

Organized by:

Hosted by:



14 - 18 JUNE 2021

St. Petersburg, Russian Federation

HIGHLIGHTS

60th Anniversary of
Yuri Gagarin's Spaceflight



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WELCOME MESSAGE

The third edition of the Global Conference on Space Exploration (GLEX 2021) was organized together with ROSCOSMOS in the beautiful city of Saint Petersburg 14 - 18 June. Being one of the first in-person conferences since the beginning of the global pandemic it was an extraordinary event that allowed the community to meet and discuss again after many months apart.

GLEX 2021 provided a platform to exchange views on the important achievements in Space Exploration by reviewing the past 60 years, discussing the recent exciting endeavors of the global space community and looking at the future planned space exploration missions. We are delighted to announce that more than 800 attendees from more than 34 countries gathered in Saint Petersburg. There were also 1500 delegates from 113 countries connected remotely.

This conference was also the occasion to celebrate the 60th anniversary of Yuri Gagarin's spaceflight. His mission was one of the defining moments of the 20th century and changed space history and the perception of all humankind forever.

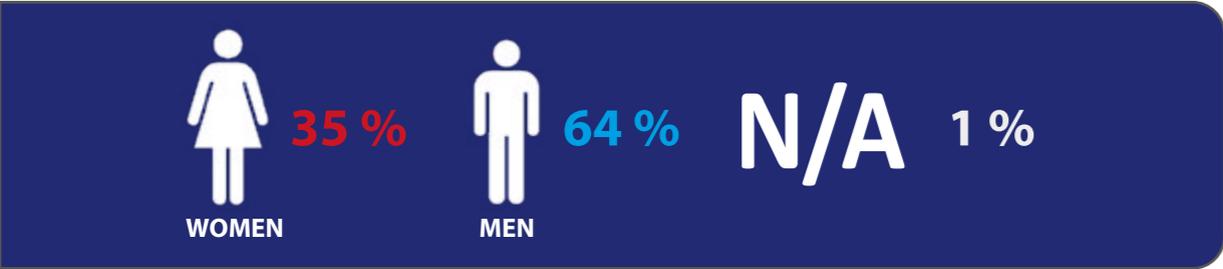
With pleasure we provide you with this booklet documenting the highlights of GLEX 2021. Once again, we would like to thank everyone who contributed to this outstanding event and thanks to all the participants who gathered in Saint Petersburg!

