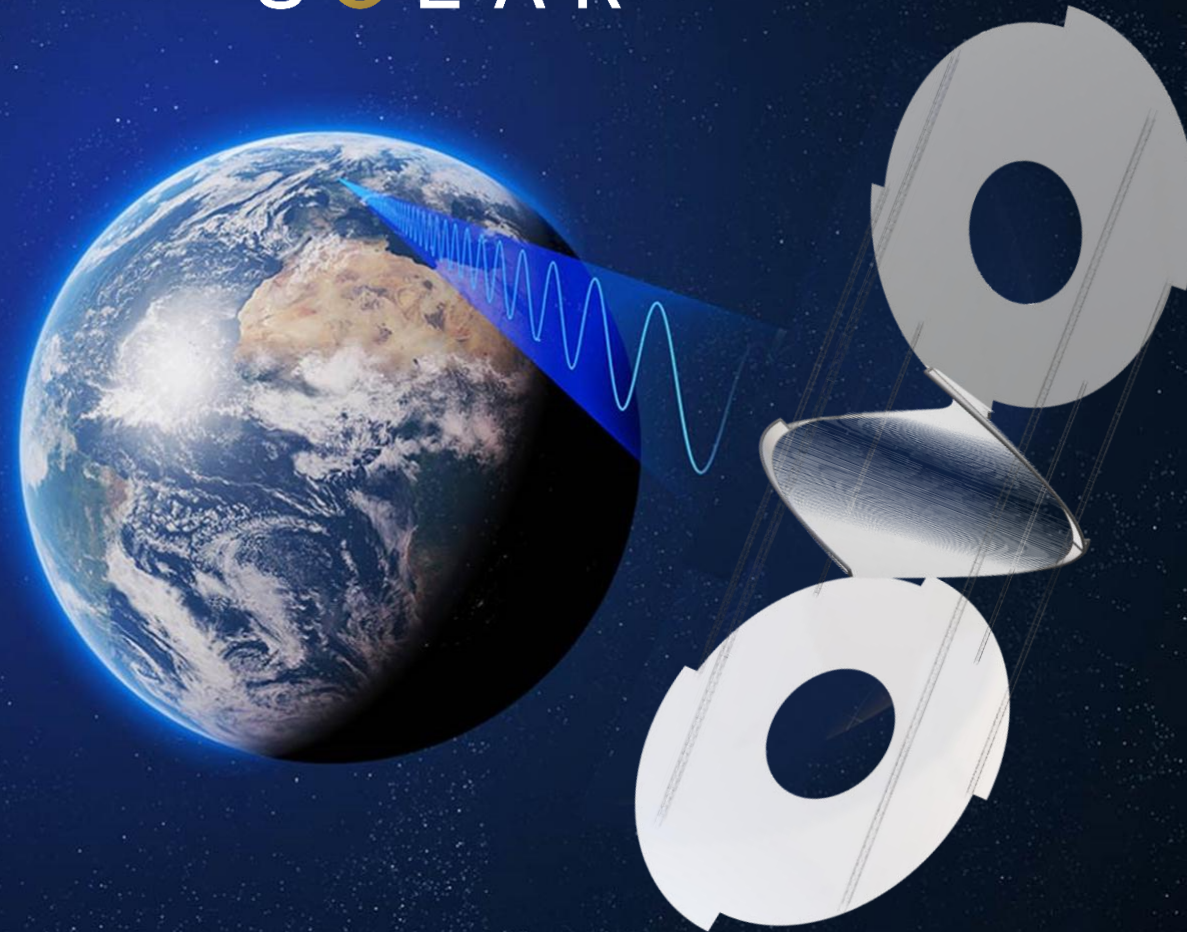


KEYNOTE SPEAKER
David Homfray



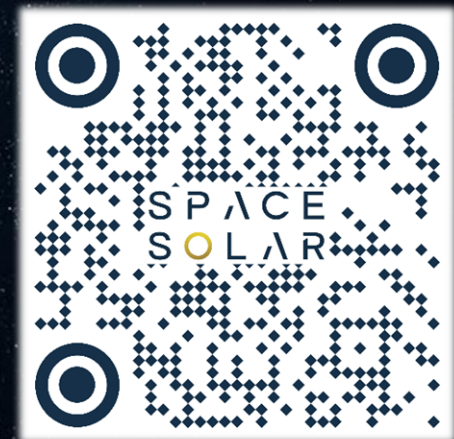
SPACE
SOLAR

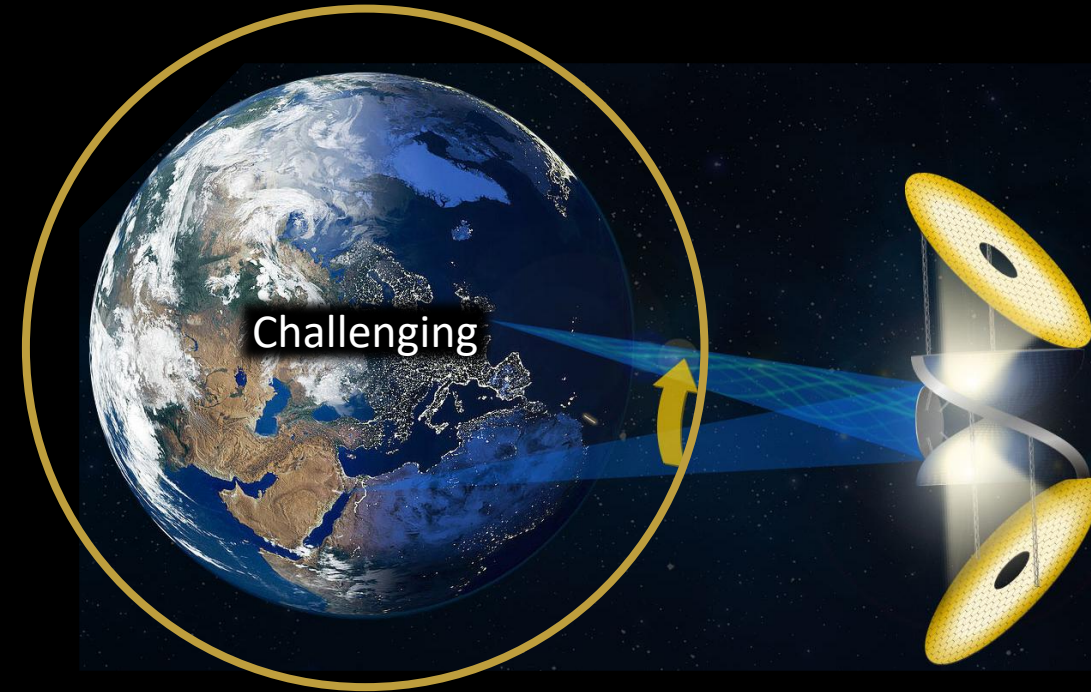
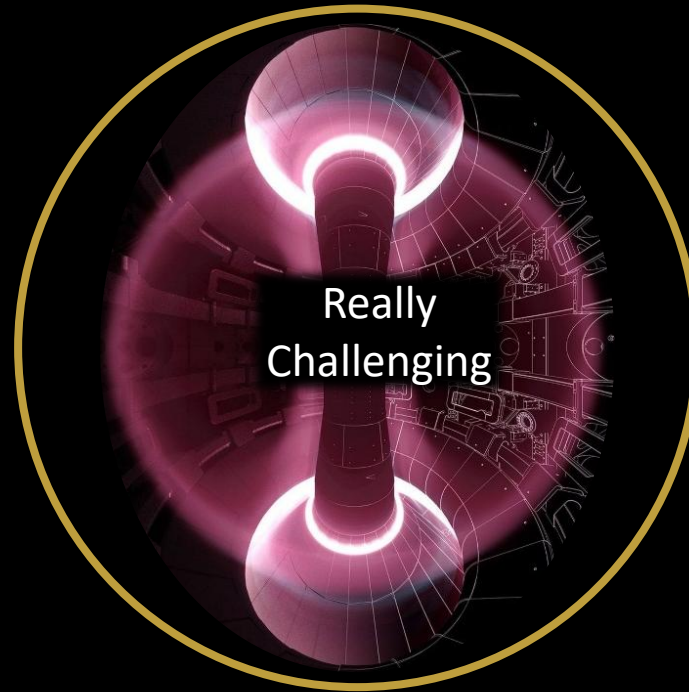
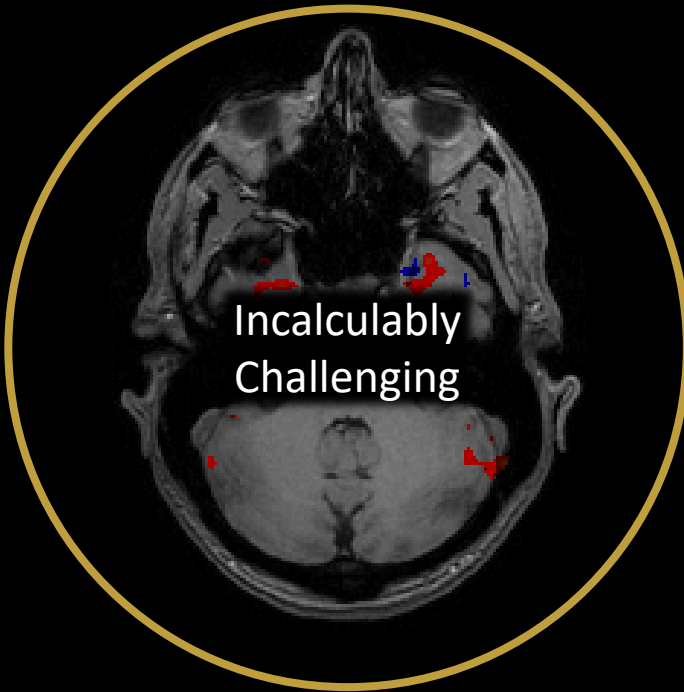
SPACE
SOLAR



