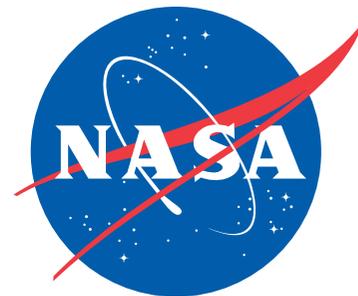


Spaceport News

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



NASA/Glenn Benson

The Shuttle Carrier Aircraft transporting space shuttle Discovery to the Washington Dulles International Airport in Virginia flies over the Vehicle Assembly Building at Kennedy Space Center on April 17. The shuttle will be placed on display in the Smithsonian's National Air and Space Museum Steven F. Udvar-Hazy Center. For more information on shuttle transition and retirement activities, click on the photo.

SpaceX Dragon sets next historic course

By *Steven Siceloff*
Spaceport News

SpaceX crossed another milestone this week as company and NASA officials met April 16 for a thorough Flight Readiness Review ahead of the launch of the Dragon spacecraft on a demonstration flight to the International Space Station.

The Flight Readiness Review, or FRR, is a standard element for NASA, but the upcoming mission is not. As scheduled, the mission will be the first to see a privately built and funded spacecraft rendezvous with the station. If successful, the mission is expected to pave the way toward regular operational commercial cargo missions.

"It's almost like the lead-up to Apollo, in my mind," said Mike Horkachuck, NASA's project executive for SpaceX. "You had Mercury, then you had Gemini, and eventually you had Apollo. This would be similar in the sense that, we're not going to the moon or anything as spectacular as that, but we are in the beginnings of commercializing space. This may

be the Mercury equivalent to eventually flying crew, and then eventually leading to, in the long run, passenger travel in space."

California-based Space Exploration Technologies Corps., known as SpaceX, is preparing to launch an ambitious mission to dock its Dragon spacecraft to the space station and return it to Earth. The spacecraft will not have a crew, but will carry about 1,200 pounds of cargo that the astronauts and cosmonauts living on the station will be able to use. The capsule will go into space atop a Falcon 9 rocket also built by SpaceX.

The FRR set the stage for a launch on April 30, although there are several additional checks to go through, including a test-firing of the Falcon 9's engines.

"Everything looks good heading into the April 30 launch date," said Bill Gerstenmaier, NASA's associate administrator for Human Exploration and Operations. "I think the teams are very well-prepared. They've done

See **DRAGON**, Page 3

Discovery departs Kennedy

By *Anna Heiney*
Spaceport News

Space shuttle Discovery departed Kennedy Space Center for the last time with an early morning takeoff atop NASA's Shuttle Carrier Aircraft (SCA) on April 17.

Instead of blazing a trail toward low Earth orbit, the agency's most-flown shuttle made its way to the Smithsonian's National Air

and Space Museum Steven F. Udvar-Hazy Center in Chantilly, Va.

The SCA transporting Discovery took off from Kennedy at 7 a.m. EDT, just as the first light dawned at the Shuttle Landing Facility. The ferry flight concluded at 11:05 a.m. when the aircraft touched down at Washington Dulles International Airport in Sterling, Va.

Before the departure, in-

vited guests, members of the media and NASA officials were joined at the runway by members of Discovery's first and last astronaut crews for an emotional send-off.

"This is the place where people have really taken care of Discovery for its entire life," said NASA astronaut Nicole Stott, a mission specialist on Discovery's

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'Transformers' spinoffs



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Golden recognition



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2012 All-American Picnic



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Innovation honored



Page 7



Award-winning videos showcase 'Transformers' spinoffs

By Anna Heiney
Spaceport News

The students who produced three award-winning videos took home trophies -- and met the actor who gives voice to a heroic robot in disguise -- at the NASA OPTIMUS PRIME Spinoff Video Contest awards ceremony on April 12 at the Kennedy Space Center Visitor Complex.

"You are the Galileos, the Newtons. You are the adventurers who will build the dreams," said Peter Cullen, the longtime voice of OPTIMUS PRIME, who attended the ceremony and answered questions for the students gathered at the complex's Rocket Garden. "You are the future, and I am proud of you all."

