

EFV Iliad

Gilgamesh Class Exploration Vessel

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- *Gilgamesh* Class Deep Space Exploration Vessel
- Constructed: Ceres Shipyard
- Design Compliment: Human: 385, ALF: 500
- Propulsion: 1g Fusion Impulse drive
- Commissioned: 2075, Launched 2080

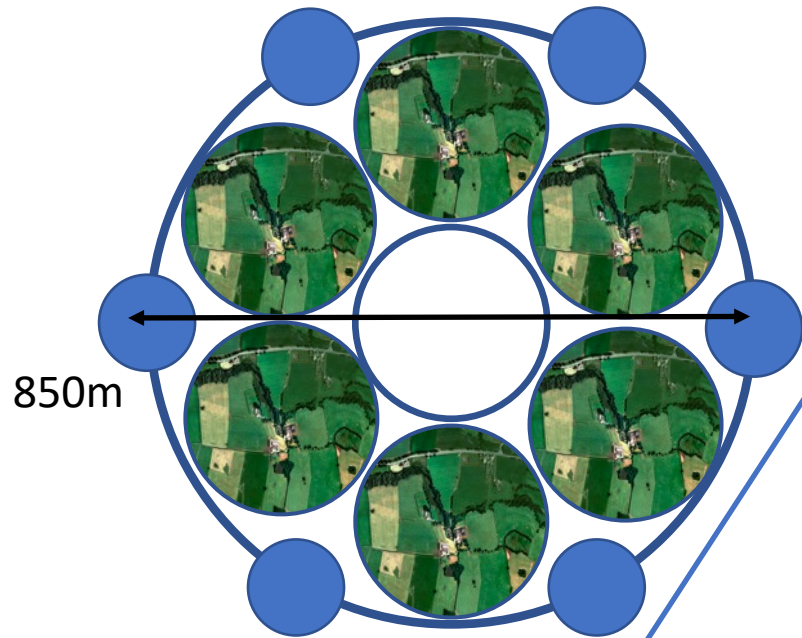
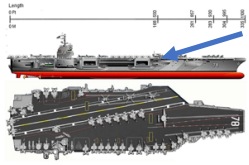
UNES Iliad

- Mass: (With Fuel) 5.36×10^{10} kg
 - Approx 51 Nimitz Class Supercarriers
- Diameter: 850m
- Length: m
- Habitable Surface Area: 1.81×10^6 square meters
 - 448 Acres
 - 336 American Football Fields
- Habitat divided into 6 spheres
- Each sphere has 30 levels

EFV Iliad - Mission

- Exploration of 18 Scorpii (<http://solstation.com/stars2/18sco.htm>)
 - Searching for habitable world
 - Establishing a forward operating base
- Travel Distance: 45.7 ly
- Travel Time: 15.1 years (Earth time: 95.2)
- Mission Launch date: March 14, 2080

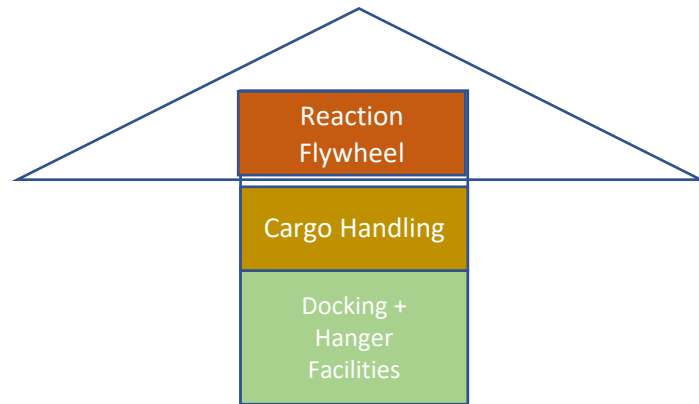
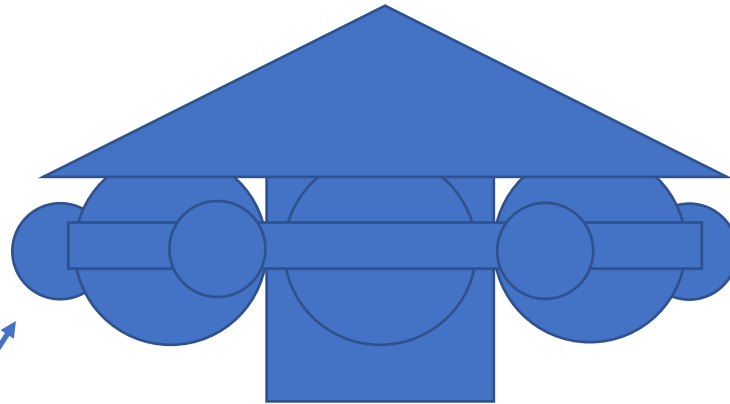
Nimitz Class Carrier (Comparison)