STC Innovation and Growth Conference
Space-Based Solar Power for Net Zero

David A. Homfray FInstP

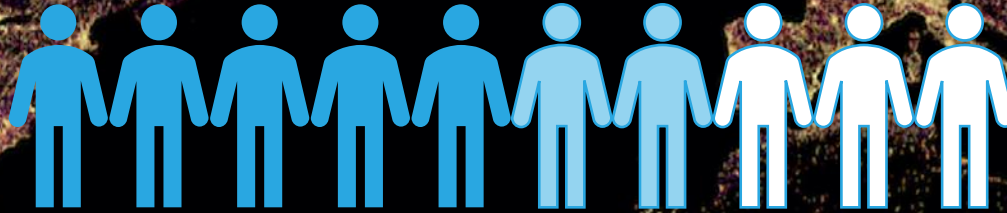




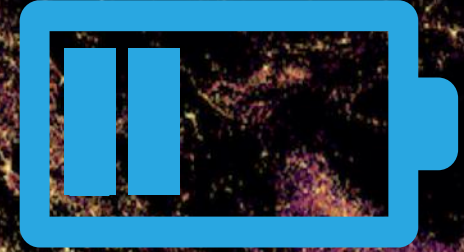
Net Zero – It's all about time

2018

7 Billion (2B no access to electricity)



20 Billion MWhr
(only 20% is considered low carbon)

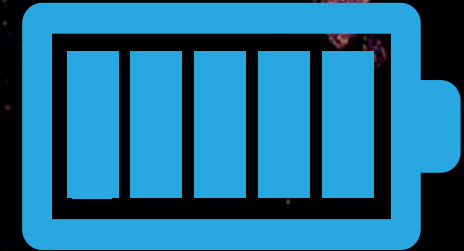


2050

9 Billion



50 Billion MWhr



8955 days left till 2050
5M MWh/day

One energy generation method to rule them all?

