictured during processing.

NASA/KSC prepare for new approach to doing business

By Lisa Malone

One of the most sweeping changes ever to impact Kennedy Space Center will be the transition of daily Shuttle processing functions to a single prime contractor, United Space Alliance, under the Space Flight Operations Contract (SFOC).

"This transition will be a slow and methodical process. This isn't a sprint, it's a marathon. The start line is Oct. 1, 1996 and the finish line is the year 2000," explained Roy Tharpe last month during a speech to the NASA Kennedy Manage-

(See BUSINESS, Page 4)

ADAMSON

BLACK

USA leaders share their vision, timeline

By Barb Compton

Kennedy Space Center employees got a glimpse of what the near future will hold when the leaders of the Shuttle program's single prime contractor shared their vision and transition timeline last week.

Kent Black, chief executive officer, and Jim Adamson, chief operating officer, of United Space Alliance (USA) briefed employees of Lockheed Martin

(See USA, Page 4)

KSC teams with industry to fight structural corrosion

By Joel Wells

A combined effort by NASA researchers at Kennedy Space Center and private industry could ultimately keep buildings across the country from corroding away.

A Space Act agreement signed recently will merge KSC's research into electrical treatments of structural corrosion with chemical processes developed by Surtreat Southeast, Inc., of Cape Canaveral, FL.

The results could have national significance, said Rupert Lee, the NASA project engineer leading the effort. "Any breakthrough in corrosion mitigation technology will have a significant impact on the integrity of this nation's infrastructure," he said.

Structural corrosion is a multi-billion-dollar problem in the United States. Over the past two years, KSC materials scientists have focused on an electrical treatment known as electromigration, which sends corrosion-inhibiting ions to the rebar or steel bars imbedded in a concrete slab to prevent the rebar from rusting, corroding and separating from the concrete.

With the help of Florida's Technological Research and Development Authority, an independent state agency that partners with KSC in technology transfer initiatives, Surtreat Southeast approached KSC with a chemical option.

Surtreat's product, Surtreat GPHP, is applied to the surface of a corroding concrete slab and then seeps through to the rebar, coating it and preventing further corrosion.

"It corrects the chemical imbalance that causes the rebar to corrode. Traditional structural repair methods only last a couple of years," explained Jim Emory, president of Surtreat Southeast.

The agreement, signed Feb. 2 by Gene Thomas, KSC's deputy center director, and Emory, combines the two efforts without requiring the transfer of funds. "It's a mutually beneficial relationship between KSC and private industry," said Kristen Riley, manager of KSC's dual use program, part of NASA's technology transfer and commercialization effort.

SURTREAT SOUTHEAST Inc. President James Emory and KSC Deputy Director Gene Thomas shake hands following the signing of a Space Act Agreement Feb. 1. Standing in the background are, from the left, Kristen Riley of NASA, Frank Kinney of Florida's Technological Research and Development Authority, Karen Thompson of NASA, Bruce Ellis of Surtreat, Dick Lyon of NASA and Robert Walde, Surtreat GPHP inventor.

"Combining NASA and Surtreat technologies may result in a unique process with broad corrosion control applications and could save NASA and others a lot of money," Surtreat GPHP inventor Robert Walde said. Surtreat will provide the corrosion-inhibiting chemical and concrete testing slabs along with technical and personnel support as needed. Kennedy will provide testing specifications and procedures, prepare the test slabs with the Surtreat chemical, and environmentally test the chemical.

KSC materials scientists will also consider the applicability of the chemical treatment to the electromigration process and prepare a report on its effectiveness. The testing process lasts about 12 months.

Employees of the month

HONORED IN FEBRUARY were, seated from the left, Erin Campbell, Comptroller's Office; Nancy Hoffman, Installation Operations Directorate; Julie Hallum, Administration Office; and Stephanie Stilson, Payload Operations Directorate. Standing, from the left, are Jessie Clark, Chief Counsel's Office; Patricia Metcalfe, Shuttle Operations Directorate; Eric Dirschka, Engineering Development Directorate; Sue Prentice, Safety and Mission Assurance Directorate; and Dorothy Davis, Procurement Directorate. Not pictured is Diane Vess, Logistics Directorate.

