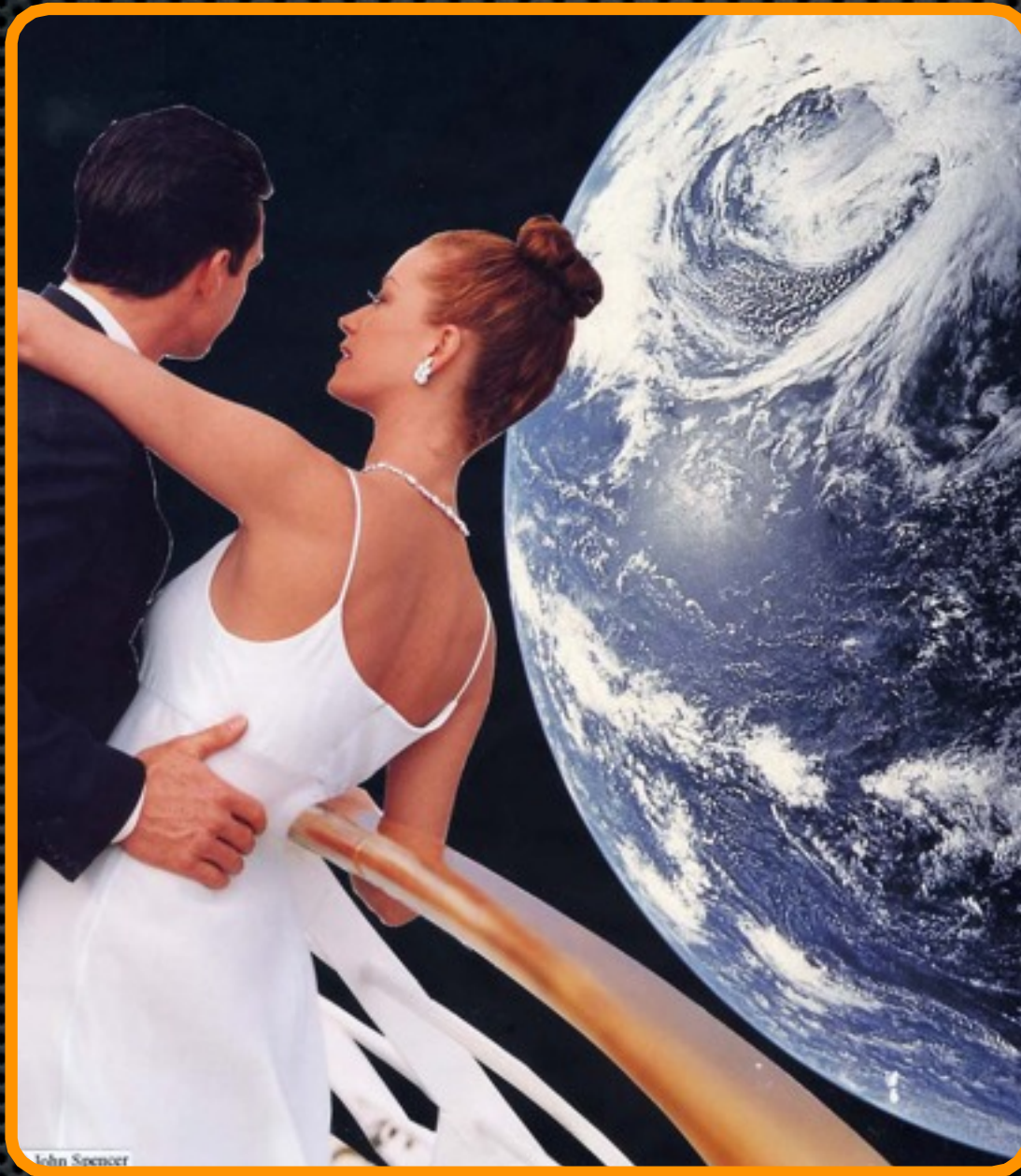




Designing for Space Tourism

by Samuel Coniglio
Space Tourism Society

Bringing romance to space...



“Fhloston Paradise”

