D-ORBIT

SPACE BOUND

MISSION BOOKLET

Mission name: Space Bound
Carrier name: ION SCV Charismatic Carlus

Fino Mornasco, Italy, June 24, 2025 – On June 23, 2025, D-Orbit, a global leader in space logistics and orbital transportation, launched **Space Bound** and **Skytrail**, the **18th and 19th commercial missions** of **ION Satellite Carrier (ION),** its orbital transfer vehicle (OTV), aboard **SpaceX's Transporter-14 mission**.

The two IONs were launched from **Space Launch Complex 4E (SLC-4E)** at **Vandenberg Space Force Base** in California at **02:25:0 P.M. PT (21:25:00 UTC).** Following liftoff, the OTVs, **ION SCV Charismatic Carlus** and **ION SCV Passionate Paula**, were released into a Sun-synchronous Orbit at an altitude of approximately 590 and 510 km, respectively.

ION Satellite Carrier is a versatile space vehicle capable of **transporting and releasing satellites into distinct orbital slots**. It can also accommodate third-party payloads, including innovative technologies, research experiments, and instruments requiring **in-orbit testing**. Additionally, ION can support **edge computing and space cloud services**, providing satellite operators with advanced storage and computational capabilities in orbit.

D-Orbit's mission control team is now conducting the **Launch and Early Orbit Phase (LEOP)**, setting the stage for the upcoming operational phase.

Photo credit: SpaceX

A note about the name of the satellite carrier

The name of the satellite carrier is "ION Charismatic Carlus", a combination of the acronym "ION", which stands for "InOrbit NOW", and the satellite's first name. This format follows the naming conventions of naval vessels used in navies around the World. The name "Carlus" was drawn at random from a bowl containing the names of all D-Orbit's employees. The company will continue to follow this procedure in the future to honor the skills, energy, passion, and commitment to its people.

ION SCV Charismatic Carlus and team

Name of payload: Lemur

Form factor: 2x 4U

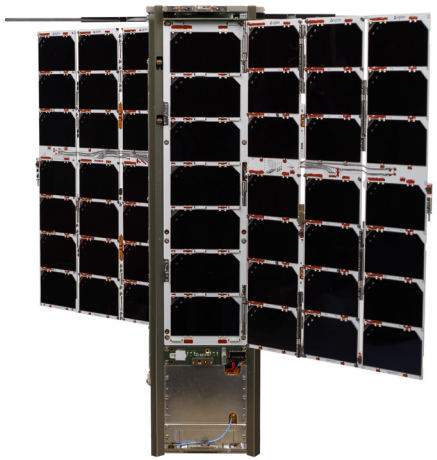
POC: Sarah Freeman
comms@spire.com

These two satellites comprise a Spire-built platform, and a Lacuna-built IoT gateway, expanding Lacuna Space's IoT constellation, which is designed to deliver low-cost, reliable global connections to sensors and mobile equipment in remote locations. The constellation supports IoT services across agriculture, environmental monitoring, smart metering, and the blue economy— with use cases ranging from measuring soil moisture, to improve crop yields in remote regions, to tracking the movement of critical assets.

COMPANY PROFILE Website: www.spire.com

Spire (NYSE: SPIR) is a global provider of space-based data, analytics and space services, offering unique datasets and powerful insights about Earth so that organizations can make decisions with confidence in a rapidly changing world. Spire builds, owns, and operates a fully deployed satellite constellation that observes the Earth in real time using radio frequency technology. The data acquired by Spire's satellites provides global weather intelligence, ship and plane movements, and spoofing and jamming detection to better predict how their patterns impact economies, global security, business operations and the environment. Spire also offers Space as a Service solutions that empower customers to leverage its established infrastructure to put their business in space. Spire has offices across the U.S., Canada, UK, Luxembourg, Germany and Singapore

Photo credit: Spire



Data from space is being used to tackle some of the world's most pressing challenges. With Spire Space Services, we're making it easier, faster, and more accessible for customers like Lacuna Space to turn that data into real-world impact.

