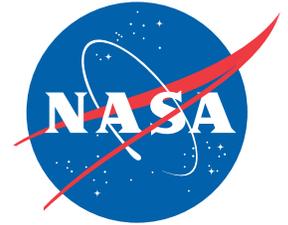


Spaceport News

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



CLICK ON PHOTO

NASA/Jim Grossmann

The Optical Payload for Lasercomm Science, or OPALS, experiment has been unpacked in a test cell at Kennedy's Space Station Processing Facility offline laboratory July 11. NASA will use the International Space Station to test OPALS' communications technology, which could dramatically improve spacecraft communications, enhance commercial missions and strengthen transmission of scientific data. The experiment is slated to fly aboard a SpaceX Dragon commercial resupply mission to the space station. The mission is expected to run 90 days after installation on the outside of the station. For more information about OPALS, click on the photo.

OPALS aims at high-speed downlink

By Linda Herridge
Spaceport News

An optical communications technology demonstration experiment developed at NASA's Jet Propulsion Laboratory (JPL) in Pasadena, Calif., is paving the way to significantly improve the agency's data rates for communication with future spacecraft by a factor of 10 to 100 over current technologies.

The nearly 600-pound Optical Payload for Lasercomm Science (OPALS) was sent from JPL on a mounting plate about 4 feet by 4.5 feet to Kennedy. It arrived at the Space Station Processing Facility July 11. The experiment will be prepared for delivery to the International Space Station (ISS) aboard a SpaceX Dragon com-

mercial resupply capsule on the company's Falcon 9 rocket early next year.

OPALS will be mounted on the exterior of the space station and communicate with a ground station near Wrightwood, Calif., 77 miles from Los Angeles, during its 90-day mission.

"It's like aiming a laser pointer continuously for two minutes at a dot the diameter of a human hair from 30 feet away while you're walking," explained Bogdan Oaida, OPALS systems engineer at JPL.

As OPALS went through its development cycle its uniqueness kept increasing. Among many firsts, Oaida said OPALS will be the first U.S. laser communication terminal on the station and will be one of the first NASA payloads to fly in the un-

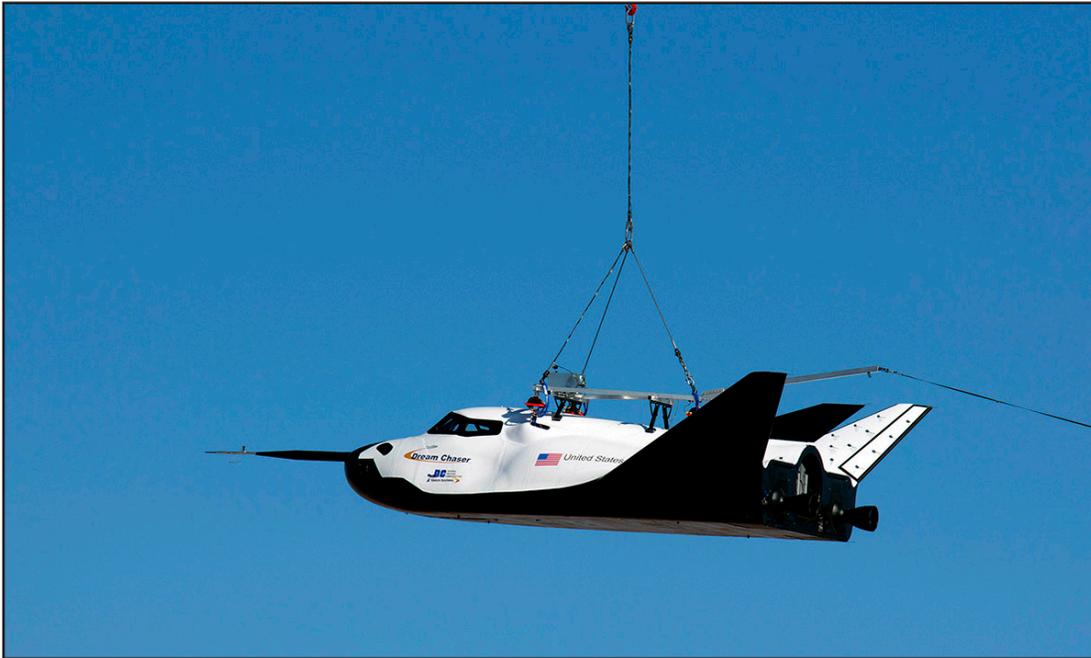
pressurized section of the Dragon capsule.

