



# International Astronautical Federation **News**

Connecting @ll Space People

4/2017 (December 2017)

## President's Welcome

It is my pleasure to welcome you to the December issue of the IAF Newsletter.

For those of you who attended the IAC in Adelaide, I hope you enjoyed and made the most of the multiple opportunities to see, hear and discuss the latest in space. This edition focuses on the exciting news and your stories from the IAC 2017.

In the following pages, you will also find IAF news, of its governance, membership, Global Networking Forum and awards, and news on the upcoming IACs and events. Next on the calendar we have the Spring Meetings to look forward to, where technical papers for next year's IAC will be selected. I hope as many of you as possible will be able to join us in Paris for these meetings.

I would like to thank the IAF community for their hard work throughout a very successful 2017, where we saw some excellent sessions at the Global Space Exploration Conference (GLEXP 2017) in June and at the IAC in Adelaide, Australia.

I look forward to working with our IAF community in 2018, the changing season is a herald of new beginnings, of a life more beautiful. May our journey of 'Connecting @ll Space People' continue to be a great one. May the road ahead of us be full of discovery, exchange and understanding. It has been (and continues to be) great to work with you.

**Dr. Jean-Yves Le Gall**

**IAF President**



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Gold

Silver

Platinum

LOCKHEED MARTIN

Bronze



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**International Astronautical Federation**

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*The changing season is a herald of new beginnings, wishing you and your loved ones a season full of joy and cheer.*

*We're so glad to have you as a member of our IAF Community and look forward to seeing you in 2018.*

## #ThisDayInSpace

The IAF believes that history plays a vital role in our everyday lives. The study of past events shape our future actions, preparing us for the future. Humanity tends to go through the same challenges over and over again. The only difference is that people learn from what has already happened and develop better problem-solving mechanisms.



Therefore the IAF decided to celebrate the history of space with a new series of videos honouring important milestones in the building of the relationship between humans and outer space named: This Day in Space. By memorializing these crucial moments, the IAF is contributing in equipping the IAF Community with vital skills to understand what informed the actions of those before us as well as helping us in finding new inspiration by remembering how others overcame adversities and innovate; it also creates a sense of moral understanding thus enhancing our belonging and loyalty to all space aspects; it builds a cultural consciousness and cross-cultural appreciation that makes us better citizens into a better society. Most importantly the celebration of history is fun! Check all #ThisDayInSpace videos in here <http://www.iafastro.org/publications/multimedia-gallery/this-day-in-space/>

## IAC 2017



The 68<sup>th</sup> International Astronautical Congress held in Adelaide, Australia on 25 – 29 September 2017 was a great success: almost 4.500 space enthusiasts coming from 72 countries gathered in the welcoming city of Adelaide for an intense week of events, meetings, collaborations and discovering. A memorable IAC enriched by the participation of space icons among which Charles Bolden who won the Federation's most prestigious award: IAF World Space Award; Bill Nye, the Science Guy who enlightened the audience with a presentation on the phenomenal story of LightSail®, a solar sailing spacecraft; and to conclude, Elon Musk on his updated plans

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to make Humans a Multi-Planetary Species. The IAF also kept its commitment to diversity by enhancing the participation of the young generation to the IAC. Indeed, the Federation decided to increase the number of students and young professionals that will be selected to participate in the IAF Emerging Space Leaders Grant Programme from 14 to 25. This grant programme enables each year students and young professionals between age of 21 and 35 to participate in the IAC, as well as in the UN/IAF Workshop and the Space Generation Congress. This IAF initiative, putting diversity at its core of its agenda with the 3G, Generation, Gender, Geography focus, is resulting into an enormous success and a tremendous improvement into the composition of the IAF Community.

## Missing those IAC 2017 days? Get nostalgic with the IAC 2017 Photo galleries:

View the photos from PreIAC Saturday

View the photos from PreIAC Sunday

View the photos from Monday

View the photos from Tuesday



View the photos from Wednesday

View the photos from Thursday

View the photos from Friday



## You can now watch the IAC2017 all over again!

Click here to watch all videos



## SAVE THE DATE!

From **27-29 March 2018** in Paris, France the IAF community is invited to be gathered in Paris at the NEW CAP Event Center (3 Quai de Grenelle, 75015 Paris). 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 2018!

