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INTERSPACE Mars analog based on proposed settlement level criteria

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Based on the results from two Mars settlement studies conducted by multi-disciplinary technical, sociology, and psychology research teams, 4Frontiers has established a concept for proposed settlement levels and associated criteria. Since current opportunities to conduct lifecycle field research involving Mars related equipment, technologies, methodologies, and other Mars research and development are mainly limited to remote, poorly accessible field locations or very small (~1-5 square feet) indoor simulations, a 4Frontiers subsidiary is using this and other 4Frontiers settlement concepts to actively develop a large (23,000 square feet) analog Mars environment called INTERSPACE. It is located near Kennedy Space Center, and one proposed use is to inexpensively conduct appropriate lifecycle Mars field research and development. Visitors and researchers can spend from 2-4 days in the Mars analog, living and working under simulated Mars conditions. Selected study can be continued for substantial durations (months or longer) if appropriate visitors conduct selected activities during their INTERSPACE experience. The INTERSPACE analog generally reflects indoor and outdoor Mars conditions except all environments are non-hazardous. Environments are kept at earth gravity and sea level atmospheric conditions, and a non-hazardous Mars regolith simulant is used. INTERSPACE includes a full scale hydroponics area with related agriculture and food science operations, a laboratory, an automated robotic construction area, and multiple other facilities which can be potential venues for Mars related research and development. The proposed Mars settlement levels and several areas in the INTERSPACE analog are discussed along with their potential for supporting related lines of study.

Biography

Mark Homnick is a corporate CEO and Program Manager with over 30 years of commercialization experience. He co-founded 4Frontiers Corporation in 2005 after leading the first of two Mars long-term habitation studies with over 70 scientists and engineers. He raised $ 550 k in equity and debt for the aerospace start-up company in addition to leading design/testing of Star Lab, an air launched suborbital vehicle flying out of Kennedy Space Center (KSC). Currently, 4 Frontiers is creating a spin-off company, the NewSpace Center, LLC, a real science Mars themed entertainment venture located on 75 acres at the Titusville-Cocoa Airport near KSC. He was previously a Program Manager with Intel Corporation where he directly managed more than $1 billion in commercial programs including all phases of multiple wafer fabrication production projects, office building projects, and site master planning/development projects. He graduated from Penn State in 1980 with a BSME.

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