

► Transforming ► Research into ► Real-World ► Impact

From Academia to Entrepreneurship: Navigating the Journey in Planetary and Space Sciences



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Distributed Research Infrastructures in Europe Workshop 2025
Impact, Industry Engagement, Research Security and Dual Use



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Industriens Hus, H. C. Andersens Blvd. 18,
1553 København, Denmark

My academic foundations

Background in **Earth Sciences**

Early entry into **Planetary and Space sciences**

Early understanding of the impact of **Technologies, State-of-the-art Instrumentation, & Computers**

Key achievements:

Publications ❖ Discoveries with impact ❖

Collaborations ❖ Interdisciplinarity ❖

Intersectionality ❖ Focus ❖ Mobility

Academic mindset:

Curiosity ❖ Creativity ❖ Problem solving ❖ Detail



Recognising the Entrepreneurial Potential



ESA OSIP PLATFORM



DISCOVERY IDEAS

Technical Focus: Usability, Modularity, Friendly Interfaces, Innovation

Collegial focus: Identify the right **Collaborators**, establish uninterrupted and trusted **Communication** on a shared **vision**

Entrepreneurial focus: **Unfearful Sharing & Merging** of ideas towards joint concepts or ventures

Identified gaps: Identification of scientific and technological **Needs** in the **Space-tech Ecosystem**

Acquired experience: **ESA** OSIP projects, **ESA** Visiting Researcher, extended network

The Transition Decision: The why!

The academic sector

Funding: Scarce, with evaluation issues

Administrational issues: extremely bureaucratic and time-consuming

Academic impact: rarely adequate or satisfactory

Plethora of Journals with **Rushed** Publications of moderate to low quality

Metrics, Citation and Evaluation: too much focus, distorted, loss of innovation

Time demand: inefficient time consumption

The entrepreneurial sector (SMEs)

Broader **Impact** – Faster **Return** (for innovative services/products)

Faster **Innovation Cycles** – Visible/Measurable **Progress**

Trust-building Mechanisms: Better established and clear

Intellectual Property/Ownership: better management/control, and less **Conflicts of Interest** than when Academia interferes
(extensive interference and reduced capacity from universities to practically/financially support/retain IPRs)

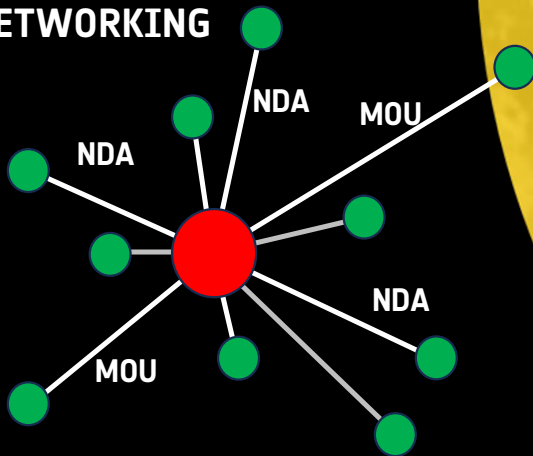


Avoiding the Pitfalls: Our First Steps



BUSINESS
INCUBATION
CENTRE

NETWORKING



Test your Ideas: Apply to **Research & Technology Funding Organisations & Agencies** (Check the role of **National Delegation!!!**)

Know the Market: identify the **Needs** through **Mobility & Networking**

Seek Mentorship: from **Incubators/Accelerators**

Embrace Minimum Viable Product (MVP) thinking and define it well

Cultivate strong Communication and Negotiation skills: speak to other entrepreneurs, venture capitalists, journalists, visit exhibitions of your interest, go to conferences organised by Space agencies (i.e., ESA) or attend their meetings (i.e., NASA's LSIC Lunar Surface Innovation Consortium)

Focus on Customer Discovery and Stakeholder Engagement: Exhibitions, Conferences etc.