850m

Propulsion Thrusters

Collision Armor / Radiator

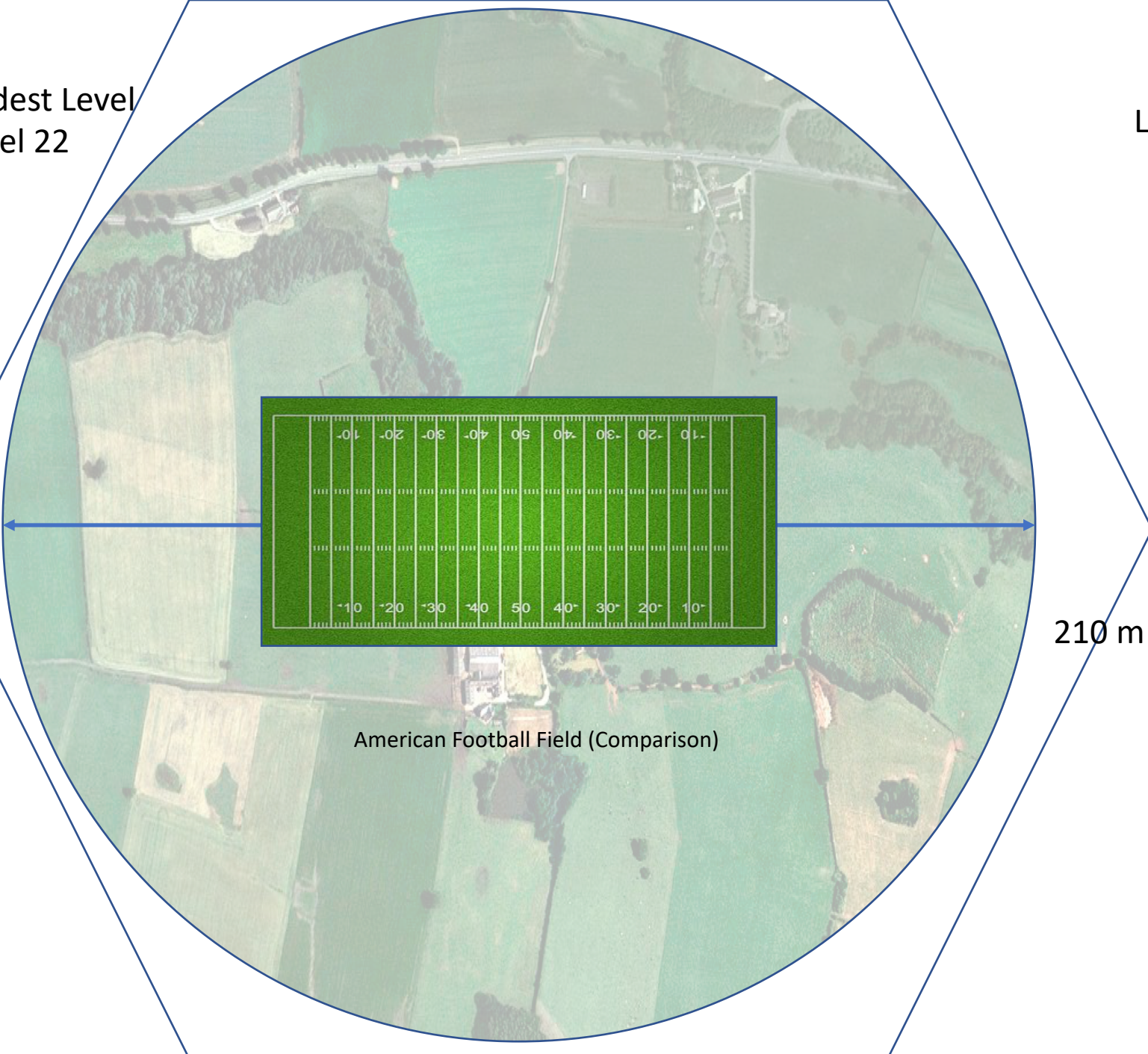


Reaction Flywheel

Cargo Handling

Docking + Hanger Facilities

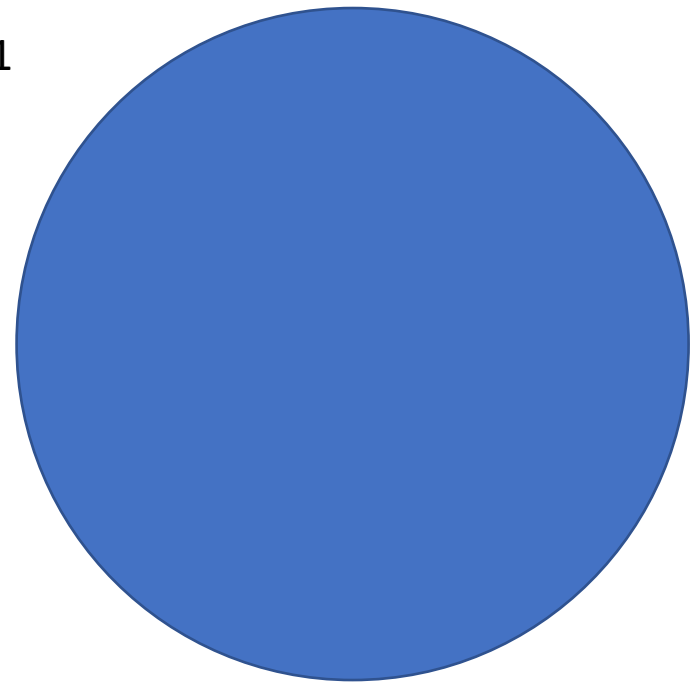
Widest Level
Level 22



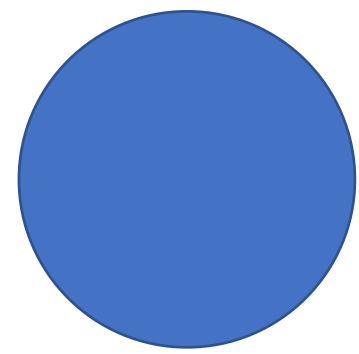
American Football Field (Comparison)