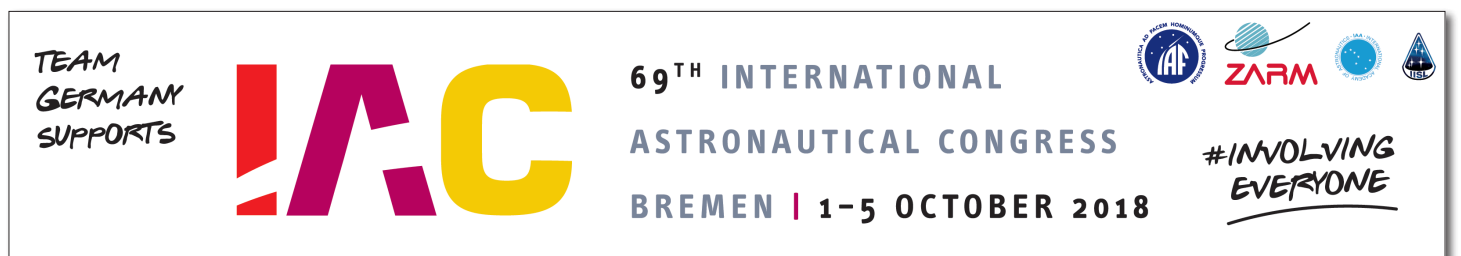


## GLAC 2018



Welcome to the **Global Space Applications Conference (GLAC 2018)**, to be held in Montevideo, Uruguay on **21-23 May 2018**. This will be the first time ever that IAF takes one of its Global Conferences to Latin America and also the first time that it organises an event in Uruguay. GLAC 2018 is coorganised together with the Centro de Investigación y Difusión Aeronáutica Espacial (CIDA-E), a member of the IAF since 1985. This conference will be a follow up on GLAC 2014 which was organised in Paris, France. During the 4 years since the previous GLAC, the international satellite-based applications community will have significantly moved forward with their respective planning and developments and it is therefore timely to take stock of the progresses and undertake an outlook to the future of space applications on a global scale, with a specific focus also on developing space nations, such as Uruguay. GLAC 2018 is designed to encourage the sharing of programmatic, technical and policy information, as well as collaborative solutions, challenges, lessons learnt, and paths forward among all nations with the desire to improve space applications and their usage. GLAC 2018 will provide an excellent opportunity to review the state of the art of satellite-based applications, with a focus on: Farming and fishing, integrated risk management, climate, natural resources, mapping, legal aspects. We hope you will be able to join us for this exciting event. More details can be found at [www.glac2018.org](http://www.glac2018.org).

## IAC 2018



The **69<sup>th</sup> International Astronautical Congress (IAC 2018)**, hosted by Zarm – Center of Applied Space Technology and Microgravity will take place in Bremen, Germany from **1 – 5 October 2018**. An intense week during which all space actors will gather to discuss the advancement and progress of space in its various features. The theme of IAC 2018, #InvolvingEveryone, aligns with IAF's motto "Connecting @ll Space People" as it is crucial for the future of the space community that we learn to successfully work together across borders, challenge norms and embrace diversity. This means cross-cultural thinking, passing the frontiers of mind sets and unlocking the potential of the young generation. IAC 2018 will involve everyone offering a rich programme of plenaries, highlight lectures, technical presentations as well as a Global Networking Forum and many social events abundant in networking opportunities. The IAC 2018 in Bremen will be a remarkable event which you should not miss – please visit the official IAC 2018 website <http://www.iac2018.org/> for more information.



## IAC 2020

Dubai, U.A.E.

28 September - 2 October 2020



During the 68<sup>th</sup> International Astronautical Congress in Adelaide, Australia, the IAF General Assembly at its second session on September 29, selected **Dubai as Host City for IAC 2020**.

The Hosting Organization is the **Mohammed Bin Rashid Space Centre – MBRSC**, a member of IAF since 2012.



## IAF Emerging Space Leaders Grant Programme - Number of recipients increased to 25!

It is no longer 14, but 25. For the very first time, the IAF will sponsor 25 students and young professionals to participate in the #IAC2018 in Bremen! So if you are a space addict between the age of 21 and 35 apply to: <http://www.iaf-grant-programme.org/> before 11 February 2018 and get the opportunity to participate in the IAC!

## IAF Young Space Leaders Recognition Programme – 2018 Call for Nominations

The International Astronautical Federation (IAF) is pleased to announce its 2018 Young Space Leaders Recognition Programme that will provide opportunities to recognise students and young professionals who are demonstrating exceptional leadership in their academics or early careers.

Send your nomination material before 11 February 2018 at [award@iafastro.org](mailto:award@iafastro.org). Detailed information on the call for nominations is available here: <http://www.iafastro.org/activities/honours-awards/young-space-leaders-recognition-programme-ysl/iaf-young-space-leaders-recognition-programme-call-for-nominations/>.

## IAF Awards – 2018 Call for Nominations

We are very pleased to announce the opening of the calls for nominations of our 2018 awards:

- **IAF World Space Award – Deadline: 15 January 2018**

The IAF World Space Award is the Federation's most prestigious award which recognises a most eminent person with exceptional merit in space science, space technology, space medicine, space law or space management who has made a fundamental and global impact upon the world's progress in astronautics.

The award consists of a medal and the recipient will also be included into a special section of the IAF Hall of Fame. The registration fees of the International Astronautical Congress (IAC) will be waived for the year of induction.

The detailed nomination process is available [here](#).

[More information about the IAF World Space Award.](#)

- **Allan D. Emil Memorial Award – Deadline: 15 January 2018**

The Allan D. Emil Memorial Award recognises an internationally-renowned person for their outstanding contribution or contributions in space science, space technology, space medicine or space law that involved the participation of more than one nation and/or which furthered the possibility of greater international cooperation in astronautics.

The Allan D. Emil Memorial Award comprises a certificate from the IAF and a grant of US\$5000 offered by the Family of Allan D. Emil. The registration fees of the International Astronautical Congress (IAC) will be waived for the year of induction.

The detailed nomination process is available [here](#).

[More information about the Allan D. Emil Memorial Award.](#)

- **IAF Hall of Fame – Deadline: 11 February 2018**

The IAF Hall of Fame recognises eminent individuals who have contributed substantially during the course of their careers to the progress of astronautics (including space science, space technology, management of space projects and space benefits to mankind) within the framework of the IAF activities.

The IAF Hall of Fame comprises a certificate. The registration fees of the International Astronautical Congress (IAC) will be waived for the year of induction.

The detailed nomination process is available [here](#).

[More information about the IAF Halle of Fame.](#)

- **IAF Excellence in “3G” Diversity Award – Deadline: 11 February 2018**

The IAF Excellence in "3G" Diversity Award is intended to recognize IAF member organisations (industry, government, academia) worldwide for outstanding contributions to the fostering of “3G” (Geography, Generation, Gender) Diversity within the space sector. It is an annual award presented at the IAC, but is given only when nominations of exceptional merit are received. Only IAF member organizations in good standing can be eligible to receive the award.