Jennifer Wahlberg is the Ground Processing Directorate's ISS integration lead for utilization payloads like the OPALS experiment at Kennedy.

"The OPALS experiment is an external payload that will be attached to the ISS via the Expedite the Processing of Experiments to Space Station (EXPRESS) Logistics Carrier," Wahlberg said.

Oaida said the benefit to the station will be tremendous, as OPALS is one of the first instruments in a long line of payloads currently in the works to utilize the plentiful resources the orbiting laboratory and platform has to offer.

For the complete story, go to:
<http://www.nasa.gov/kennedy>



CLICK ON PHOTO

NASA/Dryden

Sierra Nevada Corporation (SNC) of Louisville, Colo., performs a captive-carry test of the Dream Chaser spacecraft Aug. 22 at NASA's Dryden Flight Research Center in Edwards, Calif. For more information about the agency's Commercial Crew Program, click on the photo.

Sierra Nevada completes second Dream Chaser captive-carry test

By Rebecca Regan and Steve Siceloff
Spaceport News

A prototype spacecraft called Dream Chaser was hoisted high above the dry lakebed at Edwards Air Force Base in California by a helicopter to rehearse for a series of upcoming test flights that could see the winged lifting body glide on its own for the first time.

Built by Sierra Nevada Corporation, the Dream Chaser is being developed in partnership with NASA's Commercial Crew Program (CCP) to carry people to and from low-Earth orbit.

The flight, called a captive-carry test since the Dream Chaser did not fly on its own, saw an Erickson Air-Crane take the full-size test article to about 12,400 feet before tracing the projected 3-mile-long glide slope the craft is to follow during free-flight glide tests.

The two-hour flight, which involved NASA's Dryden Flight Research Center, helped verify communication and navigation performance. Dream Chaser's flight computer, along with its guidance, navigation and control systems were tested. The landing gear and nose skid also were deployed during flight.

"It's great to see real American-made hardware taking flight right here in the U.S.," said CCP manager Ed Mango. "This is just the start of an

exciting flight test campaign for SNC's Dream Chaser at Dryden."

This was the second captive-carry test of the Dream Chaser flight vehicle and its first captive-carry at Dryden. Data obtained from the test will provide SNC valuable information about the Dream Chaser hardware and ground operations. The test paves the way for upcoming free-flight tests at Dryden this fall as part of the company's agreements with NASA.

"This test is very much a rehearsal for the free-flight drop," said Valin Thorn, the NASA CCP flight test support manager, working with SNC during development. "I'm impressed by the SNC team and the thoroughness of their preparations."

Through a reimbursable Space Act Agreement with the center, the company is utilizing Dryden's unique testing facilities and experienced flight-test personnel to prove the Dream Chaser's systems.

"Today is the first time we have flown a fully functional Dream Chaser flight vehicle, and we are very pleased with the results," said Mark Sirangelo, corporate vice president and head of SNC's Space Systems. "Our team represents the very best in collaboration between industry and government. We have worked closely with NASA, Dryden and the Air Force to reach this important milestone in our flight test program."

CCP's unique funding pays off

By Steven Siceloff
Spaceport News

The technical innovations required to develop the first fleet of private, American spacecraft capable of reaching orbit are significant for aerospace companies, but the need to fund many of the developments as a public-private partnership demands as much innovation and consideration.

In previous human space-flight programs, NASA paid for all aspects of development, testing and operations of human-rated spacecraft. The space agency still plays a sizeable part in spacecraft development through its Commercial Crew Program (CCP), but partner companies invest financially as well, and have much more freedom to design and manufacture with their own techniques. NASA's extensive expertise plays a critical role in numerous areas, including crew safety.

"We want to pay an American company for transportation services and return crew launch capabilities to U.S. soil," said Ed Mango, NASA CCP manager. "This will only be possible if NASA and its partners continue to make this a joint endeavor."

The Sierra Nevada Corporation (SNC) of Louisville, Colo., recently completed a

To CCP, Page 5

For the complete story, go to
<http://www.nasa.gov/kennedy>

NASA seeks new proposals for CubeSat missions

By Anna Heiney
Spaceport News

NASA is looking for a few good nanosatellites.

The agency is searching for new projects for its CubeSat Launch Initiative, which aims to give small satellite payloads the chance to fly on rockets already slated for upcoming launches. CubeSats are tiny research spacecraft packaged into four-inch cubes called “nanosatellites” because of their compact size.

