

ULA NATIONAL ACADEMIES COMMITTEE ON BIOLOGICAL AND PHYSICAL SCIENCES IN SPACE

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10.31.17





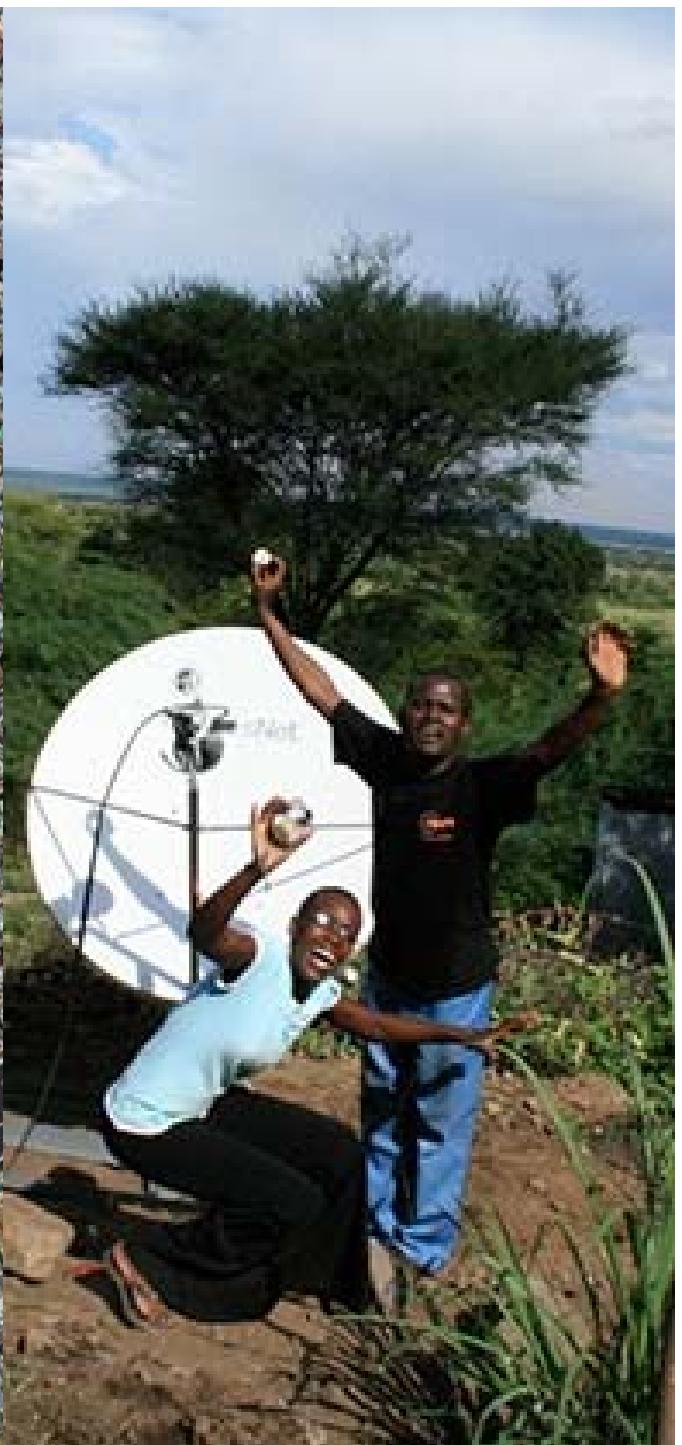
SAVE
LIVES



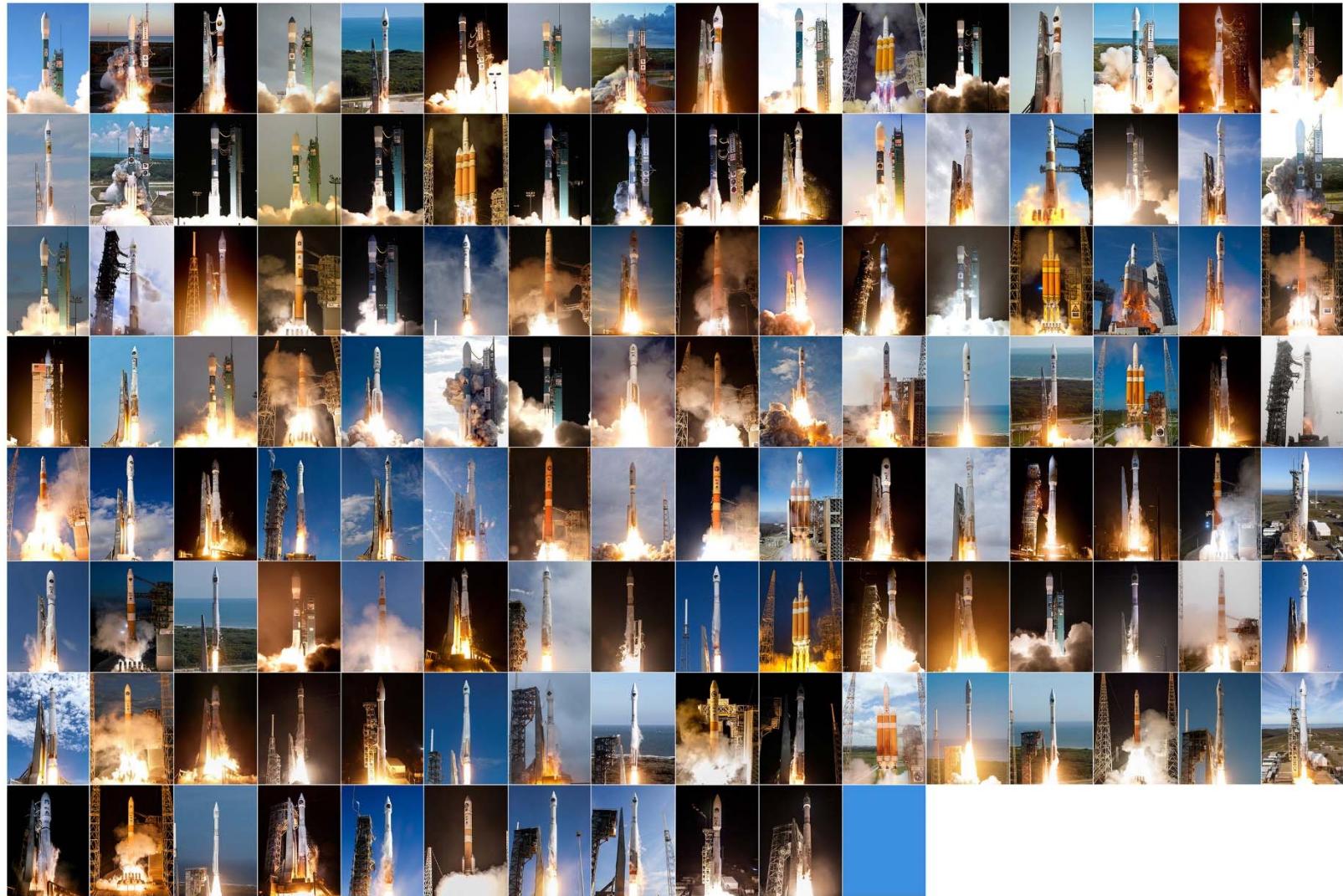




CONNECT
THE
WORLD



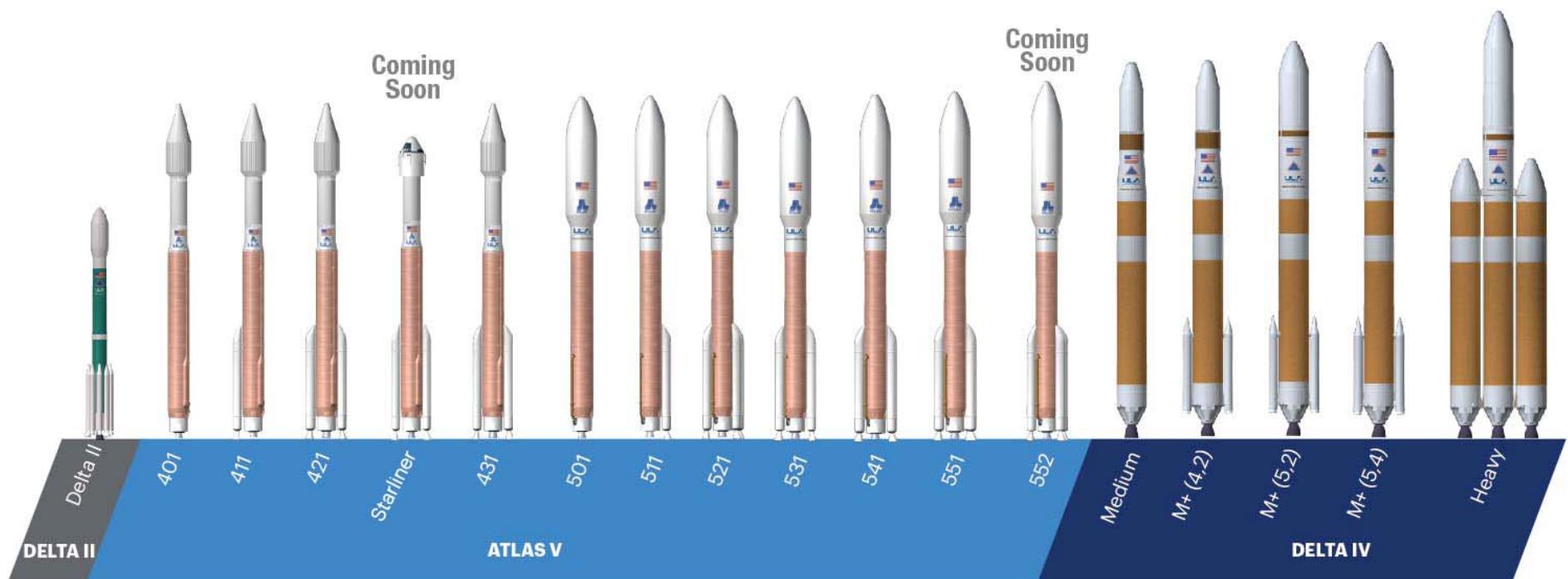
ONE AT A TIME... 122!