space cruise ship, from *The Fifth Element*



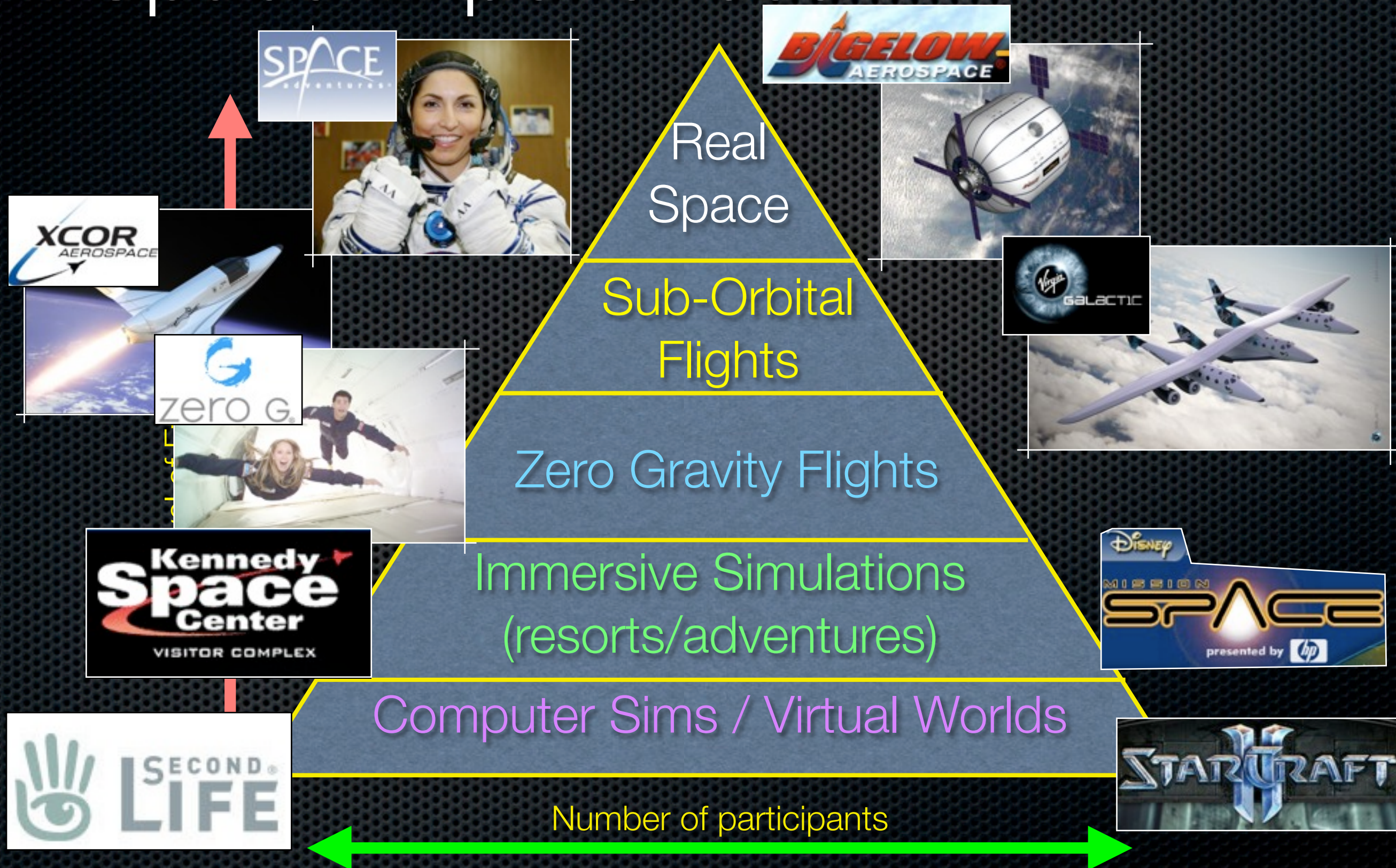
Space Tourism Society

- ✦ Non-Profit 501(c)3
- ✦ Research space tourism experiences
- ✦ Design products & services
- ✦ Plan long-term
- ✦ International

