D-ORBIT

WE NEED MORE SPACE

MISSION BOOKLET

Mission name: We Need More Space
Carrier name: ION SCV Stellar Stephanus

Fino Mornasco, Italy, December 1, 2025 – On November 28, 2025, D-Orbit, a global leader in space logistics and orbital transportation, launched **We Need More Space** and **Ride With Me**, the **20th and 21st commercial missions** of its orbital transfer vehicle (OTV), **ION Satellite Carrier (ION),** aboard **SpaceX's Transporter-15 mission**.

The two ION vehicles were launched from **Space Launch Complex 4E (SLC-4E)** at **Vandenberg Space Force Base** in California at **10:44 a.m. PT (19:44 UTC).** Following liftoff, the OTVs, **ION SCV Stellar Stephanus** and **ION SCV Galactic Georgius**, were released into a Sun-synchronous Orbit at an altitude of approximately 510 km.

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 Stellar Stephanus", 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 "Stephanus" 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 Stellar Stephanus,
ION SCV Galactic Georgius, and team

Name of payload: LEMUR-2-STARLIGHT
LEMUR-2-TARTIFLETTE

Form factor: 2x 3U

POC: Sarah Freeman
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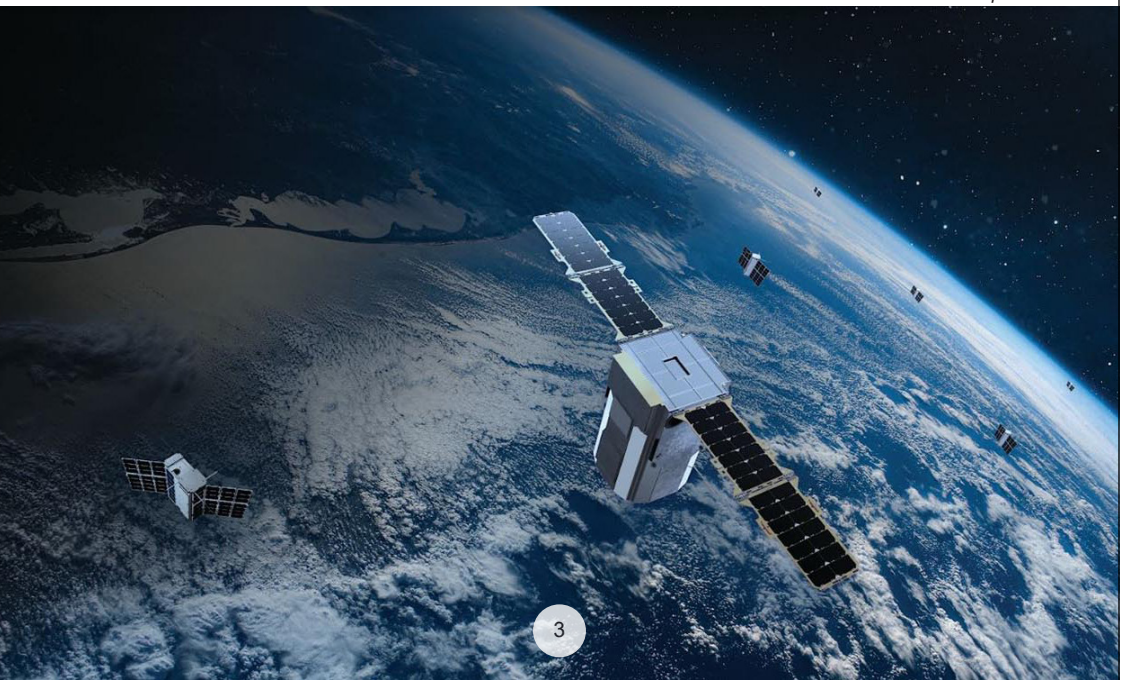
LEMUR-2-STARLIGHT and LEMUR-2-TARTIFLETTE are part of Spire's replenishment program, sustaining and enhancing the company's fully deployed multipurpose constellation. The satellite carry advanced Radio Occultation (RO) and Automatic Identification System (AIS) payloads to deliver high-quality atmospheric and radio frequency data that support global weather monitoring and commercial intelligence. Together, they provide critical insights to better understand and respond to changes in Earth's environment.

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 and Germany.

Photo credit: Spire



Name of payload: Lacuna-3 and Lacuna-4

Form factor: 2x 4U

POC: Sarah Freeman
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Lacuna-3 and Lacuna-4 combine a Spire-built platform with Lacuna's latest-generation IoT payloads, expanding Lacuna Space's constellation designed to deliver low-cost, reliable global connections to sensors and mobile equipment in remote locations. The constellation supports IoT services across agriculture, logistics, energy, environmental monitoring, and the blue economy—enabling applications from improving crop yields to tracking critical assets worldwide.

