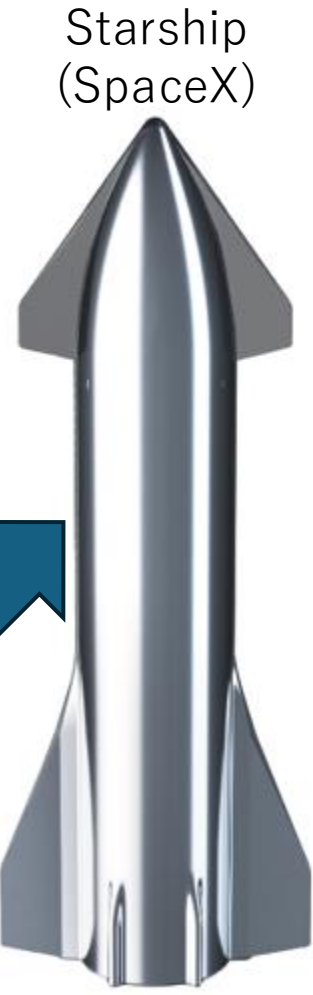
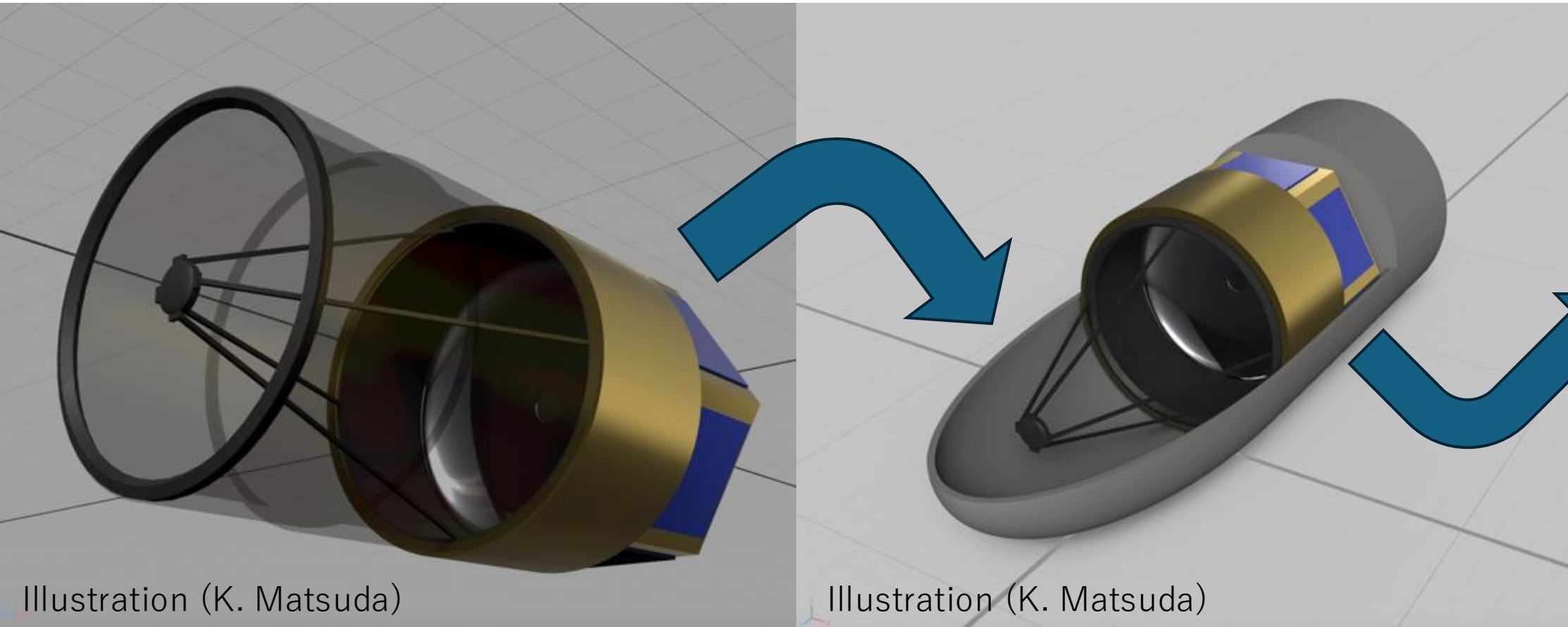