The winning videos are "Eagle Eyes Ultraviolet-blocking lens protect, enhance vision," "A Beautiful Earth, with the Help of Micro-Organisms" and "NASA Vid 2012." Winners received cash awards or scholarship money, as well as the NASA OPTIMUS PRIME trophy etched with the image of the popular TRANSFORMERS leader.



CLICK ON PHOTO

NASA/Jim Grossmann

Peter Cullen, the voice of OPTIMUS PRIME from the TRANSFORMERS franchise, addresses students and teachers involved with the NASA OPTIMUS PRIME Spinoff Video Contest in the Rocket Garden of the Kennedy Space Center Visitor Complex on April 12. To view all of the contest videos, click on the photo.

NASA's spinoff technologies are innovations originally designed for space-flight, but transformed into products that improve daily lives.

Now in its second year, the OPTIMUS PRIME Spinoff Video Contest asks students in grades three through 12 to study NASA spinoff technologies and produce short, creative videos promoting their favorites.

"I've been sent out around the country to find some of the smartest, most-talented, creative (school-age) kids in the nation to see if any of them might one day want to be a future scientist or

astronaut or engineer," said Jim Stofan, NASA's deputy associate administrator for Education.

The first person to walk on Mars is probably between fourth and eighth grade today, according to Stofan, who asked for a show of hands from students in those grade levels. "One of you might be the person who actually sets the first step on Mars," he said.

The contest, run by NASA Goddard Space Flight Center's Innovative Partnerships Office in Greenbelt, Md., is designed to help students see the benefits of NASA technology here on Earth. NASA

collaborated with Hasbro in using the company's iconic OPTIMUS PRIME character.

Students provided their completed videos to NASA, which posted them on YouTube, where members of the public could vote for the best productions. NASA judges selected winners from the top five videos in each age group: grades three to five, six to eight and nine to 12.

So, what's the connection with OPTIMUS PRIME, leader of the AUTOBOT warriors in the fictional world of the TRANSFORMERS? Like NASA's spinoff technologies, OPTIMUS PRIME was built for space, but changes into something useful while on Earth -- in his case, a slick, armored semi-truck.

Cullen has provided the voice of OPTIMUS PRIME since the television cartoon's inception in 1984, and his history with the character extends to all three live-action movies and the current computer-animated television series from Hasbro Studios, "Transformers: Prime" airing on the Hub TV Network.

"You have shown rare skill

in illustrating the innovations of the men and women at NASA," said OPTIMUS PRIME in an animated message for students. "You have inspired fellow humans to seek out new solutions to the problems you face. You are heroes."

Space shuttle astronauts Jon McBride and Wendy Lawrence also celebrated with the winners and emphasized the importance of education in their own lives and in the eventual careers of today's students.

"When I was 10 years old, we did one of the most remarkable things in the space program -- which was to put humans on the moon for the first time -- and that had a profound impact on the direction of my life," Lawrence said. "The key to making a dream like that come true is doing exactly what you're doing now. Staying in school and getting that good education -- that truly is going to be the foundation you build the rest of your life on."

TRANSFORMERS, AUTOBOT, and OPTIMUS PRIME are trademarks of Hasbro and used with permission. © 2012 Hasbro. All rights reserved.

GOES-R, GOES-S wear crown of latest, greatest technology

By Brittny Longley
Spaceport News

For more than 30 years, the Geostationary Operational Environmental Satellite system known as GOES has been used by NASA and the National Oceanic and Atmospheric Administration (NOAA) to help provide accurate weather forecasting on Earth and in space.

With each new series, the satellites are built with improvements to enhance their use and effectiveness. More recently, NASA and NOAA created a new series of GOES satellites called GOES-R and GOES-S.

"The GOES-R series is an advanced spacecraft and instrument technology that will support expanded detection of environmental phenomena," said Diana Calero, NASA mission manager with the Launch Services Program (LSP).

The satellites will assist NOAA in monitoring water, weather, climate and ecosystems. Calero said upgrades to the series will include higher resolution images, lightning detection, solar space monitoring and higher data capabilities.

