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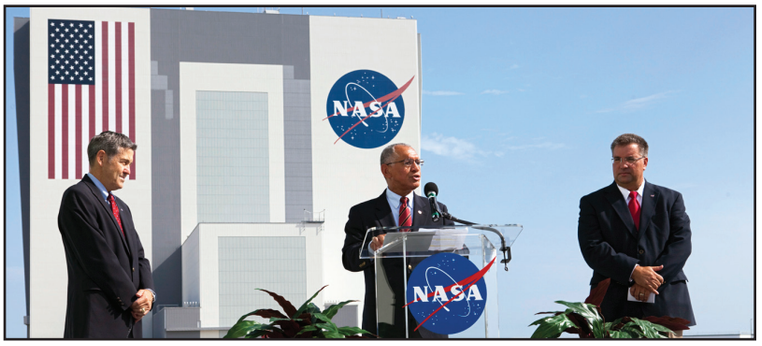
Spaceport News

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



CLICK ON PHOTO NASA/Kim Shiflett

NASA Administrator Charlie Bolden discusses the agency's new Commercial Crew Integrated Capability (CCiCap) partnerships from Kennedy Space Center on Aug. 3. Kennedy's Director Bob Cabana, left, and NASA Commercial Crew Program Manager Ed Mango also spoke about the CCiCap initiative during the news conference.

Spaceport stakes claim to commercial missions

By Rebecca Regan
Spaceport News

The three American companies building next-generation spacecraft that NASA could call on to carry astronauts into orbit in the future will perform much of their work along the Space Coast, home of the agency's Commercial Crew Program (CCP).

Advances made by these companies under newly signed Space Act Agreements (SAAs) through the agency's Commercial Crew Integrated Capability (CCiCap) initiative are intended to lead to the availability of commercial human spaceflight services for government and commercial customers.

"Our commercial crew and cargo efforts are based on a simple but powerful principle," said NASA Administrator Charlie Bolden during the CCiCap announcement. "By investing in American companies and American ingenuity, we're spurring free-market competition to give taxpayers more bang for the buck while enabling NASA to do what we do best, reach for the heavens."

Throughout the next 21 months, Sierra Nevada Corporation (SNC) of Louisville, Colo., Space Exploration Technologies (SpaceX) of Hawthorne, Calif., and The Boeing Company of Houston will complete their spacecraft and launch-vehicle designs, test their hardware, and

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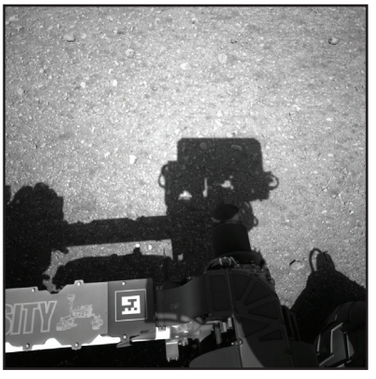
Launch director lauds Curiosity's epic landing

By Steven Siceloff
Spaceport News

Omar Baez completed his eighth trip to Mars on Monday when NASA's Curiosity rover touched down perfectly inside the Gale Crater to begin a two-year geologic survey of the mysterious red planet. As with everyone else on Earth, Baez can only go to Mars remotely, but that doesn't diminish his excitement.



CLICK ON PHOTO NASA

This is the first image taken by the Navigation cameras on NASA's Curiosity rover. It shows the shadow of the rover's now-upright mast in the center, and the arm's shadow at left. The arm itself can be seen in the foreground. To see the latest photos from Mars taken by Curiosity, click on the photo.

Nine months ago, Baez was carefully going over the details of Curiosity ahead of its launch on a United Launch Alliance Atlas V rocket. As launch director for NASA's Launch Services Program, it was up to Baez to confirm that the one-ton robotic rover was ready to make a 10-month voyage through space to a planet 14 million miles away.

On Nov. 26, 2011, Baez gave his "go" to start the mission, offering his confidence that everything he had seen showed that the rover was ready, not to mention the rocket pack that would fly through the Martian atmosphere and lower Curiosity onto the surface in a landing maneuver that had never been tried before.

Although he checked out everything several times in a processing hangar on Earth and worked closely with the rover's builders and operators from the Jet Propulsion Laboratory in Pasadena, Calif., he still had an anxious night watching the landing on TV.

"I think there's been roughly 7,000 people who have worked on this," Baez said Monday morning. "There's a personal sense of ownership and some skin that went into making this happen. So I am overjoyed. I was so ecstatic to

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Inside this issue...

