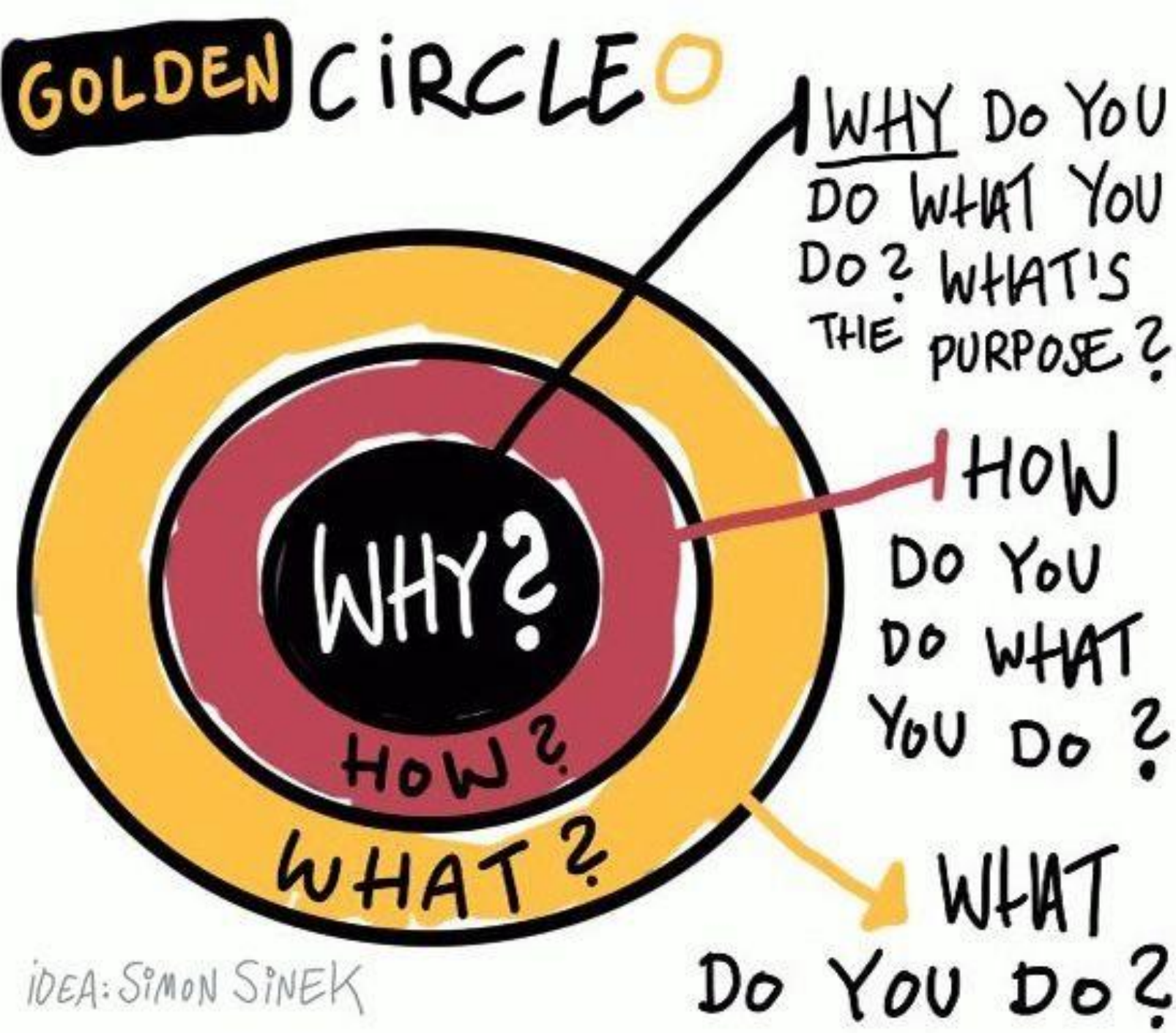
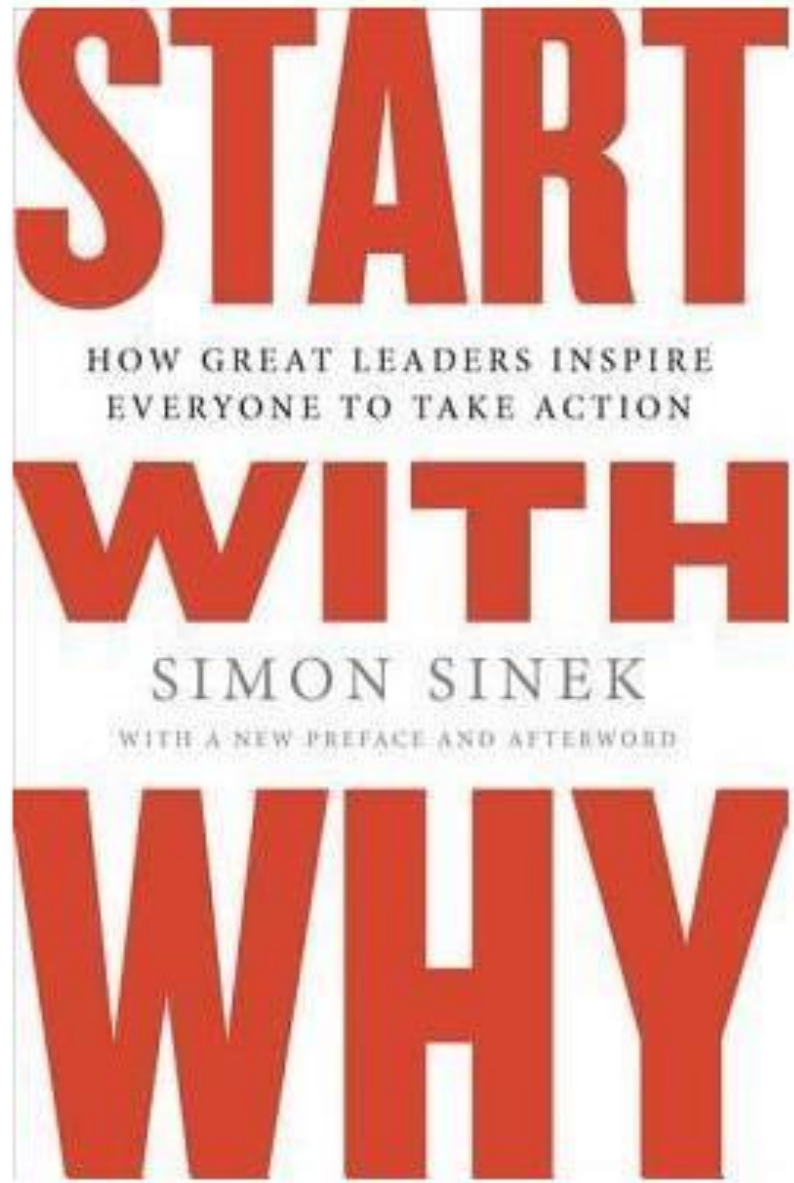
Space Philosophy