Joel Spark,
Co-Founder & Chief
Satellite Architect

Name of payload: PBI

Type of payload: Water Ion Thruster

POC: Yoko Nakayama
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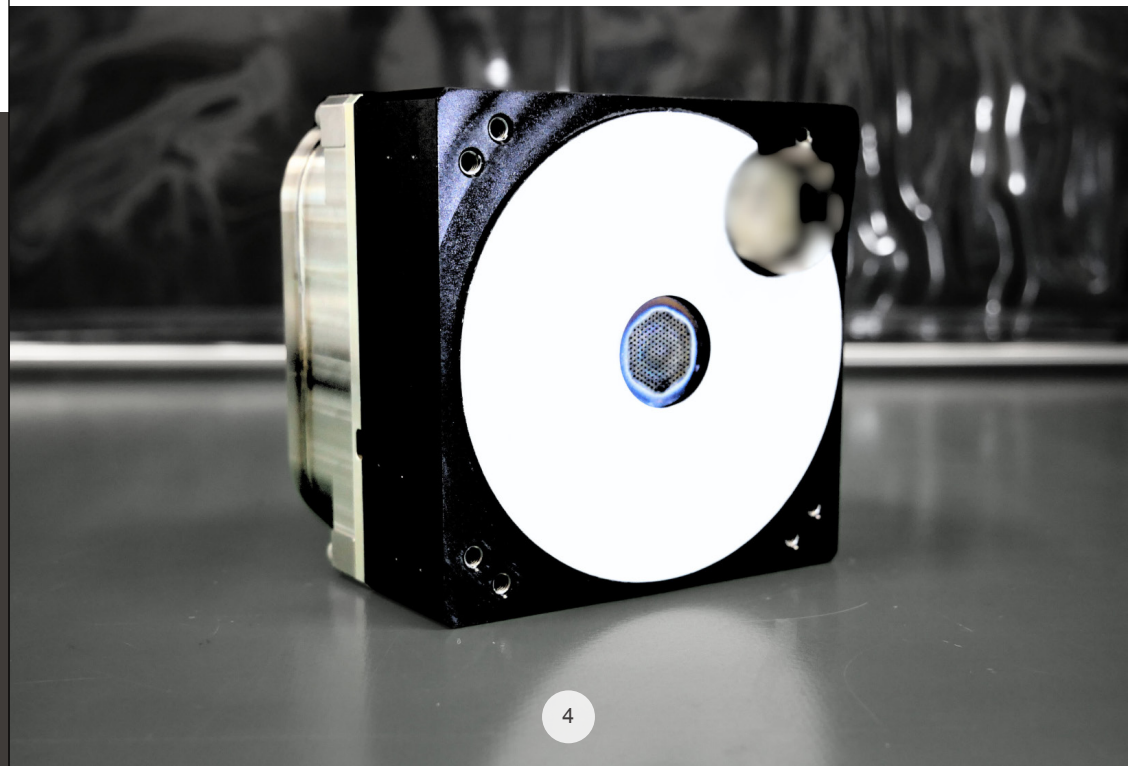
The PBI water ion thruster redefines smallsat mobility. This miniaturized gridded ion thruster delivers best-in-class total impulse per unit. Its no-high-pressure and propellant-preloaded design eliminates the need of fueling work at launch site. Fully integrated and clusterable, PBI supports a wide range of nanosats and microsats with missions that require high efficiency and reliability.

COMPANY PROFILE Website: pale-blue.co.jp

Pale Blue develops and manufactures propulsion systems for small satellites, serving satellite integrators and operators worldwide. Since its founding in 2020, Pale Blue has successfully achieved in-orbit operations of water-based propulsion systems a number of times, providing highly reliable solutions. While further expanding its product offering through R&D and in-orbit operations, Pale Blue is also strengthening production capabilities to meet the growing demand for propulsion systems. Pale Blue is committed to creating mobility that is core to the space industry, driving the next generation of space development.

Photo credit: Pale Blue



MAGDRIVE

Name of payload: Rogue Thrusters

Type of payload: Thrusters

POC: Katrina Nichols
knichols@magdrivespace.com

The “Going Rogue” Mission is Magdrive’s first In Orbit Demonstration of their Rogue thruster. Rogue is Magdrive’s first leap into the future of space propulsion. Compact, powerful, and radically efficient, Rogue uses solid metal as its propellant, turning it into plasma to generate bursts of thrust far beyond what traditional electric systems can manage.Rogue is able to deliver up to 10 mN of force, enough to shift satellites with precision, perform last-minute collision avoidance, and tackle deep-space manoeuvres. Built with internal energy storage, it’s not just fast, it’s sustainable.

COMPANY PROFILE Website: www.magdrive.space

Magdrive is a UK-based pioneer in electric propulsion; dedicated to revolutionising in-space propulsion. With their next-generation electric plasma thrusters using metal propellant, Magdrive is transforming the industry by delivering unmatched thrust and efficiency. From satellite servicing to in-space transport, Magdrive is leading the charge in enabling new possibilities for space exploration and beyond. Magdrive boasts an expert team with extensive experience in mechanical engineering, plasma physics, and pulsed power electronics. Magdrive was started in 2020 by CEO Mark Stokes and CTO Dr. Thomas Clayson and are based in Oxfordshire, UK and Los Angeles, USA

