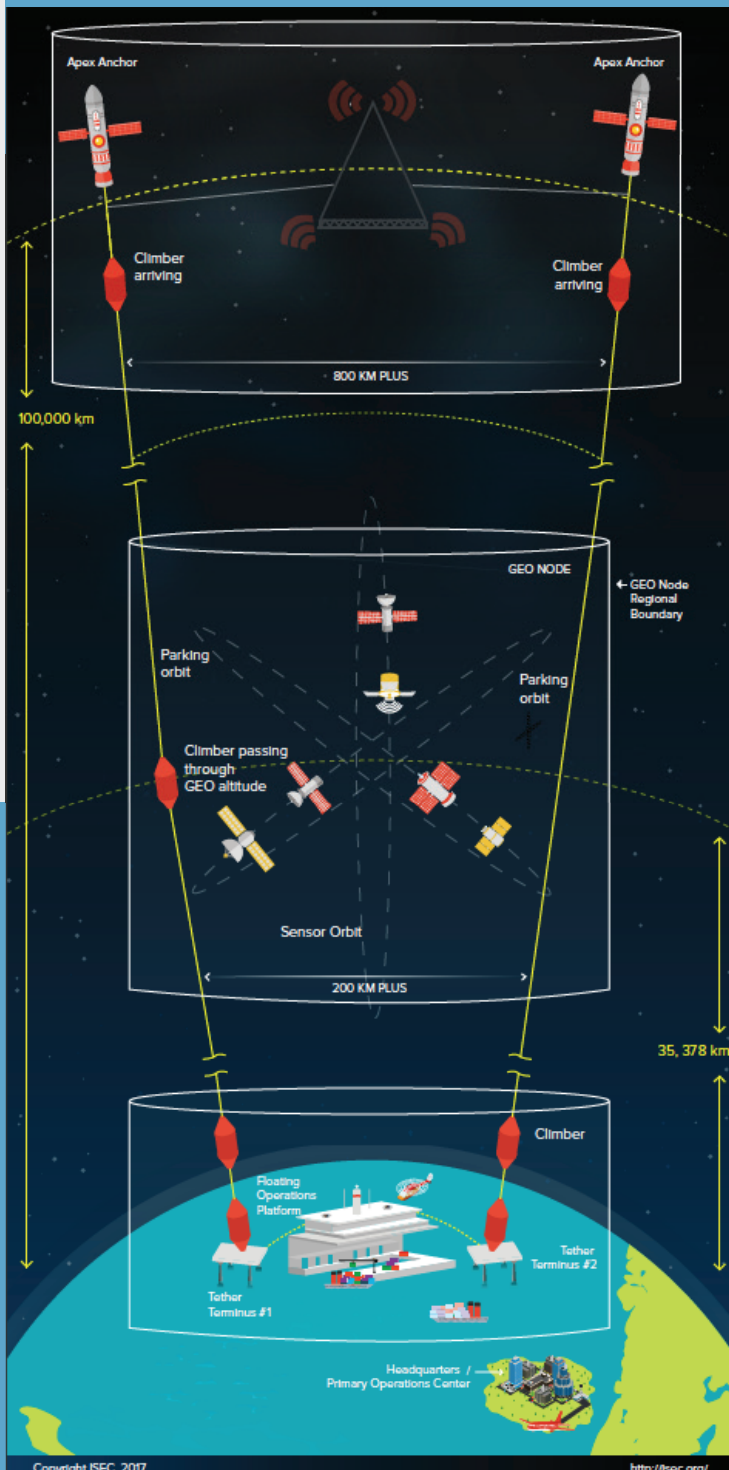


THE MODERN-DAY SPACE ELEVATOR



The Space Elevator Transportation System (SETS) is a permanent space access logistics infrastructure that has a transformational capability to ELEVATE massive cargo payloads daily into space in a routine, reliable, efficient, cost effective, secure and environmentally responsible manner.



SPACE ELEVATOR DEVELOPMENT CORPORATION

Galactic Harbours consist of two Space Elevators each.
Image owned by ISEC.