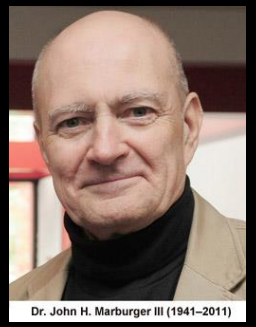

GOLDEN CIRCLE
WHY
HOW?
WHAT?
WHY DO YOU DO WHAT YOU DO? WHAT'S THE PURPOSE?
HOW DO YOU DO WHAT YOU DO?
WHAT DO YOU DO?
IDEA: SIMON SINEK

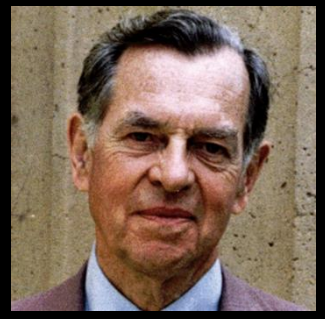

START WITH WHY
HOW GREAT LEADERS INSPIRE EVERYONE TO TAKE ACTION
SIMON SINEK
WITH A NEW PREFACE AND AFTERWORD

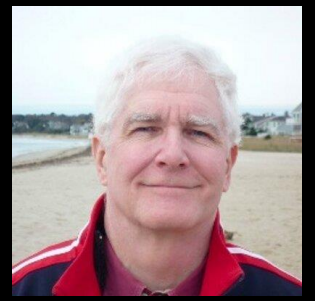
New Space Paradigms

- Musk – Settle other planets –human survival insurance
- Bezos – Protect and make Earth beautiful
- Marburger lll – Economic sphere of influence
- Campbell - Return of the Hero
- Dyson – Beautify our Universe
- Frank White –Overview Effect
- Preservation of Species Cultural Heritage










Spaceship Earth – Buckminster Fuller


NASA
GM


NASA
GM

NASA SP509 – Puttkamer, Burke, Roberts

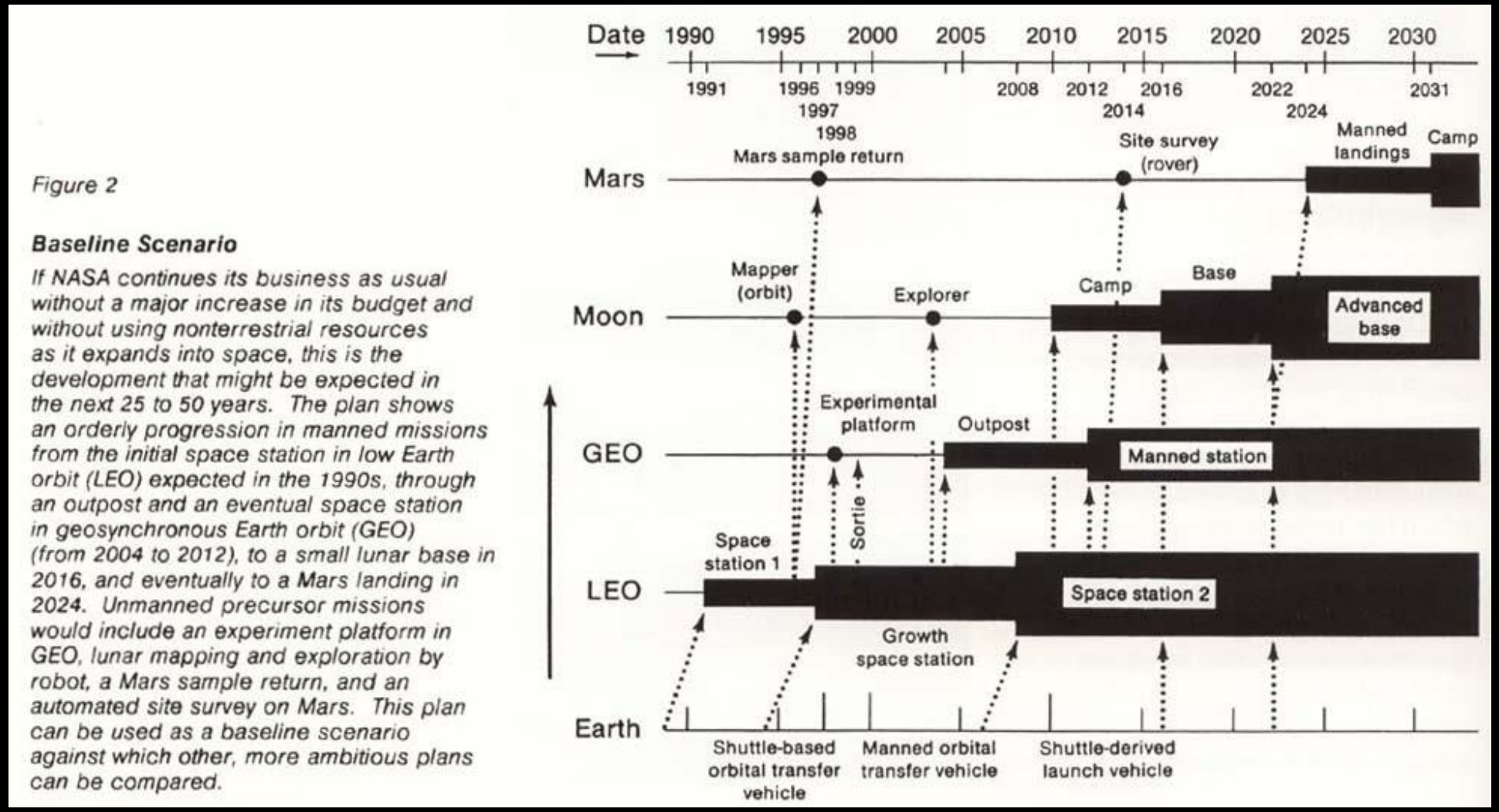


Figure 2

Baseline Scenario

If NASA continues its business as usual without a major increase in its budget and without using nonterrestrial resources as it expands into space, this is the development that might be expected in the next 25 to 50 years. The plan shows an orderly progression in manned missions from the initial space station in low Earth orbit (LEO) expected in the 1990s, through an outpost and an eventual space station in geosynchronous Earth orbit (GEO) (from 2004 to 2012), to a small lunar base in 2016, and eventually to a Mars landing in 2024. Unmanned precursor missions would include an experiment platform in GEO, lunar mapping and exploration by robot, a Mars sample return, and an automated site survey on Mars. This plan can be used as a baseline scenario against which other, more ambitious plans can be compared.