New employee viewing site opens for launch of STS-75

Center Director Jay Honeycutt has made it possible for a limited number of KSC employees to view a Shuttle launch from a new VIP viewing site.

NASA and contractor employees deserving special recognition for their support of KSC's human space flight program will be issued a vehicle pass to drive their families to this special viewing area.

The new site, located at the LC-39 Barge Turn Basin, will be operational for the STS-75 launch, scheduled at press time for Feb. 22.

As with other VIP viewing areas, launch commentary, bleachers, restroom facilities, and food and souvenir sales will be provided.

The pass will be valid for entrance through KSC gates two hours before launch for vehicles no larger than a 15-passenger van.

A badged employee must be in each vehicle.

Multicultural training workshop gives Daytona Beach students new view

NASA/KSC's multicultural training workshop reached into the community earlier this month when three program facilitators presented the program to a group of Daytona Beach students.

Sue Dickinson, air resources lead, Gregg Buckingham, university programs manager, and Michael Bell of the Administration Office led the session for 35 members of the Daytona Beach Teen Advisory Board Saturday, Feb. 3 at the Daytona Beach Police Athletic League Center.

The session turned out to be nearly as revealing for the presenters as for the students.

"Although the students come from a variety of cultures, some of them weren't aware of the day-to-day prejudices they might experience," said Dickinson.

During the daylong workshop students took part in exercises on themes such as unconscious prejudice and societal roles.

Stereotypes for groups such as jocks, good students, males, females and mixed race students were noted and discussed.

Students responded favorably to the class with 18 offering an excellent and 16 a good rating in a post-course evaluation. Comments that came back included: "Nothing was bad, just difficult to do. But that's a good thing because not everything will be easy."

Vernetta Chavis, who works in the Engineering Support Office and whose daughter, Angeleah, is a member of the advisory board, initiated the off-center presentation after she attended the course at work.

THREE FEMALE students list some of the stereotypes they have experienced as part of an exercise offered during the multicultural training workshop presented to members of the Daytona Beach Teen Advisory Board earlier this month. Students and the Kennedy Space Center facilitators studied issues such as unconscious prejudice and societal roles during the daylong session.

"I enjoyed our training so much I talked to the police officer who sponsors the advisory board and asked if they would be willing to hold the class," she said.

The officer, Suzette Moss, said she was excited by the prospect of interaction between the students and NASA employees. In addition to serving as role models, the facilitators spent time individually with the students during the lunch break. An impromptu basketball game led to some good-natured competition and enabled the students and facilitators to learn more about each other.

The board members represent 12 Daytona Beach middle and high schools, both public and private.

The students meet monthly and discuss issues ranging from smoking at school to environmental concerns.

Additional comments on the evaluation sheets show that, as a result of the class, students plan to make some changes in the way they relate to others.

"I've always had an open mind, but it has opened up a little more," one student wrote.

"Because of this class, I will now think about people's feelings before I stereotype them," wrote another.

THREE MALE students list some of the steroetypes they have encountered as they take part in the stereotyping exercise.

Federally Employed Women announce scholarship applications for 1996

Federally Employed Women, Space Coast Chapter, announces the availability of its 1996 scholarship applications.

Competition is open to all persons working toward an undergraduate degree who support the goals of FEW.

Applicants must be high school seniors who will graduate in 1996. Applicants must also show evidence of enrollment at a public or private college or university as a full-time student or must be currently enrolled in an accredited college or university program.

The registration package must be completed and returned no later than April 15. Finalists will be notified by May 17.

In 1995 FEW presented $7,500 to 11 scholarship winners.

Member scholarships are also available.

For more information or to obtain an application, contact Vickie Hall, LO-SOD-1, at 861-1455, or Clara Anderson, TM-ADM, at 867-3898.

Business . .

(Continued from Page 1)

ment Association. Tharpe helped generate the statement of work defining NASA's requirements for a single source contractor as a member of the source evaluation board at Marshall Space Flight Center. He is now a member of the NASA Contract Acquisition Team.

A new role

Tharpe said that as a result of the new contract, NASA employees at KSC will get out of the day-to-day operations involved in preparing Shuttles for launch, gradually handing those functions over to the contractor. The government job will be to monitor and evaluate the contractor performance.