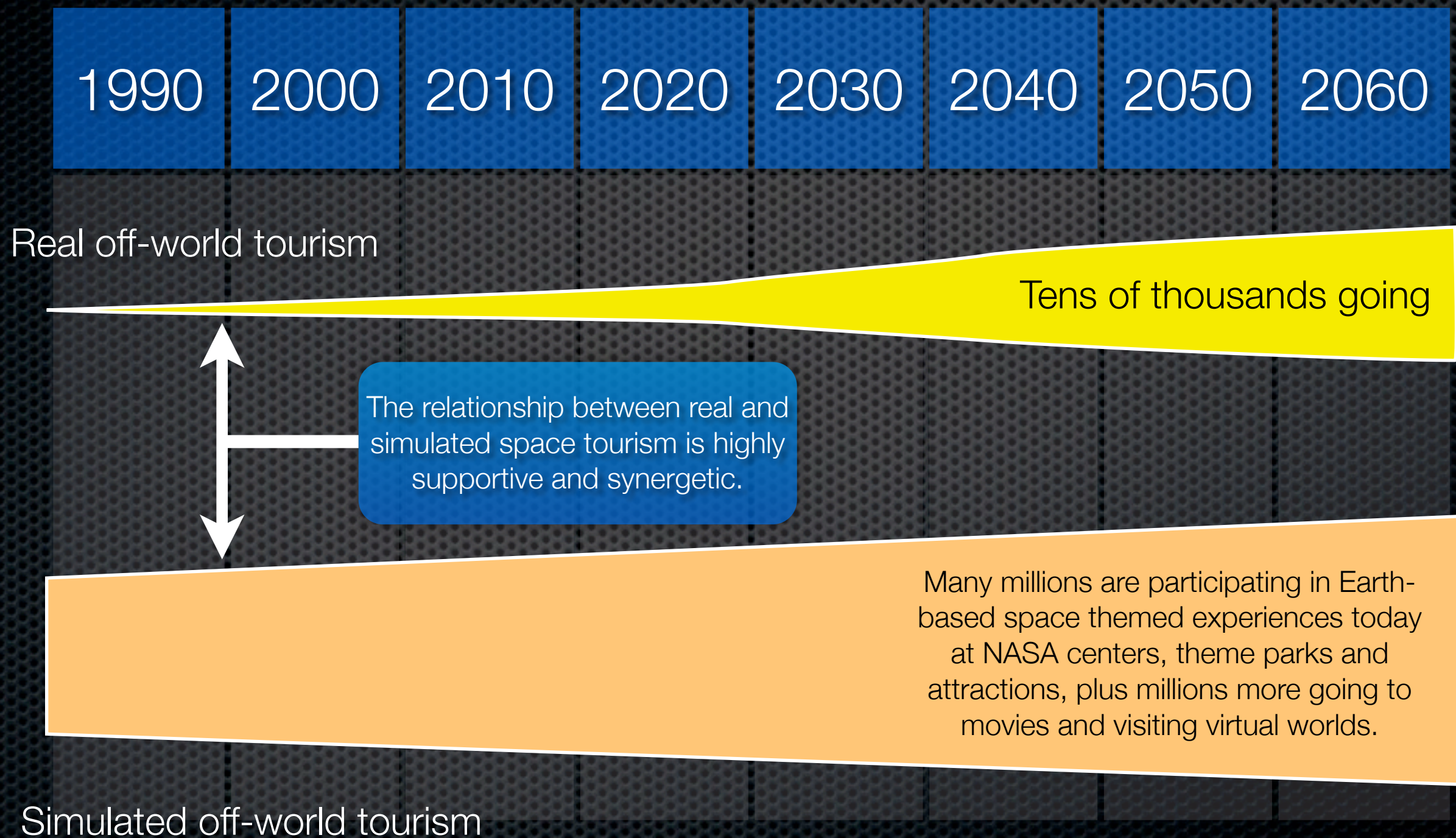


It's about the experience!

Space Experiences



Real and Simulated Experiences



Space Tourism Markets

Today

Theme Park Rides
Museum Tours
Space Camp
Zero G flights
MiG jet flights
Eight day orbital stay

Near Term

TV space shows
Zero gravity sports exhibitions
Fashion shows, other fun events
Space training computer games
Virtual reality simulations
Real world immersive simulation
Sub-orbital flights
Ten Day orbital stays

Long Term

Olympics in Orbit
Orbital super yachts
Orbital cruise line
Honeymoon tours
Lunar vacations
Private Solar System
Tours / Exploration

Why design products for outer space?

Dual Use

- ✦ NASA spin offs from 1960's became products we use everyday (personal computers, velcro, for example)
- ✦ Designing for space tourism would speed up spinoffs to the private sector

“Green” Space



- ✦ Advanced recycling systems
- ✦ Better solar panel designs
- ✦ New ways to clean clothes without water
- ✦ Improved air filters
- ✦ Untapped potential

How do you design for outer space?

Ask an Astronaut



Astronaut Don Petit demonstrates a zero gravity coffee cup during STS-126, in November 2008.

Space Design Perspectives

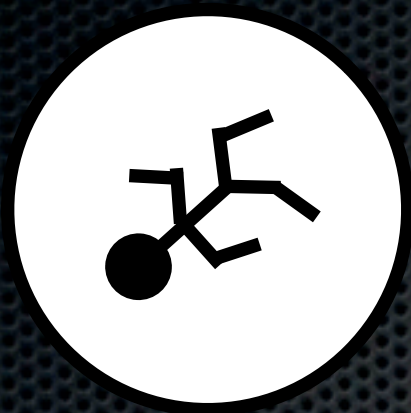
NASA

- ✦ Mission-oriented
- ✦ by engineers for engineers
- ✦ Comforts secondary
- ✦ Technology overwhelming
- ✦ Complicated

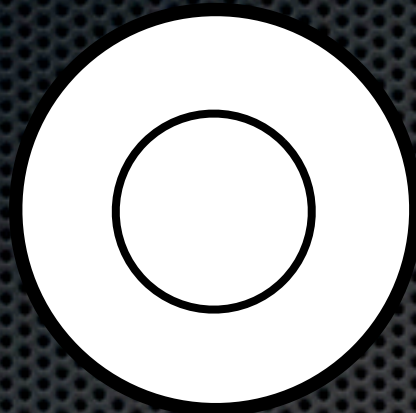
Private Ventures

- ✦ Customer-oriented
- ✦ by designers for regular people
- ✦ Comforts critical
- ✦ Technology hidden/integrated
- ✦ Simplified

Different Challenges...