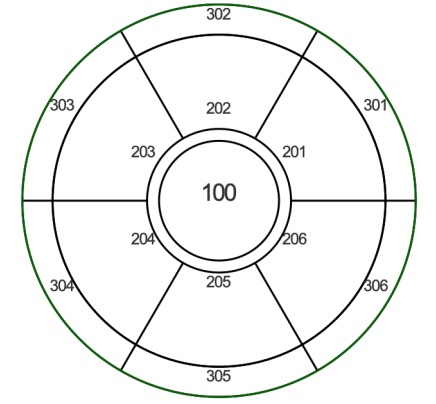
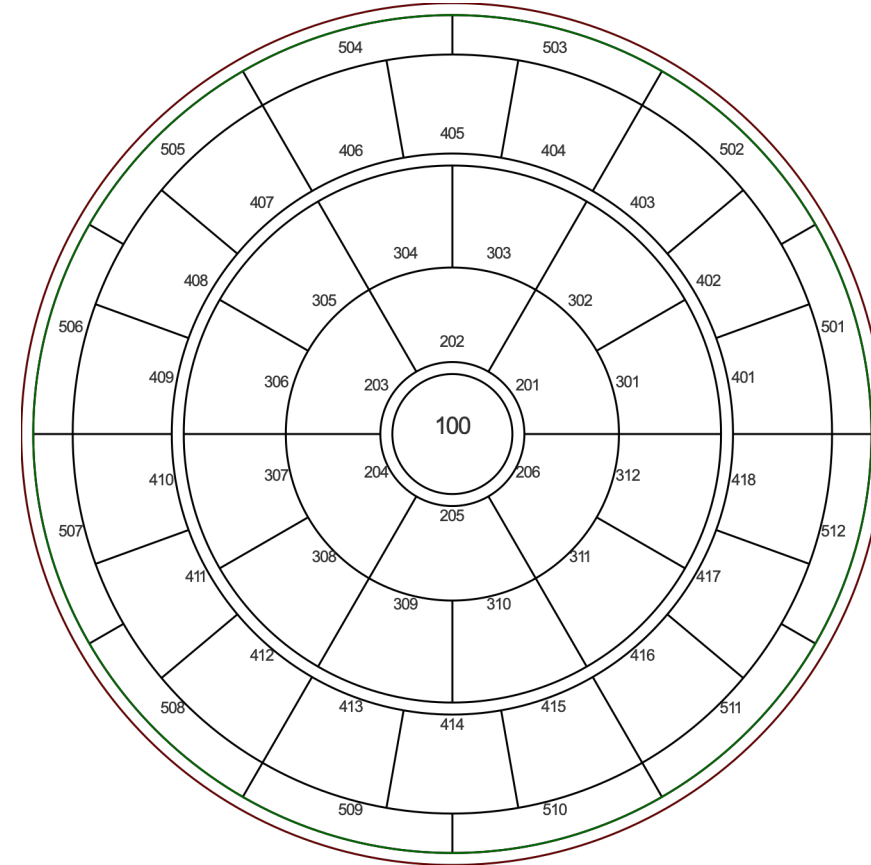
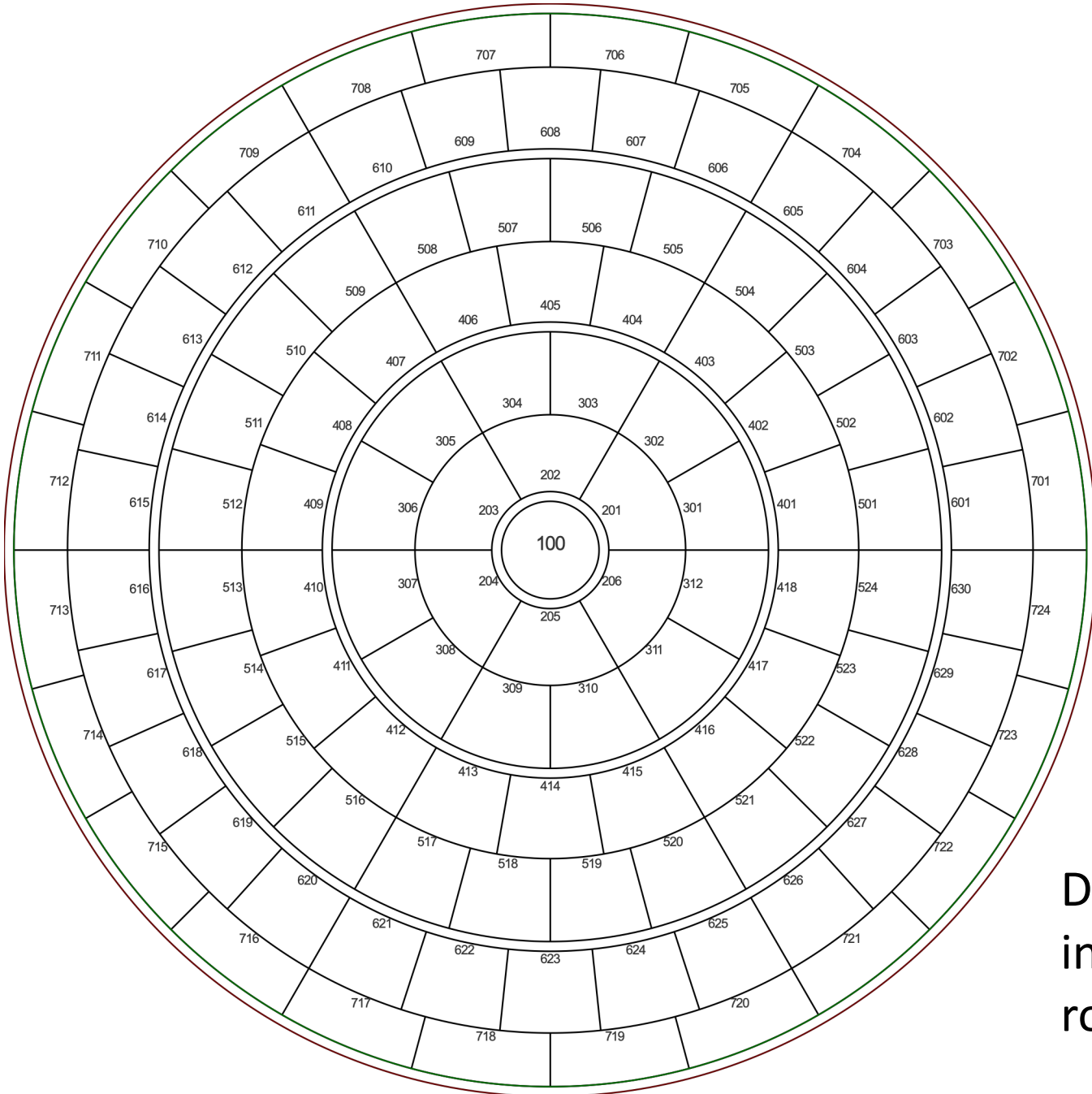
210 m