<https://www.youtube.com/watch?v=LsgGqSXJqwo>

OUR FLEET

41 Configurations



Any Payload, Any Orbit, Any Time

CURRENT ULA CUSTOMERS

National Security Space



Global Positioning System (GPS)



Intelligence, Surveillance and Reconnaissance



Civil Space

Robotic Exploration and Science



Mars Science Laboratory



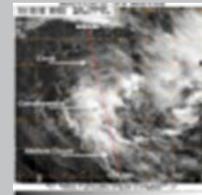
Pluto New Horizons

Increasing Our Knowledge of the Earth and Its Climate



Cloudsat

Geostationary Operational Environmental Satellite (GOES)



Human Launch



Cargo



Crew

Commercial Space



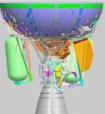
Earth Imagery

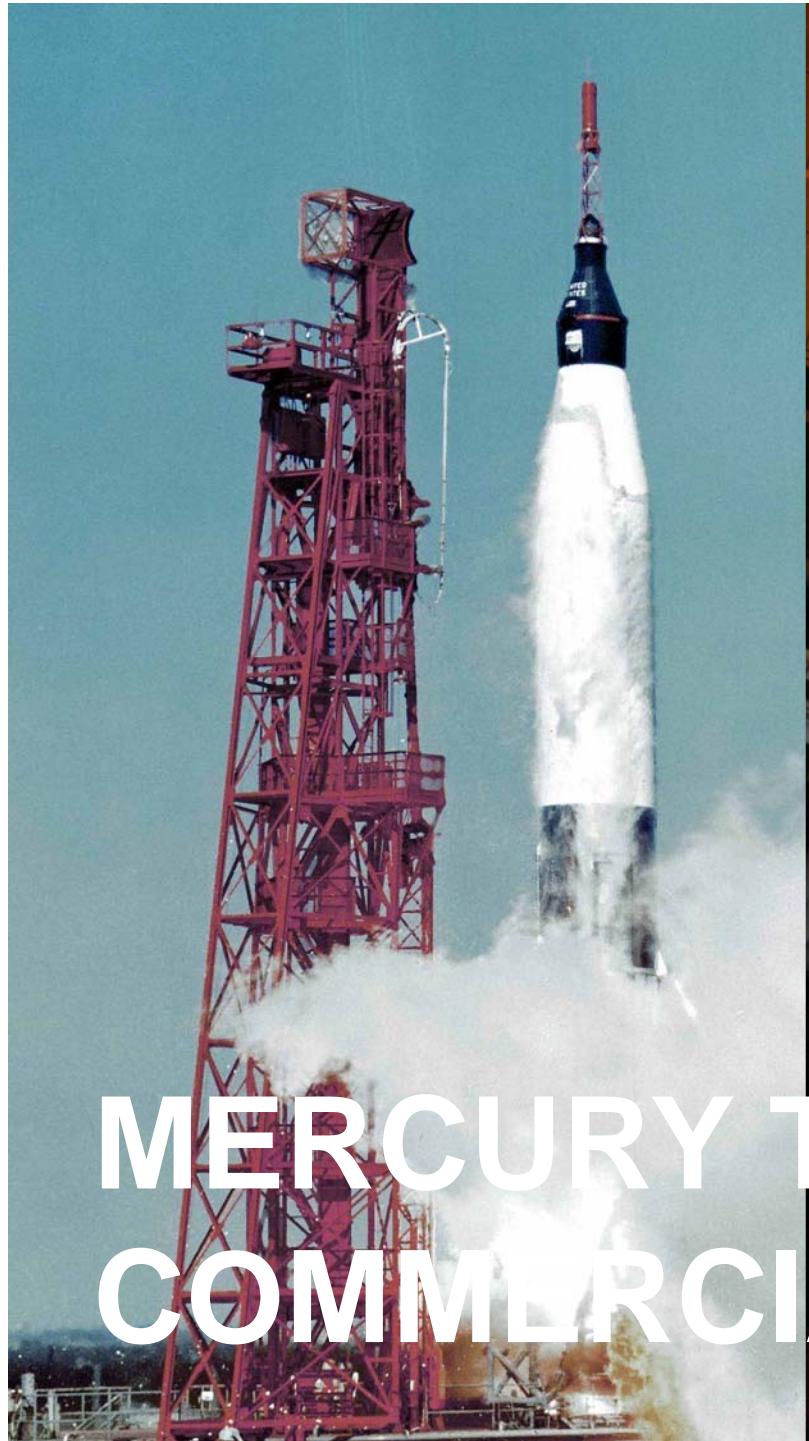
Commercial Communication



Vulcan ACES Enhances Traditional Mission

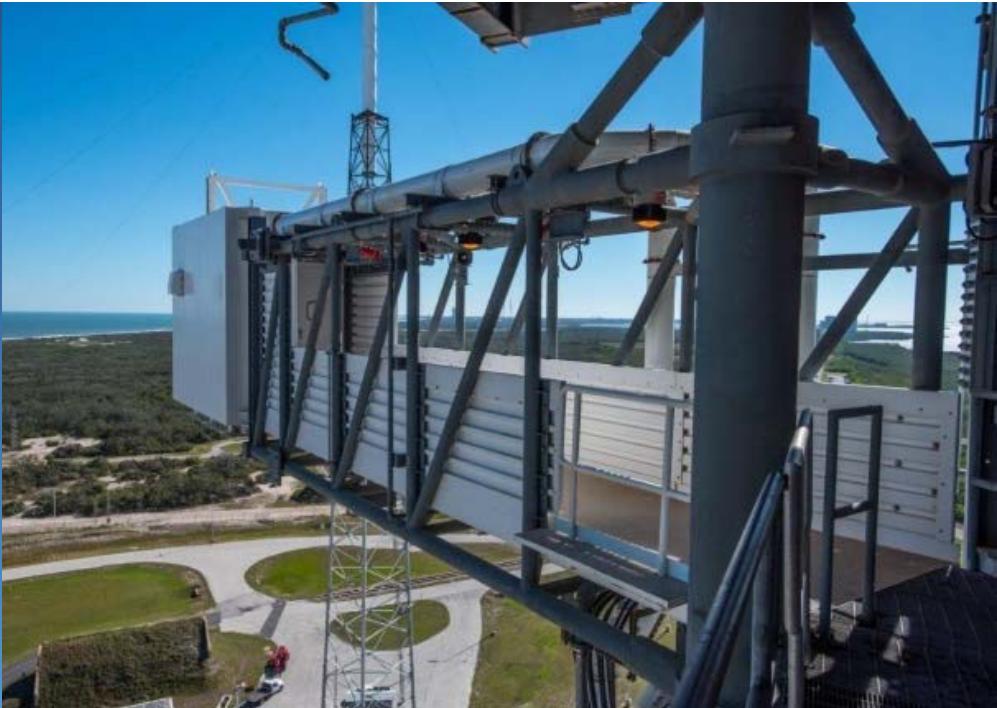
ULA MULTI-MANIFEST CAPABILITY OVERVIEW

	CAPABILITY	STATUS	INTERFACE	MAXIMUM # PER LAUNCH	MAXIMUM MASS PER PAYLOAD	VOLUME PER PAYLOAD
RIDE-SHARE	CubeSat Express Aft Bulkhead Carrier (ABC) (<i>Tyvak Nanosatellite Systems</i>)		Operational	15-in Sep System	(4) 6u CubeSats or 1 ABC	80 kg (176 lb) 51 cm x 51 x 76 cm (20 in x 20 in x 30 in)
