

Alba & Co^{smos}: March 2024 | 7



We wish you a stellar new year, which has started at full throttle for European space investments. Let's take a look at fundraisings in Europe, the complicated return of manmade objects on the Moon, ESA's many new calls for action, and many other news, including an account of fruits vanishing in orbit.















Let us launch right into it.

1. Zoom on the funding of European Space companies in 2023 and 2024: a focus on Unseenlabs and the Expansion fund
2. Back to the Moon: Japanese and American landers are on, although asleep and laying down
3. ESA is calling for innovation, to orbit, the Moon, and Mars
4. Space defence: AsterX, how France leads 15 partner countries in a real-life Star Wars training
5. The saga of the lost tomato: panic in the ISS
6. Fast facts: what's up with space

Since December 2023, European space companies have raised more than €312M, pointing to a promising year for European spacetechnology funding



EUROPEAN SPACE FUNDING – DECEMBER 2023/ MARCH 2024

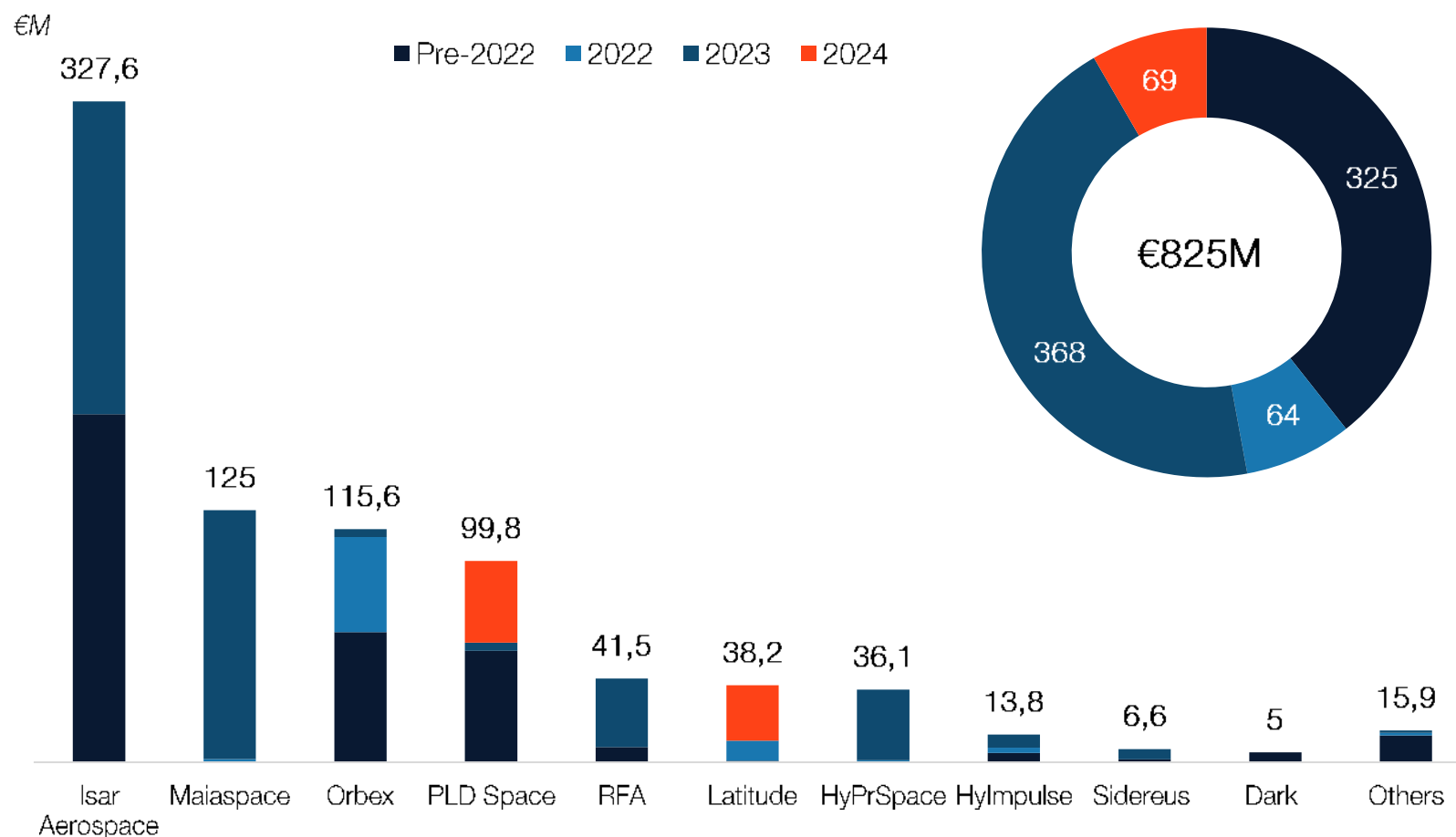
	Date	Amount raised / funding type	Round Participants	Total funds raised	Company description	
 D-Orbit	11/01/2024	€100M / Series C	Marubeni Corporation, Avantgarde, CDP venture Capital Sgr, Seraphim Space, United Ventures, NEVA SGR Spa, Primo Ventures	€121,3M	Space logistics and orbital transportation services. Includes space waste management, last-mile delivery, mission control as a service, etc.	
 Unseenlabs	26/02/2024	€85M / Series C	Supernova Invest, ISALT, Unexo, 360 Capital, OMNES, BPI France,	€120M	Satellite based radio frequency detection for maritime surveillance	
 Maiaspace	12/2023	€85M (est.) / Corporate	ArianeGroup	€125M	Small launcher startup, subsidiary of ArianeGroup. Develops a 50m launcher capable of bringing 500kg to 1500kg ⁽¹⁾ in orbit	
