

Astronautical Federation

Connecting @ll Space People

3/2019 (October 2019)

President's Welcome

Dear colleagues,

It is my pleasure to welcome you to our third newsletter for this year. Your constant positive feedback encourages us to invest even more in such a dynamic communication tool. We have much to share with you, especially now, days away from the most important space event of the year: the International Astronautical Congress 2019 to be held in Washington, D.C. from 21 to 25 October.



This is truly an exciting time in space. As a space community, we are cooperating on a global scale in many outstanding and forward-looking projects.

Our search for liquid water; the exploration of our Sun and the deep space; the improvement of our Earth observations programmes to prevent natural disasters and to protect our waters; asteroids protection; space traffic management; open space data for developing countries. Those are only some of the topics that will be covered in this IAF's Newsletter and at the upcoming IAC 2019.

We have conducted a particularly detailed review of all the events and topics we will be presenting you at this year's IAC as it will be a very special edition: in 2019 the IAC celebrates its 70th anniversary!

Over the past 70 years, the IAC has established itself as the premier and most comprehensive space event worldwide and a crucial rendezvous for everybody interested in space cooperation, scientific knowledge, and international development.

This 70th IAC will be even more important as it coincides with the 50th anniversary of the Apollo 11 Moon landing.

We have many reasons to celebrate and I can't wait to see you all in Washington, D.C. to continue our efforts in creating a space-faring world cooperating for the benefit of humanity at the #IAC2019.

With my best personal regards.

Dr. Jean-Yves Le Gall IAF President



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PRESIDENT'S WELCOME

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- IAC 2019
- ISF 2019
- IAF Spring Meetings 2020
- SpaceOps
- GLEX 2020
- IAC 2020

COMMITTEE BROADCAST

MEMBERS' CORNER

OUR LATEST PUBLICATIONS

- IAC 70th Anniversary Album
- IAC 2019 General Programme
- IAC 2019 Technical Programme
- GLEC 2019 Final Report
- IAC 2020 Call for Papers
- ISF 2019 Reggio Calabria Final Report
- GLEX 2020 Call for Papers

INTERVIEW WITH:

Sergey SAVELIEV – Deputy Director General for International Cooperation of the State Space Corporation ROSCOSMOS

IMPORTANT DATES:

- IAF Spring Meetings 2020 : 24 26 March 2020
- SpaceOps 2020 Conference : 18 22 May 2020
- GLEX 2020: 9 11 June 2020
- IAC 2020: 12 16 October 2020









IAC 2019

We are pleased to welcome you to the 70th International Astronautical Congress in Washington, D.C. It promises to be a full and rewarding week!

The global space sector is vibrant—evolving and growing, and as we celebrate the fiftieth anniversary of humans setting foot on the Moon we can take a moment during this year's IAC and truly be amazed at how far we have come. Space has become a global collaborative industry and the presentations, people, and private companies that you will engage with during this year's IAC will showcase all of the innovation occurring around the world to turn dreams of exploration into reality. As we look toward the

next fifty years we can be proud and excited about the continuing expansion of countries and people who are engaging in space and the new science and technology our sector will continue to create. The future is ours to shape, limited only by our imagination and it starts with IAC 2019!

> We wish you an informative, fruitful and enjoyable IAC 2019!



Download and use the IAFASTRO App to organize your IAC 2019!

With the IAFASTRO App, you can personalize your IAC 2019 schedule, receive the latest updates, see the list of all sessions, Plenaries, GNFs, press conferences and social events, contact all app users, check on all the speakers, watch IAC TV, connect on social media, reach out exhibitors, and so much more !

You can find the App on the "Apple Store" and on the "Google Play Store" under IAFASTRO

Should you have any questions please contact media@iafastro.org

You can download the App on:

- Google Play store: https://play.google.com/store/apps/details?id=com.attendify.confbofn3r
- Apple Store: <u>https://itunes.apple.com/app/id1328269635</u>
- IAF Web App: <u>http://bofn3r.m.attendify.com/app/events</u>

Or directly with this QR code:

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IAC 70THANNIVERSARY

This year, the International Astronautical Congress, IAC, marks 70 vibrant years since its first meeting in Paris, France, in 1950. The first IAC was attended by a bold group of 20 space enthusiasts coming from 8 countries who sought to encourage improvement in international cooperation in the aftermath of the horrendous second world war responsible for the deaths of millions of people. It was in this context that the IAC opened an international conversation to create a space-faring world. They did so by acknowledging that proper dialogue would be the best way to promote cooperation, advancing international development and sharing knowledge. Seventy years have passed since the first meeting, the IAC has come a long way and manage to rise to the challenge thanks to the incredible work of the International Astronautical Federation, IAF. The IAC could never have lasted for so long without the excellence of all those within the IAF who made INTERNA; enormous efforts to establish the foundations of an international space community and transform the IAC into a brand name. Congratulations to us all, past and present delegates of the IAC, for showing how in Space and on Earth there are no boundaries. The IAF has prepared a photo album to celebrate and recognize the people and the work behind the world most important space congress. Happy Septuagennial anniversary dear space friends, cheers to the next 70 years!

Check the full album on iafastro.org









IAF NEWS











and Late-Breaking News. **Plenary Events** PE

PUBLIC PROGRAMME



Plenary 1: Heads of Space Agencies: Challenges and Opportunities in a Changing Space Environment Monday 21 October 2019, 13:15 – 14:45 Location: The Walter E. Washington Convention Center - Grand Ballroom ABC

Plenary 2 : Host Plenary: Evolving Apollo: The Next 50 Years in Human Spaceflight Monday 21 October 2019, 18:15 – 19:30 Location: The Walter E. Washington Convention Center - Grand Ballroom ABC

Plenary 3 : The Long-Term Sustainability of Outer Space: Advancing the Space Economy and Sustaining Space Industry **Through Solutions to Space Security Issue** Tuesday 22 October 2019, 08:30 – 09:30 Location: The Walter E. Washington Convention Center - Grand Ballroom AB

Plenary 4 : Inspiring by Leading: Building and Sustaining the Global Space Workforce for the Future Tuesday 22 October 2019, 13:30 – 14:30 Location: The Walter E. Washington Convention Center - Grand Ballroom B

Plenary 5 : Heads of Emerging Agencies Wednesday 23 October 2019, 08:30 - 09:30 Location: The Walter E. Washington Convention Center - Grand Ballroom B

Plenary 6 : Europa Clipper: Making a Mission to Understand Our Place in the Universe Wednesday 23 October 2019, 13:30 - 14:30 Location: The Walter E. Washington Convention Center – Grand Ballroom B

Plenary 7: 10th Anniversary Next Generation Plenary: "Harnessing Citizen Science for the Future of Earth Observation"

Thursday 24 October 2019, 08:30 - 09:30 Location: The Walter E. Washington Convention Center - Grand Ballroom B

Highlight Lectures HLL

Highlight Lecture 1: MARSIS: the Successful Search for Liquid Water on Mars Tuesday 22 October 2019, 18:00 – 19:00 Location: The Walter E. Washington Convention Center - Grand Ballroom B

Highlight Lecture 2 : The Challenge of Exploring Our Sun – the 60-Year Odyssey to Parker Solar Probe Wednesday 23 October 2019, 18:00 - 18:45 Location: The Walter E. Washington Convention Center - Grand Ballroom B

Highlight Lecture 3 : Monitoring Coastal Waters from Space - Highlighting the Chesapeake Bay Region - Dramatic Advances Enable Better Understanding and Protection of these Vital Ecosystems, and their Immense Coastal Populations and Infrastructure

Wednesday 23 October 2019, 19:00 - 19:45 Location: The Walter E. Washington Convention Center - Grand Ballroom B

IAC 2019 AT A GLANCE



IAF NEWS

The IAC Plenary Programme features an exciting selection of high-level Plenary Events, Highlight Lectures





etworking

Meet. Share. Connect

IAF World Space Award Highlight Lecture

Thursday 24 October 2019, 18:00 – 19:15 Location: The Walter E. Washington Convention Center - Grand Ballroom ABC



OSIRIS-REx Dancing with Asteroid Bennu

Friday 25 October 2019, 08:30 – 09:00 Location: The Walter E. Washington Convention Center - Grand Ballroom ABC

Introduction to the United Arab Emirates Astronauts Program Friday 25 October 2019, 09:00 – 09:30 Location: The Walter E. Washington Convention Center - Grand Ballroom ABC

IAF GLOBAL NETWORKING FORUM

Monday 21 October 2019

IAF GNF Opening Day

15:00 – 15:10 IAF GNF Opening

- EO as a Pillar of the Space Economy and Perspectives of Industrial Policy 15:10 - 16:10
- 16:15 16:45 European Space Strategy: Achievements and Perspective
- 16:50 17:35 Boeing and Energia: Search for New Forms of Sustainable Cooperation in Space
- 17:40 18:10 OG Summit: Mankind's Return to the Moon in the NewSpace Age

Tuesday 22 October 2019

IAF GNF Industry Stream

Room: Grand Ballroom AB

Room: Grand Ballroom ABC

- 09:40 09:50 Industry Story Telling Session: Virgin Galactic 09:50 - 10:00 Industry Story Telling Session: Thales Alenia Space 10:00 - 10:10 Industry Story Telling Session: Made In Space 10:10 - 10:20 Industry Story Telling Session: Arianespace 10:20 - 10:30 Industry Story Telling Session: SpaceX 10:30 - 10:40 Industry Story Telling Session: Blue Origin 10:50 - 11:35 Communications Satellites – Then, Now, and Where Next? 11:45 - 12:30 A Grand Tour of Global Space Policy Issues 14:45 – 15:45 Commercial Crew Starliner Industry Deep Dives: Small Satellites, Big Future: Frequent and Reliable Launch on Electron 15:45 - 15:55 Industry Deep Dives: Incorporating the Moon into Earth's Economy 15:55 - 16:05 Industry Deep Dives: Making Space Sustainable for Future Space Utilization and Exploration 16:05 – 16:15 Industry Deep Dives: Space Technology to the Power of Hundreds 16:15 - 16:25
- 16:30 17:45 The IAF Startup Pitch Session

IAF GNF Culture & Socio-Economic Stream **Room: Grand Ballroom C**

14:45 – 15:45 <u>Alive in Space</u>

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15:50 – 16:35 Outcomes of the Global Conference on Space for Emerging Countries – GLEC 2019
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16:40 - 17:10
   Leaving No-One Behind: Opportunities to Support Inclusiveness Through Space-Based Applications and Space
    Exploration. Presentation of Results of the 27<sup>th</sup> Workshop on Space Technology for Socio-Economic Benefits
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17:15 – 17:45 Singapore – Regional Vision to Co-Create, Build Capacity, and Expand Space Applications for New Uses

