



LEO Community Town Hall

Frank de Winne, ISS Programme Manager

Angelique Van Ombergen, Chief Exploration Scientist

Julia Weis, LEO and Suborbital Utilisation Team Lead

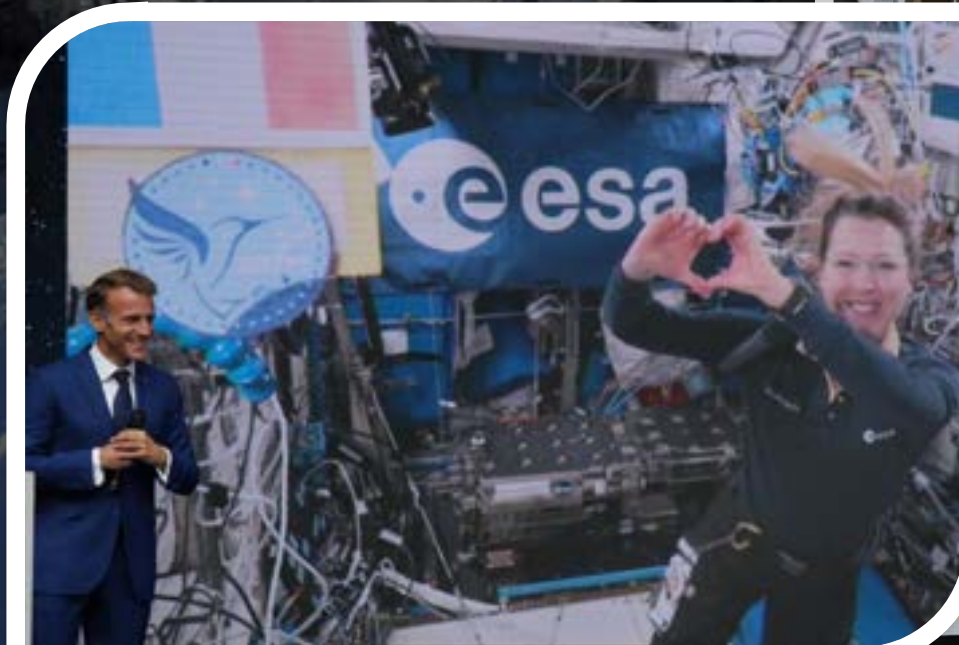
Antonella Sgambati – LEO Payload Development Team Lead

24 September 2026

EUROPEAN SPACE AGENCY

180+ hours of Sophie's time on ESA utilisation across **~25** European payloads, **21+ hours** on ESA systems maintenance or stowage

33 live events, **290 000+**
students inspired, **1M** subscribers
across all social media platforms



European flight opportunities

PAM 6 (VAST)

Thomas Pesquet (FR) as Commander
Aleš Svoboda (CZ) as Pilot
Adrianos Golemis (GR) as Mission Specialist



Haven-1 (VAST)

Arnaud Prost has joined EAC
in anticipation of his mission



Q1 2028

Mid 2030

Mid-2029

Jan 2031

Oct 2026

Nov 2028

Dec 2026

30 Sept 2032

End of ISS Operations



Foundation of a European orbital logistics ecosystem

ALADDIN Autonomous Leo Accelerated Demo Docking to ISS Node

EUROPEAN SPACE AGENCY

Essential to fulfil barter exchange obligations

Essential for continued LEO Science, Technology development and Astronautical endeavours

Building block for European crewed Vehicle





Pre-decisional

Next priority

~2035: First operational crew launch

Autonomous European crew access to LEO

EUROPEAN SPACE AGENCY



Pre-decisional

Next Ambition

Option 1: Access through partner or commercial platforms
Option 2: European-led human tended outpost

Preparing for a Post-ISS future

EUROPEAN SPACE AGENCY

Access through commercial access

Signature events on 9 September in the margin of the Space Summit



Axiom Memorandum of Understanding

Extending ESA's cooperation framework with Axiom Space to explore future collaboration in human spaceflight, research and commercial LEO activities, including possible ESA use of and contributions to Axiom commercial space station



Starlab Letter of Intent

Extending ESA's dialogue with Starlab on potential future cooperation in the post-ISS era, including possible ESA use of and contributions to the Starlab commercial space station

