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SYMPOSIUM ON VISIONS AND STRATEGIES FOR THE FAR FUTURE (D4)
Space Elevator Design and Impact (3)

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CONCEPTUAL COLONIZATION OF SPACE USING SPACE-ELEVATORS FROM MARS' NATURAL SATELLITE "PHOBOS"

Abstract

A novel approach is examined for creating an industrial civilization beyond Earth. The approach would take advantage of the unique configuration of Mars and its moon Phobos to make a transportation system capable of raising mass from the surface of Mars to space at a low cost. Mars would be used as the primary location for support personnel and infrastructure. Phobos would be used as a source of raw materials for space-based activity, and as an anchor for tethered carbon-nanotube-based space-elevators. One space-elevator would terminate at the upper edge of Mars' atmosphere. Small craft would be launched from Mars' surface to rendezvous with the moving elevator tip and their payloads detached and raised with solar powered loop elevators to Phobos. Another space-elevator would be extended outward from Phobos to launch craft toward the Earth/Moon system or the asteroid belt. The outward tip would also be used to catch arriving craft. This approach would allow Mars to be colonized, and allow transportation of people and supplies from Mars to support the space industry. In addition, large quantities of material obtained from Phobos could be used to construct space habitats and also supply propellant and material for space industry in the Earth/Moon system as well as around Mars.