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Spaceport News

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

21st Century Program passes major milestone

By Steven Siceloff
Spaceport News

The program tasked with setting up NASA's Kennedy Space Center to host an array of launchers and spacecraft passed a milestone last week with the completion of the 21st Century Ground Systems Program's Mission Concept Review.

"It gets all of our stakeholders on board," said Scott Colloredo, chief architect for the 21st Century Ground Systems Program. "We feel good about it."

The program is one of two new NASA programs that basically opened their doors at Kennedy in the past year or so. The other is the Commercial Crew Program. They join the Launch Services Program, which moved to Kennedy in 1998.

The 21st Century Ground Systems Program is a big step for NASA and Kennedy in that it is set up to accommodate a number of rockets with new techniques and parcel out the center's extensive array of facilities to several users.

Launch Pad 39B is envisioned as a site that could see the liftoff of NASA's new Space Launch System super rocket one week, and commercial company rockets and spacecraft the week after that.

Previously, launch infrastructure management was a project that was tied strongly to an individual launcher and spacecraft, such as the space shuttle.

"We've kind of graduated from a project to a program," Colloredo said. "It's exciting in a lot of ways. It's tough."

The organization already has made numerous decisions about what roles landmark facilities at Kennedy will play in future launches, although there are many more choices to make. For example, the Space Launch System under development will need only one high bay in the Vehicle Assembly Building, or VAB, along with one mobile launcher. So, the new program is working with other rocket companies that want to use other bays in the VAB for their own processing work.

"There are a lot of big decisions that are going to impact for a generation."

When program officials are considering what changes to make to Kennedy facilities, they place a premium on keeping options open so as many launchers as possible can use a given facility. When Launch Pad 39B was refurbished, for example,

See **MILESTONE**, Page 2

CLICK ON PHOTO *NASA/Cory Huston*

Kennedy Space Center Director Robert Cabana (white shirt in front of group) and other support personnel accompany the mobile launcher, or ML, as it rolls from Launch Pad 39B to the park site near the Vehicle Assembly Building at Kennedy Space Center. Data on the ML collected from structural and functional engineering tests during its two-week stay on the pad will be used in the next phases of construction. For more information, click on the photo.

Inside this issue...

NASA honors volunteers for helping to shape future

By Stephanie Covey
Spaceport News

Sharing plans for future space exploration is as important as ever as NASA transitions from the Space Shuttle Program to the Space Launch System heavy-lift rocket, Orion and the Commercial Crew Program and Kennedy Space Center has just the people to do it.

Kennedy relies on a core of more than 700 volunteers consisting of current and retired employees who share a strong passion for NASA and the space program. On Dec. 1, these volunteers were recognized at the Apollo/Saturn V Center for dedicating their time to spread information about the center's mission through educational programs and VIP guest and media tours, as well as launch support throughout the year.

Center Director Bob Cabana thanked the volunteers during the presentation and said their communication with the public helps NASA better educate about the past and future of the center.

Bob Sieck, former launch director for more than 50 shuttle launches and a current volunteer, said when he retired it was very hard for him to leave something that was such a big part of his life for so long. He said Kennedy was like a home to him.

"The legacy of the past is a big part of the future at KSC," Sieck said.

Debbie Billias, who has worked at Kennedy for 41 years, has volunteered for 15 of those years. She is very passionate about the shuttle program. In fact, she joined the Kennedy team in time to see the STS-1 mission launch and saw all 135 shuttle launches.

"I enjoy seeing the looks on children's faces when they see the shuttle launch," Billias said. "I love the rumbling in my chest. It is a part of history, and I am glad that I got to be a part of it."

Although Billias is planning to retire at the end of the year, she is not planning to stop volunteering. In fact, she's already signed up to continue.

Valencia Mitchell has worked at Kennedy for 33 years and currently is the construction administrator. She said she loves being here at Kennedy because she feels part of each mission.

Mitchell is on the tiger team, a group of volunteers that lead tours across the center. She said she loves to volunteer at Kennedy because she is able to see and experience a launch up close. It is an experience so few people ever have.

"The event really shows our appreciation to the volunteers for public outreach and conveying the NASA story to the outside world," said Tiffany Fairley, program/project coordinator for ReDe/Critique.

Fairley said volunteers are essential to raise awareness of what NASA has done, is doing and will do in the future.