 Latitude	22/01/2024	€27,5M / Series B	Kima Ventures, Vincent Luciani, Blast.club, Credit Mutuel Innovation, Expansion Ventures, DeepTech 2030, UI Investissement	~€50M	Micro launcher company. Develops the Zephyr launcher, to launch in 2024 and carry 100kg to LEO	
 Aldoria	23/01/2024	€10M / Series A	Starquest Capital, European Innovation Council Fund, DeepTech 2030 fund ⁽²⁾ , Expansion Ventures, Space Founders, Wind Capital	€22M	Space Situational Awareness: Real time orbital traffic mapping and orbit-sharing support	
 Kurs Orbital	07/03/2024	€3,7M / Seed	OTB Ventures, Galaxia, In-Q-Tel	€3,7M	Development of a docking port for in-space and debris removal missions	
 ATMOS Space Cargo	09/02/2024	€1,3M / Seed extension	OTB Ventures, The Amadeus APEX Technology Fund	€5,3M	Space cargo return service for life sciences. Offers micro-gravity on demand	
 Polaris Spaceplanes	27/02/2024	N.D. / Bridge	E2MC Ventures, Andreas Kupke	N.D.	Development of a multipurpose reusable spaceplane and hypersonic transport system	

(1): 500kg in reusable version, 1500kg in non-reusable; (2): France 2030 fund managed by BPI France
Sources: Alba & Co, Payload, L'Usine Nouvelle, companies' websites



NewSpace launcher companies in Europe have started to receive the funding that will let them see the stars, after a difficult takeoff pre-2023

EUROPEAN NEWSPACE LAUNCHER FUNDING BY COMPANY AND YEAR



Andrew Parsonson, on his Space Industry monitoring website *European Spaceflight*, has published a 2024 State of the European launch startup funding⁽¹⁾, which reports funding up to mid-February 2024.

The year 2023 gave renewed hope to the launch startup ecosystem in Europe, with €368M raised, a €304M increase compared to 2022.

With already €68M raised in only 2 months, the year 2024 has topped 2022, and if it maintains this cadence, could become the largest year of funding in European NewSpace launcher history.