Wednesday 23 October 2019

IAF GNF Space	Exploration Stream Room:
09:40 - 10:40	The Evolving Role of the Public Procurement Auth Programmes
10:50 - 11:50	Forming, Storming, and Norming the Future Lunar Ex
12:00 - 12:30	To the ISS, the Moon, Mars – and Then Some: A 360
	Beyond
14:45 – 15:45	Why We Suborbital Passengers Are Eager to Fly to Sp
15:55 – 16:55	ECOSYSTEM for Sustainable Space Exploration – Invo
17:05 - 17:45	OOS and Related Technologies Enabling Next-Gen Sp
IAF GNF Divers	ity Stream Room:
09:40 - 10:40	<u>SGAC – LSA SpaceGen Entrepreneurs</u>
10:45 - 11:35	Lessons From Business Women in the Space Indust

10:45 - 11:35	Lessons From Business Women in the Space Indus
	Industry
11:45 - 12:30	NASA YP Town Hall
14:45 - 15:45	Industrializing the Solar System – Launching the Off
15:55 – 16:55	Space Supporting the UN Sustainable Development
17:05- 17:50	We Are Going, and The Technologies to Get Us Ther
11:45 - 12:30 14:45 - 15:45 15:55 - 16:55 17:05- 17:50	Industry NASA YP Town Hall Industrializing the Solar System – Launching the C Space Supporting the UN Sustainable Developmen We Are Going, and The Technologies to Get Us Th

Thursday 24 October 2019

IAF GNF Legal and Policy Stream Room:						
09:40 - 10:40 10:45 - 11:35	The Future Lunar Ecosystem and its Business Potent Space Traffic Management is Needed Now! IAA, IISL,					
	Space Operations					
11:45 – 12:35	The Mars/Moon Generation Lawyers: A Discussion of					
12:40 - 13:30 13:40 - 14:10	Spaceports: Gateway to a Global Space Economy This Time to Stay: How Markets Will Ensure Sustaine					

Artemis: Enabling Lunar Exploration 15:30 - 16:30

IAF GNF Development Stream

09:40 - 10:40	Space Museums and Science Centres: Heritage and
10:45 – 11:25	Towards a Formal African Space Programme
11:30 - 12:15	Martian and Lunar Analogs
12:20 - 12:50	4 th International Space Forum at Ministerial Level -
12:55 – 13:20	Global Navigation Satellite System (GNSS) Market:
13:25 – 14:25	Space Sustainability Rating: Addressing the Orbital
14:35 – 15:05	Making Lunar Missions Accessible, a New Approac
15:45 – 16:30	EU Space: Trends for the Future

Friday 25 October 2019

IAF GNF Public Day

09:40 - 10:40	From the Moon to Mars NASA's Artemis Program
L0:50 – 12:20	IAF – ASE Astronaut Event
14:30 - 14:30	The Science-Fiction Continuum

IAF NFWS

Grand Ballroom A

norities Becoming an Anchor Customer in Large Space Related

xploration Enterprise)° Discussion on Humanity's Exploration of Our Solar System and

bace lving New Space, Non-Space Players ace Missions and Ultimate Exploration

Grand Ballroom C

try – Positive Tales From a Journey Through a Male Dominated

World Industrial Robotics Workforce Program Goals 2030 Agenda re

Grand Ballroom A

al for Non-Space Industries and IAF Join Their Forces to Propose Long Term Sustainability of

of the Legal Framework Taking NASA Back to the Future

d Interest in the Lunar Region 14:20 – 15:20 Governance of Space Activities – Comparative Studies on National Space Policy and Law

Room: Grand Ballroom C

d Education in a Fast Changing World

- The Mediterranean Chapter What's Next for Industries, Applications and the User Community Challenge ch to Planetary Exploration

Room: Grand Ballroom ABC



TECHNICAL PROGRAMME

Under the theme "SPACE: The Power of the Past, the Promise of the Future", IAC 2019 will offer an extensive and multidisciplinary Technical Programme that reflects the diversity of disciplines within space.

Following its usual style, the congress will span a full week, with:

- 180 Technical Sessions (including 5 Global Technical Sessions)
- More than 2,000 Oral Presentations
- More than 250 Interactive Presentations
- 19 Special Sessions
- 33 Keynote Lectures

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Technical Sessions



Date	21/10/2019	22/10/2019	22/10/2019	23/10/2019	23/10/2019	24/10/2019	24/10/2019	25/10/2019	25/10/2019
Time / oom Number	15:00-18:00	09:45-12:45	14:45-17:45	09:45-12:45	14:45-17:45	09:45-12:45	14:45-17:45	09:45-12:45	13:30-16:30
146B	A3.1	A3.2A	A3.2B	A3.3A	A3.3B	A3.4A	A3.5	A3.2C	A3.4B
146C	D2.1	D2.2	D2.3	D2.4	D2.5	D2.6	D2.7	D2.8 / A5.4	D2.9 / D6.2
150A	C1.1	C1.2	C1.3	C1.4	C1.5	C1.6	C1.7	C1.8	C1.9
150B	A6.1	A6.2	A6.3	A6.4	A6.5	A6.6	A6.7	A6.8	A6.9
151A	B3.1	B3.2	B3.3	B3.4 / B6.4	B3.5	B3.6 / A5.3	B3.7	A6.10 / B4.10	
151B	B4.2	B4.1	B4.3	B4.4	B4.5	B4.6A	B4.7	B4.8	B4.6B
152A	B5.1	E7.1	E7.2	E7.3	E7.4	E6.3		E7.5	E7.7
152B	C2.1	C2.2	C2.3	C2.4	C2.5	C2.6	C2.7	C2.8	C2.9
143A	C4.1	C4.3	C4.5	C4.2	C4.6	C4.7 / C3.5	C4.8 / B4.5A	C4.9	C4.10
143B	A1.1	A1.2	A1.3	C4.4	A1.4	A1.5	A1.6	A1.7	A1.8
143C	A2.1	A4.1	A4.2	A2.2	A2.3	A2.4	A2.5	A2.6	A2.7
145B	D1.1	D1.2	D1.3	A5.1	A5.2	D1.4A	D1.4B	D1.5	D1.6
147A	B1.1	C3.1	C3.2	B1.2	B1.3	B1.4	C3.3	C3.4	B1.5
144A	A7.1	E3.1	A7.2	E3.2	A7.3	E3.3	E3.4	E6.4	E3.6
145A	E5.1A	D5.1	E5.2	D5.2	E5.3	D5.3	E5.4	D5.4	E5.1B / E5.5
147B	E4.1	B2.8 / GTS.3	E6.1	E2.3 / GTS.4	E4.2	B4.9 / GTS.5	E4.3	B3.8 / GTS.2	E6.5 / GTS.1
144C	E1.1	E1.2	E1.3	E1.4	E1.5	E1.6	E1.7	B1.6	E1.9
144B	D4.1	D4.2	D4.3	D3.1	D3.2A	D4.4	D4.5	D3.2B	D3.4
140B	B6.2	E2.1	E2.2	E6.2	E2.4	B5.2	B6.3	B6.1	B5.3
140A	B2.1	D6.1	B2.2	B2.3	B2.4	B2.5	B2.6	B2.7	D6.3
ISZ				Not available				E1.8	
153						E.3.5 / E7.6			

Category A: Science A1--> A7 & Exploration

Category B: Applications B1--> B6 & Operations

Category C: C1--> C4 Technology

Category D: D1--> D6 nfrastructure

Category E:

& Society

Space

E1--> E8





The 70th IAC continues its tradition of offering Interactive Presentations, a great **opportunity** for presenters to showcase their work, emerging ideas, late-breaking results, experiences, and challenges on space topics. The Interactive Presentations Session is a dynamic forum among presenters and the audience and highly interactive, and allow authors and participants to engage in in-depth discussions about the presented work from which new collaborations, ideas, and solutions can emerge.

Interactive Presentations include multimedia, such as audio and video, as well as images and animations. Their flexibility helps foster presenters creativity and skills, and provides a platform for building engaging, collaborative, and visually powerful presentations. The Interactive Presentations Session will take place on Thursday 24 October, from 13:15 to 14:45.

The five best Interactive Presentations of the IAC 2019 will be awarded during a dedicated ceremony to be held just before the IP Session on Thursday 24 October, from 12:45 to 13:15.

More information about the IP Awards is available here: http://www.iafastro.org/activities/honours-awards/iaf-interactive-presentation-award/

Stay tuned on the website and our social media for more information!

Special Sessions



MONDAY 21 OCTOBER

Get Ready to Protect Earth from Asteroids - Planetary Defense in Your Hands Time: 15:00-16:30 Room: 146A

ISS-Moon-Mars: Using Spaceflight Platforms to Study and Simulate Future Missions Time: 16:45-18:15 Room: 146A

TUESDAY 22 OCTOBER

Home Planet 2030 - The Role of Earth Observations in Studying Our Planet Time: 09:45-11:15 Room: 146A

Global Launch SpaceBuzz: Launching Millions of Children into Space Time: 11:30-12:15 Room: 146A

Life's Journey Through the Universe Time: 12:30-13:30 Room: 146A

EO+AI - The Game Changer in the Way We See the World Time: 14:45-16:15 Room: 146

Artificial Intelligence in Space: Are Intelligent Space Objects the Promise of the Future? Time: 16:30-18:00 Room: 146A

WEDNESDAY 23 OCTOBER

Space Traffic Management: Working Together to Enhance Safety and Sustainability Time: 09:45-11:15 Room: 146A

Futures Past and Present: Space Architecture in Imagination and Reality Time: 11:30-13:00 Room: 146A

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IAF NFWS

Young Minds Meet Space Leaders: Words Into Action Time: 14:45-16:15 Room: 146A The Future of Space Operations Across Industries Time: 16:30-18:00 Room: 146A

THURSDAY 24 OCTOBER The Immortal Spaceship: A Discussion on the Use Cases and Value of Persistent Platforms

Room: 146A Time: 09:45-11:15

Planetary Protection for the Future: Science, Exploration, and Commerce Time: 11:30-13:00 Room: 146A

Using Open Space Data in Developing Countries Time: 14:45-16:15 Room: 146A

Space Applications of Machine Learning and Artificial Intelligence Time: 16:30-18:00 Room: 146A