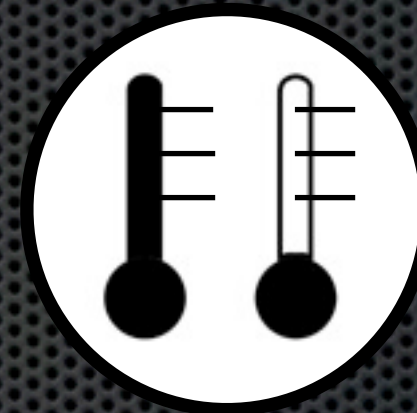
Zero Gravity



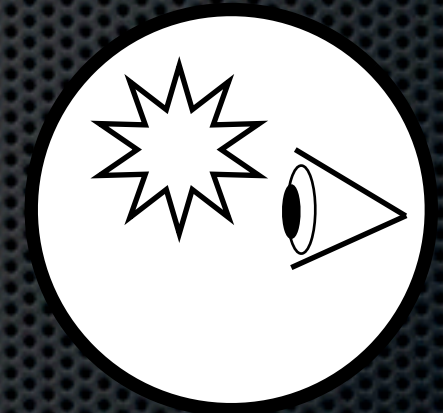
Vacuum



Radiation



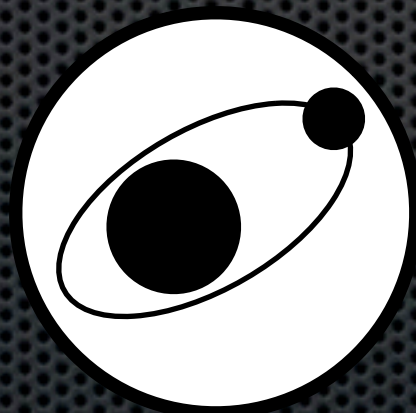
Temperature
Differential



Solar Glare



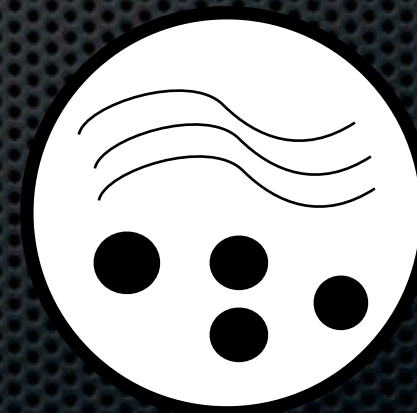
Meteors/
Orbital Debris



Orbital
Mechanics



Space
Sickness



Air Flow &
Liquids

