



SPACE GENERATION ADVISORY COUNCIL

In support of the United Nations Programme on Space Applications

Space Exploration Project Group's Plan to Ensure a Diverse, Sustainable and Exciting Path for the Future of Space Exploration

Presented by: Newsha Haghgoo



Space Exploration Project Group



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Agenda



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- Role of the current young generation within the space exploration
- Space Exploration Project Group (SEPG) 's past and current projects
- How SEPG is contributing to the inclusive and sustainable involvement of young generations in space exploration

Space Exploration



- Space exploration is a long-term challenge
- Young generations define the direction of future space exploration
- It is imperative to ensure that the young generation, despite their gender, race and class can get access to various collaborative and learning experiences



SGAC's Space Generation Fusion Forum, USA (April 2022)



SGAC's European Space Generation Workshop, Cyprus (April 2022)

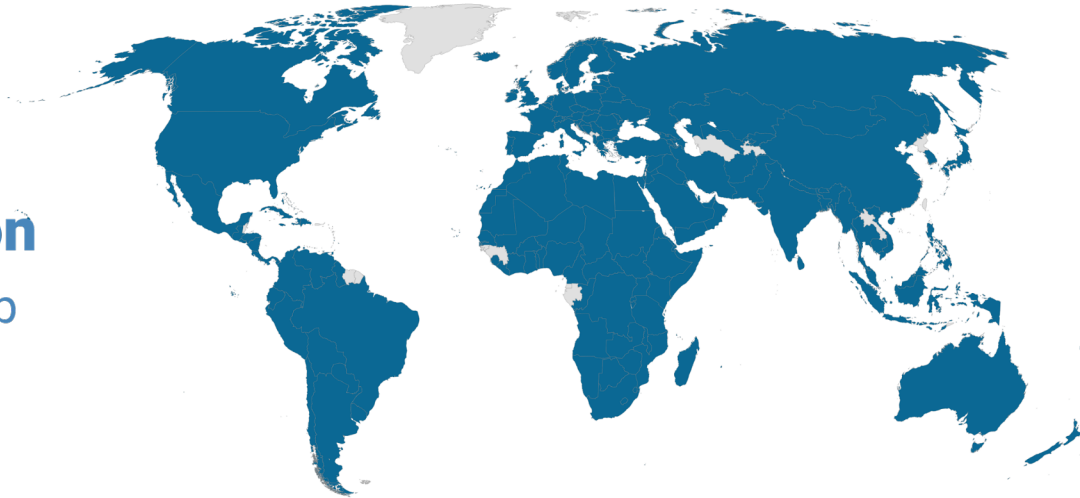
Our Project Group



6 Regions, 700+ Members



**Space
Exploration**
Project Group



SEPG's Projects



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**Conference
Papers**

**Mission Design
Projects**

**Analog Mission
Research Project**

**Space Exploration
RoadMap**

**Newsletter &
Book Project**

Conference Papers



- Our members continuously work on research topics related to space exploration to be presented at international conferences, such as the International Astronautical Congress, AAE, etc.
- This year, **7 papers** were accepted for presentation at **IAC** in Paris, topics include:
 - Lessons learned from SGAC's ACHIEVED mission design project, adapting projects based on curiosity and needs of the next generation.
 - Mercury Sample Return Mission Design Utilizing Innovative Systems and Technologies
 - Space Radiation Safety For Female Astronauts: A Thorough Study On Radiation-Induced Cancer
 - Immersion in the new space age: harnessing innovative technology for a more diverse and inclusive outreach to inspire the next generation
 - Review of menstrual blood-derived cell therapy to support astronauts in long-term space missions.
 - CubeSat-Based Mission Architecture for Outer Planet Exploration: Uranus Case Study
 - Multiphase geo-energy production on Mars using geologic CO₂ storage in the sedimentary basins

Mission Design Project



- **ACHIEVED** is an international (15+ countries) and interdisciplinary team of 20 students and young professionals who are preparing the young generation to design space exploration missions.
 - **HOPE (High-technology Operations for Planetary Exploration)**
 - Research team with various specialisms working on a high-tech realistic space mission to Neptune with a complex content of engineering, mission operations and scientific background.
 - **RAISE (Research Assembly for Innovative projects in Space Exploration)**
 - Investigating an innovative approach to a Mercury sample return mission. The science collected from this mission will bring us closer to understanding how Mercury if formed



Analog Mission Research



- **DREAM** initiative (Design and Research of Exploratory Analogue Missions) aims to foster an inclusive community which shares the common vision of using analogue missions as scientific testbeds for space exploration.
 - Centralised database
 - Combining the past and current knowledge of analogue missions (including research, logistics, operations etc.) on one user-friendly platform.
 - Standardization
 - Developing a quality management standard for future analogue astronaut missions to ensure rigorous cohesion within the global community.

