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Modern Day Space Elevators Entering Development (3)

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SPACE ELEVATOR TRANSPORTATION SYSTEM DEVELOPMENT ENABLES MANY MISSIONS.

Abstract

The authors have called for starting the engineering development of a Space Elevator Transportation System. The International Academy of Astronautics made the same call in its 2019 report “Road to the Space Elevator Era.” In the authors’ case the call is based on engineering readiness. In the IAA report, the call is augmented by a call to support humankind’s needs. The authors seek to merge the obvious: the citation that the Elevator is ready for development, and that the Elevator is important to humankind. This begins with connecting the various purposes of an Elevator (e.g., lift cargo to GEO), and then makes a preliminary correlation of what the Elevator will do. Indeed, full recognition shows that the Space Elevator Transportation System (SETS) is inarguably part of the future space transportation architecture; joining rockets. From several quarters, uses of an operational Space Elevator have ranged from essential support to the deployment of Space Based Solar Power, to the delivery of logistics in support of the Martian Settlement, supporting many Cislunar excursions, and more. Research has shown that when accumulated, the extent of the cargo to be delivered represents the classic requirements for an aggressive movement off-planet. The authors explain the call for such requirements cases with the true spirit of collective collaboration. Further, the research focused on the basic notion of “development” - as in maturity, growth, and accommodation in service to the Elevator’s purposes. Research Conclusion: The requirements definition should proceed; expecting collaboration and coordination as essential to progress. Throughout this process the team will accumulate design requirements insight, and other significant indicators of engineering value.