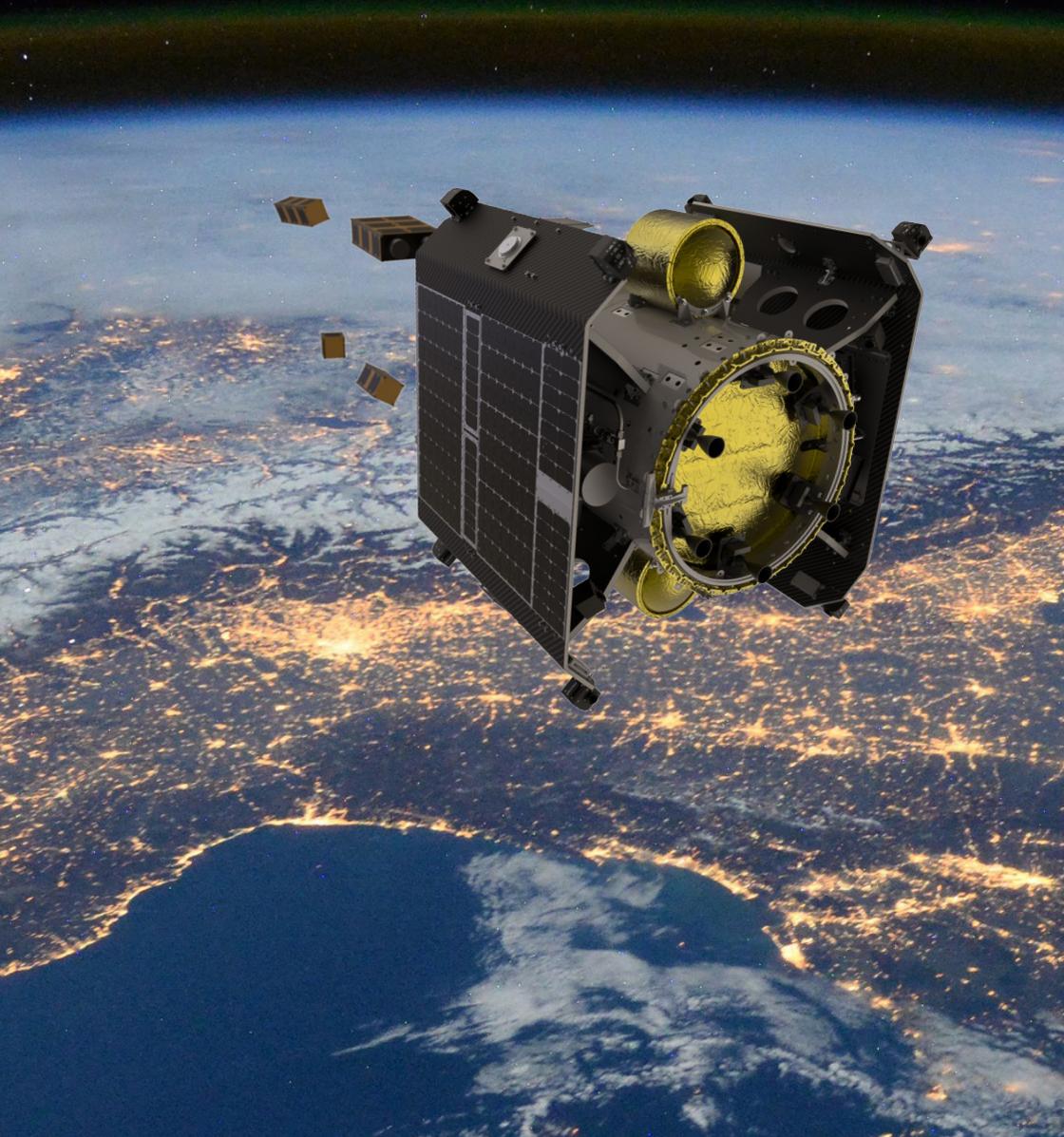




# SPACELUST

## MISSION BOOKLET



**Mission name:** Spacelust  
**Carrier name:** ION SCV005 Almighty Alexius

Spacelust, the **fifth mission** of the **ION Satellite Carrier (ION)**, launched on April 1, at **12:24 PM EDT** from the **Space Launch Complex 40 (SLC-40)** at Cape Canaveral Space Force Station (CCSFS), Florida, aboard SpaceX's Transporter-4 mission. ION was **successfully deployed at 1:50 PM EDT into a 500 km Sun synchronous orbit (SSO)**.