FRIDAY 25 OCTOBER

Atomic Test Masses and Atom Interferometry for Inertial Sensing and Gravity Measurements in Space Room: 146A Time: 09:45-11:15

Launch Tower Not Necessary: Could Responsive Launch Revolutionize Spaceport Infrastructure Needs? Time: 11:30-12:30 Room: 146A

Transforming Future Mission Design Through In-Space Manufacturing Time: 12:45-13:45 Room: 146A

Interstellar Probe: Humanity's First Deliberate Step into the Galaxy by 2030 Room: 146A Time: 14:00-15:00

Keynotes

MONDAY 21 OCTOBER NASA Science under the National Space Exploration Campaign Time: 15:00 Room: 146B

Committee on Earth Observation Satellites (CEOS): 2019 Report of Activities to the International Astronautical Congress Room: 147A Time: 15:00

NASA's Moon to Mars Exploration Plans Time: 15:00 Room: 151A

Prometheus: Precursor of Low-cost Rocket Engine Time: 15:00 Room: 143A

Falcon Launch Vehicle Lessons Learned and Reusability Room: 146C Time: 15:00

STEM Education: Lessons learned from the Challenger Center Time: 15:00 Room: 144C

TUESDAY 22 OCTOBER

An Overview of NASA's Lunar Science Exploration Plans for Artemis Time: 09:45 Room: 146B

Propulsion Technology Development Activities at NASA Time: 09:45 Room: 143A

Mission and Spacecraft Design Challenges of the Sun-Earth L5 Point Lagrange Space Weather Monitoring Mission Time: 09:45 Room: 145B

BepiColombo - The State of Art for the Exploration of Mercury Time: 14:45 Room: 145B

The ASU Interplanetary Initiative: Advancing Society Through Exploration Time: 14:45 Room: 144B

WEDNESDAY 23 OCTOBER

International Cooperation Mechanisms in Outer Space Activities for the Next Decade Time: 09:45 Room: 152A

Mars Sample Return Mission Concept Status Time: 09:45 Room: 146B

Astrodynamics of Lunar and Cis-Lunar Missions Time: 09:45 Room: 150A

Paolo Santini's Memorial Lecture: Ablators from Apollo to Future Missions to Moon, Mars, and Beyond Time: 09:45 Room: 152B

OmegA Launch Vehicle Solid Boost Time: 09:45 Room: 143A

Lab to Launch Time: 09:45

Room: 143B

Experience and Findings by Kyushu Institute of Technology to Have a Successful Space Capacity Building Program Time: 09:45 Room: 144C

A 2019 Update on the Impending Small Launch Vehicle Boom Time: 14:45 Room: 151B

The Overview Effect and the Arts Time: 14:45 Room: 145A

THURSDAY 24 OCTOBER Fluid Physics from International Space Station

Time: 09:45 Room: 143C

DISCOVERER – Making Commercial Satellite Operations in Very Low Earth Orbits a Reality Time: 09:45 Room: 152B

Execution of Parker Solar Probe's Unprecedented Flight to the Sun and Early Results Time: 14:45 Room: 146B

From LEO to the Moon, Mars, and Beyond: Shaping Capability Development Strategies for NASA's Human Exploration Campaign Time: 14:45 Room: 151A





A Girl in the Man-on-the-Moon Program: Camaraderie and Discrimination in the Apollo Era Time: 14:45 Room: 147B

FRIDAY 25 OCTOBER

50 Years of Earth Observations: The contribution to sustainable development goals and plans for the future Time: 09:45 Room: 144C

MarCO: Flight Results from the First Interplanetary CubeSat Mission Time: 09:45 Room: 151B

Test Complex M11: Research on Future Orbital Propulsion Systems and Scramjet Engines Time: 09:45 Room: 143A

Managing Risk in the Effort to Maintain Orbital Sustainability Time: 09:45 Room: 152A

NASA Science Activation Time: 12:45 Room: ISZ

ThermCERT – A Signature Commercial Space Application to Tackle Fuel-Poverty in the United Kingdom Time: 13:30 Room: 140B

Lasting Developments from Apollo and Saturn V Room: 146C Time: 13:30

The Economics of Procurement in Space & Defense Contracting Time: 13:30 Room: 144A

Global Technical Sessions

Cannot make it to Washington D.C. for IAC 2019? You can still take part in the IAC 2019 Global Technical Symposium (GTS) remotely! These sessions showcase some of the recent advances in several technical topics discussed at IAC, with speakers sharing their work both from the IAC site itself and remotely.

This year, the GTS will include 5 sessions as per the schedule below:

- Space Communications and Navigation (22 October 2019 at 09:45 EST)
- Student Team Competition (23 October 2019 at 09:45 EST)
- Small Satellite Missions (24 October 2019 at 09:45 EST)
- Human Spaceflight (25 October 2019 at 09:45 EST)
- Entrepreneurship Around the World (25 October 2019 at 13:30 EST)

The full program including astracts are accessible here: https://iafastro.directory/iac/browse/IAC-19/GTS/ Sessions will be held on-site at IAC 2019 and broadcast online using GotoWebinar. To register for the online broadcast, please use this link: https://attendee.gotowebinar.com/register/313717454653566467

You only need to register once and will gain access to all sessions based on that registration.





AND EQUALITY IN ASTRONAUTICS **3G GEOGRAPHY · GENERATION · GENDER**

IAF IDEA "3G" DIVERSITY DAY

With the aim of promoting and advancing the principles of "3-G" (Geography, Generation, and Gender) Diversity amongst a global space community the IAF has established an International Platform for Diversity and Equality in Astronautics (IDEA). The IAF welcomes delegates to participate in the IAC Diversity Activities and benefit from an intensive and open exchange on diversity and equality aspects within the IAF, amongst IAF member organizations as well as other organizations promoting diversity.

Wednesday, 23 October 2019, will again be declared as IAF IDEA "3G" Diversity Day with 2 main key events focusing on different diversity aspects and using valuable networking opportunities to bring together a global IAF community, including IPC members, IAF committee members and IAF Member representatives.

On Thursday, 24 October 2019, the IAF invites all delegates to hear the story of Rhoda Shaller Hornstein, retired from the National Aeronautics and Space Administration (NASA), who will talk about "A Girl in the Man-on-the-Moon Program: Camaraderie and Discrimination in the Apollo Era".

In addition, the IAC will host on Friday, 25 October 2019, a further "3G" Diversity event featuring a Panel and Roundtable with the Women of Aeronautics and Astronautics (WoAA) on the topic of "The First Woman on the Moon: The Women Who Are Working to Get Us There".

IAF IDEA "3G" Diversity Breakfast

Date:	Wednesday, 23 October 2019
Time:	07:00 - 08:30
Venue:	The Walter E. Washington Convention Center – South P

As an important element of the IAF "3G" Diversity Day the IAF welcomes all delegates to the IAF IDEA "3G" Diversity Breakfast sponsored by Jet Propulsion Laboratory (JPL).

The event will be opened with a welcome by the IAF President, Jean-Yves Le Gall followed by an introduction from Moderator Mary Snitch, the Special Advisor to the IAF President (Diversity Initiatives). Larry D. James, Deputy Director of JPL, will speak on behalf of JPL and share an exciting video with the audience. Furthermore, the event will feature a 3-person panel with Rukmini Roy, Rosemary Davidson and Rachael McKee - 3 female engineers currently in their degree program or very recently graduated. During the panel discussion the three women will address the important question of "What would you do to improve the diversity of the Engineering Workforce?"

Sponsored by:

Jet Propulsion Laboratory



Programme:

07:00 - 07:05 Welcome

Jean-Yves Le Gall, President, International Astronautical Federation (IAF), France

NTERNATIONAL PLATFORM FOR DIVERSITY

IAF NFWS

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IAF NEWS

07:05 - 07:10	Moderation and Introduction to IAF "3G" Diversity Breakfast
	Mary Snitch, Special Advisor to the IAF President (Diversity Initiatives), International Astronautical Federation (IAF), United States
07:10 – 07:20	Presentation by Sponsor Larry D. James, Deputy Director, Jet Propulsion Laboratory (JPL), United States
07:20 - 07:40	Panel discussion "What would you do to improve the diversity of the Engineering Workforce?"
	• Rukmini Roy, Aerospace Engineering Student, Georgia Institute of Technology, United States
	• Rosemary Davidson, Graduate Student, Massachusetts Institute of Technology, United States
	• Rachael McKee, Business Development Analyst, Lockheed Martin Space Systems Company, United States
07:40 - 07:50	Concluding Remarks

Mary Snitch. Special Advisor to the IAF President (Diversity Initiatives). International Astronautical Federation (IAF), United States

07:50 - 08:30 Networking

IAF IDEA Excellence in "3G" Diversity Award Luncheon

- Date: Wednesday 23 October 2019
- Time: 12:30 - 13:30
- Venue: The Walter E. Washington Convention Center – South Prefunction

The IAF Excellence in "3G" Diversity Award recognizes IAF member organizations (industry, government, academia) worldwide for outstanding contributions to the fostering of "3G" (Geography, Generation, Gender) Diversity within the space sector.

This Luncheon is dedicated to the award ceremony for the IAF Excellence in "3G" Diversity Award. At the IAC 2019 this award will be given to the UAE Space Agency.



















Programme:

12:30 - 12:35

12:35 - 12:40

12:40 - 12:45

12:45 - 13:05

Networking

IAF IDEA "3G" Diversity Keynote

next generation of Emiratis for leadership in the space sector.

(IAF), United States

Award Ceremony and Photo

Chairman, UAE Space Agency United Arab Emirates

Presentation by the Award winner UAE Space Agency represented by:

His Excellency Dr. Ahmad Belhoul Al Falasi,

Welcome

Date:	Thursday 24 October 2019
Time:	14:45 – 15:05
Venue:	The Walter E. Washington Convention Center – Room 1

As a valuable addition to the IDEA programme, the IAC 2019 will feature on Thursday 24 October a Keynote by Rhoda Shaller Hornstein on "A Girl in the Man-on-the-Moon Program: Camaraderie and Discrimination in the Apollo Era". Mary Snitch, Special Advisor to the IAF President (Diversity Initiatives), will welcome and introduce this special Keynote Session with Rhoda Shaller Hornstein, the recipient of the IAF Distinguished Award in 2016.