The award consists of a statue and a certificate which will be presented to an official representative of the awarded organization during the annual IAF IDEA "3G" Diversity Luncheon at the IAC. The awarded organization will be given a speaking opportunity at this event.

The detailed nomination process is available [here](#).

[More information about IAF Excellence in 3G Diversity Award.](#)

- **Frank J. Malina Astronautics Medal – Deadline: 11 February 2018**

The Frank J. Malina Astronautics Medal recognises outstanding contributions to space education by an educator who promotes the study of astronautics and space science. The most important criterion for this award is that an educator “has taken the fullest advantage of the resources available to him/her to promote the study of astronautics and related space sciences”.

The Frank J. Malina Astronautics Medal comprises an engraved commemorative medal and a certificate of citation.

The detailed nomination process is available [here](#).

[More information about the Frank J. Malina Astronautics Medal.](#)



Nomination material should be sent to the IAF Secretariat, preferably by email at [award@iafastro.org](mailto:award@iafastro.org), or by Fax to +33 1 4273 2120 or by postal mail to:

IAF Secretariat  
3 rue Mario Nikis  
75015 Paris  
France

- **IAC 2018 Call for Special Session Proposals - Deadline: 16 February 2018**

The International Programme Committee solicits proposals for Special Sessions (SpS) within the technical scope of the congress.

IAC2018 Special Sessions will be a very useful tool in order to supplement the regular technical programme of the congress and provide a sample of the state-of-the-art research or development in both academia and industry in special, novel, challenging and emerging topics in the field of space. Special Sessions that emphasize on multi-disciplinary and transversal aspects, as well as cutting-edge topics are especially encouraged and welcome.

Prospective organizers of special sessions should submit proposals at [www.iafastro.net](http://www.iafastro.net).

More information on SpS can be found here: [http://www.iafastro.org/wp-content/uploads/2017/12/IAC-2018-Special-Session-Proposals\\_07.12.2017.pdf](http://www.iafastro.org/wp-content/uploads/2017/12/IAC-2018-Special-Session-Proposals_07.12.2017.pdf)

Questions should be addressed to [sps@iafastro.org](mailto:sps@iafastro.org)

- **IAC 2018 Call for Abstracts - Deadline: 28 February 2018**

The IAC 2018 Call for Abstracts will run until 28 February 2018. The International Programme Committee looks forward to receiving high-quality submissions that will help shape a vibrant future in space and encourages you to contribute to a world-class technical programme across a wide variety of topics to be chosen from 180 Technical Sessions.

Abstracts must be submitted online at [www.iafastro.net](http://www.iafastro.net)

More information about the technical programme is available here: <http://www.iafastro.org/events/iac/iac-2018/technical-programme/>

Questions should be addressed to [support@iafastro.org](mailto:support@iafastro.org)



## The Netherlands Space Society (NVR)



The Netherlands Space Society (NVR) is proud to report its ongoing increase in number of individual members, corporate members and partnerships. The year 2017 has been successful as well, as we signed MoU's with VSV Sipke Wynia and Women in Aerospace Europe. Our magazine *Ruimtevaart*, which is nominally published four times per year, is always well received by our members, and other readers. The 2017 highlights were the company visit to corporate member Bradford and the General Assembly in June, followed by a tour through TNO Space. As every year, NVR has been present at the ESTEC Open Day and welcomed thirty new members during that event. Besides the yearly presence at the ESTEC Open Day, NVR also organised its annual 'IAC Evening', a few weeks after the IAC took place. During this evening, the highlights of the past IAC were presented, followed by several Dutch industry presentations. Finally, after the first successful excursion abroad to Cologne, Germany, two years ago, the Netherlands Space Society organised its second excursion abroad to Bremen this year early December, with visits to Airbus, DLR, OHB and the Zarm drop tower. Are you curious about NVR? Please contact [secretariaat@ruimtevaart-nvr.nl](mailto:secretariaat@ruimtevaart-nvr.nl) or visit our website at [www.ruimtevaart-nvr.nl](http://www.ruimtevaart-nvr.nl).

## Dr. Stanislav Konyukhov (Ukraine) is inducted into the IAF Hall Of Fame



On September 29<sup>th</sup>, 2017 during the Closing Ceremony of the International Astronautical Congress 2017 Dr. Stanislav Konyukhov – an outstanding rocket scientist and practitioner, former Yuzhnoye SDO General Designer-General Director was posthumously inducted into the IAF Hall of Fame.

Thanks to S. Konyukhov's inventiveness, active position and energy, Yuzhnoye SDO entered the world space services market and took the deserved place there. He supervised the works on creation of the unique Sea Launch and Land Launch space launch systems with Zenit launch vehicles, Dnepr space launcher derived from the decommissioned SS-18 intercontinental ballistic missile, light-class Vega space launcher, as well as AUOS-CM-KI, Sich-1, Ocean, Sich-2 spacecraft to name a few.

It will be an honor and a great pleasure for Yuzhnoye SDO to present such an exceptional award to Dr. Konyukhov's family.



## IAFconnect.org – space business networking tool

After the official launch of the International Space Business Platform IAFconnect.org during the International Astronautical Congress 2017, the initiative team is very much determined to turn the web-site into a valuable space business networking tool. With this, we will be glad to hear a feedback on IAFconnect.org from you in order to make it more convenient and attractive. Feel free to share your ideas with us via e-mail: [info@iafconnect.org](mailto:info@iafconnect.org) or via this link <https://iafconnect.org/contact-us/>



## SSTL confirms Sarah Parker's appointment as MD



The Board of Surrey Satellite Technology Ltd (SSTL) has today announced that Sarah Parker has been formally appointed as Managing Director, a role she has been performing in an interim capacity since March 2017. Sarah Parker joined the Board of Directors in 1999 with responsibilities for corporate strategy and finance and has helped steer the business over a 20 year period to achieve international success and a £100m turnover.