LSP selected United Launch Services to launch GOES-R and GOES-S in October 2015 and February 2017, respectively, aboard

Atlas V rockets from Space Launch Complex-41 at Cape Canaveral Air Force Station in Florida.

The GOES satellites have been a collaborative effort between NASA and NOAA for many years, successfully creating and launching 15 previous satellites. The GOES-R and GOES-S Flight Projects Office, which oversees the development of the space segment, is managed by NASA's Goddard Space Flight Center in Greenbelt, Md.

"NASA's role is to provide oversight of the development of the space segment, which consists of the spacecraft, its instruments, the launch vehicle and the auxiliary

communications payloads," Calero said.

NOAA's responsibilities include the overall programmatic responsibility and procurement of ground facilities, antenna sites, and software and hardware for satellite command and control. NOAA also processes, creates and distributes the data the satellites retrieve to researchers and weather forecasters.

Calero said, "With the new GOES-R series, we will receive new and accurate data that directly affects public safety, protection of property, and ultimately, economic health and development."



Ordnance Operations Facility earns LEED Gold

By Frank Ochoa-Gonzales
Spaceport News

The teams at NASA's Kennedy Space Center in Florida that routinely test explosive devices can now carry out their missions in an environmentally friendly facility.

On March 28, the center's Ordnance Operations Facility (OOF) received the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Gold rating. This is the sixth facility at Kennedy and the 26th for NASA to be recognized as sustainable.

"The OOF takes Kennedy's total sustainable square footage to 76,570 square feet," said Mick Barth, a LEED accredited professional with the Center Operations Directorate, who served as the OOF's project manager and lead design engineer.

Ed Tobin, with Center Operations, led the construction of the 3,500-square-foot facility.

It was designed by Eli Schoen with the directorate's Environmental



NASA

Kennedy Space Center's Ordnance Operations Facility (OOF) received the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Gold rating on March 28.

Management Branch.

The general contractor, Canaveral Construction Company Inc., completed the project three months ahead of schedule and under budget, Barth said.

Selecting and sizing the geothermal heat pump system, Barth said, was one of the many exciting challenges to designing the administrative office building.

LEED awards are designed to encourage and facilitate the development of more sustainable buildings. The system is based on the use of sustainable sites, materials and resources, water and energy efficiency, indoor environmental quality and design innovation.

Contributing to the award of LEED Gold, the OOF will receive about 20 percent of its power from a 5-kilowatt photovoltaic system located on the ground south of the

building. The facility is heated and cooled with a 3.5-ton geothermal heat pump system located six feet below the ground, also to the south of the facility.

The OOF is expected to achieve 34 percent energy use reduction and a 49 percent water use reduction compared to traditional buildings, on an annual basis.

Savings during construction include 95.8 percent waste diversion from landfill (144 tons) and 33.9 percent of the building materials were manufactured using recycled materials.

Not only is the facility good for the environment, it's good for the people working inside, too since 97.3 percent of the building is lit by natural daylight.

"By using less energy, less water and fewer resources, this facility will save the taxpayers money, reduce

CURRENT KENNEDY LEED FACILITIES

- Ordnance Operations Facility**
Certified Gold on March 2012
- Electrical Maintenance Facility**
Certified Gold on October 2011
- Propellants North**
Certified Platinum August 2011
- Visitor's Complex Artifact Storage**
Certified Silver July 2010
- Life Support Facility**
Certified Silver April 2009
- Visitor's Center**
- Food Storage Warehouse**
Certified Silver July 2007

POTENTIAL KENNEDY LEED FACILITIES

- Propellants South – Targeting Gold
- O&C Revitalization – Targeting Silver
- OSB II Retrocommissioning – Targeting Silver
- Central Campus – Targeting Gold

carbon emissions and contribute to a healthier environment for workers," Barth said.

The facility houses about 10 employees who work for Space Coast Launch Services and the Air Force, depending on the requirements for each mission.