Another Memorandum of Understanding with Vast is currently under finalisation



Signature event on 10 September



The Exploration Company Phase 2 ALADDIN contract

Development and demonstration of the Nyx cargo capsule, including an ISS demo mission and options for two additional service missions



End to End LEO services for CLDs: 3 contracts awarded

Two contract signatures



ExoBiosphere (LU)

To fly 3 well plates for ESA to VAST Haven-1 during mission 2 with ExoBiosphere's Orbital High-Throughput Screener (OHTS)

Intended to fly 1-2 pharmaceutically oriented experiments

Announcement of Opportunity released via ESA's Open Space Innovation Platform (AO led by ExoBiosphere)



Yuri (DE)

To fly 12 well plates for ESA to VAST Haven-1 during mission 1 in Yuri's Science Taxi
2 biological experiments selected to fly

Planned contract signature



Space Applications Services (SAS) (BE)

Intended to fly 3 cubes for ESA in a TBD mission

2 Announcements of Opportunity planned to be released via ESA's Open Space Innovation Platform for the SAS Science Cube and for the SAS Greenhouse Cube

Autonomous Platforms | From 68 ideas to flight

ANNOUNCEMENT OF OPPORTUNITY

Free-flying LEO missions - without crew intervention

Biology and Physical Sciences •
exploration-focused or enabled • small
(~4U, 8 kg) and medium (40 kg)
payloads • implementation 2028–2030



01 APR
RELEASED

27 JUN

68

step-one shortlist

15 OCT

14

full proposals due

NET FEB 2027

3–5

final selection

Two-step selection

14 SHORTLISTED PROPOSALS

Project	Discipline	Country
μ ² FILM	Physics	CH
Ace-Bee	Life	UK
AIMS-OHS	Life	IE
BioSigN	Life	DE
BRISE	Life	BE
COSMAS	Life	UK
DIMADEx	Physics	BE
EXTRA-LEO	Life	IT
GRaCiS	Physics	FR
GRAIL	Physics	DE
JANUS	Physics	BE
SACLIFE	Life	ES
VESICOLOS	Physics	DE
Water Spacecraft Cooling	Physics	DE

Overview of ISS utilisation plan

- In 2024/2025 ESA had performed an internal exercise to adapt the utilisation complement to the decrease of utilisation resources due to NASA funding cuts and ISS de-orbit scenario
- 2 scenarios have been presented, a baseline and a minimum scenario
- Since the last community briefing, the ministerial conference took place consolidating the available budget for the next period and CSOC has been signed with NASA for the timeframe Oct 2024 – Oct 2028
- The final scenario is located in-between the minimum and the baseline (see next slide)

Overview of ISS utilisation plan - Baseline

Human Research

Space (Venous) Haemostasis
 Immunity Assay
 Bone on ISS
 Bone Health
 RelaxPro
 Exosome Signature
 Muscle Stimulation
 ARED-K final subject(s)
 Headaches on ISS

Physical Science

Heat Transfer Host-2
 EML SCH5
 LCI Sedimenting Colloids
FSL SMD FM & mission 2
HTH2 Condensation on Fins Batch#1
 HTH2 CoF Batch#2
 HTH2 Marangoni in Films Batch#1
 HTH2 MiF Batch#2
 HTH2 CoF Batch#3
Colloidal Solids 2 & Colloidal Solids 3
 LCI Microdroplets

Biology

Compound Degradation
 Multi-Well
Nemuco
Lux-In-Space
 Bone Vessel Crosstalk
 3DBM
 Seed Vigour (Ready-to-Fly)

Radiation

DOSIS 3D PDP

TechDemos

E4D
 Smart Tanks for Space
Surface Avatar

National Contributions

BeBlop (BE)
 Oscar-BLINQ (BE)
 Swiss Placeholder (CH)
 ThorDavis LIS (DK)
 Life Cell Imaging facility (DE)
 LCI Astrocytic Reactivity (DE)
 LCI Canceroids (DE)
 T-Mini 2 (DE)
Granular Sound (DE)
 Easy Motion-2 (DE)
 Retinal Diagnostics-2 (DE)
 Marangoni in PCM-1 (ES)
 Spanish Placeholder (ES)
Food Processor (FR)
 MATISS-4 (FR)
 ECHOFinder-2 (FR)
EuroSuit (FR)
PhysioTools (FR)
 Multi Imager System (FR)
ChlorISS (FR)
 Eyebernation (IT)

