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Spaceport News

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

Mobile launcher makes transition to SLS

By Steven Siceloff
Spaceport News

A major part of NASA's recently announced heavy-lift Space Launch System (SLS) already is here at NASA's Kennedy Space Center.

The mobile launcher, or ML, standing next to Kennedy's Vehicle Assembly Building will be strengthened and swing arms will be installed during the next five years to support the SLS, a rocket quite a bit larger than the Ares I launch vehicle the tower was originally built for, NASA officials said during a media tour of the ML on Oct. 11.

"I think it's exciting anytime you find that some asset you have is going to be able to be converted or transitioned to another program because it's one less dollar that you have to spend," Charles Bolden, NASA administrator, said while standing under the 355-foot-tall ML. "This is tremendous that we get to do this."

Bolden's visit to Kennedy on Oct. 11 came on the heels of last month's unveiling of the Space Launch System's design. SLS will be used to launch astronauts far from their home planet on voyages to the asteroids, the moon and Mars.

NASA also will build the Orion Multi Purpose Crew Vehicle spacecraft, which will ride into orbit on top of the SLS after lifting off from Kennedy's Launch Pad 39B, to make the trips into deep space.

NASA/Dimitri Gerondidakis

NASA Administrator Charlie Bolden talks to media in front of NASA's mobile launcher (ML) support structure at Kennedy Space Center on Oct. 11. Center Director Bob Cabana also attended the media event held to detail ML's use with NASA's Space Launch System (SLS) heavy-lift rocket, which will send astronauts into deep space on missions to asteroids, the moon or Mars.

With current planning calling for four space shuttle main engines and two solid rocket boosters plus an upper stage, the early version of SLS is reminiscent of the Saturn V that lofted Apollo crews to the moon in the late 1960s and early 1970s. However, some of its technology is taken straight from the Space Shuttle Program.

Just as the rocket is a reminder of past successes, the mobile launcher also will be fitted with elements that were not needed for shuttle launches, mainly arms to feed and vent the liquid-powered engines' propellants. As during the Apollo/Saturn V launches, those arms will have to remain connected in some cases until the last moment, then they must swing quickly and safely out of the rocket's way.

Larry Schultz, the ML project manager at Kennedy, smiled recalling his first thoughts of the assignment to modify the launcher for a new rocket that eventually will be the largest launch vehicle ever built.

"Whatever they want me to do, I'll go design and build," he said.

Because the SLS will weigh two-and-a-half times more than an Ares I, Schultz said workers will retrofit the platform with stronger, larger support beams. The exhaust cut-out also will be widened from a 22-foot square to a 60-by-30-foot rectangle.

Currently, the SLS with Orion is due to make its first test flight, without a crew, in 2017, Schultz said.

Bob Cabana, Kennedy's center director, said the ML represents one facet of the changeover to allow the space center to become a multi-purpose spaceport, serving several kinds of missions and rockets, both government and commercial.

Other elements of the change include basing two new programs at Kennedy, including the first at the center for human spaceflight, the Commercial Crew Program, or CCP.

The 21st Century Ground Systems Program has also been established at Kennedy, charged with adapting and upgrading the center's infrastructure for the future, as well as managing the processing and launch for the SLS. Kennedy already hosts the agency's Launch Services Program, which handles launching NASA's science and research missions that do not involve astronauts.

Launch Pad 39B has undergone extensive work, with the removal of the shuttle's launch gantry and a million feet of copper cabling. Further modernization work will continue with the installation of fiber optic cables and the refurbishment of the flame trench.

Pad 39B is being modified with the needs of several different rockets and spacecraft in mind, including those that commercial companies will operate.

Cabana said no one should have been surprised by the progress that's been made in the few months since space shuttles were retired.

"We have a clear path forward," Cabana said. "Change is extremely hard, but look where we are now, what we've done. I think we're in a very good position."

Inside this issue ...

Kennedy future bright with new programs, exploration goals

By Linda Herridge
Spaceport News

Kennedy Space Center Director Bob Cabana told a large group of government, community and business leaders that he is very positive about the future of the center and the space coast during the annual Community Leaders Briefing at the Debus Center at the Kennedy Space Center Visitor Complex on Oct. 11.

"This has been a tremendous year for Kennedy Space Center," Cabana said. "I cannot say enough good things about this community and this team persevering through a very challenging period."

"We need to share our heritage and we need to present a clear vision for the future," Cabana said.

NASA Administrator Charlie Bolden said it has been an absolutely incredible year for the agency.

