

Astral Space

Refueling satellites today, building the infrastructure for a
multiplanetary future tomorrow.

No In-Space Refueling Today That Meets Industry Demand

NEAR-TERM · ON ORBIT REFUELING

- The **limiting factor** for satellites and spacecraft is **fuel**.
- **Fuel is their only consumable**
- **Military assets** are **sitting ducks** without refueling
- All spacecraft are **limited in capabilities without refueling**
- 16k+ satellites in space, more launched every month, satellites are getting bigger and bigger

Astral's dedicated refueling spacecraft



Satellite & Spacecraft Refueling Services

2 Services (**Interface & Propellant Agnostic**):

- **Dedicated refueling spacecraft** delivered directly to our customers' assets wherever they are in space
- **Fuel depot** staged in space where our customers can refuel on a recurring basis

Benefits of Refueling:

- **1 kg of additional propellant -> \$1M+ of revenue for a satellite**
- Military assets get mobility
- Orbital Transfer Vehicles, Lunar Landers, etc. can be reused and extend their lives drastically



Astral builds the refueling infrastructure for orbit today, then for the Moon tomorrow

REFUELING SATELLITES & SPACECRAFT IN ORBIT

- Support the satellites and spacecraft in space today and flying soon
- Near-term revenue that funds our long-term lunar buildout

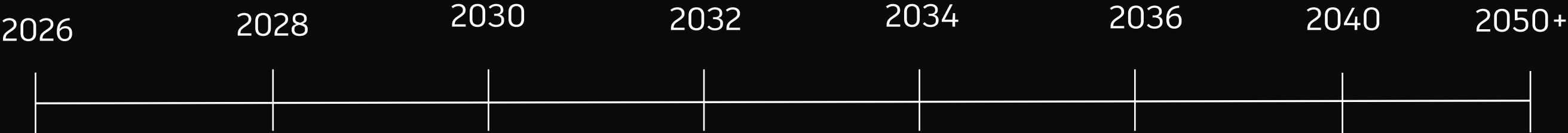


LUNAR FUEL PRODUCTION

- Infrastructure to prospect, mine, and produce fuel from lunar resources
- Enables lunar lander reusability, more mass to the Moon per landing, NASA's lunar base and cheaper fuel across space
- Fuel delivered from the Moon to Earth's orbit needs 10X less energy than fuel delivered from Earth



Phased path from near-term refueling to a \$25B+ in-space economy



Phase 1

2026+
TAM: \$10B
What We Offer: Satellite & Spacecraft Refueling from Earth



Phase 1.5

2027–2032
TAM: \$250M
What We Offer: Lunar Surface Data, Mobility & Payload Capacity