More information

For more information about volunteering at Kennedy Space Center, contact Wendy Dankovchik at 867-3005 (**wendy.dankovchik-1@nasa.gov**) or Tiffany Fairley at 867-7986 (**tiffany.l.fairley@nasa.gov**).

From **MILESTONE**, Page 1

the result was a "clean pad" with no fixed servicing tower or permanent clean room, both of which were needed to support the space shuttles.

Instead, designers made room for the things every launcher will need, such as a water sound suppression system, electronics and data links, and a flame trench to funnel exhaust away from the rocket.

"We want to be flexible, evolving, as multi-use as possible," Colloredo said. "The clean pad approach was a big part of that."

The redone Launch Pad 39B got a glimpse of the future recently when workers moved the 355-foot-tall mobile launcher (ML) into place for tests. After two weeks at the pad, the ML was driven back to its park site beside the VAB atop one of the two crawler-transporters.

The structural testing and systems checks on the ML went well, Colloredo said.

"It's the first time we've done something like that in a long time," he said. "The clean pad functioned like we thought it would."

The mobile launcher took two years to build and will go through some modifications to host the Space Launch System, or SLS. The SLS is NASA's booster that is being developed to launch astronauts to an asteroid, Mars and other deep-space destinations aboard the agency's new Orion spacecraft.

The SLS is a modular rocket allowing components of the system to be mixed and matched to suit the payload and mission. Therefore, engineers are making the mobile launcher capable of hosting five different versions of the SLS.

The SLS and ML are expected to remain at the pad for only five days before launch, a far cry from the weeks a shuttle would spend there getting ready for liftoff, but there will be a certain tie between the ML and the shuttle pads, Colloredo said.

The orbiter access arm used at Launch Pad 39A is going to be used as the crew access arm on the ML, meaning that astronauts getting into the Orion spacecraft will stride down the same metal walkway shuttle astronauts used.

With the mission concept review completed and the testing on the ML successful, Colloredo said the 21st Century Ground Systems Program is starting to show results from the months of work, studies and decisions that have been under way.

"There's a lot of work going on that a lot of people don't realize," he said. "We feel good about it."

CLICK ON PHOTO *NASA/Jim Grossmann*

Members of the media tour several facilities Nov. 21, including the Operations & Checkout Building high bay where NASA's Multi-Purpose Crew Vehicle Orion will be processed, during the 21st Century Ground Systems Program Tour at Kennedy Space Center. Other tour stops were the Launch Equipment Test Facility, the Multi-Payload Processing Facility and the Canister Rotation Facility. NASA's 21st Century Ground Systems Program was initiated at Kennedy Space Center to establish the needed launch and processing infrastructure to support the Space Launch System Program and to work toward transforming the landscape of the launch site for a multi-faceted user community. For more on Orion, click on the photo.

Students explore life in space during Brevard Space Week

By Linda Herridge
Spaceport News

What's it like to live and work in space? Almost 6,000 Brevard County sixth-graders had a rare opportunity to experience this and much more during the ninth Brevard Space Week at the Kennedy Space Center Visitor Complex from Nov. 29 through Dec. 9.

Educator Resource Center (ERC) Education Specialists Linda Scauzillo and Laura Colville presented two programs daily in the IMAX II Theater to groups of students and teachers from about 30 elementary schools in the county. The program topics included Space Shuttle Program history; how vehicles are launched; NASA's continued presence on the International Space Station; and robotics and the use of the robotic arm on the space station.

In its ninth year, Brevard Space Week is designed to encourage young students' interest in science, technology, engineering and mathematics (STEM) curricula.

"Science is my passion. It's fun to experiment and show the students hands-on science activities," said Colville, who was a science teacher at Eau Gallie High School before coming to Kennedy in 2001.

During one of the programs Dec. 2, Colville demonstrated the properties of liquid nitrogen and how it reacts with objects such as an inflated balloon and a leaf. She then invited several students to participate in hands-on demonstrations, including using tools and sleeping in space.

Colville said the most common question she is asked is how astronauts go to the bathroom in space. But many students also ask other creative questions about how astronauts eat in space and how liquid nitrogen is stored.

Scauzillo, who was a K-6 educator in Brevard County for 10 years, has been at the ERC for nearly five years and involved with Brevard Space Week since 2007.