Photo credit: Magdrive

constellation .global

Name of payload: Early Test Payload

Type of payload: 5G Telecommunication Payload

POC: Insaf Boukharouba
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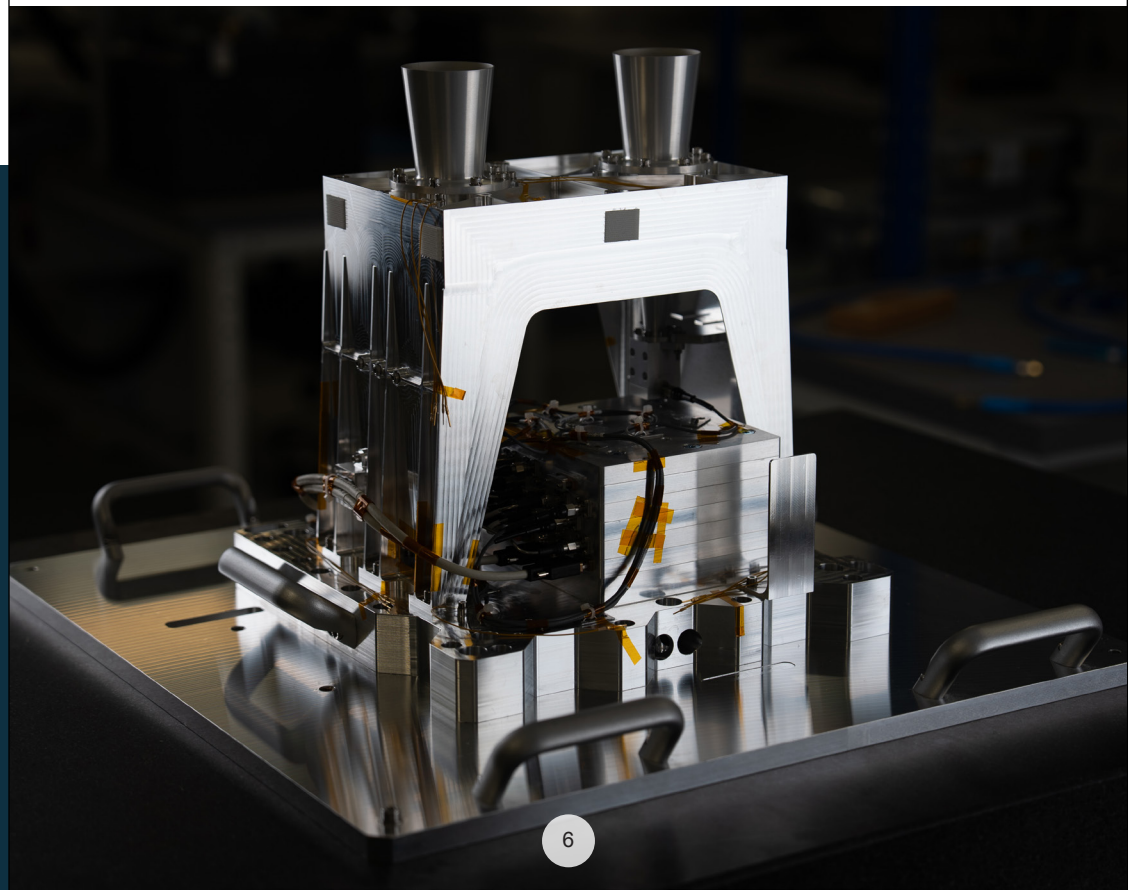
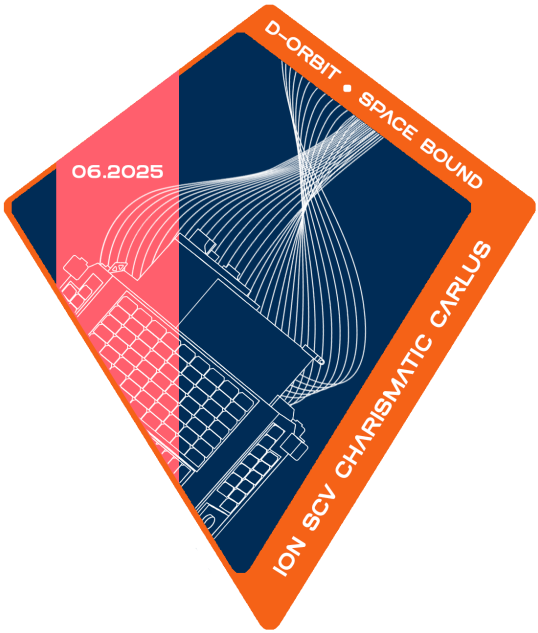
A regenerative 5G mmWave payload developed by Constellation Technologies & Operations (CTO) to enable low-latency, and high-speed connectivity from Very Low Earth Orbit (VLEO), with initial testing and validation for future satellite operations.

COMPANY PROFILE Website: www.constellation.global

Constellation Technologies & Operations (CTO) is a European space-tech and telecommunications company building a global Very Low Earth Orbit (VLEO) satellite constellation to deliver high-speed, low-latency connectivity using 5G mmWave technology. CTO partners with telecom operators to extend terrestrial infrastructure coverage into underserved and remote areas.

Photo credit: Constellation Technologies & Operations





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