IAF SPACE EXPLORATION SYMPOSIUM (A3)
Interactive Presentations - IAF SPACE EXPLORATION SYMPOSIUM (IP)

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EXPLORING THE PRACTICAL APPLICATION OF MINERALOGICAL DATA OBTAINED FROM HYPERSPECTRAL MAPS OF MARS

Abstract

When it comes to the colonization of Mars, the first thing that engineers turn to are maps, on which we rely entirely when it comes to the location of a future base or issues related to ISRO - fuel, materials for building Martian base, etc. In recent years, several institutions were combining 20 years of data from NASA's Mars Odyssey, Mars Reconnaissance Orbiter and Mars Global Surveyor and also ESA's Mars Express. Namely, the method of processing data, the method of creating mineralogical maps is being revised in order to obtain even more comprehensive information that's is already available. In order to be able to compare these data with each other or even combine information about some chemical element in one map, scientists are now spending enormous effort and resources. This is due to different data formats, different programs and approaches to data processing, as well as different resolutions. This article projects the creation a decentralized system that would avoid similar unnecessary complexity in the future Mars missions. This article also highlights the problematic issues of predictive analytics of hyperspectral mineralogy. And in addition to this, the tasks that need to be addressed in the future to facilitate mission planning are formulated.