"The most interesting question I've been asked is, 'What do we still have to learn to be able to live on the surface of Mars?'" Scauzillo said. "I found it interesting because the sixth-grade student was thinking about all of the information that we need to gather before implementing a mission to Mars."

Scauzillo said the question shows even children as young as those in elementary school are thinking about the future and the possibilities for space exploration.

"Brevard Space Week is important because it inspires students to study STEM disciplines and helps them realize the opportunities that are available to them," Scauzillo said.

Before the start of space week, a special workshop was held Nov. 16 for about 90 sixth-grade teachers at the Brevard County School Board office in Viera.

The topic on how to design a lunar thermos was one that had been requested by the educators.

The students' day excursion also included a tour of the visitor complex, a meet and greet with an astronaut and viewing of the Hubble 3D film.

Some major sponsors of this year's Brevard Space Week include the Brevard Schools Foundation, National Space Club, Lockheed Martin, Boeing, United Space Alliance, and Delaware North Companies Parks and Resorts.

More online

NASA links for educators: **www.nasa.gov/audience/foreducators/Alpha_index.html**
NASA links for students: **www.nasa.gov/audience/forstudents/index.html**
About NASA Education: **www.nasa.gov/offices/education/about/index.html**
Brevard Schools Space Week: **http://spaceweek.brevardschools.org/**

NASA/Jim Grossmann

Hundreds of sixth-graders from Brevard County schools participated in Brevard Space Week from Nov. 29 through Dec. 9 at the Kennedy Space Center Visitor Complex in Florida.

Scenes Around Kennedy Space Center

CLICK ON PHOTO NASA/Cory Huston

An Orion flight test capsule makes a splash into the Atlantic Ocean as it slides from the deck of NASA's Liberty Star ship into the water Dec. 2. The Crew Module Recovery Attach Fitting Test on the capsule, which began at-sea operations Nov. 29, is under way. Multiple attach clips are being evaluated against the current recovery cleat configuration by U.S. Air Force pararescue jumpers (PJs) and a U.S. Navy diver. The 21st Century Ground Systems Program will use data collected from the tests to help develop ground operations support equipment that could be used to recover an uncrewed Orion flight test capsule after splashdown. The Orion Multi-Purpose Crew Vehicle is NASA's next-generation spacecraft being developed for deep space missions to asteroids, moons and other interplanetary destinations throughout the solar system. For more information on Orion, click on the photo.

NASA/Kim Shiflett

Development of Exploration Park is underway near the Space Life Sciences Laboratory (SLSL) at Kennedy Space Center on Nov. 28. The first phase will encompass 60 acres just outside Kennedy's security gates. Nine buildings will provide 350,000 square feet of work space, including educational, office, research and lab, and high-bay facilities. Each building is expected to be certified in the U.S. Green Building Council's Leadership in Environmental and Energy Design (LEED). Exploration Park is designed to be a strategically located complex, adjacent to the SLSL, for servicing diverse tenants and uses that will engage in activities to support space-related activities of NASA, other government agencies and the U.S. commercial space industry.

CLICK ON PHOTO NASA/Jim Grossmann

Space shuttle Discovery sports three replica shuttle main engines (RSMEs) in Orbiter Processing Facility-1 at Kennedy Space Center on Dec. 12. The RSMEs were installed on Discovery during Space Shuttle Program transition and retirement activities. The replicas are built in the Pratt & Whitney Rocketdyne engine shop at Kennedy to replace the shuttle engines which will be placed in storage to support NASA's Space Launch System, under development. Discovery is being prepared for display at the Smithsonian's National Air and Space Museum Steven F. Udvar-Hazy Center in Chantilly, Va. For more on the space shuttle transition and retirement, click on the photo.

CLICK ON PHOTO NASA/Dimitri Gerondidakis

A truck positions a full-size display of a space shuttle external fuel tank from the Kennedy Space Center Visitor Complex at a temporary storage area at Kennedy Space Center on Dec. 2. The tank was part of a display of the external tank and two solid rocket boosters at the visitor complex that were used to show visitors the size of actual space shuttle components.

2011 Kennedy Awards

This award is intended to recognize contributions made by NASA employees, citizens, contractors or public organizations to Kennedy endeavors.