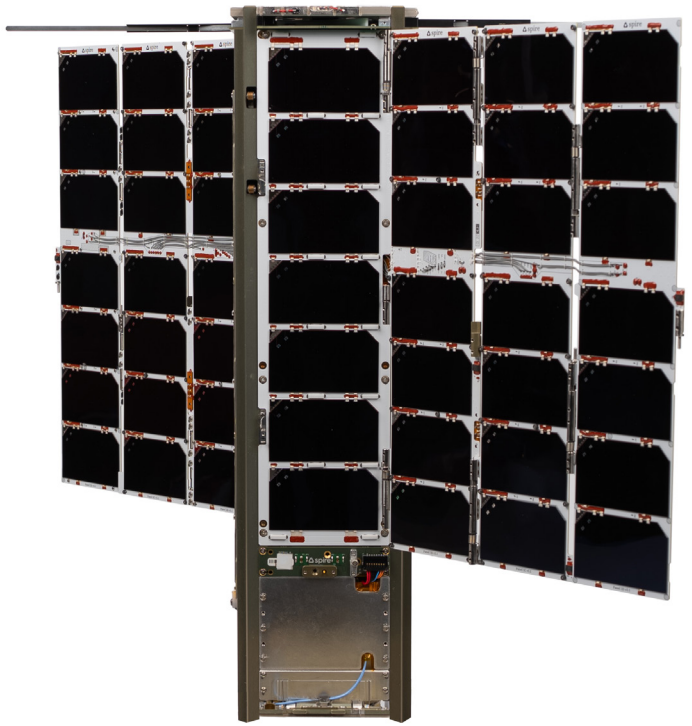

Photo credit: Spire

Aalto University

Name of payload: Foresail-1 prime

Form factor: 3U

POC: Jaan Praks
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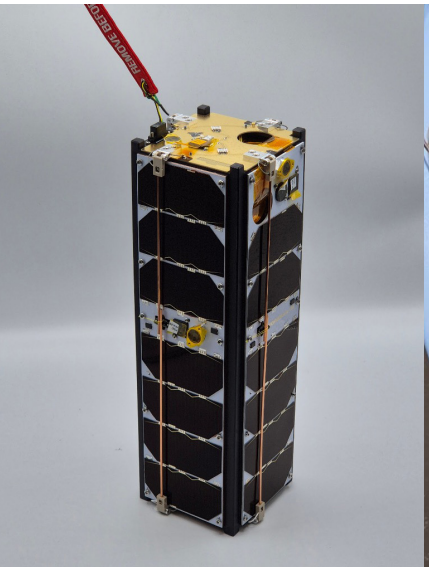
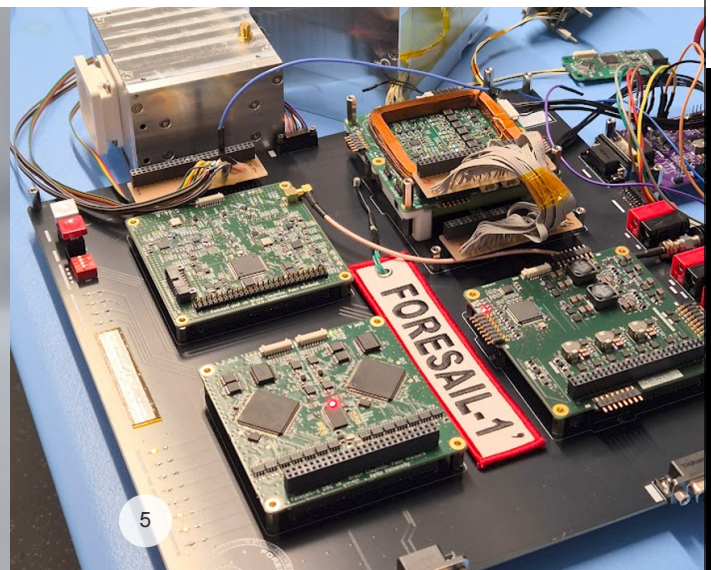
Foresail-1 prime is a 3U CubeSat developed by Aalto University in Finnish Centre of Excellence in Research of Sustainable Space, led by University of Helsinki, to study Earth's radiation environment and demonstrate sustainable deorbiting technologies. It carries two main payloads: the Particle Telescope by University of Turku, which measures precipitating electrons and solar energetic neutral atoms with high precision, and the Plasma Brake by Finnish Meteorological Institute, designed to test a propellant-free deorbiting method using Coulomb drag. Built entirely in-house, the satellite features radiation-tolerant avionics and improved communications, supporting a five-year polar orbit mission that advances Finland's space science and sustainability goals.