"The choice for the future is incredibly bright, but only if we make it so," Bolden said. "We have an opportunity to do great things."

Cabana emphasized that partnering is the key to Kennedy's future. The center broke ground on Exploration Park this year and signed a new lease with Space Florida for the Space Life Sciences Lab.

Cabana said the Center Planning and Development Office currently is working on about 80 agreements, many are partnerships with commercial companies. Some are completed, while some are being evaluated.

Amanda Mitskevich, manager of NASA's Launch Services Program (LSP) at Kennedy, showed a video recap of Juno's launch on its mission to Jupiter. She remarked that the Aug. 5 launch attracted about 10,000 visitors to the center, the most for any science mission to date.

NASA Administrator Charlie Bolden addresses guests at the annual Community Leaders Briefing held in the Debus Center at Kennedy's Visitor Complex. Community leaders, business executives, educators, community organizers and state and local government officials heard Bolden, Kennedy Center Director Bob Cabana, and other senior Kennedy managers provide an overview of the future of the space center.

"We have launched more than 65 missions since 1998, with about 35 more missions in the flow during the next 10 to 15 years," Mitskevich said. "We want to be the recognized leader in launch services, not just for the agency but all over the world."

Mitskevich said that LSP wants people to come to it for the expertise that it has put together. The goals to be able to accomplish this are near-term and long-ranging.

"We have to ensure that the missions today are successful. But we also have to be looking out there at the complicated missions in planning for NASA and make sure that there are going to be launch vehicles available for them in the next decade," Mitskevich said.

Remaining missions for 2011 are NASA's National Polar-orbiting Operational Environmental Satellite System Preparatory (NPP) that is targeted to launch later this month from Vandenberg Air Force Base in California, and the Mars Science Laboratory Curiosity in November from Cape Canaveral Air Force Station in Florida.

NASA's Commercial Crew Program (CCP) Manager Ed Mango said the CCP is the first human spaceflight program located at Kennedy and that Florida's Space Coast could benefit from the program. Its goal is to facilitate the development of the U.S. commercial crew capability to low Earth orbit.

"Once we've done that then NASA intends to buy services from that capability," Mango said. "As we do that, it isn't just for NASA. We want to create a capability that anybody can use. The companies will own the design and own the vehicles themselves."

"We want to work on designs, then transition into final design, and transition into certification by the 2013 to 2014 timeframe," Mango said. "CCP will be flying test flights during that period of time from Kennedy."

We will continue to fly test missions, probably with crew, and eventually getting to the International Space Station by the middle of the decade, according to Mango.

He expects to see a number of demo and test flights through the space coast between the 2013 to 2014 timeframe and especially in the 2015 and 2016 timeframe.

"The whole idea of the commercial crew for NASA is that we have to ensure that we're going to be safe enough to fly. Not only for our crew, but any space participant," Mango said. "NASA is using its capabilities during the last 50 years to put together a number of systems that will be safe enough for our crew."

"A successful Commercial Crew Program will use and increase the demand for local spaceflight talent," Mango said. "It also will enable multiple commercial sources for LEO and allow NASA to focus on exploration."

The 21st Century Ground Systems Program is about establishing a capability that is going to pave the way for an affordable, multi-use capability at Kennedy, according to Program Manager Pepper Phillips.

"That capability at Kennedy is going to enable the big heavy-lift rocket for Space Launch Systems (SLS) and make the entire center and the capabilities that go with it attractive to commercial industry," Phillips said. "We're going to use the assets on center, multi-purpose them or change their purpose in order to enable them to do that."

Phillips said the goal is to build and manage the assets that are needed for SLS and use the tremendous capabilities of the Vehicle Assembly Building and a clean pad approach at Launch Complex 39 and multi-purpose them so that they can be utilized by more than one user.

Phillips said there are other users that Kennedy is looking to attract to the center, including horizontal launch and landing capable companies, as well as small vehicle launches that include test flights.

"Human exploration, that's what Kennedy Space Center has been all about since the very beginning. NASA is about exploring," Cabana said. "This is our future, commercial space operations along with the heavy lift program that will take place here at Kennedy."

Bolden, Cabana and the three program chiefs delivered the same message later in the day to Kennedy's work force during an all-hands session at the training auditorium.

The 21st Century Ground Systems Program has direct ties to the successes of the commercial launch programs and when the Space Launch System sends astronauts into deep space.

"We're going to make this happen," Cabana told workers following the presentations. "We have made great strides and we have because we have been working together as one."