The Spacelust mission includes satellites from **Kleos Space S.A.** (ASX:KSS, Frankfurt:KS1, Kleos) via Spaceflight Inc., satellites developed at the **Space Exploration Laboratory (SPEL)** and a hosted payload from **Upmsphere**.

For **Kleos Space**, a space-powered radio frequency reconnaissance data-as-a-service (DaaS) company, D-Orbit will deploy four satellites which will **augment the capabilities of the company's eight satellites constellation**, increasing the average daily revisit rate to around five times a day over a 15-degree latitude area of interest, while expanding Kleos' data collection capability by up to an additional 119 million kilometers<sup>2</sup> per day.

For SPEL, D-Orbit will deploy **three additional satellites**, developed by the Faculty of Physical Sciences and Mathematics (FCFM) at the University of Chile in collaboration with the University of Santiago de Chile.

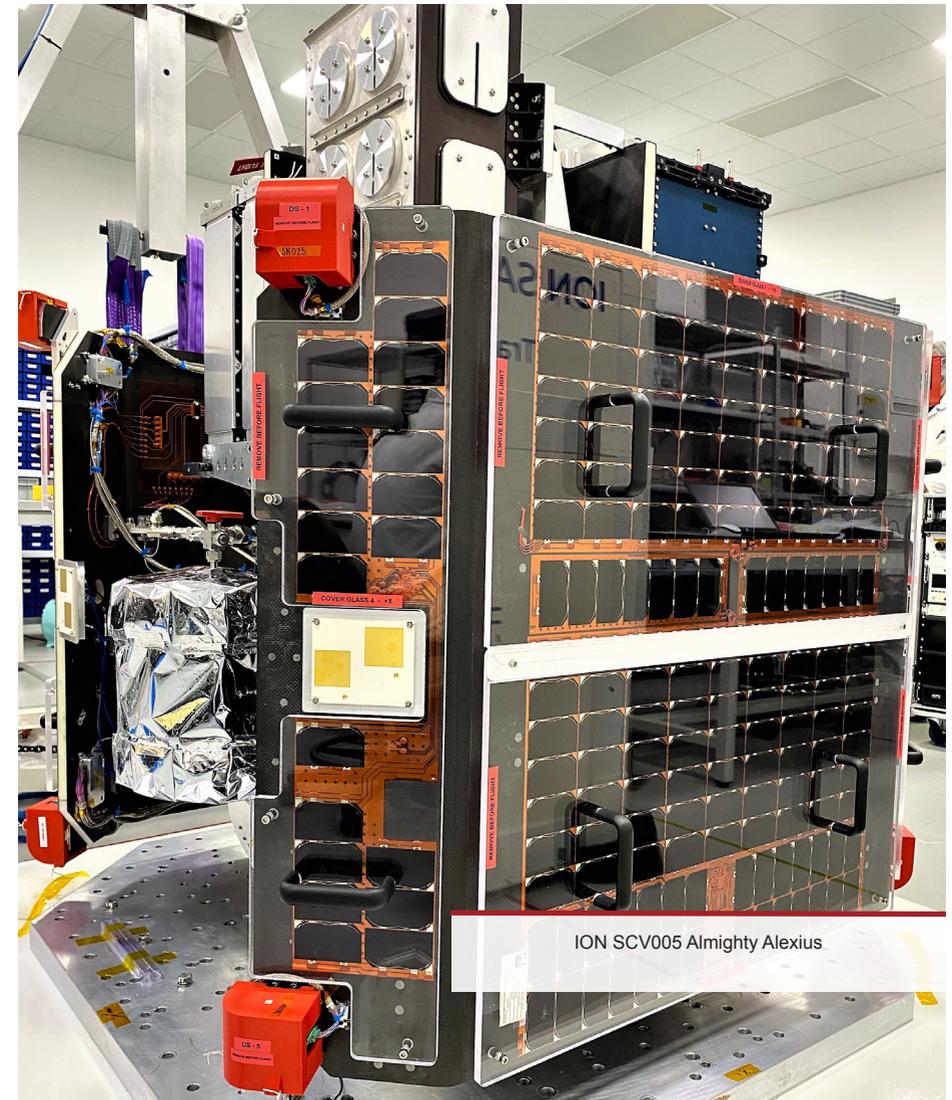
For Upmsphere, which offers customers a chance to launch smaller personal items that will travel around the Earth for several years aboard ION, the payload for this mission consists of a wooden UP-box containing mementos from four different clients.



