



Synergies of space exploration and Earth science

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A more flexible policy basis from which to manage our planet in the 21st century is desirable. As one contribution, we note that synergies between space exploration and the preservation of our habitat do exist, and that protecting life on Earth requires similar concepts and information as investigations of life beyond the Earth, including the expansion of human presence in space. Instrumentation and data handling to observe both planetary objects and planet Earth are based on similar techniques. Moreover, while planetary surface operations are conducted under different conditions, the technology to probe the surface and subsurface of both the Earth and other planets requires similar tools, such as radar, seismometers, and drilling devices. The Earth observation community has developed some exemplary tools and has featured a successful international cooperation in data handling and sharing that could be equally well applied to robotic planetary exploration. Likewise, the education and awareness of society can benefit tremendously from knowledge of the overall habitability of our Solar System, including steps taken to prevent biological cross-contamination (planetary protection). Here we propose a network involving both communities that will enable the interchange of scientific insights and the development of new policies and management strategies. Those tools can provide a vital forum through which the management of this planet can be assisted, and in which a new bridge between the Earth-centric and space-centric communities can be built.