

# INTERORBITAL SYSTEMS

END-TO-END SOLUTIONS FOR  
SPACE VENTURES

2021



# CORE TEAM



**Randa MILLIRON**  
CEO/CoFounder,  
Director of Marketing



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CTO/Co-Founder,  
Chief Designer



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Lead Avionics & Satellite  
Engineer



**Bryant AVALOS**  
Lead Composite Engineer,  
Software Developer

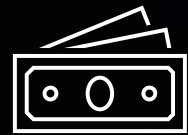
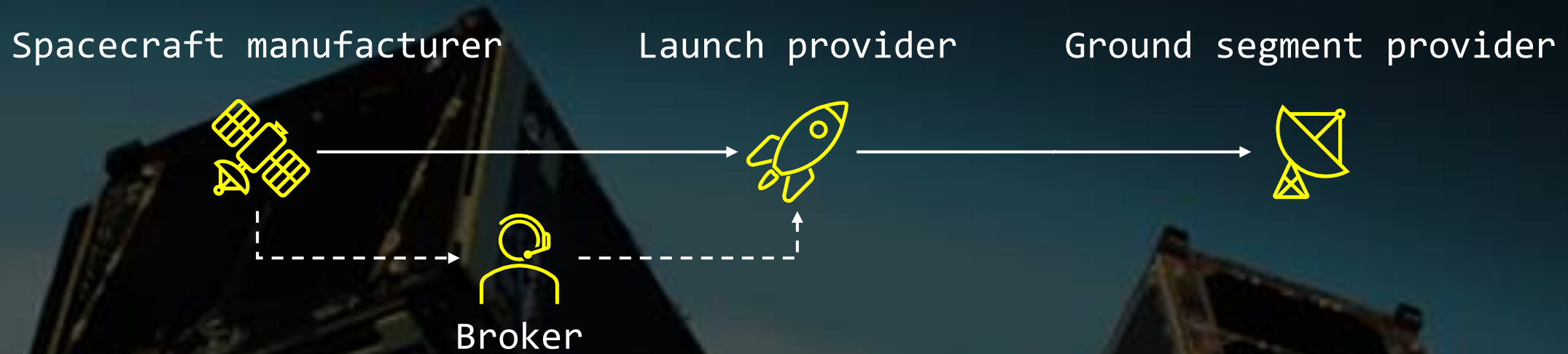