The initiative offers educational opportunities for students and teachers, helping propel interest in science, technology, engineering and math, better known as STEM disciplines. It offers a low-cost alternative for testing out new spaceflight technologies. It also generates partnerships between NASA,



NASA/Vandenberg AFB

The Dynamic Ionosphere Cubesat Experiment, or DICE, is prepared for launch. DICE flew as an auxiliary payload aboard a United Launch Alliance Delta II rocket during launch of NASA's NPP satellite in 2011.

industry and academia.

Because CubeSat payloads must align with NASA's strategic plans and educational goals,

new projects should address specific aspects of science, exploration, technology development, education or operations.

More online

To learn more about NASA's CubeSat Launch Initiative, visit:
<http://go.nasa.gov/nXOuPI>.

Many participants already have experienced the thrill of seeing their projects fly. During the initiative's four previous selection rounds, 89 payloads from 25 U.S. states were chosen for launch opportunities from 2011 through 2016. Of the CubeSats already selected, 12 satellites have flown and 21 more are scheduled for launch later this year.

Developers must send in submissions electronically by 4:30 p.m. EST on Nov. 26. Developers whose CubeSat proposals are selected may be able to see their creations launched as an auxiliary payload on a mission between 2014 and 2017.

NASA releases mosaic of Earth waving at Cassini

NASA News Report

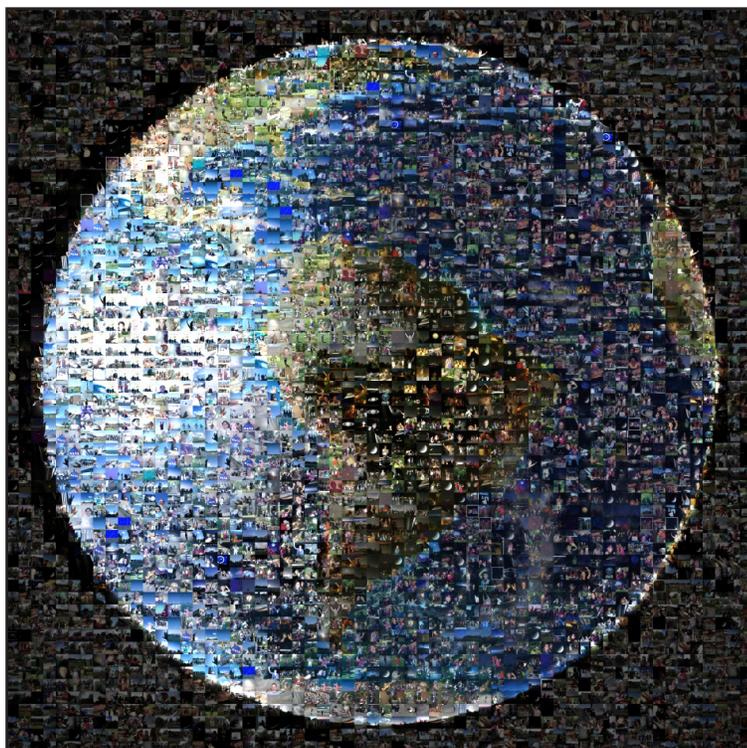
PASADENA, Calif. – People around the world shared more than 1,400 images of themselves as part of the Wave at Saturn event organized by NASA's Cassini mission on July 19 -- the day the Cassini spacecraft turned back toward Earth to take our picture.

“Thanks to all of you, near and far, old and young, who joined the Cassini mission in marking the first time inhabitants of Earth had advance notice that our picture was being taken from interplanetary distances,” said Linda Spilker, Cassini project scientist at NASA's Jet Propulsion Laboratory, Pasadena, Calif. “While Earth is too small in the images Cassini obtained to distinguish any individual human beings, the mission has put together this collage so that we can celebrate all your waving hands, uplifted paws, smiling faces and artwork.”

The images came from 40 countries and 30 U.S. states via Twitter, Facebook, Flickr, Instagram, Google+ and email.

From its perch in the Saturn system, Cassini took a picture of Earth as part of a larger set of images it was collecting of the Saturn system. Scientists are busy putting together the color mosaic of the Saturn system, which they expect will take at least several more weeks to complete.

For more information on the Wave at Saturn campaign, visit <http://saturn.jpl.nasa.gov/waveatsaturn>.



