

National Aeronautics and
Space Administration



ORION

FEBRUARY 2015

**BOLDEN: "NASA
IS FIRMLY ON A
JOURNEY TO MARS.
MAKE NO MISTAKE,
THIS JOURNEY
WILL HELP GUIDE
AND DEFINE OUR
GENERATION."**





ENGINEERS EXAMINE ORION AFTER SUCCESSFUL FLIGHT TEST

Engineers across the country have been busy taking a closer look at NASA's Orion spacecraft and the data it produced during its successful flight test in December 2014. Inside the Launch Abort System Facility at Kennedy Space Center in Florida, Orion was lifted using a special crane for removal of its heat shield on Feb. 13. Removing the back shell allows the team to get a closer look at Orion's systems to see how they fared during the trip to space. The heat shield was removed in preparation for shipment to NASA's Marshall Space Flight Center in Huntsville, Alabama, where special equipment will be used to remove its ablative material.

► [Read the full story](#)

BOLDEN DELIVERS 'STATE OF NASA' ADDRESS AT KENNEDY SPACE CENTER

In the Neil Armstrong Operations and Checkout Building high bay at NASA's Kennedy Space Center in Florida, NASA Administrator Charles Bolden delivered a "state of the agency" address on Feb. 2 at NASA's televised fiscal year 2016 budget rollout event with Kennedy Space Center Director Bob Cabana looking on. Representatives from the Kennedy workforce, news media and social media were in attendance. NASA's Exploration Flight Test-1 Orion spacecraft was displayed front and center, along with the SpaceX Dragon and Boeing CST-100 spacecraft at its sides.

► [Read the full story](#)



ORION PARACHUTE TESTING VALIDATES PEAK PERFORMANCE

The Orion Program is improving the safety and reliability of the Orion crew module's landing by investigating ways to make its main parachutes more aerodynamically stable while maintaining drag performance. As part of that work, a team consisting of NASA, Jacobs Engineering, Airborne Systems, and personnel from the National Full Scale Aerodynamics Complex (NFAC) tested 13 different parachute configurations in one of the Complex's wind tunnels in California. The testing was accomplished over a two-week period in early January. During the test, a tether system was used to simultaneously hold the parachute and measure aerodynamic forces to help determine which parachute configuration provided the best performance. The parachute was also allowed to fly freely in the tunnel. During these free-flights, data was gathered using photogrammetry, a way of taking measurements using photography, to help determine the aerodynamic characteristics of the parachute. As a result of the testing, two parachutes were selected for use in follow-on air drop testing in Eloy, Arizona in February. Data from both the wind tunnel and air drop testing will be used to help decide which parachute configuration will be used for future Orion missions that will send astronauts to deep space destinations and return them home safely.

ENGINEERS TESTING SUB-SCALE PARACHUTES

In the skies of Eloy, Arizona, engineers tested sub-scale parachutes for NASA's Orion spacecraft to help improve the safety and reliability of the Orion's landing by investigating ways to make its main parachutes more aerodynamically stable while maintaining drag performance, all in preparation for its next mission, Exploration Mission-1.

► [Read the full story](#)



WHAT FLEW ON ORION'S MAIDEN VOYAGE?

Orion's Exploration Flight Test-1 captured the world's attention and inspired many about the future of discovery and space flight. This pride and inspiration will now be carried on through the mementos and keepsakes that flew aboard this historic first flight. To inspire a new generation to look to the stars, Lockheed Martin, in partnership with NASA, managed the auxiliary equipment manifest.

Lockheed Martin received artifacts from many organizations, including industry trade associations, higher education institutions and museums. Also, STEM/STEAM (science, technology, engineering, (arts) and mathematics) advocates, including several celebrities, contributed a significant amount

of collateral to encourage students to study science and space-related subjects.

Several stowage lockers were packed with a diverse collection of memorabilia gathered from artists, writers, poets, actors, professional organizations and universities – individuals inspired by the pure potential of the Orion spacecraft's future missions into deep space. A majority of the over 7,400 items flown on the spacecraft included an assortment of flags, coins, pins and commemorative mission patches, but several unique items flew onboard as well.

► **Find out what flew**

EDUCATORS SEEC OUT SPACE EXPLORATION



On Feb. 6, Congressman Brian Babin, Texas 36th district, was toured through the Orion mockup at Johnson Space Center by Orion Program Manager Mark Geyer.



ORION TAKES PART IN ALL HANDS AT MSFC

Orion Program Manager Mark Geyer participates in the monthly All Hands meeting Feb. 11 at Marshall Space Flight Center in Huntsville, Alabama. Geyer is joined by Space Launch System Program Manager Todd May; NASA Exploration Systems Development Director Bill Hill; and Ground Systems Development and Operations Division Manager Mike Bolger (shown left to right).



GOOD GOLLY! IT'S MOLLY!

Orion engineer Molly White was recently featured in an article in the Washington Post.

► [Read about her work on Orion](#)



More than 80 science and math teachers from across the country toured the Orion spacecraft mockup at the Lockheed Martin Exploration Development Lab as part of the 21st Annual Space Exploration Educators Conference hosted by Space Center Houston Feb. 5-7. More than 350 teachers participated in the event themed "The Next Giant Leap," which included workshops and hands-on demonstrations focused on human space exploration. Orion Program Chief Engineer Julie Kramer-White spoke on a panel, while Space Launch System and Exploration System Development representatives from Marshall Space Flight Center and Johnson Space Center supported program progress talks, hands-on demonstrations and educational break-out panel discussions.

ORION MAKES HEADLINES

During Lockheed Martin's sixth annual Media Day on Feb. 18, Michael Hawes, Lockheed Martin Orion program manager and vice president, presented a briefing focused on the results of Orion's first space flight and progress being made toward Exploration Mission-1. Resulting media coverage focused on potential design modifications and progress. ► [Read the full story](#)



The Orion program shared 5 Super Bowl space day fun facts during the big game on Feb. 1. This fun fact asks followers how they would travel from Boston to Seattle. Traveling by Orion was the clear winner!



@NASA_Astronauts were invited to be Orion's #Valentine this past Feb. 14. The three-part Valentine's Day card series was a huge hit with Orion Program followers and drew a lot of attention to the program's partnerships with ESA, SLS, and Orion's future crew.

SEVENTH-GRADE SCIENCE LOVER HELPS BRING PAST AND FUTURE TOGETHER ON-BOARD ORION'S FIRST FLIGHT



In a feat that has not been achieved since the last mission to the moon, a relic from Earth was flown into deep space on a spacecraft built to carry humans into deep space, traveling farther from Earth than any since Apollo 17 in 1972. The groundwork started in Mineral Wells, Texas, when Anna Marceca, a seventh grader from Bedford, Texas, found a crinoid fossil in Mineral Wells Fossil Park and passed it on to NASA at an agency event.

► [Read the full story](#)

FOLLOW THE PROGRESS OF NASA'S NEW SPACECRAFT FOR HUMAN EXPLORATION:

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