RoadMap Committee



- **Roadmap Committee** initiative aims to directly implement Space Exploration ideas from the next generation in an inclusive **Space Exploration Roadmap** that can be provided to the space community. The program will start with 4 sub-committees:
 - **Planetary Sciences**
 - **Human Safety for Space Exploration**
 - **Engineering challenges and robotics**
 - **Gender Equality and Diversity in Space Exploration**
 - In cooperation with SGAC's Diversity and Gender Equality project group
- The committees with consist of 15 motivated members with various study backgrounds and advisors from space sector.

Newsletter & Book Project



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SPACE EXPLORATION PROJECT GROUP
NEWS FROM YOUR SOLAR SYSTEM AND BEYOND



ISSUE 1 JUNE 2020

Newsletter



SPACE X DEMO 2 A new era of human spaceflight

Location is Launchpad 39A, Florida, date is May 30th, 7:22pm UTC, 3:22 local time: this is a new historical date in the era of human spaceflight.

Almost 9 years after the last Space Shuttle mission, STS 135, NASA, more in general USA, gained again the capability of sending human beings in orbit thanks to the new crew vehicle Dragon (renamed Launch America by the crew members) developed by Space-X as part of the NASA's Commercial Crew Programme. The two astronauts, Robert Behnken and Douglas Hurley, lifted-off from the Kennedy Space Center on board the Falcon 9 and successfully docked with the International Space Station (ISS) the following day at 14:19 UTC, where their connational Chris Cassidy, ISS Commander, and the two Russia crew members, Anatoly Ivanishin and Ivan Vagner, welcomed them on-board.



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SEPG

Performed and Upcoming Events

In these difficult times with millions of people affected by the on-going worldwide coronavirus pandemic, SGAC members prepared a solidarity message to comfort people and let them know that nobody is alone:

 **SGAC sharing a message of hope amidst CoVid-19**

The SEPG leadership team is working on a series of webinars on different topics with professionals and experts in the field:

- Can we mine the Moon? Benefits and challenges of Space Resources Utilization with Mr. Paolo Pino from Politecnico di Torino
- Forward to the Moon: Sustainable Lunar Activities and Principles for a Moon Village, with Dr. Piero Messina from ESA, Prof. Mark Sundahl from Cleveland Law and Ms. Dimitra Stefoudi from Leiden University
- Towards a Lunar Economy with Dr. Giuseppe Reibaldi from the Moon Village Association and Mr. Carlos Espejel from Space Europe
- Fly me to the Moon - Analogue Missions for Lunar Exploration with Dr. Ilaria Cinelli, SEPG Co-Lead, and Dr. Aleksander Wasniowski from LUNARES

All the videos are posted on the SEPG Facebook page:
https://www.facebook.com/pg/sepg.sgac/videos/?ref=page_internal

SEPG is proud to announce that starting from the end of May, a group of SEPG members joined the SGAC team that will participate in the international Mars City State Contest organized by the Mars Society. A team of 30 students and professionals will try to design in a bit more than a month a city that could self-sustain as much as possible 1'000'000 inhabitants.

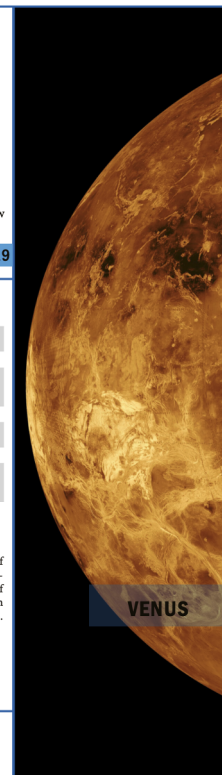
All the information about the contest can be found at:



Website

Remind that SGAC has a dedicated Calendar with all the upcoming webinars, give it a look to see what is coming next:

<https://spacegeneration.org/events/category/webinar>



SEPG's Goals



- Create an international and interdisciplinary forum integrated by students and young professionals to approach Space Exploration from a multidisciplinary point of view
- Integrate the perspectives of the next generation of space explorers into the GER implementation.
- Support members to foster space exploration careers by creating chances in educational activities, space projects and networking events.



One of the SEPG's meetings featuring our international members
(ACHIEVED)



**Space
Exploration
Project Group**

Conclusion



- Space sector is constantly evolving
- The direction that will be followed in the future is in the hand of today's young generation
- SEPG is contributing to the inclusive and sustainable involvement of young generations in space exploration

If you are interested in supporting our project group, as advisor or partner, please reach out to SEPG co-leads Newsha Haghighi & Bram de Winter



THANK YOU

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