Level 41



Level 43

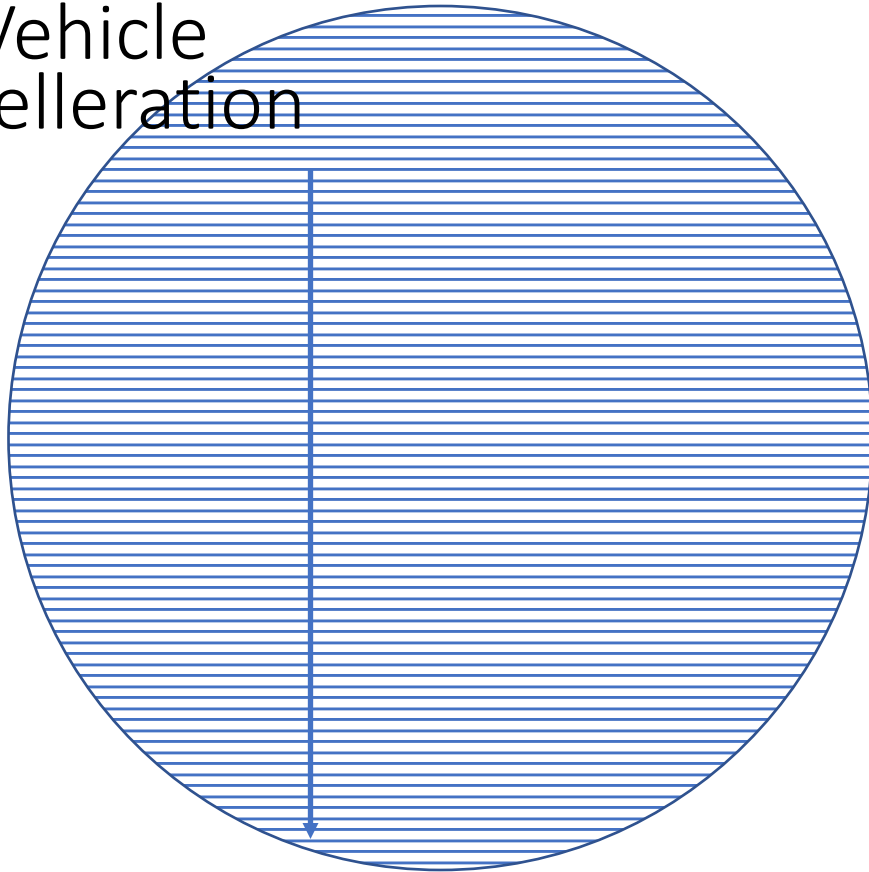




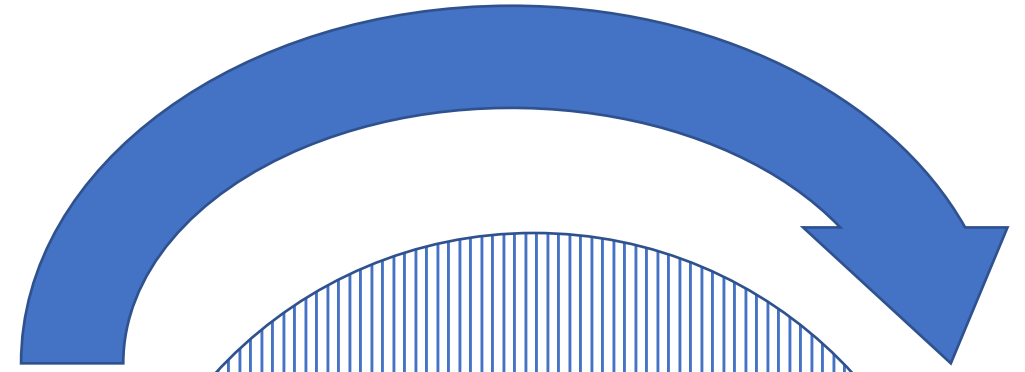
Decks are divided into sectors of roughly equal area

