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Spaceport News

John F. Kennedy Space Center - America's gateway to the universe

http://www.nasa.gov/centers/kennedy/news/snews/spnews_toc.html

AIM begins two-year study of cloud formation

NASA's AIM spacecraft, the first mission dedicated to exploring mysterious ice clouds at the edge of space in Earth's polar regions, successfully launched at 4:26 p.m. EDT April 25 in California.

The AIM mission — short for Aeronomy of Ice in the Mesosphere — will study clouds that are noctilucent, meaning they can be seen from the ground only at night, when they are illuminated by sunlight no longer visible from the Earth's surface.

Kennedy Space Center's Launch Services Program was responsible for launch vehicle and spacecraft integration and launch countdown management. The mission marked the 50th successful launch for the Launch Services Program.

A modified L-1011 jet called Stargazer departed from Vandenberg Air Force Base, Calif., and released a Pegasus XL rocket carrying the spacecraft at a drop point over the Pacific Ocean, 100 miles offshore west-southwest of Point Sur, Calif. Approximately 10 minutes after launch, communications from a Tracking Data and Relay Satellite confirmed spacecraft separation, and the solar arrays deployed autonomously soon thereafter.

The spacecraft was operating nominally at approximately 5:45 p.m., when it passed over the ground station in Svalbard, Norway.

Throughout a 30-day checkout period, all the spacecraft subsystems and instruments will be evaluated and compared to their performance during ground testing to ensure satisfactory operation in the space environment. The

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THE STARGAZER L-1011 jet carrying the Aeronomy of Ice in the Mesosphere spacecraft takes off at Vandenberg Air Force Base, Calif.

NASA Administrator Griffin addresses program transitions

By Linda Herridge
Staff Writer

NASA Administrator Mike Griffin talked to the Kennedy Space Center work force during an informal all hands meeting on April 18 about the challenges each center will face as the Space Shuttle Program winds down and the Constellation Program ramps up. The question-and-answer forum was broadcast internally on closed-circuit TV.

Griffin fielded questions relating to the role of NASA and KSC in science and research, the International Space Station, technology development, the transition from space shuttle to Ares launch vehicles, and several other topics.

Griffin said the agency will look for new roles and missions during the transition period between the shuttle's retirement in 2010 and Constellation's first manned lunar launch, targeted for 2015.

He spoke of focusing on performing new work during the transition, such as broadening avionics and operations capabilities. Among the key needs for Orion are a thermal protection system, cockpit avionics and technologies for launch.

Griffin said sustaining engineering is important in order to support the long line of design and development needed for the Ares launch vehicles and Orion spacecraft, the lunar lander, lunar

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NASA ADMINISTRATOR Mike Griffin (left) and Kennedy Space Center Director Bill Parsons listen to a question from an employee at the April 18 all hands meeting in the Training Auditorium.

Melnick humbly accepts National Space Club's Debus Award

By Jeff Stuckey
Editor

The National Space Club Florida Committee presented Bruce Melnick with the Debus Award on April 28 at the 18th annual Debus Award Banquet at the Dr. Kurt H. Debus Conference Facility. The award, named after Kennedy Space Center's first director, is given to select people involved with space launch or payload activities, ground support systems, educational activities or aerospace research.

Melnick said when he was notified he would be this year's recipient of the award, he was extremely surprised. "I felt I always maintained a low profile, did my job and thought I would sneak out of here without anyone knowing I left," he said.

Melnick recently retired as vice president for Boeing Florida Operations, where he oversaw engineering, facilities and maintenance support to NASA and the Department of Defense for Space Shuttle, International Space Station and Delta rocket programs.

Some of his last responsibilities included working with NASA in the execution of the Vision for Space Exploration.

"It's been a great ride," Melnick said. "For those of you who are still in the fight out there, I wish you the best of luck to keep this human spaceflight program going and vibrant."

BRUCE MELNICK accepts the National Space Club Florida Committee's 2007 Dr. Kurt H. Debus Award on April 28 at the Visitor Complex's Dr. Kurt H. Debus Conference Facility. A portrait of Debus is shown at the right.

Prior to joining Boeing, which was McDonnell Douglas at that time, Melnick was vice president of Space Shuttle engineering at United Space Alliance from 1994 to 1996. He has also worked for Lockheed Martin Space Operations as director of process improvement technology.

During 1987 to 1992, Melnick served in NASA's astronaut corps and logged more than 300 hours in space. He flew as a mission specialist on the STS-41 mission in 1990 and the first flight of Endeavour, STS-49, in 1992.

