

22nd IAA SYMPOSIUM ON VISIONS AND STRATEGIES FOR THE FUTURE (D4)
Modern Day Space Elevator Transformational Strengths and their Applications (3)

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KEYNOTE: "JEROME PEARSON MEMORIAL LECTURE" - SPACE ELEVATOR APEX ANCHOR
INITIAL RESEARCH

Abstract

Apex Anchors are the highest location on space elevators. They provide stability as the "sea anchor" and a location for so much more (100,000 km altitude). The International Space Elevator Consortium (ISEC) kicked off a research study to assess the characteristics and capabilities of this space station "extraordinaire," circa 2042. This location and the ability to raise mass to it by electricity [a green road to space] enables unique missions and the ability to release spacecraft at extremely high velocities going to CISLunar and beyond. The initial definition of the Apex Anchor focused upon the 7.76 km/sec release velocities with the ability to reach the Moon in 14 hours and Mars as quickly as 61 days. Current concepts are leading towards unique characteristics and potential missions resulting from further analyses such as storage, assembly, and refueling. These capabilities lead to mission enabling capabilities for planetary defense, observation, navigation, communication, and as a "truck stop in space." These concepts for the Modern-Day Space Elevator are being refined and explained so that, as Space Elevators mature, customers can plan on unique and powerful operational capabilities in the 2038+ time period.