SPACE
SOLAR



1/week

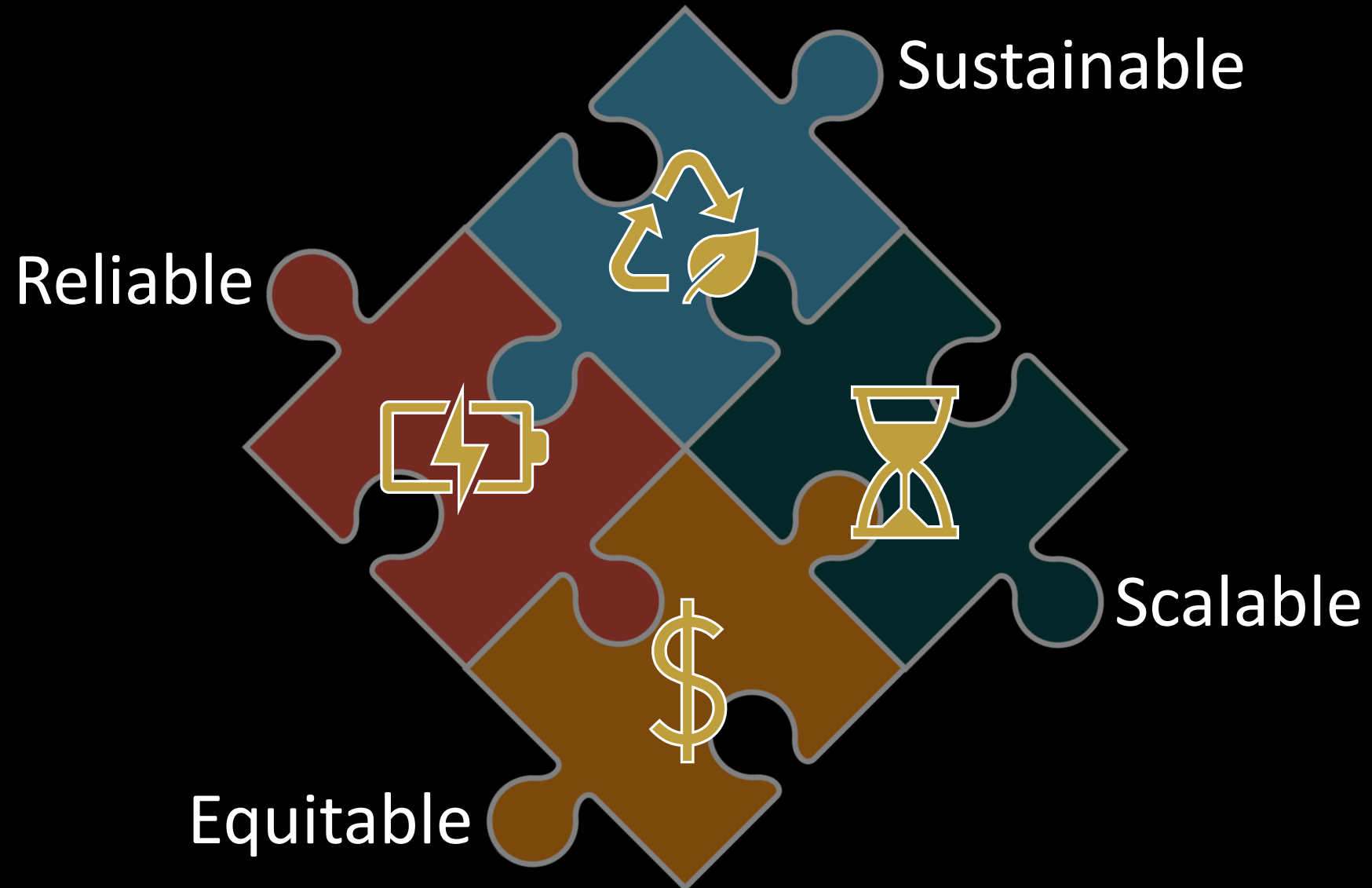


100km²/day

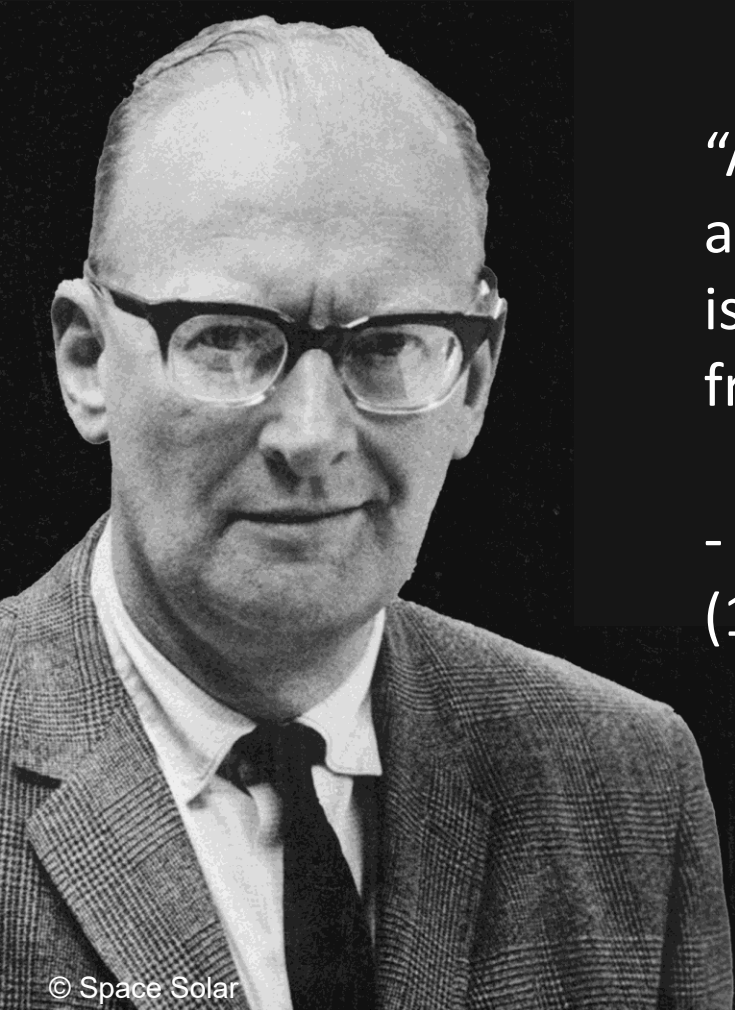


250/day

No Silver Bullet – We need to do it all – We need to do it now



It will never work.....



“Any sufficiently advanced technology is indistinguishable from magic.”

- Sir Arthur C. Clarke
(1917-2008)

“We do these things not because they are easy, but because they are hard.”

- John F. Kennedy
(1917-1963)