CERTIFICATES OF APPRECIATION

Theodore O. Adams
Lisa D. Alonso
John O. Baker
Laura A. Baker
Marcus G. Baldini
Dennis Belford
Richard Bettin
Eric E. Bissonnette
Jenna F. Bliss
Michele J. Burch
Laurie C. Carter
Anthony M. Caruvana
Thomas J. Casale
Kathleen Cobb
Kenneth W. Culberson
Marilyn A. Davidson
David Diaz
Nicholas F. DiBiase
Jane M. Dumont
Philip G. Falk
Carol-Sue Feagan
Clark D. Ford
Christopher Galli
James H. Garrett
Dimitrios Gerondidakis
Juan P. Gordon
Curtis E. Groves
Vickie C. Hall
Mark E. Hametz
Michael P. Harrelson
Gary D. Hendricks
Penelope Herbst
Heather M. Hitchcock
Michael D. Hogue
Richard G. Ikerd
Brian J. Kilcommons
Jacquelyn S. Leclaire
Leila Lee Pow
Timothy R. Lewis
Fred A. Lockhart
Randal J. Long
Thomas G. Luman
Peter J. Lyon
Bradford P. Lytle
James G. Mantovani
Edwin Martinez
Megan A. Marynec
Michael L. Moore
Anthony C. Muscatello
Duyen T. Nguyen
Johnny T. Nguyen
Mark A. Poff
Chelsea M. Poling
Janira Ramos
Glenn R. Rhodeside
Nicole M. Rivera
David F. Run
Christine R. Shepperd
Edward A. Sikora
Heriberto Soto
Cynthia V. Steisslinger
Lisa A. Stephany
John M. Sterritt
Brenda L. Teachworth
Mena A. Waters
Stephanie I. Watkins
Mark J. Woloshin

ENVIRONMENTAL AWARDS

Environmental Individual Awards

Edmund J. Byczek

Environmental Team Awards

IACP Chilled Water Flow Improvement Team:
URS Federal Technical Services Inc.

Kennedy Data Center Team:
Abacus Technology Corp.

Light Pollution and Energy Use Reduction Team:
Delaware North Companies Parks & Resorts

SMALL BUSINESS OFFICE AWARDS

Small Business Prime Contractor of the Year
Abacus Technology Corp.

Small Business Subcontractor of the Year
All Points Logistics Inc.

SECRETARIAL EXCELLENCE AWARD

Carol Moore

BEST OF KSC SOFTWARE AWARD

Ground Operations Planning Database

YOU MAKE A DIFFERENCE AWARD

Olga L. Del Rio
Armando Maiz
Dawn L. Oliver
James D. Quinn
Teresa L. Strobush

KSC ENGINEER/ SCIENTIST OF THE YEAR AWARD

Civil Servant Category
Philip T. Metzger

Contractor Category
Carlos T. Mata

KSC EMPLOYEE OF THE YEAR AWARD

Michelle C. Green

Workers fill Salvation Army stockings for local families

NASA/Frankie Martin

Lisa Simpson, an administrative assistant with ASRC, gathers up filled Christmas stockings donated by Kennedy Space Center workers for the Salvation Army.

By Linda Herridge
Spaceport News

Many of Santa's helpers, in the form of NASA Kennedy Space Center workers, were busy Dec. 9 gathering up stockings and bags filled with gifts for Brevard County boys and girls.

A caravan of cars and vans filled to the brim with the precious cargo began its trek from Kennedy's headquarters building to the Salvation Army North Central Brevard Corps distribution facility in Rockledge. The stockings will be added to other items collected through the organization's Angel Tree program and donations from the community, and then will be distributed to needy families beginning Dec. 20.

What began as a small endeavor in 1998 by the Space Coast Chapter of Federally Employed Women (FEW) has grown in 13 years to become one of the largest collection efforts in the area to support the Salvation Army's mission.

Sandra Getter, a management support assistant in the Engineering Directorate and FEW vice president, coordinated this year's effort.

"In the first year, 35 stockings were collected. Last year, we had nearly 1,000 stockings," Getter said. "This year we collected about half of that due to the reduction in the work force."

Getter has spearheaded the effort at Kennedy for six years. This year, there were about 18 NASA and contractor workers distributing and collecting the stockings. Employees filled the stockings with new personal hygiene items, books, small toys, games, coloring books, crayons and more and labeled them by age for a boy or girl.

