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MBRSC joins Nasa study on long-duration missions

Research investigates how crew members adjust to isolation

DUBAI

BY SAJILA SASEENDRAN
Senior Reporter

The Mohammad Bin Rashid Space Centre (MBRSC) announced that the second analog study of the UAE Analog Programme is set to commence, as part of Nasa's Human Exploration Research Analog (HERA).

The analog study will hold 180 days of research work across four phases (45 days each) where crew members will study how they adjust to isolation, confinement, and remote conditions on Earth before sending astronauts on long duration missions.

As part of HERA, analog crew members from the UAE will be part of the research team at the Johnson Space Centre, where they will carry out various science and maintenance tasks inside the HERA habitat.

What is HERA?

By replicating space-like conditions on Earth, HERA is a unique three-story habitat designed to serve as an analog for isolation, confinement, and remote conditions in exploration scenarios while simulating a journey to Mars.

The set of activities onboard this unique habitat will include testing augmented reality and monitoring their mock environment. The analog crew members will also face scenarios such as increasing communication delays with their ground control support staff outside their habitat as they 'approach' Phobos.

With this data, scientists can develop strategies to better prepare astronauts for interplanetary missions and eventually for ventures to Mars, a long-standing vision of the UAE under the Mars 2117 Programme.

UAE universities

UAE universities are playing a pivotal role in the study. UAE University is focusing on three major areas — glucose metabolism dysfunctions caused during the isolation period, deficits in brain function due to cognitive fatigue and optical-based cardiovascular vital signs monitoring, exploring new methods to assess heart health in isolated environments.

Mohammad Bin Rashid University of Medicine and Health Sciences (MBRU) is contributing with two critical studies, including assessing changes in whole-body energy consumption, energy content, bone density, and muscle mass before and during isolation.

The American University of Sharjah will assess mental stress in isolation and confined environments.

Salem Humaid Al Marri, director-general of MBRSC said: "The UAE Analog Programme is instrumental in deepening our understanding of the challenges and nuances of long duration space missions."

FOUR PHASES

All four phases of the second analog study will include studies provided by local universities, with the first phase scheduled to begin on January 26. The Emirati analog crew members will participate in the second phase, scheduled on May 10. The third and fourth phases will commence on August 9 and November 1 respectively.