A lot of people have asked Melnick what his plans are now that he has more time on his hands. Melnick's reply includes something for every day of the week, much like his career in the U.S. space program.

"What I'm going to do is race one day, dive one day, hunt one day, fish one day, golf one day, then take the weekend off," Melnick said. "A lot of what we do in the space business relates to these sports."

Melnick related how his new passions will compare to his career. "When you think about diving, it is really an unforgiving sport," he said. "If you haven't done it recently, you can get in trouble real quick, so I'm going to make sure I know what I'm doing before I go back into it."

Just like the space business, you must know the capabilities of the equipment and your own limitations.

"I'm going to race one day," Melnick said. "My esteemed colleague, Bob Sieck, who I'll never be the same type of racer he is, is who I'm going to compete like. Bob will tell you: You won't always have the fastest car, but a winner will know how to win with that lesser hand."

Sometimes in the space business, you are dealt a lesser hand, but you can win with that hand, according to Melnick.

He asked how many people in the audience work at the space center and forget the big picture of what they are working on. Melnick said employees should sit back and enjoy that great program that they're a part of.

Lynn Cline, NASA's deputy associate administrator for space operations, then talked to the audience about the Vision for Space Exploration.

AIM . . .

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instruments will maintain their protective covers to shield the near-pristine optical surfaces from contamination while the spacecraft outgases volatile materials.

Next week, the optical covers will be removed in sequence by ground commands and the instruments will begin scientific operations.

During the next two years, AIM scientists will methodically address six fundamental objectives that will provide critical information needed to understand cloud formation and behavior.

"This mission has many firsts, including that Hampton University is the first historically black college and university to have the principal investigator and total mission responsibility for a NASA satellite mission," said Program Executive Victoria Elsbernd of NASA Headquarters, Washington.

NASA's Goddard Space Flight Center in Greenbelt, Md., is responsible for the overall AIM mission management in collaboration with Hampton University in Virginia, the University of Colorado in Boulder, and Virginia Polytechnic Institute and State University in Blacksburg.

AIM is the ninth small-class mission under NASA's Explorer Program, which provides frequent flight opportunities for world-class scientific investigations from space within the heliophysics and astrophysics science areas.

BRUCE MELNICK (third from left) joins past recipients attending this year's Debus Award banquet, including from left, Dick Beagley, Dr. Maxwell King, Tip Talone, Ernie Briel, Lyle Holloway and Adrian Laffitte.

Carver helps launch Delta rockets by the book

United Launch Alliance employee Rosie Carver produces step-by-step guides to prepare Delta rockets for launch.

By Anna Heiney
Staff Writer

When NASA's Dawn spacecraft lifts off from Launch Pad 17-B at the Cape Canaveral Air Force Station, Rosie Carver won't be sitting at a console in the control room. She won't even be in the same building.

But her work will be. Carver, who works for United Launch Alliance, leads the team that assembles the massive procedure books that dictate every step to be taken in processing and launching a Delta rocket, including the launch countdown. It's the importance of her job — and the dedication and enthusiasm she brings to it — that make her an unsung hero.

She estimates she's created at least 15,000 procedures for more than 300 missions since the Solar Maximum Mission, which launched Feb. 14, 1980. The documents cover all Delta vehicle processing work, from the time rocket parts are shipped to the launch site until after liftoff when the pad is clear.

Carver uses a specially designed computer program that numbers each step and task in these massive, complex procedure documents. The program also keeps track of photos, test equipment, items to be worked on or removed before flight, and other data. This tracking ability is critical to launch safety and success.

"If they find out they have a torque wrench that did not meet calibration, I have usage files that will tell me exactly which procedure and step used that torque wrench," Carver explained, adding that technicians can use that information to go back and repair or double-check previous work.

When the Delta team is notified that rocket parts for a new mission are on their way to the spaceport, Carver's work begins. The procedures vary according to the type of work and the vehicle's configuration (for example, many Delta II procedures will differ from the same procedures for a Delta IV).

The first draft of a procedure document is an oversized, coverless book called a "flimsy." The flimsies are passed to the vehicle engineers, who mark their changes and return the books to Carver, who works their updates into the final version — a bound volume about the size of a textbook.

"They bleed all over it," Carver said good-naturedly, gesturing toward a book opened to a page filled with edits and additions in bright red ink. "They make changes like this. They've added steps. Because Dawn is a Heavy and we haven't done a Heavy in a while, there were a lot of updates that we needed to add to the procedures about things that have changed."