Rhoda Shaller Hornstein reported for duty 51 years ago to the NASA Goddard Space Flight Center. As an entry level Aerospace Technologist, her role in Apollo 11 was to operate the Goddard Real Time System to record radar data from the tracking sites and use this data to update the orbit and send out acquisition messages. Rhoda Shaller Hornstein's fondest memory of the Apollo program, especially Apollo 11, was that, with less than one year of Government service, she had the opportunity to work among the "giants" of NASA and experience firsthand the "Apollo Mentality" that guided her through 46 years at NASA. She also experienced the highs of camaraderie and the lows of discrimination. The camaraderie lasted one year until a manager asked why she was not pregnant. Thus, began the discrimination, more specifically gender harassment. This Keynote addresses how the "girl" accommodated both behaviors through the lens of the "Apollo Mentality" during her NASA career.



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The United Arab Emirates Space Agency, the first national space agency in the region, was established in 2014, and is responsible for organizing, regulating, and supporting the national space sector under federal law. This includes the oversight and funding of space missions such as the UAE's Emirates Mars Mission's Hope Probe, the region's first Arab and Islamic interplanetary mission. The primary goals of the UAE Space Agency are to contribute significantly to the diversification of the national economy, enhancing the UAE's international standing in space-related fields, and issuing policy and laws for the space sector. Space sector capacity building programmes and raising awareness of space sciences and STEM fields develop the

Jean-Yves Le Gall, President, International Astronautical Federation (IAF), France

Introduction of the IAF Excellence in "3G" Diversity Award Mary Snitch, Special Advisor to the IAF President (Diversity Initiatives), International Astronautical Federation

Minister of State for Higher Education and Advanced Skills

147B







14:50 - 15:10

14:45 - 14:50 Welcome and Introduction

Symposium Keynote

Mary Snitch, Special Advisor to the IAF President (Diversity Initiatives), International Astronautical Federation (IAF), United States







IAF IDEA "3G" Diversity Public Day Women of Aeronautics and Astronautics (WoAA) Panel

Date: Friday 25 October 2019

10:20 - 12:00 Time:

The Walter E. Washington Convention Center – The Launch Site is located in the IAC Exhibition Hall, Venue: Booth 3008

"A Girl in the Man-on-the-Moon Program: Camaraderie and Discrimination in the Apollo Era"

Rhoda Shaller Hornstein, Retired, National Aeronautics and Space Administration (NASA), United States

On Friday 25 October the IAC will feature a Panel and Roundtable with the Women of Aeronautics and Astronautics (WoAA) on the topic of: "The First Woman on the Moon: The Women Who Are Working to Get Us There". The Women of Aeronautics and Astronautics (WoAA) is a new committee within the American Institute of Aeronautics and Astronautics (AIAA), with a mission to provide support, empowerment, and networking opportunities for women and other minorities in the aerospace field, primarily focusing on university students. WoAA aims to provide outreach to primary and secondary school students, provide technical development opportunities for university students and working professionals, and support members throughout their careers.

Elena Feichtinger, IAF Manager for the Diversity Programme, will welcome the female space role models who are breaking barriers in the aerospace industry around the world. They will introduce themselves and tell their stories. The second half of the session will feature interactive roundtables, allowing for attendees to dialogue with speakers and brainstorm in small groups about how we can build a diverse aerospace workforce.



Programme:

10:20 - 10:25 Welcome and Introduction Elena Feichtinger, Manager for the Diversity Programme, International Astronautical Federation (IAF), France



- 10:25 10:50 **Keynote Presentation**
- 10:50 11:25 Women of Aeronautics and Astronautics (WoAA) Panel
- 10:50 11:25Presentation about Women of Aeronautics and Astronautics (WoAA)
- 11:30 12:00 **Breakout Sessions**



MEETINGS SCHEDULE

Time	Event					
Friday 18 Octob	er 2019					
08:00 - 19:00	Space Generation Congress	Off-site				
09:00 - 17:00	27 th IAF Workshop Supported by the UN	Room 152B				
Saturday 19 Oct	ober 2019					
08:00 - 12:30	IAA Lunar Farside Meeting	Room 143C				
10:00 - 13:00	IAA Space Debris Committee Meeting	Room 143B				
10:00 - 12:00	IAF Finance Committee	Room 102A				
12:00 - 13:00	IAA Commission Plenary Meeting	Room 143A				
12:30 - 15:30	IAF Space Exploration Committee	Room 149B				
13:00 - 16:00	IAA Commission 1	Room 143A				
13:00 - 16:00	IAA Commission 2	Room 143B				
13:00 - 16:00	IAA Commission 3	Room 143C				
13:00 - 16:00	IAA Commission 4	Room 144A				
13:00 - 16:00	IAA Commission 5	Room 144B				
13:00 - 16:00	IAA Commission 6	Room 145C				
13:00 - 14:30	IPC Steering Group Meeting – Session I	Room 156				

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Time	Event	Room
 14:00 - 16:00	IAE Next Generation Coordination Committee (NGCC)	Room 204A
15:00 - 16:30	IAE Technical Activities Committee	Room 102A
16:15 - 17:30	IAA Scientific Activities Committee meeting (SAC)	Room 149B
17:00 - 18:30	IPC General Meeting	Room 207AB
Sunday 20 Octob	er 2019	
09:00 - 12:15	IAA Academy Day – Part 1	Room 146B
09:00 - 12:00	IAF Space Education and Outreach Committee (SEOC)	Room 102B
12:00 - 13:00	IAF Global Workforce Development Subcommittee	Room 102B
13:00 - 17:00	IAF Earth Observation committee and GEOSS subcommittee	Room 141
13:30 - 14:30	IAA Regular Meeting	Room 146B
14:00 - 16:00	IAF Commercial Spaceflight Safety Committee	Room 153
14:00 - 17:00	IAF Workforce Development-Young Professionals Programme Committee (WD-YPP)	Room 204A
14:00 - 18:00	IAF Astrodynamics Committee (Session I)	Room 209A
14:00 - 18:00	IAF Materials and Structures Committee	Room 209B
14:00 - 17:00	IAF Bureau Meeting – Session 1	Room 102B
14:45 - 17:15	IAA Academy Day – Part 2	Room 146B
15:00 - 17:00	IAA Board of Trustees	Room 140A
15:00 - 17:00	IAF Space Transportation Committee	Room 156
15:00 - 17:00	IAF Space Propulsion Technical Committee	Room 148
16:00 - 18:00	IAF Human Spaceflight Committee	Room 149A
17:00 - 18:00	IAF Committee for the Cultural Utilisation of Space (ITACCUS) - Session 1	Room 141
18:00 - 19:00	ESL/YSL Meeting	Room 153
18:00 - 20:00	IAA Dinner	Off-site
19:00 - 20:00	YP Networking Event: IAF Opportunities	207AB
Monday 21 Octo	ber 2019	
08:00 - 09:00	HoA Preparatory Meeting	Room 149B
11:00 - 13:00	IAE Space Communications and Navigation Committee (SCAN)	Room 102A
11:00 - 12:30	IAF Space Systems Committee	Room 153
12:30 - 14:30	Joint JAF and JAA Space Life Sciences Meeting	Room 156
12:30 - 13:00	IISL Board of Directors	Room 148
13:00 - 13:30	IAA Study Group 2.18	Room 153
14:00 - 17:00	IAE Space Power Committee	Room 102B
14:30 - 16:00	SG 6.17 Multicultural Foundations and Influences of Human Space Exploration	Room 153
15:00 - 17:00	IAF General Assembly Meeting	Room 207AB
15:30 - 17:30	IAE Space Economy Committee	Room 102A
16:00 - 17:30	IAA Study Group 3.27	Room 153
18:00 - 19:00	IAF Microgravity Sciences and Processes Committee	Room 102A
Tuesday 22 Octo	ber 2019	
08:00 - 09:45	IAF Space Operations Committee (SOC)	Room 149A
08:00 - 18:00	IAF Nomination Committee	Room 101
08:00 - 18:00	IAF Congress and Symposia Advisory Committee (CSAC) Meeting	Room 209B
09:00 - 11:00	IAF Space Education and Outreach Committee (SEOC)	Room 148
09:30 - 11:30	IAF Space Astronomy Technical Committee (SATC)	Room 141
10:00 - 12:00	IAF Entrepreneurship and Investment Committee (EIC)	Room 149A
10:00 - 12:00	GRULAC Meeting	Room 153
10:00 - 12:00	IAF Committee on Space Security	Room 209A

Time	Event	Room
11:30 - 13:30	IAA Study Group 3.26	Room 149B
11:30 - 16:00	IISL Moot Court Semi-Finals 1	Room 102A
11:30 - 16:00	IISL Moot Court Semi-Finals 2	Room 102B
12:00 - 13:30	IAA Study Group 4.21	Room 153
13:00 - 14:00	IAA Small Satellite Missions Program	Room 156
14:00 - 15:30	IAF Committee on Integrated Applications	Room 149B
14:30 - 16:00	IAF Committee for Liaison with International Organisations and Developing Nations (CLIODN)	Room 148
15:30 - 17:00	IAF Knowledge Management for Space Organisations (KMTC)	Room 149B
18:00 - 21:00	AIAA Space Automation and Robotics Technical Committee (SARTC)	Room 149B
19:30 - 20:30	YP Networking Event: Industry Panel on the Moon	Room 207AB
Wednesday 23 C	October 2019	
08:00 - 18:00	IAF Nomination Committee	Room 101
08:00 - 18:00	IAF Congress and Symposia Advisory Committee (CSAC) Meeting	Room 209B
09:00 - 12:00	IAA SETI Permanent Committee Meeting	Room156
10:00 - 11:30	IAF Honours and Awards Committee (HAC)	Room 141
10:00 - 11:30	IAF Working Group on Emerging Countries	Room 149B
11:00 - 12:30	IAF Committee on Near Earth Objects	Room 102B
13:00 - 17:00	UAE Workshop	Room 202A
13:30 - 15:30	IAA Study Group 3.28	Room 153
14:00 - 16:00	IAF Student Activities Subcommittee	Room 141
14:00 - 15:30	IAF Space Societies Committee (SSC)	Room 102B
15:30 - 17:00	IAF Space Museums and Science Centres Committee	Room 102B
Thursday 24 October 2019		
07.00 - 09.30	IAE Grulac and AIAA Nuclear and Future Flight Propulsion Technical Committe	Room 156
07:30 - 08:15		Off-site
09:00 - 11:00	World Space Week Association Board of Directors	Room 149A
09:45 - 12:30	IAF Bureau Meeting – Session 2	Room 102B
10.00 - 11.00	Space Universities Administrative Committee (SUAC)	Room 149B
12:15 - 14:15	IAA History Committee Meeting	Room 149B
13:30 - 15:00	IAF Industry Relations Committee	Room 102A
14:00 - 19:00	IISI Moot Court Finals	Off-site
15:00 - 17:00	IPC Steering Group Meeting – Session II	Room 156
15:00 - 17:00	IAE Enterprise Risk Management (ERM) Committee	Room 148
16:00 - 17:30	IAA Study Group on CubeSat Interface 4.26	Room 209A
16:30 - 19:00	IAF Astrodynamics Committee (Session II)	Room 141
17:00 - 18:30	IAF Committee for the Cultural Utilisation of Space (ITACCUS) - Session 1	Room 148
19:30 - 22:00	IISL Dinner	Off-site
Friday 25 October 2019		
09:30 - 13:30	IAF General Assembly Meeting – Session 2	Room 207AB
14:00 - 15:00	IAF Bureau Meeting – Session 3	Room 102B

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IAF NEWS

The IAC 2019 is going LIVE!