"In the beginning, KSC was a directorate of the Marshall Space Flight Center, we've always been involved in the daily operations. We can be involved in a different way. This role will in no way diminish NASA's overall impact to the program. But, we don't need to sign all procedures to process the flight hardware," Tharpe said to an attentive audience of about 150.

Launch execution, preparation

Government involvement in the Space Flight Operations Contract will focus on launch execution and preparation, including development, institution and the transition to the SFOC. The government also will be responsible for continued institutional support, including the KSC infrastructure.

In the area of development, the government will design and develop ground support equipment and bring it on-line for the SFOC. KSC's institution (non-Shuttle Processing Contract expenditures) will be funded by the Office of Space Flight (Code M). The government will continue to manage the 43 contracts that do not come under the SFOC.

"We will establish a way to transition roles and responsibilities so the work is performed satisfactorily before we, the government, step back," Tharpe explained.

"We need to think and view things a little differently now. I don't view this change as a negative and things will work out all right. The launch team of the future will have the most capable people as members. Our trademark has always been the best launch team in the world. The transition will be difficult, but KSC can help accomplish it."

The SFOC performance-based contract, which will be managed at Johnson Space Center in Houston, will be measured against a predetermined set of metrics. For example, a work authorization document would be required to be technically accurate and available 100 percent of the time with a maximum error rate being available only three days prior to test start.

NASA will continue to have insight into the databases. Based on data, NASA can raise questions when warrented and conduct independent audits.

ROY THARPE speaks to NASA Kennedy Space Center Management Association members Jan. 18 in the Space Station Processing Facility cafeteria.

Next phase critical

This transition phase will be critical to the success of the space program, Tharpe said.

The cost of processing and launch will come down as areas of duplication are streamlined and optimized across the board.

Tharpe reflected on a similar situation in 1966 when Brown Engineering was awarded NASA's Mission Contract and the government role changed from doing the work to grading the contractors.

USA is motivated to protect the national resources of the space program, including the people and the hardware, Tharpe said.

NASA Administrator Dan Goldin said he wanted USA to do the job of processing and launching the Space Shuttle system.

Tharpe noted that by early 1997, USA will have already conducted at least one launch and will have had an award fee evaluation.

"KSC's team is the best in the world. The way we do things will end up being the best," he said.

USA . .

(Continued from Page 1)

at KSC on February 8 and 9. Their presentations were held in the LC39 area as well as the Training Auditorium in the KSC Industrial Area.

Mike McCulley introduced the corporate-level executives and helped answer employee questions about specific KSC impacts. McCulley is USA's associate program manager for ground operations, responsible for its activities at KSC.

The two corporate officials described the formation of USA, a joint venture of Rockwell International and Lockheed Martin, and addressed employee concerns about the status of their jobs, compensation and benefits in the transition to a single prime contract for Space Flight Operations.

The Shuttle processing work currently performed by Lockheed Martin and Rockwell will transition to USA in three phases over a five-year period, Black said.

Between June 1 and Oct. 1 of this year, USA plans to merge Lockheed Martin's Shuttle Processing Contract at KSC and Rockwell's Flight Operations Contract at Johnson Space Center. The 3,800 KSC employees and 3,000 JSC employees of Lockheed Martin and Rockwell under those existing contracts will become employees of United Space Alliance at that time. By the end of the summer, USA plans to absorb all of the orbiter subcontracts.

Phase II would occur by early 1997, when Shuttle support contracts are scheduled to be picked up by USA.

Phase III will be divided into several steps. It consists of contracts that included development effort at the time of the Shuttle Flight Operations Contract execution. It will eventually include the solid rocket boosters, external tank and Space Shuttle main engines.

USA will be headquartered in Houston where the NASA Shuttle program office is based, Black said.

Even though one of the goals of the transition is to reduce the numbers of employees, Black said no immediate or major layoffs are planned.

"It will be a gradual evolving process," he said. "I would hope most, if not all, of the reductions will be made through attrition."

Most Lockheed Martin and Rockwell employees who work directly with the Shuttle Processing and Flight Operations contracts will automatically become USA employees. Employees will not have to apply to keep their jobs, Adamson assured.

(Continued on Page 5)

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Pay structures and benefits will be largely unchanged from Lockheed Martin and Rockwell -- with the exception of some Lockheed Martin savings plans which will pay company matching funds directly to employees instead of investing them in Lockheed Martin stock.