**Ian PRICE**  
Lead Ground Support &  
Flight Hardware Engineer



**Erik REEDY**  
Manufacturing Lead,  
Prototyping

# THE CURRENT PROBLEMS OF SPACE CARGO DELIVERY



Still pricey

\$5k/kg with \$1 million minimum



Still complex

Multiple entities/middlemen/brokers involved

# THE INTERORBITAL SYSTEMS' SOLUTION:

Spacecraft manufacturer

Launch provider

Ground segment provider



INTERORBITAL SYSTEMS



Truly cost-effective

<\$5k/kg, no minimum

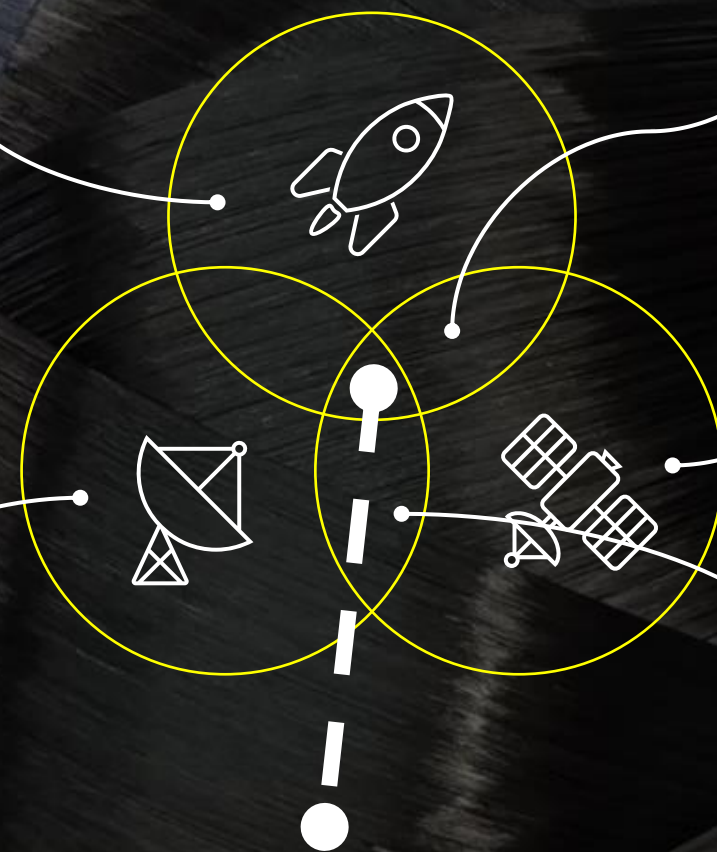
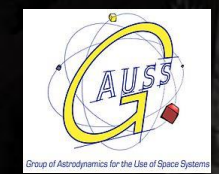
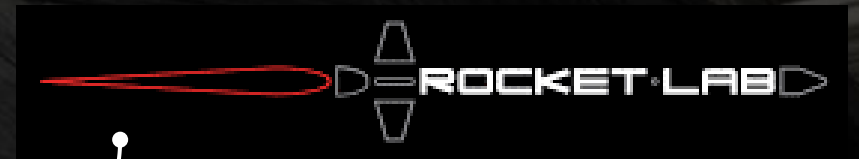


Radically simplified

An end-to-end solution

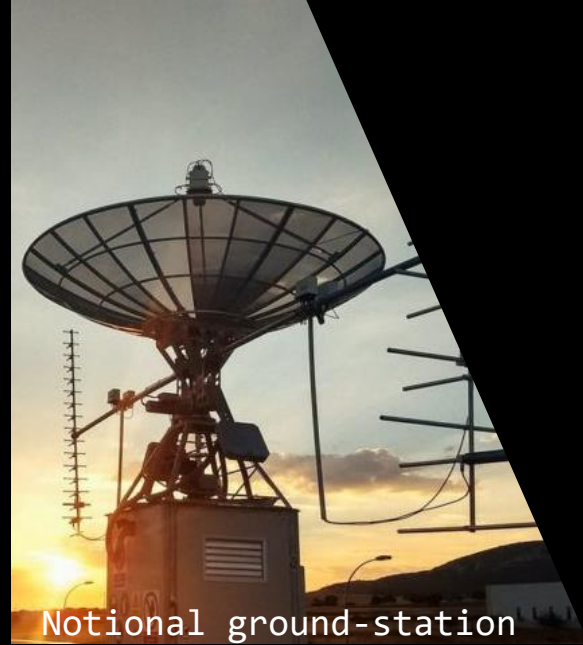
# COMPETITION

No Competitor provides all three services...



Interorbital fills the void--centralizing all design/build/launch/data services required for space access..