PASCALE EHRENFREUND
President,
International Astronautical Federation

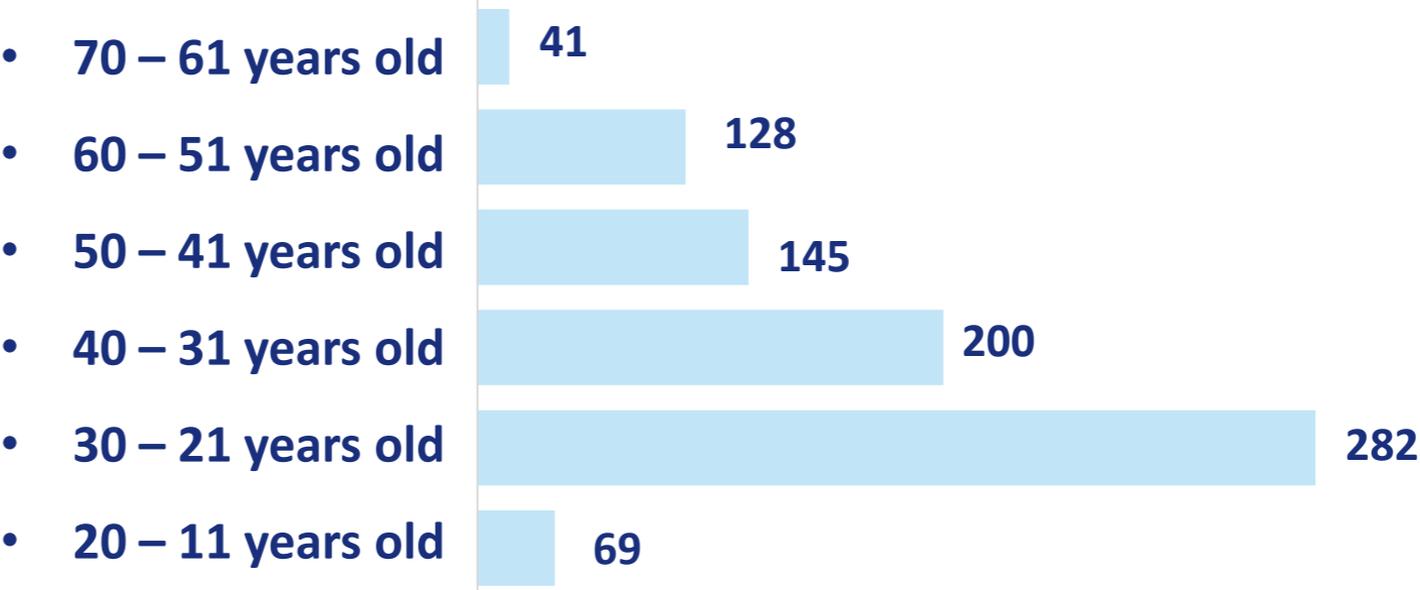


GLEX 2021 STATISTICS

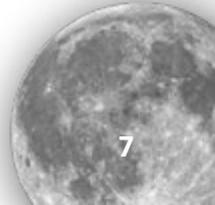
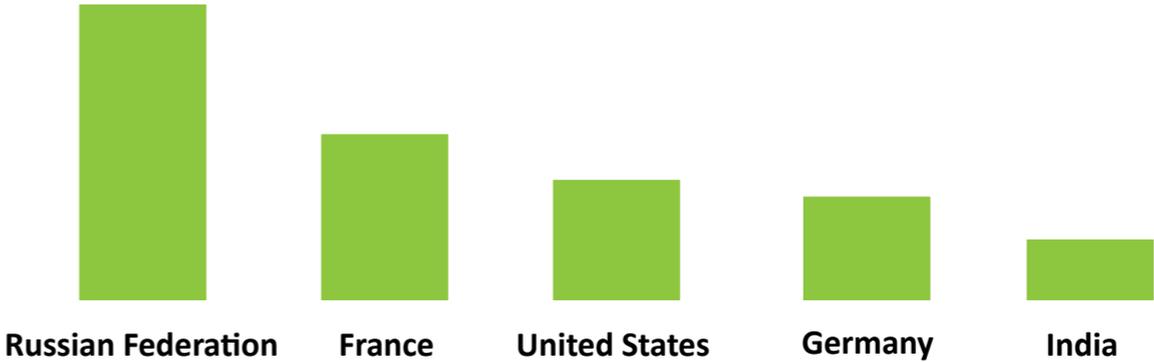
- **866** On-site registrants from **34** Countries
- **1503** Virtual registrants from **113** Countries
- **7151** views of the **Technical Presentations Gallery**



Registration by Age



Top Countries





MONDAY

Next Generation Day

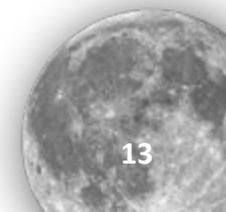
14 June 2021

The IAF Next Generation day commenced with an opening ceremony featuring IAF President Pascale Ehrenfreund, the ROSCOSMOS Deputy Director General for International Cooperation Sergey Saveliev, the Chairman of the St. Petersburg Committee on Youth Policy and Cooperation Bogdan Zastavy and the master of ceremonies IAF Executive Director Christian Feichtinger.



INTERNATIONAL COLLABORATION FOR SUSTAINABLE SPACE EXPLORATION

The main plenary session of the Next Generation Day was focused on the topic of young space professionals' role in international collaboration for sustainable space exploration.





The GLEX 2021 Next Generation day concluded with a final session hosted by IAF president Pascale Ehrenfreund and Antonio Salmeri, lead of the EAGLE team on Lunar governance in the Space Generation Advisory Council. During the session, representatives from each working group that met in the afternoon came on stage to briefly present the conclusions from their working groups.





TUESDAY

15 June 2021

After a challenging year brought on by the global pandemic, the third Global Space Exploration Conference kicked off in style with speeches by high-level representatives from Russia and the president and executive director of the International Astronautical Federation.