Kennedy to build complex to prepare for next 50 years

By Stephanie Covey
Spaceport News

How NASA carries out human spaceflight isn't the only major change starting to happen around NASA's Kennedy Space Center. On Sept. 26, the agency awarded a contract to Hunton Brady Architects, P.A. of Orlando, to develop a Central Campus Complex at Kennedy. The project in the center's Industrial Area will deconstruct half-century-old facilities and replace them with a modern, energy-efficient, centralized campus that will save land space and money.

The project will consolidate multiple functions and facilities currently spread throughout the center. That will help Kennedy transition from a government and program-focused single user launch complex to a multi-user spaceport for both government and commercial spaceflight providers. About 10 facilities, including the Headquarters Building, will be pulled together into the campus complex, which will be designed to help ensure Kennedy has the appropriate type and number of facilities for its work force.

A 2009 NASA engineering study concluded that building a central complex, which would provide workers safer, more sustainable and energy-efficient facilities, versus renovating existing buildings would reduce energy usage and operations and maintenance costs by $400 million during the next 40 years.

According to Dennis Bayón, Chief of Planning and Integration in Center Operations at Kennedy, construction of the campus can be done with minimum disruption while NASA's new Orion spacecraft and Space Launch Systems heavy-lift rocket evolve to a point where the center's support for launch and recovery operations for human spaceflight resume.

The amount of ground space the campus will occupy will be smaller than what the current buildings take up. Plans call for demolishing about 900,000 square feet of buildings and only replacing about 450,000 square feet. That also will reduce the ground "footprint" of buildings in the Industrial Area by 35 percent. And the campus concept will enable that area to become more pedestrian and eco-friendly.

The project will be designed to earn the U.S. Green Building Council's Leadership in Environmental and Energy Design (LEED) Silver status and strive for the highest achievable rating based on life cycle costs.

Bayón said, "By following the LEED certification process guidelines we ensure the project is built following a balanced approach to responsible stewardship of natural, human and financial resources."

The Central Campus Complex plan calls for construction of the new facilities and deconstruction of the old buildings to be done in six phases starting in 2013. The work is expected to take about 10-years to complete.

Crawlerway team earns Florida Project of the Year award

By Stephanie Covey
Spaceport News

CLICK ON PHOTO *NASA/Kim Shiflett*

Members of the crawlerway system evaluation team pose for a group portrait in front of the Headquarters Building at Kennedy Space Center on Oct. 4. The team received the Florida Project of the Year award from the American Society of Civil Engineers (ASCE). In the middle, showing off the trophies are, from left Michael Benik, director of Center Operations; Pepper Phillips, manager of the 21st Century Ground Systems Program Office; and Russell Romanella, associate director for Engineering and Technical Operations. The award honors the team's outstanding engineering efforts in research, design, construction and management, recognizing the complexity of multi-agency coordination and cost-effective engineering advances. For more information on the American Society of Civil Engineers, click on the photo.

On Oct. 4, the American Society of Civil Engineers (ASCE) presented the Florida Project of the Year award to the crawlerway system evaluation team at NASA's Kennedy Space Center. Accepting the award for the team were, Michael Benik, director of Kennedy Space Center Operations; Pepper Phillips, manager of the 21st Century Ground Systems Program Office; and Russell Romanella, associate director for Engineering and Technical Operations.

The Cape Canaveral branch of the ASCE nominated the team for its project entitled, "Crawlerway Evaluation to Support a Heavy-Lift Program."

The crawlerway is a 130-foot-wide, specialty-built roadway between Kennedy's Vehicle Assembly Building (VAB), where rockets and spacecraft are prepared for flight, and Launch Pads 39A and 39B.

"It was a great honor to have this project and the team recognized by the ASCE," said Justin Junod, project manager for the team. "The result of this project was more far reaching than the problem we set out to solve. The crawlerway evaluation will not only impact future programs at Kennedy, but the future of civil engineering."

The team's more than two-year evaluation confirmed the crawlerway system will be able to support the weight of moving the agency's future heavy-lift rockets and potential commercial vehicles from the VAB to the launch pads.

"The project benefits not only NASA, in allowing them to choose an economic roadbed surface that will support the upcoming space flight programs, but benefits the civil engineering profession as a whole, as many of the findings of this program will be applicable to other applications such as high-speed rail and roadways," said Steven Goldstein, president of the Florida ASCE section.

