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Modern Day Space Elevators Entering Development (3)

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CISLUNAR ORBITAL TRANSPORTATION STUDY OF SPACE ELEVATOR APEX ANCHOR
RELEASES**Abstract**

As humans increasingly begin to expand beyond the threshold of Low Earth Orbit (LEO), moving supplies and astronaut safety within the vastness of space can become daunting. Limited by Tsiolkovsky's Rocket Equation, rockets are inefficient at moving material off planet as only a small percentile of the rocket's launch pad mass reaches orbital space. While commercial enterprises have greatly increased the rate of rocket launches, a human emergency occurring far from Earth raises the question of how to send aid. Space Elevators are a simple solution to overcoming the initial constraints posed by rockets. In a simplified manner, a Space Elevator is a permanent infrastructure for moving large elevators (climbers) along a tether that extends from the surface of the Earth into space. This research looks at the volume of space between Earth and the Moon, otherwise known as Cislunar Space, and the benefits that a Space Elevator would contribute. Specifically, a safety net for astronauts beyond LEO by means of the Apex Anchor (space station located at the top of the Space Elevator) as well as mass distribution to the moon by means of the Space Elevator. Mathematical details for the Space Elevator's construction or orbits for payloads are referenced but not calculated in this study.