Watch Out for…

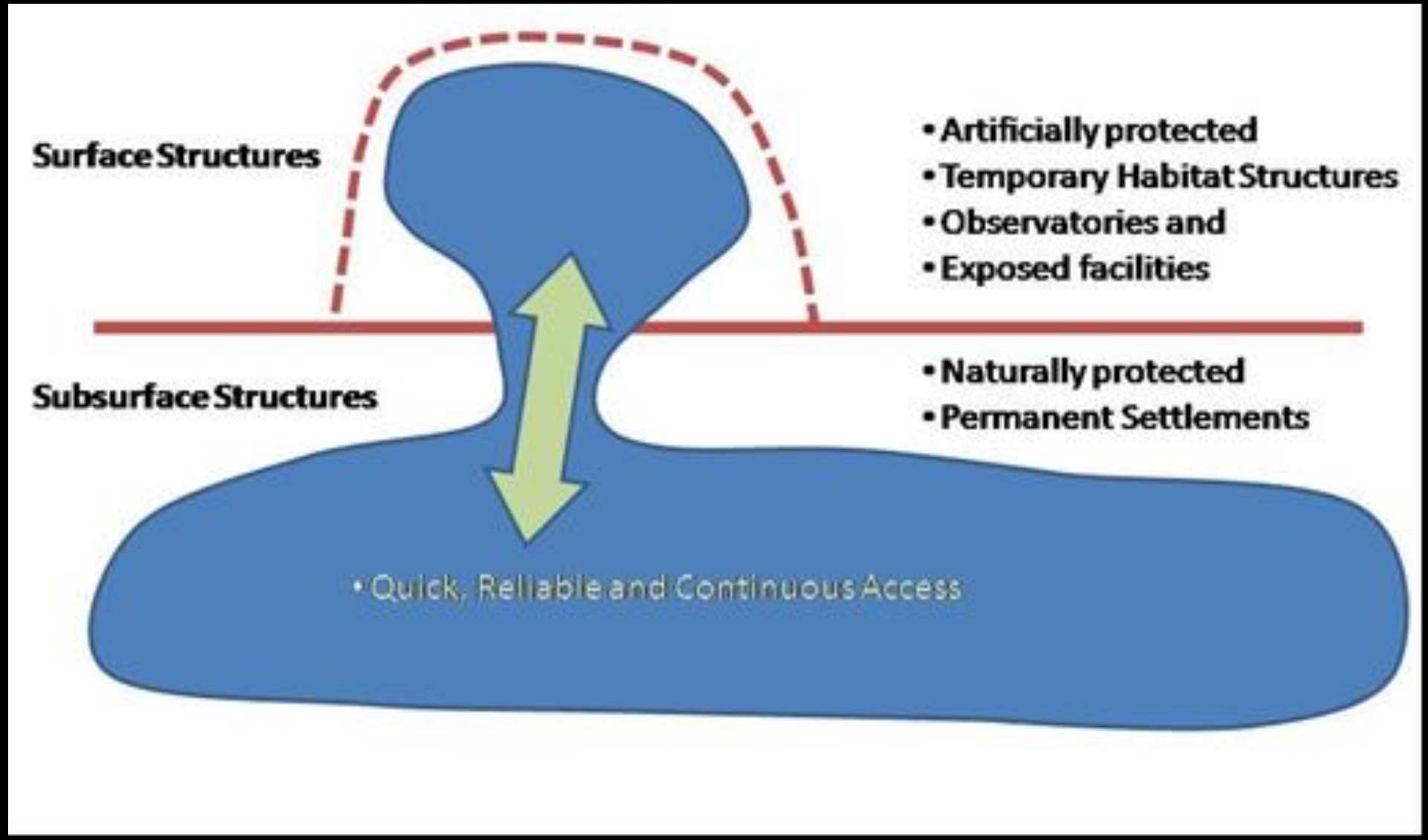
- Earth Orbital Regime - LEO as the next site of Action
- SpaceX - Starship Evolution
- Lunar Missions - Gateway, Artemis
- Government-Private Partnership - NASA as Customer
- Space Tourism

- Institutional Culture & Societal-Public Good Balance

Space Architecture Pet Peeves

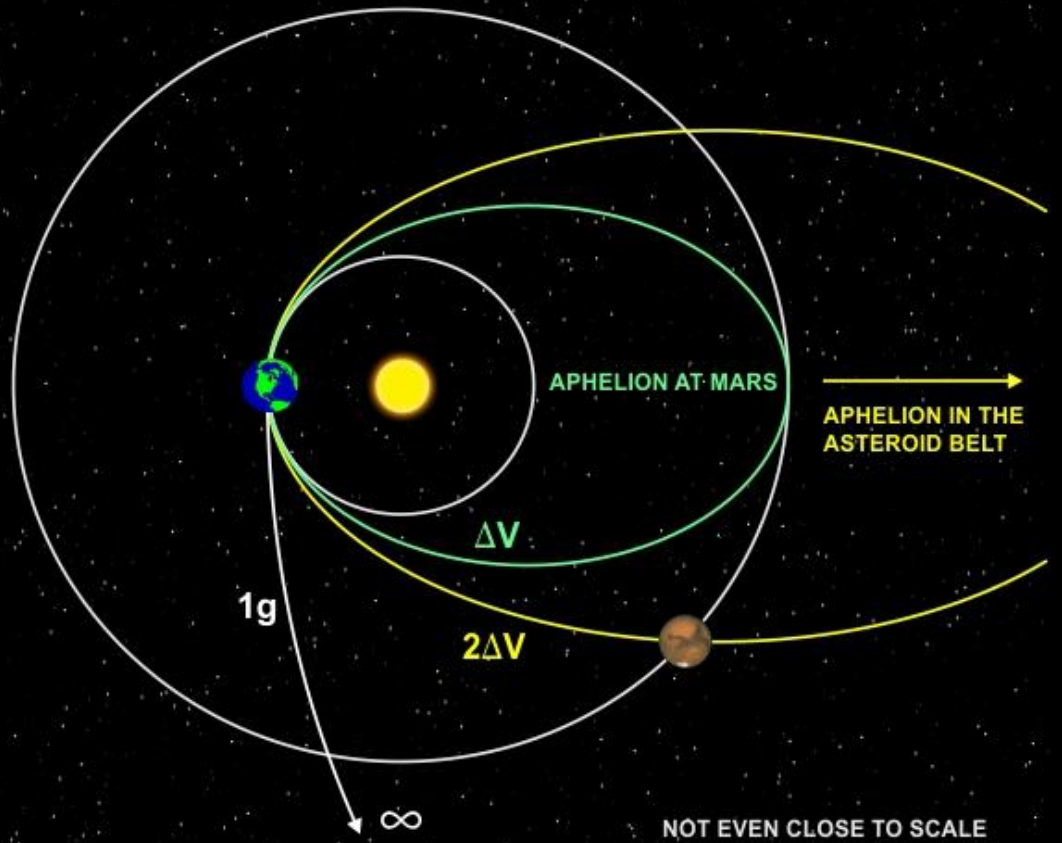
- Orbital and Extraterrestrial Environmental Impact - Debris
- Extraterrestrial Habitat Foundation - Heuristic
- Micrometeoritic Protection
- Radiation
- Thermal
- Dust
- EDL
- Triple Point
- Nuclear Energy – Propulsion And Power
- Space Architect.Org