The crawlerway system evaluation team includes more than 100 individuals, and the ASCE award honors their outstanding engineering efforts in research, design, construction and management.

It further recognizes the complexity of multi-agency coordination and cost-effective engineering advances.

Said Junod, "Putting all of the different entities together has resulted in an outstanding product that the center and the program can stand firmly on."

Scenes Around Kennedy Space Center

CLICK ON PHOTO NASA/Jim Grossmann

NASA, EDC renew agreement

Lynda Weatherman (center) Economic Development Commission (EDC) of Florida's Space Coast president and CEO, shows her enthusiasm for the new five-year Space Act Agreement she is signing on Oct. 3. Also signing the agreement, at left, is Kennedy Space Center Director Bob Cabana. Bob Whelen, chairman of the board of the EDC, looks on at right. The agreement calls for NASA and EDC senior leadership to meet regularly to discuss economic development matters of mutual interest. Managers from Kennedy's Center Planning and Development Office will work with the EDC on potential business partnerships and meet with business leaders and committees to address space-related and high-tech economic development. EDC officials will assist NASA with disseminating information about potential partnership opportunities, as well as space-related and high-tech economic development, and increase awareness of Kennedy's Engineering and Technology Directorate collaboration initiatives. They also will promote the commercial use of underutilized facilities at Kennedy. NASA and the EDC entered into their first economic cooperation agreement in 2005. For more information about the Economic Development Commission (EDC) of Florida's Space Coast, click on the photo.

CLICK ON PHOTO NASA/Dimitri Gerondidakis

Kennedy Space Center Protective Services presented a side-by-side live burn demonstration Oct. 12 in the south parking lot of Headquarters, in conjunction with Fire Prevention Week (Oct. 9-15). For more information on Fire Prevention Week, click on the photo.

Fire demo highlights prevention

Kennedy Space Center Protective Services presented a side-by-side live burn demonstration Oct. 12 in the south parking lot of Headquarters, in conjunction with Fire Prevention Week (Oct. 9-15).

Fire fighters ignited two rooms; one room equipped with a sprinkler system, demonstrating the effectiveness of early detection and suppression, while the other room had no suppression system installed.

Fire service personnel set aside a week in October to promote public awareness of fire safety inside and outside the home. This year's theme is "It's Fire Prevention Week. Protect your Family from Fire!"

All are encouraged to take significant steps to reduce the risk of fire, from installing and maintaining smoke alarms to practicing safe cooking habits in the home. Also, it is important for families to design and then practice an escape plan at least twice a year in case a fire should ever happen.

On Oct. 7, President Obama issued a proclamation saying, "This week, our nation honors the dedicated firefighters and other first responders who do the hard, dangerous work of keeping our communities safe from fire. Many have laid down their lives to save our friends and neighbors, and their selfless sacrifice defines the nature of courage. As we pay tribute to their memories, let us resolve to maintain our vigilance and take proactive steps to stop fire emergencies before they begin."

CLICK ON PHOTO NASA/Gianni Woods

Kennedy Space Center employees peruse a variety of Latin inspired desserts during the "Celebrating a Sweet Heritage" bake sale. The event, held Sept. 16 at Headquarters, Room 2229, was sponsored by the Hispanic Outreach and Leadership Alliance (HOLA). For information on HOLA, click on the photo.

NASA/Jim Grossmann

From left, Dr. Ed Hoffman, Stephen Angelillo and Kennedy Space Center Director Bob Cabana perform a ribbon cutting for the Academy Center for Excellence (ACE) during a ceremony at the Operations and Support Building II on Oct. 13. ACE is a partnership between Kennedy and the Academy of Program/Project and Engineering Leadership (APPEL). Hoffman is APPEL's director and Angelillo is director of the ACE Facility.

CLICK ON PHOTO NASA/Dimitri Gerondidakis

In the Payload Hazardous Servicing Facility at NASA's Kennedy Space Center in Florida, technicians guide the backshell as it is lowered over NASA's Mars Science Laboratory (MSL) rover, Curiosity, for encapsulation on Sept. 23. The backshell, a protective cover, carries the parachute and several components used during later stages of entry, descent and landing. A United Launch Alliance Atlas V-541 configuration will be used to loft MSL into space. MSL's components include a compact car-sized rover, Curiosity, which has 10 science instruments designed to search for evidence on whether Mars has had environments favorable to microbial life, including chemical ingredients for life. The unique rover will use a laser to look inside rocks and release its gasses so that the rover's spectrometer can analyze and send the data back to Earth. MSL is scheduled to launch Nov. 25 with a window extending to Dec. 18 and arrival at Mars August 2012. For more information, click on the photo.