Mock-up Orion stack forging path to launch

By Steven Siceloff
Spaceport News

The Vehicle Assembly Building's (VAB) transfer aisle offered a glimpse of the future recently as a full-size Orion spacecraft mock-up was placed atop a model of the service module so engineers and technicians could determine the exact dimensions for connectors that will run from the launch pad structure to the spacecraft before liftoff.

With the first test flights of the Orion scheduled in 2014 atop a Delta IV and 2017 for the Space Launch System (SLS), the work is critical to making sure the designs are accurate, said Doug Lenhardt, who is overseeing the Orion mock-up and operations planning for the Ground Systems Development and Operations program, or GSDO.

After all, changing a connector on a flight-ready spacecraft or heavy piece of launch pad equipment can get costly and time-consuming.

"The design is pretty far along for the capsule, so the sooner you can find flaws or details that you want the designers to change, the less expensive it is, the more time they have to look at it and possibly redesign," Lenhardt said. "You don't want to test all of this out on your first flight vehicle."

Stacked atop each other, the Orion crew module and service module mock-ups stand 27 feet tall. Technicians can climb inside the capsule and see how the astronauts will sit for the launch and how much room is available to them during the months it may take for a mission to an asteroid, the moon or Mars. The model's full size gives designers a greater appreciation of the scale of the spacecraft, Lenhardt said.

"That's the first thing people say when they see this, I didn't realize it was that big, that it was that tall,' " Lenhardt said. "When you go to computer-aided design models, you just don't appreciate the size."

NASA routinely used mock-ups, also known as boilerplates or pathfinders, to test equipment and techniques for all of its human spacecraft programs. The Orion work is the first NASA crewed spacecraft since the space shuttle. Many mock-ups are retired to public display, such as the "Pathfinder" shuttle on exhibit at Marshall Space Flight Center in Alabama.

NASA/Dimitri Gerondidakis

The mock-up components of an Orion spacecraft are laid out in the transfer aisle of the Vehicle Assembly Building at Kennedy Space Center on Aug. 6. In the foreground is the Launch Abort System, attached to the aerodynamic shell that will cover the capsule. To the right is the Orion capsule model on top of a service module simulator. All are the exact dimensions of the flight-ready Orion. For more on the Ground Systems Development and Operations program, click on the photo.

Lifting and moving the mock-ups also provides opportunities for technicians to maintain and practice their technical skills.

"Actually one of the big goals of the mock-ups is helping keep the workforce here proficient," Lenhardt said. "The crane guys are good, they're really good now because they were doing orbiters three or six times a year. Now, they're not lifting any flight vehicles, so obviously their skills will erode a little bit. It definitely does help to keep everybody proficient here, too."

The mock-up has been used to show firefighters and emergency medical technicians what to expect if they have to get astronauts out of the ship quickly. They saw very quickly that lifting astronauts up from their seats and out of the hatch is a lot different than it was aboard a space shuttle, Lenhardt said.

"When you're trying to get a crew out, seconds matter, so the fire and rescue guys came up with really good ideas to help the closeout (crew) do their job, to get the guys out faster," Lenhardt said.

The demonstrations already have identified numerous changes in approaches to handling the Orion spacecraft during launch preparations at the launch pad. For instance, a system of off-the-shelf scaffolds proved too difficult for crews in heavy protection gear to move around on, so a new approach is being developed.

The Space Launch System rocket is slated to be taller than a Saturn V, which means operators will have to lift Orion and its service module almost to the rafters of the 525-foot-tall VAB to place the spacecraft on top of the SLS.

With the steel and aluminum mock-up , the engineers can find out what work needs to be done before the spacecraft is lifted and what can only be done with the Orion mated to the top of the rocket.

The Orion model, an exterior replica of the spacecraft that is mostly empty on the inside save for four model astronaut seats and hatch, was used to practice stacking the launch abort system, or LAS, ahead of a flight test at White Sands, N.M., in May 2010. Kennedy engineers have been using it to model their systems and demonstrate processing techniques for several months, including placing it inside an experimental clean room.

For a service module, though, there was nowhere to turn to get a mock-up, Lenhardt said. So Kennedy designers came up with a framework and metal cylinder that would be the same dimensions as the service module and support Orion's weight. NASA and Boeing prototype shops turned the designs into the real model.

An operational service module holds propellant and consumables tanks, power-generating solar arrays, instruments and other hardware astronauts need. It stays attached to the Orion capsule until re-entry, when the capsule separates to return the crew to Earth.

"Ours is built just for the ground. It couldn't take the launch loads, the vibrations," Lenhardt said. "We only needed to simulate the outside. This is how the Orion vehicle will come to us from the Operations and Checkout Building, where it is assembled. So now we can do any of the operations, simulate them, with a flight-like vehicle."

