

National Aeronautics and
Space Administration



ORION

JANUARY 2015

**ORION'S
FLIGHT TEST
REIGNITES
THE WORLD'S
LOVE OF SPACE
EXPLORATION**



The powerful Delta IV heavy rocket lit up the launch pad on Dec. 5 as Orion embarked on its first flight test — creating a historic moment for NASA, and reigniting the world’s passion for human space exploration.

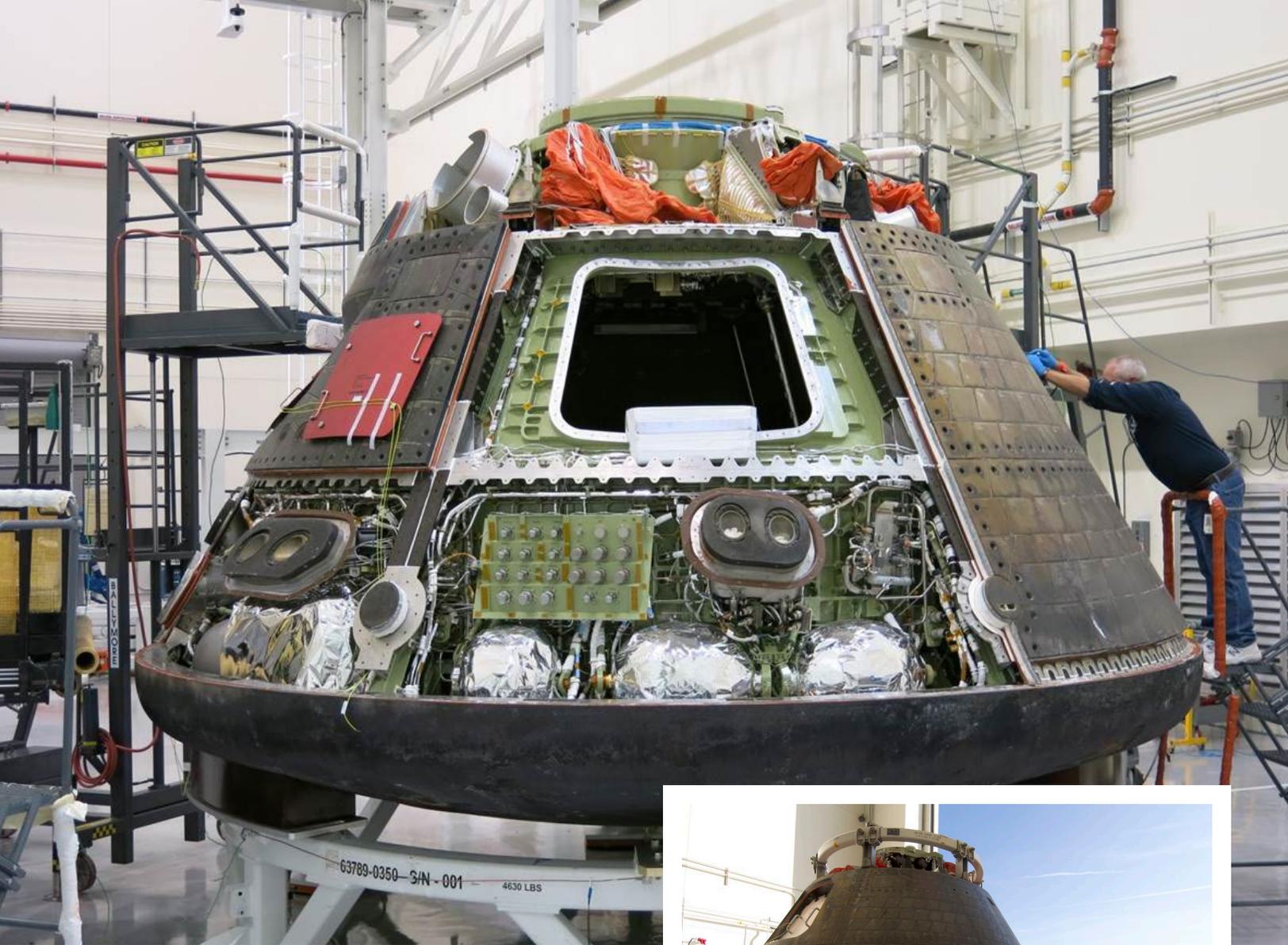
Approximately 27,000 people viewed the launch in person at Kennedy Space Center in Florida, and beyond the Space Coast, Orion’s reach circled the globe. Exploration Flight Test-1 (EFT-1) generated more than 20,000 print, radio and television news stories, more than 150 newspaper front pages, and more than 5 billion social media impressions. In addition, the top trending hashtags on Twitter were #Orion and #JourneytoMars on Dec. 5.