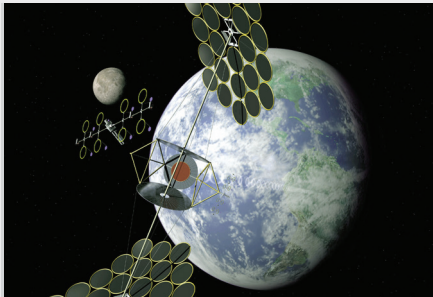
Major Transportation Customers Are **OUT OF THIS WORLD!**

Historic Missions - Future Demands

*Current GEO Satellites
Innovative Missions to GEO
Solar System Science
Asteroid Mining
Interplanetary Flights
Settlement of Solar System
Nuclear Materials Disposal*

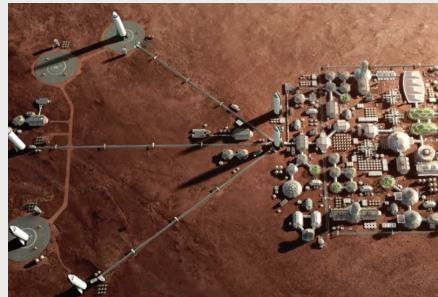
Future Missions - Future Demands

*Space Solar Power
Mars Settlement
Moon Village
Earth Sun Shades
Planetary Defense*



Space Solar Power **5 million tonnes to GEO**

Power to 12% of Earth's population while being environmentally neutral.



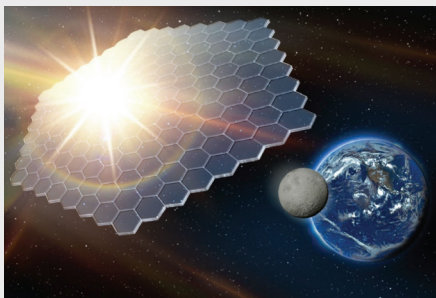
Mars Settlement **1 million tonnes**

Supporting a settlement with logistics has been under-appreciated in the movement off-planet.



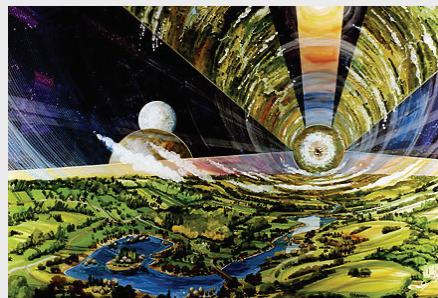
Moon Village **500,000 tonnes**

Developing and supporting a settlement of residents will require massive movement from Earth.



Earth Sun Shades **20 million tonnes**

Reducing energy from the Sun that reaches the Earth's atmosphere, thus reducing global warming.



L-5 Settlement **20 million tonnes**

Developing and supporting a settlement in L-5, along the path of the moon's orbit around Earth.

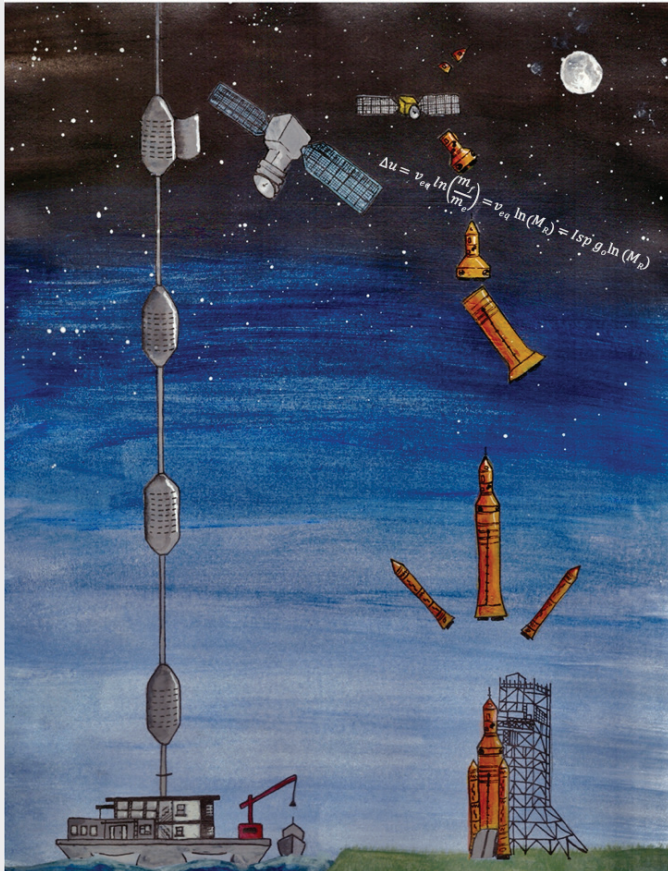


Project 6 **TBD tonnes**

As we build it, they will come!

Humanity's Dreams are Large and Important!