"This is indeed a crucial moment in the history of space exploration, both for the important event that we celebrate this year the 60th anniversary of humankind's first spaceflight, but also for the outstanding achievements that the space community accomplished in the past year and months,"

Pascale EHRENFREUND

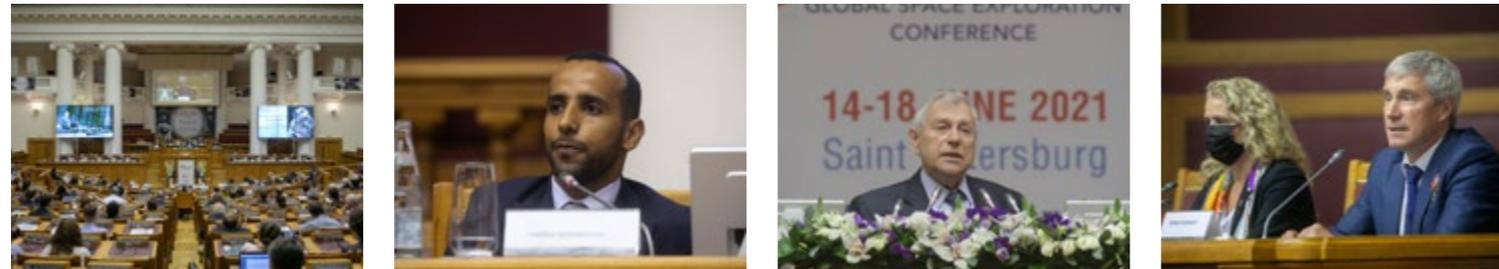


EXHIBITION OPENING



60TH ANNIVERSARY YURI GAGARIN'S SPACEFLIGHT

GLEX 2021 took place on the 60th anniversary of Yuri Gagarin's historic spaceflight. To commemorate this occasion, more than a dozen cosmonauts and astronauts took the stage for the first plenary to discuss Yuri's legacy and what this historic spaceflight meant to them.



"He was the first to go into space and look back down on our planet. He saw the beauty of our planet and he talked about protecting our environment and living here in peace. This message from Yuri Gagarin is more than ever valid."

Franz VIEHBÖCK



HIGH-LEVEL SPACE LEADERS

In the first of two panels, high-level space leaders from around the world came together to discuss their current and future space exploration initiatives. The five leaders who spoke during this session especially focused on their lunar exploration plans as well as their hopes for further international cooperation in low Earth orbit and planetary missions.



"A bright future is ahead of us in space exploration, but it must be one driven by responsibility and sustainability"

Simonetta DI PIPPO



HIGH-LEVEL SPACE LEADERS

In the second of two panels, high-level space leaders from around the world came together to discuss their current and future space exploration initiatives. The seven leaders who spoke during this session especially focused on their lunar exploration plans as well as the need for clear regulatory frameworks to enable cooperation for the future of space exploration.



“Having participated in a space shuttle flight, I was struck looking out the window by what I saw. I did not see political divisions, religious divisions, or racial divisions, what I saw is that we are all in this together. Even countries that have differences, we can cooperate in space.”