On launch day, NASA TV’s site reached more than 1.2 million people. Celebrities and even Sesame Street characters joined the thousands of people who publicly expressed their support for Orion. Pharrell Williams, William Shatner, Dwight Howard, Nichelle Nichols, Lou Ferrigno and Sesame Street’s cast of characters participated in NASA social media posts, feature stories, and public service announcements supporting Orion’s flight. The “frequent flyer” program provided subscribers with virtual boarding passes to NASA’s missions on the journey to Mars. In only 30 days, this campaign recruited nearly 1.4 million participants who were able to fly their names on Orion’s flight test.

Orion’s flight test was a big step on NASA’s journey to Mars and critical part of sending astronauts deep into space. The overwhelming interest in Orion’s first flight demonstrated that the public continues to be inspired by and supportive of NASA’s human spaceflight accomplishments.

- ▶ [View Sesame Street EFT-1 shareable](#)
- ▶ [Watch celebrity *Orion: I’m on Board* videos](#)





On Jan. 6, NASA Administrator Charles Bolden, third from right, inspected the Orion spacecraft's post-flight condition prior to a press briefing. Others, pictured left to right, include Kennedy Space Center Associate Director Kelvin Manning, Lockheed Martin Director Paul Cooper and Lockheed Martin Senior Manager Jules Schneider.



ORION SPACECRAFT NOW IN POST-MISSION PROCESSING AT KENNEDY SPACE CENTER

NASA's Orion spacecraft is currently going through post-mission processing at Kennedy Space Center. Initial results show the flight test met or exceeded all requirements. Analysis of data obtained during its two-orbit, four-and-a-half hour mission will provide engineers detailed information on how the spacecraft performed and will influence design decisions to ensure safe and successful flights for Orion's future crewed missions to deep space.

The Lockheed Martin and NASA Orion processing team joined NASA Administrator Charles Bolden in front of the spacecraft at Kennedy Space Center on Jan. 7.

THE PATH TO MARS GOES THROUGH BALLY, PENNSYLVANIA



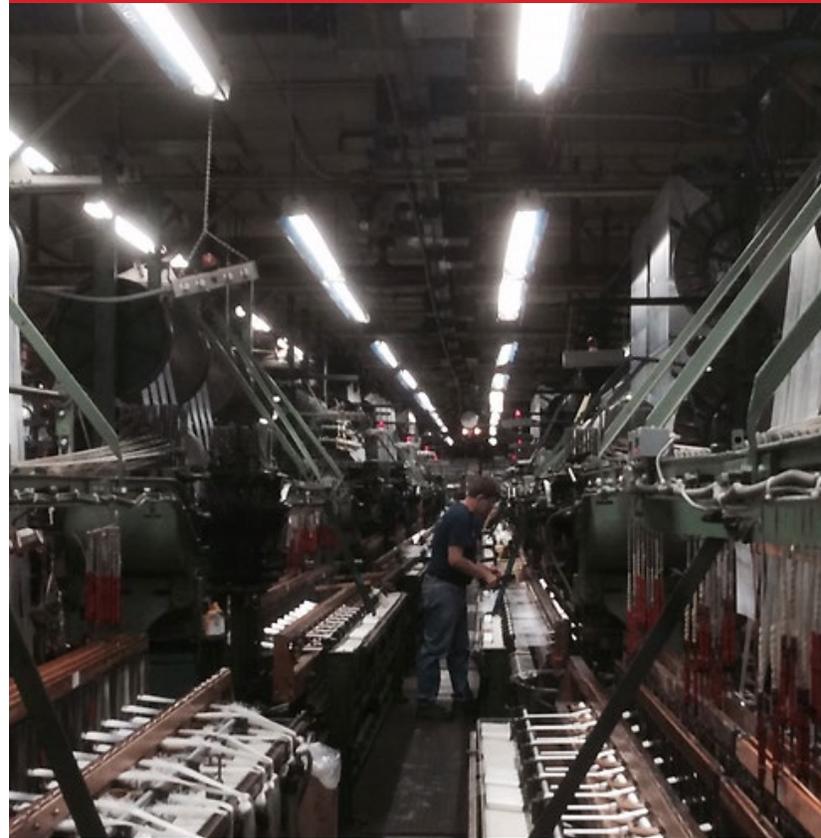
Orion's launch team gathered for a photo at Kennedy Space Center following splashdown of the spacecraft on its December flight.