Barth said, "The center is going to see more green buildings popping up to meet NASA's sustainability policy, which is to execute missions without compromising our planet's resources so that future generations can meet their needs."

| LEED'S LATEST RATING SYSTEM | |
|-----------------------------|-----------------|
| Rating | Points Required |
| Certified | 26-32 |
| Silver | 33-38 |
| Gold | 39-51 |
| Platinum | 52+ |

From DRAGON, Page 1

a tremendous amount of work getting ready."

Another review will be April 23, Gerstenmaier said. There is a single instantaneous launch opportunity at 12:22 p.m. EDT.

Elon Musk, the owner of SpaceX and the company's chief designer, said his team is not taking the mission's objectives for granted.

"We have launched the rocket twice and the spacecraft once so they are pretty new, and the proximity operations will be our first test in space," Musk said. "I think it's important to appreciate that this is fairly tricky, and it is important to remember that we are hitting a target within a few inches while it moves over 17,000 mph."

If this mission is successful, the Dragon is expected to become operational and launch regular supply runs to the station this year. Unlike any other cargo carrier, the Dragon can bring things back to Earth, too, a boon for scientists whose research is taking place on the orbiting laboratory.

"I think the (first demonstration) mission was

more of a question mark in my mind," Horkachuck said, "because no capsule that these guys had built before had gone into space, done the basic maneuvering to show you have attitude control, as well as re-entering, so knowing the vehicle came through re-entry relatively unscathed and all the parachute systems worked perfectly, that was a real big deal."

Because of that mission's achievements, NASA and SpaceX agreed to combine the planned second and third demonstration flights into one. Assuming the Dragon spacecraft passes about a few days' worth of equipment checks and demonstration in orbit, it will be allowed to approach the station close enough for astronauts to grab the capsule with the station's large robotic arm. The arm will berth the Dragon to the station and astronauts will unload the spacecraft and put about 1,400 pounds of material inside the Dragon for return to Earth.

The mission is expected to last about 21 days, Horkachuck said.

Getting the rocket, spacecraft and overall

mission together has been a learning experience, Horkachuck said. For instance, SpaceX learned how much more work would be involved in flying to a space station with a crew on board.

"One of the refreshing things has been, once you convince SpaceX they need to make a change and it's the right thing to do from a technical perspective, they just go off and do it," Horkachuck said. "There's not a lot of wrangling."

The rocket and capsule are at Cape Canaveral Air Force Station undergoing final preparations ahead of the launch. For Horkachuck, the three weeks in orbit will be filled with the tension familiar to anyone involved with a spaceflight, he said.

"Once Dragon gets into orbit and is operating, there's certainly going to be a big cheer," he said. "But I think most of the big events and dynamic events in this spaceflight really culminate when you finally have splashdown. Throughout the mission, there will be moments of panic followed by long periods of calm."



A Look Inside Discovery's Ride

NASA's Shuttle Carrier Aircraft (SCA), designated NASA 905, was the first carrier to begin ferrying space shuttles from their landing sites to their launch complex at NASA's Kennedy Space Center. The agency's other SCA was designated NASA 911 and retired in February. Often referred to as jumbo jets, the aircraft are modified Boeing 747s that feature three struts, two at the aft end and one at the forward end, where the shuttles are attached for flight. For a ferry flight mission, the crew consists of two pilots and two flight engineers. These photos were taken April 11.

Photos by NASA/Frankie Martin



A maintenance technician from NASA's Dryden Flight Research Center in California checks controls inside NASA's Shuttle Carrier Aircraft.



Maintenance technicians from NASA's Dryden Flight Research Center in California check equipment in the fuselage of NASA's Shuttle Carrier Aircraft.



An interior view of the crew cabin inside NASA's Shuttle Carrier Aircraft.

Delivering Discovery to D.C.

From **DISCOVERY**, Page 1

final flight, STS-133. Before joining the ranks of the astronaut corps, Stott worked in a variety of shuttle-processing roles at Kennedy.

"It's like sending someone from your family to go live somewhere else," Stott said. "Discovery's leaving home and starting a new life somewhere else."