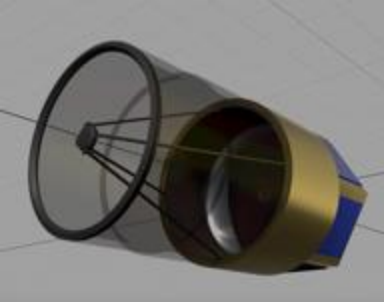
Large Space Optical Infrared Telescope

Yuichi Matsuda (NAOJ)

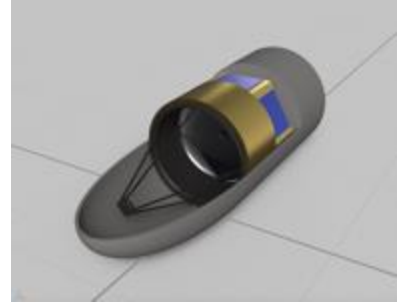
The large observatory-type (multi-purpose, serviceable, upgradable) space telescope to fill a gap between Roman Space Telescope and Habitable Worlds Observatory.

Imagine Space Seimei, Space TAO, Space Subaru

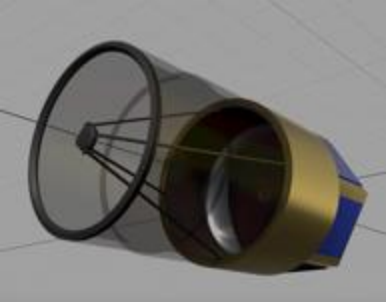




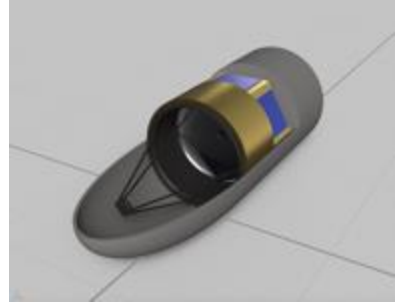
Space Telescope System Concept



Primary Mirror	4-8m (Monolithic, Clearceram)
Wavelength	0.1-2.5um (similar to HST/HWO)
Instruments	Coronagraph, Camera, Spectrograph
Mass	30,000kg (L2 max.)
Orbit	MEO, GEO or S-E L2
Lifetime	15yr (30yr with service)
Launch Vehicle	Starship (assumed)

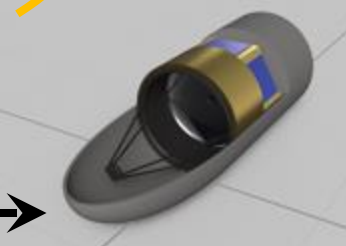
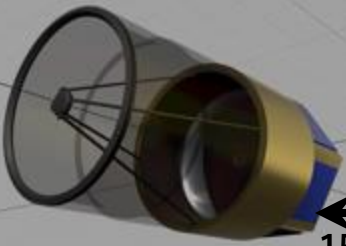


