

ORION



OCTOBER 2018



Weathering the Storm

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WEATHERING THE STORM



Focused specifically on open water raft and survival equipment performance, the Orion Crew Survival Systems (OCSS) team took to the simulated choppy waves at the Louisiana Wave Studio in Shreveport, Louisiana. While fighting challenging weather conditions and a dynamic simulated sea state, the team was able to put rescue systems to the test, ensuring our crew will be safe if they ever return to Earth in stormy conditions. The team was able to test a search and rescue beacon notification system that was used during the Space Shuttle program. They also

evaluated the OCSS suit cover layer modifications that allow for greater occupant protection during vehicle operations and tighter integration of flotation systems used after the crew has exited the spacecraft. Using a newly-designed life raft, the team was also able to simulate its use by potentially injured crew members to ensure safety of the crew even in worse-case situations. Successfully completing these tests puts the Orion team another step closer to Exploration Mission-2, the first crewed flight of Orion.

INVOLVING EVERYONE, IAC BREMEN 2018



Bremen, Germany, hosted the 69th International Astronautical Congress (IAC) in which international, multidisciplinary employees in the space sector gathered to share their recent findings, make connections and learn more about what the rest of the world is pursuing around and beyond our planet. The theme of IAC 2018 was “Involving Everyone” which played itself out as new partnerships and ideas were formed in Bremen throughout the week.

Orion team members from NASA and Lockheed Martin joined colleagues from ESA (European Space Agency) and Airbus to share the progress and upcoming milestones of the Orion spacecraft, the Space Launch System rocket, and Exploration Ground Systems. NASA Administrator Jim Bridenstine also attended the conference and led many talks with students taking part in the Space Generation Congress. He also made time to visit with the public, held



meetings with his space agency peers from around the world and toured the Airbus facility to see the Exploration Mission-1 (EM-1) and EM-2 service modules in production. Orion Program Managers, Mark Kirasich (NASA), Nico Dettmann (ESA), Bas Theelen (Airbus), and Mike Hawes (Lockheed Martin) hosted a “Meet the Orion Program Managers” event for suppliers and students attending IAC 2018. Afterward, they took part in a press conference where they informed media about Orion’s progress toward Exploration Mission-1 and its follow-on crewed missions.

Orion team members also took part in a myriad of panels and paper presentations. Amplifying IAC’s theme #InvolvingEveryone, the “Igniting International Excitement for Interplanetary Space Travel” panel drew audience members from more than 20 countries who participated in a discussion about how the space sector gets, and keeps, the public’s attention as we venture further into deep space.



PROJECT MARS WINNERS DEBUT

Imagining NASA's bold missions to the Moon and Mars just got a boost of creativity. Winners of the Project Mars International Film and Art Competition have been selected from more than 570 entries received that visualize NASA's work to expand the frontier of deep space exploration.

The competition provided an opportunity to allow college students and early career professionals to learn about NASA's deep space exploration efforts including the agency's Orion spacecraft, Space Launch System rocket and Gateway planned near the Moon, and create their vision of what NASA's leadership in deep space will look like. Entries included film and poster submissions that envisioned NASA's missions and what astronauts might see, feel and experience on those missions.

Rendezvous With Mars by Mayukh Goswami, Subigya Basnet and Divya More from New York was selected as the winning film. It was selected by a team of judges including former astronaut Nicole Stott, personnel from NASA's creative team and Gareth Edwards, director of "Rogue One: A Star Wars Story."

Mars is in Our DNA by Adrianna Allen from Lapeer, Michigan was selected as the winning poster. It was chosen by

