IM Looking Ahead

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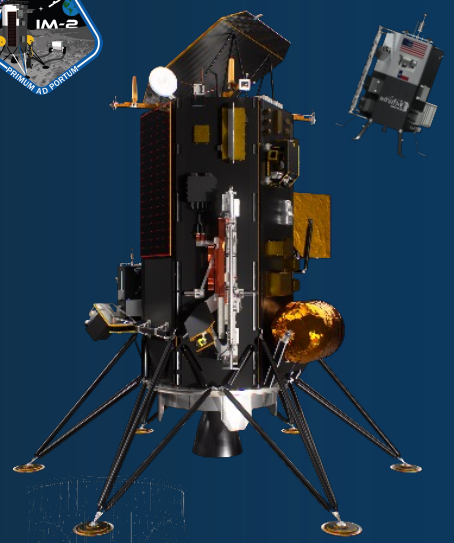
Surface Missions

IM-1

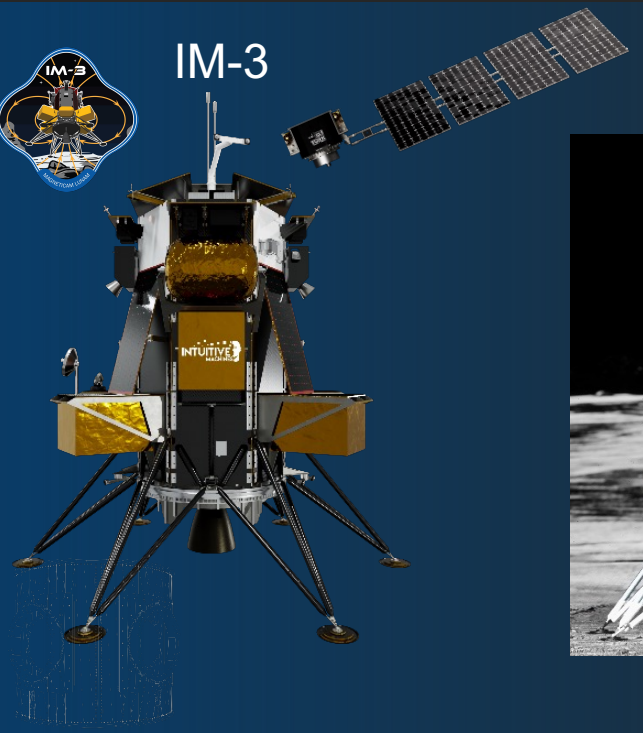
Feb 2024

IM-2



Mar 2025

IM-3



Q1 2026

IM-4

Q4 2027

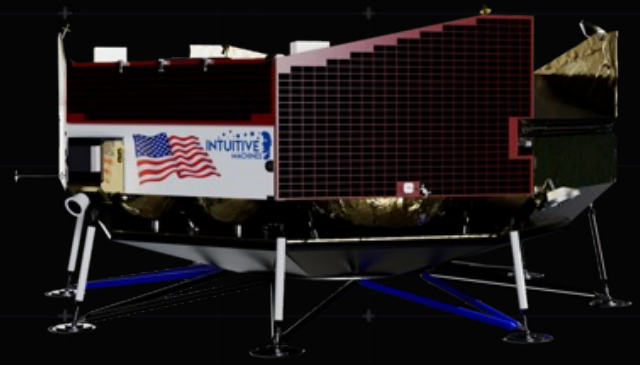
Lunar Surface Delivery
NOVA Lander Series

NOVA-C

- Global access
- 130 kg payload capacity
- Wide variety of mounting options

NOVA-D

- Derived from Nova-C, improved capability, and redundancy
- Different variants depending on class of booster used
  - Nova-D Science - 500 kg on a Falcon-9
  - Nova-D Cargo - 1500 - 2500 kg on Falcon Heavy