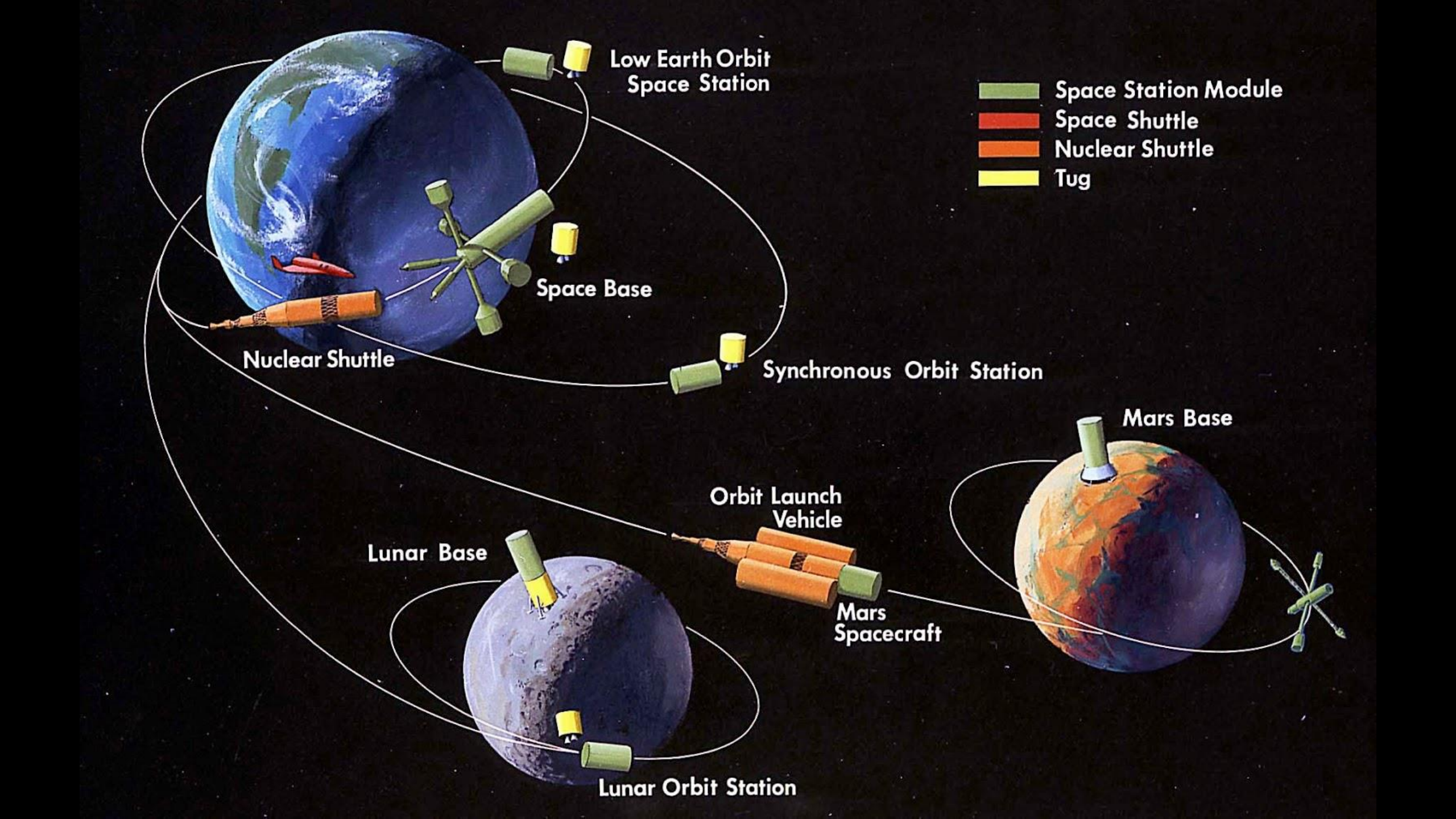
Extraterrestrial Habitats - Surface and Subsurface