Science Goal

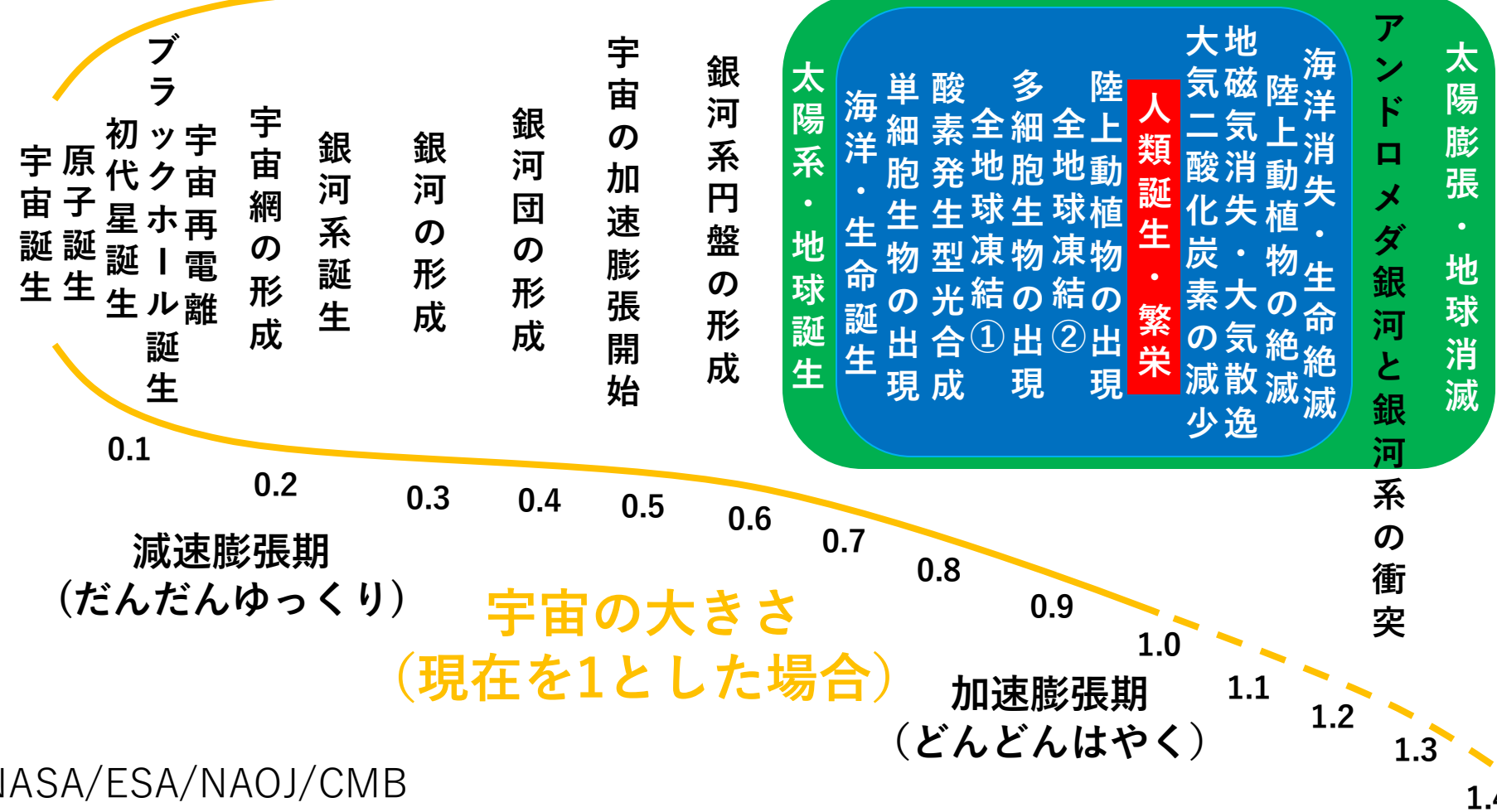
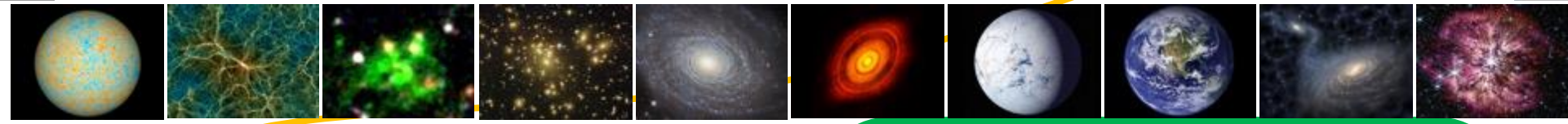


- To find exoplanets suitable for human colonization (Coronagraph – imaging / spectroscopy)
- To find jump routes connecting asteroids from the Earth to the colonizable exoplanets (Camera – astrometry)
- To do multi-purpose science between 2035-2045 (Camera / Spectrograph) as the space observatory