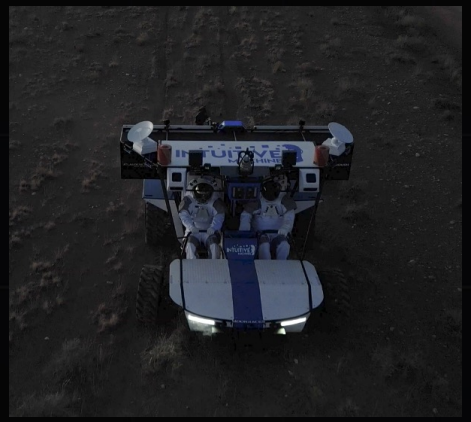


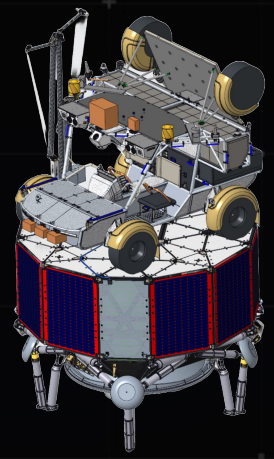
Nova-C is a Technology Leader…

…to Multiple Capabilities

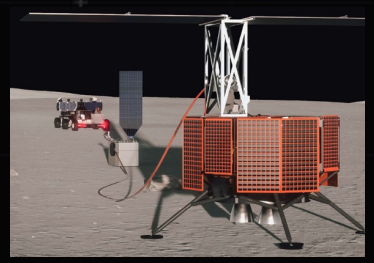
NOVA-C is an autonomous communications satellite that lands on the Moon.

μNova Hopper (built)

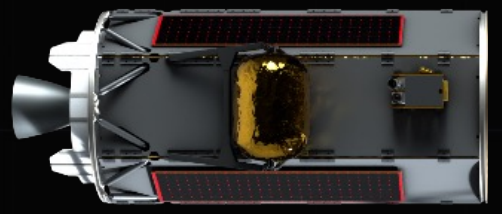




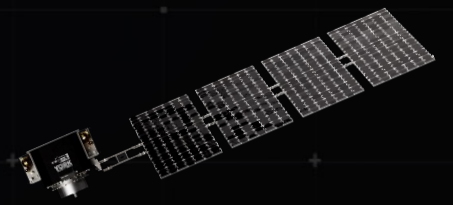
Lunar Terrain Vehicle + Nova-D



NASA/AFRL Fission and Radio Power



Nebula High Energy Orbit Transfer Vehicle



Lunar Data Network Satellites

Zephyr Earth Entry Vehicle

Moon RACER
Lunar Terrain Vehicle

LTV
MOON RACER
EXPLORATOR LUNAE

Experienced Team

Heritage Lander Systems

Nova Control

Lunar Data Network (LDN)

Micro Nova Hopper

Lunar Surface Hopper Services

- Ability to host up to 8 kg of payloads on a hopper that explores up to 25 km from the lunar lander and provide extreme access to shadowed regions and craters

Extreme Access

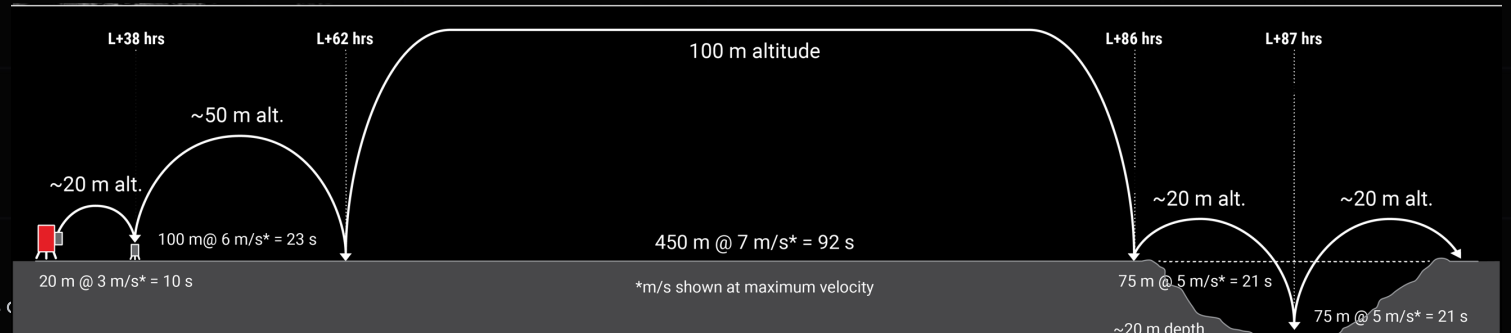
- Pits/caves/crater floors
- Rough/blocky targets
- Cliff scaling
- Permanently Shadowed regions