Highlights of 2023 are obviously the Isar Aerospace €155M Series C, but also ArianeGroup's new commitment to Maiaspace of €85M, which brings its funding to around €125M.

PLD Space, in addition to its €40,5M loan from the Spanish government obtained in 2024, is moving towards a Series C funding round of ~€150M.



With an additional €85M in Series C funding, Unseenlabs secures its path to 25 satellites by 2025, company growth and geographical expansion

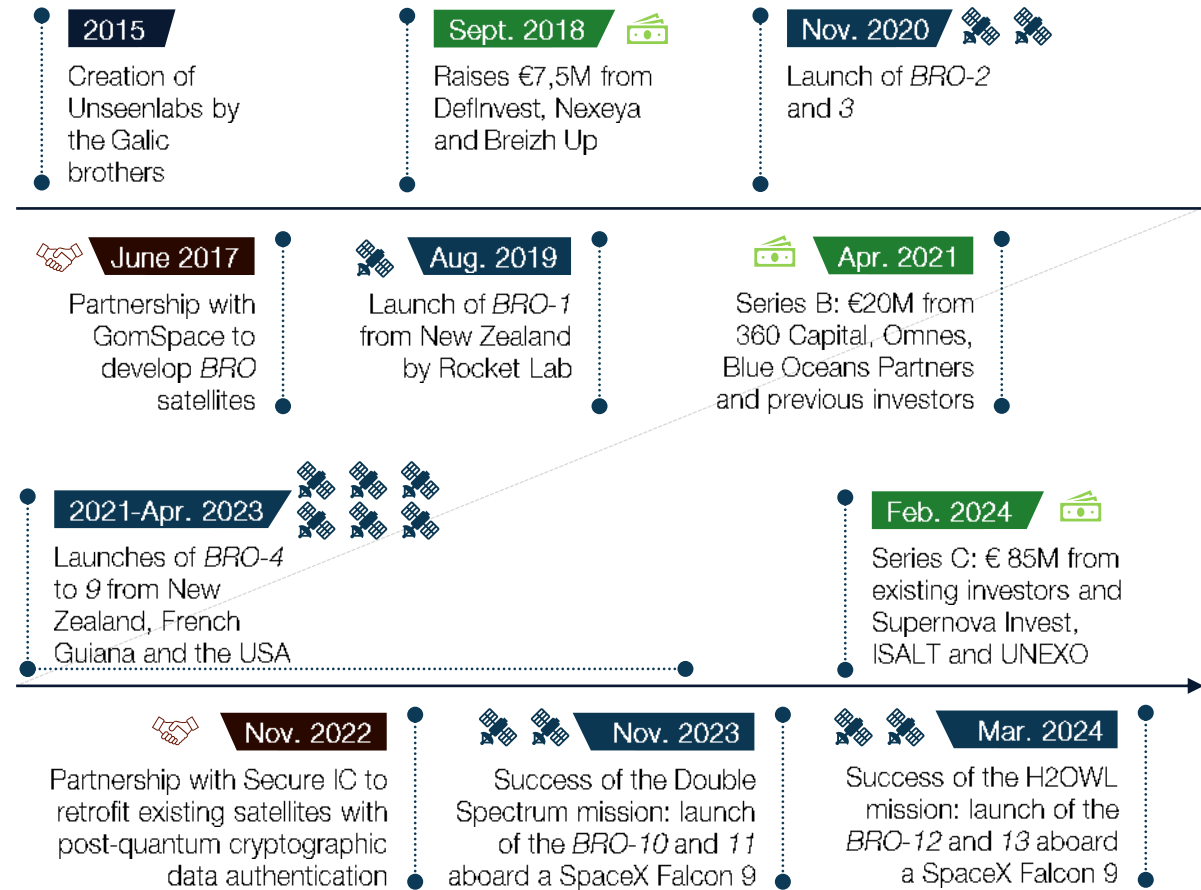
€85M FOR THE BROs⁽¹⁾

On the 27th of February 2024, Unseenlabs announced it had raised an impressive €85M in Series C funding. In addition to its historical partners 360 Capital, OMNES, BPI France, Breizh Up (UI Investissement) and S2D Ventures, who all invested in this new round, Unseenlabs brought some new investors on board: Supernova Invest, ISALT (through the Strategic Transition Fund) and UNEXO.