Commercial Activities

ICE Cubes Cubes (as per PPP)
 Laplace (DE)
GreenBone (Bioreactor Express)
 BTL activities tbc

Education

EPO activities
 ASTROPi (2 more)
 ICE Cubes Cube#20 (SCAMPI)

GND only Human Research

Cervical in Space
 Brain DTI for USOS crew
Epigenetic Adaptation
Lumbar Pain in Space
 Exosome Signature
 Cartilage Degeneration
 Muscle Health

*Q4 2024 objectives not shown
Completed this year
 On-going / to fly still this year



Priority 2 Payloads and Back-up Activities

Bottlenecks

- Upload mass
 - Limiting factor is the availability of upload for ESA
 - Big facilities are negotiated individually with barter, and the baseline is to fly on HTV-X vehicles: Exobiology-1, XRay Facility, Atmoflow, Compasso
 - ESA introduced a list of back-up candidates that can be pulled into the complement when resources become available. Most of these candidates are deemed to be flexible to fly to other platforms as well (e.g. autonomous platforms or CLDs)
- Conditioned Stowage
 - Conditioned Stowage (incubation, cooling/ freezing) is very scarce and expensive
 - The availability is assessed by NASA flight-by-flight, and only 30 weeks before the launch
 - NASA reduced support to standard temperatures: -95, -32, +4 and +37 degree Celsius
 - ESA reduced candidates with the need of CS and is looking for mitigation possibilities

MARIN | Configurable refrigeration & incubation

MIDDECK APPARATUS FOR REFRIGERATION AND INCUBATION

Versatile research - from centrifugation to incubation

Two removable rotors support experiments up to 2g; a static plate can replace the centrifuge for flexible sample configurations.

2

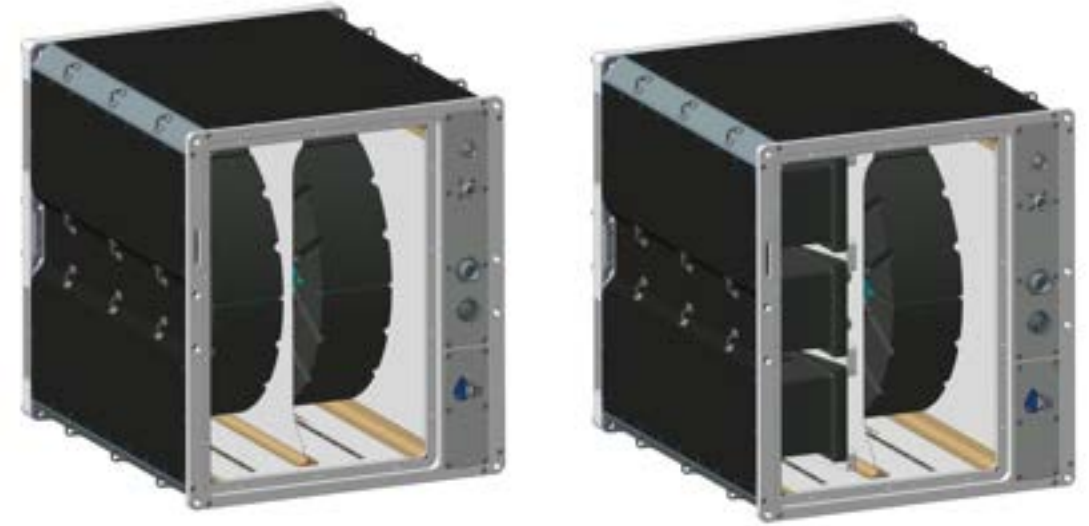
removable rotors

2g

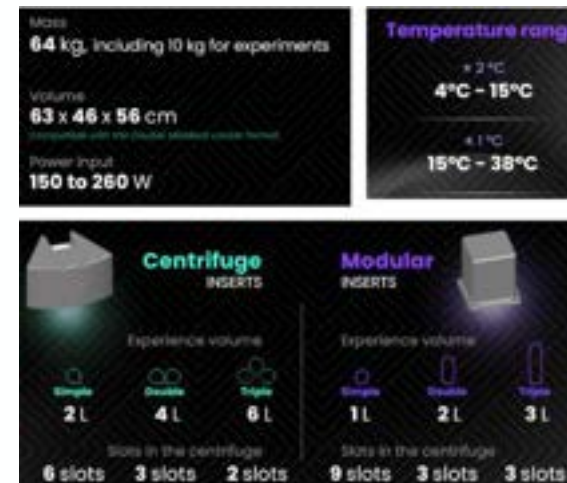
maximum g-level

Q2 2028

readiness



Credit: COMAT/KI



Biology Multiwell

Standardised sample handling for long-duration cell cultivation in space.