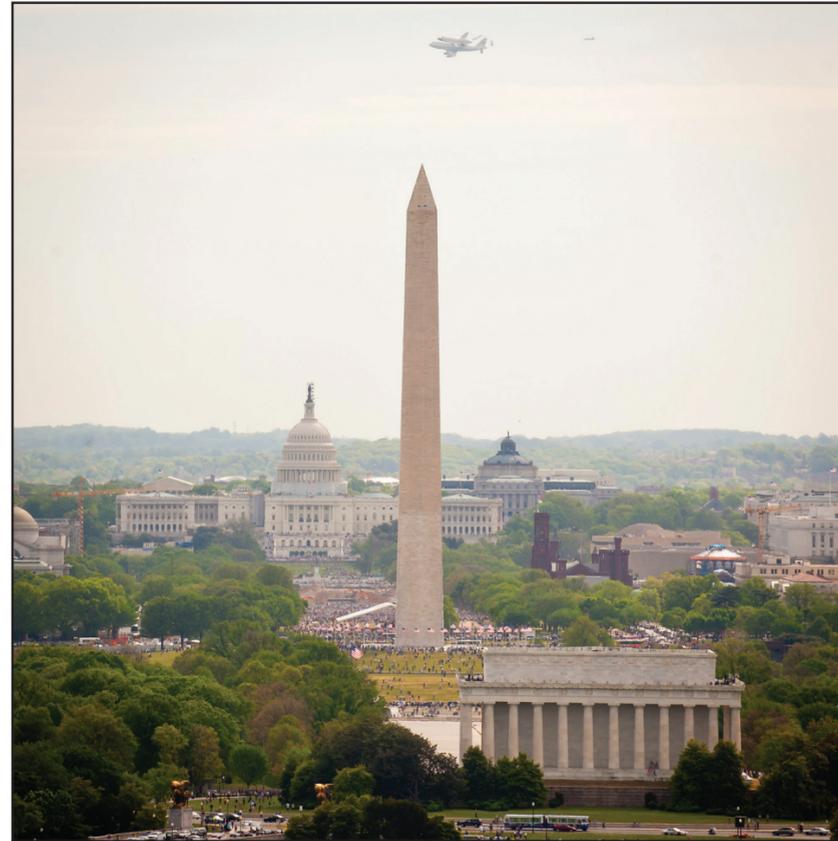
The spacecraft's retirement journey began with the ferry flight. It was removed from the SCA and relocated to the Udvar-Hazy Center on April 19.

Designated NASA 905, the aircraft carrying Discovery to Virginia is the same one that first delivered the spacecraft to Kennedy on Nov. 9, 1983. The aircraft is one of two modified 747 jets the agency used to ferry orbiters during the Space Shuttle Program.

Discovery flew 39 missions, more than any other vehicle in the fleet. Its 26-year spaceflight career began Aug. 30, 1984, when it carried six astronauts into orbit on the STS 41-D mission. The Hubble Space Telescope was deployed from Discovery's payload bay. The spacecraft also completed the first space shuttle rendezvous and the final shuttle docking with the Russian space station Mir. Astronaut and U.S. Senator John Glenn rocketed into orbit aboard Discovery as a member of the STS-95 crew -- 36 years after his pioneering Mercury flight.

After the Challenger and Columbia tragedies, it was Discovery that led the space shuttle fleet back to orbit. It docked with the International Space Station 13 times and supplied more than 31,000 pounds of hardware as the laboratory grew.

The STS-133 mission to the space station was Discovery's final spaceflight. Led by Commander Steve Lindsey, the six-person shuttle crew delivered the Permanent Multipurpose Module, offering extra room for science tasks and storage, and Robonaut 2, a humanoid robotic helper. On March 9, 2011, Discovery's main landing gear touched



Space shuttle Discovery, mounted atop a Shuttle Carrier Aircraft, is seen from Top of the Town in Arlington, Va., as it flies near the U.S. Capitol on April 17 in Washington. Discovery, the first orbiter retired from NASA's shuttle fleet, completed 39 missions, spent 365 days in space, orbited the Earth 5,830 times, and traveled 148,221,675 miles.

down for the last time on Kennedy's Runway 15. It traveled more than 148 million miles and spent a total of one year in space.