This money will allow Unseenlabs to strengthen its position through 5 axes:

<p>Satellites Unseenlabs will expand its observation capabilities, aiming at 25 satellites by 2025, essentially doubling the constellation size</p>	<p>Recruitment Unseenlabs will use new funds to recruit talents to support its strategic vision and operational excellence</p>	<p>Private sector activity Unseenlabs aims at diversifying its client portfolio, developing activities with oil and gas, insurance, shipowners, etc.</p>
<p>International development Unseenlabs's activity is global by nature, and the company aims to develop its business in America and Asia</p>	<p>Innovation and new products These funds will allow Unseenlabs to deploy new products and solutions to strengthen their market position</p>	

UNSEENLABS TIMELINE



The Expansion Fund has taken off with an initial € 100M in funding, a great step for consolidation of VC capabilities for EU space companies

EXPANSION – A EUROPEAN VC

Expansion:

Expansion Ventures, the New Space and New Air Mobility VC funded by Audacia and Rymdkapital, and Charles Beigbeder, Ted Elvhage, Sandra Budimir and Ulf Palmas, has raised its initial tranche of €100M for its fund Expansion, including a €60M commitment from the European Investment Fund (EIF).

Expansion aims for a final closing of €300M to invest in 40 European companies, from early stage to Series B.

The company has invested €10M+ in their portfolio companies and aims at dedicating 15 to 20% of its fund to initial investments, the rest being dedicated to follow-up investments.



The European Investment Fund in Expansion

The EIF's main mission is to support European micro companies and SMEs, fuelling their access to finance and venture capital. To fuel Expansion's initial round, the EIF leveraged CASSINI, the European Commission's funding facility dedicated to the growth of space companies in the EU.

THE EXPANSION GALAXY: A GROWING SPACE PORTFOLIO



Landers are back on the Moon: Japanese and US landers followed the path of the Apollo 17 mission, but both faced problems

THE UNSTEADY AND SLEEPY PATH BACK TO THE MOON

The SLIM probe has survived!

On January 25th, 2024, the Japanese Space Agency succeeded in landing the Smart Lander for Investigating Moon (SLIM) less than 60m from its target landing point. This propelled Japan in the exclusive club of moon landers, becoming the 5th nation to put a spacecraft on our natural satellite.

Unfortunately, the vehicle landed in such a way that its solar panels have hardly been able to generate any power. After losing and regaining power in the last week of January, the lander went through a lunar night starting February 1st. According to JAXA, this should have been the end of the saga. With little to no power, the lander was not designed to survive a lunar night.

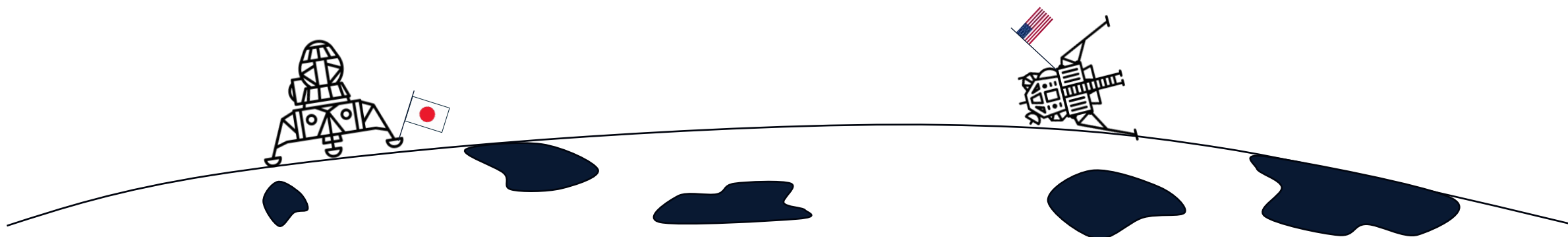
Against all odds SLIM had a lucky star, and reestablished communication after the end of the lunar night, on February 26th.