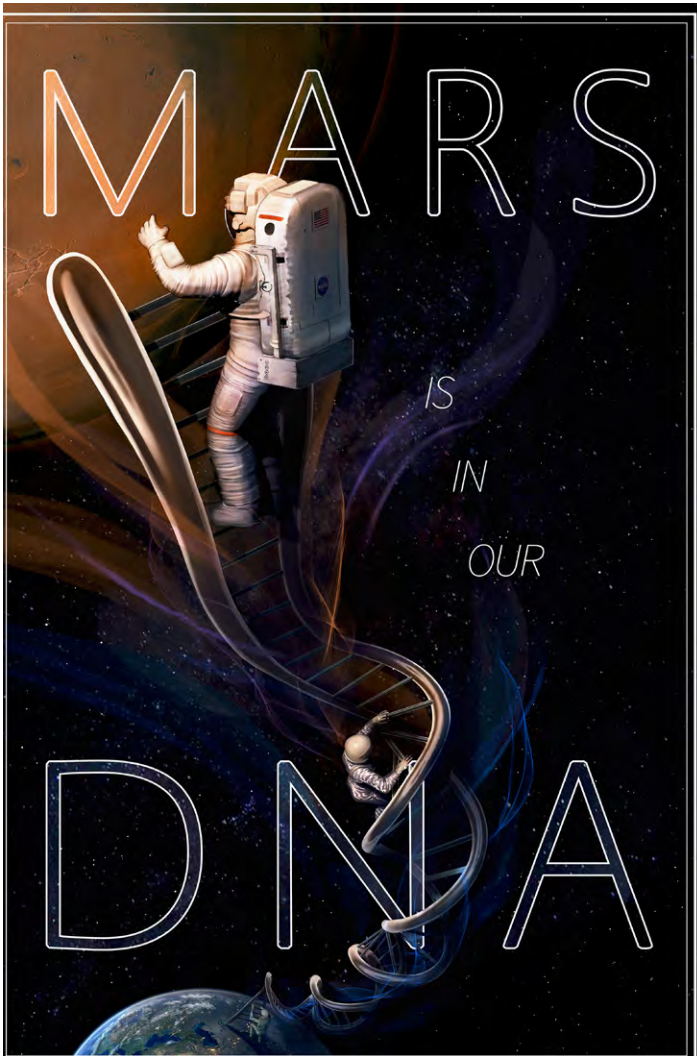
a team of judges including Joshua Grossberg, creative director of the McCann New York advertising agency.

Project Mars is a collaboration between NASA, SciArt Exchange and Mori and Associates. SciArt Exchange is a non-profit organization based on the international Humans in Space Art program. Participants are invited to creatively communicate science and technology with multimedia artwork, promoting innovation and engaging society in the future of space exploration.

Those who won, show us their idea of what journeying to deep space in Orion will entail, and what we might see when we get there. The film "Rendezvous with Mars" was also shown in more than 250 Cinemark theaters around the country on the opening night of the movie "First Man." The winning entries can be seen at:

projectmarscompetition.com

Read more: syfy.com/syfywire/the-winners-of-nasas-project-mars-competition-have-some-mind-blowing-ideas



GIANT LEAPS START HERE



NASA's Johnson Space Center in Houston opened its doors to the public on Saturday, Oct. 27 in celebration of the agency's 60th anniversary. There wasn't a cloud in the sky and the temperatures stayed low, which meant perfect conditions for Johnson's neighbors to visit and explore the center. During the open house, the public had access to a variety of exhibits and hardware, including Orion's hi-fidelity mockup, where they learned about Exploration Mission-1 from Orion team

members Lara Kearney, Matt Lemke, Rose Flores, Bob Floyd, Paul Boehm, Sarah Manning, Chad Moeller and Carlos Garcia-Galan. Visitors also heard from Center Director Mark Geyer and Orion's Stu McClung during special "Teague Talk" presentations in the auditorium. Nearly 12,000 visitors took advantage of this rare occasion to get a behind-the-scenes glance at Johnson's operations that support NASA's human spaceflight programs and other space exploration missions.



SOCIETY OF WOMEN ENGINEERS, MEET ORION



From left to right: Jessica Vos (Orion Spacecraft Systems Engineer), Marcia Lindstrom (SLS Strategic Communications Manager), Nujoud Merancy (Exploration Mission Analysis Lead), Stephanie Brown-Houston (NASA SWE Coordinator), Catherine Long (Associate Chief for the Instrument Systems and Technology Division), and Dr. Felicia Jones (Director of Engineering and Technology)

The world's largest conference for women engineers, SWE 2018, was held in Minneapolis, Minnesota, this year, welcoming more than 14,000 engineers, scientists and engineering students from 35 countries around the world. Orion, Space Launch System and Exploration Ground Systems team members participated in panel presentations

and informal talks at the NASA exhibit. Orion's Concha Reid, Nujoud Merancy and Jessica Vos had the opportunity to speak with excited young female engineering students about what they could pursue in the space sector. Merancy and Vos also participated in a panel entitled "First Wo-Man."