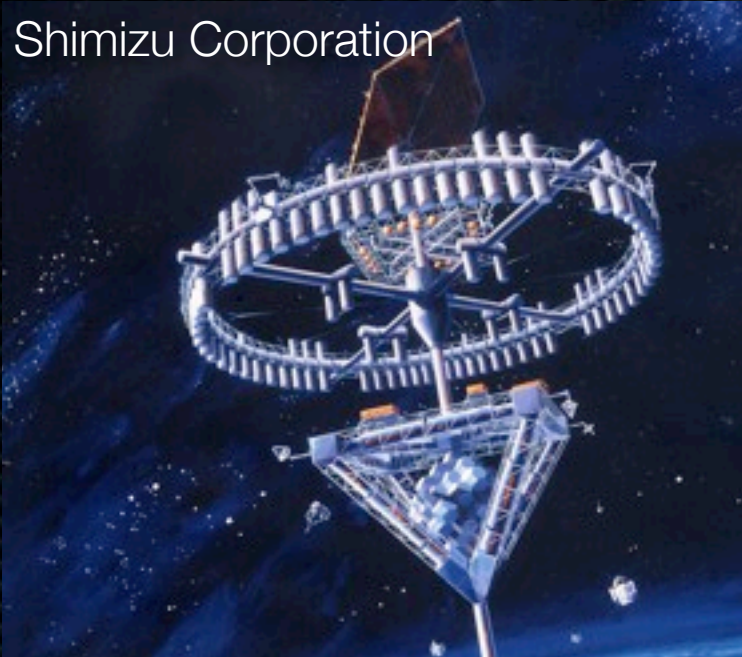


Contamination

Example concepts

Space Hotel Designs

Shimizu Corporation



Bigelow Aerospace

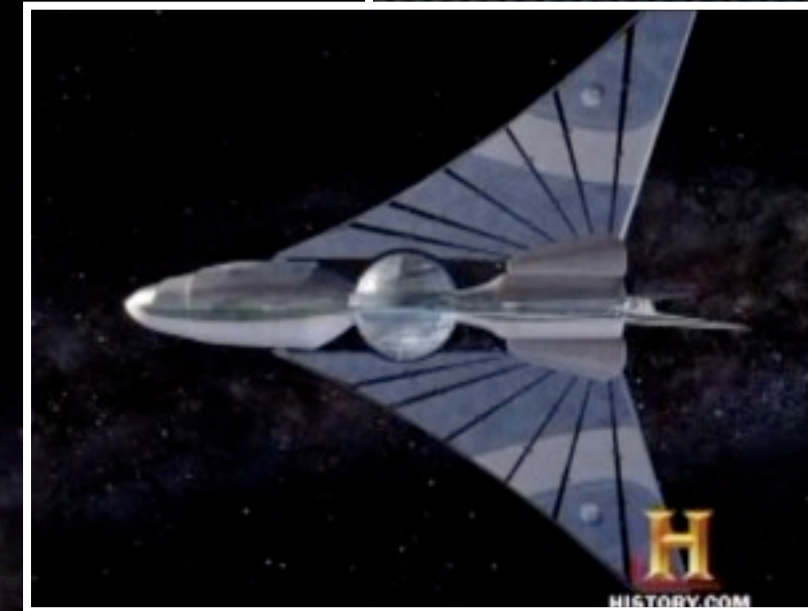


Japanese Rocket Society



Galactic Suites

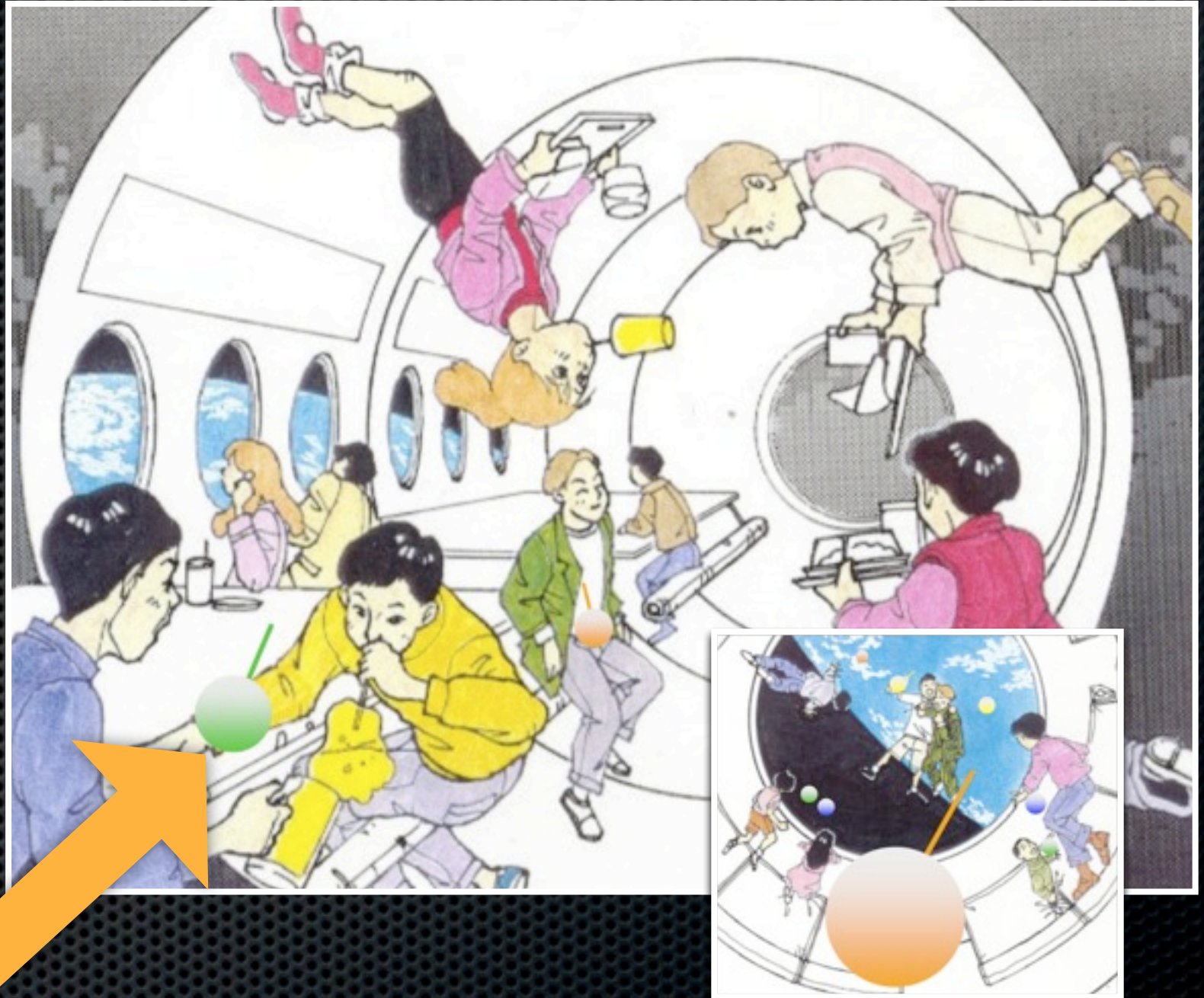
Orbital Super Yacht



Use of Computer Graphics granted by Flight 33 Productions and the History Channel.