Because the VAB's transfer aisle is vast, it can be used to simulate other facilities, too, so work that will take place in other areas of Kennedy to prepare Orion for flight can also be perfected without moving the mock-ups around.

The model also includes an aerodynamic shell that will anchor the LAS rocket to the spacecraft. In an emergency, the LAS would ignite and pull the Orion spacecraft to safety. Workers in the VAB have not stacked a rocket with an LAS since Apollo missions ended in 1975, because the space shuttle did not have such a mechanism.

"Is it better to stack the LAS when it's on top of the rocket? Is it better to stack it on the ground here and then lift the whole thing on top of the rocket?" Lenhardt said. "Those are the kinds of things we can try out here."

With the pace of work increasing and flight tests into space closer on the horizon, Lenhardt said excitement is building at Kennedy.

"We've got this, and with the EFT-1 spacecraft showing up in the Operations and Checkout Building, it shows people we are moving down a path," Lenhardt said. NASA is moving forward and it's starting to get pretty exciting."

NASA chief technologist praises Kennedy innovations

By Steven Siceloff
Spaceport News

A heat shield partially made from Martian or lunar soil, lighting that allows plants to grow in space and specialized containers that keep astronauts from getting infected by biological experiments were some of the technology developments shown to NASA's chief technologist during his visit to laboratories at Kennedy Space Center on July 30-31.

Although known for pioneering tools and techniques to prepare payloads and launch spacecraft successfully, Kennedy also works with its partner Space Florida to operate labs for scientists performing cutting-edge research in other fields.

"It's very exciting to be here at Kennedy Space Center because one of the best parts of my job is thinking about the future," said Mason Peck, NASA's chief technologist. "That's one of the reasons I wanted to do this in the first place."

Peck, who has been in his NASA post for six months, has been visiting NASA centers to see up-close what developments are under way. The trips are important for a variety of reasons, but Peck said there is a certain element of fun in seeing such things, too.

NASA/Frankie Martin

Dr. Mason Peck, NASA's chief Technologist, examines an innovative conductive material during a tour of the Space Life Sciences Laboratory at Kennedy on July 30. Peck also toured the center's Operations and Checkout Building and Shuttle Landing Facility and United Launch Alliance's Atlas V Space Operations Center at Cape Canaveral Air Force Station during his two-day visit.

"If you really want to geek out about technology, which is what I like doing, you have to come to a place like KSC," Peck said.

The Morpheus lander started flight tests Aug. 3 at the Shuttle Landing Facility also was shown to Peck, along with an Atlas V rocket that United Launch Alliance is prepping for a future mission.

One of Peck's duties is to help technologies developed for space make their way into the commercial market for use on Earth. He was told that center researchers have long developed innovative devices.

"We have a lot of people who do really great things and they don't know it," Martin Belson, president and CEO of Diversified Industries, told Peck. "They just say, 'I'm just doing my job.' We hear that so often."

Some of the technologies shown to Peck may find commercial applications sooner rather than later. A prime example of that is a system that electrically repels dust and dirt molecules from a metal surface. Michael Hogue's team developed it to keep solar panels clean on Mars and the moon, enabling a robotic explorer to operate longer.

Imagine, on Earth, a car that instantly shakes off dust and dirt itself. Hogue said auto companies already have made early approaches to mirror the technology.

"The success they've had here with turning out their products and embracing the business community is really unparalleled," Peck said. "When we spend money on the nation's space program, we're not spending it in space, we spend it right here on Earth. NASA has made contributions to our American life."

Peck also was shown some of the payload technologies developed at Kennedy that allow experiments to be performed safely on the International Space Station. Kennedy researchers have produced payload containers that have flown 51 times on shuttle and station missions, David Reed told Peck, and another seven are to fly on future missions, including an upcoming resupply flight.

"One of the very exciting things about NASA these days is we are looking to the future. We've got a lot on our plate, a lot of exciting work being done, a lot of it's being done right here at Kennedy," Peck said. "Right now, with NASA, we're seeing a return to what I'll call our innovation roots."

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see them succeed and see this thing on the surface."

Before the mission was launched, and knowing how difficult the entry and landing would be, Baez said he would call the flight a success if the rover landed and returned some video and photos of the barren Martian landscape.

That goal has been met, but Baez said he is on to the next level of expectations from Curiosity.

"I think I'm still numb, I'm still waiting for more pictures," Baez said. "I want to see the thing roll around and rove. I'm not ready to pop the champagne corks yet."

The landing buoyed the whole launch team.

"Everyone's walking with a spring in their step, just having a good time," Baez said. "Overall, it's a great feeling."