"I think how important it is to be able to give to those who do not have," Getter said. "And specifically this year, for our friends who are now out of work and cannot afford what they would wish for their children."

Salvation Army Corps Officer Major Vicki Strong said she anticipates giving the Christmas stockings to about 330 families, which could include about 1,200 children.

"The majority of the stockings we give out come from employees at Kennedy Space Center," Strong said. "We might think that crayons, a new toothbrush or the small toy that fits in the stocking aren't very important, but for children, it is still a wonderful gift -- one that is filled with many different surprises."

Winning logo heightens Earth, space sustainability awareness

By Stephanie Covey
Spaceport News

NASA has been going green, and Kennedy Space Center is helping lead the way.

Through the use of alternative-fuel vehicles, recycling programs and other initiatives, Kennedy has been putting an emphasis on sustainability for years.

Recently, center employees were invited to enter a contest to design the new sustainability logo that would include the recently selected slogan "Mission Sustainable: Go for Green," by Curtis Beatovich. The logo will be used to promote awareness of sustainable products and programs.

Fifteen logo concepts were submitted and posted for online voting. More than 1,100 votes were cast, and one design rose above the rest.

And the winner is… Eli Schoen, Kennedy's energy and water manager.

"I wanted to show that sustainability can really be simple and should be a part of our everyday lives," Schoen said.

Raquel Lumpkin, organizational development specialist and the lead for the contest, said the logo will be used to create a sustainability awareness campaign.

The campaign will establish sustainability goals, emphasize the importance of communication and will help Kennedy employees benefit from the natural environment in their day- to-day activities.

She said Schoen's logo stood out because it is original, has a professional feel and captures the message that we need to be sustainable on Earth and in space.

"In all of our initiatives, we have to be very sustainable," said Lumpkin. "This is especially important since Kennedy is on a national preserve. We need to protect the Earth and the land we use." The Merritt Island National Wildlife Refuge is inside the center's boundaries.

Current center sustainability initiatives include the new alkaline battery recycling program and updated facilities that meet the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) certification. The Florida Power and Light solar field in Kennedy's Industrial Area saves NASA about $162,000 in electric use each year.

Approximately 75 percent of the center's automotive fleet runs on alternative-fuels, including bio-diesel, electricity, compressed natural gas (CNG) and E-85 (85 percent ethanol.) The center was able to obtain an additional 63 alternative-fuel vehicles through the American Recovery and Reinvestment Act.

And the Kennedy sustainability team says it is not done yet.

It is working on a plan to advance current initiatives, so watch for sustainability tips, a sustainability newsletter and future contests.

Remembering Our Heritage

PHSF takes 'hazard' out of hazardous processing

By Kay Grinter
Reference Librarian

NASA/Frankie Martin

In July, technicians in the high bay of the Payload Hazardous Servicing Facility at Kennedy Space Center transfer the multi-mission radioisotope thermoelectric generator (MMRTG) for NASA's Mars Science Laboratory (MSL) mission onto the aft of the Curiosity rover for a fit check with the aid of the MMRTG integration cart.

Solar system exploration is dangerous, not only in space but also on Earth where the probes are prepared for launch.

NASA constructed a specialized facility in Kennedy Space Center's Industrial Area 25 years ago to handle the processing of any payloads that might present safety concerns during ground operations. Its location in a remote, piney wooded area south of the Parachute Refurbishment Facility provides a built-in safety zone.

Major construction by Doster Construction Co. of Alabama on the new Payload Hazardous Servicing Facility (PHSF) was completed in December 1986.

Workers then only had to put on the finishing touches such as a state-of-the-art fire alarm system and an area paging and warning system.

The steel-frame facility is covered with insulated metal siding and features an 89-foot-high airlock leading into a 95-foot-high service or high bay. The 100,000-pound-rated crane in the high bay and 30,000-pound-capacity crane in the airlock can move and position the most massive payloads on NASA's manifest.

Payload customers, however, provide their own specialized checkout equipment and work stands for their payloads.

A facility control building is located 700 feet away from the PHSF and can accommodate 55 engineers and separate control rooms for simultaneous processing of two payloads, one in the PHSF and one in another location.

The high bay can support almost any hazardous processing, such as ordnance installation; the loading of hypergolic propellants; or the buildup, mating and alignment of a payload to a solid-propellant upper stage motor, to name a few.

