What is known about the United Arab Emirates plans to build a City on Mars?
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NASA intends to send humans to Mars in the 2030s, but the space agency does not have a realistic budget and the Artemis program, to go back to the Moon and beyond is behind schedule. SpaceX's Elon Musk wants to send the first human colonists to Mars in the 2020s, but his company also lacks the qualification of its StarShip spacecraft as of March 2025. We can now add the United Arab Emirates to the list of those entities who want to contribute to Mars colonization. However, even if it too lacks the space exploration budget or technology to do so at this time, the federation of seven Arab emirates appears to have a much more reasonable timeline for sending humans to the red planet—the year 2117, almost a century from now. [1]

The United Arab Emirates (UAE) plan to contribute to human exploration of Mars, including the goal of building a human settlement on the planet by 2117. This initiative, known as the **Mars 2117 Project**, is part of the UAE's broader commitment to advancing space exploration and fostering scientific innovation.

Key Aspects of the UAE's Mars 2117 Project

1. **Long-Term Vision**:
    - The project aims to establish a human colony on Mars by the year 2117.
    - It aligns with the UAE's desire to contribute to global efforts in space exploration and position itself as a leader in advanced sciences.
2. **Research and Development**:
    - The UAE is working to develop advanced technologies in areas such as robotics, artificial intelligence (AI), and renewable energy, which are crucial for sustaining life on Mars, as well as food production and water extraction.
    - Collaborative research with international space agencies and universities is a cornerstone of the initiative.
3. **Mars Science City**:
    - As a precursor to the Mars settlement, the UAE plans to construct a prototype **Mars Science City** in the desert near Dubai.
    - The city will serve as a research hub and simulate Martian living conditions.
    - Covering 1.9 million square feet, it will be one of the largest Mars simulation projects ever built, incorporating laboratories for food, water, and energy research.

A $140 million Project

The plan for the construction of the city was announced at the annual United Arab Emirates (UAE) government meetings in Abu Dhabi in 2017 — and it made a splash. As a part of the Mars 2117 Strategy, the project Mars Science City is anticipated to be the largest space stimulation city ever that would cost around a whopping 500 million United Arab Emirates dirhams.

“The Mars Science City will be a platform where we’re going to have our future space robotics lab, future analogue facilities, a habitat and a space sustainability lab,” said Mr. Al Rais of the Mohammed bin Rashid Space Centre (MBRSC) and project manager of 2117.

The Mars Science City will be tucked in the desert, composed of 3D-printed sand. Housing a space museum, the project is a celebration of the greatest achievements of mankind in space exploration. It aims at educating the visitors though displays in museum and amphitheater. The campus will also include laboratories to imitate the life and human occupation on Mars, taking the advantage of 3D printing technology and radiation.

Mr Al Rais informed in 2017: “We’re currently working on the design. Then we’ll do the construction for the next two years. Hopefully, the city will be ready and operational towards the end of 2024.” [2]

However, as of 2024, the UAE's Mars Science City remains in the conceptual phase, with no significant construction progress reported. The project, designed by Bjarke Ingels Group (BIG) in collaboration with the UAE/MBRSC. The UAE has released conceptual visuals and simulations of what a future Mars settlement might look like. These visuals often depict domed structures, solar panels, and advanced infrastructure designed to withstand Mars' harsh environment. [3]

Knowledge Development

- The project emphasizes education and the development of a new generation of scientists, engineers, and researchers specializing in space sciences.
- The UAE has launched initiatives to inspire youth to pursue STEM (science, technology, engineering, and mathematics) careers.

4. **Hope Probe**:
    - The Mars 2117 Project builds on the success of the UAE's **Hope Probe** (the Emirates Mars Mission) mission, which entered Mars' orbit in February 2021.

- The Hope probe studies the Martian atmosphere, weather patterns, and climate, contributing valuable data to the global scientific community.

5. **Collaborative Partnerships**:
   - The UAE is collaborating with leading space agencies and research institutions worldwide to advance its Mars mission.
   - Partnerships include joint research, technology exchange, and participation in global discussions on Mars exploration.

Broader Implications

The Mars 2117 Project reflects the UAE's commitment to diversifying its economy, investing in future-oriented industries, and contributing to humanity's knowledge and exploration of space. While the 2117 timeline is ambitious, the project's intermediate steps, such as the Mars Science City, ensure tangible progress and impact in the near term.
The project represents a significant step forward in humanity's quest to explore and potentially colonize other planets.

References

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[2] https://blog.raynatours.com/dubai-mars-science-city/

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