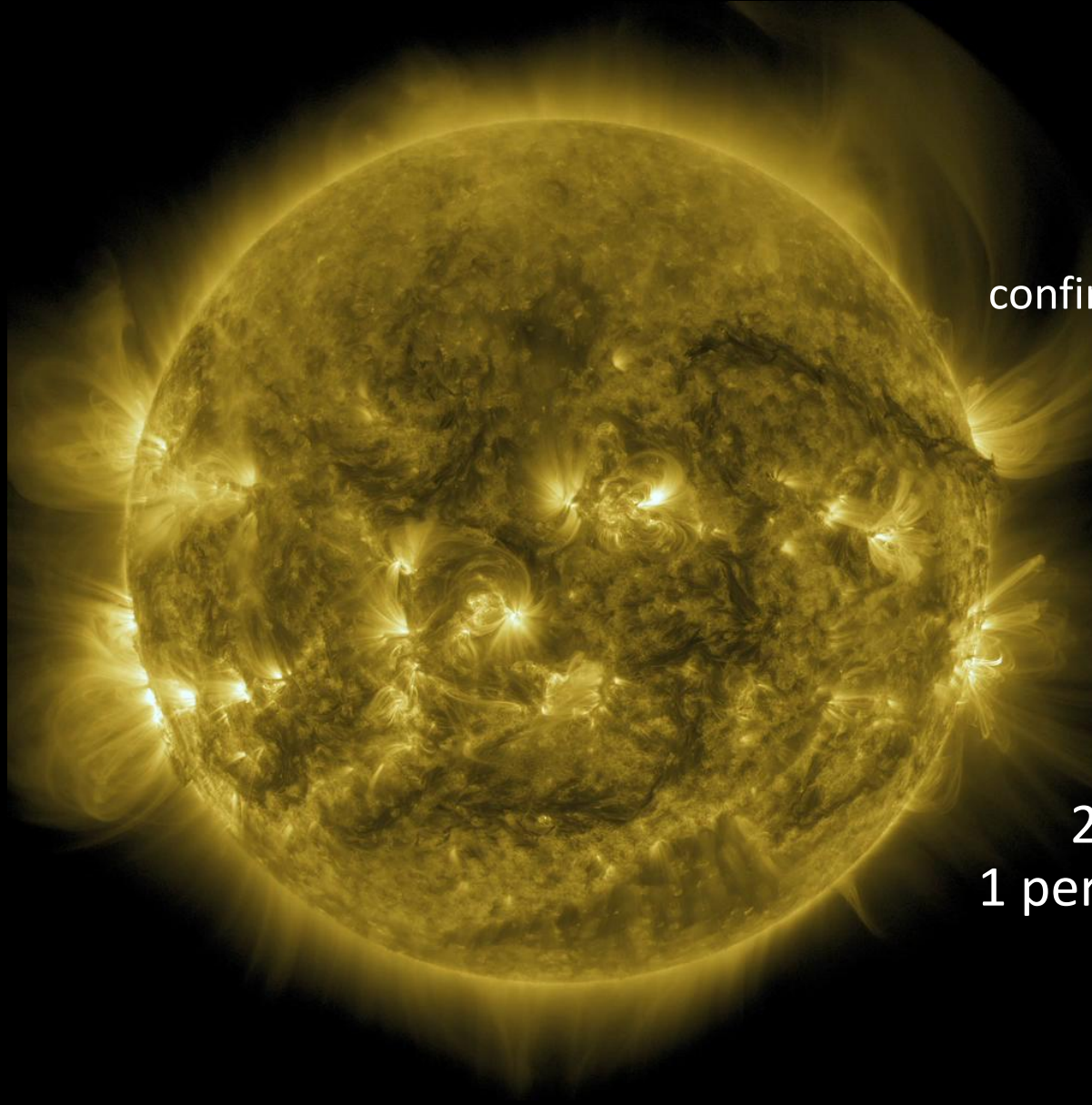


Our first fusion reactor

Mass
 2×10^{30} kg

Temperature
10,000,000 °C

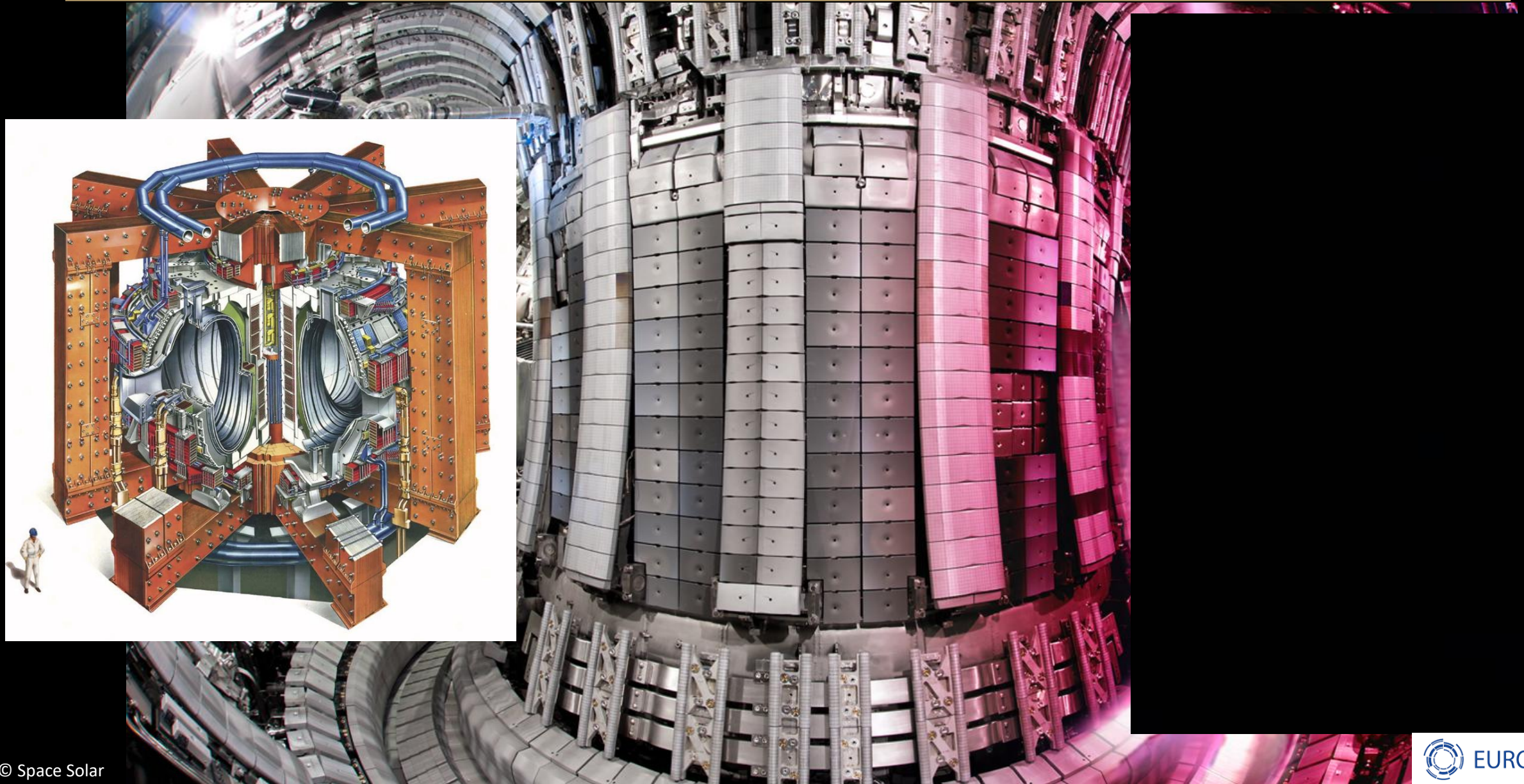
Energy
1 watt/m³



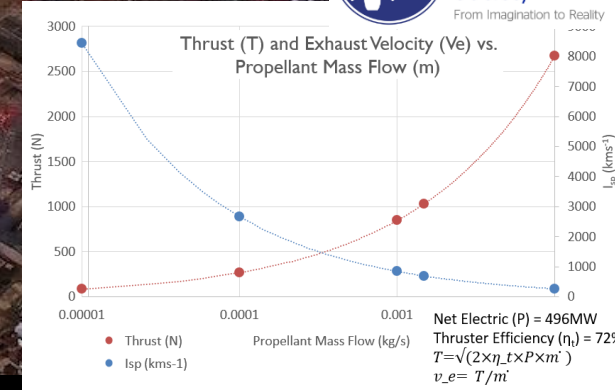
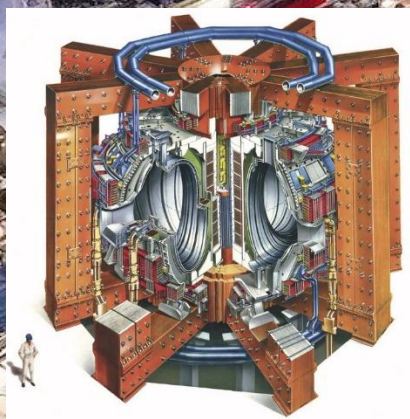