The officials explained that since USA is a separate company its employees will not be able to participate in Lockheed Martin's corporate stock purchase plan, but instead will have the freedom to invest the funds in a variety of stocks.

Black invited employees to take advantage of this "chance to change the way things are done and improve the system."

KSC employees are invited to share ideas for improvements with the USA team.

Suggestions can be sent to Val Wardell, Mail Code A-11, Lockheed Martin Engineering and Sciences Services, Houston, TX, 77058 or to Bill Jeffs, Rockwell Space Operations Company, Mail Code R04B, Houston, TX, 77058. E-mail messages can be sent to usa-team@usa.lesc.lockheed.com

EG&G appoints deputy general manager

Stephen J. Bailey of Merritt Island has been appointed deputy general manager of EG&G Florida Inc. Bailey has been serving as acting deputy general manager for the company since September 1995.


BAILEY

Bailey has worked as controller at EG&G Florida since the inception of the Base Operations Contract in 1983. In June 1995, he was appointed director of administration over Finance, Human Resources and Contracts. He will continue to serve in this capacity also.

As the Base Operations Contractor to NASA at the Kennedy Space Center, EG&G Florida provides a broad range of support services for the KSC mission.

Entries taken for two running events

Kennedy Space Center athletes can start getting warmed up this winter for two upcoming running events.

Beat the Boss

The fifth annual Beat the Boss 5K run and two mile walk will take place Saturday, March 30, at 8 a.m. at the Patrick Air Force Base Officers Club Pavilion. The time and date have been changed from previous years to take advantage of low tide and cooler weather. The location was also moved further south to give participants a flatter and firmer surface to run on.

Participants will have the option of competing against the bosses in a 5 kilometer run or against a different set of bosses in the 2 mile walk.

All NASA, military and Shuttle Processing Contract employees are eligible to enter either of the events. An entry fee of $6 includes a post-race pancake breakfast. Entrants will also receive a specially designed T-shirt. Applications are available at the KSC exercise facilities and NASA Exchange stores. For more information, call Marty Winkel at 861-7502.

Intercenter run

KSC's seventh annual Spring Intercenter Run will be held Wednesday, April 17, at 5 p.m. at the Shuttle Landing Facility runway.

There is no registration fee but participants must sign up by midnight April 5.

Registration forms are available at the KSC exercise facilities.T-shirts may be ordered (pre-paid) at any NASA Exchange store. The cost is $5.50 for sizes medium to extra large and $7.00 for extra extra large. T-shirts will be available on race day.

PROFESSOR KYOICHI KURIKI of the Institute of Space and Astronautical Science in Tokyo, program leader for the Space Flyer Unit (SFU), presents a Daruma, a Buddhist good luck symbol, to Payloads Director John Conway Jan. 29 at the Operations and Checkout Building. The presentation acknowledged Kennedy Space Center's role in the successful retrieval of that satellite during Mission STS-72.

Japanese icon commemorates SFU's retrieval, return to KSC

by George Diller

Kennedy Space Center's role in the successful retrieval of Japan's Space Flyer Unit (SFU) satellite during Mission STS-72 was acknowledged during a ceremony Jan. 29 in the Operations and Checkout Building. Members of the STS-72 payload test team, senior NASA and McDonnell Douglas payload managers, and representatives of Japan's Institute of Space and Astronautical Science (ISAS) were present when KSC officially turned over the SFU to the Japanese Space Agency and its ISAS partner. SFU was then transported to Astrotech in Titusville where investigators are retrieving their experiments and data.

SFU was launched on an expendable vehicle from the Tanegashima Space Center in southern Japan on March 18, 1995. It remained in orbit 10 months before being retrieved from space by Endeavour's crew on Jan. 13, 1996. SFU is an octagonally shaped, multi-purpose reusable spacecraft with eleven experiments including an infrared telescope, biological and crystal growth experiments. It took ten years to develop.

NASA Director of Payload Operations, John Conway and Professor Kyoichi Kuriki, the SFU Program Leader from ISAS, signed the document turning over custody of the spacecraft from NASA to the Japanese.

After the signing Kuriki presented Conway with a "Daruma," a Buddhist good luck symbol.

