

# NASA Announces Next Undersea Exploration Mission Dates and Crew

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NASA will send three astronauts and a Constellation Program aerospace engineer into the ocean depths off the Florida coast from Aug. 6 to 15. They will test lunar exploration concepts and a suite of medical objectives for long-duration spaceflight.

NASA veteran space flyer and aquanaut Nicholas Patrick will lead the 10-day undersea mission aboard the National Oceanic and Atmospheric Administration Aquarius Underwater Laboratory. NASA astronaut Richard Arnold, Japan Aerospace Exploration Agency astronaut Satoshi Furukawa and systems integration engineer Christopher Gerty complete the crew.

During the NASA Extreme Environment Mission Operations 13 (NEEMO 13), the crew will conduct a variety of undersea "moon walks." They will test concepts for future lunar exploration using advanced navigation and communication equipment.

"This crew will work much more independently from the mission control team than on previous missions," said NEEMO Project Manager Bill Todd of the United Space Alliance at NASA's Johnson Space Center in Houston.

"This autonomous mode of operation will encourage the crew to make real-time decisions about daily operations similar to what we think will be necessary for lunar and Mars missions. The idea is to show how procedures and training for future missions can be adapted, considering

the reduced direct communication with mission control those crews will encounter," Todd said.

During the extended undersea simulated moon walks, the crew will construct a communications tower, practice techniques for lunar sample collection and manipulation, and perform a series of tasks investigating future spacesuit design. The crew also will participate in research designed to answer questions on the physiology and human behavior aspects of living in extreme environments.

Jim Buckley and Larry Ward of the University of North Carolina at Wilmington will provide engineering support for the submerged habitat. The university operates Aquarius on behalf of NOAA as part of NOAA's Undersea Research Program. The NEEMO missions are a cooperative project among NASA, NOAA and the university.

This will be the 13th NEEMO undersea mission. NASA Flight Surgeon Sean Roden will serve as a backup crew member.

Similar in size to the International Space Station's living quarters, Aquarius is the world's only permanent underwater habitat and laboratory. The 45-foot-long, 13-foot diameter complex is three miles off Key Largo in the Florida Keys National Marine Sanctuary, about 62 feet beneath the surface. A surface buoy provides connections for power, life support and communications. A shore-based control center monitors the habitat and crew.

For more information about NEEMO and Aquarius, including a virtual dive to the underwater habitat, visit: [www.nasa.gov/neemo](http://www.nasa.gov/neemo)

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