Building a Sustainable Venture



Integrate **Scientific Rigor**
with **Entrepreneurial**
Agility

Build a
Multidisciplinary
Team



Building a Sustainable Venture by defining our 'Unique Value Proposition'

lunarDBCRCR

Lunar Dust Biotoxic Chemical Reaction
quantitative detection

**Measures total
ROS ($O_2^{\cdot-}$, H_2O_2)**

QXR
In Situ Oxygen Resource Utilisation

**Measures $\cdot OH$ radicals
(induced biotoxicity)**

**Cosmic ray-activated
perchlorate (ClO_4^-)
is explosive and
generates biotoxic
PERCS**

**A novel Perchlorate
Reactive Chlorine
Species (PERCS) sensor
for missions to Mars,
Moon, and Europa**

$ClO_4^- \xrightarrow{H_2O} HClO (PERCS)$

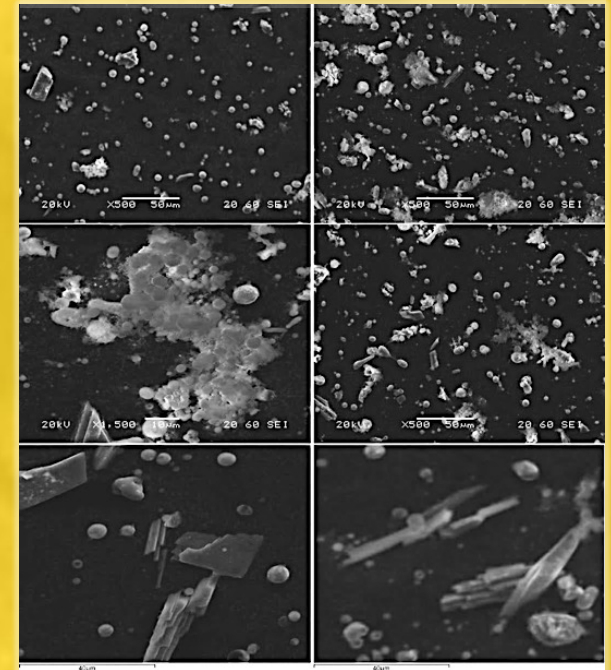


**Measures perchlorates
as free chlorine
(Cl_2 , $HOCl/OCl^-$),
(toxic/explosive)**

**Sensors for:
Monitoring the
Lunar
Environment
(Highly Reactive
and Biotoxic
Lunar dust)**

**& for measuring
the Oxidative
Stress of
Astronauts**

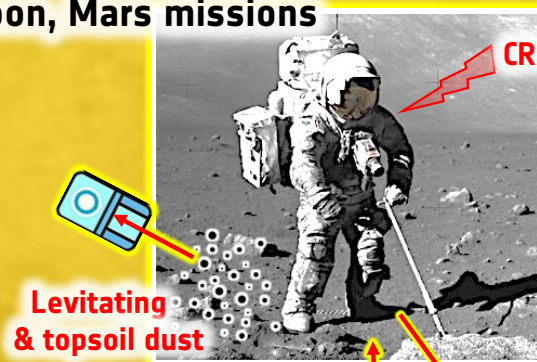
**Ultra-high Fidelity
Lunar Surface
Environment Simulants**