Commenting on the appointment, Executive Chairman Sir Martin Sweeting: "I am delighted that Sarah Parker has been appointed as our new Managing Director.



Sarah's depth of knowledge of the industry and her experience in managing the Company's growth will be invaluable as we continue to challenge the economics of space with new innovations and to explore new global business collaborations and partnerships."

On her permanent appointment as Group MD, Sarah commented "It is a real honour to be confirmed as Managing Director of such an iconic company, and with innovation positively in our DNA, I am excited to lead SSTL onwards to explore new possibilities for small satellites and space systems."

## SSTL has a new logo too



## About SSTL

Surrey Satellite Technology Limited (SSTL) is the world's leading small satellite company, delivering operational space missions for a range of applications including Earth observation, science, communications, navigation, in-orbit servicing and beyond Earth infrastructure. The Company designs, manufactures and operates high performance satellites and ground systems for a fraction of the price normally associated with space missions, with 500 staff working on turnkey satellite platforms, space proven satellite subsystems and optical instruments.

Since 1981, SSTL has built and launched 50 satellites for 20 international customers – as well as providing training and development programmes, consultancy services, and mission studies for ESA, NASA, international governments and commercial customers, with an innovative approach that is changing the economics of space. Headquartered in Guildford, UK, SSTL is part of the Airbus Group.

[www.sstl.co.uk](http://www.sstl.co.uk)

## IAF Vice President Sergey Krikalev Visits Asia Pacific Office of IAF Select Committee on Satellite Commercial Applications

Vice President of IAF, and Executive Director of Human Space flights at Roscosmos, Mr. Sergey Krikalev visited Asia Pacific Office of IAF Select Committee on Satellite Commercial Applications in Hong Kong on November 22.

Mr. Krikalev investigated the Asia Pacific Office, and met with the branch team. Ms. Linqi ZHU, director of the Asia Pacific Office, briefed the process of office launch, and its recent activities & operation.



Asia Pacific Office of IAF Select Committee on Satellite Commercial Applications was set up by IAF and Chinese Society of Astronautics (CSA). Focused on Asia Pacific region, the office is responsible for promoting satellite commercial applications, and advancing utilization and economic return from satellite commercial applications. Since launched at the end of June, the Asia Pacific Office cooperates with large state-owned enterprises to explore opportunities for landing satellite applications overseas. The office also organized international exhibitions and forums on satellite applications and services. Mr. Krikalev believes that following the path of combining international aerospace technology resources with local economic & social development is not only conducive to academic sustainability, but also to the benefit of human well-being. He provided some advices and requirements for future work of the office under the guidance of the IAF.



The Asia Pacific Office also arranged a visit to Chinese University of Hong Kong. Guided by Professor Hui LIN, director of Institute of Space and Earth Information Science (ISEIS), Mr. Sergey Krikalev and Ms. Linqi ZHU visited the Laboratory for GeoInformation

Science and Satellite Remote Sensing Receiving Station. After Professor LIN introduced background and achievements of ISEIS, they discussed potential cooperation, and reached a consensus on deepening the academic exchanges between IAF members and local universities.



## Secure World Foundation Begins Establishing Industry Consortium on Satellite Servicing Standards



The Secure World Foundation (SWF) is proud to announce that it is part of a team that is establishing an industry consortium to develop standards for rendezvous and proximity operations (RPO) and cooperative on-orbit satellite servicing (OOS). RPO and OOS are key technologies and capabilities for enabling the next major step in space applications, market creation, and robotic and human exploration. Yet today there is no common set of standards or norms associated with safe and secure RPO and OOS activities in space.

The team is led by Advanced Technology International (ATI) and consists of SWF, the University of Southern California's Space Engineering Research Center (SERC), and the Space Infrastructure Foundation (SIF). Initial funding for the effort comes from the Defense Advanced Research Projects Agency (DARPA).

Over the next year, SWF and the rest of the team will work to establish the Consortium, research existing practices on OOS and RPO, and develop a multi-stakeholder process that brings together experts from industry, academia, government, and the international community.

SWF is interested in hearing from companies and institutions that wish to be part of the Consortium. For more information, please contact Dr. Brian Weeden at [bweeden@swfound.org](mailto:bweeden@swfound.org).

## Microgravity & Low-Gravity Science Research, Education and Training Center - Mauritius

In November 2017, at the United Nations's / UAE High-Level Forum on Space, held in Dubai, the President of the Republic of Mauritius and Biologist Laureate of the 2007 L'Oréal-UNESCO For Women in Science Awards, Dr. Ameenah Gurub-Fakim, has confirmed her Country's support for the first ever, fully-dedicated Microgravity & Low-Gravity Science Research, Education and Training Center which is being built in the main island of Mauritius by the Italian engineering group "SpaceLand".



The program is led by frm. European Space Agency's Zero-Gravity Research Flight Veteran Doct. Carlo Viberti, who in 2010 has been proposed by the Italian Space Agency as first sub-orbital engineer-astronaut for upcoming sub-orbital test flights within the context of this program.

The innovative, multi-lab facility, under construction on a magnificent sandy terrain facing the Indian Ocean, focuses on new Space-related training, educational and scientific sectors dedicated to microgravity, including sport, ground and underwater weightless emulation facilities; it will generate, de facto, a ground-breaking Center of Excellence for all STEAMM (science, technology, engineering, arts, math and medical) disciplines which can benefit from reduction or absence of gravity.