- 01** **STANDARDISE** A familiar multiwell format becomes a reference sample holder and support system for biomedical tissue models
- 02** **DEMONSTRATE** An early ISS demonstration will pair Biology Multiwell with CSA's MicroPREP facility
- 03** **EXTEND** The ISS pathway prepares in-situ biology research for post-ISS LEO platforms and beyond

READINESS

Q4 2028



Notional illustration · AI generated

Research commodities | Building the post-ISS toolkit

FUTURE LEO RESEARCH INFRASTRUCTURE

Turn ISS heritage into scientific enablers

Capabilities and infrastructure will enable future science, with an optical work bench (GLOW-BENCH) and cold storage (PINGU) prioritized as a critical first capabilities.



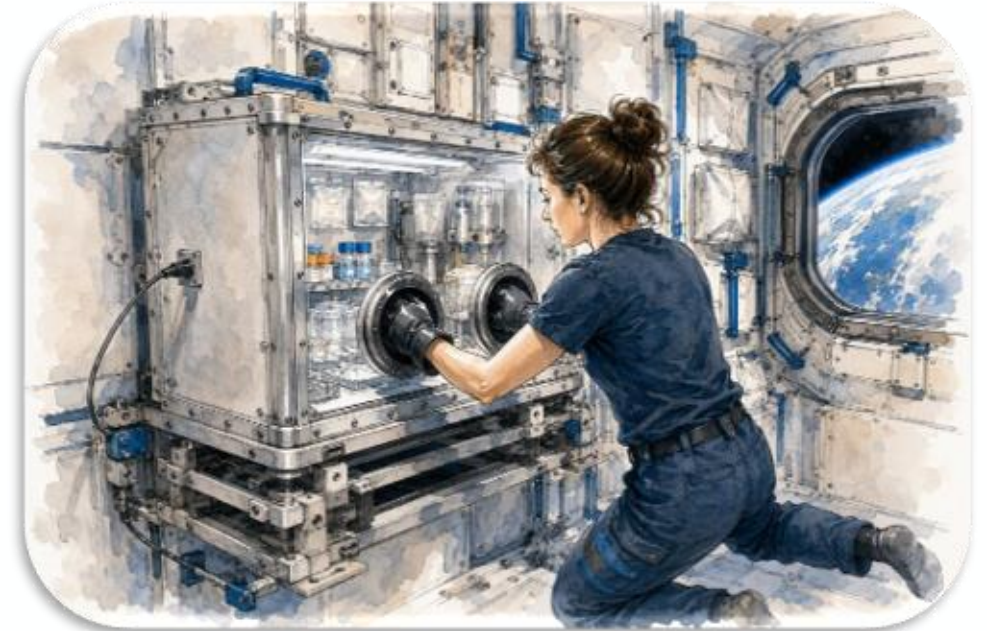
Notional illustration · AI generated

GLOW-BENCH | Research continuity beyond ISS

GLOVEBOX OPTICAL WORK BENCH

A modular research bench for post-ISS LEO

Interchangeable kits and dedicated interfaces support high-value science and selected ISS legacy payloads.



Notional illustration · AI generated

MODULAR

interchangeable research kits

LIFE + PHYSICAL

broad science applications

OCT 2026

project start

PINGU | Cryo-freezing autonomy in LEO

POWERED COOLED INTEGRATED GENERAL-PURPOSE
STORAGE

Europe's cryo-freezer for autonomous LEO research

One middeck-locker unit supports varied sample
geometries and demanding ESA thermal research.



14 L

conditioned volume
Middeck-locker format

−90 °C → +4 °C

programmable temperature control

Q4 2026

planned ITT release

CRYO-THAW | Autonomous sample transfer

AUTONOMOUS CRYOGENIC SAMPLE TRANSFER THAWING

Move frozen biological samples safely— from storage to science

Designed for autonomous thawing and downstream experimentation on long-duration missions.