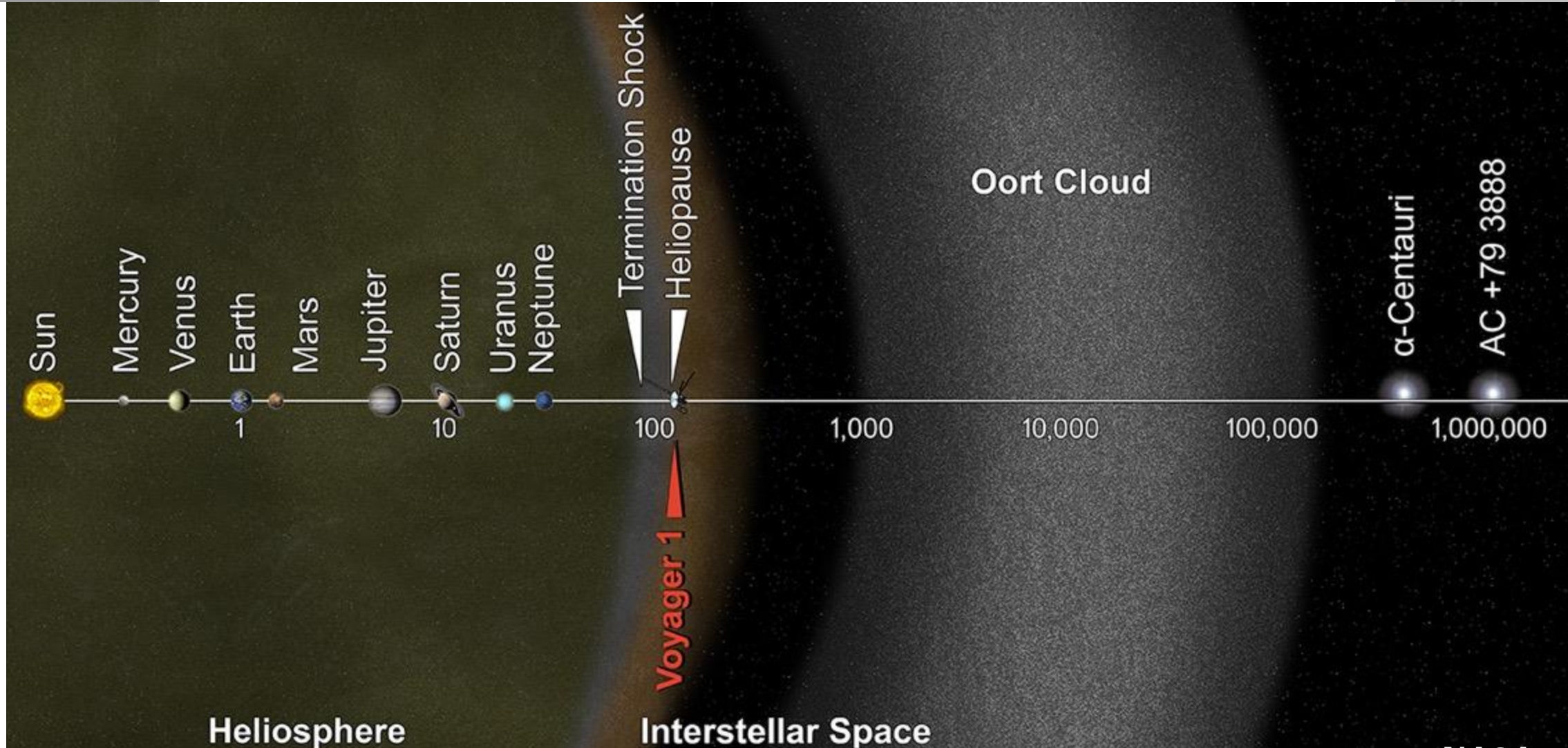
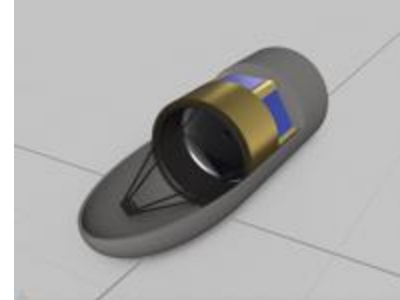
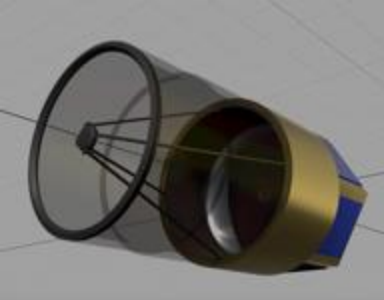
Why colonizable exoplanets?