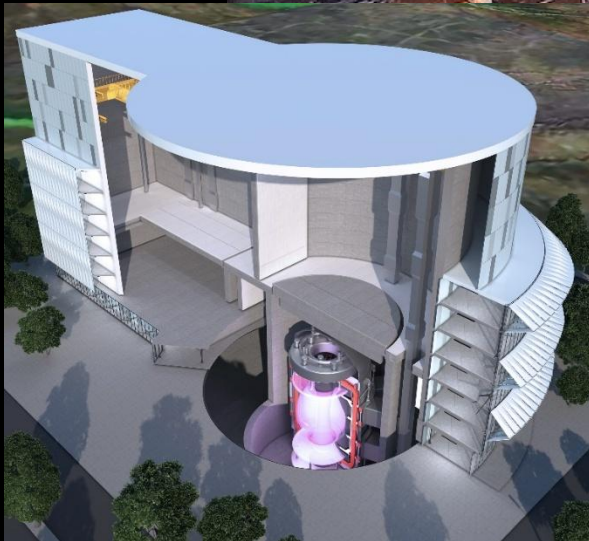
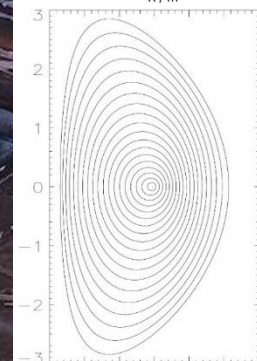
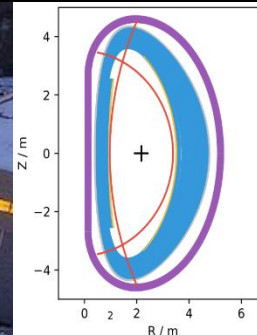
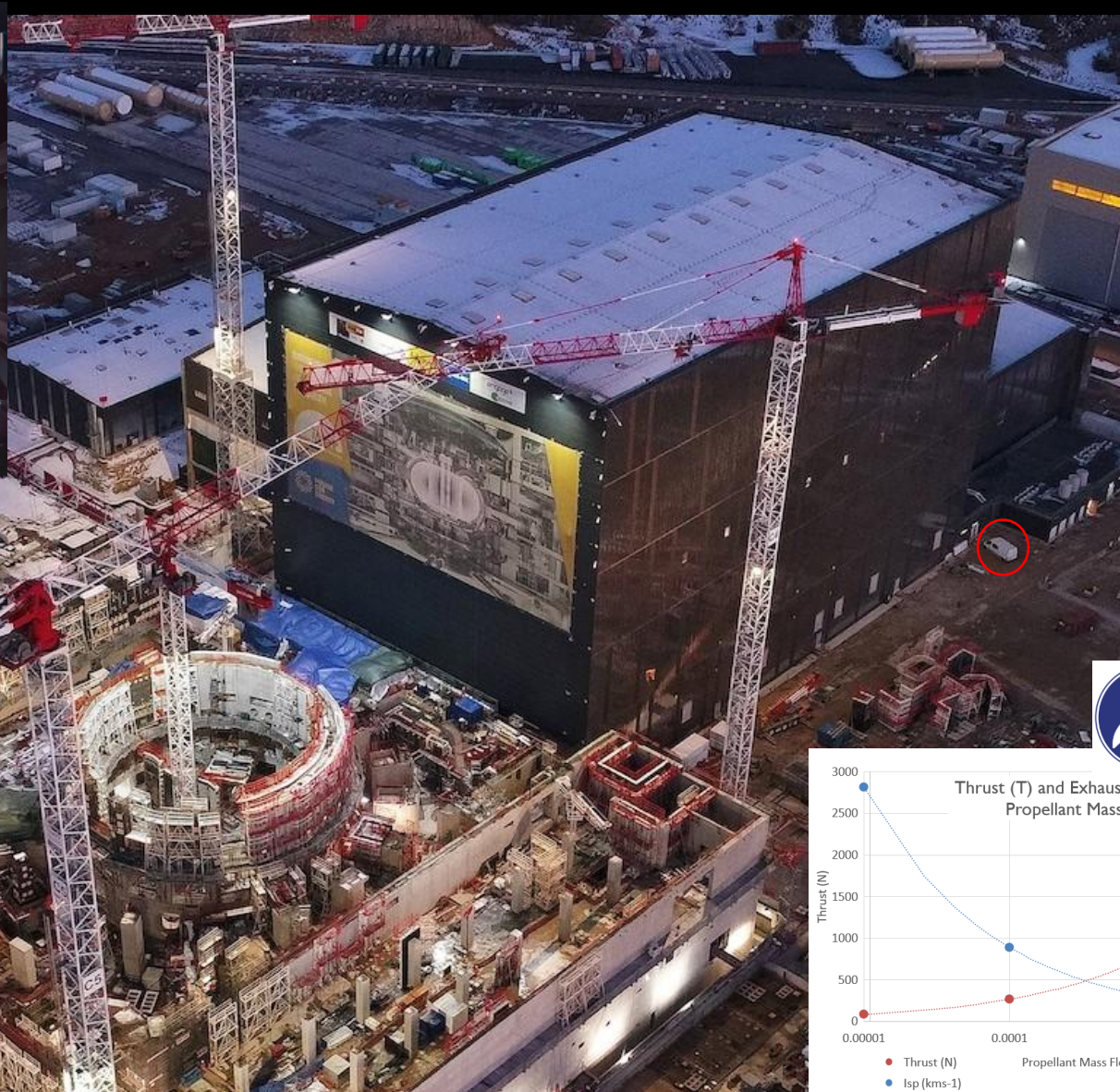
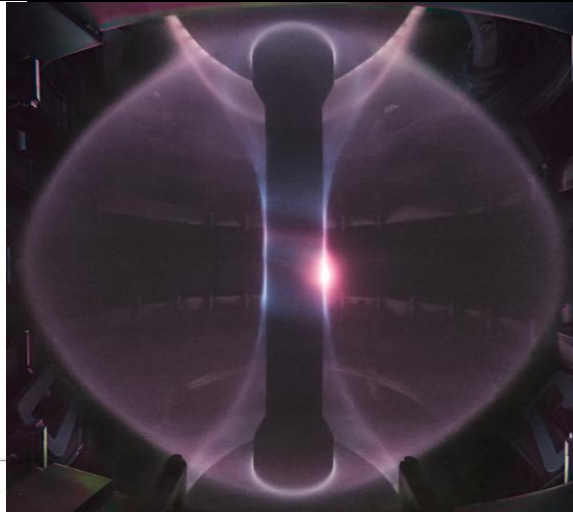
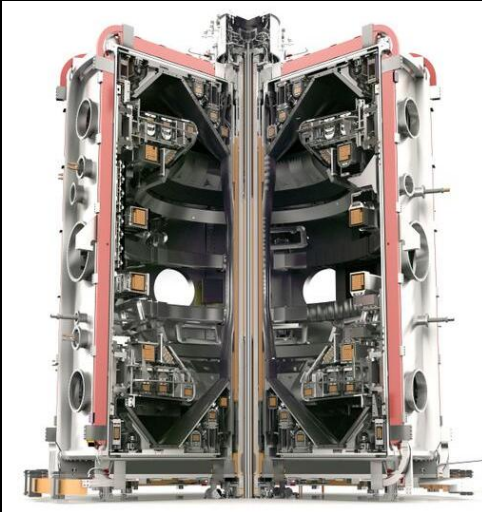
Triple product
confinement, density, temperature

