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THE 'SALAR DE UYUNI' AS A SIMULATED MARS BASE HABITAT IN SOUTH AMERICA

Abstract

The growing interest to explore the Universe, discover new planets, has led us to develop scientific and technical projects, to discover the unknown.

The exploration of Mars has been a project that has emerged since the beginning of the cold war, the reasons for exploring the red planet are several, for example, ancient astronomers have evidenced the presence of furrows on the surface of the red planet that would be an indication of the existence of water. On the other hand, Mars would have a strategic position respect to the Sun. Finally, the existing technology of space exploration can take us to that planet.

In the last years, different projects have come up to make the exploration of Mars come true, first by sending rover explorations like Spirit, Opportunity, Curiosity and others. On the other hand, there have also been projects to develop human exploration, with initiatives such as Mars500, MarsOne, and others.

To crystallize the human explorations on Mars, it has been understood that the first thing to do is to understand the necessary considerations for a manned space mission, for this, the Mars Society launched the Mars Analog Research Station (MARS) project. A global program of Mars operations research that includes four simulated Mars base habitats located in Australia, Iceland, the Canadian Arctic, Australian and the American Southwest. This mission is designed to understand on earth aspects such as the conditions of life that would have to be faced on Mars for exploration, also carried out geological, biological, electronic and even psychological investigations.

In this paper, we want to make a comparison of environmental conditions, geologic features, and biological attributes that we can see in the four simulated Mars base habitats, and we want to propose a location for the existence of a fifth simulated Mars base habitats located in the 'Salar de Uyuni in Bolivia'. 'The Salar de Uyuni' is a place that has the climatic, and geological conditions that are required and also has a quality of radiation. The salt and lithium that exist in the territory affect the correct functioning of electronic components, a quality that we would find interesting to simulate in search of a future human exploration mission to Mars.