The SpaceLand Center will also help low-budget users from all over the world to conceive, engineer, develop and microgravity-qualify any kind of biomedical, science and technology payloads for research and/or educational low-gravity and microgravity flights. This include the support to users interested in getting their experimental facilities and payloads on board the first United Nations' space mission planned on a new vehicle being qualified at NASA. In this context, the SpaceLand team is also

working to have the Mauritius airport get licensed to become the first Spaceport of Africa and the Indian Ocean, also supporting private research, commercial and touristic spaceflights.

The video-message by the President of the Republic of Mauritius is displayed on [www.SpaceLand.it](http://www.SpaceLand.it).

A 2-day open-workshop in synergy with the first cornerstone ceremony with all international stakeholders is planned for 20-22 April 2018 along the beautiful beaches of Mauritius: you are all welcome !



## Extraordinary Space Day and the Capital of Science in Hungary

The Hungarian Astronautical Society (MANT) celebrated the 60<sup>th</sup> anniversary of the beginning of Space Age on 4 October with its traditional Space Day. While such an event is held every year in Hungary in connection with the World Space Week, the remarkable jubilee led us to organize a very special meeting. Space Days target professionals as well as the general public with lectures on interesting and timely space topics. This year it was hosted by the Hungarian Academy of Sciences in its headquarters' historical building in Budapest. The lectures covered reminiscences of the past six decades but also actual topics like the space activities in the country over the past year, the opportunities provided to companies by the ESA technology transfer network, a novel space weather monitoring system under development, the Hungarian participation in the European Copernicus Earth observation programme, and psychological issues related to long-duration spaceflight.



Among universities, companies, research institutions, and other

societies in engineering and science, we were present at a large-scale public event called "Capital of Science" in Budapest. During the full day of 23 September, our volunteers met with thousands of enthusiasts – young and old alike – at our stall. We offered space quiz, brochures, T-shirts and our various publications, as well as the opportunity to chat with experts on space matters. The highly publicized and attractive events like this are essential for us to extend our reach to an even broader audience and to give higher publicity to space activities and everyday applications.



## Successful launch of the first commercial Chinese maritime satellite 'HEAD-1'

**Beijing, Paris, Noordwijk, November 17, 2017** - On 15<sup>th</sup> November 2017, 2:35 AM local time, China's first commercial maritime satellite "HEAD-1" operated and owned by China HEAD Aerospace Co. Ltd was successfully launched from the Taiyuan Satellite Launch Centre on a Long March 4C as a piggy back launch with the FY-3D mission.



All launch and orbit insertion stages were executed nominally. The satellite smoothly reached its 808 km polar orbit. Initial in-orbit verification of the platform and payload have already started.

HEAD-1 is a 45kg satellite jointly designed and developed by the Shanghai Aerospace Technology Research Institute (SAST) of China Aerospace Science & Technology Corporation (CASC) and

China HEAD Aerospace Technology Co. Ltd (HEAD). The satellite was designed as a modular, highly integrated platform making use of platform virtualization and other innovative techniques to create compact, high performance and quickly integrated small satellite solutions.

The main payload manufactured by a European supplier is a 4<sup>th</sup> generation AIS (Automatic Identification of Ships) receiver making use of advanced signal processing techniques to deliver a high detection rate over high- and medium-density shipping areas. The satellite is designed to receive 2 million messages and identify 60 thousand vessels per 24 hours.

HEAD operates its own data centre in China to process the AIS data of HEAD-1 and to provide a range of positioning and analytical services through a dedicated on-line portal. Products and services are based on a mix of shore-based and satellite-based data sources allowing the company to start its commercial services swiftly.

"HEAD-1" is the first Chinese commercial maritime satellite to target international commercial market and meet the demand in the domestic market. The data and services of HEAD-1 is expected to contribute in the Chinese national maritime security market as well as to leverage socio-economic benefits through the support in the national initiative 'The Belt and the Road'.

## About China HEAD Aerospace Technology Co. Ltd (HEAD)

China HEAD Aerospace Technology Co. Ltd is a privately owned, independent company founded in 2007 and headquartered in Beijing, China with subsidiaries in Hong Kong, the Netherlands, France and joint laboratories located in Switzerland and Italy. The company have successfully helped non-Chinese aerospace companies to commercialize their space products and services in China over the last ten years. Driving by an interest in small satellite market, HEAD has been investing in a constellation of small satellites with multiple payloads dedicated in providing value-added services and applications. The HEAD-1 satellite is the first technology demonstration satellite as part of the "Skywalker constellation", a multi-functional AIS and Earth observation micro-satellite constellation.

Company website: <http://en.head-aerospace.com>

## The Project Mars Competition is Open!



Join NASA's Orion and Space Launch Systems teams and SciArt Exchange in visualizing humans venturing into deep space, to

the Moon and beyond to Mars. Interested college students and early career professionals worldwide are invited to submit short films and graphic art about this mission, what astronauts may see, and their dreams for the future of exploration.

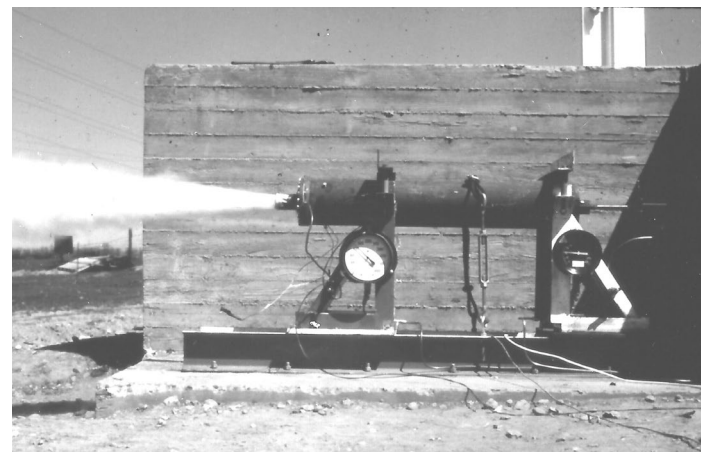
Entries will be judged by film and graphics industry professionals and NASA astronauts. Winning entries will be screened at an Opening Event at NASA visitor centers, NASA museum consortium members, micro cinemas, and other interested venues in Fall 2018. The top film will win \$10,000, and the top poster will win \$1500.

