MoonMars Base in Poland: a Simulation Habitat and Laboratory for Research

Agata Kolodziejczyk (1), Michal Gocyla (2), Matt Harasymczuk (3), Mateusz Krainski (4), Adam Nawrot (5), Leszek Orzechowski (6), Bogdan Wszolek (7), Heleen Vos (8), and Bernard Foing (9)

(1) Advanced Concepts Team, European Space Agency, Noordwijk, Netherlands (fichbio@gmail.com), (2) Neuronator, Poland (mgocyla@gmail.com), (3) Institute of Microbiology, University of Warsaw, Warsaw, Poland (matt@harasymczuk.pl), (4) ESTEC, European Space Agency, Noordwijk, Netherlands (mt.krainski@gmail.com), (5) Polish Academy of Sciences, Warsaw, Poland (adam.p.nawrot@gmail.com), (6) Wroclaw University of Technology, Wroclaw, Poland (orzechleszek@gmail.com), (7) Jan Dlugosz Academy, Czestochowa, Poland (bogdan.wszolek@gmail.com), (8) ESTEC, European Space Agency, Noordwijk, Netherlands (heleen_c_vos@hotmail.com), (9) ESTEC, European Space Agency, Noordwijk, Netherlands (Bernard.Foing@esa.int)

Analog simulation missions are notable steps of real space exploration missions, where the hardware, along with the psychological behavior, the scientific and geological experiments, and operations, are scrutinized and conducted in a simulated environment to prepare astronauts and space agencies for actual missions. Here we present the newly built MoonMars base in Poland to investigate human-robotic relations during long-term planetary missions. We apply novel tele-medicine solutions, novel architecture design, life-sustaining systems and novel methods of planning and working to simulate not only "the beginning of life" in the habitat but also "a need to transform". The aim of the project is to facilitate and to speed up development of space education in Europe. Particularly, we are interested to enroll students, engineers and PhD students for realization of their individual projects in the frame of their master and doctoral programmes.