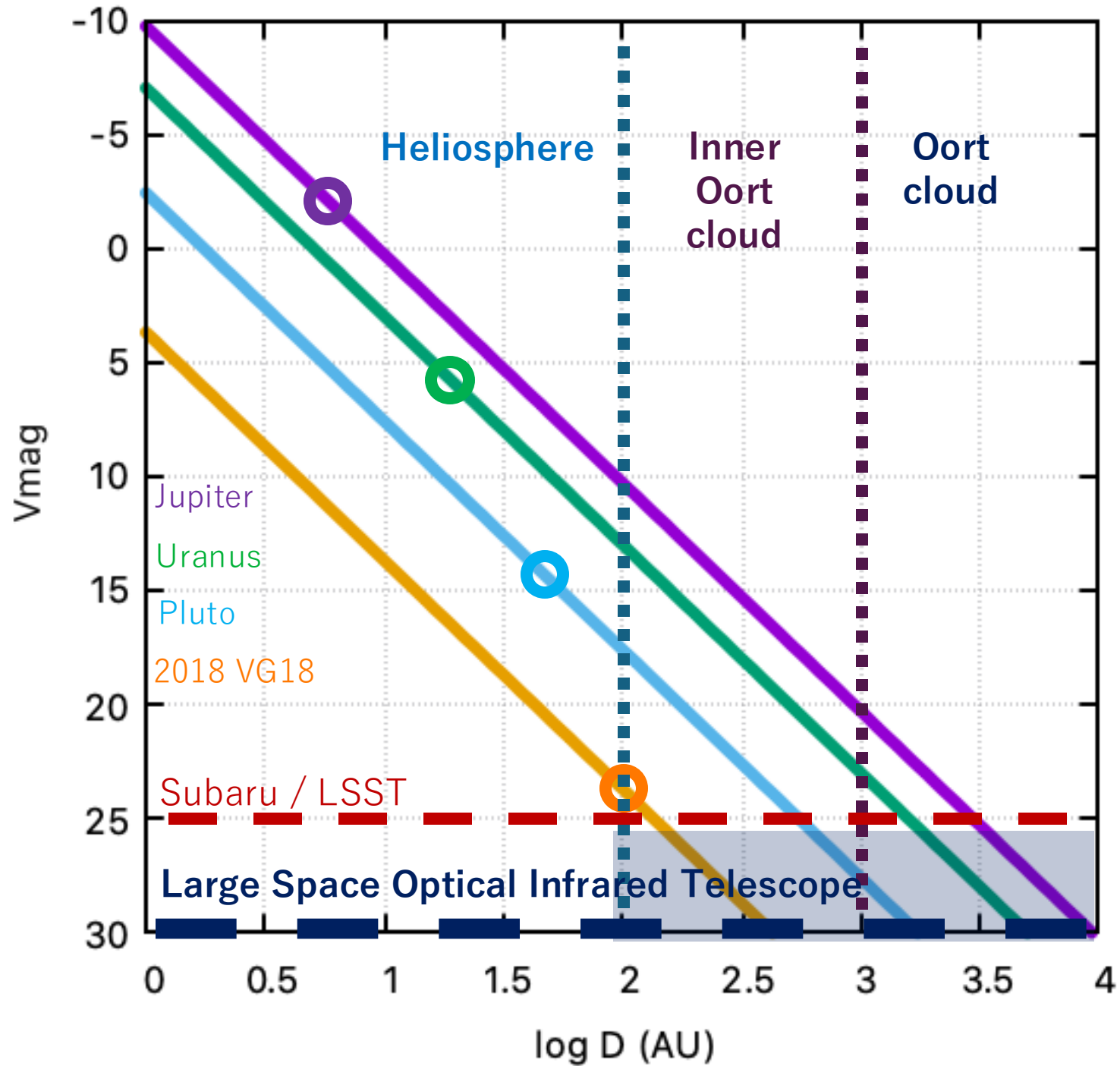
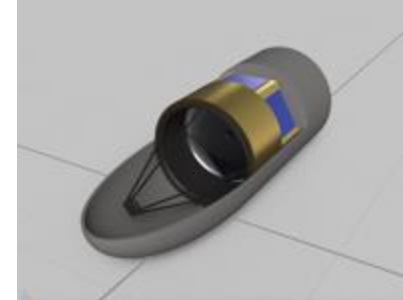
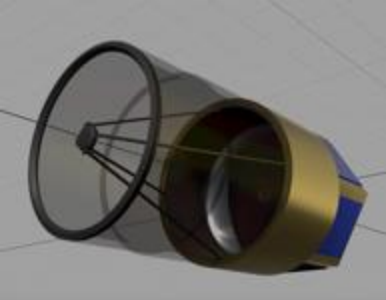