Odysseus has fallen and it can't get up

The US is back on the Moon for the first time in fifty years, and it is a wonky return. Intuitive Machines, a Texan company, landed its Odysseus spacecraft on the south pole of the Moon on February 22th, with many NASA research instruments on board.

The landing was a rocky one, because the vehicle landed too fast, and with no altimetry data, the range finders being inoperable. The lander is on its side, having landed a few kilometres from its landing point, on a rock formation.

Even with the lander toppled over, the team is over the moon with the mission's conduct, with data being transmitted, pictures, and all equipment onboard operational and facing in the right direction, apart from Jeff Koons "art cube", which faces the moon. With another lunar night starting, the lander shut down from depleted power, hopefully just for a few weeks.





ESA calls for Best in class to develop reusable booster concepts, new satellite technologies, and liquid propulsion competencies

BEST! THRUST! AND FLIGHT TICKETS

The European Space Agency has published an additional call for ideas for future launchers, this time on [Boosters for European Space Transportation](#). This call aims at fostering competition for **new concepts of future reusable first or booster stages** through concept studies. The initial application phase closed on **March 1st** and will be followed by a **pitch day of selected applicants, jointly with THRUST!**

Although no applicants have been officially mentioned, I expect ArianeGroup, Latitude, RFA, Isar Aerospace, PLD Space and others to attempt to benefit from this call.

In addition to BEST!, ESA has called for new concepts in Technologies for [High Thrust Re-Usable Space Transportation](#), to push European launcher liquid propulsion competencies forward. The scope of demonstrations eligible are: complete staged combustion engine cycle, pressure-fed combustion devices, and turbopumps. The call also closed on **March 1st**, and will be pitched alongside BEST!.

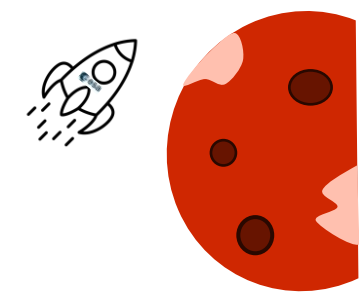
It is clear that one of the applicants is Pangea Aerospace, and other liquid propulsion European companies probably expressed interest, which will be monitored here.

The last initiative I want to present here is the still open **Flight Ticket initiative**, which closes on March 15th. ESA and the EU, under the Boost! programme, are proposing to **co-fund the launch of new satellite technologies**, selected on a competitive basis. From what can be gathered, all innovative satellite technologies are welcome to apply. This initiative fits into the wider [In-Orbit Demonstration/Validation](#) call for proposals, a set of calls set between 2023 and 2026 to support both space systems needing aggregation, and ready-to-fly satellites, as is the case in this call.

ESA TO MARS AND BACK TO EARTH

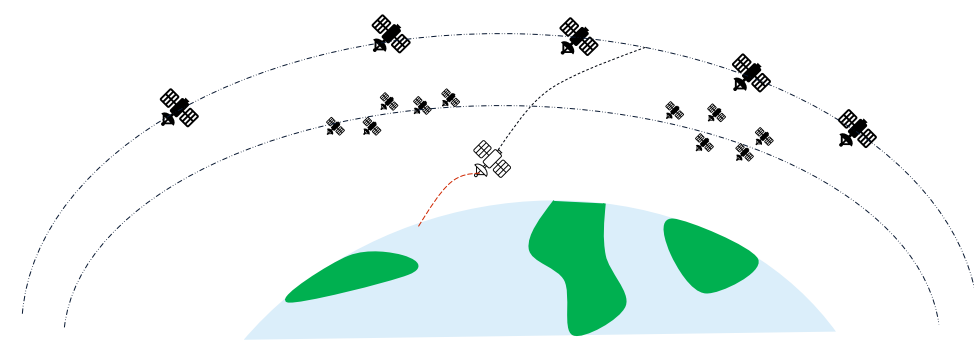
ESA (kind of) wants you for their MARS exploration team!

