# Asclepios

**Press Kit**

Asclepios I

2021

## About Asclepios

- Asclepios is an EPFL MAKE initiative by Space@yourService whose purpose is the realization of analogue missions designed by students for students under the mentorship of trained professionals. These missions are simulations of actual space missions and are prepared using a "do-it-yourself" approach. As such, every member of the project isn't a professional but an enthusiastic student willing to learn and adapt to make each mission a reality. However, the project collaborates with scientists, laboratories as well as the industry to benefit from their expertise and to offer in return a testbed. As a matter of fact, analogue missions are performed each year under the supervision of space agencies but in the case of Asclepios, it is only students who are in control.
- Space@yourService (S@yS) is an EPFL recognized non-profit student organization which aims at promoting and popularizing space sciences (astrophysics, space engineering, astronomy, etc.). S@yS, in collaboration with national and international institutions from science and industry is working at the cutting edge of space promotion with the development of innovative means of communication (Astronomy on tap, school programs, etc, ...).

## Analogue Mission

- The Asclepios missions are human-sized analogue missions which can be performed only by students with the goal of training them for their future space endeavors as astronauts, space engineers or members of the Mission Control Center.
- It is thus for this reason that one of its main objectives is **education**, which is carried out in collaboration with official educational institutions and takes the form of academic work, workshops and analogue missions training.
- By trying to imitate the conditions of space, the goal of analogue missions is to test every component of upcoming missions to other celestial bodies, such as the Moon or Mars, thus paving the way to the future space exploration of our solar system. This is why offering partners the possibility to do **scientific research** is the second objective of Asclepios. Finally, as part of S@yS commitments, the project adopts the role of **science communicator** through a various array of means. The goal is educating and inspiring young generations, through engaging media appearances and mission protocols popularization.

## Interest of the project

The Asclepios mission has a wide scope of interest. It serves as a platform for laboratories and start-ups, offering a framework that allows them to carry out tests with a heightened sense of realism compared to a laboratory.
Furthermore, the Asclepios mission aims to provide a first insight and training to those who will be the astronauts, the engineers and the researchers of tomorrow which are likely to be the students of today.

## Asclepios I

Dates: *12th to 20th of July, 2021*

Focus: *Exploration (Moon analogue)*

Location: *Grimsel Test Site, Switzerland*

## Asclepios in Figures

Astronauts

**6** analogue astronauts

**+**

**3** backup astronauts

International Team

**4** Continents

**18** Countries

Members

From **High School** to **PhD**

**20+** fields of study

# Scientific Research

Presented here is a curated selection of some Asclepios I experiments. They are representative of the wide scope of the scientific payload of the mission.

## NASA Psychology Project

University of Manchester

The purpose of this project is to help validate the health standards of NASA and explore the premises that might influence the responses of individuals in stressful and demanding environments like the ones astronauts will be facing.

## GeoReMap

University of Basel

This project consists in creating a topographic chart of the area where the analogue mission will take place, based on certain parameters like: the height of objects, GPS data and the perception of astronauts to whom the terrain will be completely unknown.

## Redmars

University of Lausanne

A groundbreaking experiment that consists in being able to remove perchlorate from Mars soil, a substance that currently makes it a barren land. The experiment is a sustainable process as it uses the same water for each cycle and the extracted chlorine could be used as propellant for any kind of activity in the base.

## Hydration III

MIT

This is a collaboration with MIT for a NIA & NASA challenge. It is a proof of concept for an autonomous water ice mining system for the Moon or Mars that includes a prospecting system to identify layers of overburden. The astronaut will be trained to use it remotely from the base as the engine stays at MIT.

## Geophysical Exploration Training

ETHZ

Geophysical exploration techniques are key to illuminate the internal structure of the Moon; from the shallow subsurface to the lunar core. The goal is to gain experience with astronaut-conducted geophysical field experiments during EVA (extravehicular activities) .

# The Teams

***Science:***
The science team coordinates start-ups, companies, laboratories and students to conduct experiments within the frame of Asclepios. After the mission, the team helps analyze the data collected.
The team is divided into three different subgroups: Life aboard, Operations and Systems.
Some members of the team are students doing a Semester project as part of their Bachelor or Master studies.

***Communication:***
The communication team is responsible for the project's public image. It uses social media, external events, website development tools to ensure that the project reaches space enthusiasts or newcomers alike as well as to allow the project to meet new partners to work with.
It is also the press organ of the project, acting as an intermediary between journalists and any component of Asclepios mission.