These are living documents. Whenever an issue or new solution pops up during the prelaunch process, it's added to the appropriate procedure, ensuring that the best practices are used on every mission.

Carver produces about a hundred procedure books for each mission. Each procedure is made up of multiple tasks, which in turn consist of page after page of steps — sometimes 400 pages or more.

These aren't small books.

"I had one (procedure) that was stacked in my room that was three books this high," she remembered, holding her hand 18 inches above the desktop.

Since the books need to be ready to use the moment they're needed, sometimes Carver and her co-workers only have a week or so to pull the documents together. That sounds challenging enough, but consider this: Carver is currently working on six upcoming missions.

On launch day, Carver is typically in her office, hard at work on documents for another mission. But her work is clearly visible: She creates the complex, scripted countdown procedure used by every launch controller. She knows her procedures are critically important — and that NASA and other launch customers are watching.

"I want the customer to see that our procedures are professional and our work is professional, and that we're going to give them the best ride anybody can give them, so that they come back," she said with pride.

ROSIE CARVER of United Space Alliance is in charge of producing the massive procedure books for processing and launching Delta rockets. She has created more than 15,000 procedures since February 1980.

NASA recognizes Diaz for Ares test flight transition efforts

By Linda Herridge
Staff Writer

Ground Systems Equipment Project Engineer David Diaz's plate is full at Kennedy Space Center. Since transferring to NASA in July 2006 after nearly 20 years with United Space Alliance, Diaz worked on shuttle projects and is currently involved in the launch pad transition, Ares I-X test flight preparations and Constellation projects.

He transferred to NASA for the opportunity to work on a

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DAVID DIAZ is a ground systems equipment project engineer.

STS-120 astronauts train with Node 2 elements

In the Space Station Processing Facility, STS-120 Mission Specialist Daniel Tani (left) examines equipment for the Node 2, another element to be added to the International Space Station. Looking on, at right, is astronaut Peggy Whitson, who served on Expedition 5 aboard the space station. During her six-month stay aboard the space station, Dr. Whitson installed the Mobile Base System, the S1 truss segment and the P1 truss segment. Tani and other crew members were at Kennedy Space Center last week for equipment familiarization.

Node 2 will provide a passageway between three station science experiment facilities: the U.S. Destiny Laboratory, the Kibo Japanese Experiment Module, and the European Columbus Laboratory. STS-120 is targeted for launch in late October.

STS-120 MISSION Specialists Scott Parazynski (left), Paolo Angelo Nespoli (center), who represents the European Space Agency, and Douglas Wheelock practice using some of the equipment for the Node 2.

IN THE Space Station Processing Facility, STS-120 Commander Pamela Melroy (right) learns more about the Node 2, another element to be added to the International Space Station. With her is astronaut Peggy Whitson, who assisted the STS-120 crew, served on Expedition 5 aboard the space station.

THE MISSION STS-120 crew members are getting familiar with the Node 2, another element to be added to the International Space Station. Seen here are Mission Specialists Paolo Angelo Nespoli (left) and Douglas H. Wheelock. Nespoli represents the European Space Agency.

Physicist Hawking takes Zero Gravity flight

Noted physicist Stephen Hawking (center) enjoys zero gravity during a flight aboard a modified Boeing 727 aircraft owned by Zero Gravity Corp. (Zero G). Hawking, who suffers from amyotrophic lateral sclerosis (also known as Lou Gehrig's disease) is being rotated in air by (right) Peter Diamandis, founder of the Zero G Corp., and (left) Byron Lichtenberg, former shuttle payload specialist and now president of Zero G.

Kneeling below Hawking is Nicola O'Brien, a nurse practitioner who is Hawking's aide.

The modified jet took off from the Kennedy Space Center Shuttle Landing Facility. After the 727 reached an altitude of 24,000 feet, the plane made a series of ascents before plunging into a dive. Each free fall gave all those aboard a feeling of weightlessness for approximately 30 seconds.

At the celebration of his 65th birthday on Jan. 8 this year, Hawking announced his plans for a zero-gravity flight to prepare for a sub-orbital spaceflight in 2009 on Virgin Galactic's space service.

AT THE Shuttle Landing Facility, a modified Boeing 727 aircraft owned by Zero Gravity Corp. takes off with its well-known passenger, physicist Stephen Hawking. Zero Gravity Corp. is a commercial company licensed to provide the public with weightless flight experiences.