Artificial Gravity

Vehicle
Acceleration



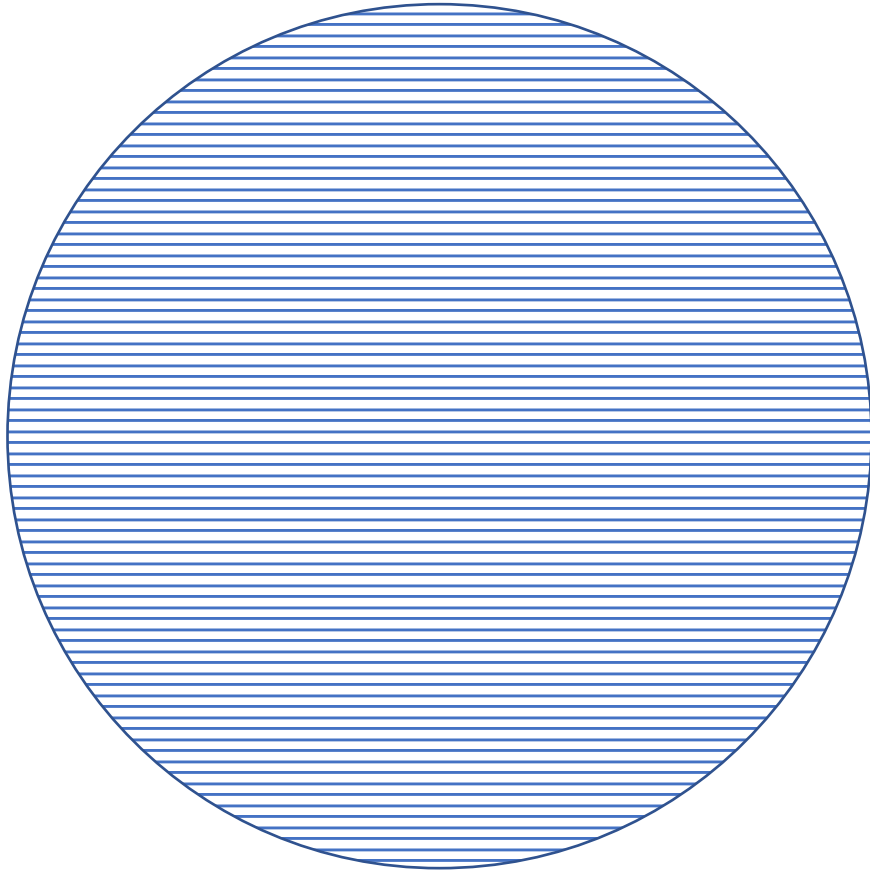
Thrust Mode



Centrifuge

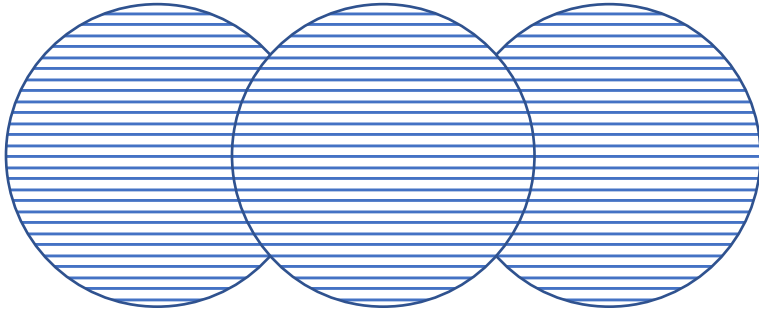
Coast Mode

6 Habitat Spheres



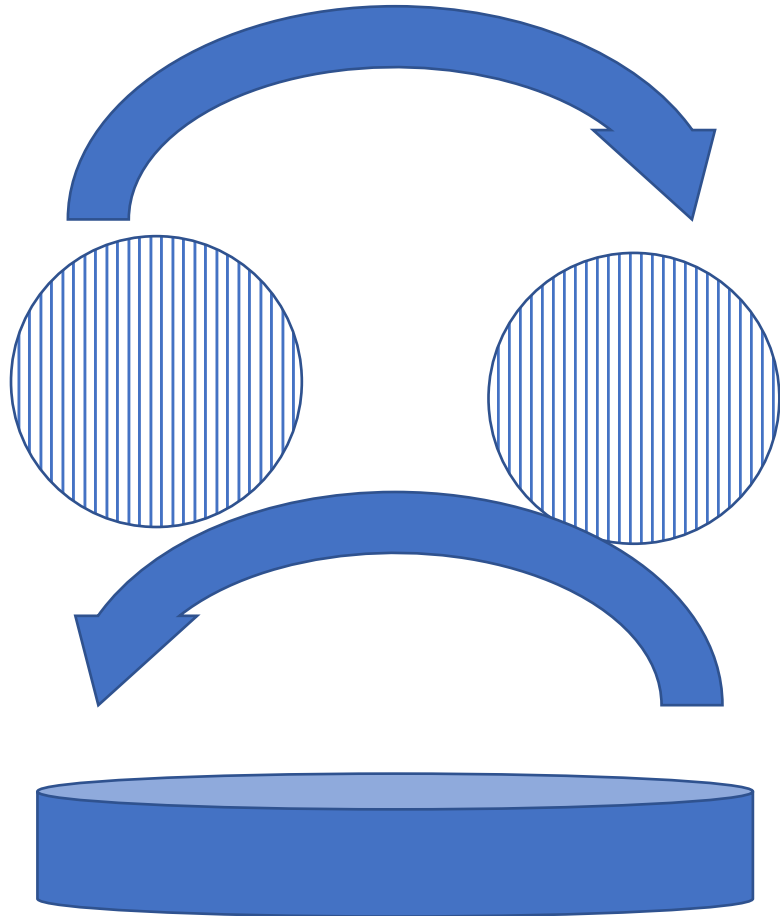
- Each 137.5 Meters in diameter