1 bathtub of water
2 two laptop batteries
1 person's energy for 60 years

The Joint European Torus (JET)

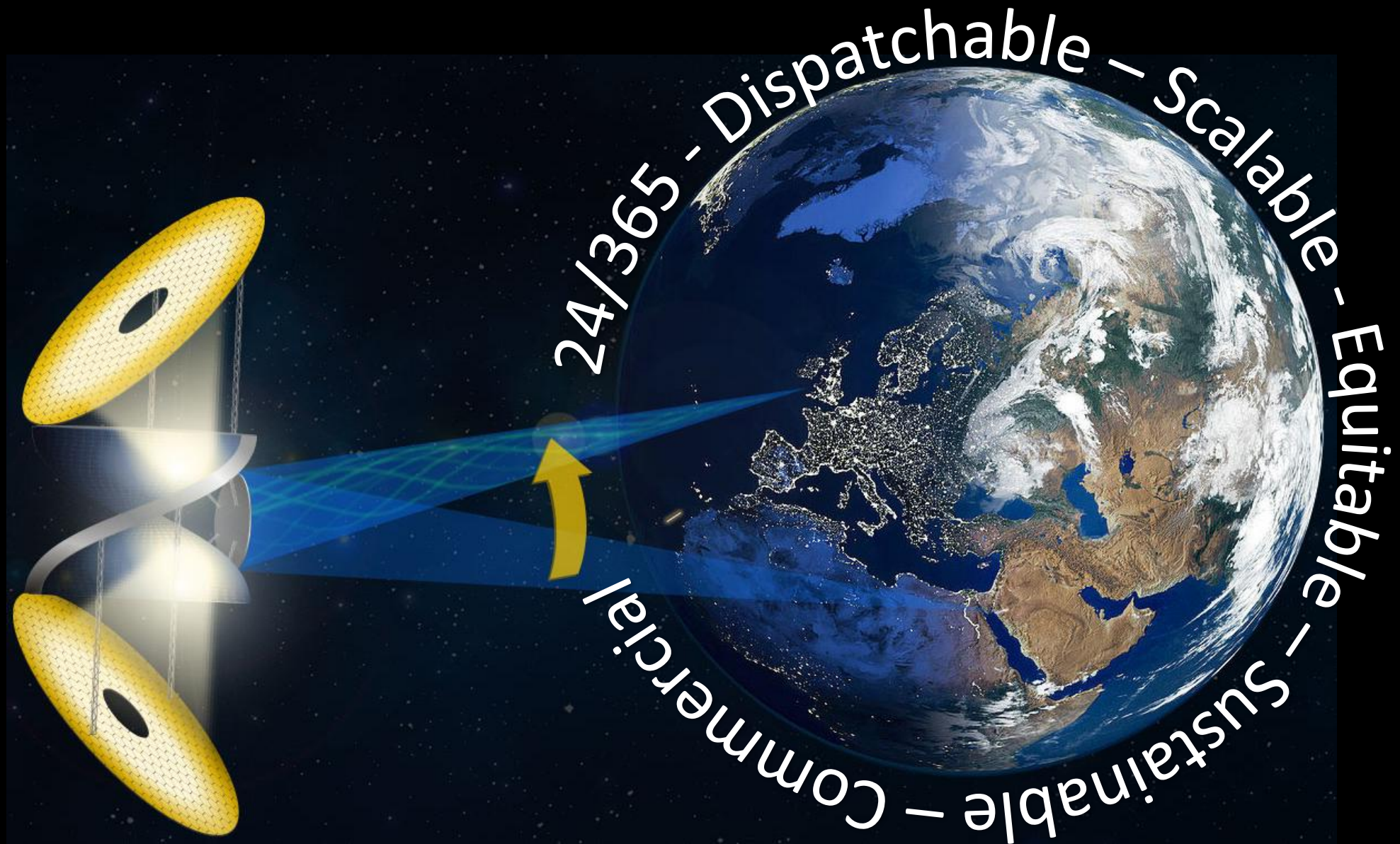


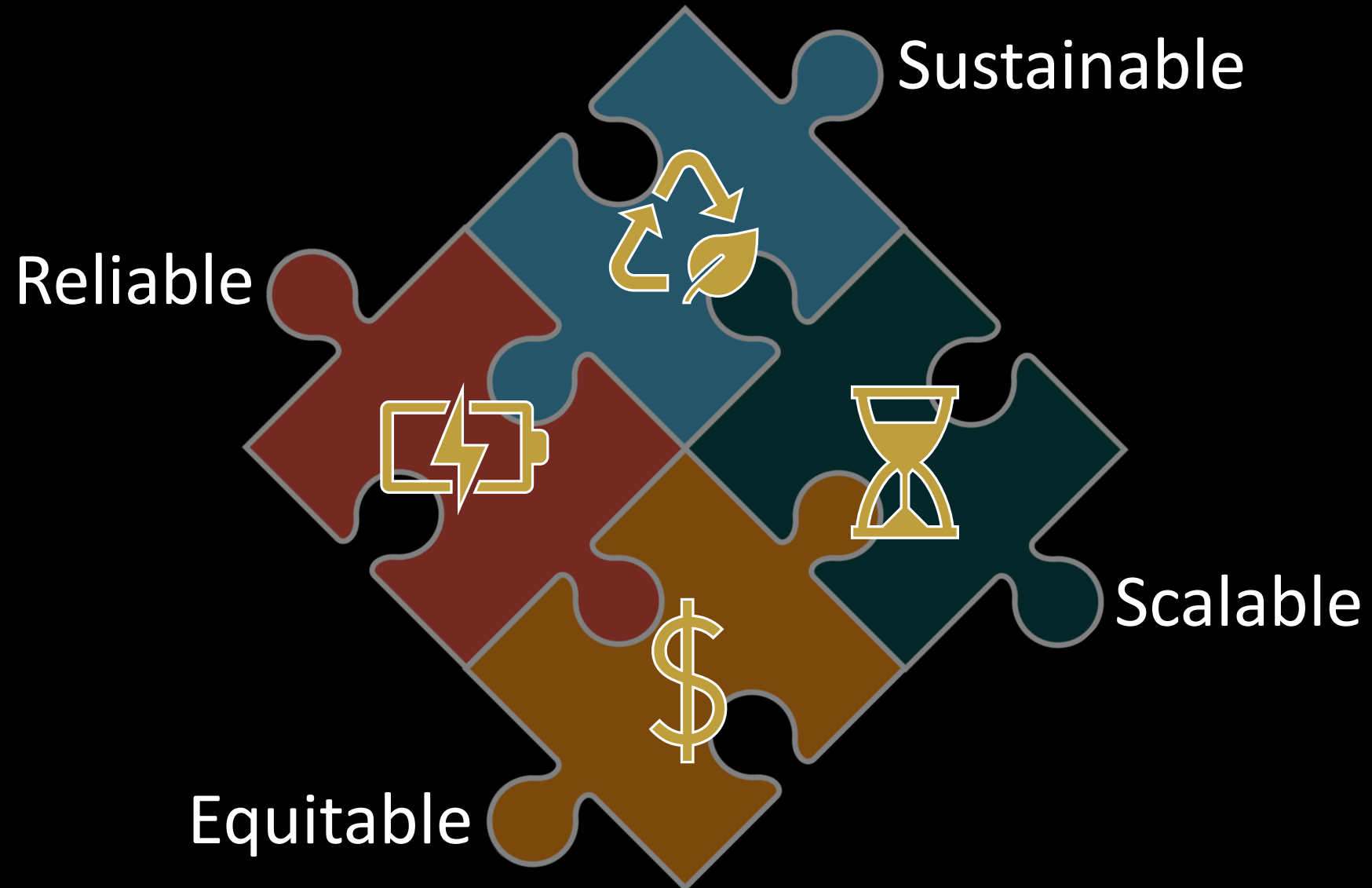
Many stars in a bottle



Why Space-Based Solar Power

SPACE
SOLAR





Economically and technically viable

SPACE
SOLAR



Astounding Science fiction
1941
Isaac Asimov



NASA technical
feasibility 1977



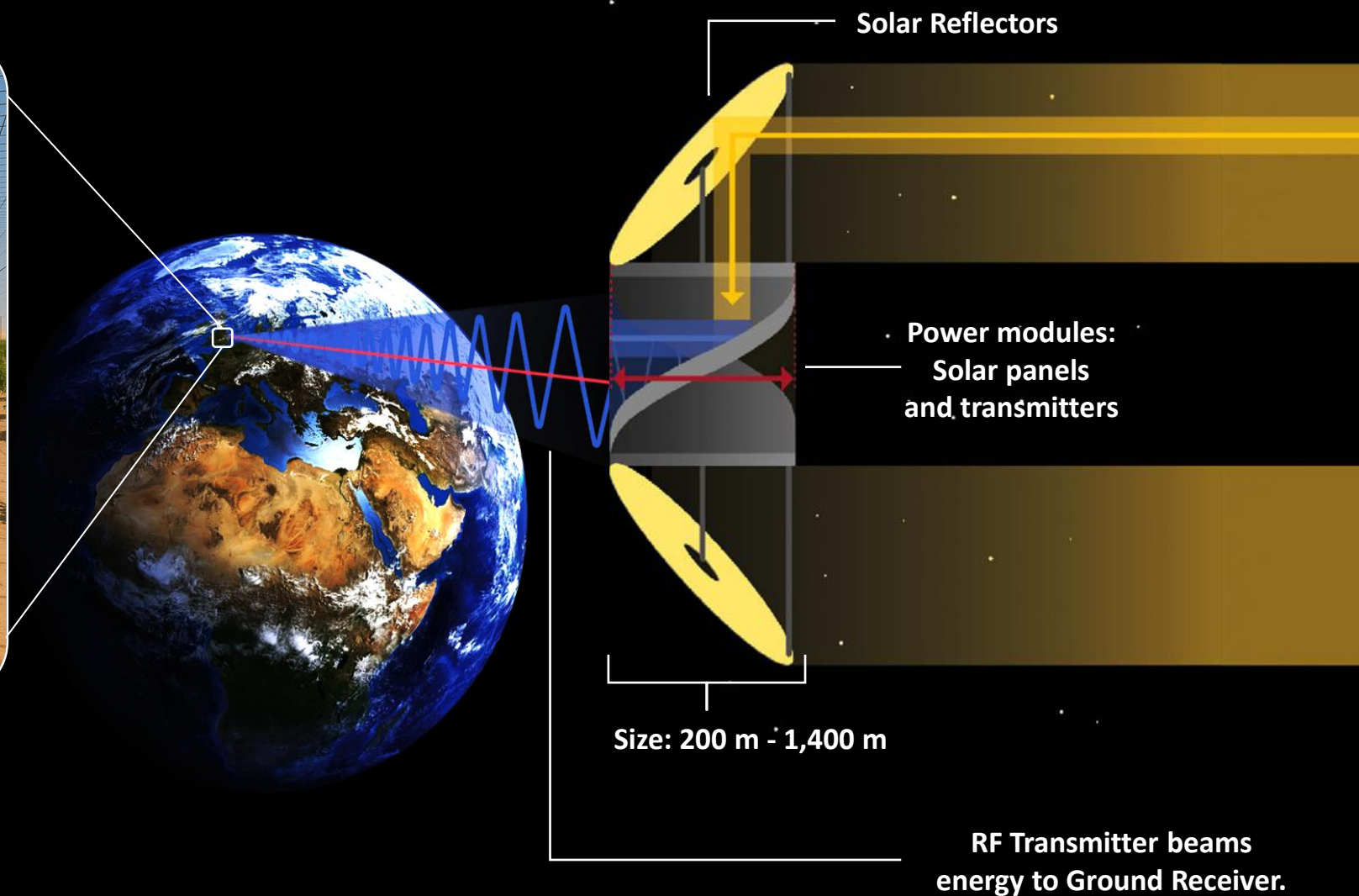
UK Gov economic
feasibility 2021
ESA economic
feasibility 2023