“Labu Sayong” Meal Container

- ✦ Combination meal and drink container
- ✦ Keeps messes to a minimum
- ✦ Liquids don't float away



-- As envisioned by Norul Ridzuan Zakaria, STS Malaysia Chapter

Zero Gravity Martini Glass

- ✦ Functional--Holds liquids safely
- ✦ Beautiful--Appeals to a higher esthetic
- ✦ Fun--It says "Cool"



“G-Chair”

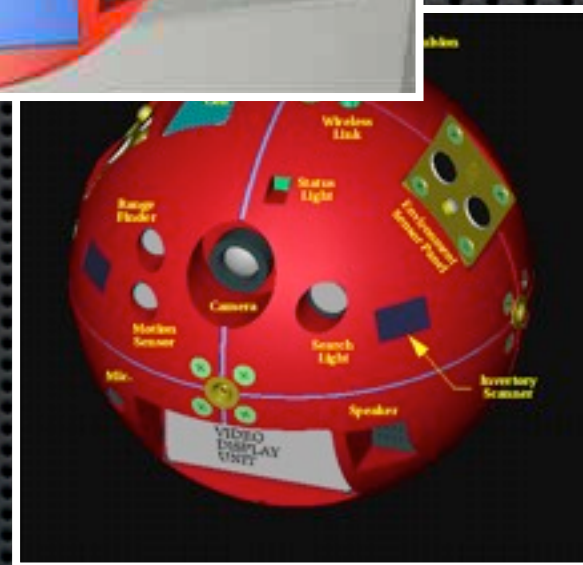
- ✦ Takes advantage of neutral buoyancy
- ✦ User stays in place
- ✦ Passive restraint
- ✦ Inflatable
- ✦ Fur adds style and comfort.



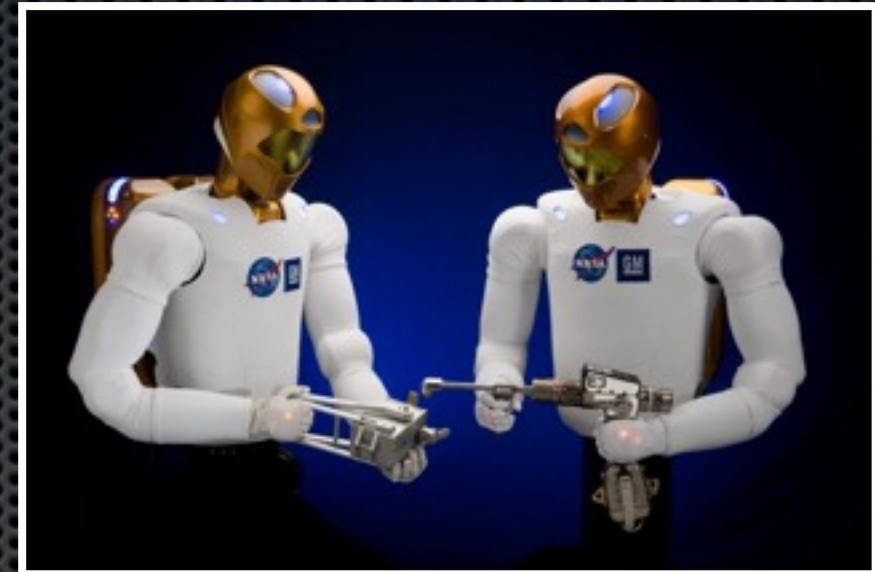
Samuel Coniglio

Worker Bots

- ✧ Artificial Intelligence
- ✧ “Indoor” bots help passengers & crew
- ✧ “Outdoor” bots maintain vessel
- ✧ Example modules:
 - ❖ Maintenance
 - ❖ Waiter
 - ❖ Washer/Dryer
 - ❖ Vacuum cleaner
 - ❖ Air filter