Even after launching eight spacecraft to Mars, Baez' work with the red planet is not finished. The Launch Services Program is working toward the launch of the MAVEN mission, a spacecraft that will study Mars from orbit. MAVEN, short for Mars Atmosphere and Volatiles EvolutioN, will look for clues as to why the Martian atmosphere changed and why its surface water was lost to space. It is scheduled to launch in late 2013.

As for Curiosity, it is the most powerful rover ever sent to another world and is taking tools to drill into and sample soil and rocks, along with lab mechanisms to experiment on the material directly, albeit millions of miles from Earth.

"One of my greatest thrills is to go to schools and speak to kids and one of the amazing things is being able to pull up a site and show them live pictures of (the smaller NASA rovers) Spirit and Opportunity on the surface of Mars, and I can't wait for the day I can do that for Curiosity and show them that our presence is somewhere else besides this planet," Baez said. "And it's not just Curiosity, it's the other two rovers, it's the orbiters and a lot of people don't realize that."

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then showcase how they would operate and manage missions from launch through orbit and landing.

"We have selected three companies that will help keep us on track to end the outsourcing of human spaceflight and create high-paying jobs in Florida and elsewhere across the country," Bolden said.

The proposals submitted by these three companies include processing and launching from Kennedy or the adjacent Cape Canaveral Air Force Station (CCAFS), which could create new jobs along Florida's Space Coast.

"The KSC team has the human capital expertise, unique facilities and specialized equipment to propel the agency into the next phase of space exploration," said Kennedy Director Bob Cabana, "and the Commercial Crew Program is a key part of that."

Sierra Nevada Corporation

SNC will receive up to $212.5 million to further advance its Dream Chaser spacecraft, which resembles NASA's space shuttle but is smaller and based on improvements to the agency's HL-20 lifting-body design.

During two previous development rounds with CCP, the company matured the spacecraft's guidance, navigation and control system and tested its hybrid-propellant propulsion system. It also built an engineering test article for approach-and-landing tests that are scheduled for later this year as part of NASA's Commercial Crew Development Round 2 (CCDev2) agreement with the company.

SNC has partnered with United Launch Alliance (ULA) of Centennial, Colo., to launch its spacecraft atop an Atlas V rocket. As progress is made with SNC's spacecraft, ULA will be working to outfit its launch pad at CCAFS's Space Launch Complex-41 with the structures and systems necessary to support crewed missions, such as crew access walkways and emergency escape systems.

As the only lifting-body spacecraft under development for crew transportation, the Dream Chaser will utilize Kennedy's unique Shuttle Landing Facility for traditional runway landings.

Space Exploration Technologies

SpaceX will receive up to $440 million for its crewed Dragon spacecraft and Falcon 9 rocket combination. The next-generation Falcon rocket will feature the company's Merlin1D engine to provide greater lift capability to support the heavier weight of an astronaut crew plus cargo.

The uncrewed version of Dragon made history in May as the first commercially built spacecraft to rendezvous and then berth with the International Space Station.

SpaceX's mission control will be at its headquarters facility in Hawthorne, while launches will take place from Space Launch Complex-40 at CCAFS. The company is working to outfit its Dragon capsule with the capability to land on dry land, rather than the ocean's corrosive salt water, and a targeted landing site is still in work.

During the previous partnership with CCP, the company provided details about its side-mounted launch abort system that will employ SuperDraco engines, as well as conceptual modifications to its launch pads to support crewed missions. The company also outlined crew living arrangements in its capsule, such as environmental control and life support equipment, initial displays and controls.

The Boeing Company

Boeing will receive up to $460 million to continue to develop its CST-100 spacecraft, which underwent rigorous testing during two previous development phases with CCP. The spacecraft's engines, orbital maneuvering system thrusters, and parachute landing and thermal protection systems were initially designed and tested.

Plans already are in work for the CST-100 to be manufactured and assembled in Orbiter Processing Facility-3 at Kennedy. The center also will be the home of the company's mission control facility.

An Atlas V, using the rocket's dual-engine Centaur upper stage, will loft Boeing's CST-100 spacecraft to low Earth orbit from CCAFS.

"I am very confident in the ability and capability of our three partners under iCap," said CCP Manager Ed Mango. "I believe that we can make great progress with these three partners."

The new CCiCap agreements follow two previous commercial endeavors by NASA to spur the development of transportation systems and subsystems. Four funded and three unfunded partners worked to meet 62 complex milestones during CCDev2, which should be completed by the end of this year.

"In just over a year, our CCDev2 partners made steady progress in the design and development of their systems," Mango said. "As we wrap up those partnerships under CCDev2, we commend the teams for their hard work and dedication, and we look forward to possibly working with them again in the future."