Should you not be able to join us in Washington D.C., you can still experience our incredible congress in live stream. Wherever you are, it is now so easy to connect and join the discussion. Make sure to download the IAF App "iafastro" to get engaged with participants and speakers!

This year at IAC 2019, all Plenary Events, Highlight Lectures, selected GNF events and more will be broadcasted live.

Register on the platform, pay a modest fee and book your preferred sessions now. Connecting from remote has never been so easy.

To access and select the sessions, please visit this link: http://www.iafastro.org/events/iac/iac-2019/livestreaming-schedule/



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The venue Walter E. Washington Convention Center



www.websedge.com





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IAF NEWS











azercosmos













IAF NEWS



ISF 2019

The successful series of International Space Forums at Ministerial Level (ISF), returned to Italy for The Mediterranean Chapter, ISF 2019 that took place in Reggio Calabria on 5th September 2019.

Launched in 2015, under the auspices of the IAF Vice President for Science and Academic Relations, the International Space Forum represents an annual gathering at Ministerial Level aiming to encourage a global discussion and debate on the necessity of promoting a greater involvement of Universities and national Academies into space activities.

Following the successful meetings held in Trento, Nairobi – the African Chapter, and Buenos Aires - the Latin American and Caribbean Chapter, this fourth edition of the Forum represented the logical continuation of last year's regional forums. The 2019 edition, held in Reggio Calabria, Italy, brought together major actors of the Mediterranean region to discuss the great opportunities space has to offer for the socio-economic advancement of the area.

The success of such a meeting begins with its preparation, but can be truly measured only by its participation and the engagement of the attending delegations. In this respect, this year was truly remarkable. A total of 12 countries from the Mediterranean region, and 20 space agencies and international organizations from all over the world, took part in the Forum. The involvement of various actors from government, space agencies, universities and technical institutions shows that these entities are well aware of the major role that space has to play in supporting the further development of the region.

As emerged during the Forum, by touching upon the three main topics - Maritime Surveillance, Space and Blue Economy and Space Education, Cooperation and Scientific Knowledge - the need to protect and preserve the Mediterranean region and its magnificent sea is a shared goal. Its unique geographical location and natural richness represents an exceptional resource that needs to be preserved. For this reason, the employment of space technologies and their application can be crucial in providing countries with the means to ensure said protection. Now more than ever, the dialogue and scientific exchange between policymakers and key stakeholders is of vital importance in order to preserve this unique region of the world.

In order for space technologies to have a true worldwide impact, international partnership is key. For this reason, the IAF is particularly glad that so many different countries from the area gathered in Reggio Calabria, giving the opportunity to all to exchange ideas and points of view. Space Education and International Cooperation are a first, important step to develop and spread the technologies that could help the Mediterranean region to face major challenges.

These and many more topics, were widely discussed during the Forum and were brought to light by the statements of the delegations. These statements, as well as the Reggio Calabria Page, will contribute to keep alive the spirit of the Forum, and will inspire new forms of cooperation and partnership, not only in the Mediterranean region, but throughout the whole world.



FINAL online.pdf





IAF 2020 SPRING MEETINGS



The IAF Spring Meetings to take place from 24 – 26 March 2020 at the NEW CAP Event Center in Paris will gathered the IAF community. For three days IAF Administrative and Technical Committees will meet and the International Programme Committee will select the abstracts to be presented during the IAC 2020.



IAF NEWS

Please read the full report here: http://www.iafastro.org/wp-content/uploads/2019/10/ISF-2019 Final-Report 2019-10-14





SpaceOps





GLEX 2020

The International Astronautical Federation (IAF) is pleased to invite you to the Global Space Exploration Conference (GLEX) 2020 to take place in St. Petersburg, Russian Federation from 9 – 11 June 2020.

The Conference, co-organized by the International Astronautical Federation (IAF) and ROSCOSMOS, will bring together leaders and decision-makers within the science and human exploration community - engineers, scientists, entrepreneurs, educators, agency representatives and policy makers. The leaders in the field will converge in St. Petersburg to discuss recent results, current challenges and innovative solutions and it will contain several opportunities to learn about how space exploration investments provide benefits as well as discuss how those benefits can be increased through thoughtful planning and cooperation.



ROSCOSMOS and IAF are both committed to supporting the international relationships that enable exploration of outer space and are very enthusiastic to organize GLEX 2020.

The conference will feature an Opening Event; several Plenary Events and Keynote Lectures; a Technical Programme with Sessions in several parallel technical streams; a Global Networking Forum (GNF) Programme and an attractive social and networking programme including a Welcome Reception and a Gala Dinner.

IAC 2020

For the very first time, the IAC will open its doors to the global space community in the United Arab Emirates, the first Arab country to host the IAC since its establishment in 1950. The United Arab Emirates' interest in astronomy and space sciences dates back to the 1970's, when His Highness Sheikh Zayed bin Sultan Al Nahyan met with the NASA team responsible for the Apollo moon landing. This encounter sparked a national focus on space that began almost three decades ago, eventually leading to the birth of a national space sector.

The IAC 2020 Host Organization - the Mohammed Bin Rashid Space Center (MBRSC) - member of the IAF since 2012, was established by the Dubai Government to serve as one of the main pillars to drive the establishment of the knowledge economy and sustainable development in the UAE.

With the theme "Inspire, Innovate & Discover for the Benefit of Mankind", the IAC 2020 looks forward to make a contribution to humanity and to science by strengthening and enhancing cooperation between all countries in the space sector.

We are convinced that thanks to the dedicated work of all parties involved and the participation of each and every one of you, the 71st IAC will be of remarkable significance for the space sector.

We look forward to welcoming you in Dubai in October 2020!

Check the Call for Papers and start organizing your trip!



IAF NEWS





Space Education and Outreach Committee

The Space Education and Outreach Committee (SEOC) promotes the development and delivery of quality learning and outreach opportunities for students, educators and members of the IAF so that space, science, and technology become better known and are more accessible to the global community. The SEOC will support the 2019 IAC, as the global community come together in a mighty way.

As reported in the IAF June Newsletter, the SEOC and the International Space Education Board (ISEB) are working together to plan and execute an excellent Educator Professional Development (EPD) Workshop and Student Program for the 2019 IAC. For the first time, local middle school students will experience two days of STEM engagement and the Educator Professional Development Workshop will be a global event. In addition, there will be a live college broadcast, which will target undergraduate and graduate students in the United States and abroad.

The 2019 activities will provide an array of opportunities for professional development; cultural awareness; and networking between peers and space professionals on site. Increased virtual activities will expand the reach of the Congress, allowing greater opportunities for inclusion.

Representatives of Space Generation Advisory Council (SGAC) are active members of SEOC. The SGAC will organize several events during the IAC with its partners, including SpaceGen Entrepreneurs session@GNF (Wed, Oct 23, 9:40-10:40, Grand Ballroom C). This is a joint GNF with Luxembourg Space Agency focused on the concept of space commercialization. The SpaceGen Entrepreneurs will feature high-calibre entrepreneurs, business investors and startup experts that will analyze how to capitalize new commercial opportunities in the space industry, discuss the most effective ways to succeed in startup ventures, and share the human story behind space entrepreneurs. On the same day, there will be another interesting session, Space Supporting the UN Sustainable Development Goals 2030 Agenda (Wed, Oct 23, 15:55-16:55, Grand Ballroom C). The Sustainable Development Goals have to be reached by 2030, which gives little time to act. The related GNF will give the opportunity to some of the actors to exchange on what they propose and what they need. The IAC participants are invited to the SGAC / ISU / IAF WD-YYP Evening Reception (Wed, Oct 23, 19:00-21:00, room 2017AB) and to the SGAC – Space Foundation Booth Reception (Mon, Oct 21, 16:00-17:00, Exhibition Hall Booth 200).





NEWS!



Australian Space Agency Strategy and projects

The Australian Space Agency formed on 1 July 2018. Our purpose is to transform and grow a globally respected Australian space industry that lifts the broader economy, inspires and improves the lives of Australians - underpinned by strong international and national engagement.

The activities of the Agency are shaped by the Australian Civil Space Strategy 2019-2029, which outlines a ten year plan to triple the size of Australia's space sector from AU\$3.9 billion to AU\$12 billion, and create another 20,000 jobs by 2030.

The Strategy is built on four Strategic Space Pillars – open the door internationally; develop national capability in areas of competitive advantage; ensure safety and national interest are addressed; and inspire and improve the lives of all Australians. Under the pillars, seven National Civil Space Priority Areas, have been identified: communication technology to increase the connection between the ground and space; earth observations to improve our way of life; position, navigation and timing focused on improving the resolution of global positioning to enable innovation in other sectors such as agriculture; the use of robotics and automation in space; exciting new areas under leapfrog R&D such as the use of AI in space; and supporting access to space.



Members' Corner

The Strategy also lays the foundation for Australia to consider participate in joint missions with international partners and seeks to engage and inspire the nation to support future jobs in the space sector.

In support of the Strategy, the Australian Space Agency will implement two programs, the AU\$19.5 million Space Infrastructure Fund (SIF) and the AU\$15 million International Space Investment (ISI) Initiative. The SIF will fill space infrastructure gaps and the ISI will support projects to help unlock international space opportunities for Australia.



Australian Space Agency brand

Indigenous Australians are our nation's first scientists and astronomers, and their knowledge and contributions to Australian science are reflected through the Australian Space Agency brand.