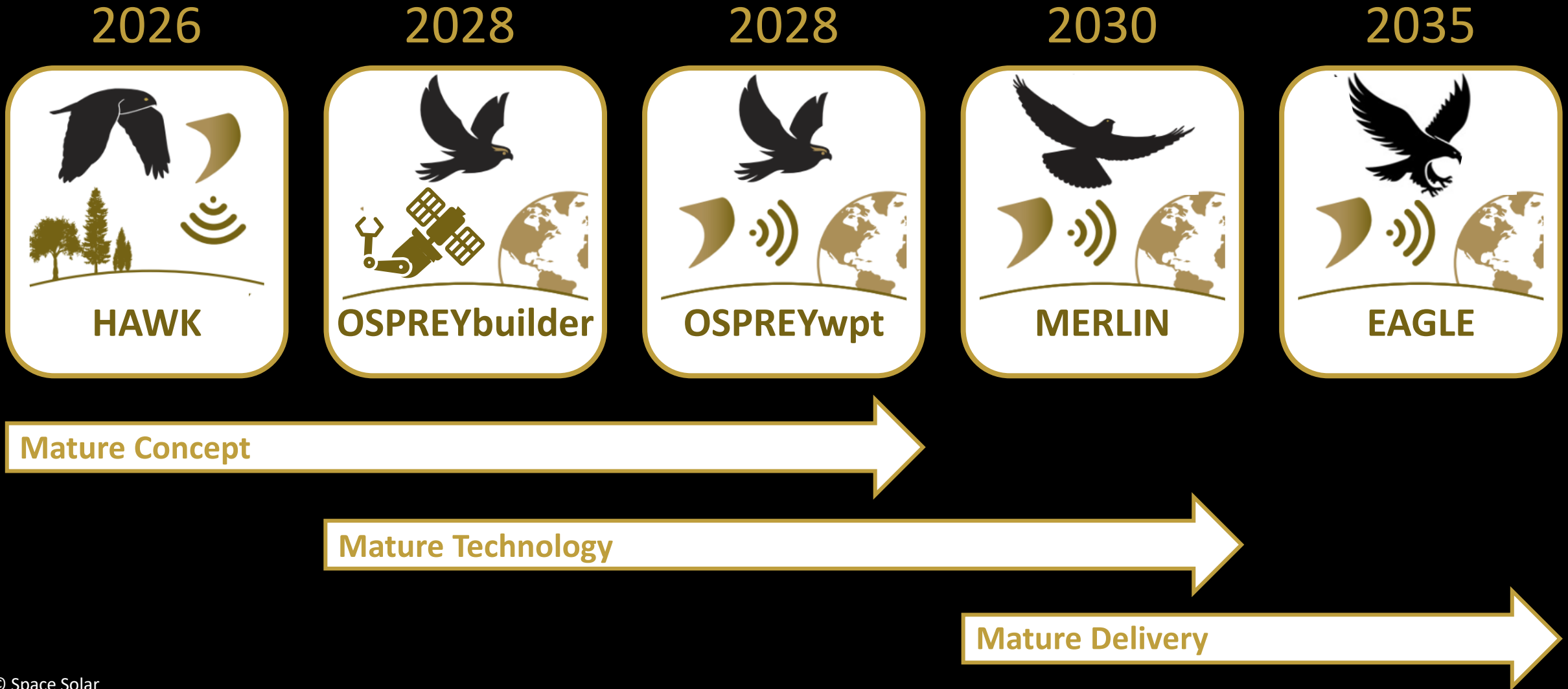


Ground Receiver



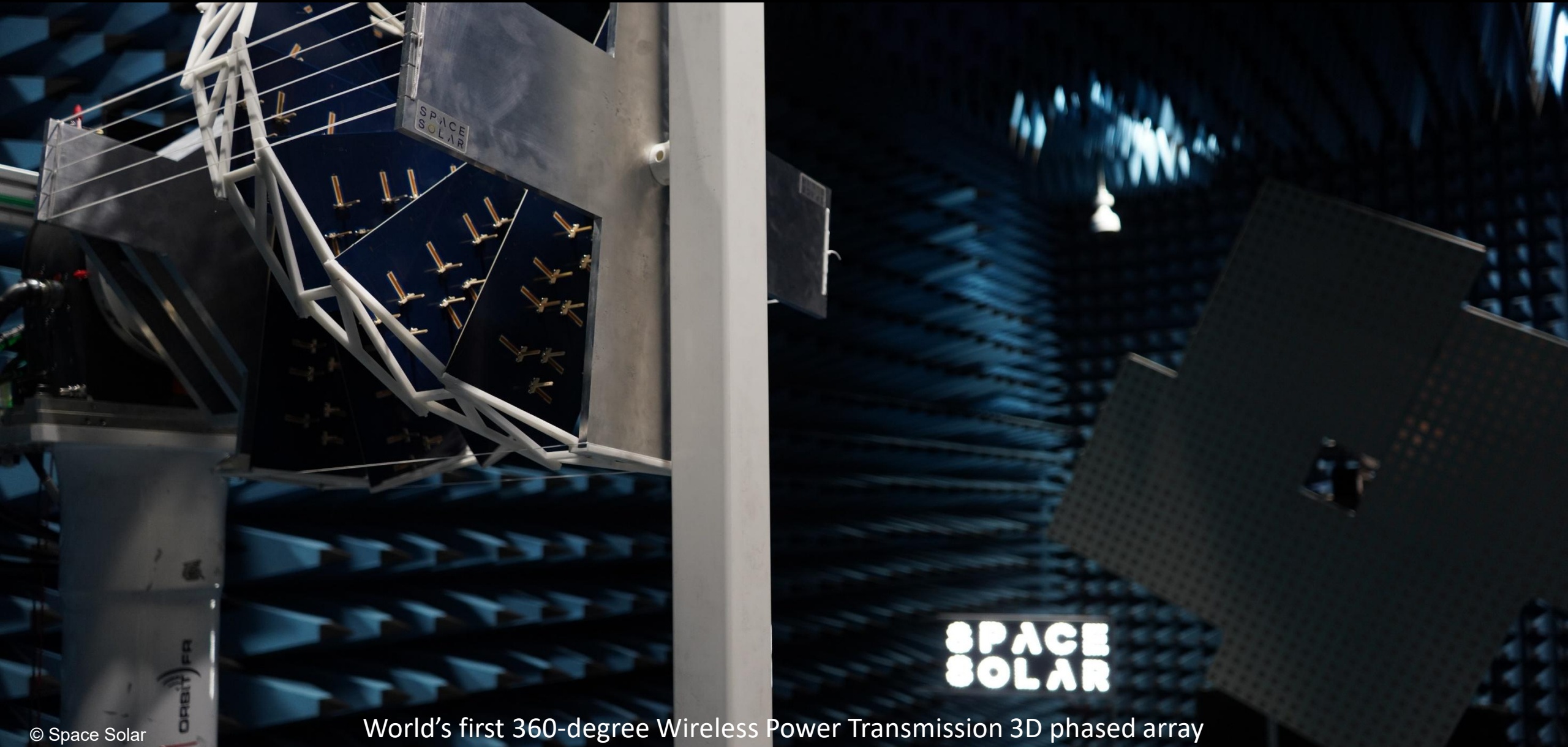
Space Segment

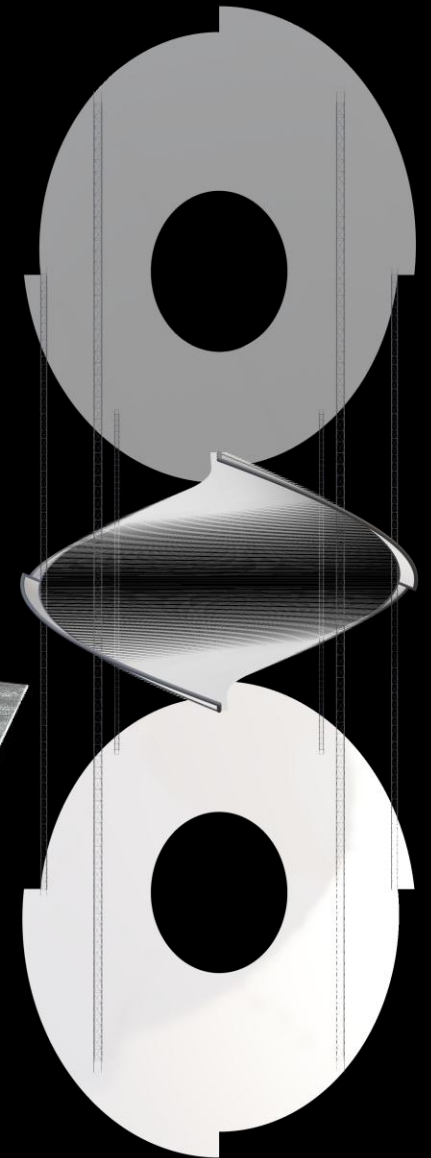
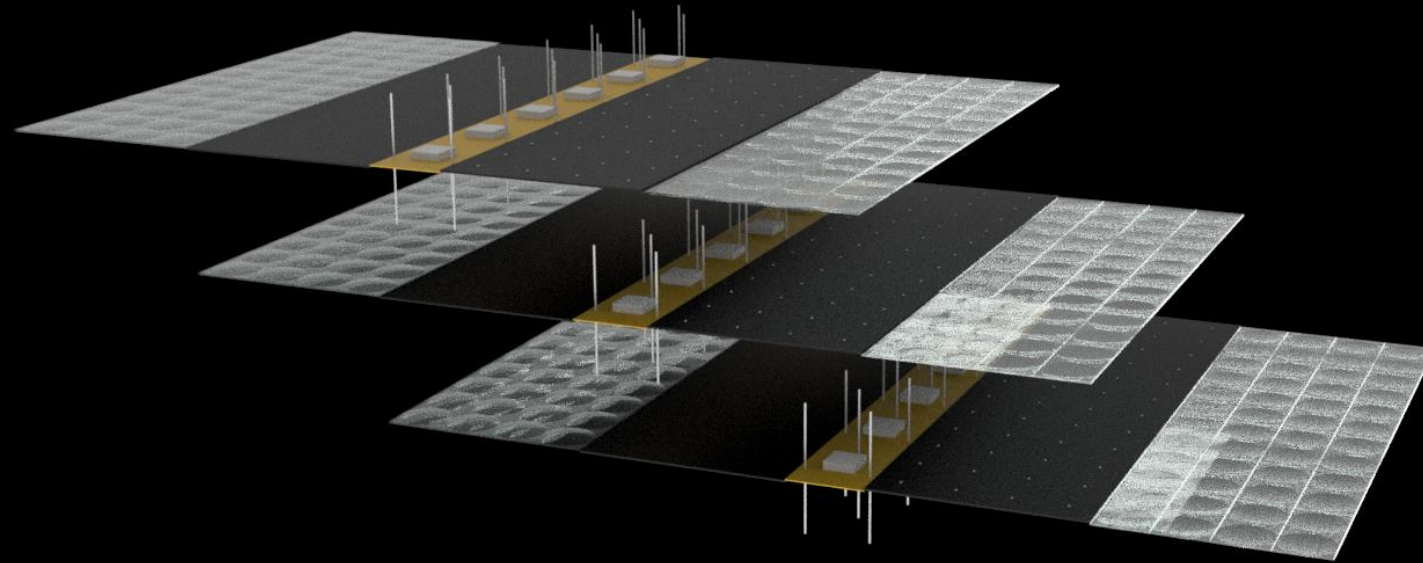
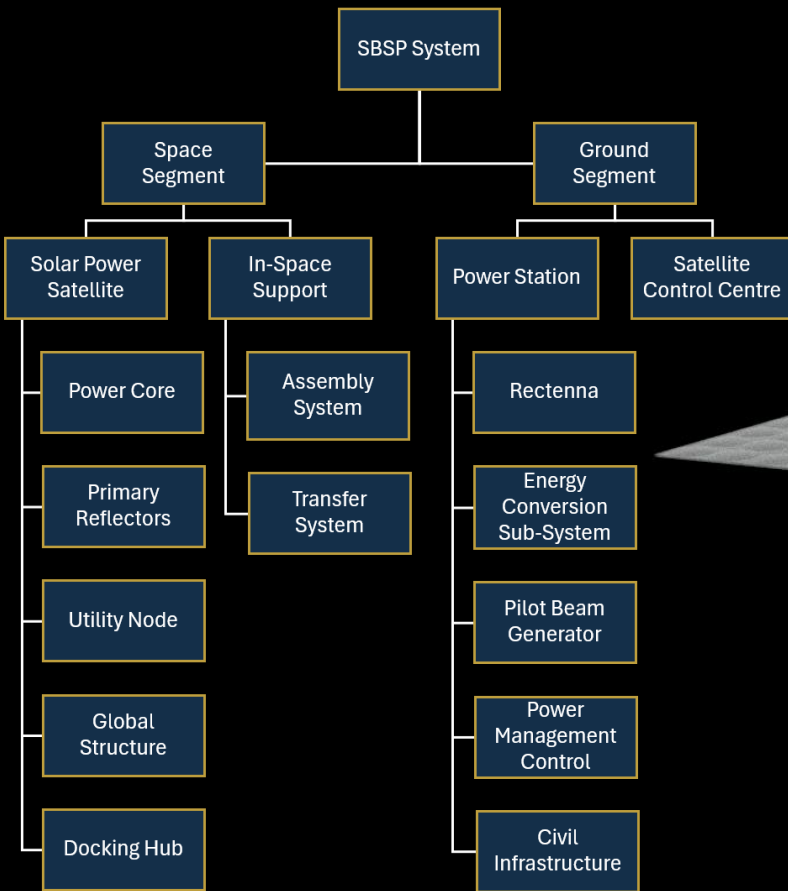




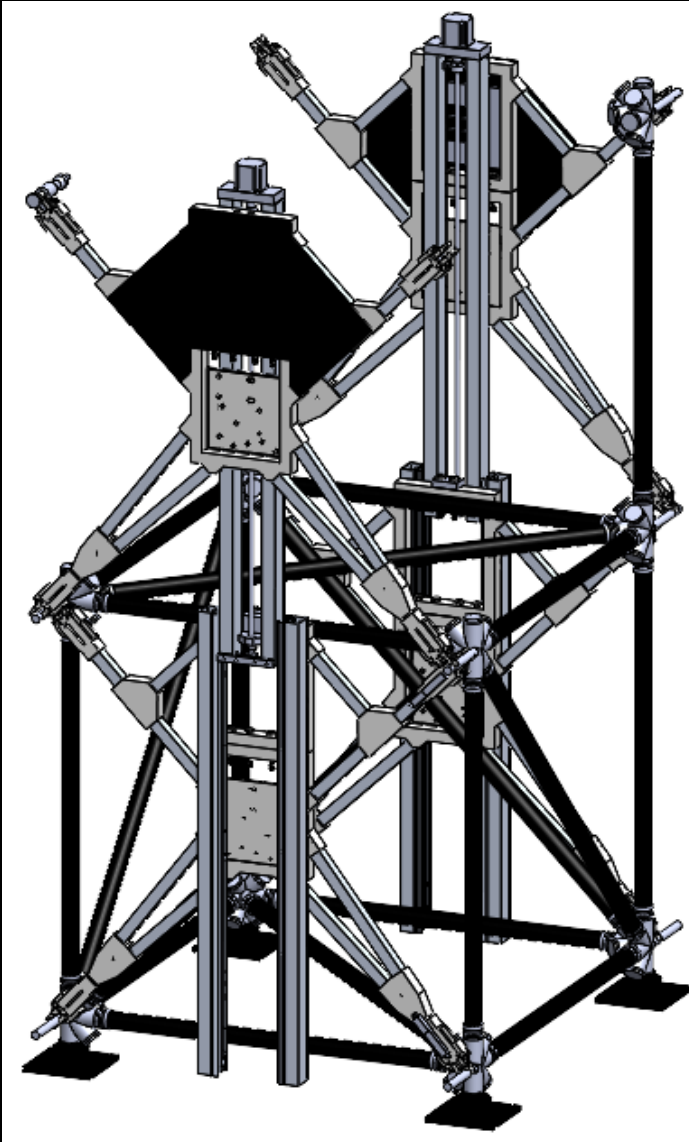
HARRIER

SPACE
SOLAR





World's first Space-Based Solar Power complete system design



World's first Space-Based Solar Power assembly system

Thank you

OUR MISSION

- Build the biggest structure our species has ever built
- In-Space
- With Robots
- In 10 years
- Save the world
- Go to the pub

