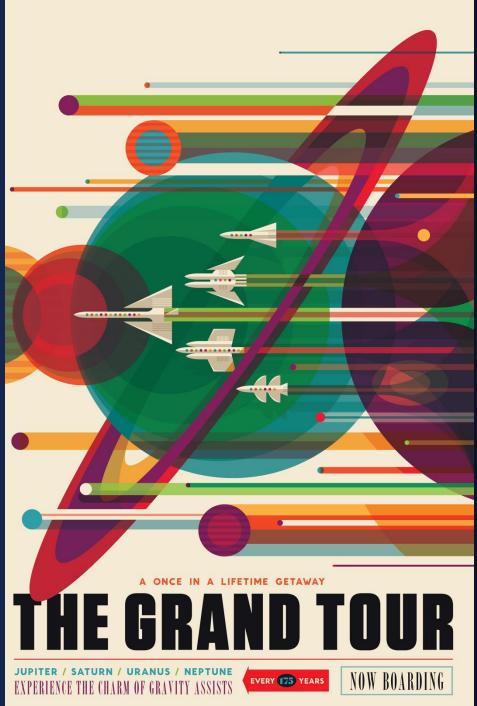


We help Earth benefit from Space

Esrange Space Center: Leverage for Space exploration

Future Space - Linköping

Armelle Frenea-Schmidt, Business Development Director, Science Services, SSC 17.09.2024



Credits: NASA <u>Voyager - Downloads (nasa.gov)</u>

Space Exploration: Why?



Navigation system

Scientific instruments

Power system

Space Exploration: What?



Thermal management system

Communication system

Credits: NASA Voyager - Mission Overview (nasa.gov)

Navigation system

Communication system

Scientific instruments



Power system

Thermal management system

Credits: ES

ESA - Wher

Life Environment system



s - The International Space Station

Credits: ES ESA - Space

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SaFari - Integrated circuits on silicon to produce better computer chips and solar panels ESA Experiment

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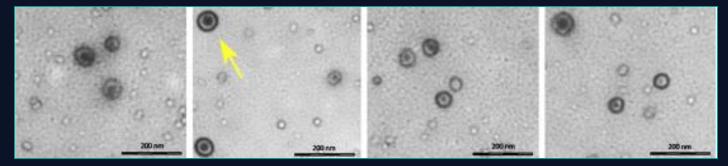
TRUP -

- HER

TEXUS 59 - Launched in 2024 from Esrange

Credits: ESA ESA - Viper and T-Rex on double rocket launch





Credits: Uppsala University <u>Effects of microgravity on neural crest stem cells (diva-portal.org)</u>

CREST STEM cells – Effects of microgravity on neural cells *Uppsala University, Biomedical Center*

Suborbital Express Maser 14 & Maser 15 - Launched in 2019 and 2022 from Esrange

BIODECODER MIND-G & LIFT - Study biological system, especially neuronal cells under altered gravity conditions *DLR*, *Institute of Aerospace Medicine*

MAPHEUS 12, MAPHEUS 13 & MAPHEUS 14 - Launched in 2022, 2023 and 2024 from Esrange

Credits: DLR/Bayern-Chemie <u>Four hundred kilograms of research in microgravity (dlr.de)</u>





CEMIR – Bone & muscle cells and influence of microgravity effects *Karolinska Institute Stockholm*

MAPHEUS 14 – Launched in 2024 from Esrange

Credits: DLR/Bayern-Chemie Four hundred kilograms of research in microgravity (dlr.de)



RADICALS - Test of conceptual radiation shield for long term space missions *Royal Melbourne University of Technology*

MAPHEUS 14 – Launched in 2024 from Esrange

Credits: DLR/Bayern-Chemie Four hundred kilograms of research in microgravity (dlr.de)



TOPOFLAME - Study of flame spread in reduced ambient pressure while increased oxygen concration effects *University of Bremen, ZARM*