With major Earth based and beyond Earth challenges – A Dual Space Access Strategy Enables these dreams!



Dual Space Access Strategy.
Image by Stanton, owned by Swan.

"The manufacture of tether-quality material for a space elevator still needs more development, but the trajectory to a high-quality industrial product is clear. It is not unreasonable to think that, as this graphene process continues apace, space elevator tether production could begin in five to 10 years using graphene as its material."

By Adrian Nixon, John Knapman and Dennis Wright
Spaceflight "the Right Stuff" <https://www.isec.org/recent-publications> Expansion of this statement is given <https://www.isec.org/space-elevator-tether-materials>

Can you imagine a time when climate is under control on Earth and people are living on the Moon and Mars?

This can happen in the near term if we build the green road to space and join advanced rockets in supporting access to space. **This dual space access strategy** can raise millions of tonnes off planet using solar power while having rockets move people through radiation belts rapidly. This dual space access strategy enables our dreams to become reality.

Graphene Super Laminate is the leading tether material of choice!



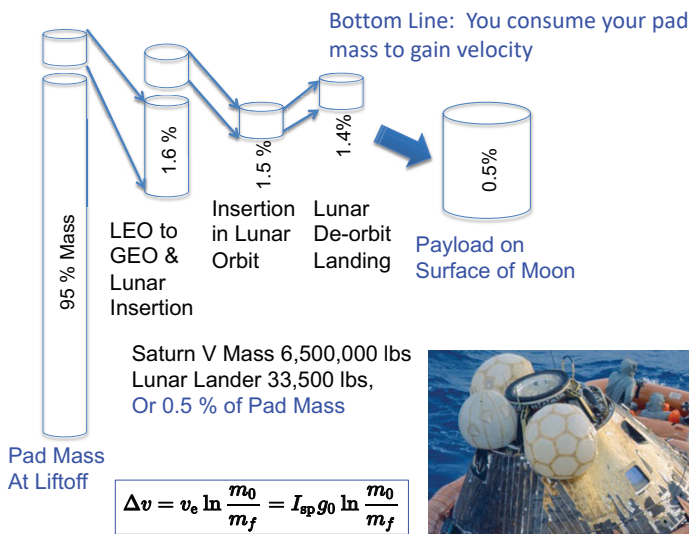
Tether extending up from equatorial ocean.
Image owned by ISEC.

Modern-Day Space Elevator Transformational Strengths

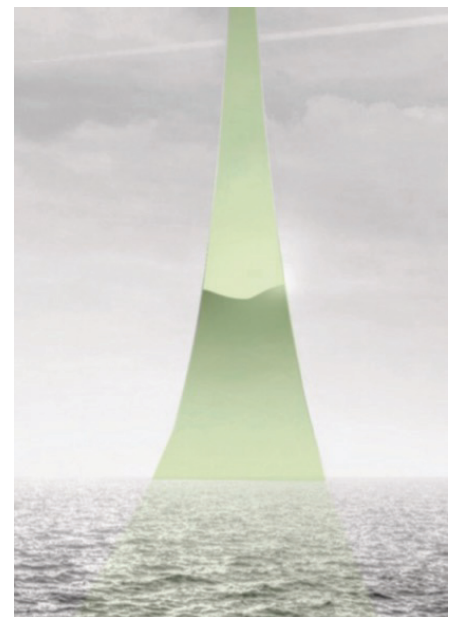
*The transformation of space access will be similar to moving from small boats crossing a large river to a permanent infrastructure, called a bridge, moving traffic daily, routinely, safely, inexpensively, and with little environmental impact. **Permanent space transportation infrastructures, called space elevators, will enable missions by leveraging their strengths:***

The answer to: *Why Space Elevators?*

Rocket Equation



Green Road to Space ensures environmentally neutral operations by climbing with electricity and not discarding anything along the way.



Unmatched Efficiency for moving mass to space on a permanent transportation space system: 70% delivered vs. rockets at 0.5 % of lift-off mass to the lunar surface and 2% to GEO – reusability does NOT effect these numbers! Extreme example, Apollo delivered 0.5% of pad mass to surface of Moon.