## Entries are due August 31, 2018.

Visit [www.ProjectMarsCompetition.org](http://www.ProjectMarsCompetition.org) for details & signup to receive more information!

## Rocket Research Institute, Inc., To Celebrate 75<sup>th</sup> Anniversary of Founding

On January 6, 1943, the educational organization Rocket Research Institute, Inc., was founded by George S. James and five associates who established the nucleus of the present non-profit corporation as the Southern California Rocket Society (SCRS). As the group evolved, it became the Glendale Rocket Society (GRS-1943-1946); then the Reaction Research Society (RRS-1946-1949); and in 1949, the founding members renamed the organization as Rocket Research Institute (RRI) to emphasize the objectives of both education and research. Those wishing to retain the earlier RRS designation did so. Thus, since 1949, both the RRI, Inc., and the RRS, Inc., share a common six-year heritage. In 1968, The RRI became a member of the International Astronautical Federation (IAF). The Institute's space-related educational concepts of inspiring and motivating young people through a combination of experiential "hands-on" activities and extra-curricular text book learning have become precursors to some of today's STEAM (Science, Technology Engineering, Art, and Mathematics) educational programs.



## Interview with Gabriella Arrigo, IAF Vice President for Science & Academic Relations and Global Networking Forum, Head of International Relations, Italian Space Agency (ASI)



Gabriella Arrigo is currently the Head of International Relations at the Italian Space Agency (ASI), where she arrived in 1991. Graduated in Political Sciences at the University of Messina (Italy) in 1984, she has specialized in international relations and diplomatic studies in Rome and Geneva (Switzerland).

She developed more than thirty years of experience in international space relations activities at governmental and agency level, including the main international space organizations.

Senior expert in Space Policy and Institutions, she founded the first European Master' course in Space Policy and Institutions in 2009 to the Italian Society for International Organizations (SIOI) in Rome, where she is Professor of Space International Relations.

Member of the Italian delegation to the European Space Agency in the International Relations Committee since 1992 and to the United Nations Committee of the Use of Outer Space for Peaceful Purposes (COPUOS) since 1994. ASI coordinator for the international activities related to space exploration (ISS, ISECG, ISEF), space scientific projects, earth observation (GEO, CEOS, Gulich Institute) and space policy studies (ESPI, OCSE, IAA).

Member of the International Astronautical Academy (IAA) in the Social Science Section and currently Secretary of the Space Policy, Law and Economy Commission.

A great promoter of space capacities and transparency building issues among spacefaring, emerging and developing countries. She is deeply convinced of the importance of gender equality also in Space for a healthy and balanced development of both social well-being and activities.

### **1. On which particular topics and actions will you be focusing in your mandate as IAF Vice President on 'Science & Academic Relations and Global Networking Forum'?**

First of all, let me say that my role of IAF VP on Science and Academic Relations and GNF, together with my membership in the International Academy of Astronautics - Space Sciences section – could represent a fruitful and useful combination for the benefit of the space international community. In the upcoming years I would like to continue the process of the International Space Fora (ISF), started in 2016 by my predecessor, Prof. Roberto Battiston, with the first edition held in Trento (Italy) and

the second edition 2017 at regional format in Nairobi (Kenya), postponed for presidential political elections to February 2018. For the third edition I am discussing with Argentina in order to invite and host there all South America countries.

The ISF' aim is the promotion of a greater involvement of the national Academies in space programs and activities, in particular, the increase of local and regional capacity building in developing countries. I would also like to activate new initiatives to stimulate innovative partnerships and facilitate the Academy access to governmental space strategies and policies (for example, with an "ad hoc" event during the IAC).

With regard to the GNF, my focus will be on providing a systematic analysis in order to ensure as much as possible a programme of high quality by avoiding redundancies and overlaps of subjects and topics treated."

### **2. How do you assess the current relations between science & academy with international affairs issues?**

Science & Academy and international affairs are particularly closely related because no space progress and future would be possible without the hard core of Science and, therefore, of the Academy, both equally necessary to technology development and innovation. In particular, space capacity building is an important key and subject for the international relations development to promote the peaceful use of space.

### **3. What do you think should be the role of an organization such as the IAF in dealing with Science and Academy?**

The IAF Constitution establishes that the Federation, founded in 1951, exists to foster space research, development and application of space activities for peaceful purposes. In this direction, Space and Academy are fundamental pillars to build a sustainable, balanced and knowledge based space system. I think the IAF can play, in collaboration with other partners such as the IAA, an important role to enrich and benefit society.

### **4. The Global Networking Forum (GNF) has developed enormously since its beginning as an excellent source of relevant information for the enlarged space community bringing together groups of experts from around the world. Where do you see this further thinking and discussion on current and future issues on space going?**

I remember when the IAF Global Networking Forum (GNF) was introduced in the IAC 2012 in Naples and from that date successfully used to promote space cooperation. Today, the importance of the GNF lays in its complementarity to the Technical Programme and the Plenary Programme, by allowing

members of the IAF community to have a flexible access to the events, and to be involved in discussions revolving around current topics in the space sector. In this sense, the activities at the GNF are tailored according to the stakeholder's needs and offer a unique opportunity for all IAF members to participate actively and showcase their latest developments. The Forum is also used to put focus on issues that are important to the Federation, as for instance, priority topics from the IAF Global Innovation Agenda, and serves as an excellent tool for membership development. By organising successful sessions

with high level speakers and sought-after topics, the Federation gains in credibility and increases the opportunities to attract new communities to the IAF events as well as additional members.