CLICK ON PHOTO

NASA/JPL-Caltech

From more than 40 countries and 30 U.S. states, people around the world shared more than 1,400 images of themselves as part of the Wave at Saturn event organized by NASA's Cassini mission. That event July 19, marked the day the Cassini spacecraft turned back toward Earth to take our picture as part of a larger mosaic of the Saturn system. As a tribute to the people of Earth, the mission has assembled this collage from the shared images, using an image of Earth as the base image. For more about the Cassini mission, click on the photo.

2013 KSC Honor Awards

NASA Distinguished Public Service Medal

Christopher Keller

NASA Group Achievement Awards

Emergency Egress System Safety Analysis Team

Executive Safety Forum Team

GSDO 2013 Program SRR/SDR

KNPR 8715.3 Re-write Team

KSC Television and WebTeams

LDCM Integration and Launch Team

Mission Assurance Engineering Team

Orion Anomaly Materials Team

Programs' Communication Strategy Team (PCST)

TDRS-K Integration and Launch Team

TOSC Source Evaluation Board

NASA Distinguished Service Medal

Annette Dittmer
John Madura

KSC Diversity and Equal Opportunity Award

Timothy Griffin

KSC Strategic Leadership Award

Loraine Tuttle

KSC Center Director Award

Scott Colloredo

Individual KSC Honor Awards

KSC Certificates of Commendation

Linda Adams
Norman Beck
Clara Blakeley
Sergio Briceno
Philip Bristol



NASA

Scott Colloredo, of NASA's Systems Engineering and Integration Division, accepts the KSC Center Director Award Aug. 13, the highest award the center confers on an employee. Colloredo was given the award for exceptional technical excellence leading the strategy and transition of Kennedy's multiuse architecture in support of NASA and commercial customers.

- Rodney Brown
- David Burris
- Clayton Butler
- Julie Caimi
- Diana Calero
- Nathalie Castano
- Phillip Coffin
- Dawn Cummings
- Leo Decesare
- Arthur Edwards
- Kathleen Ellis
- Janet Gobaira
- Eugene Hajdaj
- Thomas Hogrefe
- Joy Huff
- Dawn Kniffin
- Michael Lane
- Charles Loftin
- Eduardo Lopez Del Castillo
- Everette Martin
- Lien Moore
- Mary Mulligan
- Patricia Nicoli
- Stephen Paglialonga
- Lori Paule
- Eric Perritt
- Roger Pierce
- Patti Powell
- Lisa Saunders
- Regina Spellman
- Maria Stelzer
- Andrew Swift
- Prentice Washington
- Jeerapong Wongchote

NASA Exceptional Achievement Medal

- Perry Becker
- Robert Brown
- Luz Calle
- Michael Campbell
- Kenneth Carr
- Leonard Duncil
- Laura Govan
- Lori Hicks
- William Higgins
- Timothy Honeycutt
- Grace Johnson
- Kirk Ketterer
- Bruce McBride
- Cheryl McPhillips
- Andrea Meyer
- Darcy Miller
- Marcus Orr
- Jesse Porter
- Lauren Price
- Pedro Rodriguez
- Jeffrey Thon
- Liliana Villarreal
- Philip Weber
- Lori Weller
- Thomas Wilczek
- Henry Yu

NASA Exceptional Administrative Achievement Medal

- Joslyn Barroso
- Zulaida Cipo

NASA Exceptional Bravery Medal

- Christopher Cronwell
- Timothy Pirlo
- Tamara Pope

NASA Early Career Achievement Medal

- Stephanie Covey
- Jennifer Dorsey
- Layla Dowdy
- Fernan Rodriguez-Ortiz
- Christine Shepperd
- Misty Snopkowski

NASA Exceptional Public Service Medal

- Robert Abernathy
- Ladonna Neterer

NASA Exceptional Service Medal

- Darren Bedell
- Keith Castilow
- Joseph Delai
- William Dimmer
- Teresa Kinney
- David Lubas
- John Matthews
- Michele Taylor
- Sharon White
- Tami Wilson

NASA Outstanding Leadership Medal

- John Branard
- Todd Brandenburg
- Mary Chevalier
- Denise Coleman
- Mary Faller
- Dana Hutcherson
- Tracey Kickbusch
- Jeremy Parsons
- Robert Peacock
- Brent Seale
- Steven Sullivan
- Terry Turlington