Engineers seek ways to better utilize cryo propellants

By Linda Herridge
Spaceport News

A team at Kennedy Space Center is investigating how to conserve and significantly reduce the cost of liquid hydrogen (LH2) operations for future space launch vehicles, and the Cryogenic Test Laboratory (CTL) will play a role in developing the new process.

"We are bringing this technology 30 to 40 years forward and using it for new space applications," said Bill Notardonato, the task manager for the Ground Operations Liquid Hydrogen portion of the Integrated Ground Operations Demonstration Units (IGODU) project. "We're taking existing components and integrating them into a new system. That is the advancement."

The IGODU project is one of three NASA Advanced Exploration Systems (AES) projects being led by engineers at Kennedy Space Center. This project is for the AES area of Ground Operations Systems and will utilize or reuse existing assets to their greatest potential, which is one of the AES principles. Other principles include establishing partnerships, and using lean management approaches with minimal overhead in order to keep costs low.

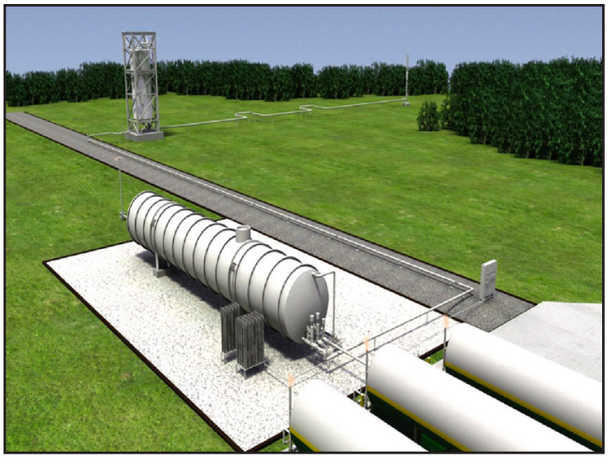
The project includes two components -- autonomous command and control and LH2 refrigeration systems demonstrations. Test objectives incorporate zero loss storage and transfer, and achievement of propellant densification and liquefaction of hydrogen.

Notardonato said the benefits of densification will be improved launch vehicle performance and increased payload capability.

Robert Johnson is the IGODU project manager and manager of the demo unit command and control portion of the project. He said the work will concentrate on a new command and control architecture that embeds Kennedy's ground operations expertise into a new software design to increase the real-time capability of the software applications.

The control development simulation work will be performed at the center's Electronic Development Laboratory and will be tested against real hardware at the CTL on the propellant loading simulation system.

"In the shuttle program, if a critical pressure or temperature sensor failed during the cryogenic loading process, the software couldn't determine if it was indicating a serious condition in the system or a simple transducer failure so it stops the loading process," Johnson said.



NASA image

An artist's illustration of a Kennedy Space Center test site for the Integrated Ground Operations Demonstration Units project. Test components include a ground storage tank with transfer lines and a Centaur stage with a flare stack in the background.

NASA file/2010

Vaporized liquid nitrogen drifts away from the dump basin at Kennedy Space Center's Cryogenics Test Laboratory (CTL) as the Simulated Rapid Propellant Loading System is used to perform a cold flow test of a new magnetically coupled cryogenic pump in December 2010. The CTL will play a role in the Integrated Ground Operations Demonstration Units project, led by Kennedy, that includes liquid hydrogen refrigeration systems demonstrations.

What Johnson said the team hopes to demonstrate is that the software will recognize that same failed sensor as just that, and continue the loading process ensuring an on-time launch. If the software doesn't ascertain a definitive solution to a problem, it will lead the console operators through a series of guided troubleshooting steps to quickly narrow down the potential cause.

"The skills and experience of the Cryogenic Test Lab workers are essential to the process," Notardonato said. "Though the system will be tested at Kennedy's Bore Site Test Area near the Hypergolic Maintenance Facility, much of the component refurbishment work will be done at the CTL."

Notardonato said in the past, the process to obtain LH2 was thru a vendor in New Orleans who shipped it to Kennedy. But by the time the LH2 arrived and was used for shuttle launches, about half of the propellant was lost through evaporation during normal processing and tanking operations.