Bill NELSON



PRESS BRIEFING



GLEX 2021 HIGHLIGHTS- TUESDAY



**PERSEVERANCE,
INGENUITY,
AND
THE
FUTURE
OF MARS
SCIENCE
AND
EXPLORATION**

**ENABLING
SCIENCE
AND
EXPLORATION:
EXTENDING
HUMAN
PRESENCE
FROM
EARTH TO THE MOON AND
BEYOND**



**LUNAR
SURFACE
INFRASTRUCTURE**

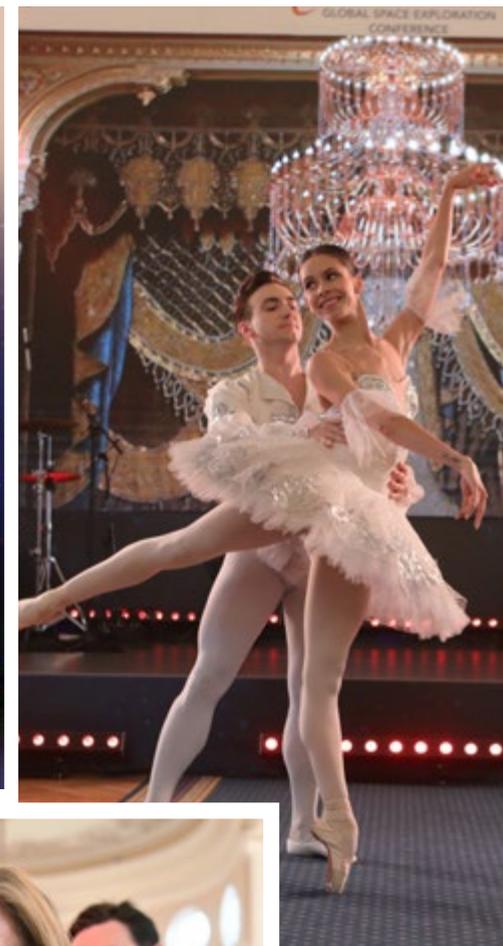


Tuesday's Global Networking Forum sessions covered many different aspects of the robotic and human exploration of the Moon and Mars. The day began with an overview of the science and exploration achievements of NASA's new Perseverance rover, whose mission includes demonstrating key technologies for a human Mars mission. Later in the day, representatives from the European Space Agency, NASA, and several commercial exploration partners discussed various technologies ranging from habitat architecture to communication systems that will enable humans to live and work on the lunar surface as a stepping stone toward the Red Planet.

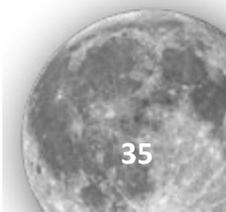




WELCOME RECEPTION



GLEX 2021 HIGHLIGHTS - TUESDAY





WEDNESDAY

16 June 2021

SPACE TRANSPORTATION SYSTEM OF HUMAN MARS EXPLORATION

Xiaojun Wang, the President of China Academy of Launch Vehicle Technology and IAF Vice President, gave a talk discussing concepts for space transportation systems that would enable the human exploration of Mars.