Interorbital's test flight



Notional ground-station

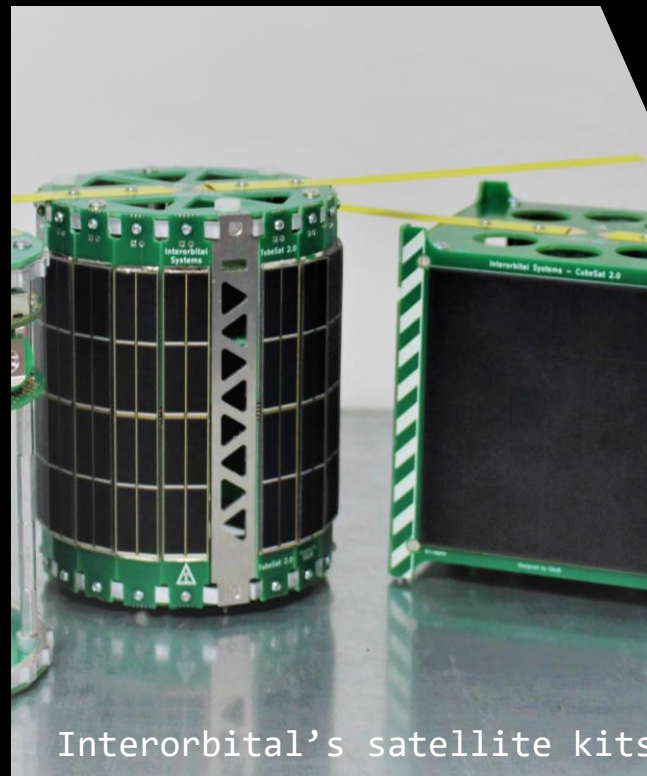
## NEPTUNE modular rocket series

In final stage of development

Most cost-effective launcher in the world

Scalable to adapt to any payload

Easy, quick, and cheap to build



Interorbital's satellite kits

## Pre-built & custom satellites

A market leader for CubeSats/TubeSats

Satellite kits assembled in hours, plus

Constellation design and launch services

175+ Satellites on current launch manifest

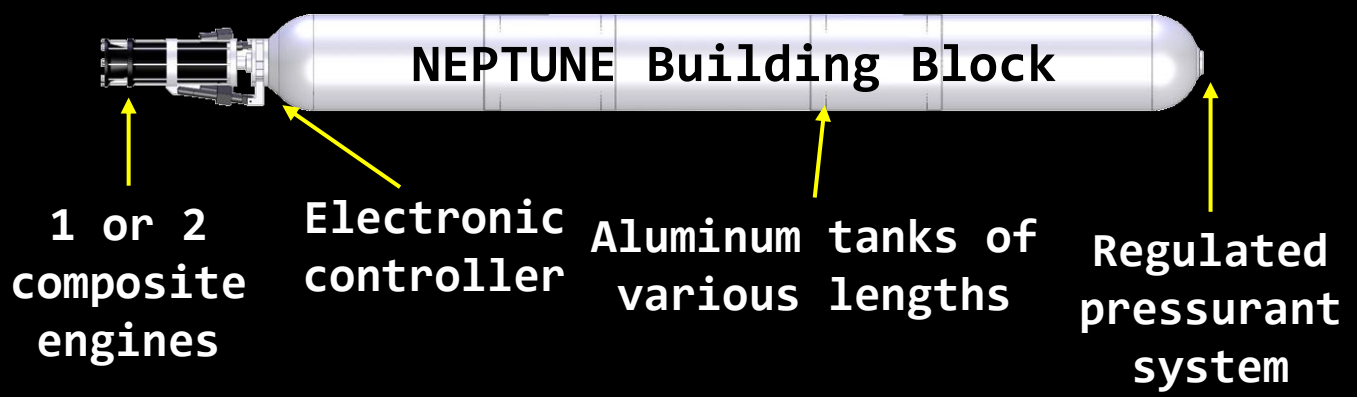
## Reconfigurable, mobile ground-stations