NASA Outstanding Public Leadership Medal

- Sarah Patterson
- Rachel Power

NASA Silver Achievement Medal

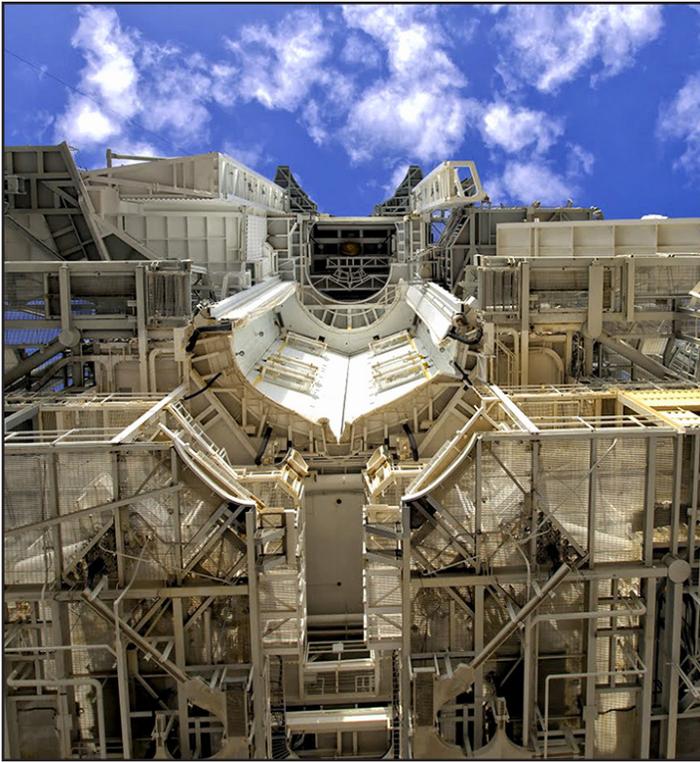
(Group Category)

- Technical Integration Leads Team
- Launch Services Program Flight Dynamics Team

(Individual Category)

- Steven Pece
- David Wagner

Scenes Around Kennedy Space Center



[CLICK ON PHOTO](#)

Photo courtesy of Google/Wendy Wang

The Rotating Service Structure at Launch Complex 39A at Kennedy was one of the many historical facilities Google precisely mapped for the company's map page. The work allows Internet users to see inside buildings at Kennedy as they were during the space shuttle era. To take a virtual tour, click on the photo.



[CLICK ON PHOTO](#)

NASA/Jim Grossmann

Technicians install the parabolic high-gain antenna onto the Mars Atmosphere and Volatile Evolution (MAVEN) spacecraft in the Payload Hazardous Servicing Facility at Kennedy Aug. 9. The antenna will communicate vast amounts of data to Earth during the mission. MAVEN is being prepared for its scheduled November launch to Mars aboard a United Launch Alliance Atlas V rocket. Positioned in an orbit above the Red Planet, MAVEN will study the upper atmosphere of Mars in unprecedented detail. For more on the MAVEN mission, click on the photo.

From **CCP**, Page 2

milestone for investment financing under its Commercial Crew Integrated Capability (CCiCap) agreement with NASA. SNC is building a winged lifting body spacecraft called Dream Chaser to fly to the space station on a rocket and return to Earth as a glider landing on a runway.

"SNC has committed substantial financial contributions to the Dream Chaser throughout the entire Commercial Crew Program," said Eren Ozmen, SNC's president and chief financial officer. "In these uncertain financial times of budget cuts and sequestration, it is even more necessary that the commercial crew partners step up and invest in their own programs to achieve our national objectives."

NASA awarded CCiCap agreements to SNC for Dream Chaser, The Boeing Company of Houston for its CST-100 capsule and Space Exploration Technologies (SpaceX) of Hawthorne, Calif., for its Dragon spacecraft. Each agreement includes a precise set of milestones, both technical and financial. All three companies have met the financial standards and disclosures required to date.

Because the financial burden is not born entirely by NASA, the companies have a concrete incentive to fly safely.

"The 'skin in the game' method also drives positive behaviors such as dedication to reliability, and meeting performance and cost objectives," said Gwynne Shotwell, president and chief operating officer of SpaceX.

Because they are of vastly different sizes and capabilities, each of the three companies has tailored its work to its own situation.

Boeing, for instance, has been able to call on engineers from airliner development and other areas of the company to design or improve elements of the CST-100, said John Mulholland, Boeing vice president and program manager of Commercial Programs.

"Our manufacturing and assembly processes are brought from across Boeing to make it streamlined," Mulholland said. "A lot of process and system-level advancements we've been able to bring in across the company."