The Daruma's left eye was painted in while the Japanese were at KSC in 1991 planning the SFU retrieval and downloading activities. The recipient of the Daruma then makes a wish, and when it comes true, he paints the other eye. Kuriki painted the other eye just after the joint signing of the turnover document.

After the experiments are removed , the spacecraft will be shipped back to Japan.

STS-75. . .

(Continued from Page 1)

1R (TSS-1R) and United States Microgravity Payload-3 (USMP-3) experiment equipment on board the Space Shuttle Orbiter Columbia. The STS-75 mission is scheduled to land at the KSC Shuttle Landing Facility on March 7 at 7:32 a.m.

Deployment on Day 3

On Flight Day 3, the crew will begin TSS-1R deployment by raising a 40-foot boom to elevate the satellite and its support structure. Once released, the satellite, 5 feet in diameter, will rise 12.4 miles above the orbiter while an electrically-conductive tether the diameter of a matchstick unwinds from a motorized reel. The objective for this Italian Space Agency (ASI) and NASA payload is to demonstrate the ability to deploy and control satellites on long tethers in space and to conduct space plasma experiments that include the generation of electrical power. The TSS-1 first flew on STS-46 in 1992, but a mechanical problem allowed the satellite to be deployed only to 840 feet.

As the tether passes through the electromagnetic fields of the Earth's atmosphere, an electrical charge is expected to build up between the satellite and the orbiter. Electrons from the ionosphere will be collected at the satellite and will travel down the tether to the orbiter. Approximately 27 hours after deployment, the crew will activate the 5-horsepower electric motor that will rewind the tether and draw the satellite back to the top of the support structure in the payload bay. The retrieval will be conducted in two phases over 18 hours.

The crew will also conduct research with four major USMP-3 experiment packages in Columbia's payload bay and three combustion experiments in a Glovebox facility located in the orbiter's middeck area. The payload bay experiments are designed to gather data that will continue NASA's microgravity research program. One experiment will use mercury cadmium telluride semiconductor alloy samples to study the directional solidification method of processing semiconductors. A better understanding of this process could lead to improved production methods on Earth. Another will analyze Xenon fluid at the "critical point", a phase where liquid changes to vapor. Understanding how matter behaves at this point could lead to advances in physics. Yet another experiment could lead to improvements to materials preparation and processing on Earth.

THIS AERIAL view of the Space Shuttle Columbia was shot as the Shuttle arrived at Launch Pad 39B on January 29.

Investigating fires

The three USMP-3 middeck experiments will study the characteristics of fires and how they spread in microgravity. Data will be used to help design safer spacecraft and better fire detection systems on Earth.

The STS-75 crew includes two European Space Agency (ESA) astronauts and one from the Italian Space Agency (ASI), as well as four veterans of STS-46.

Mission Commander Andrew M. Allen is on his third space flight, having served as pilot of both STS-62 and STS-46. He has more than 4,000 hours of flight time in more than 30 types of aircraft. Pilot Scott J. "Doc" Horowitz is on his first Shuttle mission. He holds a doctorate degree in aerospace engineering and was selected as one of the Outstanding Young Men in America in 1985.

Payload Commander Franklin R. Chang-Diaz has flown on STS-60, STS-46, STS-34,and STS 61-C. He holds a doctorate in applied plasma physics and is director of the Advanced Space Propulsion Laboratory at the University of Houston.

Mission Specialist Jeffrey A. Hoffman (Ph.D.) has served in this capacity on STS 61, STS-46, STS-35 and STS 51-D. He holds a doctorate degree in astrophysics and has been working on the Tethered Satellite project since 1987.

Mission Specialist Claude Nicollier (ESA) has flown on both STS-61 and STS-46. A captain in the Swiss Air Force, he holds a master's degree in astrophysics and is a Fellow of the British Interplanetary Society.

Mission Specialist Maurizio Cheli is a lieutenant colonel in the Italian Air Force. He became an ESA astronaut in 1992.

Payload Specialist Umberto Guidoni (ASI**)** is a researcher of the Space Physics Institute and is the scientist responsible for the integration of the Electrodynamic Tether Effects (RETE) experiment on the TSS-1R.

John F. Kennedy Space Center

Spaceport News

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