At Naval Base San Diego in California, members of the news media had the opportunity to view NASA's Orion spacecraft in the well deck of the USS Anchorage before it was offloaded and prepared for return to Kennedy Space Center in Florida following the successful flight.



Employees of Orion's partner Airbus are shown with a congratulatory message for Orion in front of the Spacelab, also a successful cooperation project.



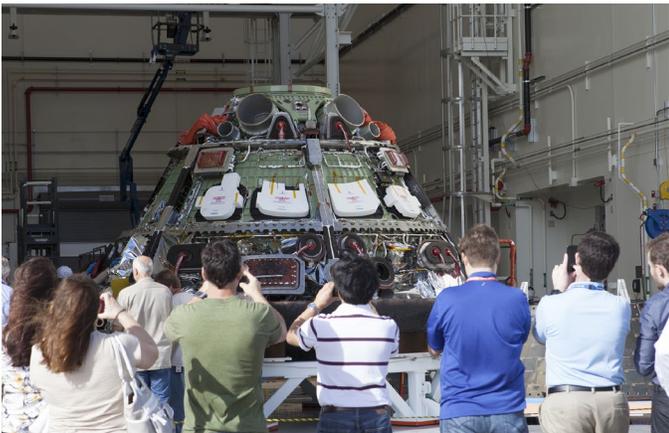
During a visit to Bally Ribbon Mills in Bally, Pennsylvania on Jan. 9, NASA Administrator Charles Bolden got a firsthand look at work being done on advanced woven thermal protection systems used on the agency's Orion spacecraft.

As a manufacturer of high-performance multidimensional (3D) woven materials, Bally Ribbon Mills is weaving the multifunctional thermal protection system padding used to insulate and protect NASA's Orion spacecraft.

► [Read the full story on NASA.GOV](#)

Media coverage from the visit included:

- [The Philadelphia Enquirer](#)
- [WFMZ](#)
- [Lehigh Valley Business](#)
- [Berks-Mont News](#)



Employees take photographs of NASA's Orion spacecraft during a viewing at the Launch Abort System Facility at NASA's Kennedy Space Center in Florida on Jan. 13.



More than 75 people came to the National Space Club in Huntsville, Alabama to hear NASA Orion Program Manager Mark Geyer and Lockheed Martin Orion Program Manager Mike Hawes give a presentation on the successful Exploration Flight Test-1 mission. The National Space Club is the foremost entity devoted to fostering excellence in space activity through interaction between industry and government, and through a continuing program of educational support.



NASA Orion Program Manager Mark Geyer, along with other Johnson Space Center program managers, joined Johnson Space Center Director Dr. Ellen Ochoa for a center-wide celebration on Dec. 12 to share with employees and their families the many JSC accomplishments in 2014, including the successful Exploration Flight Test-1.

EFT-1 PLAQUE HANGING CEREMONY HONORS OUTSTANDING MISSION CONTROL OPERATIONS



The Johnson Space Center Landing Support Officer, Instrumentation and Communications Officer and Ground Controller teams were honored during the Exploration Flight Test-1 plaque hanging ceremony in the Blue Flight Control Room at Houston's Mission Control Center on Dec. 15, 2014. The Public Affairs Office was also recognized. The event was attended by Center Director Ellen Ochoa, Deputy Center Director Kirk Shireman, Orion Deputy Program Manager Mark Kirasich, Mission Manager Bryan Austin (Lockheed Martin), Orion Program Manager Mike Hawes (Lockheed Martin) and about 200 flight controllers and back room support personnel.



SUBSCALE MAIN PARACHUTE WIND TUNNEL TESTING AT AMES

The Orion parachute team and personnel have recently completed a set of 35 subscale main parachute wind tunnel tests at the world's largest wind tunnel, the National Full-Scale Aerodynamics Complex at NASA Ames Research Center.

Various testing techniques of numerous parachute configurations were conducted at the 80 by 120 foot facility, including tethered and free flight formats, as well as first and second reefing states, each resulting in valuable recorded data.