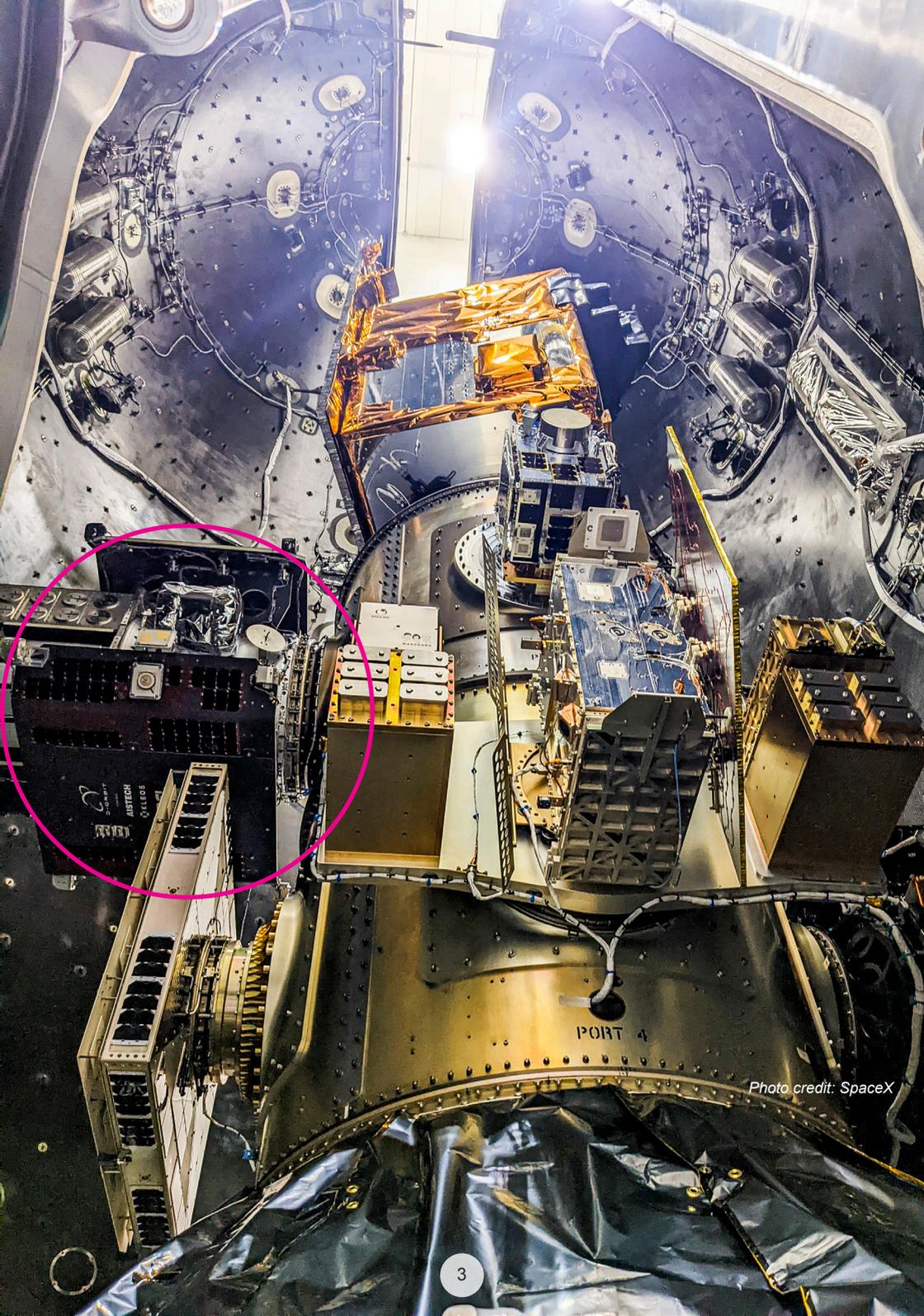
Photo credit: SpaceX

**A note about the name of the satellite carrier**

The name of the satellite carrier is "ION SCV005 Almighty Alexius", a combination of the acronym "ION", which stands for "InOrbit NOW", the acronym "SCV," which stands for "Space Carrier Vessel," and the satellite's first name. This format follows the naming conventions of naval vessels used in navies around the World. The name "Alexius" 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 of its people.



ION SCV005 Almighty Alexius



Name of payload: Patrol Mission (KSF2)

Form factor: 6U

POC: Melanie Delannoy  
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The launch of Kleos's Patrol Mission (KSF2) will increase the company's reconnaissance capability by adding an additional four to the existing constellation of eight satellites, each expanding Kleos's data collection capability by up to an additional 119 million kilometers<sup>2</sup> per day. In addition, the launch will increase the average daily revisit rate over a 15-degree latitude area of interest to around five times a day. The twelve-satellite constellation will detect and geolocate radio frequency transmissions to within 300 meters, improving the intelligence, surveillance, and reconnaissance (ISR) capabilities of governments and commercial entities, uncovering data points to expose illegal activity on land and sea.