The creativity of NASA's industry partners during CCiCap will set the stage for a crewed orbital demonstration mission around the middle of the decade.

Future development initiatives will eventually lead to the availability of human spaceflight services for the agency to send its crews to the International Space Station, where critical research is taking place daily to benefit all of humanity. It could also make space more accessible and open for business for other government and commercial customers.

Dream Chaser/Atlas V

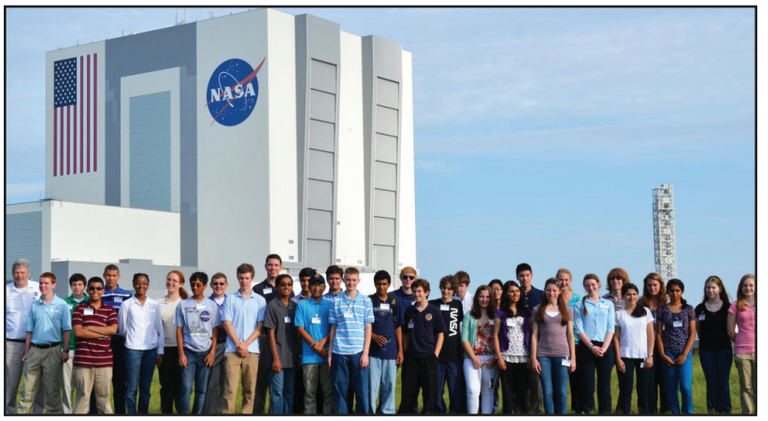
Dragon/Falcon 9

CST-100/Atlas V

Scenes Around Kennedy Space Center

NASA

Kennedy Space Center employees George Haddad and Josephine Santiago-Bond graduated from the 2011-2012 Systems Engineering Leadership Development Program (SELDP) on June 20 at NASA Headquarters. From left are Mike Ryschkewitsch, NASA chief engineer; Santiago-Bond; David Kruhm, KSC SELDP advocate; Haddad; and Charles Bolden, NASA administrator.



For NASA

Kennedy Space Center hosted an "Unconference" for dozens of INSPIRE students and their parents from July 31 to Aug. 2. Students and parents participated in workshops and facility tours. The group got to view an IMAX movie and rode on the Shuttle Launch Experience.

CLICK ON PHOTO NASA/Kim Shiflett

Technicians prepare to remove the payload faring containing the two Radiation Belt Storm Probes, or RBSP, spacecraft from a transport vehicle to integrate with a United Launch Alliance Atlas V rocket at Space Launch Complex 41 at Cape Canaveral Air Force Station, Fla. Liftoff is targeted for Aug. 23.

Photo courtesy of Lockheed Martin

Children of Lockheed Martin and United Launch Alliance workers enjoy a day of mind-expanding activities at Young Minds At Work (YMAW) on July 18 at Cape Canaveral Air Force Station. The event, which allows parents to showcase their place of work, aims at encouraging the study of and potential careers in Science, Engineering, Math and Technology (STEM). More than 200 children participated.

Firing Room-3 modifications focus on 'flexibility in design'

By Bob Granath
Spaceport News

For more than 40 years, the firing rooms of the Launch Control Center, or LCC, have served as the "brain" for launches at NASA's spaceport. Civil service and contactor personnel staffed consoles monitoring every aspect of launch countdowns. Whether an Apollo-Saturn rocket or the space shuttle, the focus always was on one program. In the near future, however, the Kennedy Space Center control rooms could support a variety of upcoming launch vehicles.

When the LCC and its four firing rooms were built in the 1960s, all attention was on launching the Saturn V vehicles that would take astronauts to the lunar surface. In the years following the conclusion of Apollo, teams staffing the consoles focused solely on sending space shuttle crews to Earth orbit to conduct research and deploy, service and retrieve satellites, as well as construct the International Space Station.

Kennedy's Launch Complex 39 is now transitioning to be able to support multiple users such as the Orion Multi-Purpose Crew Vehicle, the Space Launch System, or SLS, and spacecraft for the Commercial Crew Program. The firing rooms also are being modified to be more generic in nature for upcoming programs.

CLICK ON PHOTO *NASA/Jim Grossmann*

Technicians remove legacy consoles and monitors to make way for new systems designed to be flexible so controllers can process and launch multiple types of rockets and spacecraft, whether they are government or commercial models, in Firing Room-3 of the Launch Control Center at Kennedy Space Center on July 6. Kennedy's Launch Complex 39 is transitioning to support multiple users with the firing rooms being modified to be more generic in nature for upcoming programs.

"While our first focus will be on supporting Orion and SLS, we want to be able to be multi-disciplined, supporting other launch vehicles that may be coming along," said Stephen Cox, NASA Operations Manager for End-to-End Command and Control, and Communications Elements. "That could include commercial or other NASA customers."