Personal Satellite Assistant
-- NASA



Robonaut 2 -- NASA and GM



Multi-purpose service bot
-- Samuel Coniglio

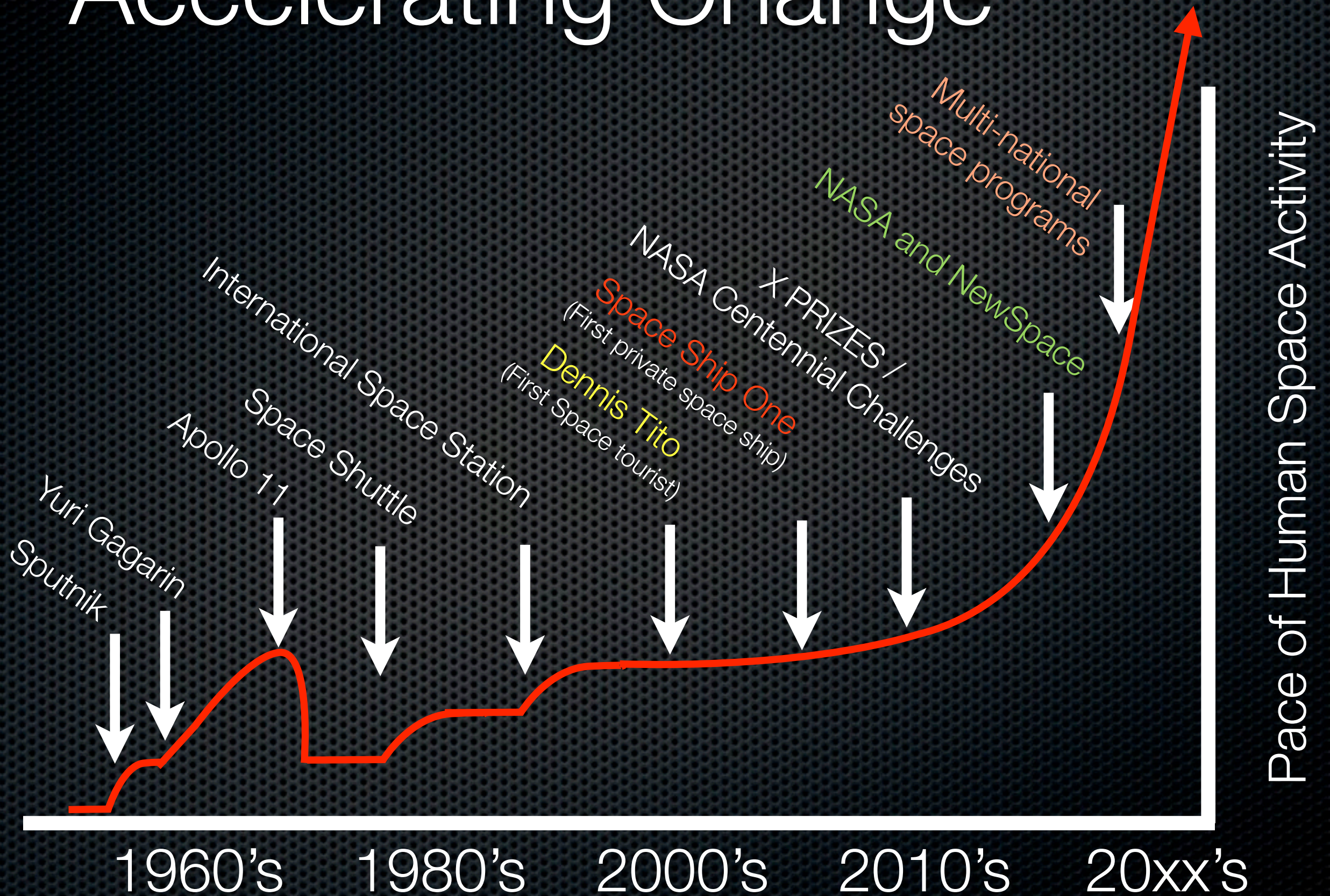
Snuggle Tunnel

- ✦ Super comfy sleep tube for two!
- ✦ Attached to wall or viewport
- ✦ Takes advantage of neutral buoyancy
- ✦ Keeps couples from floating apart