**FROZEN
STORAGE**



**SAFE
TRANSFER**



**THAW & FURTHER PROCESSING
(INCUBATION, ANALYSIS)**

2

parallel contracts
Phase A/B1

Q1 2027

planned ITT release



Notional illustration · AI generated

Current and Future Science Opportunities

01	Human Research	Planned AO ISS utilisation potential extension from 2030 to 2032 • short-duration missions	Q1 2027
02	Biology	Released AO End-to-end services: ExoBiosphere Planned AOs End-to-end-services: Space Applications Services (planned) ESA-led biology AO (e.g. for MARIN)	OPEN DEADLINE: 3 NOV 2026 2027
03	Physical Sciences	Planned Call for Science Ideas For DLR's COMPACT instrument (no flight confirmed) Planned AO End-to-end-services: Space Applications Services (planned)	Q4 2026 2027
04	General	Future End-to-end services opportunity future scope may include autonomous platforms	LATER

HRE Data Archive

HUMAN AND ROBOTIC EXPLORATION DATA
ARCHIVE

Find and explore HRE datasets in one place

Browse scientific and mission data
from ESA human and robotic
exploration investigations.

- 01 BROWSE** Explore the data catalogue
- 02 FILTER** Search by mission platform
- 03 ACCESS** Open the relevant dataset



OPEN THE ARCHIVE

hreda.esac.esa.int

Exploration Science PhDs

OSIP CALL NOW OPEN

Advance exploration science through doctoral research

Applications are invited for a first round of co-funded Exploration Science PhDs.

APPLICATION DEADLINE

30 OCT 2026

≈10

CO-FUNDED PhDs

€90k

MAXIMUM ESA FUNDING



Exploration Science Workshop

Exploration Science Workshop

24-26 November 2026

ASI Head Quarters,
Frascati (Rome), Italy

Exploration Science Workshop

24–26 NOVEMBER 2026 · ASI HQ

One workshop. Three destinations. Shared science priorities.

Bring the Exploration Science community together across LEO, Moon and Mars and translate to concrete inputs and recommendations for future work.

- | | | |
|-------|--------------------------|---|
| 01 | WIDEN THE VIEW | Showcase the breadth of Exploration Science and bring every community into one plenary narrative. |
| <hr/> | | |
| 02 | CROSS-DESTINATION | Bridge LEO results and facilities with Moon and Mars needs through cross-disciplinary sessions. |

24–26 NOV 2026

ASI HQ



Agenzia Spaziale Italiana

WORKSHOP DETAILS



REGISTRATION



REGISTRATION DEADLINES

19 OCT 2026 International

10 NOV 2026 Europe

Workshop agenda | Three days from LEO to beyond

A three-day agenda connects today's LEO research with tomorrow's exploration science

DAY 1

ESA UPDATES ACROSS EXPLORATION PROGRAMME

- 01** ESA programme & science highlights
- 02** ExPeRT: preparation, research & technology
- 03** Space medicine: health, adaptation & countermeasures
- 04** Research fellow pitches: microgravity

DAY 2

PHYSICAL SCIENCE + BIOLOGY + HUMAN RESEARCH

- 01** Fundamental microgravity research & applications
- 02** Early-career pitches
- 03** Biology roadmap & future opportunities
- 04** Translate LEO research into exploration needs

DAY 3

FUNDAMENTAL PHYSICS + RADIATION COMMUNITY DISCUSSION

- 01** ACES: precision measurements on the ISS
- 02** Dosimetry, radiation protection & future research
- 03** Interactive discussion: priorities & opportunities

KEY MESSAGE Leverage the space environment to enable excellent science, close exploration-critical knowledge gaps and prepare future human and robotic missions.

Community discussion | Your voice, our future

Shape the Day 3 discussion: share questions, comments and recommendations

Input is welcome on any aspect of ESA Exploration Science and will directly inform the interactive workshop session.

01	SHARE	Questions, comments or recommendations
02	INFLUENCE	Help shape the Day 3 community discussion
03	BUILD	Lay the foundation for future exploration science activities

DEADLINE **8 NOVEMBER 2026**

SCAN TO CONTRIBUTE



Your input.
The community’s future agenda.



EUROPEAN SPACE AGENCY

THANK YOU!



EXPLORATION SCIENCE

<https://explorationscience.esa.int>



ExplorationScience.esa.int

Newsletter subscription available