TEXUS 59 – Launched in 2024 from Esrange

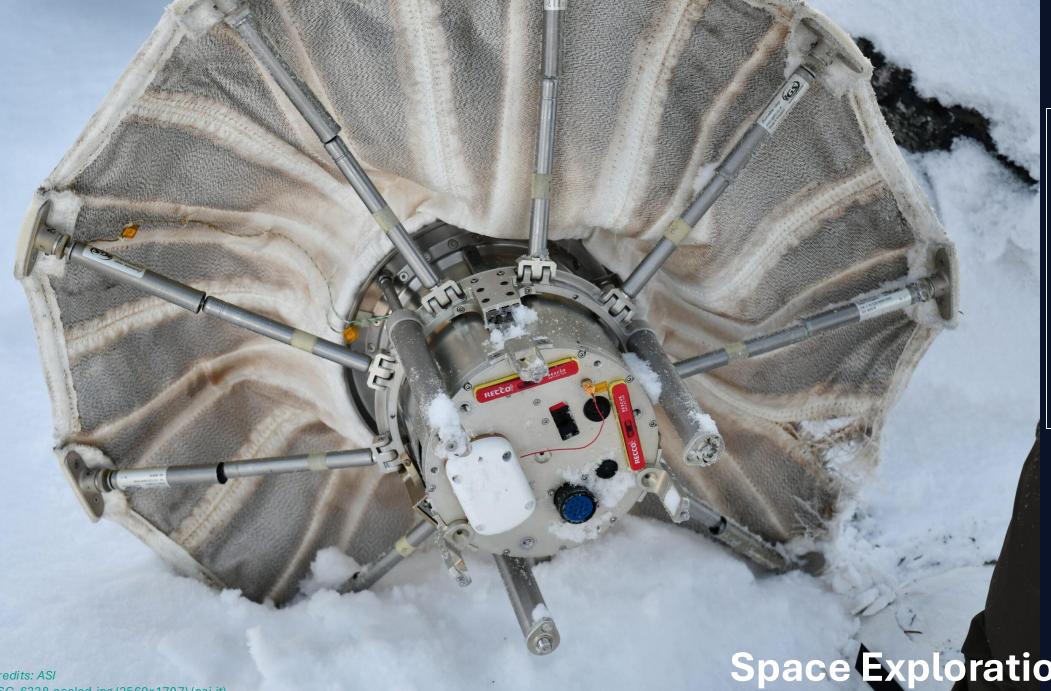
Credits: SSC Space research towards efficient solar cells (sscspace.com)



HADT - Qualification and Testing of ExoMars parachute system *ESA, Vorticity*

HADT Balloon - Launched in 2021 from Esrange & upcoming mission in June 2025

Space Exploration: What?



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Mini-IRENE Qualification and Testing of re-entry system MIFE project from ASI & ESA

Suborbital Express MASER 15 – Launched in 2022 from Esrange

Space Exploration: What?

Credits: ASI DSC 6338-scaled.ipg (2560×1707) (asi.it)





IMFEX – Proof of feasibility of designing, building and operating fiber spinning apparatus to produce glass fibre on the Moon's surface. *RWTH Aachen University*

REXUS 30 – Launched in 2024 from Esrange

Space Exploration: What?

Credits: IMFEX (11) Feed | LinkedIn **ECRIDA** – 3D printing under microgravity (resin curing) *Politechnica Bucharest*

REXUS 29 – Launched in 2023 from Esrange



Space Exploration: What?

SSC

Credits: ECRIDA (20+) Facebook **DREAM** – Dreaming Experiment for Asteroid Mining Wroclaw University of Technology

REXUS 21 – Launched in 2017 from Esrange





Space Exploration: What?

Credits: DREAM (20+) Facebook SUNRISE III - Solar Observatory investigating physics and plasma flows in the lower solar atmosphere to understand the magnetic activity of the Sun / Telescope USA (Johns Hopkins Applied Physics Laboratory), Japan (NAOJ), Spain (IAA, UV, UPM), Germany (Max Planck Institute, KIS)

Launched in July 2024 from Esrange



pace Exploration: What?



BoB BAMMsat-on-BEXUS - Life environment to ensure survival of biology material Application for future human spaceflight *Cranfield University, UK*

ssc

BEXUS 30 - Launched in September 2021 from Esrange



CURIE - Composite and photovoltaic undergoing radiation effects *Warsaw University of Technology, Poland*

BEXUS 34/35 - Planned to be launched in October 2024

MASS - Manufacturing of Structures in Space (rigidization method on inflatable structures for Space application) <u>Hochschule M</u>ünchen, Germany

BEXUS 31 - Launched in September 2021 from Esrange

Space Exploration: What?

Launch here today to Explore beyond tomorrow

Esrange Space Center

Thank you for your kind attention!

Armette.frenea-schmidt@sscspace.com



Swedish Space Corporation

We help Earth benefit from Space

www.sscspace.com