150億年前 100億年前 50億年前 50億年後

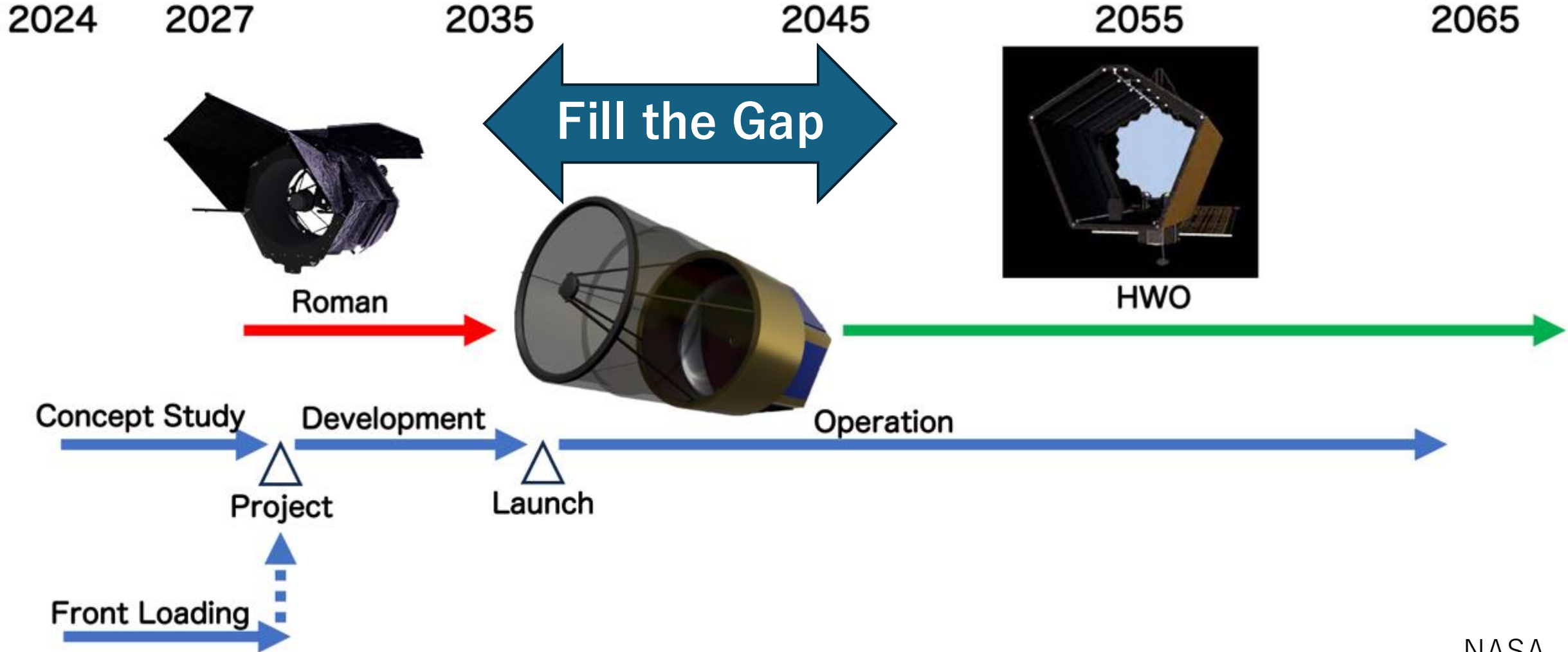
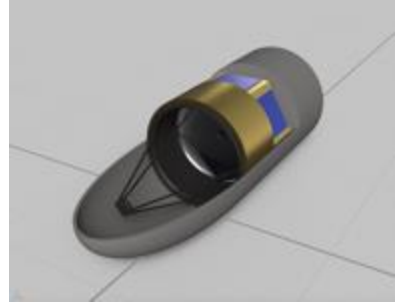
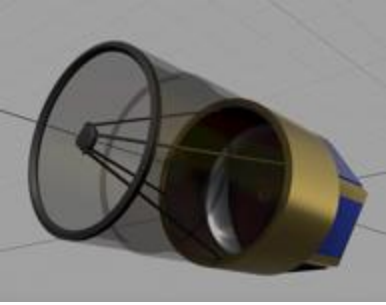