	ESPA (EELV Secondary Payload Adapter)		Operational	15-in Sep System	Up to 6 S/C	181 kg (400 lb) 61 cm x 71 cm x 96 cm (24 in x 28 in x 38 in)
	ESPA Grande (EELV Secondary Payload Adapter)		Operational	24-in Sep System	Up to 4 S/C	318 kg (700 lb) 100 cm x 115 cm x 125 cm* (39 in x 45 in x 49 in*) * For 5m PLF Only
	AQUILA (<i>Adaptive Launch Solutions</i>)		Qualified	Multiple Configurations	Up to 3 S/C per AQUILA	1,000 kg (2,200 lb) 142-cm dia. x 152 cm (56-in dia. x 60 in)
DUAL-MANIFEST	DSS-4 (Dual Spacecraft System, 4-m)	CDR Complete	62-in Bolted	1 DSS-4	Forward	2,270 kg (5,000 lb) 365-cm-dia. x 658 cm (144-in-dia. x 259 in) (3-plug)
					Aft	9,000 kg (19,800 lb) 254-cm-dia. x 445 cm (100-in-dia. x 175 in) (3-plug)
	DSS-5 (Dual Spacecraft System, 5-m)	CDR Complete	62-in Bolted	1 DSS-5	Forward	5,440 kg (12,000 lb) 457-cm-dia. x 762 cm (180-in-dia. x 300 in)
					Aft	9,000 kg (19,800 lb) 375-cm-dia. x 487 cm (148-in-dia. x 192 in)