Extra SETS Transformational Strengths

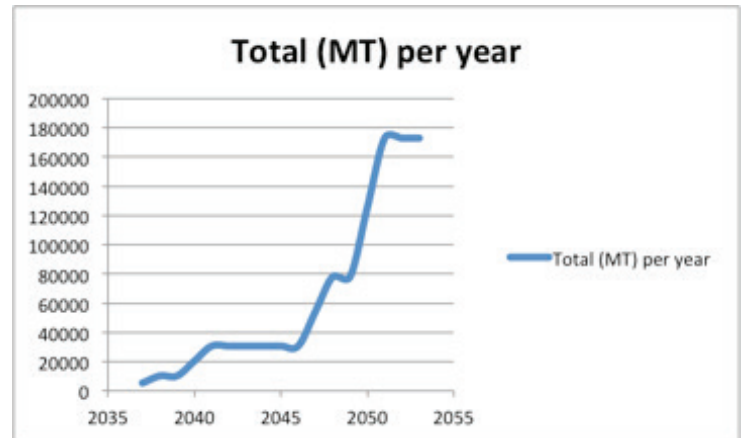
Daily, routinely, efficiently, safely, inexpensively, sustainably, with the following characteristics!

Unmatched Mass Movement

30,000 tonnes/yr at Initial Operational Capability (IOC to GEO and beyond)

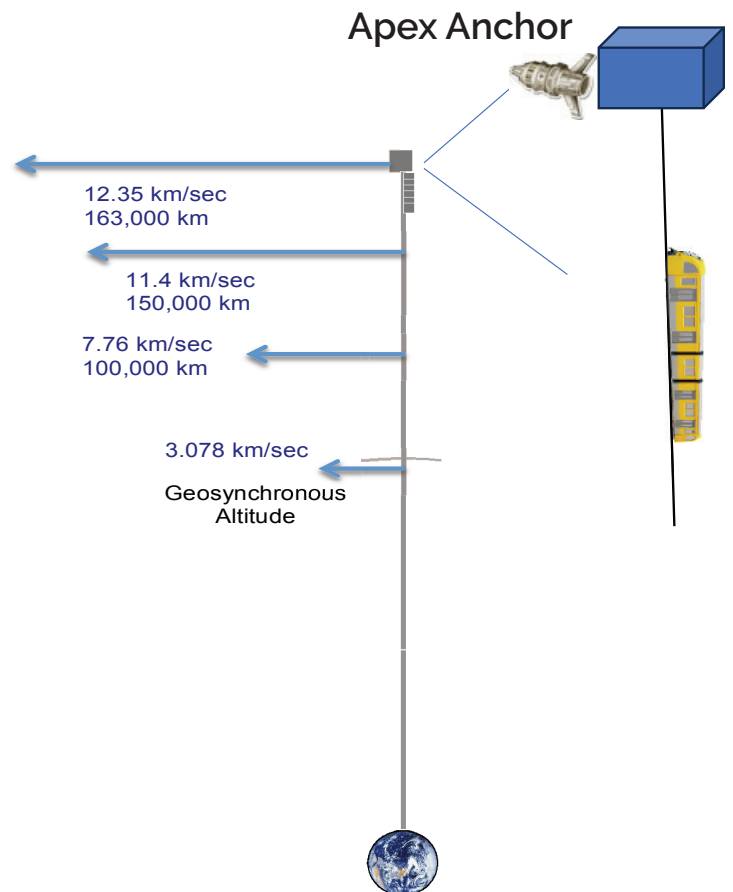
Assembly at the Top of the Gravity Well

Build huge spacecraft for release at tremendous velocities! No need to be restricted by mass when assembling space systems.



Unmatched Velocity

- Release at 163,00 km – leave solar system
- Release at 100,00 km – reach beyond Mars
- Release at GEO – float next to Tether
- Can you imagine 14 hours to the Moon and fastest option of 61 days to Mars?



Space Elevator Transportation System (SETS) Segments are described as:

Earth Port Facilities

A complex of facilities and equipment located on the Equator with a Semi-submersible Operations, Control and Communications Platform and floating Tether Terminus Platforms.

"The Earth Port facilities provide the basis for adding the z-axis (to and from space) to today's global 2-dimensional transportation system"

Tether Segment

The Tether Segment will provide a basic transportation mechanism for the movement of Climbers and their payloads from the surface of the Earth to Geosynchronous Earth Orbit and beyond. The concept is simple; a one-meter wide tether going from the Earth Port to the Apex Anchor at 100,000 km altitude.

Tether Climbers

Electric powered and reusable vehicles able to climb and lower themselves along the tether from the Earth Port to GEO to the Apex Anchor. In space, they may be serviced by robotic space tugs directed from the Command Center located at the Floating Operations Platform and/or the Earth Port Access City. As presently conceived, 70 percent of the mass of each climber is payload.