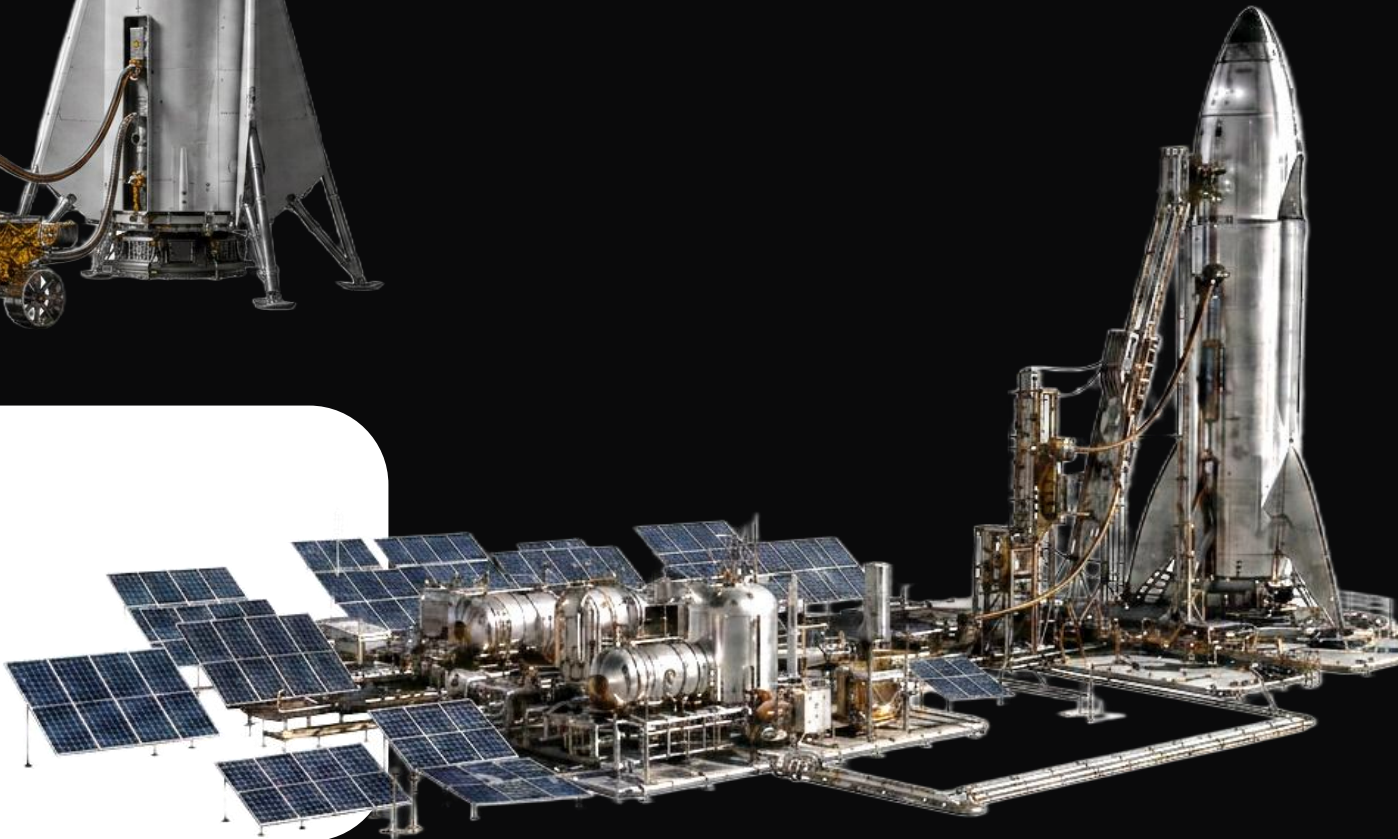
Phase 2

2029–2036
TAM: \$5B
What We Offer: Lunar Water, Oxygen, Propellant Supply, Lunar Mobility, Hydrogen Fuel Cells



Phase 3

2032 & Beyond
TAM: \$25B
What We Offer: Full scale lunar fuel production, in-space refueling. Habitat consumables. Energy production.



PHASE 1.5 · LUNAR

SCOUT Rover

Status

- System design complete
- V1 prototype built
- Sensor shortlist finalized
- 2 Missions in work for 2028 & 2029 to deploy and gather data. Customers lined up.



LONG-TERM VISION

Lunar Infrastructure

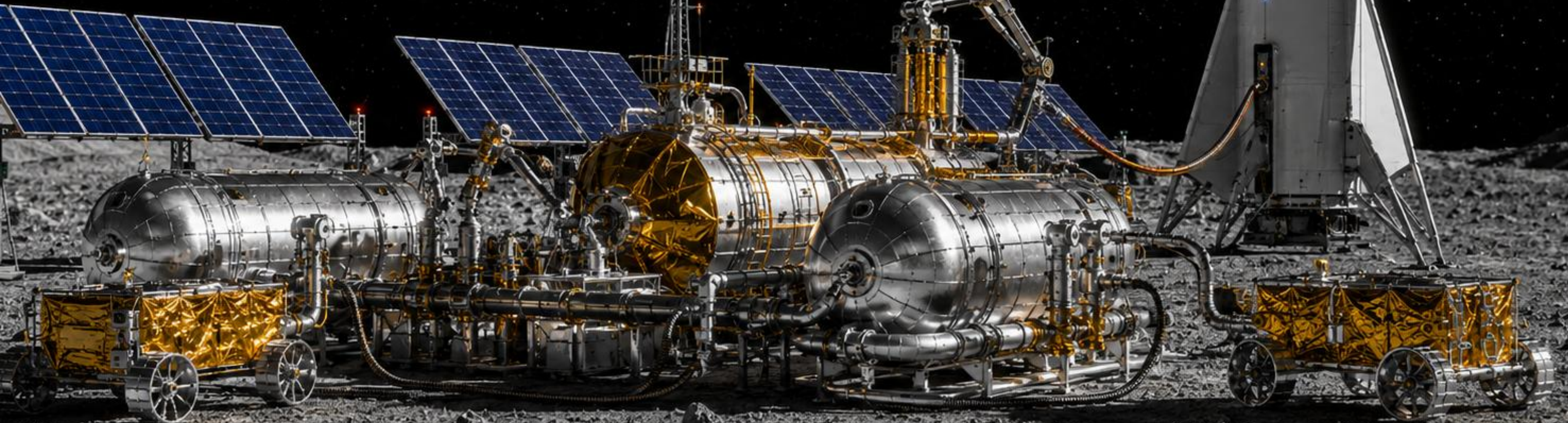


SCOUT - Prospecting



ARDA - Mining

PORT - Lunar Fuel Production & Delivery



Competition

Satellite Refueling Competition

Orbit Fab

\$20M Series B fundraise and changed CEOs over the last few months. They're trying to go from R&D to production. Only targeting satellites built with refueling interfaces.

Northrop Grumman

Legacy aerospace company, targeting all satellites, also attempting to transition from R&D to production. Targeting satellites with and without refueling interfaces.

Spaceium

YC backed startup, raised a \$6.3M seed in January 2025, sent 1 small mechanism to space. Not much else is publicly available regarding their progress.

Astroscale

Raised a Series G in 2023. Went public on Tokyo Stock Exchange in 2024. They have US Space Force and Japanese Science/Tech Agency contracts for tech demo refueling missions.

Who Am I?

- Started my career at Firefly Aerospace, developed mechanisms and cryogenic components for rockets
- Joined Blue Origin to develop some of their first in-house cryogenic quick disconnects, then led other critical component deliveries
- Completed my MS in Aerospace Engineering from CU Boulder while working full time at Blue
- Left Blue Origin to start Astral Space, an in-space commodities company





So, do you want to build the future? **Join our pre-seed round**