There is a strong link between space and Australia's Indigenous people who are some of the world's oldest astronomers. For thousands of years, the sky has been critical to Aboriginal and Torres Strait Islander people in dictating seasonal activities around food and movement, a reflection of what is happening on the land.

At first glance, the logo appears as a satellite view of Australia. The dots allude to the light created from human life and industry, which the Australian Space Agency will support. However, closer inspection reveals this isn't an abstract view looking down on Australia from space. It's actually what Australians see when they look to the skies.

Just like with the night sky, the logo holds gems for those who know where to look. Hidden within the logo are significant Indigenous star constellations which represent dreamtime stories. The dots now take on a star-like quality, while subtly referencing the artistic methods of our first people.

The abstract view is also what Australians can see when they look to space. The continent is made up of eight Aboriginal constellations and star maps, with each cluster capturing our heritage and the spirit of the Agency.



Members' Corner



We acknowledge the Traditional Owners of country throughout Australia and recognise their continuing connection to land, waters and culture. We pay our respects to their Elders past, present and emerging.

Watch an animated video tells the story of the Australian Space Agency's brand identity.



USC Viterbi School of Engineering

On April 21, 2019, the University of Southern California Rocket Propulsion Laboratory (USCRPL) broke the student world altitude record and became the first student team to send a rocket past the Kármán line (100 km) into space. Their record-setting rocket, Traveler IV, reached an apogee of 103.5 km and a max speed of Mach 5.1. RPL's avionics system, custom-built by USCRPL's team of students, recorded the flight using its onboard sensors and deployed the vehicle's parachutes at apogee, allowing the rocket to safely glide down to earth. Traveler IV is 3.95 m long, 21.6 cm in diameter and weighs 141.5 kg. The space shot vehicle produced a thrust of 17.8 kN.



PHOTO/USCRPL

USCRPL was founded by Ian Whittinghill, University of Southern California Viterbi School of Engineering MS '08, in 2005. It has grown to include over 70 USC Viterbi students from the Department of Astronautical Engineering, as well as other departments. Traveler IV's success marked the culmination of 15 years and over a million hours of work.



LandViewer Adds High-resolution **Imagery Options and Advanced Analytics**

High-resolution (view only)

In case you don't need to use commercial imagery from LandViewer with a resolution between (0,3m and 1.5m) for in-depth analytics, we added a new, stand-alone data source - "high-resolution imagery (view only)". It's been designed to deliver high detail imagery that is accessible, user-friendly, and affordable from just \$0.7 per tile.

The desired high-resolution images are just several clicks away and to launch the feature, you just need to:

- Set your AOI (upload, draw)
- Confirm viewing
- Make a one-time payment

Once these three steps are done, the image will appear on the map.

The feature has an unlimited scope of application, plus, wherever deep analytics is not required, there's no need to pay for it.

Image 1



Mosaic

In case, you are interested in one and the best satellite image, that covers your area of interest fully no matter the size it has, we know the solution. A new option from LandViewer - Mosaic allows combining daily satellite images, obtained from one sensor for a set location, apply both - default or custom indices on-the-fly and download the scenes for further analytics.

- no more manual preselection of suitable scenes
- no more unnecessary switching between available images
- no more blank spaces within your area of interest

Image_2



The Index Change Detection

To always keep you updated, we designed a feature that would scan new satellite images of your AOI, detect changes in the index values compared to the previous ones and send an urgent e-mail notification to the end-user.

Image 3



Check LandViewer's step-by-step user-guide to find the detailed instructions on how to work with Change Detection or feel free to email us at <u>support@eos.com</u>



MAN AND THE MOON... 50 YEARS ON

At 12.56 pm on 21 July 1969 Australian Eastern Standard Time (AEST) a truly momentous event occurred when Neil Armstrong stepped out of Apollo 11 onto the surface of the Moon. According to history, this significant achievement for mankind was enabled

Members' Corner

by nearly 400,000 scientists, technicians and engineers drawn from more than 20,000 companies and universities across the globe.

"The Space Industry Association of Australia is proud to have many members who are involved in various endeavours that enable and support ongoing space activities. I am sure that many of our members have been inspired to pursue careers in space as a direct result of man landing on the moon 50 years ago" said Mr Drury CSC, Chair of the Space Industry Association of Australia (SIAA).

The diverse membership of the SIAA includes organisations undertaking a wide range of space related activities, including education, research, development, design, production, operations and sustainment. The SIAA capability database provides a comprehensive source of information about many and varied space activity being undertaken across Australia.

The SIAA hopes that all Australians will be able to celebrate the anniversary in some way - a listing of celebration activities is available on our website.

For more information and interviews contact: Mr Rod Drury Sherri Dawson 0477 787 388 chair@spaceindustry.com.au Sherri Dawson 0488 105 775 operations@spaceindustry.com.au



The Final Stage of CanSat Azerbaijan **2019 Model Satellite Competition Took Place**

The final stage of CanSat Azerbaijan 2019 student model satellite competition, organized by Azercosmos and the Ministry of Education of the Republic of Azerbaijan, was held in in the Main Satellite Ground Control Station of Azercosmos.

38 teams from 15 universities registered to participate in the competition. This year, students from regional universities of Azerbaijan took part in the competition as well. The teams mainly consisted of students studying mechanics and computer engineering, aerodynamics, process automation, mathematics, physics, and other technical specialties.





11 teams from 8 universities, who had successfully completed the PDR (Preliminary Design Review) and CDR (Critical Design Review) stages of the competition got the right to participate in the final stage of the competition.



The Chairman of the jury was the scientific consultant of the Council on Space Affairs of the Republic of Azerbaijan, Doctor of Physical and Mathematical Sciences, academician Roald Sagdeev. The jury was composed of experts from the Thales Alenia Space, TÜBİTAK Space Technologies Research Institute, the Ministry of Education of the Republic of Azerbaijan, and Azercosmos.



The CanSat Azerbaijan competition, which was held in Azerbaijan for the second time, contributes to increase of interest of youth in space technologies and develops relevant skills and knowledge among them to construct nano and other real satellites in future in Azerbaijan



The Demo Day of the NewSpace **Business Accelerator Program** took place

The Demo Day of the NewSpace Business Accelerator Program, announced by Azercosmos and Social Innovation Lab (Sil.), was held at the French-Azerbaijani University (UFAZ) on June 13, 2019.

The main goal of the program, announced in October 2018, was to reveal innovative startup projects and products in space and related industries, create a bridge between them and markets and support them both financially and capacity building wise. Forty teams from five countries applied to the program sending their innovative solutions to particular challenges put by the organizers. Further, ten promising projects were selected.



During the Acceleration Phase, which covered January-May of 2019, the organizers of the program provided support to the teams in the form of satellite resources, workspace, technical and business training, experts' and mentors' guidance, etc. Moreover, during this period, startups were working on crucial technical and business concepts, creating prototypes of their final products. Likewise, they were progressing, taking important steps to develop their startups.



At the Demo Day of the NewSpace program, the selected startup teams pitched to the Jury. Three of them were chosen by the Jury members as the winners of the program and got seed investment financed by Azercosmos. Furthermore, the startups got an opportunity to present their products to foreign markets, taking part in international exhibitions and conferences together with Azercosmos.



Summer School Alpbach 2019

From 16 – 25 July 2019, 58 university students from 23 nations attended the 43rd edition of the Summer School Alpbach. Organised by the Austrian Research Promotion Agency (FFG) and ESA, this year's theme was "Geophysics from Space Using Micro- or Nano-Satellite Constellations".

The student teams were challenged to propose ideas for new satellite missions to observe the magnetic and gravitational field of the Earth from space with a high resolution in space and time using a mission configuration that goes beyond all missions that have been realized so far. The course culminated with each team presenting their mission to an expert jury.

Team Blue proposed MAGMA-C, an eight-satellite constellation in a Low-Earth Orbit (LEO). MAGMA-C's mission is to measure Earth's magnetic field in order to study the induced magnetic field in the mantle.

Team Green devised GRAVL: GRAvity observations by Vertical Laser ranging. The processes behind solid-Earth mass movements and ocean water redistribution caused by earthquakes are poorly understood, due to the limited capabilities of terrestrial measurement systems. A well-proven alternative is to study gravitational anomalies from space. GRAVL will develop this approach by studying mass redistribution in the upper mantle before, during, and after earthquakes

Team Orange conceptualised Orpheus, a series of small satellite constellations to provide insight into the geodynamo of Earth's outer core. Orpheus will build on the dataset produced by SWARM until 2055, as well as complementing it by providing additional measurements of the ionospheric current density.

Team Red planned RUBIKS: Reconstruction of Undercrust Behaviour with Interconnected (K) cubesatellites. A nanosatellite mission proposal dedicated to analysing Earth's mantle, RUBIKS will feature eight 6U CubeSats on two Cartwheel-Helix orbits. All student reports and presentations are available for download: http://www.summerschoolalpbach.at/index.php?file=students. <u>htm</u>



Members' Corner



43rd COSPAR **Scientific Assembly** Connecting space research for global impa

ANNOUNCEMENT

43rd Scientific Assembly of the Committee on Space Research (COSPAR) and **Associated Events**

"COSPAR 2020"

Date: 15 – 22 August 2020 Place: Sydney, Australia

Contact:

COSPAR Secretariat Tel: +33 1 44 76 75 10 cospar@cosparhq.cnes.fr http://www.cospar-assembly.org or http://www.cospar2020. org/

Scientific Program Chair:

Prof. Iver Cairns, University of Sydney

Abstract Deadline:

14 February 2020

Topics:

146 meetings covering the fields of COSPAR Scientific Commissions (SC) and Panels (full list available at http://www. cospar-assembly.org):

- SC A: The Earth's Surface, Meteorology and Climate
- SC B: The Earth-Moon System, Planets, and Small Bodies of the Solar System

- SC C: The Upper Atmospheres of the Earth and Planets Including Reference Atmospheres

- SC D: Space Plasmas in the Solar System, Including Planetary Magnetospheres

- SC E: Research in Astrophysics from Space
- SC F: Life Sciences as Related to Space
- SC G: Materials Sciences in Space
- SC H: Fundamental Physics in Space
- Panel on Satellite Dynamics (PSD)
- Panel on Scientific Ballooning (PSB)

- Panel on Potentially Environmentally Detrimental Activities in Space (PEDAS)

- Panel on Radiation Belt Environment Modelling (PRBEM)
- Panel on Space Weather (PSW)
- Panel on Planetary Protection (PPP)
- Panel on Capacity Building (PCB)



Members' Corner

- Panel on Education (PE)

- Panel on Exploration (PEX)

- Panel on Interstellar Research (PIR)

- Special events: Interdisciplinary lectures, space agency round table, etc.