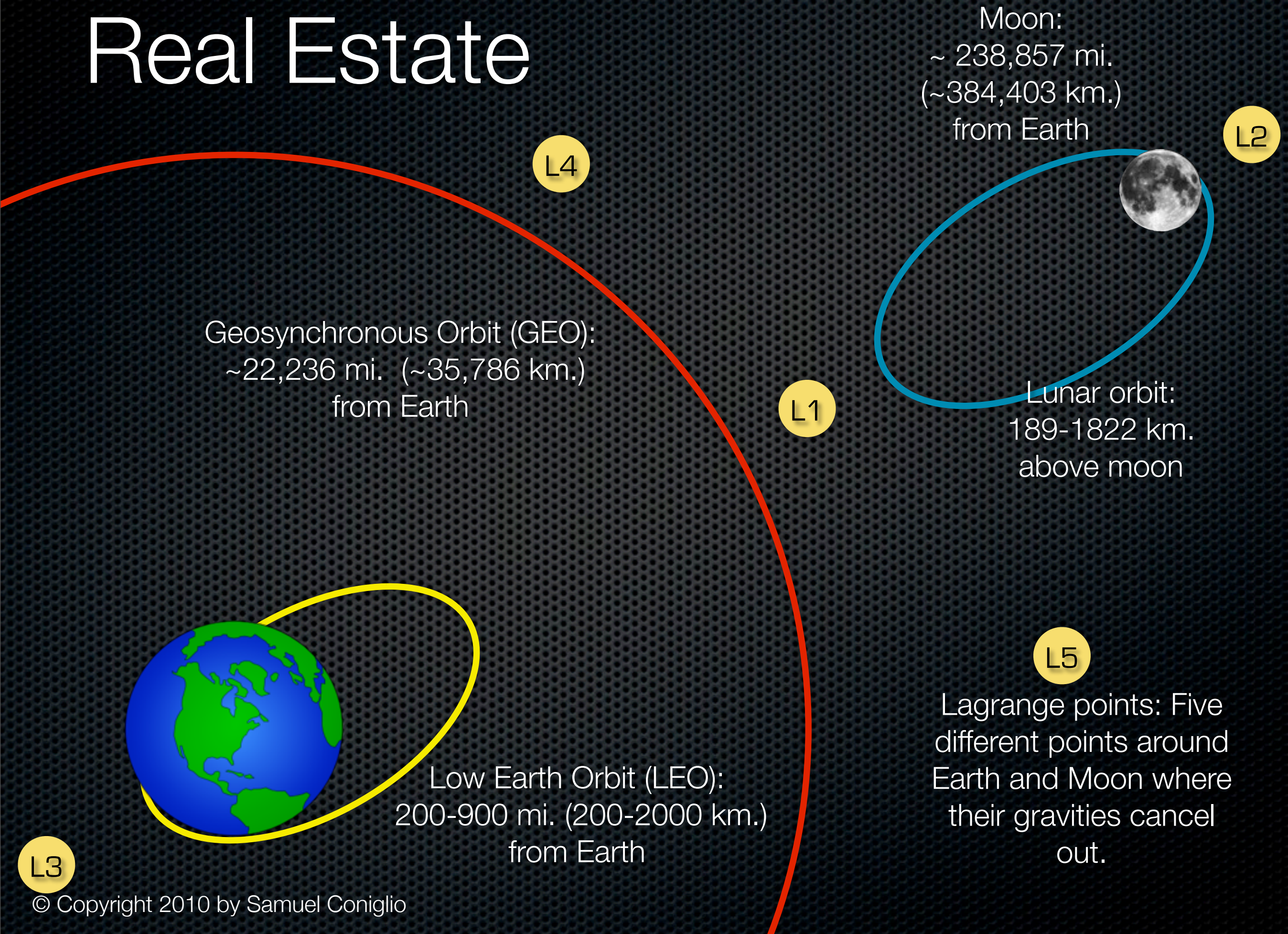


The Master Plan

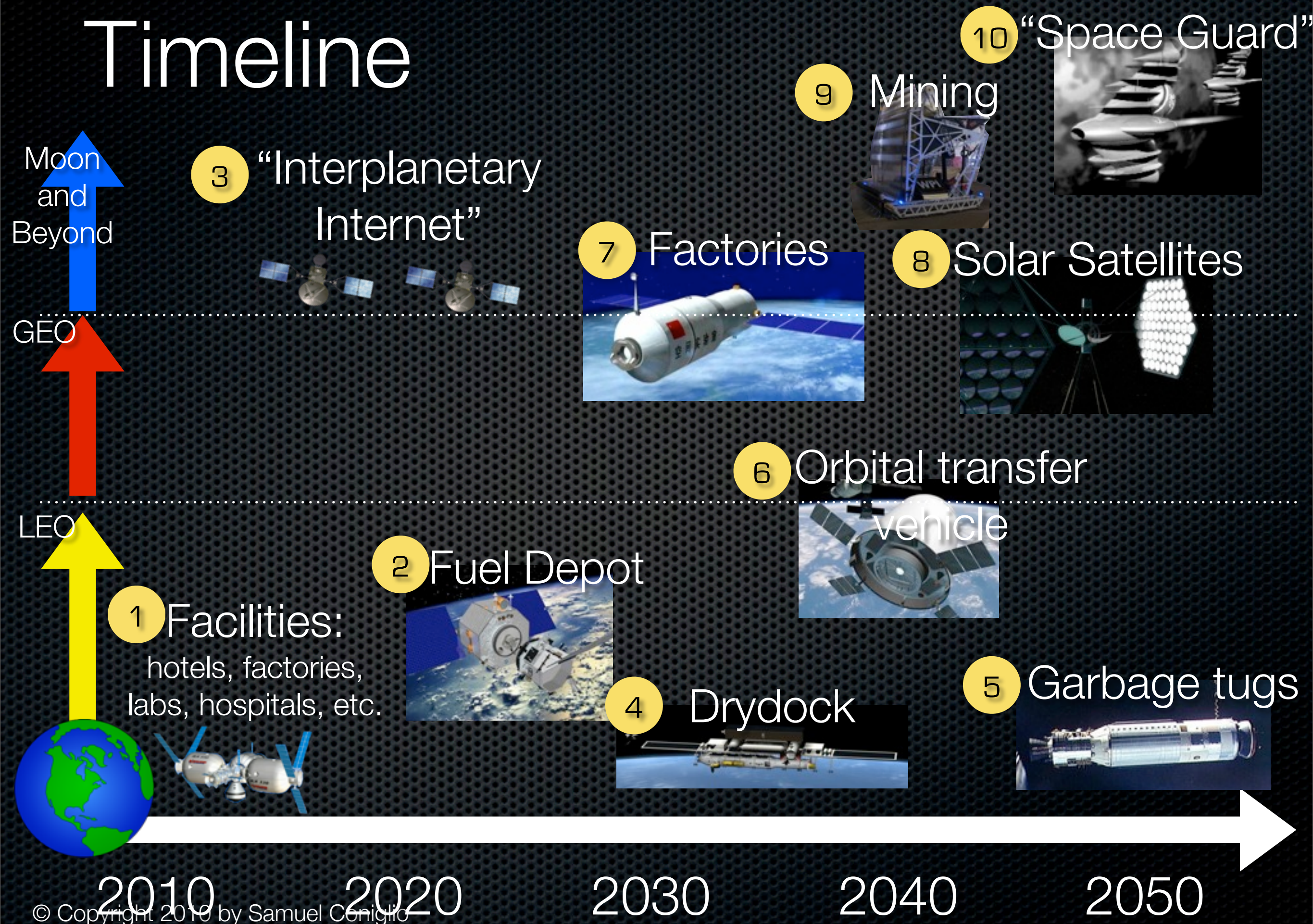
Accelerating Change



Real Estate



Timeline



Designing for Space Tourism is a fun way to design for Space Settlement



Thank You

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