That adaptability will be crucial as NASA moves forward. According to the recent Kennedy Space Center Future Development Concept report, "In the years ahead, Kennedy will transform from a government and program-focused, single-user launch complex to a more capability-centric and cost-effective multiuser spaceport. Kennedy's new mission will be to enable government and commercial space providers with facilities, (and an) experienced workforce (with) the knowledge necessary to support existing mission sets and new space programs."

"Flexibility in design is now the key, as we prepare for the future," said Cox. "We want to be sure we are building the right tools for the jobs ahead."

About six months ago, crews began removing the legacy consoles, cables and flooring from Firing Room-3, much of which had been in place since the Apollo era.

"One of the many changes is the electrical and data cables being replaced," Cox said. "New codes require cables that won't burn. That's a positive step since ensuring safety has always been our foremost concern and continues to be with the work going on now."

While old is making way for new state-of-the-art equipment, history is being preserved.

"Representatives of several museums and other educational institutions have come in and identified artifacts they would like to display," Cox said.

"The Smithsonian and the California Science Center were among those requesting artifacts," Cox said. "We're proud these consoles will be used to help tell Kennedy's story. While we don't know all the exact programs we may be supporting, we plan to make sure the new Firing Room-3 will have the capability to adapt to whatever is needed."

Bolden challenges International Space University participants

By Bob Granath
Spaceport News

Following nine weeks of hearing from leading experts in space technology and participating in hands-on activities such as designing and launching model rockets, approximately 130 participants representing 31 countries concluded their experience in the International Space University, or ISU, Space Studies Program for 2012. Closing ceremonies which took place Aug. 3, were highlighted by remarks from NASA Administrator Charles Bolden.

"ISU is a great tool for expanding your professional experience," Bolden said. "As you know, it's not all about the glories of launches or landings. There's a lot of hard work behind the scenes to make it all happen and to manage missions as they race through space."

This intensive program is designed for post-graduate university students and professionals during the summer. ISU, hosted by a different country each year, provides a unique educational experience for participants from around the world. Kennedy Space Center and the Florida Institute of Technology served as co-hosts for this year's event, which began June 4.

As the keynote speaker for the graduation, Bolden noted international cooperation will play an increasingly important role in future space exploration and solving the problems that lie ahead.

"As we move forward, the partnerships we share among nations are going to be critical to our success as global space-faring people," he said. "I know 'out-of-the-box' thinking was the sort of thing you were looking at in your team projects."

The closing came just two days prior to the Mars Science Laboratory's landing on Mars.

"As we wrap up this ISU program, we're on the cusp of another thrilling milestone in exploration as the Curiosity rover prepares to land on Mars," Bolden said. "Curiosity can stand in for a lot of what ISU means to our field. It represents the intersection of exploration and science -- a great example of how each can support the other. Not only will Curiosity return amazing science as the largest rover ever landed on the Red Planet, it will also serve as a precursor to the human missions to Mars we're working for in the 2030s."

Janet Petro, Kennedy's deputy center director, challenged the students to spearhead upcoming programs.

"We have a really bright future, and I believe you can help us move forward," she said. "The space industry is constantly evolving. We've got new places to explore and new ways to get there and new challenges to conquer. With this, we need future international leaders and I think those leaders are sitting here in this audience today."

Headquartered in Strasbourg, France, the International Space University provides an interdisciplinary education experience to support the development of future leaders in the world space community. The program curriculum includes sessions in space physical sciences, space systems engineering, policy and law, business and management, space and society, satellite applications, space life sciences and human spaceflight.

Remembering Our Heritage

Social media followers hear stories of Kennedy's 50-year history

By Bob Granath
Spaceport News

While the 50-year history of the Kennedy Space Center includes powerful rockets lifting off on historic missions to Earth orbit and beyond, it also is a story of dedicated and talented people working as a team. About 45 of NASA's social media followers gathered at the spaceport Aug. 2-3 to hear from key past and present leaders who related stories of the space agency's efforts to explore the unknown. It was the first social media event run entirely by Kennedy.

A relatively new phenomenon, social media enthusiasts use web- and mobile-based technologies to communicate with followers in interactive dialogues. Reaction was posted instantly on Facebook, Twitter and similar media.

NASA Administrator Charlie Bolden was among those who addressed the group explaining the space agency's approach to planning for the future.

"People today want to see performance," he said. "That's the course we've been trying to set over the last three years or so. Establish some goals for NASA, tell people when we are going to do it and how much it's going to cost -- as best we can determine -- and then try to do it.