Although NASA will be a prominent if not primary customer for the companies, Boeing is focusing on ways to expand the market. Mulholland offered this appraisal of the emerging arena of commercial spaceflight:

"It's still a very immature market but in our discussions with other potential users, we see a lot of excitement about it and exploring a lot of possibilities. The excitement is there but I really believe we just need to get a little further along so there is certainty within the customer base that we will be there on time."

This new approach to funding reflects the coming era of spaceflight development and exploration, Mango said. Private companies tapping into NASA's know-how can carry astronauts and others to low-Earth orbit while the agency pursues missions into deep space. Rather than having to choose one or the other, this approach lets the nation benefit from both, resulting in less money from taxpayers.

Orion mock-up aces stationary recovery test

By Denise Lineberry
Langley Research Center

With the U.S. Navy's well deck ship USS Arlington stationed against its pier at Naval Station Norfolk in Virginia, divers in small boats approached a test version of NASA's Orion crew module. As part of a deliberative process, the divers attached tow lines and led the capsule to a flooded well deck in the ship. With the capsule in position over the recovery cradle, the water drained until the capsule settled.

The stationary recovery test is helping to ensure that when Orion returns from deep space missions and splashes down in the Pacific Ocean, the methods used to recover the spacecraft and obtain critical heat shield data are sound.

"Today marks a significant milestone in the Navy's partnership with NASA and the Orion human spaceflight program," said Navy Commander Brett Moyes, Future Plans Branch chief, U.S. Fleet. "The Navy is excited to support NASA's continuing mission of space exploration. Our unique capabilities make us an ideal partner for NASA in the recovery of astronauts in the 21st century — just as we did nearly a half century ago in support of America's quest to put a man on the moon."

The stationary recovery test was two years in the making. NASA met in working groups with the Navy to leverage their well deck recovery expertise to develop recovery procedures for the Orion crew module. Together, NASA and the Department of Defense (DOD) carefully choreographed each step of the test.

"It was nice to see how the ballet of it all performed," said



CLICK ON PHOTO

NASA/Dimitri Gerondidakis

NASA and the U.S. Navy conducted a stationary recovery test on the Orion boilerplate test article in the water near a U.S. Navy ship at the Naval Station Norfolk near Langley Research Center in Virginia on Aug. 15. The tests will help to prepare for recovery of the Orion crew module and forward bay cover on its return from Exploration Flight Test-1 next year. Click on the photo to watch a video of the test.

Lou Garcia, NASA Recovery director.

In the sheltered waters next to a pier, the controlled environment test revealed how precise the positioning of the capsule can be over the cradle used to move the crew module, how long the recovery operation takes and how the taglines, winch lines and tow lines work.

"This allows us to practice our procedures in a benign environment with no ship movement and minimum wave action," said Jim Hamblin, Landing and Recovery Element Operations manager in NASA's Ground Systems Development and Operations (GSDO) Program.

Navy divers prepared for the recovery test in Norfolk by training in the 6.2 million gallon pool at NASA's Neutral Buoyancy Lab in Houston.

Scott Wilson, manager, Offline Processing and Infrastructure for Development, GSDO Program, referred to

testing strategy as a "crawl, walk, run."

"With this test, we are taking the first steps in learning to walk," Wilson said.

The hardware used in the stationary test will be sent to the West Coast to prepare for a future test of Orion recovery operations in open water planned for January 2014. NASA and the DOD will use the recovery procedures employed in Norfolk to evaluate methods for next year's recovery operations test.

Lessons learned from the test in Norfolk and January's underway recovery test will be applied to the recovery of the Exploration Flight Test-1 (EFT-1) in September 2014.

EFT-1 will be Orion's first mission, which will send an uncrewed spacecraft 3,600 miles into Earth's orbit. As part of the test flight, Orion will return to Earth at a speed of approximately 20,000 mph for a splashdown in the Pacific Ocean.

The flight test will provide

engineers with critical data about Orion's heat shield, flight systems and capabilities to validate designs of the spacecraft before it begins carrying humans to new destinations in the solar system, including an asteroid and Mars.

EFT-1 will launch from Kennedy and splash down off the Baja Coast on the same day. For EFT-1, the recovery ship and team will be in the splashdown zone at the time of launch.

"The recovery of the EFT-1 unmanned Orion capsule will become another building block towards the recovery of Orion capsules with our nation's astronauts aboard," Garcia said.

