Paper ID: 69593
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IAF SPACE EXPLORATION SYMPOSIUM (A3)
Space Exploration Overview (1)

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PRESENT AND FUTURE SPACE EXPLORATION IN THE UNITED ARAB EMIRATES

Abstract

The Emirates Mars Mission (EMM) has put the United Arab Emirates among the elite space nations, the USA, Europe, China, Russia, and India. Moreover, it is opening the door to hundreds of young UAE nationals to major in Sciences, Technology, Engineering, and Mathematics (STEM), referred to as STEM education. The local universities have started space sciences programs by creating several space centers with new graduate programs in astronomy, space sciences, and aerospace engineering. New space explorations projects are now underway. The first project is the UAE Rashad Lunar Rover set to land on the north-eastern part of the Moon's near side, on a site known as the Lacus Somniorum by October 2022. The main scientific goals of this rover include studying lunar soil, the geology of the Moon, dust movement, and investigating the Moon's photoelectron sheath for one lunar day. This lunar project is in collaboration with the Japanese space firm ISIL. The second and major project is the Venus-Asteroid mission, planned to be launched by 2028 and visit the first asteroid by 2030. The main objectives are to explore Venus, complete an Earth gravity-assist maneuver to reach the asteroid belt between Mars and Jupiter – known as the main asteroid belt. Through its journey, the spacecraft will orbit Venus in mid-2028, followed by a close orbit of Earth in mid-2029. It will study seven asteroids before its final landing on an asteroid 560-million kilometers from Earth in 2033. The mission will be developed by the Laboratory for Atmospheric and Space Physics (LASP, University of Colorado, Boulder) in partnerships with the UAE local universities. This paper will lay down the EMM achieved scientific objectives and its role in promoting new space exploration programs such as the lunar rover and the Venus-Asteroid mission.