It also is a safe haven for hazardous systems checkout and testing.

Prestigious payloads checked out in the facility include NASA's Cassini Saturn probe in 1997 and the equipment carriers for the Hubble Space Telescope servicing mission in 2008.

The PHSF was enlisted earlier this year for the fit check of the multi-mission radioisotope thermoelectric generator (MMRTG) on Mars Science Laboratory's Curiosity rover. The MMRTG generates power from the natural decay of plutonium-238, a non-weapons-grade form of the radioisotope.

Testing of the MMRTG on the rover verified that it was making the proper connections, but the real test will come after Curiosity, which launched in November, arrives at Mars in August 2012.

The facility will stand empty next year while its heating, ventilating and air-conditioning (HVAC) air-handling system is upgraded and preparations are made to receive NASA's Mars Atmosphere and Volatile Evolution Mission (MAVEN) spacecraft in 2013.

MAVEN, like Curiosity, will begin its journey to Mars from Cape Canaveral Air Force Station. Its primary mission is to obtain critical measurements of the Martian atmosphere to help scientists understand dramatic climate change on the Red Planet over its history.

NASA file/1986

Construction on the Payload Hazardous Servicing Facility and the surrounding support buildings gets under way in 1986.

NASA file/1996

The Payload Hazardous Servicing Facility sits in a remote, piney wooded area south of the Parachute Facility in Kennedy Space Center's Industrial Area.

NASA Employees of the Month: December

CLICK ON PHOTO NASA/Tony Gray

Employees for the month of December are, from left, Evelyn M. Orozco-Smith, Engineering Directorate; Chelsea M. Poling, Procurement Office; Matthew Jimenez, Chief Financial Office; Phillip L. Swihart, Safety and Mission Assurance Directorate; Muzette B. Fiander, Center Operations; and Brian P. Emond, Education and External Relations. Not pictured are Ginger L. F. Arrington, Chief Counsel; Timothy "Ozzie" Fish, Ground Processing Directorate; Joshua J. Manning, 21st Century Ground Systems Program Office; William U. Nortardonato, Engineering Directorate; and William C. Atkinson, Launch Services Program.

CLICK ON PHOTO NASA/Frankie Martin

Mars Science Laboratory Update

From left, Lars Perkins, chair of the Education and Public Outreach Committee of the NASA Advisory Council; Will.i.am, entertainer and member of the The Black Eyed Peas; NASA Deputy Administrator Lori Garver; former astronaut Leland Melvin, NASA associate administrator for Education; and television personality Bill Nye the Science Guy share a light moment with the participants of a NASA Tweetup in a tent set up at Kennedy Space Center's Press Site during prelaunch activities for the agency's launch of Mars Science Laboratory with the Curiosity rover on Nov. 26. For more on the mission, click on the photo. MSL currently is on course for an August 2012 landing. For more on the MSL mission, click on the photo.

Looking up and ahead . . .

*** All times are Eastern**

2012

No Earlier Than Jan. 19	Launch/CCAFS (SLC-37B): Delta IV, WGS 4; Launch window: TBD
Targeted for Feb. 7	Launch/CCAFS (SLC-40): SpaceX Falcon 9, Dragon C2/C3; Launch window: TBD
No Earlier Than Feb. 16	Launch/CCAFS (SLC-41): Atlas V, MUOS; Launch window: TBD
No Earlier Than March 14	Launch/Kwajalein Atoll: Pegasus XL, NuSTAR; Launch window: TBD
No Earlier Than April 27	Launch/CCAFS (SLC-41): Atlas V, AEHF 2; Launch window: TBD
June	Launch/CCAFS (SLC-37B): Delta IV-Heavy, NROL-15; Launch window: TBD
No Earlier Than Aug. 23	Launch/CCAFS (LC-41): Atlas V-401, RBSP; Launch window: TBD
No Earlier Than September	Launch/CCAFS (LC-37B: Delta 4, GPS 2F-3; Launch window: TBD
No Earlier Then Dec. 1	Launch/VAFB: Pegasus XL, Interface Region Imaging Spectrograph (IRIS); Launch window: TBD
No Earlier Than Dec. 1	Launch/CCAFS (LC-41): Atlas V, Tracking and Data Relay Satellite-K (TDRS-K); Launch window: TBD

John F. Kennedy Space Center

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