Ultra Precise Landing

- Target < 2 m radius starting from deployment location
- Update mission profile as you go

Regional Exploration

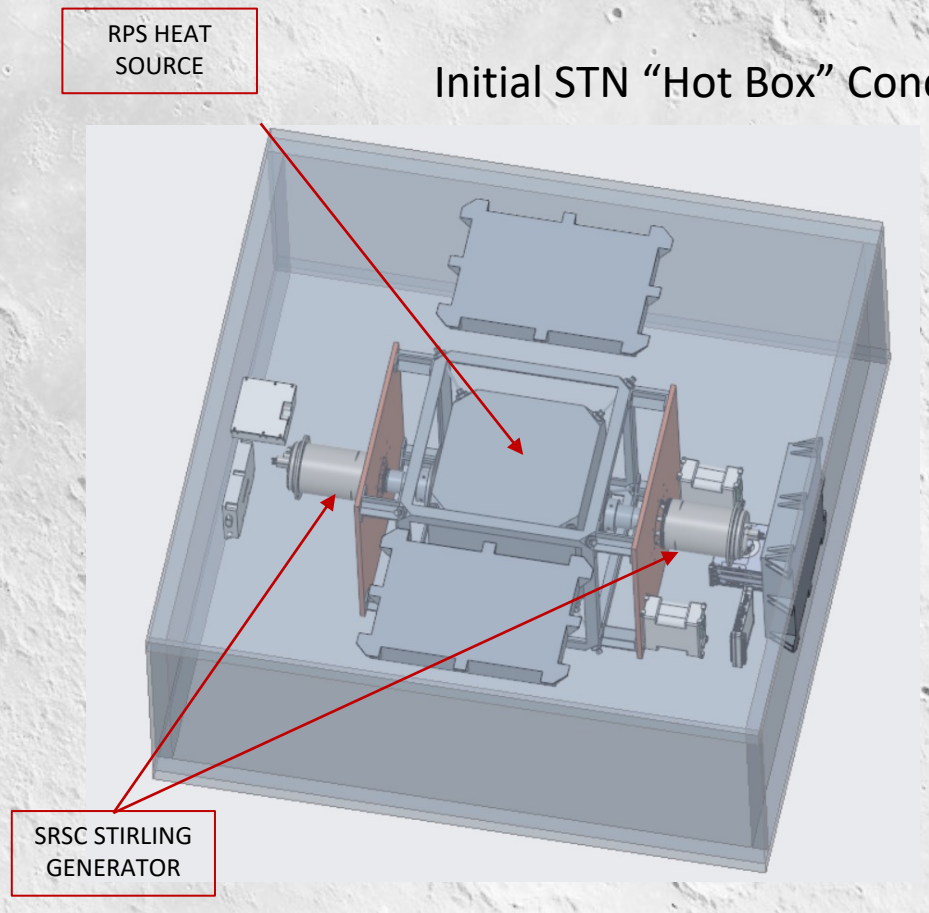
- Traverse large distances in one lunar day
- Fly prescribed trajectories
  - Parabolas, or constant altitude
- Achieve < 1 cm imagery over large tracts of land
- Deploy/utilize instrument and/or microrover



Survive the Night Generator

- RPS Solution Derived from current IM projects
- Dual-opposed SRSCs doubles output:
  - Power to Bus: 70 We → 140 We
  - Waste Heat: 150 Wt → 300 Wt
- Trading RPS Heat Sources:
  - Am-241 very similar to Pu-238
    - High power density reduces mass by 4x
    - Long half life to meet 6-yr STN requirement
    - Negligible radiation environment easily shielded
      - Allows crew ops in immediate vicinity
  - Requirements:
    - 2-4 kg Am-241 per generator
    - As early as 2028
    - Am-241 price target ~$20K per kg
- Generator mass target <40kg