ORION FLIES WITH THE OWLS AND ROAMS WITH THE PANTHERS



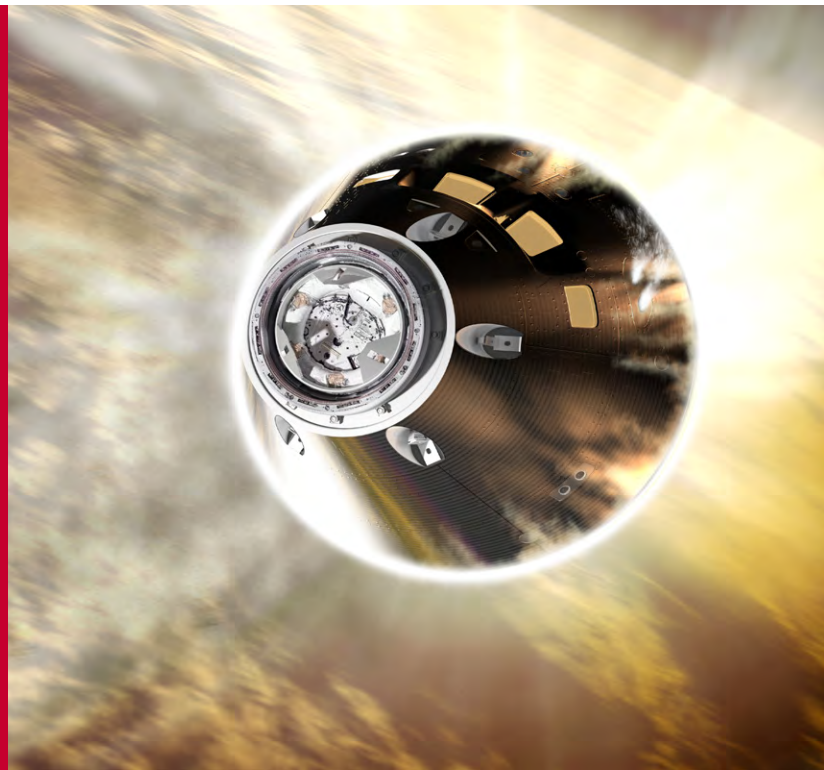
Paul Marshall, NASA Orion assistant program manager, and Larry Price, Lockheed Martin deputy Orion program manager, met with students at universities in southeast Texas to talk about Orion and where their careers could take them in the space industry. Marshall, an alumnus of Rice University, spoke during their annual NASA Day preceding a Rice Owls football game in Houston. Students and families

got to hear more about Orion, the Space Launch System rocket, and other programs that NASA is currently leading in the journey to deep space. Price and other Lockheed Martin Orion employees spoke with Prairie View A&M University students at a career day where they were able to share the future missions of Orion, and what opportunities Prairie View Panthers could pursue to work in the industry.

5000°F PODCAST

Ronny Baccus, Orion Structures and Thermal Protection System functional area manager, discusses the Orion heatshield in Episode 66 of "Houston, We Have a Podcast." Baccus explains what the Orion spacecraft will face, how the team has outfitted it for human survival, and how Orion deals with temperatures around 5,000°F when hurtling back into Earth's atmosphere at 25,000 miles per hour.

Listen: nasa.gov/johnson/HWHAP/5000-f



SUPPLIER SPOTLIGHT

GENERAL DYNAMICS



General Dynamics Mission Systems Scottsdale, Arizona, team has been supporting the nation's human and robotic space flight missions for more than 50 years. Specifically, for Orion, General Dynamics is providing the S-Band transponder, which allows Orion's crew to communicate through different frequencies such as the NASA Space Network and Deep Space Network, as well as adjust its range to allow communication between two spacecraft outside of Earth's orbit. This will keep astronauts and their

spacecraft connected to mission command centers on Earth during deep-space missions. General Dynamic's transponders helped to deliver Neil Armstrong's iconic "One small step..." audio and video message from the Moon, and continues to send and receive signals from Voyager (1977), Mars rovers (2003, 2011), and the International Space Station today. Their employees take pride in contributing to NASA's goal of providing a safer, more reliable space transportation capability for crew transport in the journey to deep space.

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

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NOVEMBER 2018

European Service Module Departs Germany
KSC Welcomes Arrival of EM-1 Service Module to Florida
Recovery Testing Off the Coast of San Diego