"Today, for humanity, I think Mars is the ultimate destination," Bolden said.

The NASA Social also featured speakers who worked across the river in the earliest days of Project Mercury and were a part of the organization that became Kennedy.

"It was a different era when we began," said Jack King, NASA's first chief of Public Information. "The (Wernher) von Braun team transferred to NASA and Kurt Debus came down here to the Cape, setting up the Launch Operations Center in 1962. We were in a space race between two super powers -- the United States and the Soviet Union."

Speakers recalled how the nation pulled together to achieve the remarkable goal of landing on the moon before the end of the decade.

CLICK ON PHOTO *NASA/Gianni Woods*

About 45 of NASA's social media followers listened to speakers Aug. 2-3 during two days of presentations on the Kennedy Space Center's past, present and future. It was the first social media event run exclusively by Kennedy.

"Going to the moon wasn't a big deal to me, (the big deal) was what it took to get there," said Lee Solid, a retired senior executive with Rockwell and Boeing. "I can't imagine anything more exciting."

The social media participants represented varied backgrounds including an engineer, a law professor, a stay-at-home mom and a self-described "NASA nerd." What they all had in common was an interest in the space agency's efforts to explore and utilize space.

One participant, University of South Florida student Joey Vars, pointed out that hearing first-hand recollections helped him get a better feel for the effort involved in going into space.

"When you hear from people who lived the history, you understand what it took to do what they did," said Vars, who goes by "RocketMan" on his Facebook page.

After listening to recollections of Kennedy's history, anecdotes and achievements, several social media participants had high praise for the space center's team.

"The dedication and pride of the people who work here is amazing," said Kim Davis, a fourth-grade teacher from Auburn, Ala. "I sure appreciate their contributions."

Another participant, Dan O'Shea, is a professor at the University of Phoenix campus in Tampa, Fla. He has more than 5,500 followers on his Google Plus account.

"I started following NASA's programs in the 1960s," O'Shea said. "I'm still fascinated by what goes on here."

Space Gateway Support President Roy Tharpe recalled the uncertainty that was inherent during the early years of the fledgling space program. While on one of his first jobs as part of a surveying crew for Cape Canaveral's Launch Complex 34, he watched a rocket lift off just to the south.

"It launched up about 350 feet and turned left . . . right at me," he said. "I jumped to the ground just as it exploded."

"Imagine a rocket taking a turn and heading straight for you. Yikes!" Davis posted on her Facebook page.

Tharpe was later a part of the team that helped prepare for construction of the Vehicle Assembly Building and other elements of the complex that would be used to launch the first humans to the moon.

Solid recounted the development of rockets and their engines through the relatively small Redstone, Jupiter and Thor-Delta programs to the breakthroughs that resulted in powerful engines for the Saturn and space shuttle launch vehicles.

"There has been no more efficient machine than the space shuttle main engine, or SSME," he said. "In fact, the SSMEs are now being readied for use on the Space Launch System."

The Space Launch System is an advanced, heavy-lift launch vehicle that will provide a new capability for human exploration beyond low Earth orbit.

Another Apollo veteran to address the group was former Kennedy Space Center Director Jay Honeycutt. After serving in various roles in the Vehicle Simulation Section at the Johnson Space Center during the moon landing program, he transferred to Kennedy, serving as director of Shuttle Management and Operations and as center director.

"The center director is like being mayor of a small city," Honeycutt said. "You try to keep between 12,000 to 15,000 people pointed in the same direction."

Dr. Liz Warren, communications coordinator for Kennedy's International Space Station Program Science Office, encouraged the participants to join a friend some evening or early one morning in watching history in the making as the station flies overhead.

"Be sure to tell your friend some great factoid about the space station," Warren said. "For example, did you know that during the station's first 10 years, over 1,100 investigations were conducted by researchers from more than 60 countries?"

Thomas Engler, deputy manager of Kennedy's Center Planning and Development Office, was one of several speakers who updated the space center's plans for upcoming programs.

"There is a lot of exciting work ongoing to position us for the future," he said. "The next 50 years will be much more diverse than the past."

After hearing about NASA's Commercial Crew, Launch Services and center development programs, Emily Carney tweeted a message with a common theme among the day's social media participants.

"Just like to let everyone know that NASA is NOT going out of business," said Carney, a journalist from St. Petersburg, Fla.

The social media participants also toured the historic launch pads of NASA's early days and the present-day facilities that supported the Space Shuttle Program and Kennedy's transition to the future.

"You know the Vehicle Assembly Building is big," O'Shea said. "But, my gosh, I was surprised by the size inside. It was also great to see (the space shuttle) Atlantis up close."