More online

For more information about the Orion Program, visit:
<http://www.nasa.gov/orion>.

For more information about the Ground Systems Development and Operations Program, visit:
<http://go.nasa.gov/16quSix>.

NASA tacks on four milestones to CCP agreement

NASA announced Aug. 15 it is adding milestones to agreements with three U.S. commercial companies that are developing spaceflight capabilities which could eventually provide launch services to transport NASA astronauts to the International Space Station from U.S. soil.

During the Commercial Crew Program's Commercial Crew Integrated Capability (CCiCap) initiative, The Boeing Company, Sierra Nevada Corporation and Space Exploration Technology (SpaceX) will perform one or two additional milestones each.

In their respective CCiCap Space Act Agreements, which were awarded in

More online

For more information about NASA's Commercial Crew Program, visit: <http://www.nasa.gov/commercialcrew>

August 2012, NASA's partners listed optional milestones that could be exercised to continue the development and maturation of their space systems. After negotiation with the partners, NASA decided to fund revised portions of existing CCiCap optional milestones and extend the period of performance for the CCiCap agreements from May 2014 to August 2014. The industry partners also will be contribut-

ing financially to the execution of these milestones.

The milestones are:

- Boeing Spacecraft Safety Review: NASA's investment is \$20 million and the milestone is planned to be accomplished in July 2014.
- SNC Incremental Critical Design Review No. 1: NASA's investment is \$5 million and the milestone is planned to be accomplished in October 2013.
- SNC Incremental Reaction Control System Testing No. 1: NASA's investment is \$10 million and the milestone is planned to be accomplished in July 2014.
- SpaceX Dragon Parachute Tests.

Bolden climbs aboard Boeing's CST-100 mock-up

NASA Administrator Charlie Bolden climbed aboard a fully-outfitted test version of The Boeing Company's CST-100 on Aug. 19 to check out the modern design of the spacecraft, which features LED lighting and tablet technology. The mock-up and its equipment are being tested for maneuverability and ease of use at the Boeing's Houston Product Support Center near NASA's

Johnson Space Center in Houston. The company also evaluated the tools, equipment and procedures it could use if the CST-100 needed to make a water landing. The testing included a full-scale mock-up of the spacecraft floating in a specialized facility operated by Bigelow Aerospace near Las Vegas on July 8.

To view a video of the tests, go to <http://go.nasa.gov/17ibmzV>.

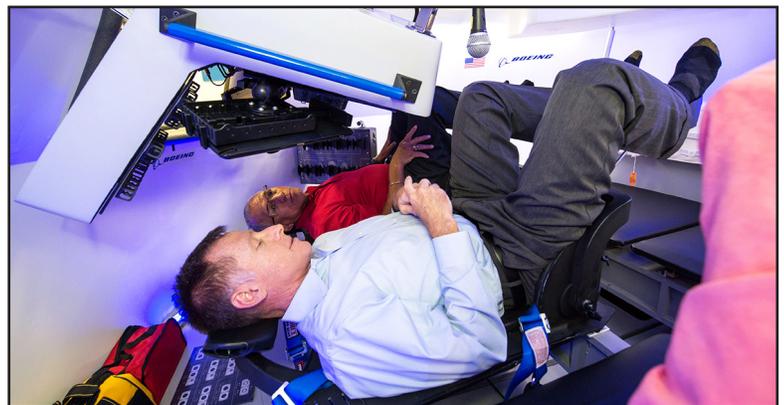


Photo courtesy of The Boeing Company

NASA Administrator Charlie Bolden, in red, and former astronaut and The Boeing Company employee Chris Ferguson try out the CST-100.



Artist image courtesy of Space Exploration Technologies

Space Exploration Technologies (SpaceX) shared analysis of their Dragon systems.

SpaceX presents completed crewed orbit, entry review

During a preliminary design review in mid-July at Space Exploration Technologies (SpaceX) headquarters in Hawthorne, Calif., company engineers presented NASA representatives and aerospace industry experts detailed analyses of Dragon systems critical to keeping crews safe in orbit and during re-entry operations. The review included basic life

support functions, such as pressurizing Dragon with breathable air to stocking the capsule with enough food and water for as many as seven crew members. It also detailed the equipment and software Dragon would use to help guide crews to the International Space Station for rendezvous and docking operations.

For the complete story, go to <http://www.nasa.gov/kennedy>

Compiled By Rebecca Regan

Looking up and ahead . . .