**COMPANY PROFILE** Website: [www.kleos.space](http://www.kleos.space)

Kleos is a space-enabled radio frequency reconnaissance data-as-a-service company with operations in Luxembourg, the US and UK. Kleos locates radio transmissions in key areas of interest around the globe, efficiently uncovering data points to expose human activity on land and sea. Using clusters of four satellites, proprietary radio frequency data (RF Data) is collected, transmitted to the ground, processed, and delivered to customers worldwide. Customers, including analytics and intelligence entities, will license data on a subscription basis (Data-as-a-Service aka DaaS), for government and commercial use cases – aiding better and faster decision making.

Kleos' first satellite cluster, the Kleos Scouting Mission (KSM), successfully launched in November 2020 is performing as a test and technology demonstration whilst collecting data. The company's second satellite cluster, the Vigilance Mission, successfully launched in June 2021 and its Patrol Mission is scheduled to launch in April 2022. These satellite clusters form the foundation of a global high-capacity constellation of up to 20 satellite clusters, which will deliver high value global observation.

Photo credit: SpaceX

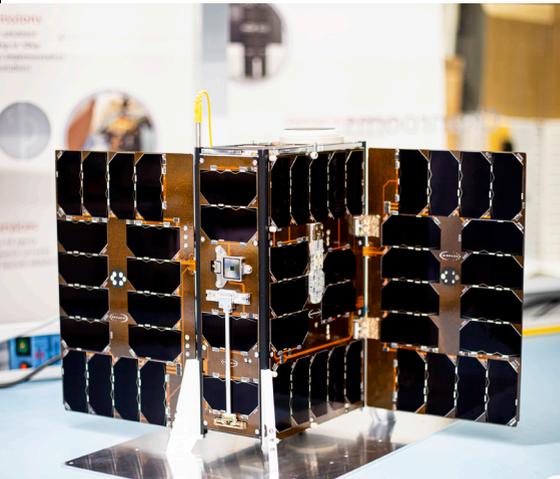
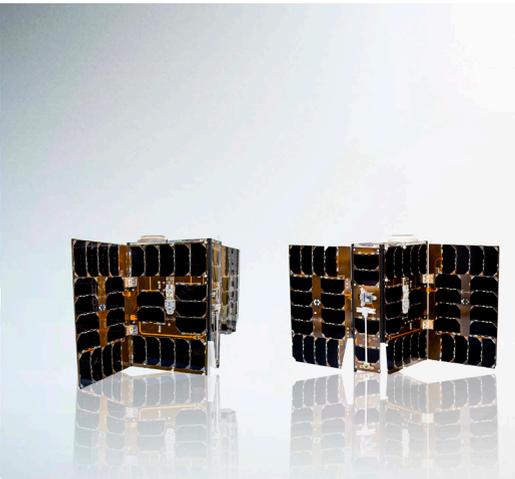