*In development*

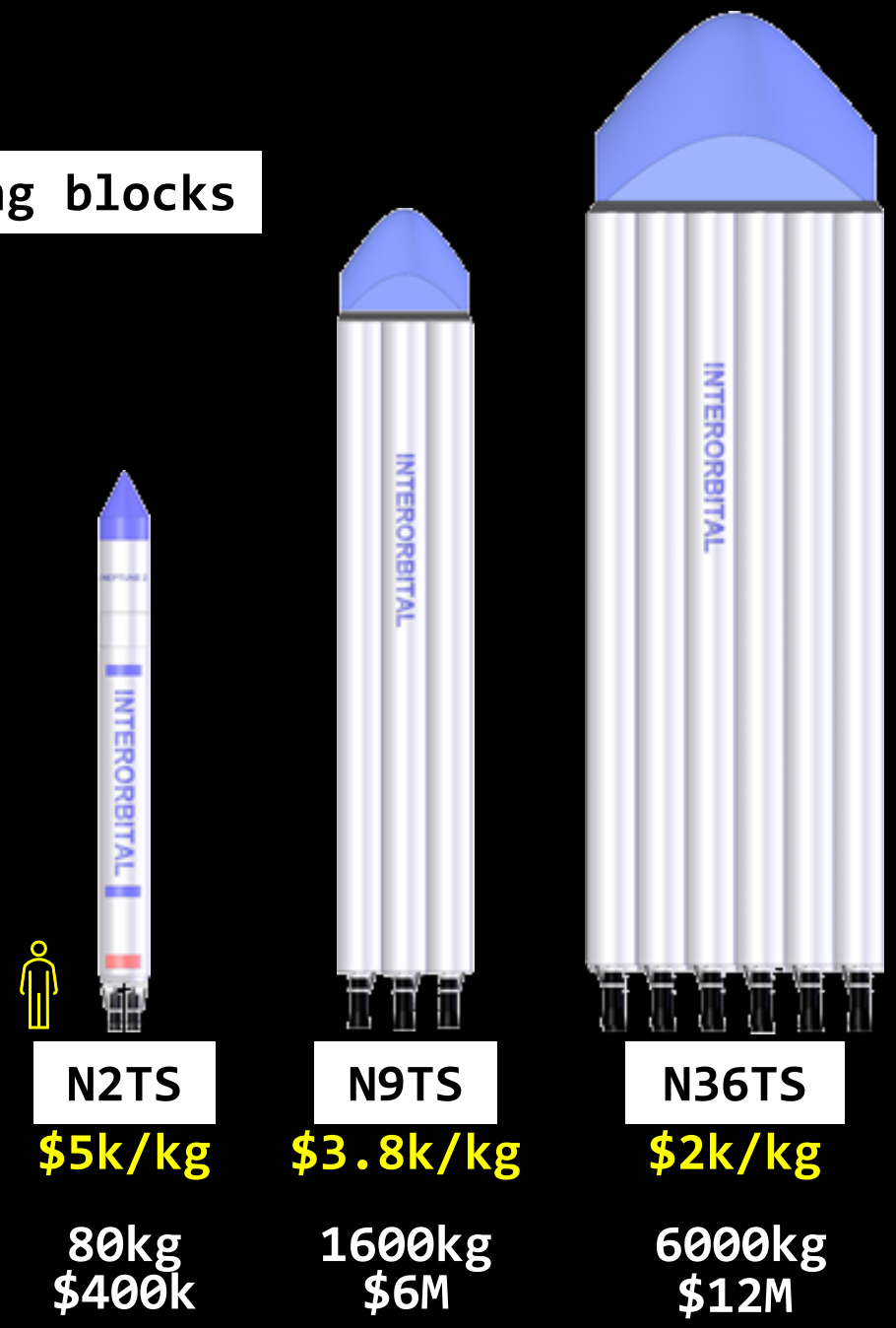
# NEPTUNE Modular Rocket Series

Rockets assembled with 2, 9, or 36 identical building blocks

Basic building block of the NEPTUNE rocket series:

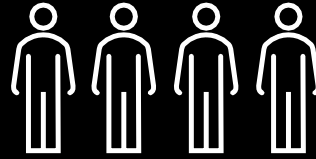
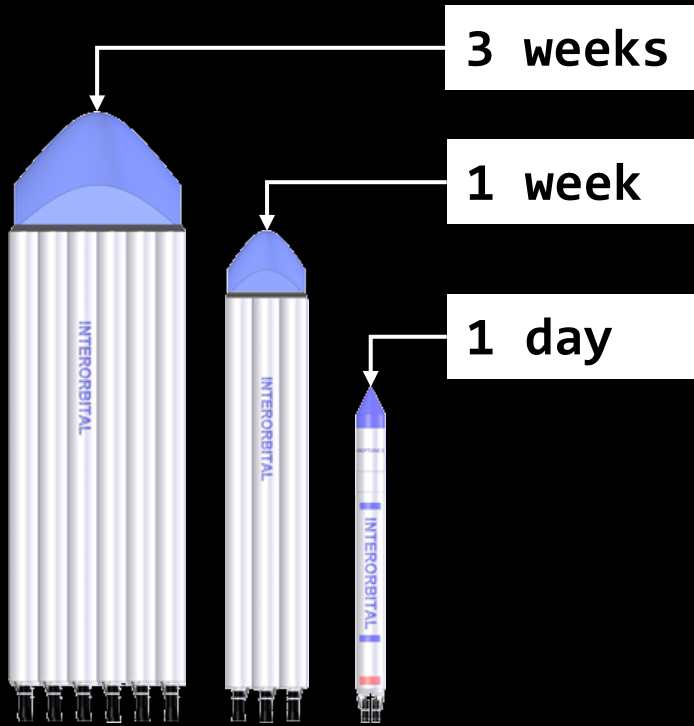


- SIMPLE:** Only 4 components per block
- MODULAR:** More blocks = Larger rocket = More payload
- CHEAP:** Blocks mass-produced; automated manufacturing
- RELIABLE:** No failure-prone, expensive systems

