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IAF SPACE EXPLORATION SYMPOSIUM (A3)
Space Exploration Overview (1)

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THE UNITED ARAB EMIRATES SPACE EXPLORATION ECOSYSTEM – FROM THE INTERNATIONAL SPACE STATION TO THE ARTEMIS LUNAR PROGRAM

Abstract

In this paper, the United Arab Emirates (UAE) space exploration ecosystem is examined comprehensively, as well as significant milestones achieved by the country in recent years, providing a comprehensive picture of the nation's burgeoning space exploration ecosystem. We will take a close look at the UAE's space program as well as the contributions made by its astronauts Hazzaa alMansoori and Sultan alNeyadi, the pioneering Mars Hope Mission, the ambitious Venus/Asteroid Mission, and the nation's noteworthy contributions to the Artemis Lunar Program.

The accomplishments made by the two UAE astronauts, Hazzaa alMansoori, who spent one week aboard the International Space Station (ISS) in 2019, and Sultan alNeyadi, who spent six months on the ISS in 2023, have elevated the UAE's stature in the global space community. Their space missions, experiences, and contributions to scientific research serve as inspirational benchmarks for aspiring astronauts worldwide. We will also discuss the 2020 Emirates Mars Mission (EMM), also known as the Mars Hope Mission, an unprecedented achievement for the United Arab Emirates, as it marks the nation's successful entry into the field of planetary exploration. The Mars Hope spacecraft has provided valuable insight into Martian atmospheric and climate conditions, establishing the United Arab Emirates as a significant player in interplanetary exploration.

This paper also explores the UAE's ambitious plans for a Venus/Asteroid mission in 2028 as part of a third aspect of the paper, which illustrates the UAE's commitment to advancing space exploration beyond Earth's immediate vicinity in a tangible way. The UAE has demonstrated its commitment to pushing space research boundaries with this mission, which features scientific objectives and technological innovations. Lastly, as part of the paper, we will highlight the UAE's contributions to the Artemis Lunar Program, emphasizing the UAE's collaborative efforts with international space agencies in developing this program. The UAE Mohammed bin Rashid Space Centre (MBRSC) plans to provide an airlock for Gateway, humanity's first space station to orbit the Moon. Under a new implementing arrangement expanding their human spaceflight collaboration with NASA through Gateway, MBRSC will provide Gateway's Crew and Science Airlock module and a UAE astronaut to fly to the lunar space station on a future Artemis mission.

Essentially, this paper will provide an in-depth analysis of the UAE's multifaceted approach to space exploration, demonstrating the UAE's commitment to scientific innovation, international collaboration, and the nation's desire to contribute to the collective understanding of space.