GEO Region

A complex of Space Elevator activities positioned directly above the Earth Port within the Earth's geosynchronous belt with a centroid elevation of 35,786 km. In this region, all forces are in equilibrium

so minimal energy is required to handle large mass payloads. The GEO region will be a center of economic activity for many, as yet to be determined, space-based enterprises.

Apex Anchor

At 100,000 km above the surface of the Earth, the APEX Anchor will be at the upper end of the Tether providing stability for the S.E.T.S.. Its principle mission will mature as there can be an assembly plant to bring together major segments of huge spacecraft. Release from the tether at the APEX region enables free flights to the Moon and beyond Mars rapidly and daily. Think – Assembly of Starship Enterprise.

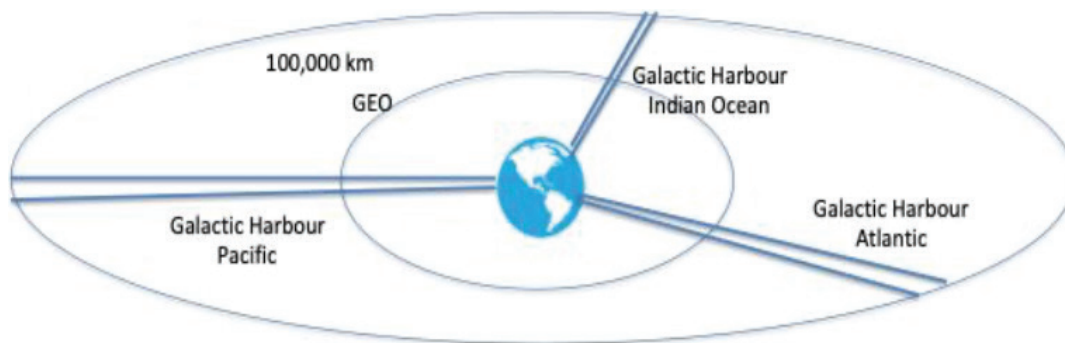


Climber elevating from Tether Terminus.

Image owned by Galactic Harbour Associates, Inc..

ELEVATE 2024

Space Elevators will provide a transformational capability as a permanent space access infrastructure to elevate massive cargo - daily, efficiently, inexpensively - to GEO and beyond. These permanent infrastructures, with parallel strengths as terrestrial bridges, will be distributed around the equator beginning at 14 tonnes to GEO daily-without impacting the environment as climbers are raised by electricity. This capability will have initial operations in the last half of the 2030's and cooperatively join advanced rockets in delivering customers' needs. As initial operations become real, the capability to GEO is roughly 30,000 tonnes per year. This is more than humanity delivered to LEO between 1957 and 2022. The breakout technology will provide space leadership to the operators while helping to improve humanity's future.



Vision:

Space Elevators are the Green Road to Space while they enable humanity's most important missions by moving massive tonnage to GEO and beyond. This is accomplished safely, efficiently, routinely, inexpensively, daily, and they are environmentally neutral.

Based on the decades-long work and published studies of the International Space Elevator Consortium (ISEC), Modern Day Space Elevators:

- Are ready to enter Engineering Development phase
- Are the Green Road to Space!
- Are joining Advanced Rocketry in a Dual Space Access Strategy
- Enable movement of massive cargo payloads to GEO (Geosynchronous Orbit) and beyond providing an uninterrupted exchange of resources from the Earth's surface to CisLunar space, the moon, Mars and the asteroids.
- Are a transportation core, which will attract and logistically support existing and untold future space-based enterprises.

THE SPACE ELEVATOR TRANSPORTATION SYSTEM CAN AND MUST BE BUILT

WHY SPACE ELEVATORS?

Unmatched Efficiency

for moving mass to space on a permanent transportation space system: 70% delivered vs. rockets at 0.5 % of lift-off mass to the lunar surface and 2% to GEO – reusability does NOT affect these numbers!

Unmatched Mass Movement

30,000 tonnes/yr at Initial Operational Capability (IOC) to GEO and beyond

Green Road to Space

Tether Climbers raise themselves with electricity instead of burning rocket fuel inside atmosphere and do not leave debris along the way.

Apex Anchor Assembly

Build at the Top of the Gravity Well allows for construction of huge spacecraft for release at huge velocities!

Unmatched Velocity

Can you imagine 14 hours to the Moon and fastest option of 61 days to Mars daily?

Tether Climber raising itself above the atmosphere.
Image owned by SEDevCo.



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