** All times are Eastern*

Sept. 6

Mission: Lunar Atmosphere and Dust Environment Explorer (LADEE)

Launch Vehicle: Minotaur V

Launch Site: Wallops Flight Facility, Va.

Launch Time: 11:27 p.m.

Launch Pad: Mid-Atlantic Regional Spaceport Pad 0B

Description: LADEE will gather detailed information about conditions near the surface and environmental influences on lunar dust. A thorough understanding of these influences will help researchers understand how future exploration may shape the lunar environment and how the environment may affect future explorers.

Sept. 14

Mission: Orbital Sciences Demonstration Flight

Launch Vehicle: Antares

Launch Site: Wallops Flight Facility, Va.

Launch Time: TBD

Launch Pad: Mid-Atlantic Regional Spaceport Pad 0A

Description: Orbital Sciences will launch a demonstration mission to the International Space Station, testing out the Cygnus cargo vehicle as part of NASA's Commercial Orbital Transportation Services program.

Sept. 25

Mission: Expedition 37/38

Launch Vehicle: Soyuz 36 (TMA-10M)

Launch Site: Baikonur Cosmodrome, Kazakhstan

Launch Time: TBD

Description: Soyuz TMA-10M will carry three Expedition 37/38 crew members to the ISS. They are NASA astronaut Flight Engineer Michael Hopkins, Soyuz Commander Oleg Kotov and Flight Engineer Sergey Ryzansky.

Oct. 16

Mission: ISS Resupply

Launch Vehicle: ISS Progress 53

Launch Site: Baikonur Cosmodrome, Kazakhstan

Launch Time: TBD

Description: Progress 53 will carry supplies, hardware, fuel and water to the ISS.

Nov. 7

Mission: Expedition 38/39

Launch Vehicle: Soyuz 37 (TMA-11M)

Launch Site: Baikonur Cosmodrome, Kazakhstan

Launch Time: TBD

Description: Soyuz TMA-11M will carry three Expedition 38/39 crew members to the ISS.

Nov. 18

Mission: Mars Atmosphere and Volatile Evolution (MAVEN)

Launch Vehicle: Atlas V

Launch Site: Cape Canaveral Air Force Station

Launch Pad: Space Launch Complex 41

Launch Time: TBD

Description: MAVEN will be the first mission devoted to understanding the Martian upper atmosphere. The mission's goal is to determine the role that loss of atmospheric gas to space played in changing the Martian climate through time.

To watch a NASA launch online, go to <http://www.nasa.gov/ntv>.

NASA Spinoffs: Did you know?

Several NASA technologies have been used to make sure school buses provide a safe environment for kids.

It's that time of year when students travel every day to get to school.

If they live far enough from their school, they generally ride the bus. They are riding on a truck frame. The frame, the wheels, and the power train are called the chassis. Truck companies make them for bus lines. Then, the outer body, inside seats, and lights are added.

This is where NASA technology is being used. A computer program creates a three-dimensional (3-D) model of the products and parts. NASA's program then analyzes the design to predict how it will hold up under different conditions.



By testing with computer models, designers can simulate ^{NASA file} crashes, dangerous turns, and other situations without danger to people. They can see the weak and strong areas on the frame and decide what changes need to be made. These tests can check small springs or large suspensions on the frame.

NASA technology is used for more than bus safety. NASA uses a meter to improve aircraft design. It works on large vehicles to help make a smooth, comfortable ride. The meter provides measurements to check the quality of the ride. It mounts on the vehicle and uses sensors to measure vibration and sound level. Using this information, engineers can change the design to make the ride more comfortable without losing any safety features.

For more about NASA Spinoffs, go to <http://www.nasa.gov/spinoffs>.



John F. Kennedy Space Center

Spaceport News

Spaceport News is an official publication of the Kennedy Space Center and is published online on alternate Fridays by Public Affairs in the interest of KSC civil service and contractor employees.

Contributions are welcome and should be submitted three weeks before publication to Public Affairs, IMCS-440. Email submissions can be sent to KSC-Spaceport-News@mail.nasa.gov.

Managing editor Chris Hummel
Editor Frank Ochoa-Gonzales
Assistant editor Linda Herridge
Copy editor Kay Grinter

Editorial support provided by Abacus Technology Corp. Writers Group.

NASA at KSC on the Web, at <http://www.nasa.gov/kennedy>

SP-2013-08-175-KSC • NASA Kennedy Space Center Public Affairs