- Levels are 5 meters apart
- 30 Levels
- $3.02e5 \text{ m}^2$ (74 acres)
- 10% of floor area unallocated

6 Habitat Spheres



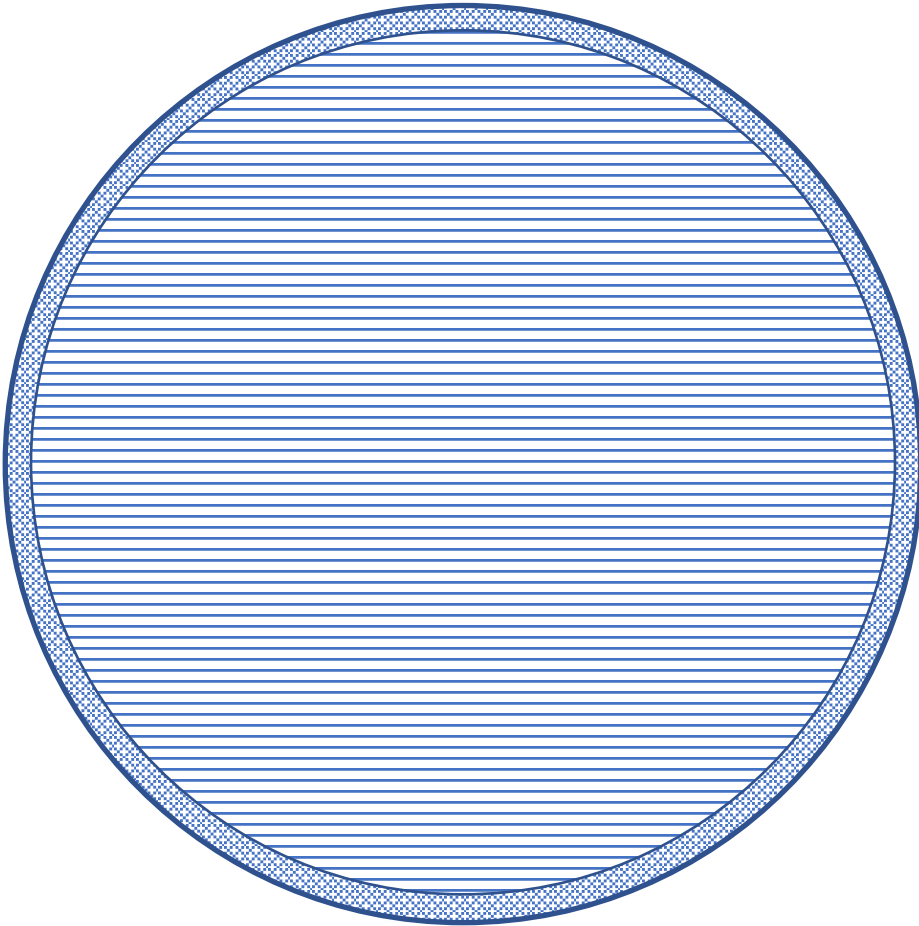
- Thrust Phase: aligned with the thrust vector of the craft
- "Gravity" equal on all floors (usually 9.8m/s^2)