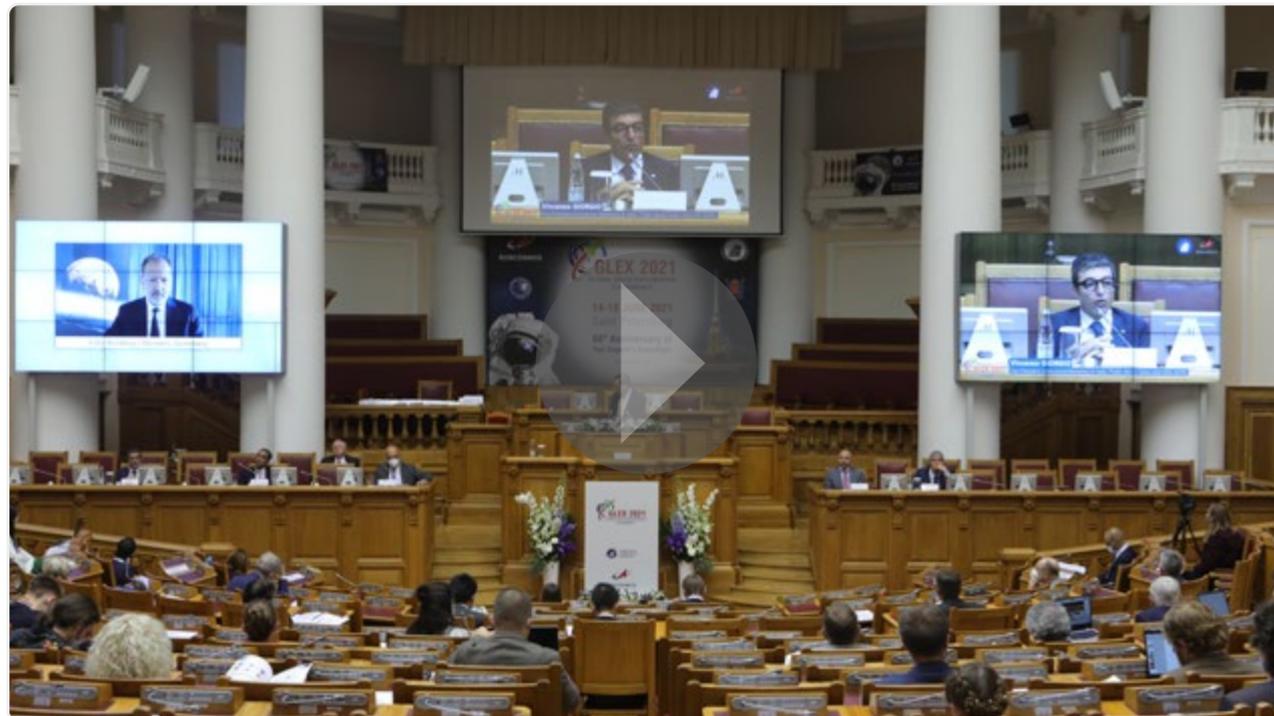


"Mars exploration is of great significance to human beings. It is an important way for human beings to get out of the cradle of the Earth, explore the origin of life and expand our living space. We are willing to join hands with our counterparts all over the world to realize the dream of mankind going to deep space and walking on Mars."

Xiaojun WANG

GOING FORWARD TO THE MOON - NEW ROADS TO LUNAR EXPLORATION

Space industry leaders from Germany, the United States, Italy, the United Arab Emirates, and Russia met to discuss the technologies they are developing to enable crewed lunar exploration in the coming years. Each panelist discussed the unique contribution made by their company and country to future lunar exploration, ranging from technologies for extracting oxygen from lunar regolith to developing habitation modules that will be able to host crews for weeks at a time in lunar orbit.



GLEX 2021 HIGHLIGHTS - WEDNESDAY



"Clearly, within the decades to come, the lunar ecosystem can be expected to be developed. Our founder has always had a special devotion to the moon and in fact was the first to send a privately funded mission to the Moon's orbit."

Lutz BERTLING





**FORECASTING
FUTURE
SPACE
HABITABILITY:
LESSONS LEARNED
FROM TWENTY YEARS
OF ISS PERMANENT
OCCUPATION**

**ROADMAP
FOR
CREATION
OF THE
INTERNATIONAL
LUNAR RESEARCH
STATION**



**IAF-ASE ASTRONAUTS
PANEL**



The second day of GLEX, the IAF Global Networking Forum was packed full of diverse discussions on topics including forecasting space habitability, international lunar research stations, and building a sustainable lunar economy. The day also featured a panel with astronauts and cosmonauts from around the world, who spoke about their experiences in spaceflight and what to expect for the future of human space exploration.



GLEX 2021 HIGHLIGHTS- WEDNESDAY





**TOWARDS A
SUSTAINABLE
MOON ECONOMY
– VISION OF
AGENCIES & INDUSTRIES**

**HABITATS, EXTREME
ANALOGUES,
RESEARCH,
TRAINING, CULTURE
AND ARTS FOR SPACE
EXPLORATION
(HEART-CASE)**



EXPLORE AS ONE





GALA DINNER





THURSDAY

17 June 2021

UAE NATIONAL SPACE PROGRAM: CURRENT STATUS AND UPCOMING MISSIONS

During the second GLEX Highlight Lecture, Adnan Al Rais, the Senior Director of the Remote Sensing Department and the Program Manager of Mars 2117 at the Mohammed Bin Rashid Space Center discussed the United Arab Emirates' national space program including the UAE astronaut program and the country's ambitions on Mars.



GLEX 2021 HIGHLIGHTS - THURSDAY



"We have partners from different parts of the world and international collaboration is an integral part of all of our programs. We are going to continue doing that with all of our programs. We work with everyone and we have since day one."

Adnan AL RAIS

HUMAN ROADS TO OUTER SPACE - REAL AND IMAGINARY DANGERS

Space medicine experts from China, Russia, Greece, and Germany met to discuss the health hazards faced by crews headed to deep space. The panel covered many different medical challenges that will be faced by future deep space explorers, including radiation exposure, challenges with body heat, and preventative medicine.



