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CHILEMOONMARS, AND IT ALL BEGAN ON THE SLOPES OF THE OJOS DEL SALADO IN THE PUNA DE ATACAMA

Abstract

The arid and hyper-arid conditions of the Atacama Desert in the surrounding of the Altiplano-Puna

central Andes, make this geographical area a terrestrial analogue that can provide keys to understanding the past climate of the planet Mars. On the strength of this remarkable natural heritage, the University of Atacama (UDA, Chile) has launched the construction of a transdisciplinary high-altitude laboratory, the first module of which should be built in 2021 at 3,800 meters above sea level (masl), at the Salar de Maricunga (26°55'S / 69°05'W), close to the Chilean-Argentinean border. Starting from this base camp with a surface area of 250 square meters, a prospecting work of 18 months will be carried out in order to determine a logistically, technically and scientifically relevant location above 5,200 masl. Some of the research activities carried out within the UDA have a strong potential in terms of planetary sciences, particularly in terms of astrobiology and analog studies of Mars. In order to concretize the UDA's declared will to develop a planetary science theme based on the enhancement of the exceptional natural heritage of the Puna, the LICA (Water and Cryosphere Laboratory of the University of Atacama) has approached the EuroMoonMars program in order to benefit from expertise in the organization of analog campaigns and thus develop similar activities in Chile: the ChileMoonMars section of the EuroMoonMars program.This presentation looks back at the organization and the first results of a travelling campaign carried out from 22 February to 3 March 2021 in the vicinity of the Ojos del Salado, the highest active volcano on Earth (27°06' 3"S / 68°32'28"W). This high-altitude expedition focused on the collection of soil, water and vegetation samples as well as the acquisition of geophysical data related to the characterization of the glacial and periglacial environment of the region. This expedition was also the opportunity to set up a remote operational support unit located in Europe as well as some protocols aimed at quantifying cognitive losses during work at high altitude. This first expedition, involving both people from the University of Atacama and people from the EuroMoonMars program is a first step towards the organization of joint campaigns aiming, in the longer term, for the prospect to the installation of an analog base in the Puna de Atacama.