ESA has opened two calls to join the measurement definition and Instrument definition teams for the Mars infrastructure mission EP Tug, to develop an electric propulsion transfer stage carrying passenger spacecraft to Mars. Apply [here](#) and [here](#) before March 28th. Let's go to the Red Planet!



ESA deorbits its space junk, responsibly.

The defunct ERS-2, launched in 1995, has reentered the atmosphere after 13 years of retirement. Once the satellite was defunct, ESA deorbited it from 785km to ~573km, successfully avoiding collisions in high-use orbits.



AsterX: France and 15 partners simulate a space defence scenario to comprehensively train the teams of the Space Command and its allies

ASTERX 2024: SPACE DEFENCE IS AN INTERNATIONAL CHALLENGE



15 countries



140 participants

4-15th of March

CNES Toulouse



~4 000 simulated space objects



23 space events simulating 14 different threat types

Two teams

Armland:

Fictional country's Space Command: Team of 15 countries, and 27 players, reacting to the threatening manoeuvres of Mercury. Supported by the industrials

Mercury:

Fictional country's Space Command: Team of 5 American players, conducting threatening manoeuvres towards Armland and reacting to their actions.

The AsterX 2024, although in line with the past three space attack simulations led by the French Space Command, marks an increased awareness of the global nature of space defence.

For the first time, the event includes representatives of partner countries, who will learn to cooperate with French forces throughout the 11-days simulation. This aligns with the training's stated ambition of: "developing a common culture of space operations."

The training also includes industrials, who provide their expertise : ArianeGroup, CS Group, Safran, Airbus, ONERA, etc.

The name AsterX is both an homage to everyone's favorite Gaulois, and to France's first launched satellite, Asterix (A-1) launched in 1965 from the Algerian desert on a Diamant-A launcher.

The simulated threats can be: ASAT tests, satellite interceptions, jamming, cyber attacks, debris avoidance, etc. and happen on all orbits. A team, coordinated by CNES and the French Space Command, is tasked with generating and simulating all technical orbital data during the test.

The saga of the missing tomato: an invaluable fruit lost and found in the ISS



VEG-05: THE TOMATO INVESTIGATION ON THE ISS

After the little misshap of the lost toolbag in the [last edition](#), this time Alba & Cosmos comes to you with the most thrilling saga of the ISS, a true mystery: the adventure of the missing tomato. Here are the key documents⁽¹⁾ of this breathtaking investigation.

MISSING



Last seen: March 23rd 2023, in the possession of Franck Rubio, astronaut, allegedly Velcroed after harvest.

Main suspect: Franck Rubio, accused of eating the missing victim in a search for fresh produce in space.

Reward: all the riches in the ISS [Veggie](#) production system (mainly tomatoes)

Case ISS/Veg-05
Cosmos Police Dept


15/12/2023

Investigation report: Veg-05 disappearance and retrieval

The missing subject Veg-05, a space-grown dwarf tomato part of the ISS Veggie experiment, has been found, uneaten, thanks to witness Jasmin Moghbeli, NASA astronaut.

Main suspect Franck Rubio thus sees all charges of eating the incriminating tomato dropped.

It is now admitted that the tomato must have floated away in the Station, a dangerous risk to take into account for future agricultural endeavours in Space.

 A. Starstruck
Head of Cosmos Police dept

AGRICULTURAL EXPERIMENTS ON THE ISS

VEGGIE: more than a topic for jokes, a groundbreaking research system for future space exploration

With the idea of human settlements onto the Moon and Mars becoming less and less of a science fiction scenario in recent years, the question of food production in space has become instrumental.