Fast, Faster, Fastest

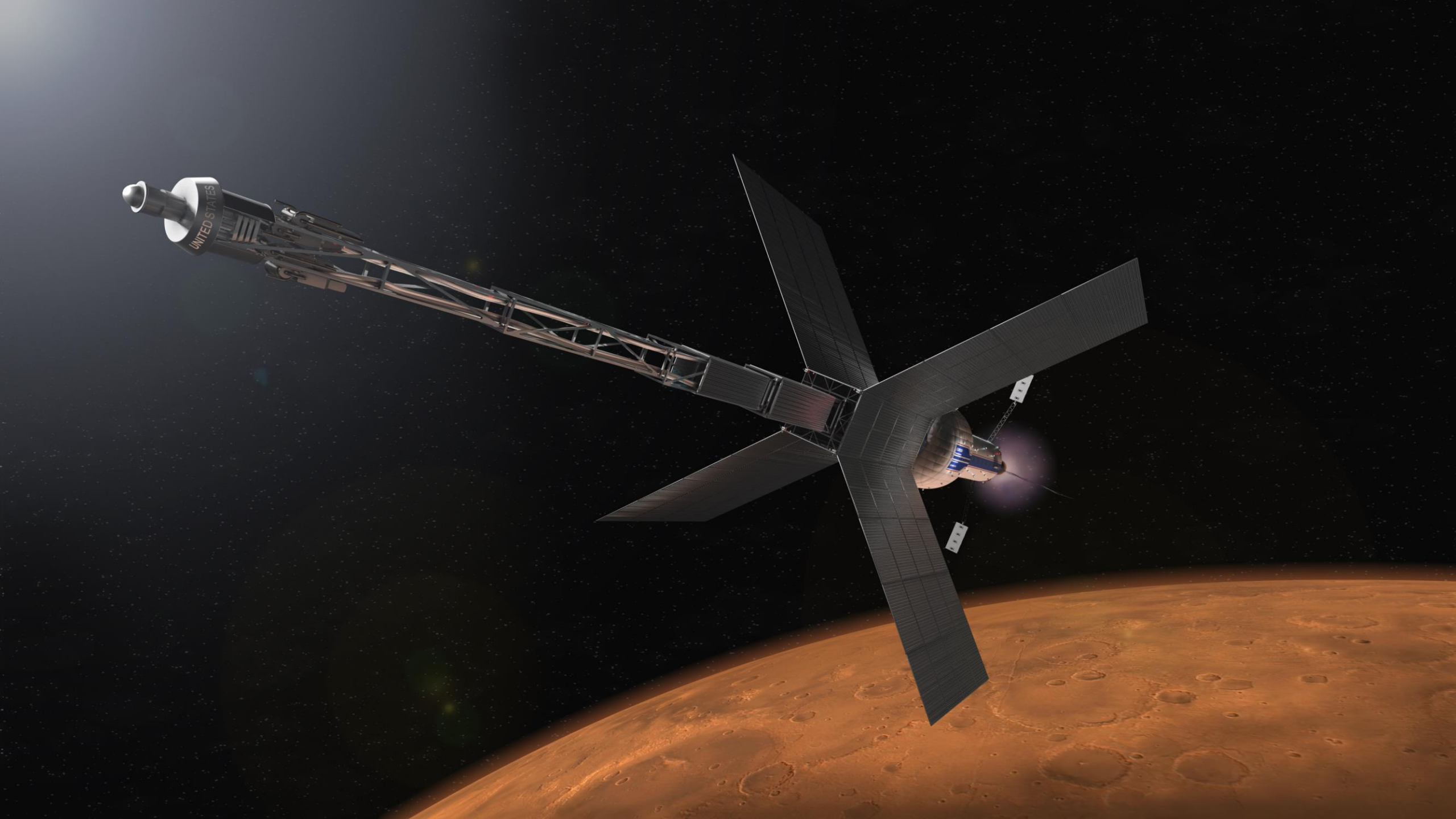
- Hohmann Transfer
- Patched Conic
- 1G acceleration – 2 day transit
- Nuclear Electric Hybrid
- Fully propulsive EDL




Low Earth Orbit
Space Station
Space Station Module
Space Shuttle
Nuclear Shuttle
Tug
Space Base
Nuclear Shuttle
Synchronous Orbit Station
Mars Base
Orbit Launch
Vehicle
Lunar Base
Mars
Spacecraft
Lunar Orbit Station

StemRad-ARS- https://en.wikipedia.org/wiki/StemRad

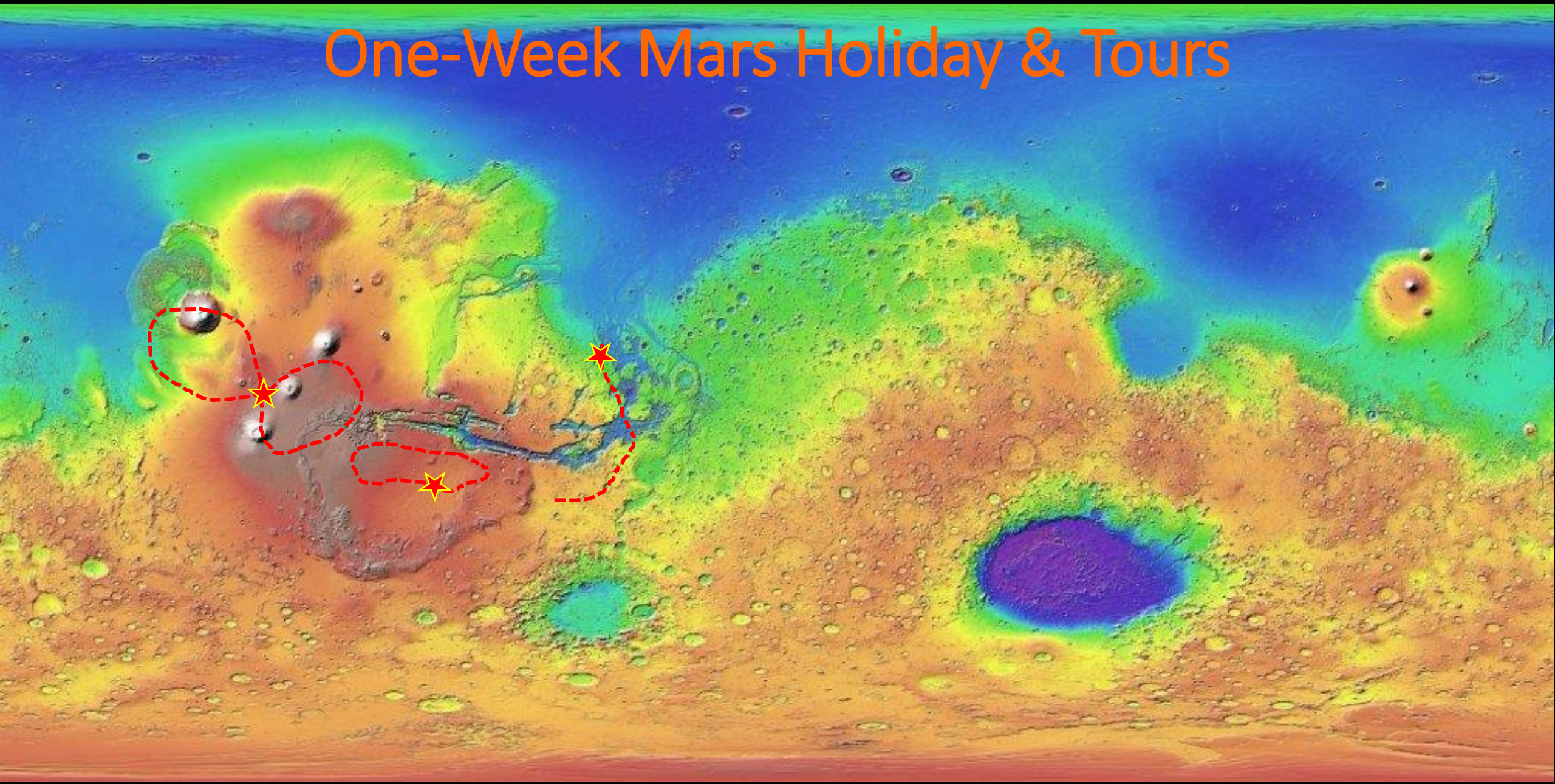

MTV-P02
Copernicus


UNITED STATES

One-Week Mars Tours !