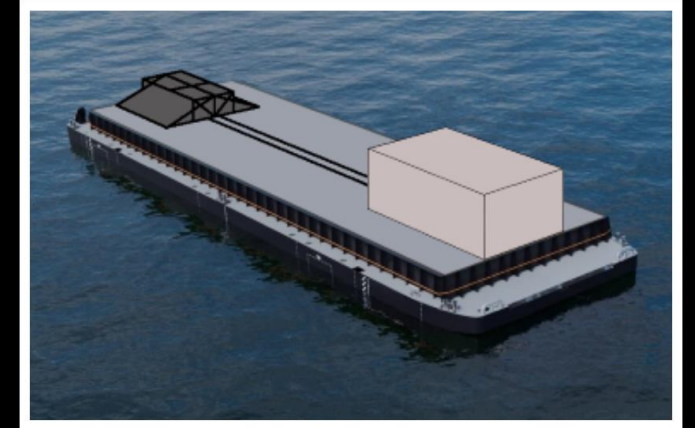


# LAUNCHED ANYWHERE, ON-DEMAND

**MANUFACTURING TIME (with automation):**



**4-Person launch crew**



**Mobile ocean-launch**

**CUTTING-EDGE TECHNOLOGIES:**  
3D Printing  
Composite Filament Winding  
Decentralized Electronics

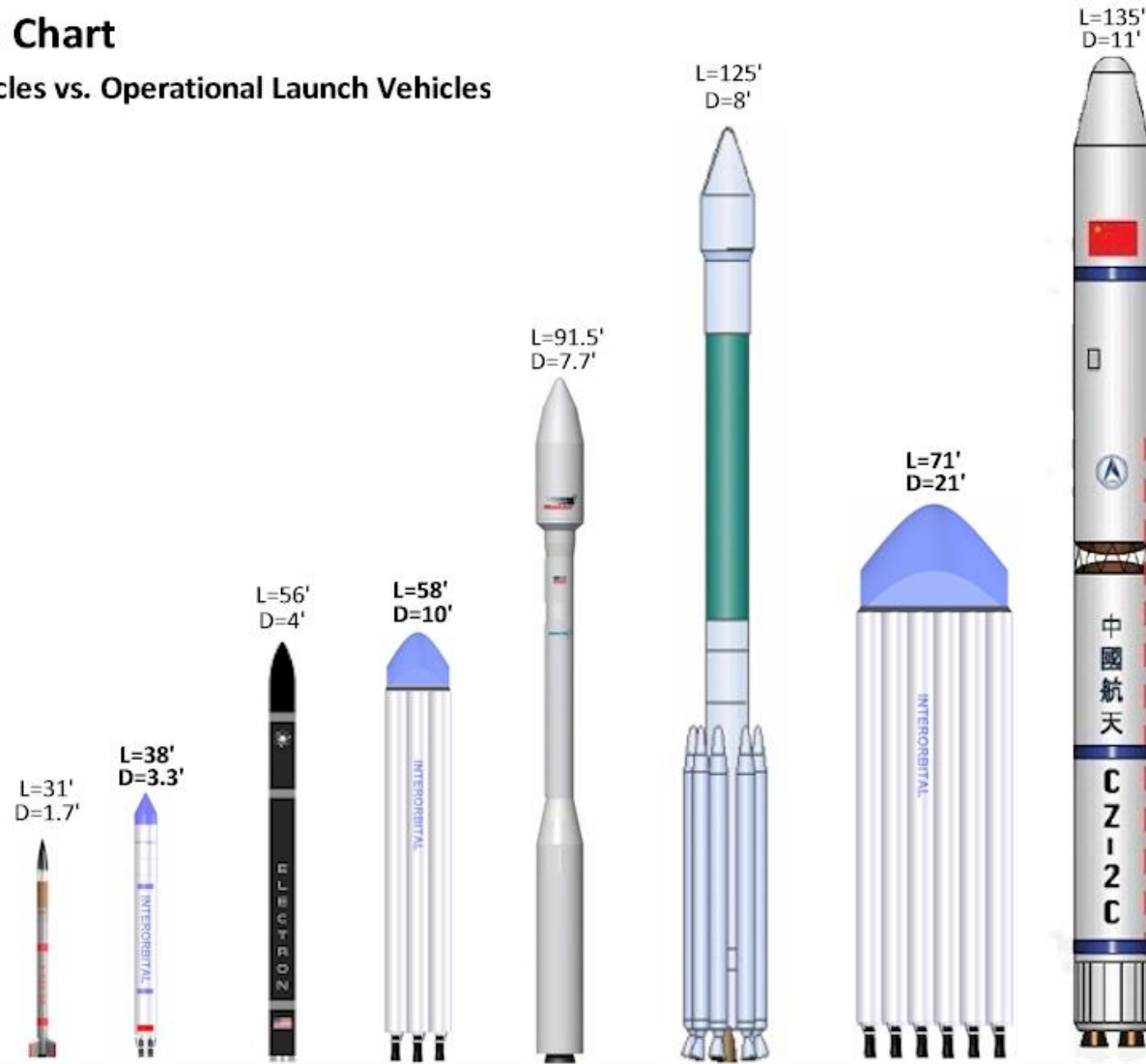


**Mobile land-launch**



# Comparison Chart

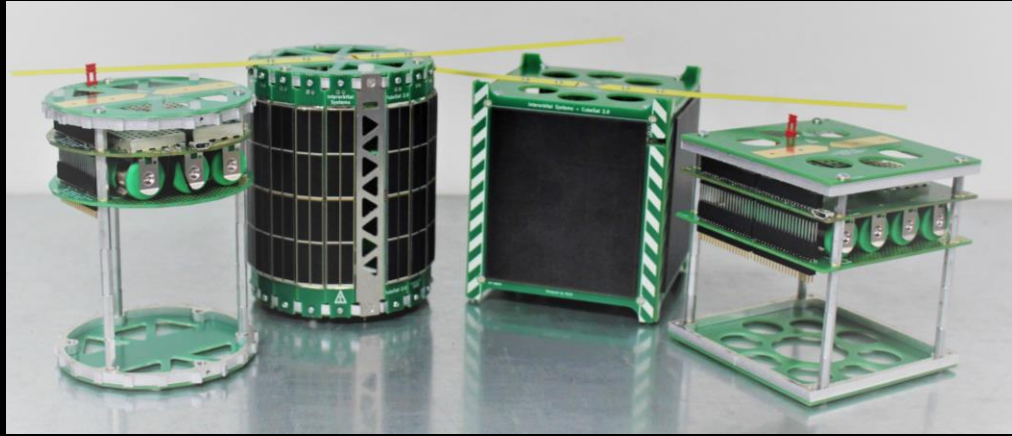
## IOS Launch Vehicles vs. Operational Launch Vehicles