Notardonato said the goal of this investigation is to recover the hydrogen through the use of a refrigerator that is integrated into a storage tank and then recycle it, thereby conserving and significantly reducing the cost of LH2 operations

"We're over-sizing the refrigerator so it will densify the propellant to 15 degrees Kelvin," Notardonato said. "We can pack more hydrogen in by volume and that would allow us more LH2 for the launch vehicle. We also can do on-site liquefaction so we may be able to produce our own hydrogen here someday."

Components of the refrigeration module will be assembled, and the system will be serviced and validated at the CTL prior to operations at the test site.

For the tanking demonstration, a 33,000-gallon storage tank was acquired from the old Titan launch complex at Cape Canaveral Air Force Station (CCAFS) in Florida, whereas a pneumatic system was acquired from Complex 20, also at CCAFS. Several other components were salvaged from the X-33 launch site.

Notardonato said the center currently is negotiating with United Launch Alliance for a flight-weight Centaur-3 tank to achieve a more accurate representation of the loading demonstration.

Potential users of this new technology could include the commercial hydrogen industry, fueling stations for hydrogen-fueled cars, the Department of Energy's hydrogen programs, as well as any launch vehicle that uses liquid hydrogen.

"This project also has the potential to provide future testing opportunities that mimic surface operations on the moon and Mars for propellant liquefaction, storage and transfer," Johnson said.

Remembering Our Heritage

Upcoming NPP launch brings visions of ESSA 3

By Kay Grinter
Reference Librarian

As Halloween approaches, preparations for the Oct. 27 launch of NASA's National Polar-orbiting Operational Environmental Satellite Preparatory Project (NPP) from Vandenberg Air Force Base, Calif., conjure up ghostly images of the first Delta launch from the Western Range 45 years ago. Aboard was the ESSA 3 meteorological satellite.

The satellite's ethereal sounding name -- ESSA -- was actually the acronym for the Environmental Science Services Administration, the forerunner of today's National Oceanic and Atmospheric Administration.

There was nothing spooky, though, about the performance of that first California-launched Delta, Delta 41. It performed nominally, placing the ESSA 3 satellite into the desired polar orbit Oct. 2, 1966. The now defunct Douglas Aircraft Company manufactured the early Delta rockets.

The 325-pound ESSA satellite, built by RCA, was designed to provide daily global photographic coverage of weather systems for central processing and distribution by the U.S. Weather Bureau's National Meteorological Center.

ESSA 3 was the first satellite in the Tiros Operational Satellite (TOS) system to utilize the Advanced Vidicon Camera System. More than 150 photos were provided daily of an Earth-surface area 2,000 miles on a side. After ESSA 3's cameras failed in September 1967 and October 1968, the satellite was deactivated Dec. 2, 1968.

In keeping with the season, NASA is expecting NPP to provide scientists with an abundance of treats and help foil some of Mother Nature's dirty tricks.

"The timing of the NPP launch could hardly be more appropriate," said Louis W. Uccellini, director of NOAA's National Centers for Environmental Prediction in Camp Springs, Md. "With the many billion dollar weather disasters in 2011, NPP data is critical for accurate weather forecasts into the future."

NPP is the first Earth-observing satellite to measure both global climate changes and key weather variables. It also is the first mission designed to collect critical data to improve weather forecasts in the short-term and increase our understanding of long-term climate change. NPP will continue observations of Earth from space that NASA has pioneered for more than 40 years.

NPP's five science instruments, including four new state-of-the-art sensors, will provide scientists with data to extend more than 30 key long-term datasets. These records, which range from the ozone layer and land cover to atmospheric temperatures and ice cover, are critical for global change science.

"NPP's observations of a wide range of interconnected Earth properties and processes will give us the big picture of how our planet changes," said Jim Gleason, NPP project scientist at NASA's Goddard Space Flight Center. "That will help us improve our computer models that predict future environmental conditions.

Better predictions will let us make better decisions, whether it is as simple as taking an umbrella to work today or as complex as responding to a changing climate."

Parents nationwide will be better able to prepare their costumed goblins for the weather conditions on All Hallows' Eve without consulting their Ouiji boards.

The Delta II rocket will carry NPP into an orbit 512 miles above Earth's surface. Roughly the size of a minivan, the spacecraft will orbit Earth's poles about 14 times a day, transmitting data once each orbit to a ground station in Svalbard, Norway, and to direct broadcast receivers around the world.

Nppy, NPP's mascot, is a little stuffed polar bear found by NPP Ground Project Manager Dan DeVito in Svalbard, located 600 miles from the North Pole.