***Astronauts:***
The astronauts team handles everything related to the astronaut crew of the Asclepios missions. They are responsible for every step of the selection of the astronaut crew. Once it is done, the training of the astronauts, their nutritional plan and sport activities becomes their responsibility. This duty puts them in charge of searching for ways to ensure that the astronauts receive teachings on a level required guarantee the realism and the success of an analogue mission.

***Logistics:***
The logistics team has the critical role of providing the rest of the project with the tools needed to perform its mission. It ranges from finding locations or booking meeting rooms to looking for and purchasing consumable itemsfor the astronaut crew.
They handle the search for space relevant industrial products and their usage protocols during the missions. The design of the base falls under their umbrella as well as the critical role of operating the communication system between the base and the mission control center

# Astronauts of Asclepios I

**Willem Suter,**
Master student

Born in Switzerland in 1996 as a Swiss, Belgian and American national. Currently studying Mechanical Engineering in Automation and Control with a specialization in Space Technologies at EPFL in Lausanne. He is currently finishing his studies working for ClearSpace on the Relative Navigation system as well as for the Geneva Observatory on a near-field cosmology research project. Along with his studies, Willem works part time as a project manager for SORA Consulting and spends his free time doing mountaineering in the Alps. He is fluent in English and French, and speaks German and Dutch.



**Eleonore Poli,**
PhD candidate

Born in 1995 in Lausanne, Switzerland, she studied Materials Science at EPFL, and then Mechanical Engineering at ZHAW, Switzerland. She completed a Master's in Materials Science and Metallurgy at the University of Cambridge where she is currently working on her PhD, on the subject of Mechanical Damages in Coatings for Superalloys in Hot Corrosion Environments for Turbines. In her free time she plays handball, competes in long distance triathlon and running races, plays piano and does photography. She speaks French, English and German fluently and has bases of Italian and Russian.

**Sebasthian Ogalde Castro,**
Master degree

Born in 1994 in Antofagasta, Chile. He is a graduate in Microelectronics and Telecommunications Engineering at Universidad Católica de Chile. Afterwards, he studied a MSc. in Mechatronics Engineering at Politecnico di Torino, Italy. Currently, he works as an AOCS Engineer on ESA's satellite EUCLID, aimed to study dark matter and dark energy. Sebasthian is also a private pilot student and scuba diver. He speaks Spanish, English, Italian and Russian fluently.

# Astronauts of Asclepios I

**Manuela Raimbault,**
PhD

Born in Laval, France, she studied maths and physics. After an engineering school in Nantes, she specialised in astrophysics pursuing her studies at Observatoire de Paris and completing a PhD at Geneva observatory. She is keen on mountaineering which she practices regularly in the Alps. She also plays the violin, piano and guitar and likes photography and astrophotography. She speaks French, English and a little bit of Spanish, Italian, Portuguese and german.



**Julien Corsin,**
Master student

Born in France near the swiss border next to Geneva, he graduated from high school with a one-year lead, and after getting his Baccalaureate in sciences (Mathematics specialty), he moved to Lausanne where he is currently studying computer and communication sciences studies at EPFL. In possession of a Bsc in Communication Systems, he is now pursuing an Msc in the same domain, with a specialty in spatial technologies. He is fluent in french and english, and also knows german.

**Sophie Lismore,**
Bachelor student

Born in 1999 in St-Julien-en-Genevois, France, as a Swiss and British national she earned a bilingual baccalaureate in 2017 and is now studying Physics at EPFL in Lausanne, Switzerland. She was a competitive alpine skier and now fences and is an avid reader and traveller. She speaks fluent English, French and German.

For more information on the astronaut crew visit the mission's website: *https://asclepios.ch/asclepios-en/the-astronauts/*

## Main Partners

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GTS

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*Absolutely*

Startups Friendly,
**Absolutely**

Association des communes de Crans-Montana
Service de la promotion économique

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EPFL Space
Center

SPACE
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EPFL

# Support Partners

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SOLENIX

## Bronze

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AIRTHINGS

HE SPACE
it's all about people

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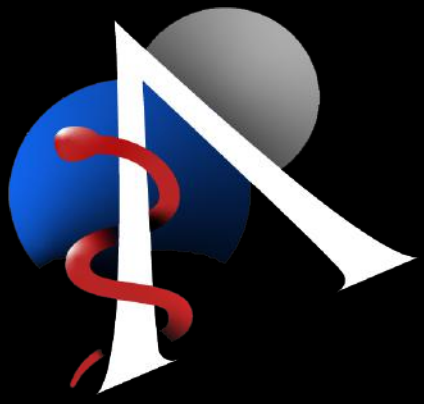

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