Photo credit: KLEOS





Name of payload: PlantSat, SUCHAI 2, SUCHAI 3

Form factor: 3U

POC: Zafiro Fleming  
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**PlantSat** is a contribution to the ongoing human efforts of exploring, understanding and eventually colonizing Mars. The goal of this 3U CubeSat is to study in low earth orbit the growth of a suitable plant, replicating the conditions that life will experience on Mars' surface. These conditions include low gravity force and high solar radiation.

The Satellite of the University of Chile for Aerospace Investigation (SUCHAI) has two nanosats named: **SUCHAI 2** and **SUCHAI 3**. The two Chilean 3U CubeSats will be launched into orbit to perform basic science research funded by the U.S. Air Force Office of Scientific Research (AFOSR). Multidisciplinary teams will undertake cutting edge research for scientific exploration and technological development.

SUCHAI 2, SUCHAI 3, and PlantSat vehicles were developed at the Space Exploration Laboratory (SPEL) of the Faculty of Physical and Mathematical Sciences (FCFM) at University of Chile in collaboration with University of Santiago de Chile.

Nanosatellite technology is growing quickly and many universities around the world are realizing they can design, build, launch, and operate nanosatellites as part of their education and research programs. The U.S. Air Force Research Laboratory (AFRL) has a university nanosatellite program that funds research in U.S. universities. This project with the University of Chile is one of AFOSR's first international projects.

### COMPANY PROFILE - SPACE EXPLORATION LABORATORY (SPEL)

Website: [www.spel.ing.uchile.cl](http://www.spel.ing.uchile.cl)

The Space Exploration Laboratory (SPEL) serves as a hub for researchers, engineers, and students at University of Chile (UCH) and University of Santiago of Chile (USACH) to collaborate on space physics and space instrumentation.

### COMPANY PROFILE - THE FACULTY OF PHYSICAL AND MATHEMATICAL SCIENCES (FCFM)

Website: [www.ingenieria.uchile.cl](http://www.ingenieria.uchile.cl)

The Faculty of Physical and Mathematical Sciences (FCFM) at University of Chile has been in existence for over 175 years. It is focused on higher education and on the development of basic sciences, engineering sciences and technological applications. At present, it offers professional degrees in Engineering in nine different specializations, Geology, three bachelor of sciences and more than 30 postgraduate academic programs.

### COMPANY PROFILE - THE U.S. AIR FORCE RESEARCH LABORATORY (AFRL)

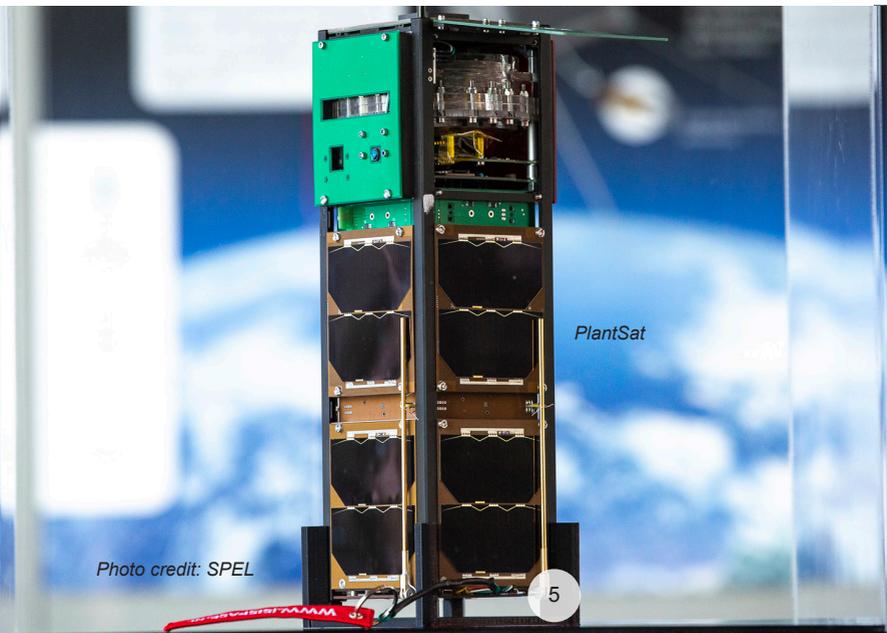
Website: [www.afrl.af.mil](http://www.afrl.af.mil)