Discovery functioned "amazingly well" on that flight, according to Mission Specialist Alvin Drew. "That was the first time I've ever seen a mission when the shuttle lands with a clean rap sheet," Drew said.

He recalled a conversation with members of Discovery's processing team. "They were beaming with pride and said, 'We're the pros. This may be the last one, but we're going out on top of our game.' That was their message. 'We're going to give you the best orbiter you've ever flown in your life.' And they did."

That final homecoming kicked off a "transition and retirement" phase as the shuttle processing team worked to prepare the spacecraft for public display. Its main engines were removed and replaced with mock-ups, sparing the working engines for reuse in NASA's under development Space Launch System heavy-lift rocket. The

technicians permanently powered down the vehicle. Soon after, an aerodynamic tail cone was fastened over the orbiter's main engines, and the crew access hatch was closed and sealed for the last time.

"I spent the better part of my career, starting in 1988, working on Discovery in one capacity or another," Pannullo said. "I will miss seeing her in the OPFs (orbiter processing facilities) and going inside the crew module. But mostly, I will miss the excitement of the beautiful launches and landings she provided."

The transition and processing team will go through a similar process again later this year when shuttle Endeavour moves from Kennedy to the California Science Center in Los Angeles. Shuttle Atlantis will remain at Kennedy in a new exhibit at the center's visitor complex.

"Working with the Smithsonian team has been wonderful," said Stephanie Stilson, NASA flow director within the Shuttle Transition and Retirement Directorate. "Their passion for not only telling the story of this amazing spacecraft, but also the team behind Discovery's proud history, has made it easier to accept that we will no longer have the honor and privilege of caring for Discovery."

At Kennedy's Shuttle Landing Facility, busloads of guests gathered before dawn for the perfect view of Discovery's departure. A hush descended over the crowd as a procession of aircraft -- a helicopter, T-38 jet, and finally, Discovery and its ride -- moved to the north end of the runway for takeoff. As with all ferry flights, a "pathfinder" aircraft also departed with the SCA. The NASA C-9 jet flew about 100 miles ahead of Discovery to scout for the safest route between Kennedy and Dulles.

The SCA took Discovery on one last aerial tour of Florida's Space Coast. It also flew above the Kennedy Space Center Visitor Complex, Vehicle Assembly Building and Kennedy Press Site before making one more pass over the Shuttle Landing Facility on its way out of the area for the final time.

See Discovery Leave

To hear what the crew of STS-133 had to say about the ferry flight, [click here to watch the video.](#)



NASA/Kim Shifflett

Space shuttle Discovery completes a three-point turnaround April 14 outside the Vehicle Assembly Building at Kennedy Space Center, for its trip to the Shuttle Landing Facility.



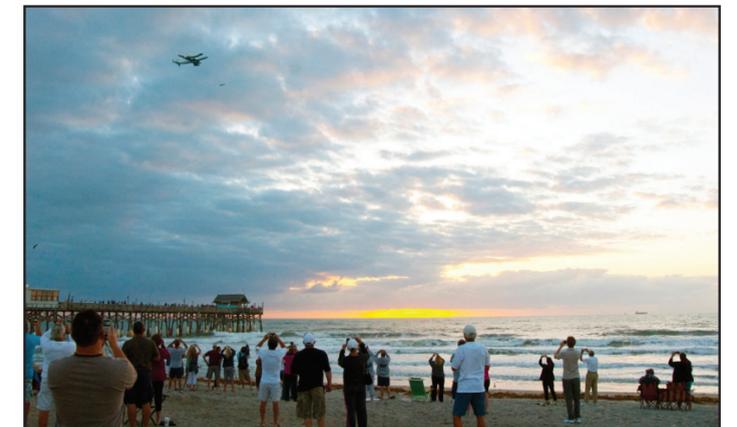
NASA/Kim Shifflett

At the Shuttle Landing Facility at Kennedy Space Center, the Shuttle Carrier Aircraft is positioned beneath space shuttle Discovery in the mate/demate device on April 15.



