Ground-Based Preparatory Activities (11)
Ground-Based Preparatory Activities (2) (2)

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LIFE AND RESEARCH AT MOONBASE: RESULTS FROM ILEWG EUROMOONMARS CAMPAIGNS AND SIMULATIONS

Abstract

We present life and research from EuroMoonMars campaigns EMMIHS HISEAs, EMMPOL Poland that simulated science and operations at the future lunar bases. EuroMoonMars programme field campaigns: EuroMoonMars is an ILEWG programme following up ICEUM declarations as a collaboration between ILEWG, space agencies, academia, universities and research institutions, and industries. The ILEWG EuroMoonMars programme includes research activities for data analysis, instruments tests and development, Moon/Mars analogue field tests, pilot projects, training and hands-on workshops , and outreach activities. EuroMoonMars also includes a programme of grants for Young Professional Researchers. EuroMoonMars field campaigns have been organised in specif-ic locations of technical, scientific and exploration interest. These field campaigns started with EuroGeoMars2009 (Utah MDRS, 24 Jan-1 Mar 2009) with ILEWG, ESA ESTEC , NASA Ames, VU Amsterdam and GWU, and continued with yearly EuroMoonMars Field campaigns in Utah (2010-2014). Other EuroMoonMars analogue field campaigns, using selected instruments from ExoGeoLab suite, were conducted in other MoonMars extreme ana-logues, such as the Eifel volcanic area, Rio Tinto, Iceland, and La Reunion, and Hawaii, and at ESTEC, the LunAres base in Poland and the HI-SEAS. Latest campaigns have been conducted jointly between EuroMoonMars, International MoonBase Alliance and HI-SEAS: EMMIHS. EMMIHS campaigns (EuroMoonMars-IMA International Moonbase Alliance- HiSEAS): EuroMoonMars 2018-20 supported field campaigns at IMA HI-SEAS base on Mauna Loa volcano in Hawaii. The International Moonbase Alliance (IMA), an organization dedicated to building sustainable settlements on the Moon, has been organising regular simulated missions to the Moon or Mars at HI-SEAS. In 2019, the EuroMoonMars campaigns were launched at HI-SEAS, bringing together researchers from the European Space Agency, VU Amsterdam, ILEWG and IMA. Six scientists, engineers, explorers, journalists spent two weeks at the HI-SEAS station performing research relevant to both the Moon and Mars there. Research and technological experiments conducted at HI-SEAS will be used to help build a Moonbase in Hawai'i, and ultimately to create an actual Moonbase on the Moon, as part of IMA ILEWG major goals. 2020/06 EMM Iceland CHILL-ICE Scouting. A small team explored locations and collaborations for installing a deployable research habitat in lavatube for May 2021. 2020/10 EMMPOL EuroMoonMars Poland. We were able to organise in controlled safety conditions 2 one-week Moonbase isolation simulations, in order to conduct a number of research investigations, human factors studies, with 5 crew supported by a remote support team.

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