WELL-WISHERS greet Stephen Hawking (in the wheelchair) at the Kennedy Space Center Shuttle Landing Facility after a zero-gravity flight. Next to him at left is Peter Diamandis, founder of the Zero Gravity Corp. that provided the flight aboard its modified Boeing 727.

Second part of Kibo module ready for processing

The second of two pressurized components for the Japanese Experiment Module Kibo recently arrived at the Kennedy Space Center. In the Space Station Processing Facility, representatives from both the Japanese Aerospace and Exploration Agency (JAXA) and NASA were on hand to mark the beginning of the final preparations for flight. Teams of Japanese and American technicians will work together to perform checkout and processing activities prior to launch.

Kibo, which means hope, is Japan's first human space facility and its primary contribution to the International Space Station.

This pressurized section will be the first Kibo segment attached to the space station by the crew of the STS-123 shuttle mission, and will serve as a storage area for materials, tools and supplies. In addition, it will deliver eight experiment racks that will later be transferred to the main Kibo laboratory module.

Other speakers at the event included Russ Romanella, director of International Space Station and Spacecraft Processing; Dr. Kichiro Imagawa, project manager of the JEM Development Project Team for JAXA; and Melanie Saunders, associate manager of the International Space Station Program at Johnson Space Center.

AS PART of the ceremony to welcome the final component of the Japanese Exploration Agency's Kibo module, Bill Parsons, director of Kennedy Space Center, talks about the International Space Station.

Starfighter F-104 makes test flights at landing facility

The Starfighter F-104 comes to a stop on the KSC Shuttle Landing Facility after its test flight with pilot Rick Svetkoff and co-pilot Dave Waldrop. The aircraft took part in a series of pathfinder test missions from the space shuttle runway.

The two flights generated test data to validate sonic boom assumptions about the potential impacts of suborbital and orbital commercial spaceflight from the facility. Starfighters Inc. of Clearwater, Fla., will perform the flights to help in assessing suborbital space launch trajectories from the runway and paving the way for future commercial space tourism and research flights from the facility. The company is conductng flights out of the Shuttle Landing Facility under a Space Act Agreement with KSC.

KSC celebrates Asian/Pacific American Heritage Month

Kennedy Space Center will celebrate Asian/Pacific American Heritage Month with a commemorative event from 1 to 2 p.m. May 11 at the KSC Training Auditorium.

Each May, the center honors the achievements and contributions of Asian/Pacific Americans.

The center will celebrate this year's theme, "Pursuing Excellence Through Leadership, Diversity and Unity," with a collaborative commemoration by United Space Alliance's Office of Diversity and Compliance, the Boeing Asian American Professional Association, the Japanese Aerospace Exploration Agency, and the KSC Asian Americans and Pacific Islanders Working Group.

All employees are invited to join the center's senior management at the event. Light traditional refreshments will follow the presentation.

The rich cultural program includes the Honorable Judge Alli B. Majeed from the Brevard County Court, 18th Judicial Circuit, as the guest speaker and several cultural performances.

Contact Diana Navas at *diana.s.navas@usa-spaceops.com* or Paula Nosca Lay at *paula.nosca-lay@boeing.com* for information.

THE ASIAN/Pacific American Heritage Month celebration on May 11 at the Training Auditorium will include this Japanese dance group.

DIAZ . . . *(Continued from Page 3)*

program from the ground up. "This organization is a great place to be," Diaz said. "There's a lot of freedom to do the work to prepare for the next generation of space vehicles."

Diaz works in the Engineering Integration Division of the Ground Projects Branch in the Launch Vehicle Processing Directorate. His work in developing processes for transferring ground systems equipment from the Space Shuttle Program to the Ares 1-X test flight earned him recognition as the May employee of the month from the directorate.

Diaz said he was honored to receive the recognition but was quick to add many people are doing a lot of work to prepare for the Ares test flight. "It brings into focus the group's shuttle work, as well as the work on future programs," he said.

According to Becky Thompson, branch chief for ground systems equipment, Diaz was instrumental in the Launch Pad 39B transition endeavors, which included developing the Pad 39B Hubble Space Telescope launch-on-need plan and the integrated maintenance plan.