By following its motto "Meet, Share, Connect", the GNF will continue to foster exchange and collaboration amongst diversified audiences coming from small and medium sized enterprises, R&D institutions, universities and of course, also large industries and agencies."

## Interview with Yang Baohua, IAF Vice President for Societies and Museums, Vice President of China Aerospace Science and Technology Corporation (CASC), Vice President of Chinese Society of Astronautics (CSA)



Yang Baohua now acts as the Vice President of China Aerospace Science and Technology Corporation (CASC), Vice President of Chinese Society of Astronautics (CSA), Deputy Commander-in-chief of China's Lunar Exploration Program (CLEP), Deputy Commander-in-chief of China's High-resolution Earth Observation System, Commander-in-chief of China-France

oceanography satellite Program (CFOSAT), Commander-in-chief of China-Brazil Earth Resources Satellites CBERS-3/4, Member of Leading Group of China's New-Generation Launch Vehicle, and Leader of Coordination Group of China's Commercial Satellite Launch Services.

Mr. Yang has been engaged in China's space activities for nearly 30 years, successively holding important positions respectively in Beijing Institute of Control Engineering, China Academy of Space Technology (CAST), and CASC. He has accumulated rich experiences in space engineering management. With his outstanding leadership and unremitting efforts, China's many major space programs such as Manned Space Program, Lunar Exploration Program, Beidou Satellite Navigation Program are making good progress and have made important breakthroughs.

Mr. Yang has a deep understanding in the academic research. He has published six books, including: *Shenzhou-7 Spaceship Project Management*, *Practical Space Systems Engineering*, *Practical Space System Project Management*, *Spacecraft Navigation, Guidance and Control*, *Spacecraft Dynamics and Control*, *Chinese Spacecraft*

Mr. Yang got his doctor's degree in space-vehicle design from Harbin Institute of Technology.

**1. On which particular topics and actions will you be focusing in your mandate as IAF Vice President on 'Societies and Museums'?**

Societies and Museums are major members of IAF. In recent years, they have played an increasingly important role in the IAF community by actively carrying out various kinds of activities. In the future, I will focus on the following topics and actions:

First, to support the Society Members to be deeply involved in the IAF activities to make more and greater contribution to the development of the Federation and promote the international space exchange and cooperation. The specific actions include:

- The Space Society Members and IAF jointly host global or regional conferences to stimulate the academic atmosphere and push forward the advancement of the space technology.
- The Space Societies organize themed events at IACs or global series conferences to enrich the content of the Federations' activities.

Second, to support Space Museums Members to organize space popularization activities to foster talents and workforce for the world space industry. The specific actions include:

- Space Museum Members share programs in the aspects of exhibits, culture and education to build a platform for young people to know, understand and love space.
- Space Museum Members hold large scale space popularization events locally and internationally, such as the space knowledge contest, satellites design contest, to inspire young people's enthusiasm of learning space science and to promote the development of the space industry.

**2. Museums are in a better position to offer people multiple ways of learning than a classroom formal education?**

The museum has the functions of collection, education and research. Museums display the vast and rich cultural essence in a limited space through the exhibition of objects, models, sample collection and graphics with concise and vivid language. The guides provide face to face explanation with details and the modern audio-visual technology creates a combination of static and dynamic environment to fully stimulate people's interest of learning; in addition, open activities such as lectures, meetings, seminars give each and every visitor a chance of

receiving information and experiencing as much as possible. The museums have played an important role of supporting traditional classroom education, which is irreplaceable.

### ***3. The traditional role of museums in preserving history is of particular importance, does this apply also to the Space Sector?***

The space museum has the important functions of recording history, transmitting spirit, and guiding the future. Through historical graphics, rich collections, interactive equipment, space museums display the developing journey of world space industry,

reflects the golden days of the brilliant undertaking of mankind, and shows people's indomitable courage and unforgettable hardships of exploring the universe. Space museums provide people with a platform of fully understanding space history and culture and give people an opportunity of seeing the future from the past.

From ground to the deep space, the space exploration is challenging the human limit, therefore the preservation of space history and the spiritual inheritance are more valuable and meaningful.

## **Interview with Seishiro Kibe, IAF Vice President for Honours and Awards, Senior Advisor of the International Relations and Research Department of Japan Aerospace Exploration Agency (JAXA)**



Seishiro KIBE was born in Japan in 1952. After graduating from Tokyo University, he has been working for the R&D directorate of JAXA. His technical specialty covers space debris, structural dynamics and space life support technology. During his research career, he used to be a Visiting Professor of Asian Institute of Technologies (Bangkok, Thailand) from 2006 to 2009, President of Society of Eco-

Engineering from 2015 to 2017. On the occasion of IAC2005 in Fukuoka, Japan, he made tremendous contribution as Executive Secretary of the LOC for its great success and has been an active member of CSAC since then. He is now a Senior Advisor of the International Relations and Research Department of JAXA/HQs.

### ***1. On which particular topics and actions will you be focusing in your mandate as IAF Vice President on 'Honors And Awards'?***

I think that 'Honors and Awards' is one of the most important and visible activities of the Federation and have been always appreciating the hard work and dedication of the HAC members. I, as VP on 'Honors and Awards', would like to be a broad bridge connecting them with the Bureau and support their activity as far as I can.