6 Habitat Spheres



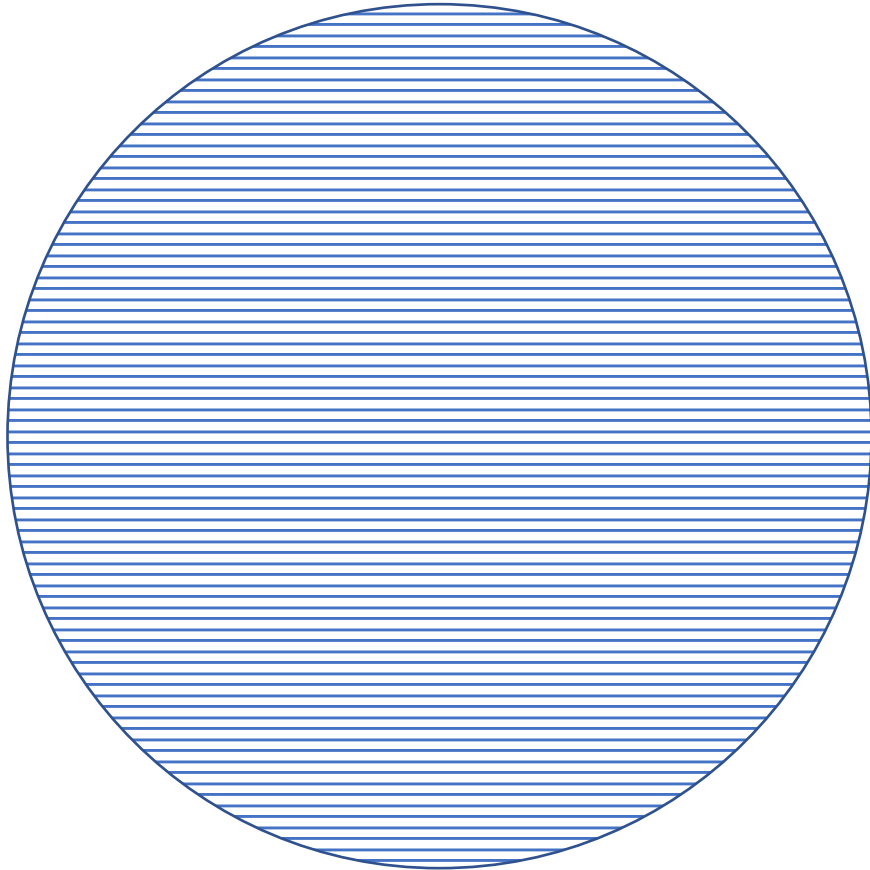
- Coast Phase: habitat rings rotate at $\sim 1.5\text{rpm}$
- "Gravity" on the lower levels is 9.8m/s^2 (1 Earth gravity)
- "Gravity" on the upper levels is 4.9m/s^2 (1/2 Earth gravity)
- Spheres rotates clockwise
- Flywheel rotates counter-clockwise

Cosmic Ray Sheilding



- Each habitat sphere is encased inside an outer sphere, and insulated by 10 metric tons of water and metal per m^2 of surface area.
- Cosmic ray penetration protection equivalent to the 2 atmospheres of the Earth
- Neutron bombardment enriches water in the insulation into Deuterium and Tritium.