"The risks are related to both technical infrastructure and our own bodies. Both are very important because if the infrastructure fails then this will have an impact on the health of astronauts. By quantifying the hazards and estimating the risks, we can design appropriate shielding"

Ioannis DAGLIS

EXPLORING TOGETHER - OPPORTUNITIES, CHALLENGES, AND THE ROLE OF ISECG IN ENGAGING EMERGING SPACE AGENCIES

The final GLEX plenary focused on the opportunities and challenges of cooperation in deep space exploration. The panel featured high-level representatives from six national space programs who discussed their experiences and hopes for the future in terms of collaboration on shared exploration goals.



GLEX 2021 HIGHLIGHTS - THURSDAY



"The key was really to present a vision for robotic and human space exploration and focusing on destinations in the solar system where we may one day work and live. In 2007 that still sounded like science fiction but with recent developments, things have changed and become a lot more real now."

Christian LANGE





**DESIGN AND
IMPLEMENTATION
OF CHANG'E-5
ROBOTIC SAMPLE
RETURN MISSION
ON LUNAR SURFACE**



**NATIONAL
SPACE PROGRAM
OF TURKISH
SPACE AGENCY
(TUA)**

**GLOBAL EXPLORATION
AT A CROSS ROAD:
THE ROLE OF EUROPE**



The third day of the GLEX Global Networking Forum covered a wide array of topics that included insight into China's Chang'e-5 lunar sample return mission, Europe's ambitions in deep space exploration, a media panel, and an overview of the International Astronautical Congress 2021 in Dubai, UAE.

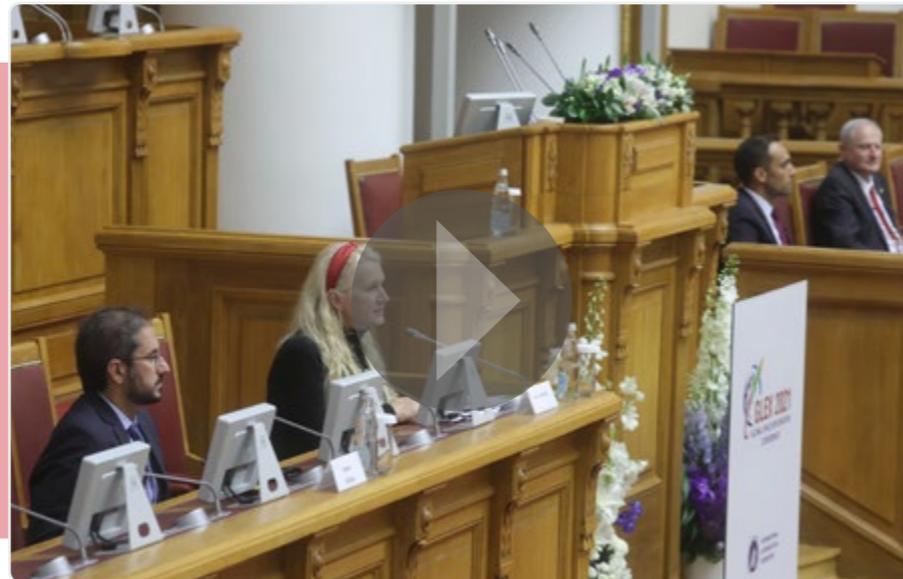




**MEDIA PANEL -
A ROUNDTABLE
ON THE ROLE
OF MEDIA IN
PROMOTING
SPACE EXPLORATION**



**NEXT STOP - IAC 2021
IN DUBAI**



TECHNICAL SESSIONS



GLEX 2021 HIGHLIGHTS- THURSDAY

After four days of discussion about the past, present, and future of space exploration, the GLEX closing ceremony celebrated yet another successful conference with speeches from the IAF president, representatives from ROSCOSMOS, and members of the GLEX International Programme Committee.



“It was great after a long period of time to see everybody and to communicate in a live offline format. I think GLEX will remain a part of the history of St. Petersburg because such a large number of cosmonauts and astronauts attended this conference and this city has never witnessed such a large number before.”

Sergey KRIKALEV





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