NASA/Kim Shifflett

An aerial view of space shuttle Discovery bolted to the top of a Shuttle Carrier Aircraft on the ramp of the Shuttle Landing Facility at Kennedy Space Center on April 16.



NASA/D. Lee

The Shuttle Carrier Aircraft transporting space shuttle Discovery, accompanied by a T-38 jet, flies over the Cocoa Beach pier just after sunrise on April 17.



2012 KSC All-American Picnic



Children of all ages choose from dozens of activities, including rock climbing, corn hole, human jousting and lazer tag. The train ride and bounce houses were a hit as well.



The potato sack race brought out the competition.

More than 3,000 people attended the 2012 Kennedy Space Center All-American Picnic on April 14 at KARS Park I on Merritt Island, Fla.

This year's picnic celebrated 50 years of success at Kennedy with food and fun, classic children's games, train rides, a singing competition called KSC Idol, exhibits, a chili cook-off, and car and motorcycle show.

Share your thoughts

Give your feedback on the 2012 KSC All-American Picnic by filling out a survey here.

NASA photos by Frankie Martin and Amanda Diller



NASA astronauts Jack Fischer and Serena Auñón, members of the 2009 astronaut class, and STS-118 and STS-133 Mission Specialist Alvin Drew (not shown), meet with workers and their families.



The annual chili cook-off was a hit with the GP-O.K. Corral winning first place for Storefront; The Dragon Slayers winning the People's Choice; and The Parrot Heads taking home the Judges' Choice.



Children and adults snacked on corn on the cob, cotton candy and snow cones.



Flexible aerogel, innovator earn hall of fame honors

By Linda Herridge
Spaceport News

Technology called flexible aerogel that originated in a research lab at Kennedy Space Center and its senior principal investigator James Fesmire were inducted into the International Space Foundation's Space Technology Hall of Fame during the 28th National Space Symposium in Colorado Springs, Colo., on April 19.

During the past 10 years, aerogel blankets have been used inside the space shuttle and on a number of ground support systems, including the launch tower and vehicle umbilicals. Aerogel blankets also were used for insulation on the space shuttle external fuel tank's hydrogen vent umbilical system interface connection.

This technology could be applied to cryogenic pipes and tank insulation on future space launch systems and in thermal protection systems on crew vehicle exteriors.

Fesmire, the senior principal investigator of the Cryogenics Test Laboratory at Kennedy, received an Innovating Individuals award for his work in pioneering the technology. Aspen Aerogels Inc. of Northborough, Mass., and Aspen Systems Inc., of Marlborough, Mass., received the Innovating Organizations award for their role in producing flexible aerogels for commercial use.

"I'm thankful for the privilege to work at Kennedy and serve NASA by helping to develop this new aerogel blanket technology," Fesmire said. "The thermal insulation applications are conserving energy for our nation and changing the world for the better."

Aspen Aerogels Vice



Photo courtesy of Thomas Kimmell, Space Foundation

Kennedy Space Center Deputy Director Janet Petro, right, and senior principal investigator James Fesmire at the 28th National Space Symposium in Colorado Springs, Colo., on April 19.

President of Research and Development George Gould said that it takes a long time and a huge amount of effort and investment to develop commercially useful materials-based technology.

The aerogel blankets are critical in NASA's current research and development funded by the Office of the Chief Technologist for new intelligent composite materials for future thermal management in space vehicles, exploration and habitation applications.

Fesmire said the aerogel blanket materials are used for a number of space cold chain articles, such as the Glacier late-load demonstration test for SpaceX's Falcon 9 rocket and Dragon capsule at Space Launch Complex-40 at Cape Canaveral Air Force Station. Glacier is a cryogenic freezer for the International Space Station and future vehicles.

Fesmire said he first got the idea for flexible aerogels in 1992 and led the development of the technology through NASA's Small Business Innovation Research Program with startup company Aspen Systems

Inc. starting in 1993. This initial work also paralleled his founding of the Cryogenics Test Laboratory at Kennedy in 1997 with industry partner Dr. Stan Augustynowicz.