Selected papers published in Advances in Space Research and Life Sciences in Space Research, fully refereed journals with no deadlines open to all submissions in relevant fields.

Euroc[©]nsult

Euroconsult predicts 10-year growth cycle for government space programs

Charlotte Croison, Consultant, Euroconsult Paris

2018 marked two historic records in government spending for space programs: the sum of government satellites launched and the number of organizations launching these units. In the past year, 24 government civil and defense agencies sent in orbit 138 satellites over 50 kg, representing an 84% increase compared to 2017's 75 satellites.

Our leading global consulting firm specializing in space markets, Euroconsult, has updated its 25-year maintained database on governmental programs and released in 2019 our newly research, Government Space Programs: Benchmarks, Profiles & Forecasts to 2028.

In 2018, global government space budgets totaled \$70.8 billion continuing the last few years of recovery of space budgets posting a 5.75% CAGR. According to the research, the U.S. government continues to be the world's largest investor in space programs with a budget of \$40.9 billion in 2018, representing 58% of the world market. At \$11.8 billion, Earth Observation and Meteorology is the highest-funded space application followed by Manned Spaceflight which totaled \$11.6 billion over the year. As post-ISS and exploration missions gain momentum, Space Science and Exploration has emerged as the 3rd-highest application spending area in which \$7 billion were invested in 2018. Satcom spending has halved to \$5.8 million but it remains the 2nd-highest application regarding the number of satellites launched.

Our Senior Consultants will attend the IAC 2019 in Washington to both present the socio-economic return of large satcom programs and comment the growing need of space exploration actors to understand the fast-changing trends of this booming field.



©Euroconsult 2019 - PROFILES OF GOVERNMENT SPACE PROGRAMS Benchmarks, Profiles & Forecasts to 2028



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Riding the Wave of Transformation in the European Space Industry

The European space industry is going through a motion of change. New Space has brought about changes to the way space is 'done' across the globe. Industry players have become familiar with the shockwaves companies like SpaceX, Planet and OneWeb have sent through the market: they build, test and launch fast with tremendous success, a wealth of funding and a decline in manufacturing cost. This development has equally brought about optimism and concern among the European industry.

While European space professionals receive money through grants and other ways of funding via the European Commission (Horizon 2020, COSME, ESI Funds), the European Investment Bank Group and European Investment Fund, national ministries and the European Space Agency (ARTES, GTSP and TRP, among many others), there is concern among start-ups in this region regarding the funding available for them.

This is especially true for start-ups that are scaling up to a higher technology readiness level (TRL) and want to move into a commercialisation and growth phase, and move away from institutional money and need to rely more on private investments through seed, equity and debt funding. At this stage, start-ups are dependent on the flourishing initiatives such as the ESA Business Incubator Centres, as well as a small portion of venture capital (VC) funding and the InnovFin Space Equity Pilot (ISEP). As highlighted in the 'The Future of the European Space Sector' report, the European Investment Bank raised the concern that the "investment landscape today is suboptimal and poses a risk for the commercialisation of space technologies in Europe".

Despite this concern, it is not all doom and gloom. The amount of private funding remains low compared to the US, which is mainly down to cultural differences in the way VC funding is 'done' in these regions. The venture capital activity in Europe increased between 2008 and 2017, with a nearly doubled value of deals, although a decline in deals closed. This signals that the EU-based VCs are increasing the value of deals for specific organisations.

There is an abundance of start-ups based in Europe, especially those that serve the small satellite industry. Many start-ups provide particular technologies or services such as advanced propulsion systems, data analysis tools, software development, communication systems, launch vehicles and launch brokerage, among many others. Companies include PLD Space, Exolaunch, Morpheus Space, ThrustMe and Exotrail. Consequently, many downstream service providers are flourishing in this growing industry, including companies such as Open Cosmos, Leaf Space, Astrocast and Earth-I.

Meanwhile, system integrators and (subsystem) suppliers are

Members' Corner

becoming aware of the changes these new players mean for the industry. Various collaborations and innovation platforms have been established within the European market, including the ArianeWorks project: an innovation platform set up by French space agency CNES and launch vehicle manufacturer ArianeGroup. Other examples include the Airbus BizLab and the establishment of various groups within satellite manufacturer OHB, such as OHB Blue Horizon and LuxSpace.

Space Tech Expo Europe (19-21 November, 2019) in Bremen, Germany brings together government agencies, system integrators, suppliers, SMEs, start-ups and private investors to discuss the future of space in Europe, and what its next steps will be for funding and technology innovation.

To view the full agenda and register, please take a look at: www.spacetechexpo.eu



UPDATE:

Firefly Aerospace continues to make excellent progress towards the initial launch of the Firefly Alpha launch vehicle in the first quarter of 2020

Firefly recently announced a partnership with Israel Aerospace Industries (IAI) for technology based on its Beresheet Lunar Lander. This will allow Firefly to commercialize the Beresheet lander and build an American version of the lander called Genesis, which will be the highest TRL commercial lunar lander in development and will be eligible for use in the NASA Commercial Lunar Payload Services program.

Firefly has continued to retire considerable technical risk in the Alpha launch vehicle development program. Recent milestones include successful hot fires of the fully integrated first stage Reaver engine and the start of the multi-engine Reaver testing regimen.

Firefly has also successfully completed a fairing separation test. The Firefly payload deck, payload fairing, and fairing separation system are all built in-house, and the test was successful on the first attempt.

Firefly has grown to over 300 employees worldwide, including the Firefly team at Vandenberg Air Force Base that is preparing the launch site for the maiden launch of Firefly Alpha."







SPACE RULES RELEASED

The Space Industry Association of Australia (SIAA) congratulates the Australian Space Agency (the Agency) on completing and transitioning to a new regulatory framework for Australian space activities for launching to space and returning to Earth.

The SIAA is pleased that the Australian Government and the Agency have undertaken this revision of the regulatory framework to ensure that the Australian space regulatory regime is more consistent with the rapidly changing nature of space launch and returns. The new regulatory regime provides more clarity and allows for greater flexibility for the introduction of new technologies and is now better suited to the rapidly changing nature of space activities globally.

The SIAA is particularly pleased that the revised regulatory framework aligns with many of the Australian launch safety standards and insurance requirements which are best practice

industry standards used worldwide. This alignment with accepted industry standards will enable additional opportunities for Australian launch and return activities in the future. The SIAA strongly commends the Agency for this wise approach, which will enhance the future prospects of the Australian space industry. The SIAA agrees with the comments of Dr Megan Clark AC, Head of the Australian Space Agency, when she said, "By updating the regulatory framework, we are improving Australians' access to space, while continuing to uphold our strong values to ensure safety of activities on Earth and in space ... "

Chair of the SIAA, Mr Rod Drury, said "I commend the Australian government and the Australian Space Agency for undertaking this revision of Australia's space regulatory regime and, on behalf of our members, I congratulate the Agency for achieving a strong outcome that will better position Australia to be an active participant in the growing space activities in the 21st century and beyond."

NASA AND AUSTRALIAN SPACE AGENCY FORM NEW PARTNERSHIP

The Space Industry Association of Australia (SIAA) welcomes today's announcement of a partnership between the Australian Space Agency and NASA, formalising future cooperation in space.

"This is a tremendous step forward for Australia's growing space industry, and will provide a significant injection of funding, which will underpin both jobs and growth in our space sector," said Mr Drury CSC, Chair of the SIAA.

Mr Drury went on to say "The Australian space industry has been growing steadily, as reflected in the exponential growth in our membership. Strong leadership and support from the Federal Government has accelerated this growth in the domestic space industry. A partnership with NASA will provide the next big incremental step needed to ensure continued expansion in the industry, encouraging the development of local skills and expertise and enabling a host of job opportunities for both current and future participants in the space sector, as well as motivating and encouraging our budding space enthusiasts."

We congratulate our Prime Minister the Hon Mr Scott Morrison MP, Minister for Industry Science and Technology the Hon Karen Andrews MP, and the Australian Space Agency on this key initiative which outlines and enables a path for growth for the Australian space industry.

For more information and interviews contact: Mr Rod Drury 0477 787 388 chair@spaceindustry.com.au Sherri Dawson 0488 105 775 operations@spaceindustry.com.au



After the successful design milestone, an equity fund is being set to enable private investors to diversify their portfolio through the 40 mEUR-EBIT-generating SpaceLand City in the tropical island of Mauritius, Africa's OECD-white-listed number-1 economy.

Such a new beach-front, green-energy real estate development, facing crystal-clear sea lagoons and virgin forests, features the world's largest Mars-base analog for low-gravity research & tourism at walking distance from high-tech Near-Zero-Energy-Building (NZEB) penthouses, offices and business incubators around a futuristic plaza with space-themed boutiques and cafès, characterized by 10,000 m2 of thermally-insulating vertical green for an actual *paradise life* into a paradise island.

Such a unique "space-themed business & life settlement" is designed by a team of Italian engineers and architects led by former design supervisor of the international mass media buildings of the 2006 Winter Olympics, Architect Celeste Petraroli.

As presented this year at the United Nations - China Forum on Space Solutions and at the IAF Global Conference for Emerging Countries and, through an invitational multimedia show, this month at the European Planetary Science Congress in Genève (CH), SpaceLand is enabling people at any age to utilize, work and even live in the first "low-gravity knowledge hub" for all-yearround business development, research, education and leisure focused on the opportunities given by microgravity STEAMM (Science, Technology, Engineering, Arts, Math and Medicine) and their myriad applications for eco-sustainable progress.

The City's green-energy-powered luxury habitation and busines facilities will be a "pilot case" also thanks to its Mas hill-like radiation-proof research labs and space-emulation stations, with ground and underwater facilities for space-immersive projects and experiences: inter alia, it will host "open-doors" neutral buoyancy habitats and an unprecedented "Mars-green house" served with self-replicant robots built through parts of the plants cultivated by mother-robots, entailing major spinoff applications also for innovation in biology and agriculture addressing remote or desertic territories on planet Earth.

SpaceLand will also facilitate bioengineering and biomed R&D on analogies between humans in microgravity and everyday's needs of elderly, disabled and kids affected by similar daily difficulties as astronauts face in Space, with a special focus on breakthrough applications related to zero-gravity-developed cancer treatment, anti-aging and life-extension therapies.