COMPANY PROFILE Website: www.aalto.fi

The Finnish Centre of Excellence in Research of Sustainable Space (FORESAIL) aims to advance our understanding of Earth's near-space radiation environment, the solar wind, and innovative propulsion techniques for the sustainable utilization of low-Earth orbits. The FORESAIL project encompasses a series of small-satellite missions designed for space environment research and technological advancement. The consortium, building upon the successes of prior Aalto-1 and Aalto-2 missions, continues to leverage a blend of cutting-edge research and experience, incorporating technologies developed entirely within Finland. The FORESAIL project showcases efforts by the University of Helsinki, Aalto University, University of Turku, and the Finnish Meteorological Institute, to prolong the active life of satellites in orbit and reduce space debris once a satellite has finished its mission. FORESAIL is funded by the Research Council of Finland under the grant numbers 336805 to 336809.

Photo credits: Aalto University





planetek italia

D-ORBIT AIKO

Name of payload: AI-eXpress 1 Plus (AIX-1+)

Type of payload: Cloud ecosystem platform

POC: Leonardo Amoruso
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AI-eXpress 1 Plus (AIX-1+) is the third satellite of AI-eXpress, a project led by Planetek Italia in collaboration with D-Orbit and AIKO, and co-funded by ESA InCubed, an Earth Observation programme managed by ESA Φ-lab. The mission leverages advanced technologies such as Artificial Intelligence (AI), Blockchain in Space, and onboard autonomy, to enhance satellite reactivity, responsiveness, and low-latency information delivery. AI-eXpress provides a hybrid edge/cloud ecosystem on a platform in Low-Earth Orbit (LEO) equipped with Earth observation payloads and a software framework that manages sensors and onboard resources - a dynamic environment designed to revolutionise in-orbit processing and introduce a new concept of cognitive cloud computing in space. AIX-1+ is designed to implement the final building blocks of fundamental software services - data processing and execution - directly in space. These functionalities form the backbone of the "satellite-as-a-service" model. AIX-1+ represents the next step toward creating a space "App Store", with AIKO providing the first applications, that will offer a simpler and more innovative way to access space resources. The payload also incorporates advanced sensing and data delivery mechanisms, including a Multispectral Camera by TSD and a data-relay radio by AddValue for 24/7 communication.

COMPANY PROFILE Website: www.planetek.it

Planetek Italia is an Italian company founded in 1994, employing over 130 men and women, passionate and skilled in Geomatics, Earth sciences and software for space missions. It develops systems and services for processing cartographic and satellite data aimed at creating geo-localised knowledge. It operates in many application fields: environmental and land monitoring, smart cities, defence and security, engineering, energy, utilities, Earth observation satellite missions and space exploration. With sustainability and business ethics as its core values, since 2021 it has become a Benefit Company.