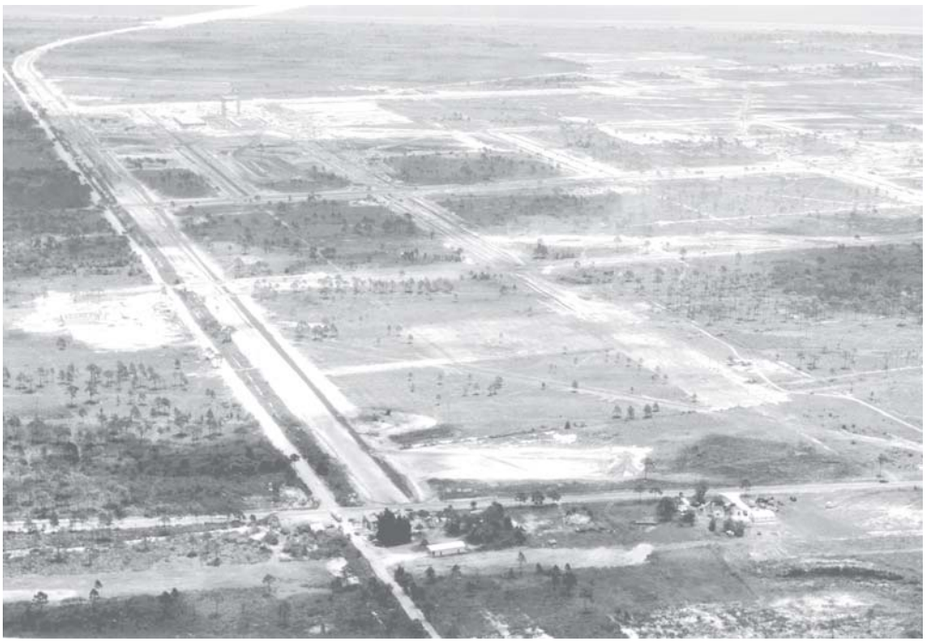
"He demonstrated outstanding leadership abilities as the NASA lead for the teams that developed these plans," Thompson said. "His technical expertise and shuttle ground systems equipment knowledge were key to meeting deadlines and providing quality products for both plans."

Diaz is the ground systems integration lead for the Ares I-X test flight scheduled to launch in the spring of 2009. The test flight will demonstrate ascent flight control system performance. Diaz's work involves developing processes, defining design requirements and ensuring they are integrated within the Engineering Directorate. He also supports the Constellation Directorate with engineering studies.

Remembering Our Heritage

43 years ago: Orsino township gives birth to a space-age city

By Kay Grinter
Reference Librarian



THIS 1963 aerial photo of the Orsino township was taken looking toward the ocean. The land eventually became Kennedy Space Center's Industrial Area, with new facilities, including an office building for the U.S. Army Corps of Engineers, a central telephone exchange and a hypergolic test building.

In May 1964, Kennedy Space Center's industrial area sprang to life on the site of the Orsino township.

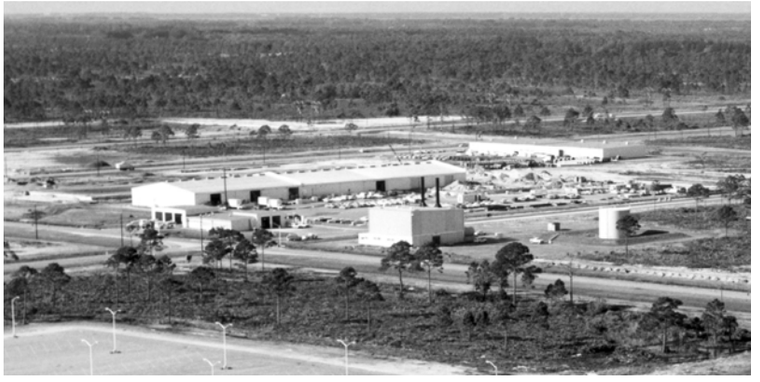
Seventeen essential support buildings in NASA's fledgling spaceport were completed or almost ready for occupancy. The structures provided more than 250,000 square feet of floor space and housing for about 500 employees.

The property had been purchased from private owners by the U.S. Army Corps of Engineers at NASA's direction. NASA also tasked the Corps with overseeing the center's facility construction.

The new facilities included everything from an office building for the Corps, a central telephone exchange and a sewage plant, to a plant maintenance building, heating plant and cable storage area. The area also housed a fire station, shipping and receiving building, dispensary, central supply area, fluid test support facility, hypergolic test building, cryogenics building, radar and boresight structure, and an environmental control structure.

NASA also awarded the Houdaille-Duval Company a contract in May to construct two additional lanes of highway to parallel the existing section of State Route 3 between Orsino and the Wilson township to the north, to support the traffic anticipated between the industrial area and the budding Launch Complex 39.

THE CABLE storage building (above) was one of the first facilities built at the Kennedy Space Center. The central supply area (below) was also located in the old Orsino township.