MERCURY TO COMMERCIAL CREW

INFRASTRUCTURE UPGRADES FOR HUMAN SPACEFLIGHT

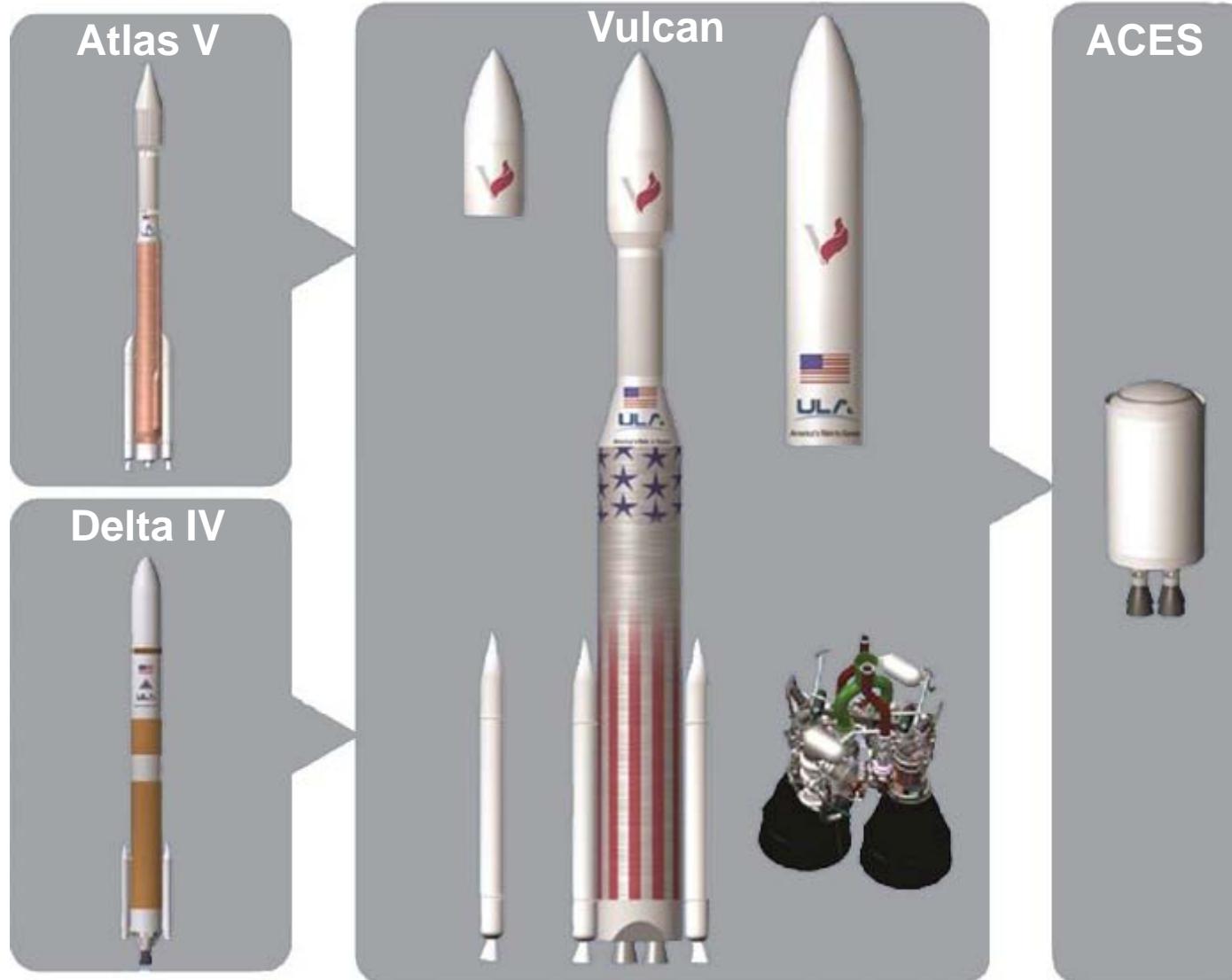






Credit Sierra Nevada Corporation

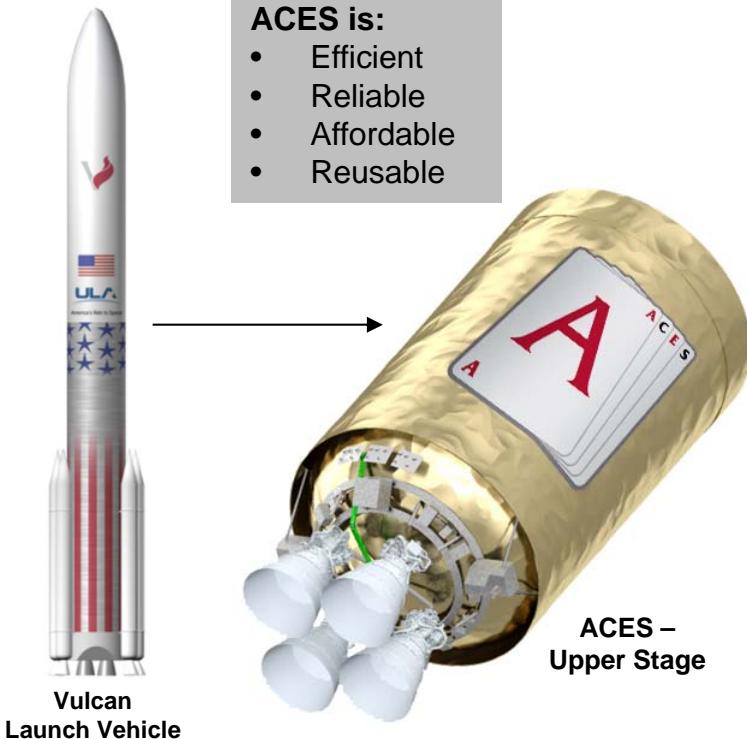
SIMPLE AND MORE POWERFUL ROCKET



CISLUNAR TRANSPORTATION SYSTEM