Since polar bears are affected by global warming and the melting of ice around the poles, satellites like NPP that constantly monitor the Earth's health from space to help scientists build models and predict how climate is changing over time are especially important to Nppy.

Nppy is featured in a series of animated videos available online at http://npp.gsfc.nasa.gov/nppy.html.

The NPP spacecraft was transported to the launch pad Oct. 13 for attachment to the Delta II.

The United Launch Alliance Delta II 7920 rocket enlisted to launch NPP will be the 365th Delta launched and the 83rd Delta launched from California.

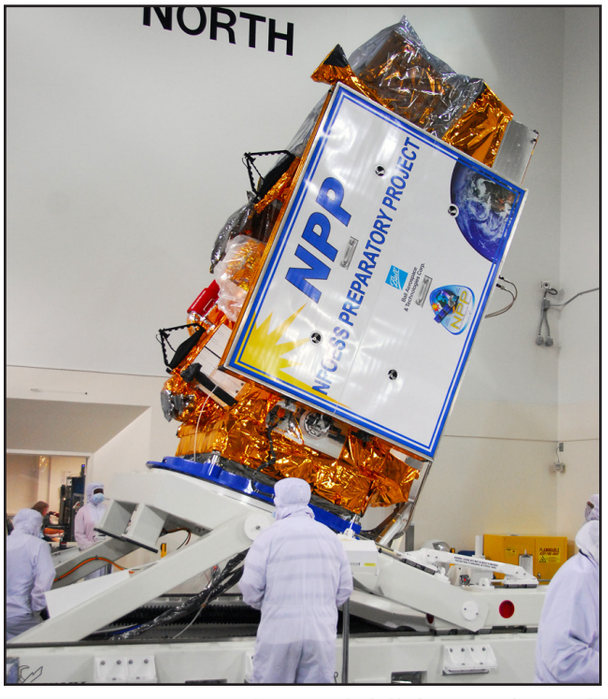
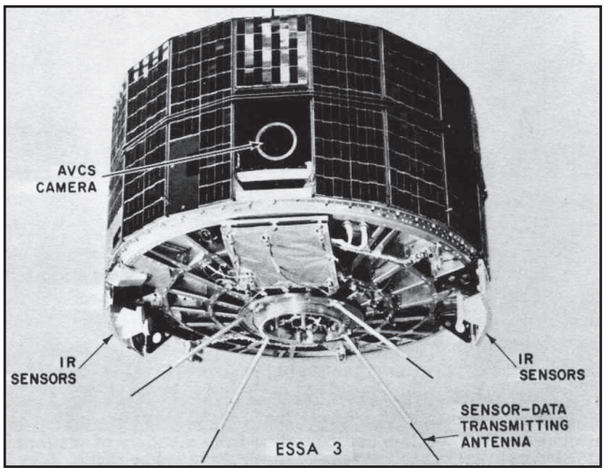


Photo courtesy of NASA/30th Communications Squadron, VAFB

Ball Aerospace technicians rotate NASA's National Polar-orbiting Operational Environmental Satellite System Preparatory Project (NPP) into the vertical position during a solar array frangible bolt pre-load verification test in a clean room inside the Astrotech Payload Processing Facility at Vandenberg Air Force Base, Calif., on Sept. 8



CLICK ON PHOTO *NASA file/1966*

ESSA 3 was a sun-synchronous operational meteorological satellite designed to take and record daytime earth cloudcover pictures on a global basis for subsequent playback to a ground acquisition facility. The spacecraft was also capable of providing worldwide measurements of reflected solar and long-wave radiation leaving the earth. For more on the mission, click on the photo.

More online

To watch videos or find out more on the NPP, click on the following links.

The mission: **http://npp.gsfc.nasa.gov/nppy.html**

Big Planet, Little Bear: **http://www.youtube.com/watch?v=JeWp34lhJCo**

Who is NPPy?: **http://www.youtube.com/watch?v=JfF3-a0sh14**

NASA Employees of the Month: October

NASA/Sandra Joseph

Employees for the month of October are from left, Mau V. Nguyen, Chief Financial Office; Bobbie J. Raymond, Ground Processing Directorate; Gary J. Villa, Center Operations; Suzanne M. Blubaugh, Procurement Office; Darcy H. Miller, Safety and Mission Assurance Directorate; Bradley A. Haver, Engineering Directorate; and Rolando J. Nieves, Engineering Directorate. Not pictured are, James S. Hamblin, 21st Century Ground Systems Program Office; and Laura A. Ulrich, Launch Services Program.