### ***2. The IAF confers a number of awards every year to individuals and groups who have distinguished themselves in space cooperation and space activities at global level. Why is it important to celebrate these achievements and engagements?***

Recipients' achievements and they themselves are great assets not only of the federation but also of the broader world space community and I strongly believe that it is one of the most important duty of the Federation to appreciate and make known worldwide their great contributions to the advancement of

human space development. In addition, this awarding activity would stimulate and encourage younger people to be actively involved in various space projects and other related activities, providing them with the precious and advisable role models for their career building.

### ***3. The IAF World Space Award is to this day the highest recognition that can be given in the space environment. What are the requirements to win this award?***

The IAF World Space Award is one of the most prestigious awards of the federation and is presented for an outstanding contribution or contributions in space science, space technology, space medicine, space law or space management of exceptional impact to the world's progress in astronautics. So far, Dr. E. C. Stone (2013), Dr. Y. Koptev (2016), Mr. C. F. Bolden (2017) received this honorable award. Considering their great contributions to our space community, I believe that everyone heartily congratulated these three recipients. The HAC will do its best to select and recommend the persons like them who really deserve this distinguished award.



## Interview with Valanathan Munsami, IAF Vice President for Developing Countries and Emerging Nations, Chief Executive Officer of South African National Space Agency (SANSA)



Valanatha Munsami holds a PhD in Solid State Physics and a research background in Space Physics. He joined the Department of Trade and Industry, as Deputy Director, working on issues relating to the non-proliferation of weapons of mass destruction and the space sector. He later joined the National Research Foundation, as Manager, responsible for implementing

South Africa's international science and technology partnerships. He then joined the Department of Science and Technology as Director (and later promoted to Chief Director) for Space Science and Technology, where he was involved in the development of South Africa's National Space Strategy and National Space Policy, and oversaw the establishment of the South African National Space Agency (SANSA). He then became the Deputy Director-General: Research, Development and Innovation where he was responsible for Space Science (including the Square Kilometer Array (SKA) project and oversight of SANSA), Biotechnology and Health, Hydrogen and Energy, and Innovations Instruments, which included oversight of the Technology Innovation Agency and the National Intellectual Property Management Office. On winning the bid to co-host the SKA in 2012, he then became the Chief Specialist for Astronomy and African Space Science. In this role, he led the development of the Multi-Wavelength Astronomy Strategy and also chaired the African Union Space Working Group, which was tasked with the development of the African Space Policy and the African Space Strategy that was approved by the African Union Heads of State in January 2016. As of January 2017, he has been appointed as the Chief Executive Officer of SANSA.

### ***1. On which particular topics and actions will you be focusing in your mandate as IAF Vice President on 'Developing Countries and Emerging Nations'?***

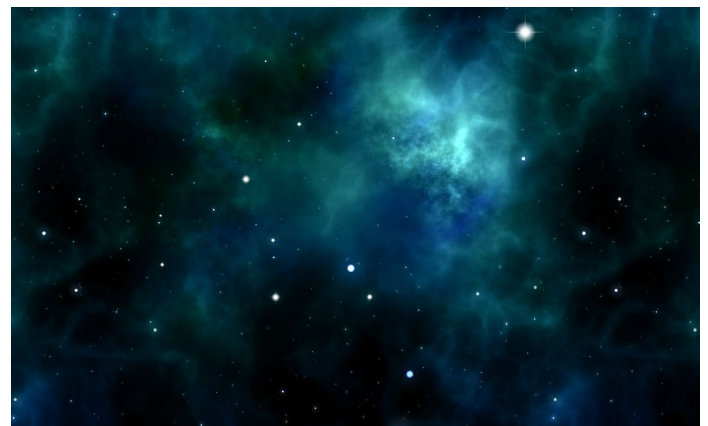
The particular focus is on increasing the participation and visibility of Developing Countries and Emerging Nations (DCEN) within the IAF organised meetings. This will be done through identifying and organising specific topics of interest to the DCEN for the Plenary and Special Sessions of the IAF hosted events. In addition, linkages will be created between developed space nations and the DCEN to share experiences and best practices towards strengthening space programmes of the DCEN. Specific interventions, such as a dedicated exhibition booth for the DCEN, will be organised.

### ***2. Why do you think that growing access to space creates a variety of opportunities for developing countries? And which role the IAF should play?***

A key focus of developing countries (or any country for that matter) is on improving the quality of life of its citizens and optimising the economic growth potential of the country. On both fronts, space applications impacts on the quality of our daily lives and is a key part of the high-end technology sector. Therefore, by adopting space applications and its associated technologies and integrating it into our solution space for addressing our socio-economic-environmental challenges, the long term impact is significant and worthy of the investments made. However, many DCEN are not fully aware of the potential of space applications and the benefits that can be derived therefrom. The IAF should therefore be used to highlight these benefits and these could be done within the context of the many IAF hosted events.

### ***3. Space sustainability requires international engagement. What are the challenges for the advancement of space sustainability for emerging nations?***

Space debris is a worrying concern on the sustainable usage of outer space. The United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS) is currently working on guidelines for the Long-Term Sustainability (LTS) of outer space. It is important that such guidelines are agreed to by consensus and that measures are taken during operational missions to limit further debris proliferation of outer space. Every opportunity must therefore be taken, including through the IAF hosted events, to create awareness on this critically important issue, including the DCENS. It is also coincidental that South Africa will be taking over as Chair of the Scientific and Technical Sub-Committee of UNCOPUOS as off next year and this provides an opportunity to seek convergence on this important issue between UNCOPUOS, IAF, IAA and IISL, especially given the UNISPACE + 50 Conference planned for next year.







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