

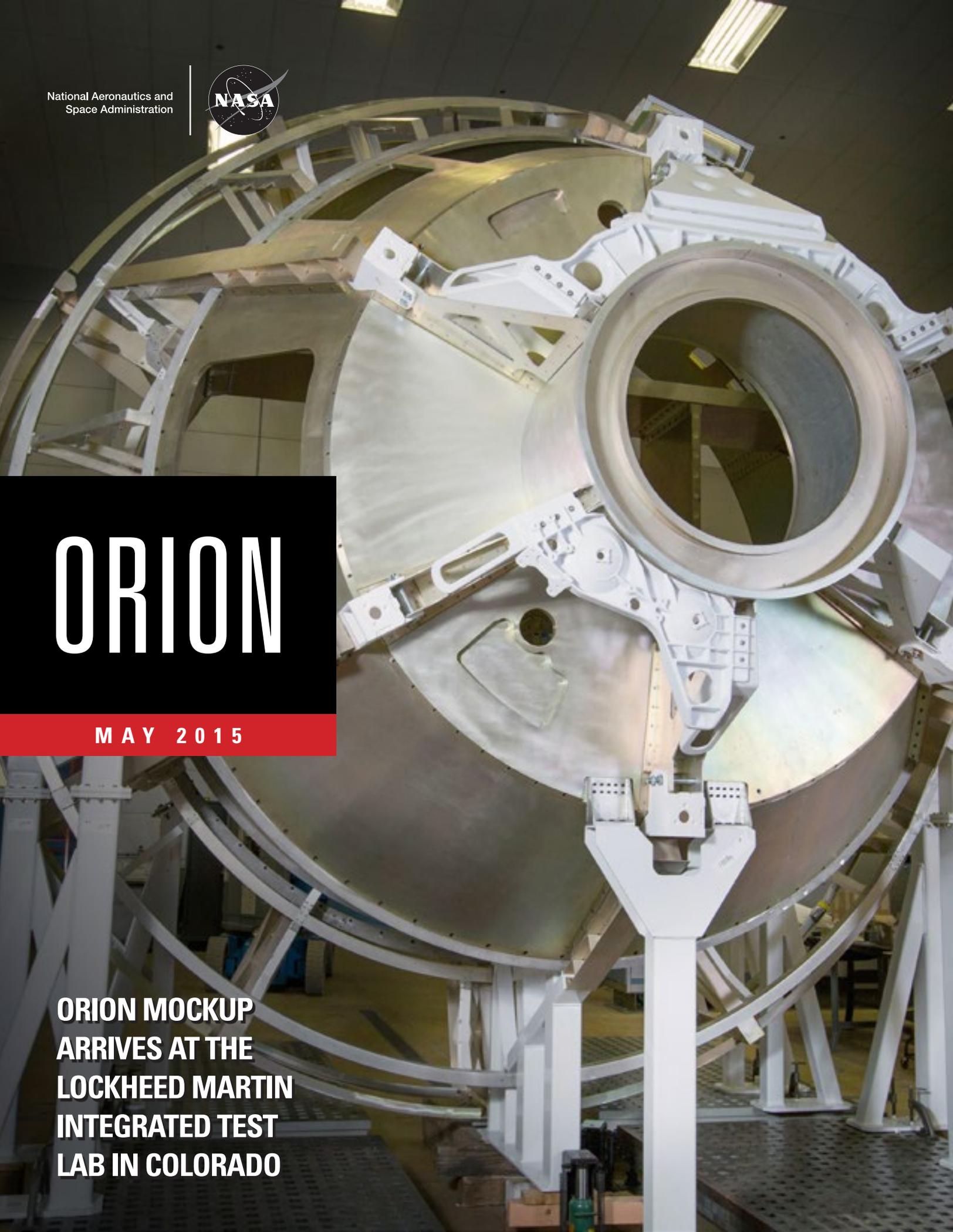
National Aeronautics and  
Space Administration



# ORION

MAY 2015

**ORION MOCKUP  
ARRIVES AT THE  
LOCKHEED MARTIN  
INTEGRATED TEST  
LAB IN COLORADO**





# WELDING UNDERWAY ON EM-1 ORION PATHFINDER

On May 7, engineers at NASA's Michoud Assembly Facility in New Orleans began welding together the first pieces of the structure of the Orion crew module pathfinder. This pathfinder is a full-scale version of the current spacecraft design. It is used to demonstrate the manufacturing and assembly procedures that will be used to produce the actual flight hardware. Using a pathfinder allows engineers to make sure those procedures work correctly and to improve the process before producing the flight article. This pathfinder will help NASA prepare for Orion's first flight atop the agency's Space Launch System rocket. The elements of the hardware that will actually fly on Exploration Mission-1 will be joined this summer.

► [Read the full story](#)

**RIGHT:** The forward bulkhead and the tunnel pieces of the Orion crew module pathfinder prior to welding at Michoud Assembly Facility.

**ABOVE:** The forward bulkhead welded to the tunnel.





# LOCKHEED MARTIN COMPLETES ORION MOCKUP FOR RISK REDUCTION TESTING

Engineers at Lockheed Martin's Watertown facility completed construction of the Orion crew module and crew module adapter full-scale mockup. The mockup was transferred to the Orion Test Lab on May 13 for installation of harnessing, electrical power, sensors, avionics and flight software needed to support Exploration Mission-1 (EM-1). Orion's team of engineers will use the mockup to verify the configuration of these vehicle components for EM-1 which ultimately saves assembly time and reduces risk. The mockup will then be connected to hardware emulations of the full EM-1 stack (crew module, European Service Module, second stage booster, Space Launch System and ground support equipment). Once connected, the team will simulate and test every aspect of the EM-1 mission from launch to splash down.