Photo credit: Planetek Italia

Name of payload: LaserCube Compact ISL 1000

Type of payload: Optical Inter Satellite Link

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Communication Department
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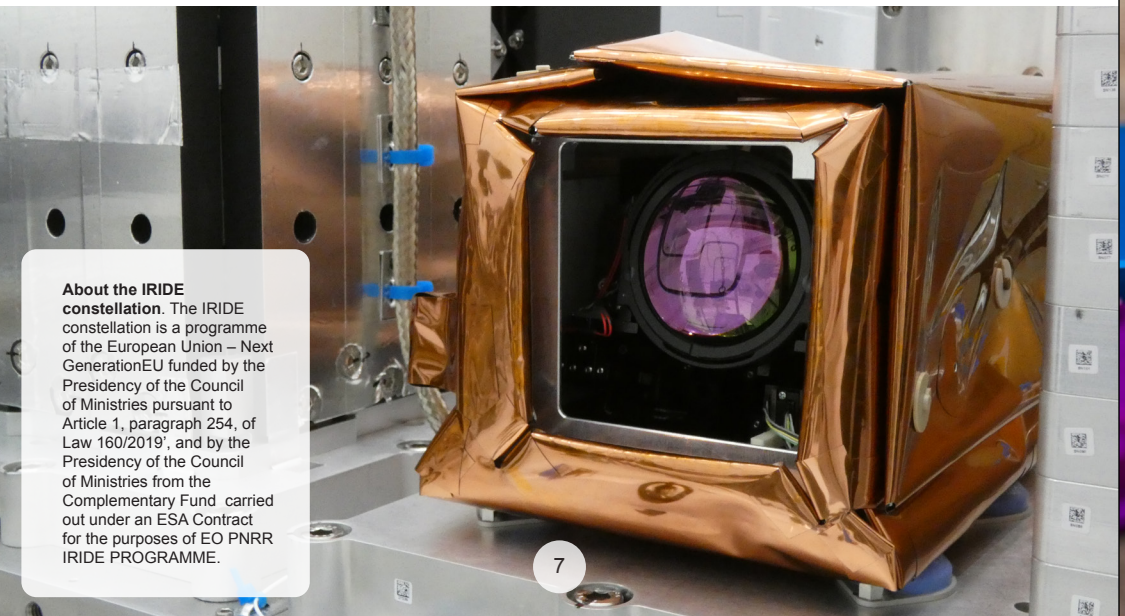
The LaserCube Compact mission is the first Italian Optical Inter-Satellite Link (OISL) mission and will take place within the IRIDE Constellation program, one of Europe's largest space programs for Earth observation, managed by the European Space Agency on behalf of the Italian Government, with the support of Agenzia Spaziale Italiana. As prime contractor for the "Optical Inter Satellite Link In Orbit Verification" section, D-Orbit provides its ION Satellite Carrier to host and test two LaserCube Compact terminals, the smallest laser communication terminals in Stellar Project's production line. The two terminals, integrated on two separate ION satellites, will establish an optical connection in orbit to demonstrate this low-power, high-performance laser communication technology designed to enhance data transfer between satellites and increase the overall responsiveness of future Earth observation and telecommunication constellations.

COMPANY PROFILE Website: www.stellarproject.space

StellarProject is an Italian company that provides bright and light solutions for free space optical communications specifically designed for small satellites. Through its different classes of lasercom terminals, Stellar Project provides reliable connectivity both for Inter Satellite Links (ISL) and User Terminals accessing space optical networks, implementing solid pointing accuracy, increased data rate and enhanced security. In the field of space debris analysis, Stellar Project has developed an Advanced Fragmentation Analyzer, with fragmentation study and forensic analysis (determination of offender size and speed).

Photo credit: D-Orbit



About the IRIDE constellation. The IRIDE constellation is a programme of the European Union – Next GenerationEU funded by the Presidency of the Council of Ministries pursuant to Article 1, paragraph 254, of Law 160/2019', and by the Presidency of the Council of Ministries from the Complementary Fund carried out under an ESA Contract for the purposes of EO PNRR IRIDE PROGRAMME.

Name of payload: StardustMe SD-3

Type of payload: Emotional Payload

POC: Stu Potter
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The SD-3 payload is a memorial payload, consisting of a number of aluminium machined capsules (called "tokens" by StardustMe), each carrying 1g of human cremated ashes, contained in an additive-manufactured frame and enclosure. This assembly is in turn mounted to the main core of the host ION vehicle.

There is no deployment or other release of StardustMe hardware or items at any point in the mission. The StardustMe hardware is permanently affixed to the ION host vehicle, and will de-orbit and re-enter the atmosphere with the host vehicle.

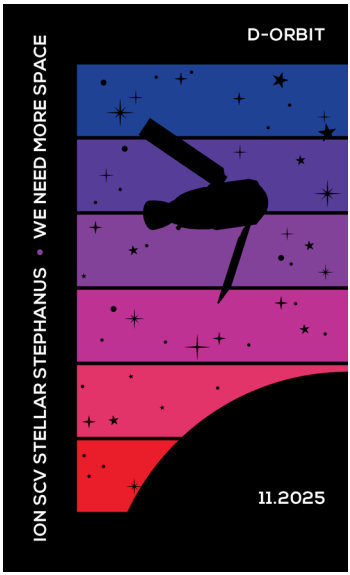
COMPANY PROFILE Website: www.stardustme.com

The Company's specially-designed memorial tokens, containing a symbolic portion of a departed's ashes, quietly orbits the Earth for up to 5 years whilst family and friends can follow this journey through the stars using a mobile tracker. In a last poetic moment, the spacecraft harmlessly re-enters the Earth's atmosphere, blazing as a shooting star.

Photo credit: StardustMe

"Every atom in your body came from a star that exploded. And, the atoms in your left hand probably came from a different star than the atoms in your right hand. It really is the most poetic thing I know about the universe: you are all stardust."

Physicist Lawrence Krauss



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