Looking up and ahead . . .

*** All times are Eastern**

2011

Oct. 27	Launch/VAFB, SLC-2W: Delta II, NPP; Launch window: 5:48:01 to 5:57:11 a.m. EDT
No Earlier Than Nov. 7	Launch/CCAFS: Delta IV, WGS 4; Launch window: TBD
Nov. 25	Launch/CCAFS: Atlas V, Mars Science Laboratory; Launch: 10:21 a.m. EST
Under Review	Launch/CCAFS: SpaceX Falcon 9, Dragon C2/C3; Launch window: TBD
No Earlier Than December	Launch/Wallops Flight Facility, Pad 0A: Orbital Sciences Corporation, Taurus II, Launch window: TBD

2012

Early 2012	Launch/CCAFS: Atlas V, AEHF 2; Launch window: TBD
Early 2012	Launch/CCAFS: Delta IV-Heavy, NROL-15; Launch window: TBD
No Earlier Than February	Launch/Wallops Flight Facility, Pad 0A: Orbital Sciences Corporation, Cygnus/Taurus II, Launch window: TBD
No Earlier Than Feb. 3	Launch/Kwajalein Atoll: Pegasus XL, NuSTAR; Launch window: TBD

Kennedy Space Center Activities

2011 KSC Fall Flag Football League Standings and Upcoming Schedule

TEAM	RECORD	POINTS SCORED	POINTS ALLOWED
Predators	5-0	123	31
Dog and Bone Crushers	3-2	116	56
Rowdies	3-2	98	55
Stuffers	3-2	93	69
Team Ram Rod	1-4	36	120
Bacalao	0-5	13	148

Week 5 Results (Oct. 11)
Rowdies 35, Bacalao 0
Crushers 25, Ram Rod 7
Predators 16, Stuffers 0

Week 6 Schedule (Oct. 18)
5:30 p.m. - Predators @ Bacalao
6:30 p.m. Stuffers @ Ram Rod
7:30 p.m. - Rowdies @ Crushers

Games are played Tuesdays at KARS Park I. For more information, contact Matt Jimenez at 321-867-4509 or **matthew.j.jimenez@nasa.gov**.

2011 KSC Tennis League Rankings, Leaders and Upcoming Schedule

Singles

Group 1 Rankings	Group 2 Rankings	Group 3 Rankings	Group 4 Rankings
Norm Hosan	Calvert Staubus	Bob Ingram	Kate Liu
Billy Specht	Miguel Rodriguez	Kevin Panik	Jorge Rivera
Alan Wheeler	Ken Young	Scott DeWitt	Laura Scott
Art Shutt	Ed Bertot	Teresa Bolig	Lashelle McCoy

Oct. 20 Schedule
Hosan vs. Wheeler
Specht vs. Shutt
Staubus vs. Young
Rodriguez vs. Bertot
Ingram vs. DeWitt
Panik vs. Bolig
Liu vs. Scott
Rivera vs. McCoy

The league seeks new players and is open to all Kennedy civil service and contractor personnel and dependents. Matches are played Thursdays at KARS Park I and II. For more information, contact Alan Wheeler at 321-867-3565 or **alan.j.wheeler@nasa.gov**.

Doubles

COURT LEADERS FROM OCT. 11

Court 9 - Chip Hooper	Court 7 - Teresa Bolig	Court 4 - Pat Hadde	Court 2 - TBD
Court 8 - Art Shutt	Court 6 - Jay Hebert	Court 3 - Laura Scott	Court 1 - TBD

COURT GROUPS FOR OCT. 18

Court 9	Court 8	Court 7	Court 6
Chip Hooper	Miguel Rodriguez	Ray Jones	Tom Li
Scott Schilling	Ron Feile	Ted Moore	Amy Lombardo
Dave Davies	Art Shutt	Teresa Bolig	Laura Rochester
Jeff Andress	Norm Ring	Alan Wheeler	Lenny Corack

Court 4	Court 3	Court 2	Court 1
Jay Hebert	Jane Mosconi	Mike Lietzen	TBD
Pat Hadden	Scott DeWitt		
Bill Shockley (fill-in)	Damien Boos		
Jim Fitzgerald	Laura Scott		

The league seeks new players and is open to all Kennedy civil service and contractor personnel and dependents. Matches are played Tuesdays at KARS Park I and II. For more information, contact Teresa Bollig at 321-264-8575 or **teresa.e.bollig@nasa.gov**.

John F. Kennedy Space Center

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