- Lift Off to High Earth Orbit
- Transfer to Nuclear Mars Transit Vehicle
- Accelerate to 1G
- 2-Day transit at constant 1G – 9.81m/sec2
- Conventional Chemical Propulsion for Entry, Descent and Landing
- 2-Day Mars Rover Tour – Mons Olympus, Valles Marineris
- Back to Earth – No gimmicks

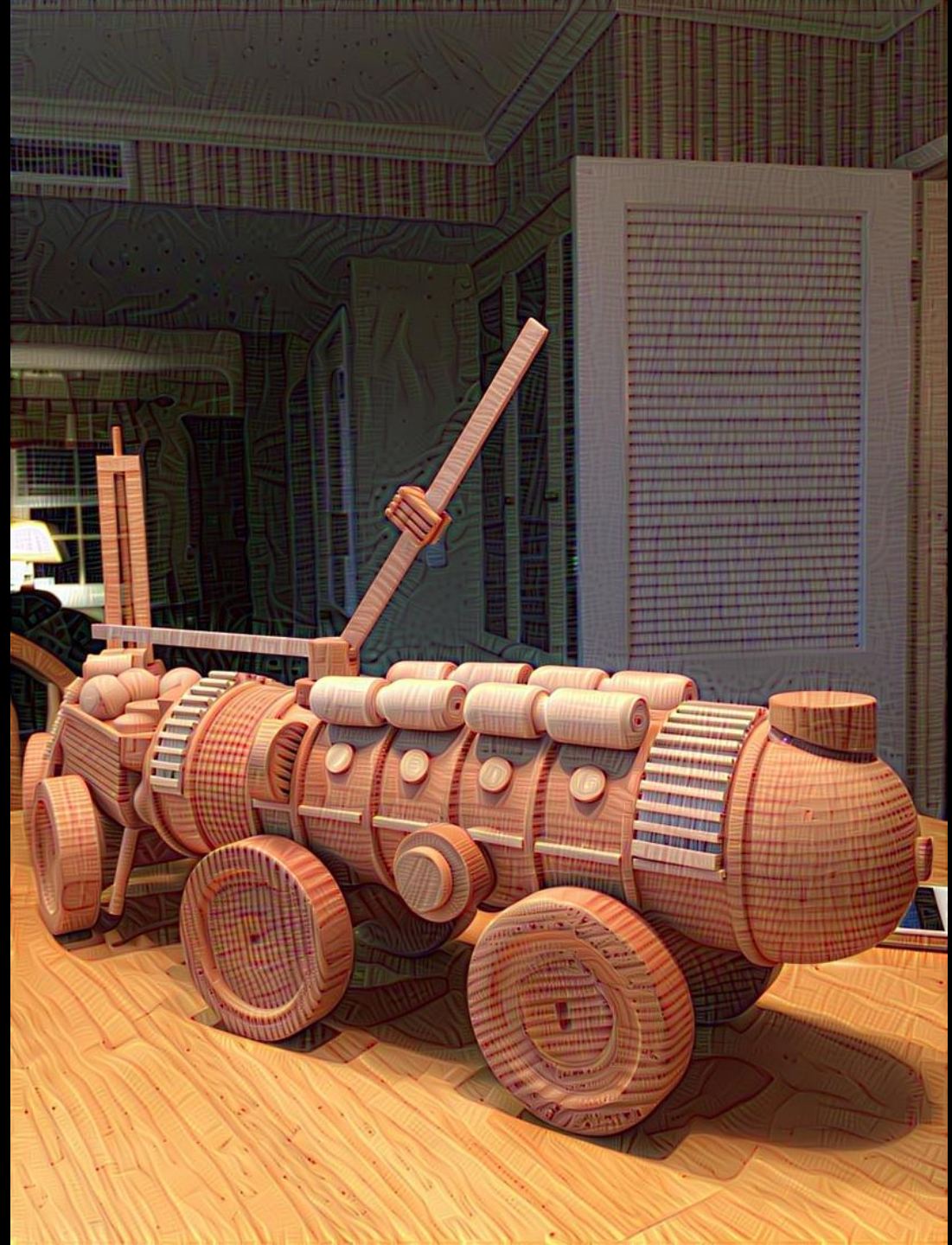
One-Week Mars Holiday & Tours

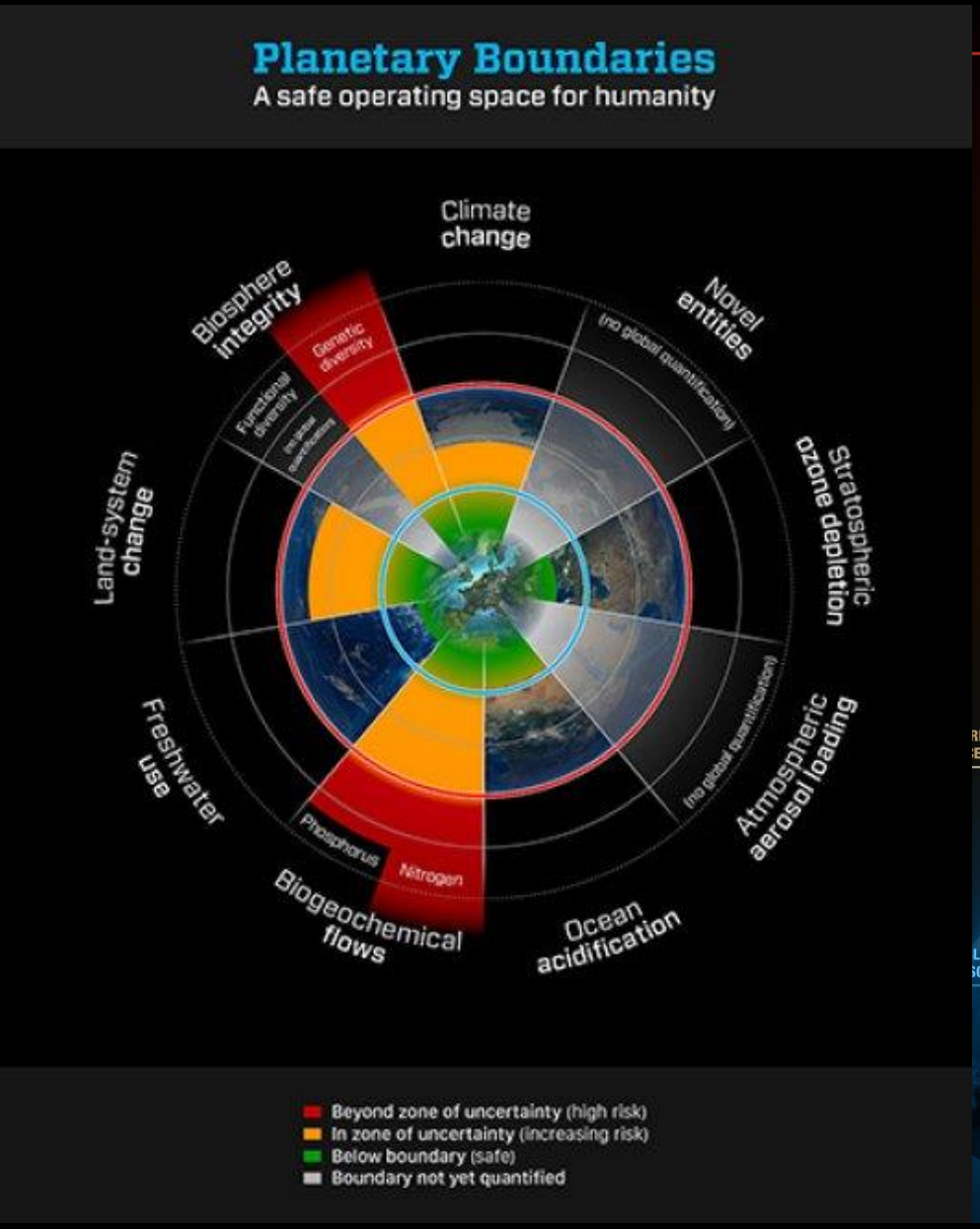


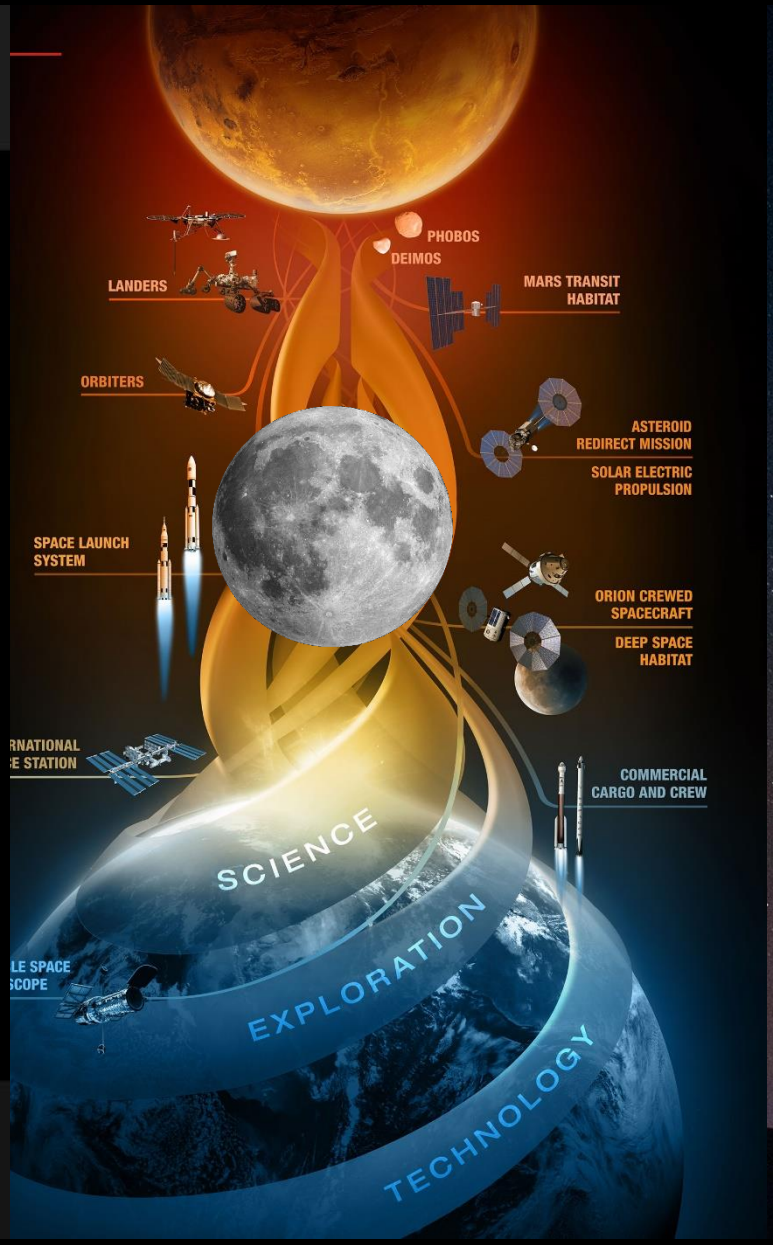

NASA

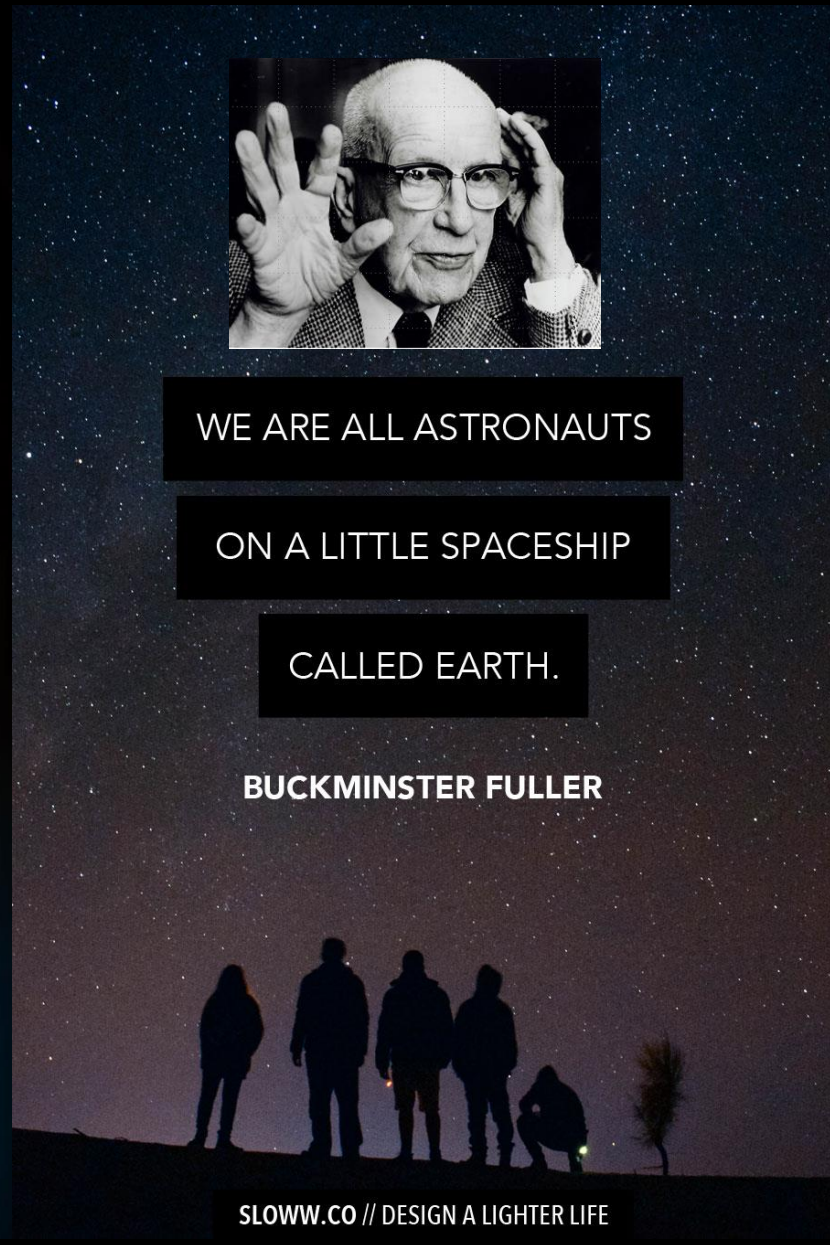
Mars Rover

- Long Range 10,000km
- 6 crew
- Methane ICE
- Fuel Cells
- Deep Drill
- Crane
- Shirt sleeve Workshop