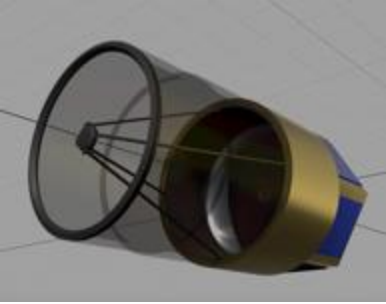
Why jump routes



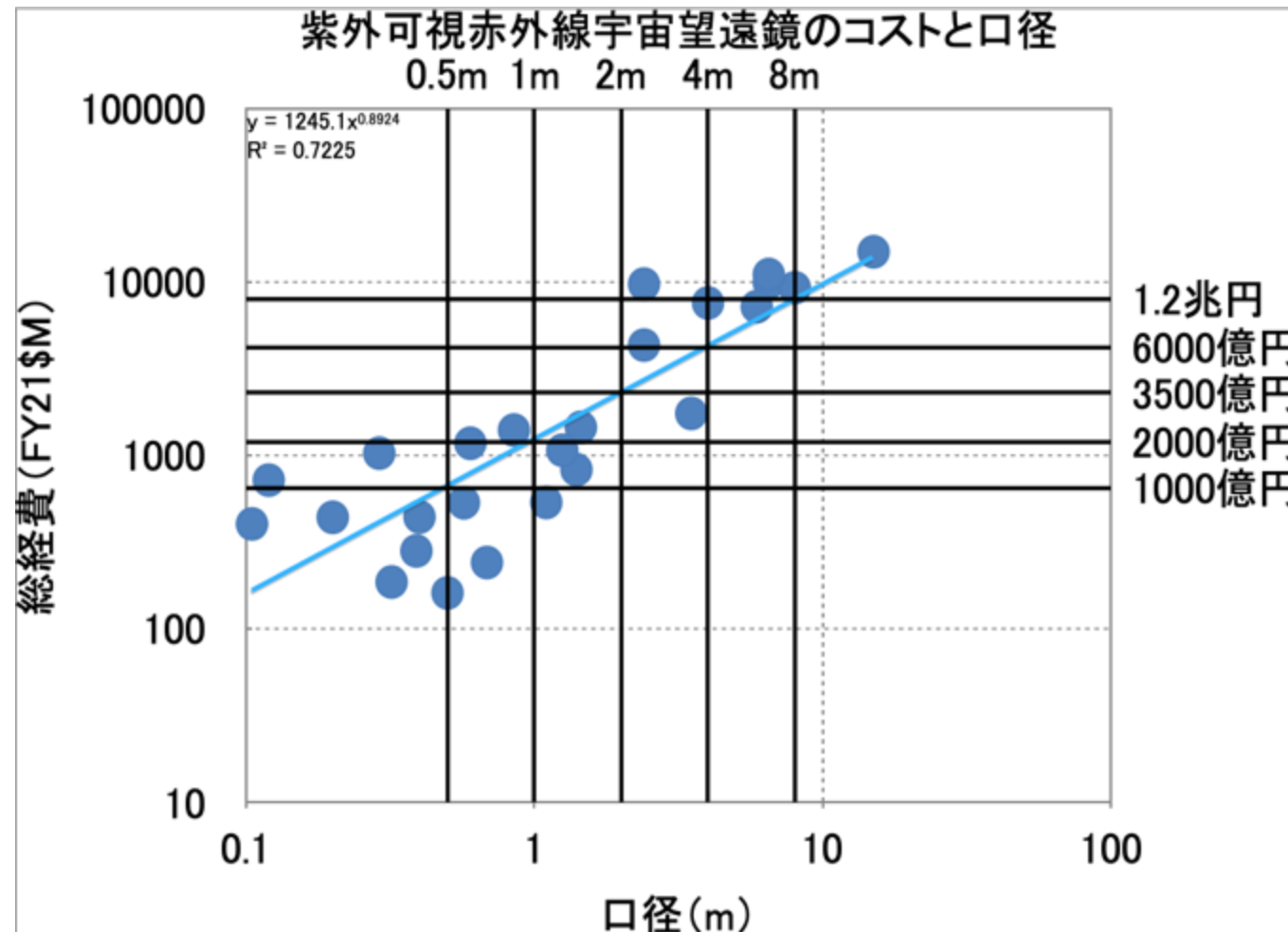
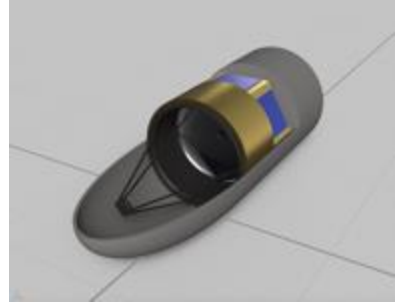


When?

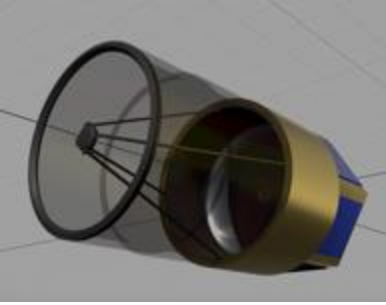




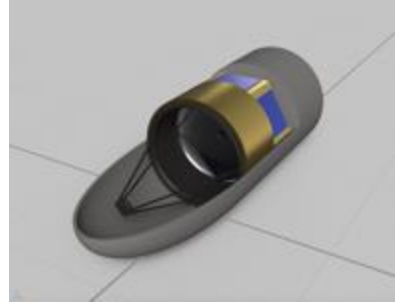
How much?



- Such large space observatory have been considered unfeasible for Japan to lead due to budgetary and technical constraints.
- However, Japanese government prepared a space strategy fund (1兆円) to foster space ventures.
- NAOJ needs to immediately launch space ventures to realize the large space telescope (by inspired from the approach of Seimei telescope 20 yeras ago)



Who?



- **NAOJ will lead the development and operation.**
 - ◆ **NAOJ / Large Space Optical Infrared Telescope Project will be responsible for prototype testing and system integration with ATC and for handling the data with ADC.**
- **NAOJ needs to collaborate with JAXA (including ISAS), and international partners.**

Large Space Optical Infrared Telescope

Yuichi Matsuda (NAOJ)

The large observatory-type (multi-purpose, serviceable, upgradable) space telescope to fill a gap between Roman Space Telescope and Habitable Worlds Observatory.

Imagine Space Seimei, Space TAO, Space Subaru