ACES:

Advanced Cryogenic Evolved Stage
➤ Vulcan upper stage reusable in space



ACES is:

- Efficient
- Reliable
- Affordable
- Reusable

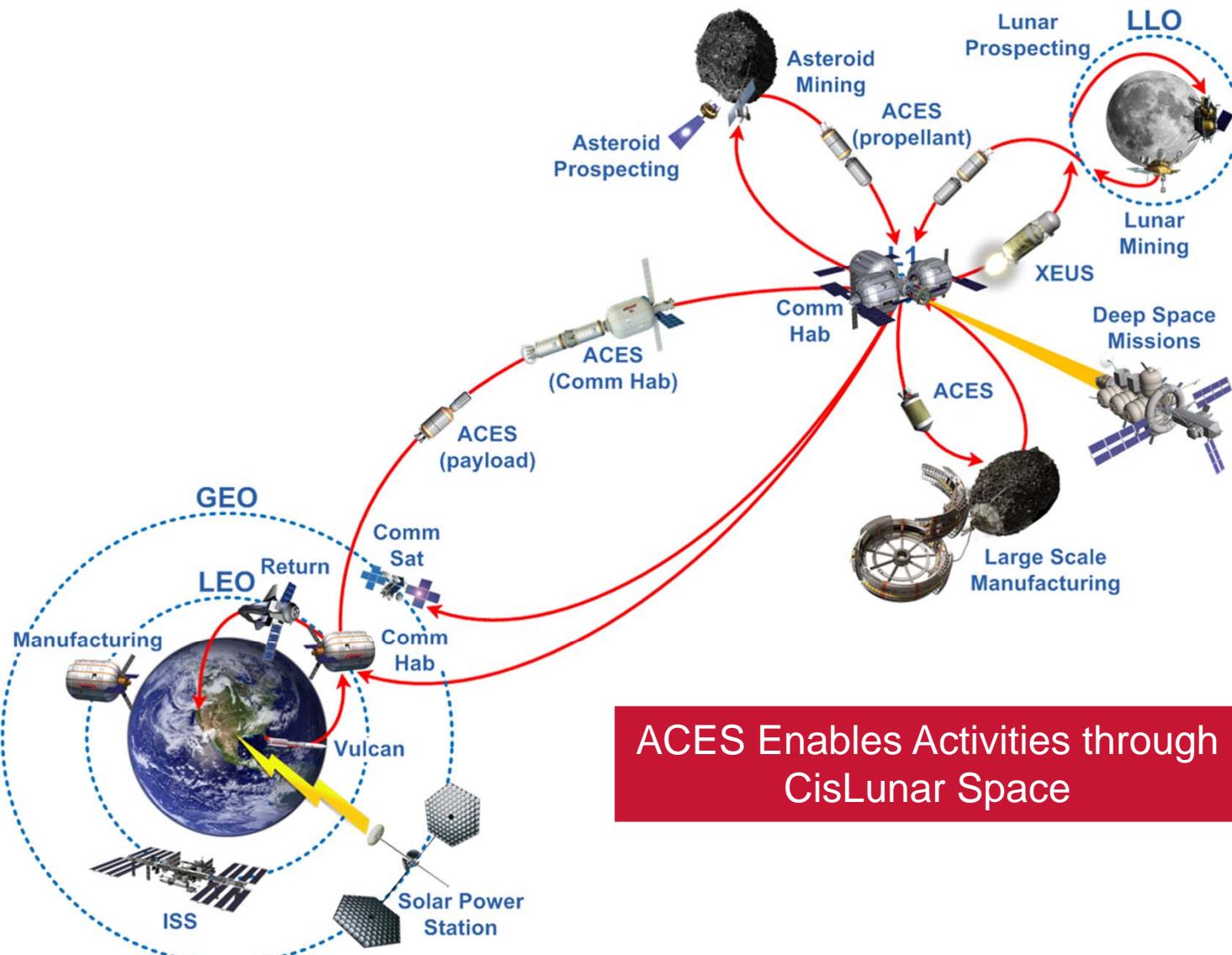
Fueled with liquid oxygen and liquid hydrogen propellant **provided** from:

- Earth
- Moon
- Asteroids



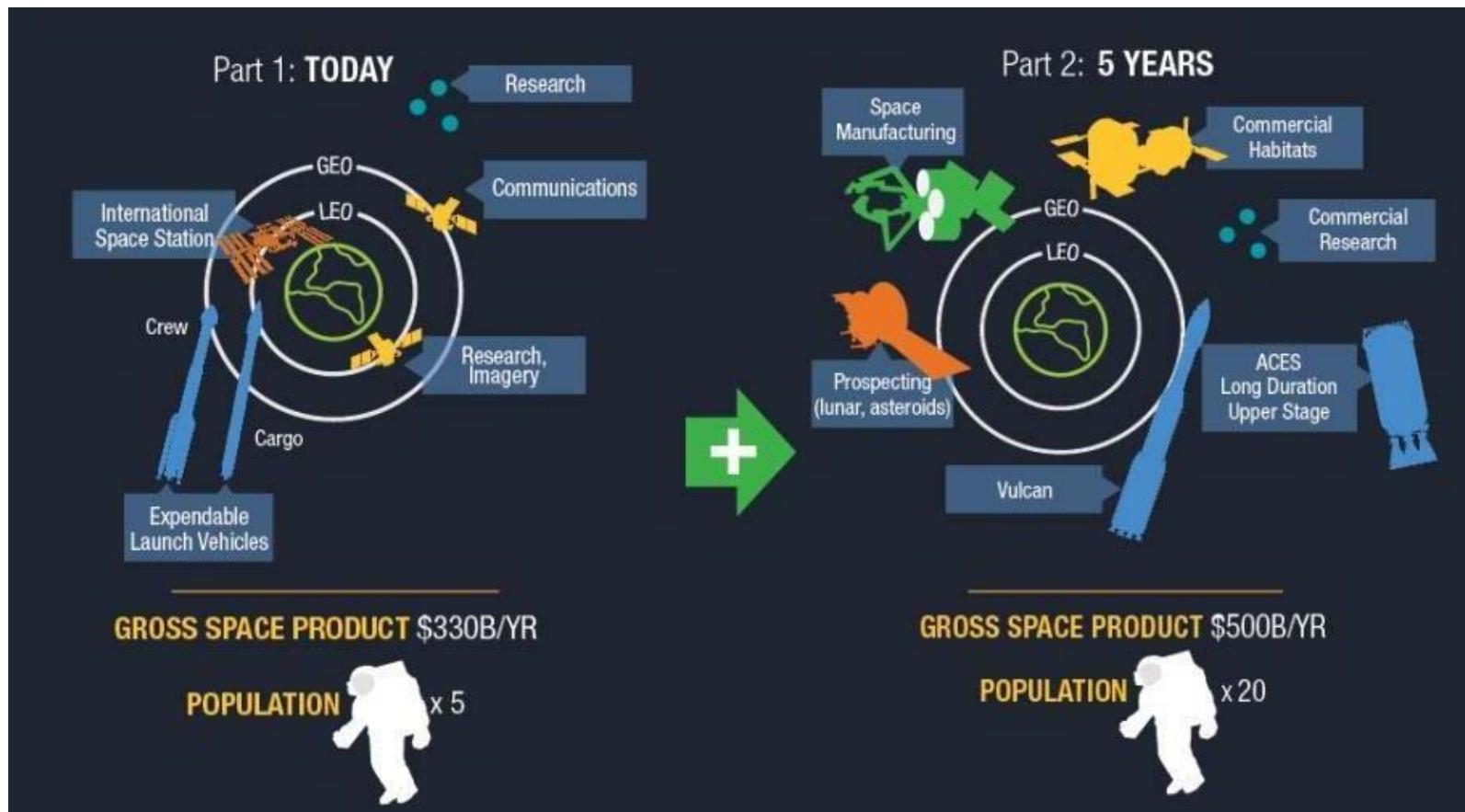
ACES is the Revolutionary Foundation Enabling
Space Transportation that Avoids Earth's Deep Gravity Well