<b>Country</b>	Japan	USA	New Zealand	USA	USA	USA	USA	China
<b>Launch Vehicle</b>	SS-520-5	IOS N2TS	Electron	IOS N9TS	Minotaur C	Delta II	IOS N36TS	CZ-2C
<b>Payload LEO (Kg)</b>	3	80	200	1,600	1,320	3,000	6,000	3,500
<b>Launch Cost</b>	\$3M	\$400K	\$6M	\$6M	\$50M	\$51M	\$12M	\$30M
<b>Cost/Kg</b>	\$1M	\$5.0K	\$30K	\$3.8K	\$37.8k	\$17K	\$2.0K	\$8.6K

IOS = INTERORBITAL SYSTEMS    D = Diameter (feet)    L = Length (feet)    LEO Altitude = 500 km    LEO Inclination = 28 degrees

# IOS Satellite Kits--over a decade of experience



**CubeSat: 1.3kg, 4x4x4in**

International standard

Kit + launch: **starting at \$22,000, Academic**

**TubeSat: 0.75kg, 3.77x4.72in**

Interorbital Systems' standard

Kit + launch: **starting at \$12,400, Academic**

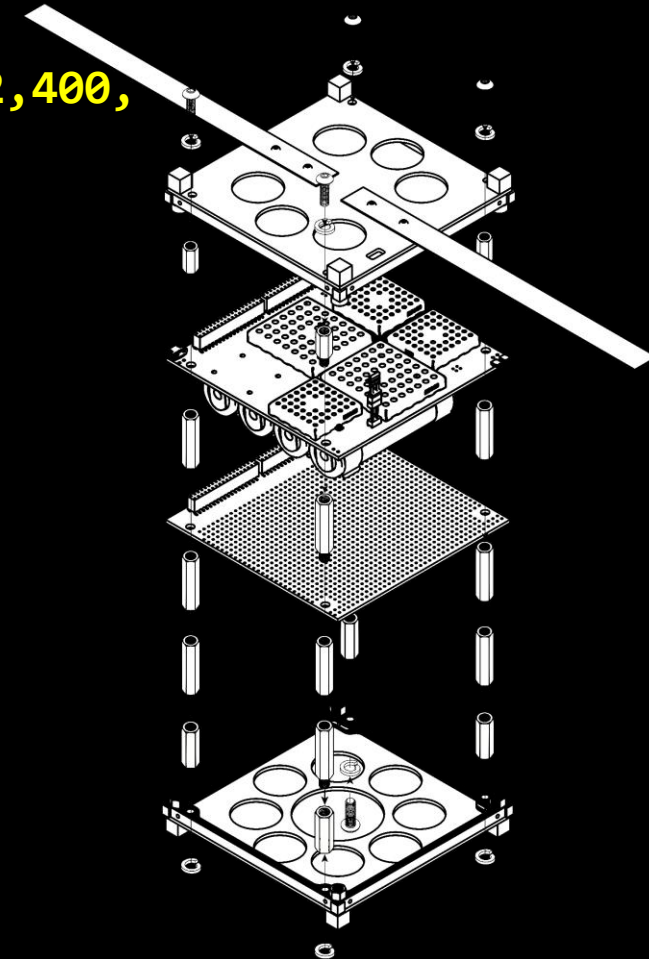
From 1 to 24kg (1U to 24U)