Residents, tenants, users and visitors, at any age, will also be enjoying facilities for tropical mountaineering, beach & marine

Members' Corner

sports in a gorgeous setting, with their respective activities thriving thanks to a new concept of working and living.

Taking advantage of one of the world's best low-taxation, OECDcleared economies, equity investors are welcome into this ecofriendly business to share an impressive EBIT, part of which will also serve to expand the eco-sustainable NZEB real-estate and develop high-skill educational and occupational opportunities for Africa's weak social classes, alleviating the migration crisis: pre-sale marketing is getting started for the first properties, to turn a dream into an actual dream-life.

Welcome to the paradise island of Mauritius and welcome to SpaceLand!





Happy 25th birthday. **Hungarian Space Camp**

The Hungarian Astronautical Society (MANT) organized its first Summer Space Camp a guarter of a century ago. Accidentally, this anniversary coincided with the 50th anniversary of the first Moon landing. Therefore Moon exploration was already the topic of our traditional student contest ended in February. The winners were eligible for free tickets to the Hungarian Space Camp held in the town Sátoraljaújhely, Hungary, July 7-13. More than 30 participants at the age of 13–18 years convened to listen to lectures by renowned space experts, and to take part in a space-related team work and various social activities. To celebrate the 25th birthday of the Hungarian Space Camp, the most memorable attraction of the 2019 Space Camp was the successful public launch of a stratospheric balloon from the center of the town, performed by the Universal Platform for Robotics and Aerospace team of the Budapest University





CONFERENCE DEADLINES 29 September 2019 06 December 2019 Notification to speakers 20 December 2019

15 January 2020

Full paper submission

Exhibition

Abstract submission

Preliminary program

CONFERENCE FORMAT 500 attendees, 400 papers / presentations Main auditorium (plenary sessions + ANERS sessions) Conference rooms (8 parallel sessions)

AEC2020 intends to offer a wide exhibition area. Next to the sponsors and exhibitors, a research agora will be set up.

You are invited to communicate and disseminate the results of your collaborative research project in the fields of aeronautics and space to the international conference community.

AEC2020 Conference will bring together a large panel of participants: policy-makers, government officials, industry decision makers, R&D establishments, researchers, engineers, academics, media.





of Technology and Economics. The enthusiastic Space Camp participants could have an insight into the preparations and operation of a mission – even though this time only to "near space" –, and took the opportunity to discuss the details with the balloon team members. Looking back to the long history of Space Camps, it is now evident that many of the former student participants were inspired to later become scientists or engineers in the space sector or related fields. We recently published a book containing exciting interviews with 12 of them.



1st Edition of the

AEROSPACE EUROPE CONFERENCE – AEC2020

BORDEAUX, FRANCE | 25 – 28 FEBRUARY 2020

To pave the way for a single European aerospace conference, 3AF and CEAS have decided to join forces to launch the very first edition of the Aerospace Europe Conference (AEC2020).

Aerospace Europe Conference 2020, will feature 3AF, 3rd Greener Aviation, CEAS 7th Air & Space Conference and the 8th edition of Aircraft Noise and Emissions Reduction Symposium (ANERS).

This conference will be offering scientists and engineers from industry, government, and academia an exceptional opportunity to exchange knowledge and results of current studies and to discuss directions for future research in the fields of aeronautics and space. Individually, each of the three conferences has proven to be very successful. In joining the three we expect to be even more attractive, offering additional transversal topics and synergies between aeronautics and space towards a greener and cleaner environment.



By welcoming worldwide contributions, this new conference will give attendees a unique overview of the global research efforts aimed at reducing the environmental impact of aviation and space activities.



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All delegates and speakers of the AEC2020 Conference will visit the exhibition area, conveniently located near the technical sessions, and around the coffee breaks and lunches lounge.

The exhibition area will also provide you a dedicated place for discussion, small meetings and for making new contacts.

The exhibition area is also open to any outside visitors, free of charge. Exhibitors are welcome to invite colleagues, clients and prospects to come visit their booth on the exhibition (visitors must be registered prior their coming).

Exhibition days are from Tuesday 25 February to Thursday 27 February 2020

CONFERENCE VENUE

The Aerospace Europe Conference (AEC2020) will be held: Bordeaux Congress Centre rue Jean Samazeuilh 33070 Bordeaux FRANCE

More information can be found at: http://www.aerospaceeurope2020.eu Questions should be addressed to: aec2020@3af.fr





Launch your Space Career

Higher Degree Research Scholarships

Applications Now Open

The SmartSat CRC invites expressions of interest for higher degrees by research (Masters & PhD) scholarships commencing in 2020. Successful candidates will be enrolled with one of our university partners and will work on applied R&D which align with our research programs.

Topics Include

- advanced communications & IoT connectivity
- advanced satellite systems
- sensors & Al
- next generation earth observation remote sensing analytics & data services
- space cybersecurity systems and space governance.

Funding

Generous full scholarships or top-up scholarship stipends will be offered to suitably qualified applicants of both PhD or Masters by research programs.

Eligibility

Scholarships are available for Australian residents. Non-residents will be considered, subject to projectspecific requirements. Australian citizenship may be required for projects with specific industry partners.

Applicants should have a first-class honours degree, or equivalent, in a related discipline.

Refer to the SmartSat CRC website www.smartsatcrc.com for additional information.





Business res Program

Interview with SERGEY SAVELIEV – Deputy Director General for International Cooperation of the State Space Corporation **ROSCOSMOS**



Mr. Saveliev was born in 1965 in Perm, Russia. He graduated as radioelectronic systems engineer from the Moscow Aviation Institute in 1989. He began his career as an engineer in the Automation Design Bureau (Dolgoprudny city, Moscow region) before becoming a senior expert of the International Science and Technology Cooperation Directorate of the Ministry of Science and Technology of the Russian Federation.

Between 1995 and 2001 he was a secretary of the Permanent Mission of the Russian Federation at UNESCO in Paris.

Mr. Saveliev then moved to the International Cooperation Department of the Ministry of Industry, Science and Trade of the Russian Federation, where he was a senior manager until 2004. In 2004, he

became a secretary of the Russian Embassy in the United Kingdom.

He became a senior manager at CJSC "Sukhoi Civil Aviation" (2007-2008) before moving onto the post as Deputy Head of the Russian Federal Space Agency (ROSCOSMOS).

Mr. Saveliev is an expert with experience in government, corporate and private practice who have made outstanding contributions to international cooperation in the peaceful uses of outer space. He has been instrumental in facilitating an exchange of ideas on international cooperation development among space fairing and developing countries.

Moreover, under his leadership international activities of the State Space Corporation ROSCOSMOS made progress in establishing mutual beneficial partnership with different foreign space agencies and enterprises.

During 2012-2014 he served as IAF Vice-President for International Organizations Relations and Developing Countries providing for International initiatives for safe and sustainable use of outer space, promoting space activities outcome appliance in different branches of economy.

In 2015 Mr. Saveliev became Deputy Director General for International Cooperation of the State Space Corporation ROSCOSMOS. Mr. Saveliev is a recipient of Order of Merit of the Russian Federation. He actively promotes international exchange and cooperation and is willing to make new contributions to the peaceful uses of outer space.

1 GLEX 2020 will be the third Global Conference on Space Exploration, why do you think humans' interest in the heavens is so universal and enduring?

Why are people so keen on the Universe and its infinity? Why do people worry about the problems of galaxy? For what reasons do people study and try to master outer space? Probably, not the last role in this process is played by desire to cognize the world and by hope to meet another life. People have always expected a lot from outer space, thought of the idea that there are worlds beyond our own, dreaming about meeting with another sapient beings.

Space affects people through gravity and radiation by sending meteorites to Earth, space affects people even by the fact of its existence and attraction of the starry sky that certainly excites imagination and again raises a lot of controversial issues. That is the reason why space exploration will always continue to be

Interview

an essential driver for opening up new domains in science and technology, triggering other sectors to partner with the space sector for joint research and development.

2 How does space exploration provides benefits? And how those benefits can be increased?

There are many benefits of space exploration and they have contributed substantially to expand the human frontiers of science. The most important of all these benefits from space exploration is that it encourages new technology. Since its inception, the technology used in various space programs has led to the creation of numerous commercial products. Examples of these products include water purification appliances for developing nations, satellite and digital television, satellite radio, cordless tools, cell phones, GPS navigation systems and various cordless tools. Most of these appliances were first used in space exploration and then later modified to benefit other people.



Interview

Space exploration has also led to the creation of new and improved medical equipment such as cancer detection devices, small heart pumps and laser eye surgery among others. In addition, it has resulted in the creation of various safety devices like fire-resistant clothes as well as the popular smoke detectors.

At the same time, the chief benefit from space exploration is that it helps to teach people more about Earth and the best methods of preserving it because of improved imaging and software first developed to assist space explorers.

Consequently, any benefits from space exploration can be increased only if all participants of space activities, carry out their activities in the exploration and use of outer space, including the Moon and other celestial bodies, in accordance with international law, without violating the internationally recognized regime.

3 In addition to the Plenary Programme, GLEX 2020 will also offer a Technical Programme as well as a Global Networking Forum, what kind of essential issues will be explored? And how many people are you expecting to attend?

GLEX-2020 will be dedicated to exploration of outer space in all fields: manned space flights, research of objects of the Solar system and the Universe, astronomical and astrophysical research and so on. Since the conference program is very interesting and really extensive, and even a separate day will be dedicated to young professions, we expect that a thousand of delegates will take part in GLEX-2020.

Taking into account that GLEX 2020 will be held in Saint-Petersburg, the historical heart of the Russian Federation, participation in the conference will be a unique opportunity for delegates not only to make new useful acquaintance, but also to familiar with the culture and traditions of Russia.

4 What does it mean for Russia to host GLEX 2020?

More than 60 years ago our country (USSR) made a breakthrough in outer space, therefore we with particular pride and responsibility approach to the organization of the conference. We do hope that GLEX 2020 will have great practical results and contribute to the development of space exploration activities.

5 Why is it important to attend such a forum for exchange of experiences in space exploration?

GLEX 2020 is a unique platform at which everyone will be able to express its opinion on the most critical issues. Moreover, it's a great chance to strengthen the links between the Russian Federation and the rest of the world, among present and future generations of specialists in the field of space exploration activities.









International Astronautical Federation

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Be part of the conversation @iafastro

Connecting @ll Space People

The next newsletter will be issued in December!

100 Avenue de Suffren