The event concluded with Kennedy's participation in NASA's first-ever multi-center simulcast, previewing the landing of the Mars Science Laboratory's Curiosity rover.

Young aviators with lofty aspirations fly in for Kennedy tour

By Linda Herridge
Spaceport News

Several young students and their flight instructors from the Florida Institute of Technology (FIT) in Melbourne flew their lightweight aircraft north and touched down at Kennedy Space Center's Shuttle Landing Facility (SLF) on July 20. It just happened also to be the 43rd anniversary of the Apollo 11 moon landing.

Though not as historic an event as a moon landing, to the seven middle- and high-school students who are participating in FIT Aviation's Av/Aero summer camp experience, their touchdown in Piper Warrior and Cessna 172S aircraft at the SLF was definitely worth the ride.

NASA Aviation Safety Officer Joe Torsani met the group and accompanied them on their tour of several facilities.

They gathered in a support building near the SLF to hear from Kennedy Director Bob Cabana who shared stories of his interest in becoming a test pilot and eventually becoming a NASA astronaut.

"Make sure you enjoy what you're doing," Cabana said. "And continue to set those goals. Don't limit yourself. You're capable of doing anything that you set your mind to if you apply yourself."

FIT Aeronautics Outreach Coordinator Juliet Sisk said the field trip to Kennedy was one of the highlights of the Av/Aero Experience.

NASA/Kim Shiflett

Students and their flight instructors from the Florida Institute of Technology in Melbourne view F104 Starfighter aircraft and listen to Starfighter Director Rick Svetkoff inside the RLV Hangar near Kennedy Space Center's Shuttle Landing Facility on July 20. For more, click on the photo.

"From landing to takeoff, our tour was engaging and informative," Sisk said. "Everyone welcomed us warmly."

Four students from Brevard County, two students from Washington state and one student from Texas, along with seven flight instructors, toured the SLF midfield Air Traffic Control Tower and viewed the plaques marking wheels stop for each of the final space shuttle landings.

They viewed F104 Starfighters and two NASA Huey helicopters in the RLV Hangar and met Starfighters Director Rick Svetkoff, and toured the Vehicle Assembly Building where space shuttle Atlantis temporarily is stored.

Tenth-grade student Nicholas would like to attend the Naval Academy and acquired his interest in aviation from his father, a pilot, and his great grandfather, an Air Force fighter pilot who flew F4 Phantoms.

Eighth-grader Sean enjoyed the tour of the F104 Starfighters.

"It was very cool seeing the jets," Sean said. "I was afraid of flying at first, but now I would like to go into engineering and fly an airplane or helicopter in the future."

Cody, an eleventh-grader, said he would like to learn to fly an F104 Starfighter and wants to attend the Naval Academy.

FIT Aviation Director Glenn Vera who accompanied the group of students, said, "NASA and the entire KSC team have long set as one of their goals to inspire the next generation of aerospace explorers. With these young students, they definitely succeeded in accomplishing that goal today."

Tennesse Garvey is FIT Aviation's retail program supervisor. He and the other instructors were just as excited as the students to be at Kennedy.

"The Av/Aero Experience is the first camp of its kind to be offered by FIT," Garvey said. "It is such a unique opportunity to experience the tour of Kennedy Space Center and hear from Center Director Cabana."

Assistant Chief Flight Instructor Shannon Ferry said the Av/Aero and other FIT summer aviation camps were designed to expose young adults to the aviation industry which includes more than just flying.

"We are so grateful to NASA for this experience. It was 'out of this world,' " Ferry said.

Sisk said through FIT's basic Summer Flight Camp, Advanced Aviation Academy and now, the hybrid aviation aerospace camp, or Av/Aero Experience, she has the privilege of watching young people mature into knowledgeable, confident student pilots.

"It was an honor getting to host these future aviators -- who knows, maybe future astronauts," Torsani said. "Their enthusiasm, curiosity and initiative are just what we need in the next generation of aerospace pioneers."

NASA Employees of the Month: July

NASA/Kevin O'Connell

Employees for the month of July are, from left, Cary J. Peaden (NE), Dave Ungar (IT), Bill Heidtman (GP), Nicole Rivera (OP), Leo DeCesare (TA), Behrouz F. Pashaee (NE), Kirk Ketterer (SA). Not pictured are Luis Berrios (EX), Fernan Rodriguez (VA), Thomas Drake (LX), Ken Thornsley (PA)

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

FROM THE VAULT

NASA file/1963

This aerial view shows construction of the Operations and Checkout Building (previously known as the Manned Spacecraft Operations Building) on July 29, 1963. It was added to the U.S. National Register of Historic Places on Jan. 21, 2000.

John F. Kennedy Space Center

Spaceport News

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