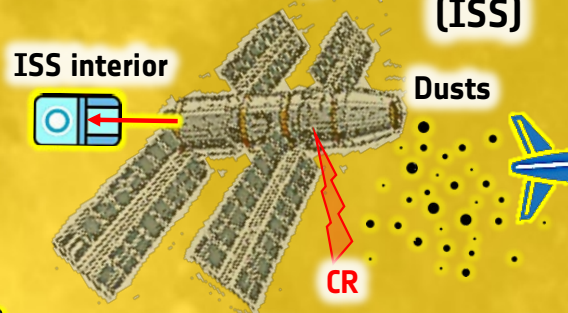
Sustainability of our Venture

Uninterrupted search for Opportunities & Applications

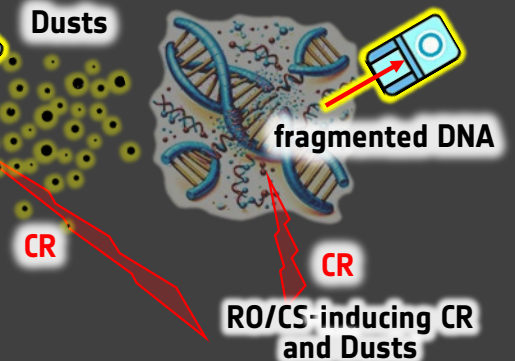
Moon, Mars missions



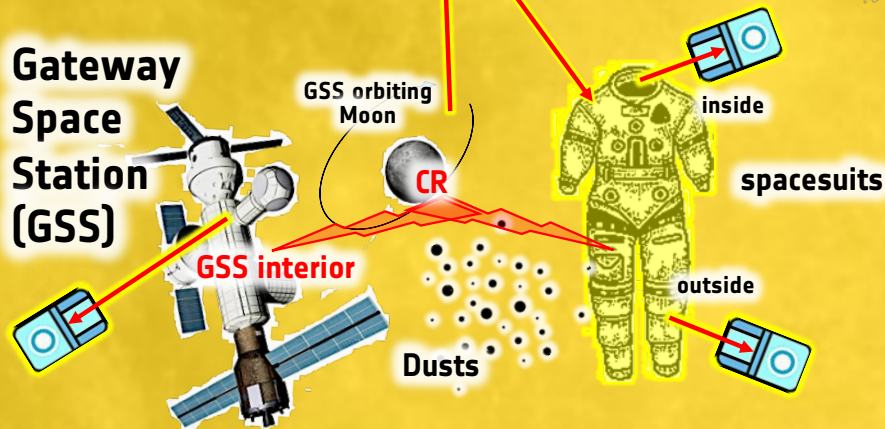
International Space Station (ISS)



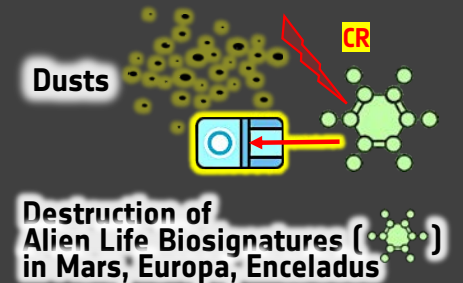
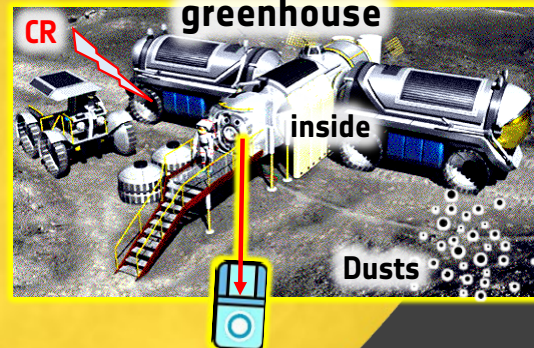
Airplane Crew and Astronaut DNA damage



Gateway Space Station (GSS)



Moon/Mars base stations, rovers, greenhouse



Long-term Sustainability for our Venture

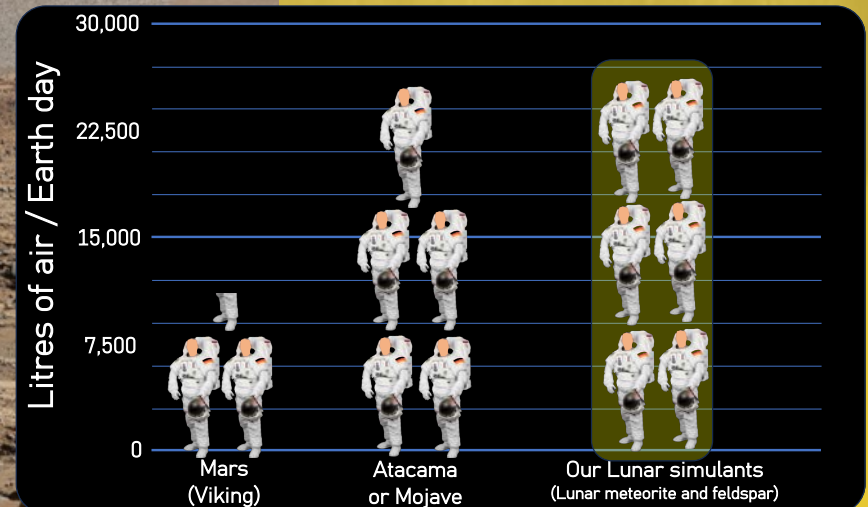


Inspiration by promoting Long-Term Concepts



Oxygen Farming on the Moon:

extract oxygen with almost
no energy requirements by
processing the Lunar Dust



What we are looking for ...



Stellar Discoveries P.C.
is redefining the future of
human space exploration
with a ground-breaking
combination of planetary
science, biochemistry,
astrobiology, and
advanced engineering.

Stellar Discoveries P.C.
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GR-14453, Greece

<https://stellardiscoveries.space>
info@stellardiscoveries.space

There is a rapidly expanding network of collaborators
(Industries, State Agencies, Institutions, Space Agencies)

**We are looking for all types of collaboration and
investments!**

**Being part of our network,
gets you involved in shaping
a sustainable human presence
in Space!**