The U.S. Air Force Research Laboratory (AFRL) leads the discovery, development, and integration of affordable warfighting technologies for U.S. air, space, and cyberspace forces.

### COMPANY PROFILE - THE U.S. AIR FORCE OFFICE OF SCIENTIFIC RESEARCH (AFOSR)

Website: [www.afrl.af.mil/AFOSR](http://www.afrl.af.mil/AFOSR)

The U.S. Air Force Office of Scientific Research (AFOSR) manages basic research programs for AFRL, which ultimately provide the foundation for future technological advancements. AFOSR facilitates long-term, broad-based research programs with government agencies, industry partners and academic institutions.



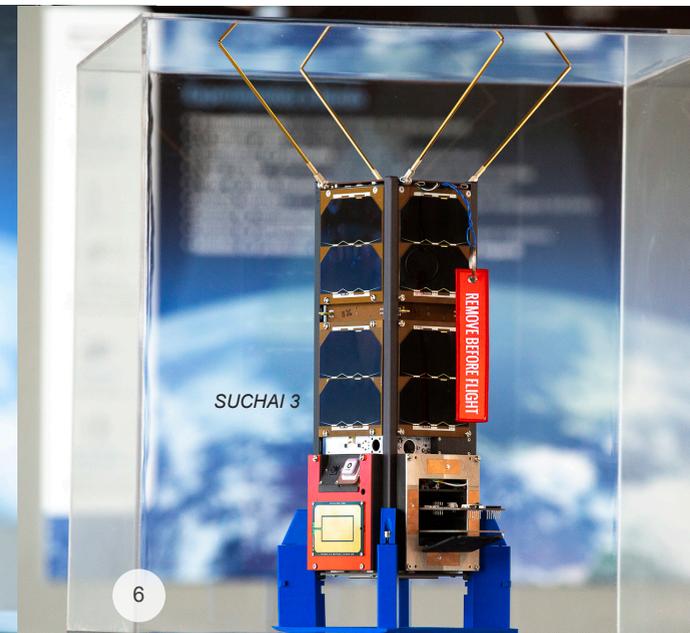
PlantSat

Photo credit: SPEL

5



SUCHAI 2



SUCHAI 3

6



# UPMOSPHERE

Name of payload: UP-box

POC: Luigi Maini  
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The Upmosphere's payload consists of a wooden UP-box containing mementos from 4 different clients. Specifically, the mission will launch the memories related to two different weddings, a wedding ring and a picture of the bride and groom, the pin of an association based in Trentino, Italy, and the business card of an Italian insurance company.

The wood used for the construction of the UP-boxes comes from the trees felled during the Vaia storm, which devastated northern Italy in 2018. The Vaia project foresees the valorization of the felled wood through the construction of small-sized artifacts such as Upmosphere's Up-box, but also the reforestation of the areas affected by the storm.

**COMPANY PROFILE** Website: [www.upmosphere.space](http://www.upmosphere.space)

Rest in Space, with the Upmosphere project, offers the opportunity to value one's memories by placing them in special wooden boxes, which will travel around the earth for a few years together with D-Orbit's satellites. The project fully embraces a green policy approach: the customers' personal memories are further valued through the falling star effect, which occurs during the re-entry of ION Satellite Carrier into the atmosphere, when the satellite is incinerated to avoid the proliferation of orbiting waste. The Upmosphere project enables its customers to stay in constant contact with their personal effect through an app, which allows the monitoring of the keepsake's position through ION's satellite tracking.

Rest in Space in an Italian company founded in 2021, with its registered office in Milan and several operating offices located in Trentino and Emilia Romagna regions.



Photo credit: Upmosphere