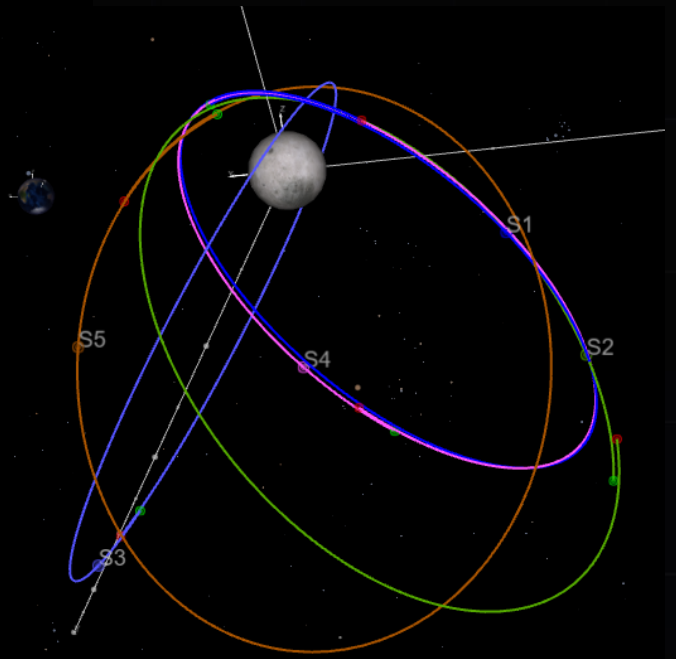
Initial STN “Hot Box” Concept

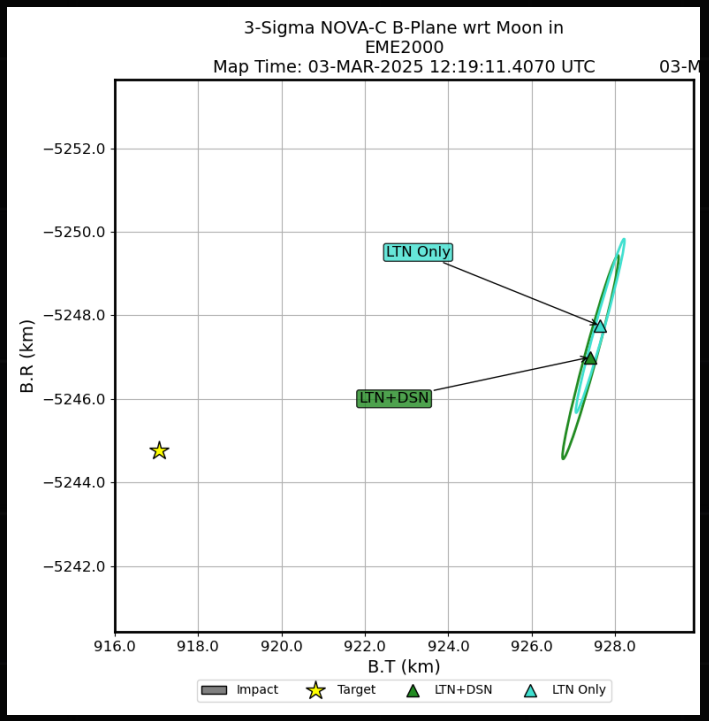


Commercial Lunar Data Network: LDN

Nova Control
Houston, Texas and Perth, Australia

Validated on the IM-1 and IM-2 missions





MURRIYANG,
CSIRO'S 64M PARKES RADIO TELESCOPE

IM-3 NASA Payloads

- MoonLIGHT: Laser Reflector
  European Space Agency
- LUSEM: Charged Particle Detector
  Korean Space Agency
- CADRE: Rover Swarm
  NASA Jet Propulsion Laboratory
- Lunar Vertex: Lunar Magnetic Anomaly Explorer
  JHU/APL

IM-3 Commercial Payloads

- ALEPH-1: Plant Growth Experiment
  Australia
- Felix & Paul VR Camera
  Canada
- LaRRI: Laser Reflector
  Italy
- SSTEF-1: Science & Testing Facility
  Aegis Space