Can be assembled in 4 hours with no skills

All the basic functions are included

Customer needs only to design his or her own application

**Interorbital can apply the same design elements and methodologies for rapid construction of larger custom satellites**



# Ground Stations - in development

UHF, VHS, S-Band & upgradable to other frequencies on demand

Network leased by subscription or on a usage basis

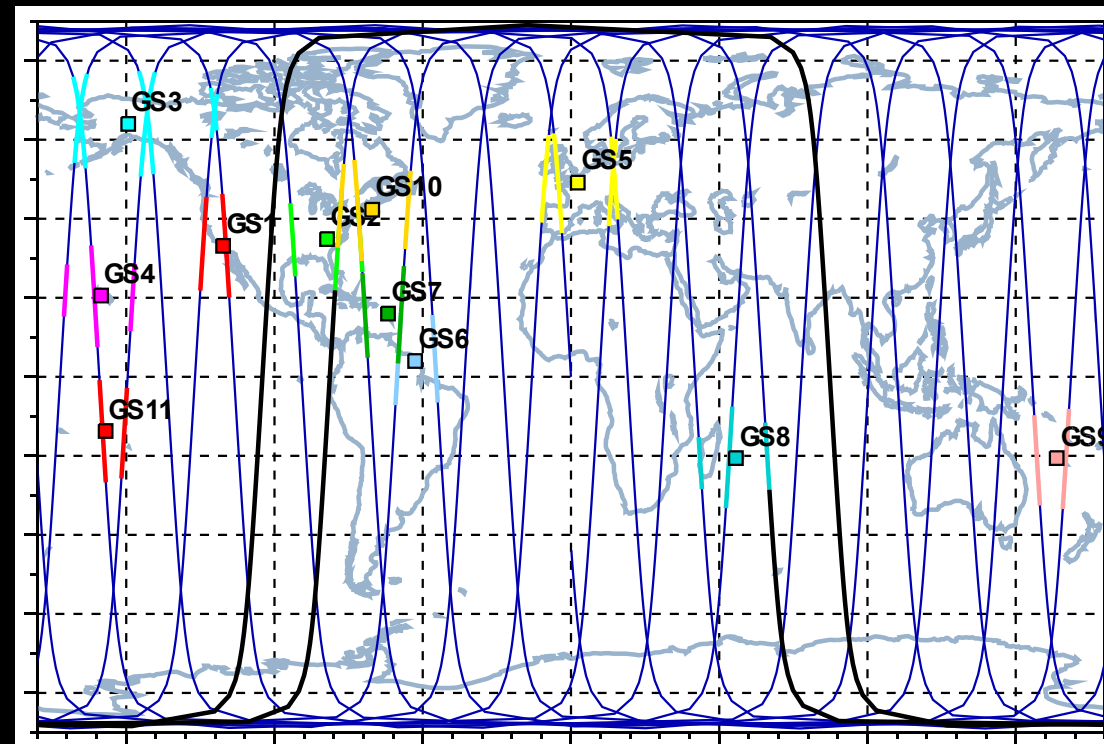
Remotely accessible 24/7 via web interface

<\$15,000 per station

Shipped in a 10-ft cargo container



Notional ground-station



Planned initial network

# Interorbital Systems' 12-YEAR PLAN



Larger satellites



Heavy-lift rockets



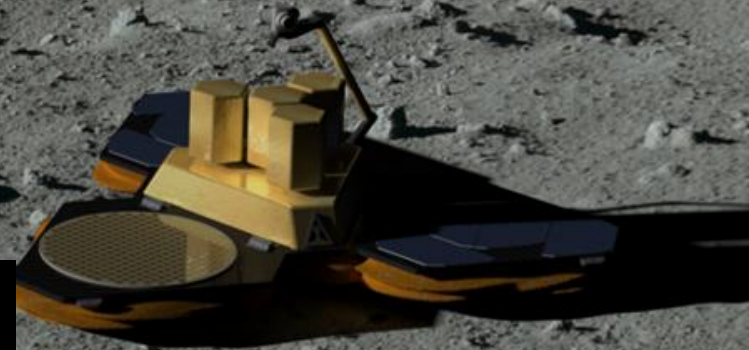
Lunar missions



Human spaceflight



Unmanned/manned deep-space and interplanetary missions to Luna, Venus, and Beyond



## CONTACT:

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