The test results were evaluated, and incorporated into the parachute designs that will undergo additional subscale main parachute airdrop testing in February. These tests will address mitigating a main parachute pendulum phenomenon under two main parachutes.

The airdrop testing in Eloy, Arizona, has started and is scheduled to complete in late February 2015.



PARACHUTE TESTS DEMONSTRATE MANY "FIRSTS" FOR ORION SYSTEM

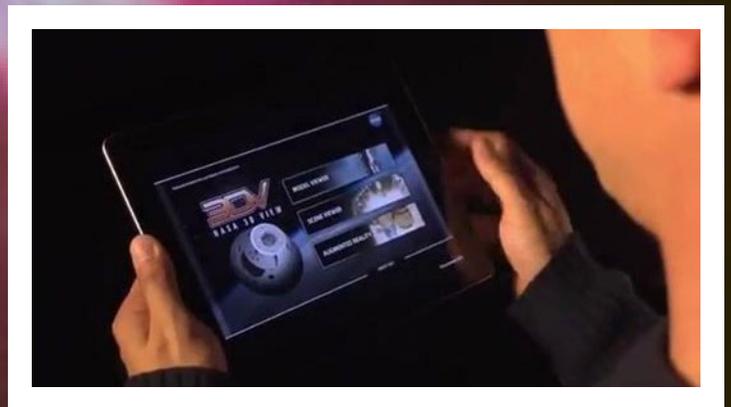
The parachute team successfully completed the Parachute Test Vehicle (PTV-9) drop test in Yuma, Arizona on Dec. 18, 2014. There were 15 parachutes deployed during this test; nine were test technique related, and six were the Orion system. The primary test objectives included first time demonstration of many design modifications to the drogue parachutes including textile risers and textile reefing loops, first time deployment using the modified drogue mortar configuration, and first-time demonstration of many main parachute system design modifications including the deployment bag, over-inflation control line and shorter riser.

VIDEO GIVES ASTRONAUT'S-EYE VIEW INSIDE NASA'S ORION SPACECRAFT

Video recorded during NASA's Orion spacecraft return through Earth's atmosphere provides viewers a taste of what the vehicle endured during its flight test.

The video begins 10 minutes before Orion's 11:29 a.m. Eastern Time splashdown in the Pacific Ocean, just as the spacecraft was beginning to experience Earth's atmosphere. Peak heating from the friction caused by the atmosphere rubbing against Orion's heat shield comes less than two minutes later, and the footage shows the plasma created by the interaction change from white to yellow to lavender to magenta as the temperature increases. The video goes on to show the deployment of Orion's parachutes and the final splash as it touches down.

► [View the video of Orion's re-entry](#)



DOWNLOAD THE NEW DEEP SPACE PROGRAM APPLICATION

Take an up-close look at the critical components of NASA's human deep space program with NASA's new 3-DV mobile app. See details of NASA's Orion spacecraft crew module or experience the view from the launch platform.

► [Visit NASA.GOV to download the app](#)

PRESIDENT OBAMA PRAISES CHIEF ENGINEER JULIE KRAMER-WHITE AND ORION TEAM



BEHIND THE SCENES DURING EFT-1

NASA Public Affairs Officer Brandi Dean interviews NASA Administrator Charles Bolden following the successful Exploration Flight Test-1. The NASA-TV production team produced a live show on Dec. 4 and Dec. 5 to support real-time coverage of Orion's first flight test. (Rob Navias is pictured below providing commentary during the flight)



Following Orion's successful Exploration Flight Test-1 launch in December, President Obama addressed the Senior Executive Service, thanking them for their outstanding work and recognized Orion Chief Engineer Julie Kramer-White for her work and dedication to the exceptional test flight.

President Obama also said that Kramer-White and the Orion team are helping America launch a new era of space exploration. Her commitment to America's space program has been unwavering, stemming from a strong work ethic and perseverance developed at a young age. The challenge of human spaceflight has always been a passion for Kramer-White, resulting in a successful career at NASA where she has provided leadership and dedication to all of the human spaceflight programs, including the space shuttle orbiter, the International Space Station, the X-38 vehicle, and now, the Orion Program.

► [Watch the President's Comments](#)

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

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FEBRUARY:

Administrator Bolden State of NASA address

Sub-scale parachute air drop tests in Arizona

Removal of EFT-1 heat shield begins