The aerogel originally was developed to serve as a barrier to the extreme temperatures that occur during rocket launches and that affect spacecraft as they are exposed to high heat and severe cold.

To meet NASA's needs for efficient launch vehicles and facilities, Fesmire collaborated with Aspen Systems to produce affordable and easy-to-use aerogel composite blankets for space applications.

"Materials that we can now buy as needed from Aspen Aerogels have become an absolute staple in the design and construction of equipment and facilities and a critical part of the future research work for space launch and exploration," Fesmire said.

"The aerogel blanket doesn't absorb water, is mechanically robust and is the best insulator in the world," Fesmire said. "It can go where other insulators cannot."

Commercial applications include sub-sea piping for oil and gas, liquefied natural gas terminals and ships, building construction, outdoor apparel and numerous consumer goods, including stadium seats and shoe inserts. Fesmire said there also may be future applications in the arenas of hydrogen-powered transportation and super-

conducting electrical power transmission, and he is looking for inroads with the Departments of Energy and Homeland Security and the U.S. Navy.

"These products give engineers, designers and architects access to very high-performance and affordable insulation that is uniquely thin and light, and we will see many new technologies emerge that are enabled by flexible aerogel blanket insulations for years to come," Gould said.

Fesmire previously received the NASA Exceptional Technology Achievement Medal in 2009, and the R&D 100 Award for Flexible Aerogel Superinsulation with Aspen Aerogels in 2003.

"I think it is a good thing, and what citizens expect, for NASA to foster the creative work and innovation to help make industry go and solve problems in the world," Fesmire said. "I am very thankful to have been given the opportunity to be a part of such long-range work with the contributions of so many people and see it come to success."



NASA/Amanda Diller

A cold storage team member checks an International Space Station experiment cryogenic freezer, called a Glacier unit, inside the Space Station Processing Facility at Kennedy Space Center on March 2. The freezer utilizes the aerogel blanket technology which is targeted to launch aboard the Space Exploration Technologies Corp. (SpaceX) Dragon capsule on April 30.



In celebration of Kennedy Space Center's 50th anniversary, enjoy this vintage photo . . .

FROM THE VAULT



NASA file/1976

This aerial view of the Vehicle Assembly Building taken June 24, 1976, shows the Bicentennial Exhibit domes, and in the background, construction of an orbiter processing facility.



Workers walk, run, have fun in the sun

About 280 people, including some 45 volunteers, participated in the 2012 KSC Annual Walk/Run at the Shuttle Landing Facility on April 3. Sponsored by Kennedy's Fitness Center, the goal of the event was to motivate center employees to get moving. Participants chose to walk or run 2 miles down the runway, rollerblade, or run a 5 or 10K.



Looking up and ahead . . .

* All times are Eastern

2012

| | |
|--------------------------|---|
| Targeted for April 30 | Launch/CCAFS (SLC-40): SpaceX Falcon 9, Dragon C2/C3 Launch time: 12:22 p.m. |
| No earlier than May 5 | Launch/CCAFS (SLC-41): Atlas V, AEHF 2 Launch window: 2:38 to 4:38 p.m. |
| June (Under Review) | Launch/Reagan Test Site Kwajalein Atoll: Pegasus XL, NuSTAR Launch window: TBD |
| No earlier than June 28 | Launch/CCAFS (SLC-37B): Delta IV-Heavy, NROL-15 Launch window: TBD |
| No earlier than Aug. 23 | Launch/CCAFS (SLC-41): Atlas V-401, Radiation Belt Storm Probes (RBSP) Launch window: 4:07 to 4:27 a.m. |
| Targeted for Sept. 20 | Launch/CCAFS (SLC-37B): Delta 4, GPS 2F-3 Launch window: TBD |
| Dec. 1 | Launch/VAFB: Pegasus XL, Interface Region Imaging Spectrograph (IRIS) Launch window: 9:32:24 to 9:37:24 a.m. |
| No earlier than December | Launch/CCAFS (SLC-41): Atlas V, Tracking and Data Relay Satellite-K (TDRS-K) Launch window: TBD |



John F. Kennedy Space Center

Spaceport News

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