GRIFFIN . . .

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base system and systems that will get us to Mars. "We cannot let Orion slip any later than 2015," Griffin said.

Although NASA's budget is determined, Griffin said the agency can improve its performance by being clever and working smarter while accomplishing goals.

He emphasized the importance of launch availability, as well as launch safety.

"We don't want to be manifest-driven," Griffin said. "We need to think about the fact that we are designing systems for the future."

The agency needs to consider new ideas and conduct trade studies, according to Griffin.

"In general, we know what our budget is and what it will be," Griffin stated. "It's not going to be easy. There will be some dislocation. The agency is paying attention."

He focused on having 10 healthy centers with everyone at every center performing work that is important to NASA.

Griffin said it is important that the agency fulfills its obligations to its partners by completing the space station before taking on new commitments.

The nation's "civil space" endeavors, which include the Space Shuttle Program, are strategic and important in terms of the country's image and standing in the world. He said space enterprises give America an opportunity to bind the country together with other nations in a productive way.

"We need contributions from many nations," Griffin said. "Partnerships need leaders; the only logical leader is the United States."

Energy management office highlights efficient sources

By Jennifer Wolfinger
Staff Writer

Small changes can make a big impact in the world of energy efficiency. On April 20, Space Gateway Support's Energy Management Office celebrated Earth Day early by teaching Kennedy Space Center employees how to make these changes.

An information booth in the Headquarters Lobby helped workers think globally and act locally, providing the latest updates about fluorescent lighting, renewables, programmable thermostats and Energy Star products, which use less energy, save money and help protect the environment.

Some employees also entered their estimate for the center's April electric bill in hopes of winning packages of compact fluorescent bulbs.

"KSC spends almost $2 million a month on electricity alone. As the cost of utilities is on the rise, we need to work together to conserve and reduce our energy consumption," advised SGS Energy Analyst Florie Raffaele. "At work and at home, shutting down computers and unnecessary lights and equipment, when not in use, is the most effective way to save energy. The easiest measure to reduce energy consumption is to replace your incandescent light bulbs with compact fluorescent lights."

ROY JONAS (second from right) from the Space Gateway Support Energy Management Office talks to employees about energy conservation.

Compact fluorescent lights use at least two-thirds less energy and generate less heat, which can be seen in reduced cooling costs. Replacing one bulb with a compact fluorescent light is equivalent to reducing carbon emissions from 800,000 cars, according to several energy resource groups.

For those unhappy with the lighting these bulbs emit, many are now made to give out pleasant lighting and can be used with a dimmer. Raffaele also suggests using them in areas where lighting effects aren't important, such as garages and hallways.

Another aspect of the event was the Energy Hog Refrigerator Contest, which identified two offices that had the most inefficient refrigerators and replaced them with Energy Star-rated refrigerators. A 50-year-old refrigerator from a Wyle Labs office and an InDyne Inc. office's 27-year-old model were replaced. SGS Mechanical/Energy Engineer Kevin Riley encourages everybody to replace old refrigerators with efficient models when funding becomes available.

The SGS Energy Management Office's continuous mission is to promote energy awareness throughout KSC by providing information and facts about how employees can lower energy consumption at work and in their homes.

For more information, contact Ruth Ann Strunk, supervisor of energy and water management, at 867-8199. For more Energy Star product information, visit **www.energystar.gov**.

FLORIE RAFFAELE and Mike Rector of the SGS Energy Management Office talk about alternative energy sources in the Headquarters Building.

KSC Fitness Centers offer friendly health training options

The friendly atmosphere in the Kennedy Space Center Fitness Centers is apparent when people walk in the door. Whether a person would like to lose weight, get stronger or whatever the goal may be, the staff will help them get there.

The fitness centers, located in the Operations and Checkout Building and the Operations Support Building 1, both have a myriad of programs. There are on-site massage therapists, as well as free personal training, state-of-the art cardiovascular and strength equipment, motivational and incentive programs for healthy lifestyles and a complete group exercise series.

With 20 group fitness classes offered weekly at the KSC Fitness Centers, there are classes for the beginner, intermediate and advanced exerciser. From heart-pumping classes such as "Cardio Medley," "Cardio Boot Camp" and "Sport Conditioning," to serene and calming classes, such as "Yoga Soul" and "Pilates," the group fitness classes provide another way to improve one's quality of life.

Personal training is one-on-one and can include personalized strength, cardiovascular and flexibility training. Visit **www.fitness.ksc.nasa.gov** for information.

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