► [Read the full story](#)

## QUARTERBACKING FOR THE FUTURE

Nujoud Merancy of the NASA Orion Program participated in the Beating the Odds Foundation's Quarterbacks of Life: EFT-1 Student Design Challenge Event at NASA Headquarters on May 7. The educational program is integrated into a school's academic curriculum and is designed to support and promote student success. The event coordinators chose to focus this year's research project on a slightly modified version of the Exploration Design Challenge.

► [Read more about Exploration Design Challenge](#)



Paul Marshall, NASA Orion assistant program manager gave a presentation about the spacecraft to hundreds of students at his alma mater, Pueblo East High School in Pueblo, Colorado.

► [Read the full story](#)



# SPACE FOUNDATION LAUNCHES LOCKHEED MARTIN SPACE EDUCATION CENTER

NASA and Lockheed Martin Orion program representatives Larry Price, Paul Marshall and Barbara Zelon attended the Lockheed Martin Space Education Center dedication event on May 12. Kathy Tobey, Lockheed Martin vice president of special programs, spoke at the center's formal dedication event at the Space Foundation Discovery Center in Colorado Springs, Colorado. Local elected officials and military officers also attended the event, during which Tobey presented an American flag flown on Orion's first high orbital test flight -- EFT-1. The center was made possible with a grant from Lockheed Martin Space Systems Company.

► [Read the full story](#)



# HOUSTON... WE HAVE RECOGNITION!

Members of the Orion team in Houston were honored with several NASA Orion Exploration Flight Test-1 recognition awards during an event held at Space Center Houston on May 20. Team, individual and leadership awards were presented by Orion Program Managers Mark Geyer and Mark Kirasich of NASA and Mike Hawes of Lockheed Martin. A flag flown on EFT-1 was also presented to Johnson Space Center Director Ellen Ochoa and a commemorative poster signed by many of the Orion team members was presented by Orion engineer Carlos Garcia-Galan to Geyer and Hawes (shown here).



## LOCKHEED MARTIN EARNS JSC HONOR FOR SMALL BUSINESS INITIATIVES



Lockheed Martin received the JSC Prime Contractor of the Year Award on May 14, at a ceremony held at Johnson Space Center in Houston. Lockheed Martin was recognized for its work with more than 800 small businesses in 47 states that have contributed to the Orion program. Lockheed Martin Orion Small Business Advocate Michelle Butzke accepted the award on behalf of the team. Pictured here are (left to right) Billy Autry, JSC Associate Director for Procurement; Butzke; and Melanie Saunders, JSC Associate Center Director.

► **NASA Deep Space Human Exploration Spacecraft Orion: A Case For Small Business**

## FUTURAMIC BRINGS THE FUTURE OF SPACEFLIGHT TO MICHIGAN



Orion and Space Launch System supplier Futuramic Tool & Engineering hosted an open house event at their facility in Warren, Michigan, on May 15, to showcase their contributions to NASA's new space vehicles that will support deep space human exploration of our solar system. More than 300 employees attended the event along with media and several VIP guests including Michigan's U.S. senators, NASA SLS Stages Manager Steve Doering, Lockheed Martin Vice President & General Manager of Civil Space Wanda Sigur, Boeing Vice President & SLS Program Manager John Shannon and Orbital ATK Vice President of Space Systems Charlie Precourt.

# NASA BLENDS SCIENCE FICTION WITH SCIENCE FACT AT COMICPALOOZA



Orion Chief Engineer Julie Kramer White spoke with media about Orion's EFT-1 heat shield during a media day at Marshall Space Flight Center on May 12.



The Orion "I'm on Board" public service announcement, starring Lou Ferrigno, recently won the prestigious Telly Award. Founded in 1978, the Telly Awards honors outstanding video and film productions. Pictured left to right are the video's creators: Greg Wiseman, Charles Clendaniel, John Streeter and Ed Toma of Johnson Space Center's External Relations Office .



Like a throng of caped crusaders responding to calls of distress, thousands of comic enthusiasts descended upon the George R. Brown Convention Center in Houston for the 2015 Comicpalooza event. Known as one of the biggest annual multi-format conventions in the southwest region of the United States, Comicpalooza attracts comic and pop culture fans from across the country.

The NASA exhibit at this event featured the latest news and highlights from the International Space Station, Orion and Space Launch System programs. NASA exhibit staffers were a big hit at this event as they provided hands-on demonstrations of the latest in robotics technology and participated on several panel presentations.

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

**NASA's Orion Blog**..... [Blogs.NASA.gov/Orion](http://Blogs.NASA.gov/Orion)

**Twitter** ..... [Twitter.com/NASA\\_Orion](http://Twitter.com/NASA_Orion)

**Facebook** ..... [Facebook.com/NASAOrion](http://Facebook.com/NASAOrion)

**Flickr** ..... [Flickr.com/NASAOrion](http://Flickr.com/NASAOrion)

**Google+** ..... [Plus.Google.com/+NASAorion](http://Plus.Google.com/+NASAorion)

## JUNE:

**Deputy Administrator Dr. Newman visits Orion**

**Fairing Separation Test at Lockheed Martin**

**European Service Module Structural Test Article Adaptor ships to Plum Brook Station**