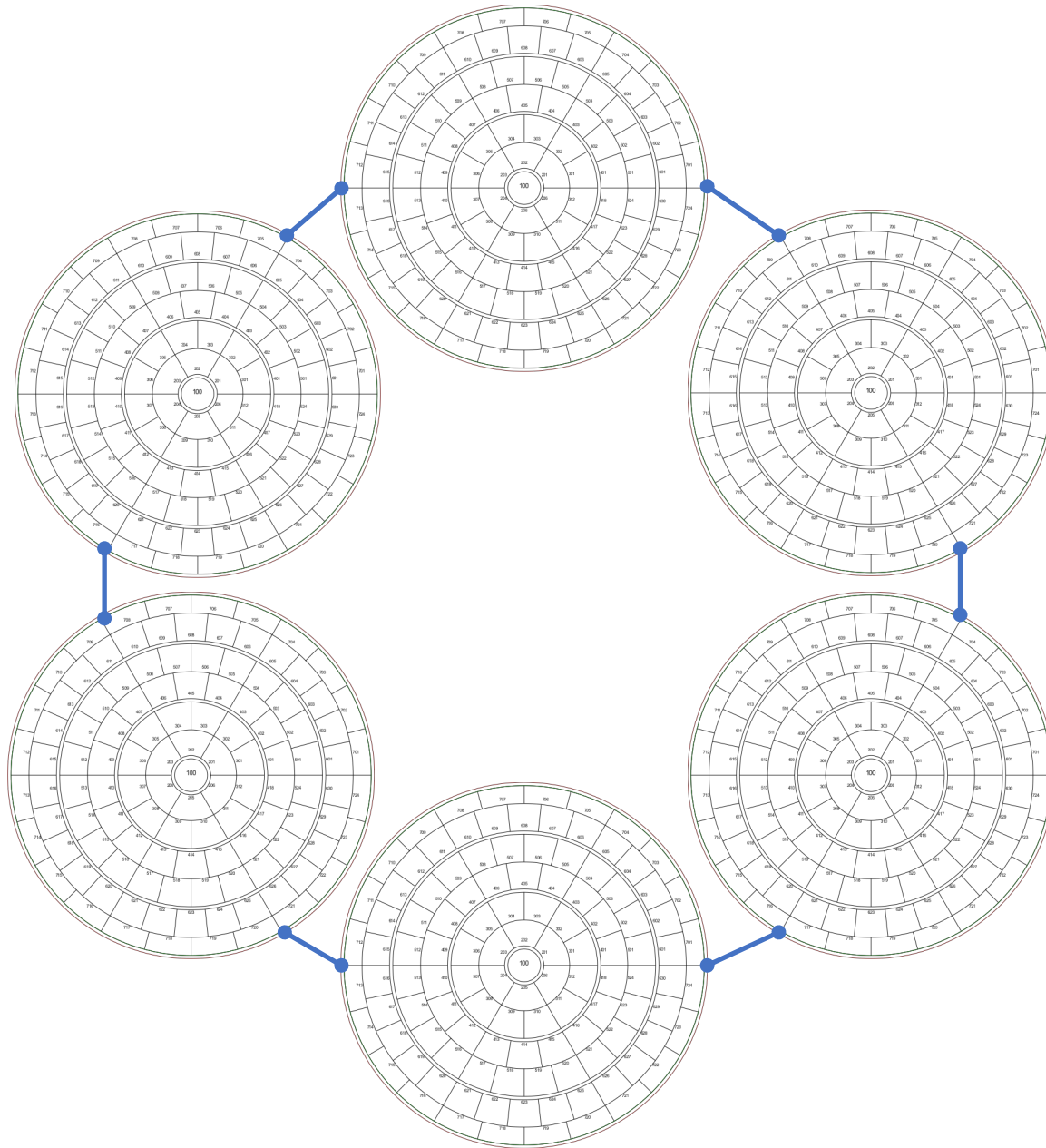
Power and Lighting

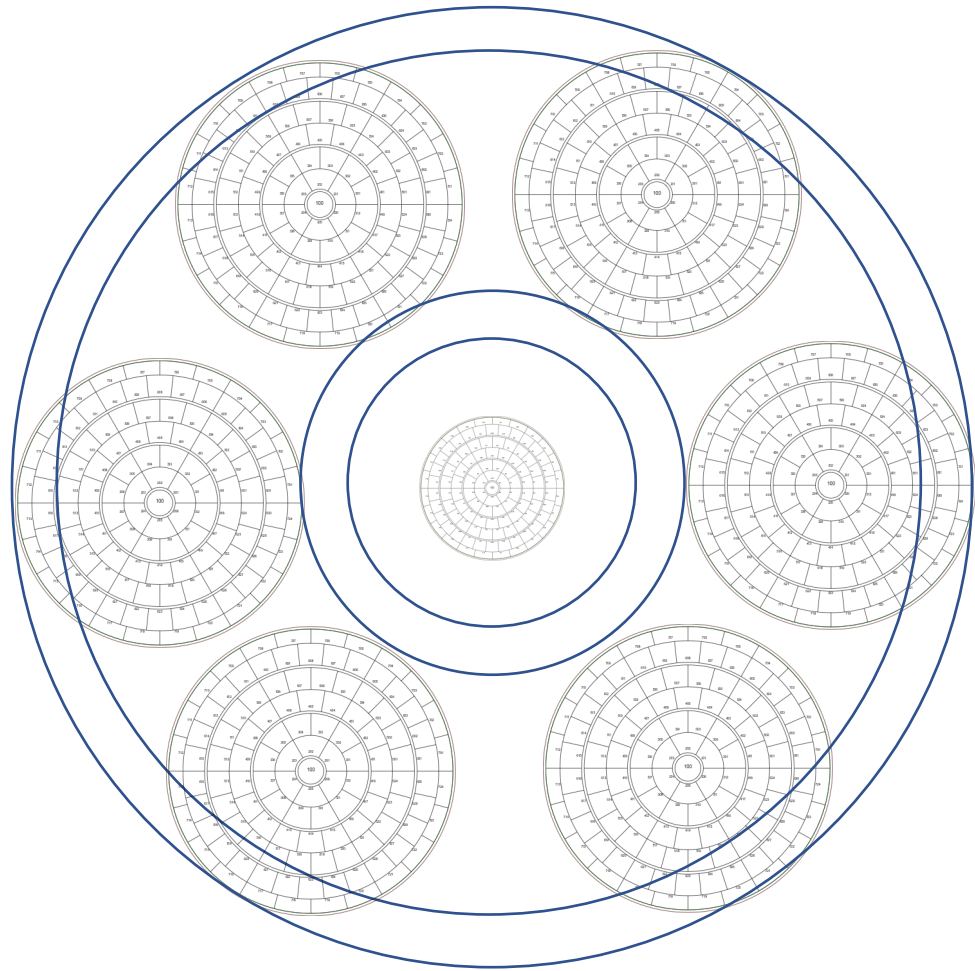


- LED lighting covers entire “land” surface.
- Max luminosity per square meter equivalent to daylight on Earth
- Color can be adjusted to tailor lighting conditions
- Power system rated to deliver 1kw of power per m² of land surface
- Peak Electrical Output: 66 megawatts
- Daily power usage: 25600 Mwh

A “Main Street” connects all 6 spheres that equator

Communications between sphere is possible through 2 access tunnels bored through a bearing at the hinge point Of each sphere. These access tunnels can be hermetically sealed in an emergency.





Habitation

- Habitation is concentrated around the the levels near the equator
 - Between levels 20 and 24
- 500 square meters (~5300 square feet) is allotted for each citizen. That figure includes shared spaces like cafeterias, libraries, laundries
- Many areas in the habitation area span multiple decks to produce a sense of having sky above