Within the International Space Station, there are 3 plant research units: two Veggie units, and a more complex growth chamber unit, the Advanced Plant Habitat.

The Veggie units are made by ORBITEC and were installed on the ISS in May 2014. In these modules, five vegetable growth experiments have been conducted along with algae and flowering plants growth experiments. The Veggie team successfully has grown and eaten, along with the infamous tomatoes, some romaine lettuce, cabbage, mustard, and kale.

The experiment not only test the ability to grow plants for consumption, but also assesses the psychological benefits of interacting with plants in a spaceflight environment.



Fast facts: some selected tidbits about the state of the space industry

ESA's boosting PLD Space with a €1.3M contract

PLD Space won a €1,3M contract through the BOOST! programme, in collaboration with OCCAM Space, to develop a modular and customisable payload accommodation system on the MIURA V launcher. The payload system, MOSPA (Modular Solution for Payload Adapter), should be as light as possible to accommodate to a wide range of satellites.

Space law

Europeans are moving forward to better regulate space activities. Portugal passed an amendment to its space law, outlining rules on space launch centre licensing. This amendment answers a growing demand for a legal framework on launch centres in the country. At the same time, the French National Assembly has backed Cécile Rilhac's proposition of a [European law on Space](#).

Who better than a star to reach for the stars

Bridgit Mendler can now add space company CEO to her resume of Disney actress, singer, MIT and Harvard graduate. She announced in February the creation of Northwood Space, a space startup developing mass produced shared ground stations for satellite data collection. The US company has gathered \$6M in initial funding to build its « data highway ».

Ariane 6 has reached Kourou, by grace of the wind

The Canopée transport ship, on which we wrote earlier last year, has fulfilled its first mission, bringing the maiden Ariane 6 from Europe to Kourou, using wind energy to decarbonise the transport. Ariane 6 should launch between June 15th and July 31st, and will even be set up on its launch pad in the coming weeks.

Astroscale is hunting for debris, or at least their image

On February 18th, 2024, the ADRAS-J spacecraft of the Japanese debris removal company Astroscale launched on an Electron rocket in New Zealand. The goal of the mission is to rendez-vous with a defunct Japanese rocket upper stage, to demonstrate its capacity to get close to such a debris, and take pictures that will allow for better understanding of the debris environment.

A new CEO and CFO onboard Starlab

Starlab, the commercial space station Airbus and Voyager Space joint-venture profiled in our [last newsletter](#), announced its leadership in February 2024. Tim Kopra, Voyager executive and retired astronaut, becomes CEO, while Airbus's key role in the joint-venture is confirmed by the appointment of Mohit Sharma as CFO, up to then the ADS Head of M&A.

The Exploration Company faces delays

The Franco-German company has had to backtrack on its announcement that the Mission Possible demonstration flight would happen in 2024, and delay the launch to 2025. The first demonstrator, Bikini Demo, will still be launched in June 2024 aboard a launcher of the Indian Space research Organisation.

Consolidation in the space industry

2024 could be a dynamic year for space M&A. United Launch Alliance is rumoured to be in process to be bought by Blue Origin, creating a strong launch and defence actor. Lockheed Martin is also moving towards consolidation, offering to buy Terran orbital at \$1 per share, owning already 28% of the company's share. Lockheed is the "largest-revenue generating customer" of Terran.

The Assises du NewSpace inscriptions are open!

25th and 26th of June 2024: The Assises du NewSpace are coming back for a third edition. Two days of conferences on all challenges faced by the NewSpace ecosystem, split in 4 topics: *News uses*, *Innovation*, *Economy*, *politics and funding*, and *Europe*. Register [here](#).

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Thank you for your read and support. I will be at the [Paris Space Week](#) tomorrow and Wednesday, feel free to contact me to meet at the forum, or to gather any insights on the event.

I remain at your disposal for any question, suggestion, and space related strategic need at constance.griton@alba-andco.com.

Please find all previous editions of Alba & Co^{smos} [here](#) !