CISLUNAR ECONOMIC ACTIVITIES



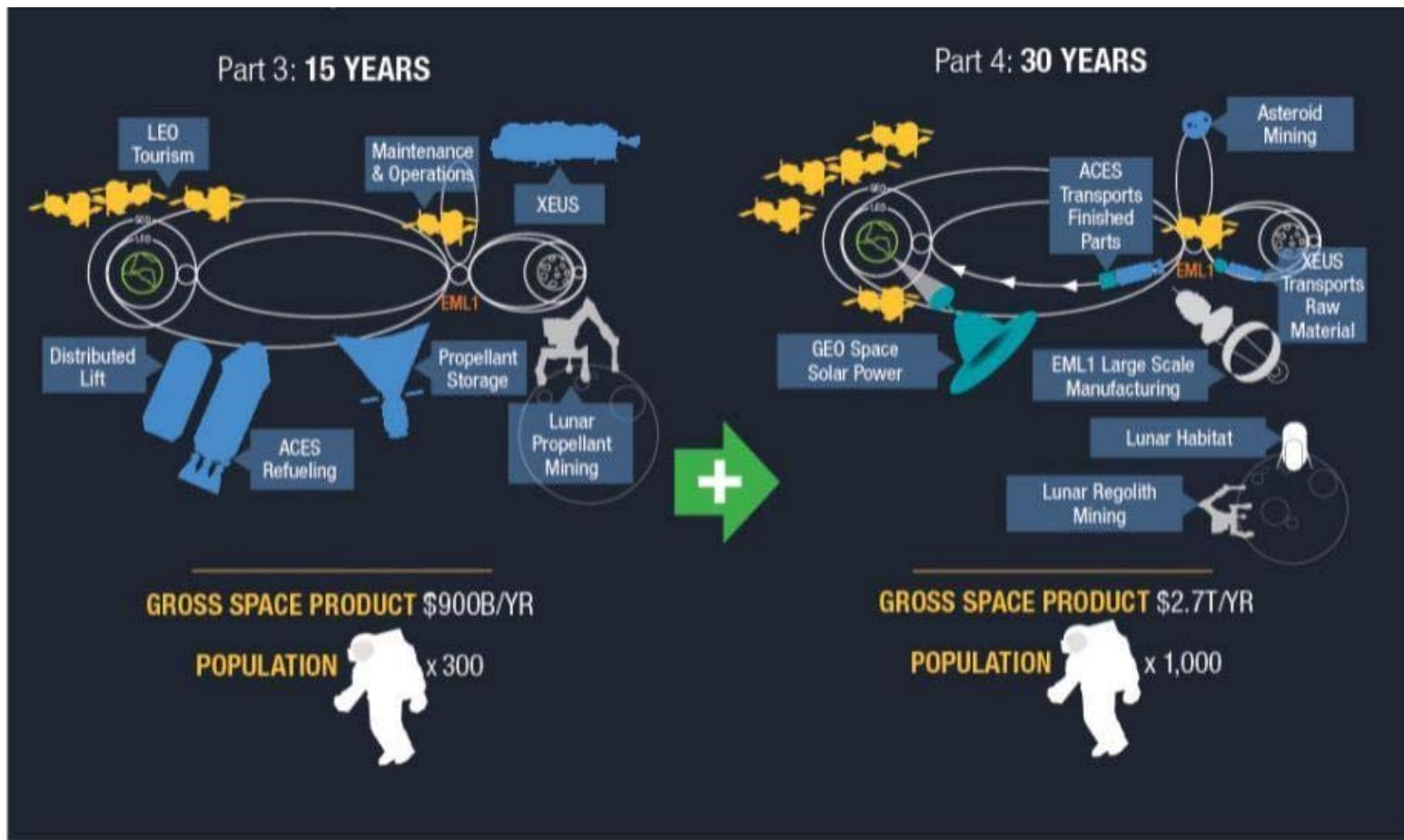
CISLUNAR-1000SM VISION

The First 5 Years



CISLUNAR-1000SM VISION

The Next 25 Years





America's Ride to Space