IM-3 Rideshare Payloads

- Lunar Data Network Satellite - 1
  Intuitive Machines

IM-3 Mission

2026

LDNS-Hosted Payloads

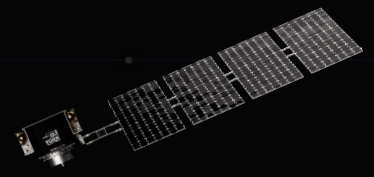
- IM's LDNS architecture consists of 5 satellites in elliptical lunar orbits
- Orbits are selected to maximize comm/PNT for the Moon's south polar region, in support of NASA's Near Space Network contract
  - Orbits: ~1,000 x 18,000 km
  - 6th s/c could be placed into a different orbit, more amenable to surface imaging

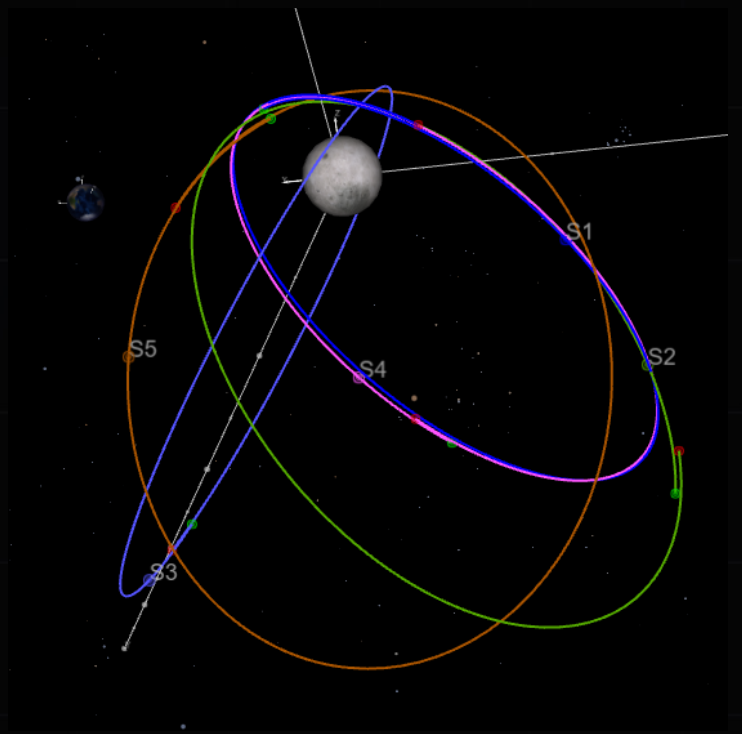
- Each LDNS s/c has ~40 kg available for additional payloads

- IM intends to fly additional payloads on every LDNS satellite

LDNS-1 Hosted Payloads:

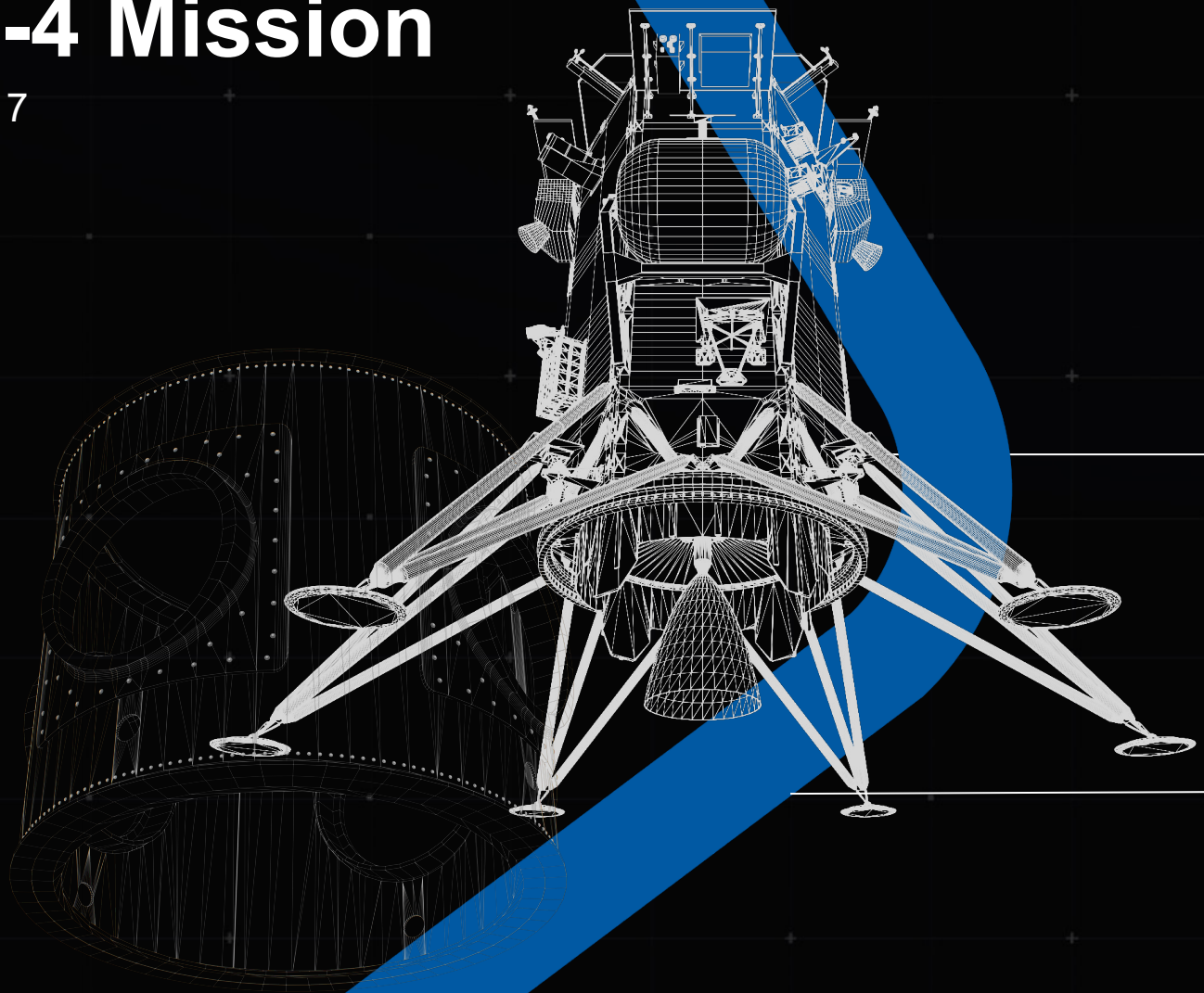
1. Multispectral – Scanway – Poland
2. Thermal imager – U Hawaii
3. Radiation – U New Hampshire
4. HD video – Raptor – United Kingdom





IM-4 Mission

2027



IM-4 NASA Payloads

- PROSPECT: ISRU Package
  European Space Agency
- LEIA: DNA and Surface Radiation Instrument
  NASA Ames
- L-CIRiS: Infrared Imaging System
  CU Boulder
- SEAL: Exosphere Instrument
  NASA GSFC
- Fluxgate Magnetometer
  NASA GSFC

IM-4 Commercial Payloads

- Rover
  TASA
- LunaX: Laser Navigational Aid
  Advanced Navigation

IM-4 Rideshare Payloads

- Lunar Data Network Satellite - 2
  Intuitive Machines
- Lunar Data Network Satellite - 3
  Intuitive Machines

Opportunities

Ride Share
- TLI Throw
- Drop of in lunar orbit
- Drop off from LDNS satellite

Hosted Payloads
- Instruments on LDNS satellites
- Instruments on IM mapping orbiter

Small Orbiters
- Bus in a bespoke orbit

Surface Payloads
- Payloads or entire mission suites
- Survive the night capability

Cislunar Infrastructure
- Comm relay
- LTV Trailer


IM-1
NOVA-C
ADTIGO PLANITIA LUNAE

THANK YOU!


IM-2
PRIMUM AD PORTUM


IM-3
MAGNETICAM LUNAM