- Assembly Assist
- City Builder

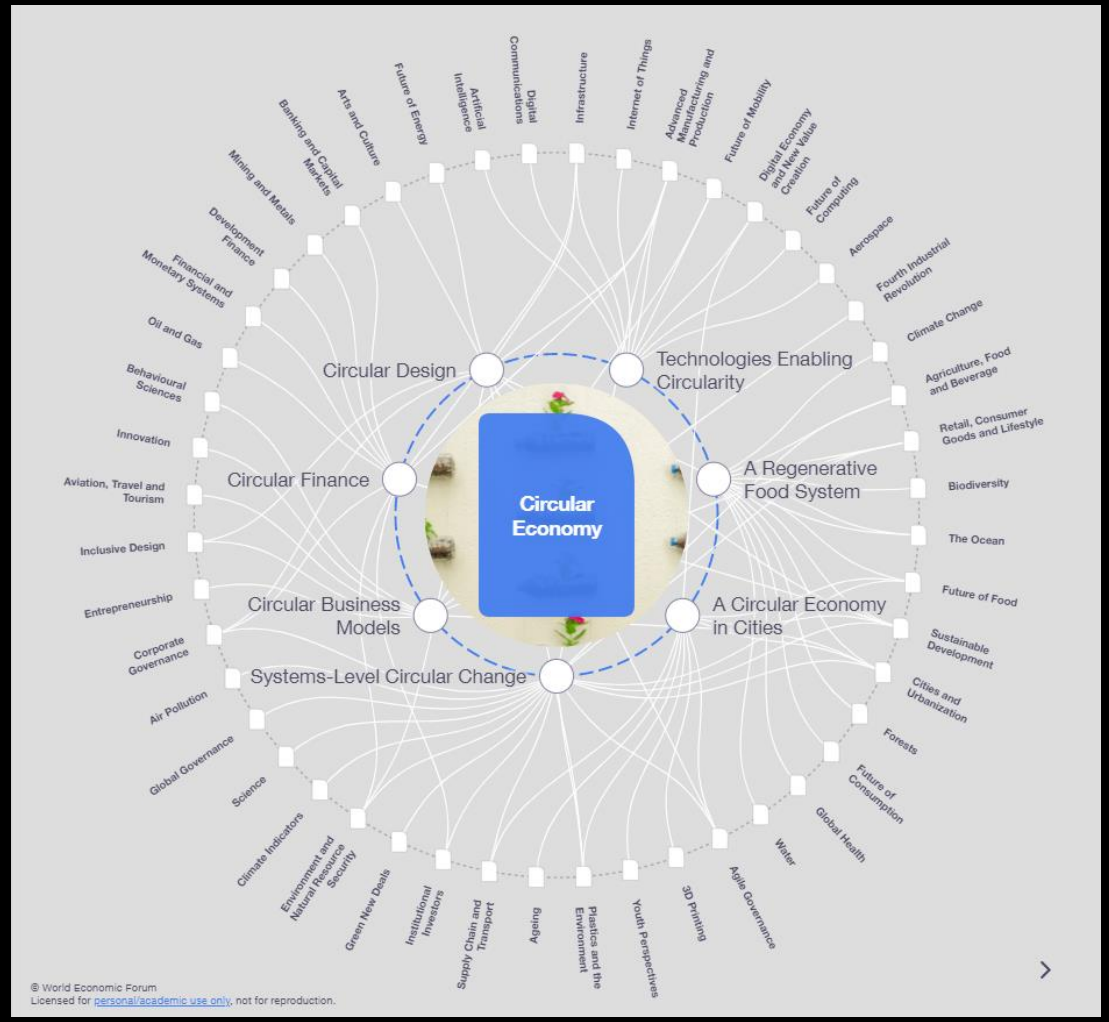



Planetary Boundaries
A safe operating space for humanity
Climate change
Novel entities
(no global quantification)
Stratospheric ozone depletion
Atmospheric aerosol loading
(no global quantification)
Ocean acidification
Biogeochemical flows
Phosphorus
Nitrogen
Freshwater use
Land-system change
Biosphere integrity
Genetic diversity
Functional diversity
Beyond zone of uncertainty (high risk)
In zone of uncertainty (increasing risk)
Below boundary (safe)
Boundary not yet quantified


PHOBOS
DEIMOS
LANDERS
MARS TRANSIT HABITAT
ORBITERS
ASTEROID REDIRECT MISSION
SOLAR ELECTRIC PROPULSION
SPACE LAUNCH SYSTEM
ORION CREWED SPACECRAFT
DEEP SPACE HABITAT
COMMERCIAL CARGO AND CREW
SCIENCE
EXPLORATION
TECHNOLOGY


WE ARE ALL ASTRONAUTS
ON A LITTLE SPACESHIP
CALLED EARTH.
BUCKMINSTER FULLER
SLOWW.CO // DESIGN A LIGHTER LIFE

How does Space Architecture fit in ?



Philosophy, Visions, Policies,
Architectures, Concepts, Engineering

T.S.Eliot-Little Gidding, Four Quartets

We shall not cease from exploration

And the end of all our exploring

Will be to arrive where we started

And know the place for the first time.