





Connecting Space People

2/2013 (June 2013)



Message from the President

"Dear colleagues,

Welcome to the April-July IAF newsletter. This edition features a great deal of exciting news on IAC preparations, which will take place from 23-27 September in Beijing and already features a rich programme of plenary and technical sessions. There are also announcements of IAF awards winners, both young professionals and established figures, and developments from our members including successful missions and changes in leadership.

There is a strong youth development focus to this year's IAC, and the Emerging Space Leaders grants and Young Space Leaders prizes will help young talent to attend. Also in this issue are updates on the IAF's Global Networking Forum, which recently held a successful event on satellites at the Paris air show, and promises to attract a large audience at the IAC.

I would like to express my special appreciation to our IAF members and committees for their presence and contribution to this newsletter. Many thanks to all for your contributions and see you in Beijing!"

Kiyoshi Higuchi President

IN THIS ISSUE

MESSAGE FROM THE PRESIDENT

IAF NEWS

- IAF World Space Award
- Allan D. Emil Memorial Award
- Young Space Leaders Recognition Programme
- GNF Event at the Paris Air Show
- Emerging Space Leaders Grant Recipients

MEMBERS' CORNER

INTERNATIONAL ASTRONAUTICAL CONGRESS

- Associated Events
- Young Professionals and Students Programmes
- GNF Event
- IAC 2016 Bids

COMMITTEES' BROADCASTS

OUR LATEST PUBLICATIONS

IAC 2013 Brochure IAF Brochure Membership Kit IAC Video IAF Video GLAC 2014 First Announcement and Call for Papers

INTERVIEW - with Gerard Brachet (Programme Committee Co-Chair for GLAC - the Global Space Applications Conference, 2 – 4 June 2014).

DEADLINE REMINDERS

- IAC 2013 Regular Registration before:
 5 August
- IAC Notification call for Authors: 4 September
- IAC Papers and call for Presentation submissions: **18 September**
- IAC Technical Visits registration: 31 August
- Luigi G. Napolitano Award call for nominations: 29 August 2013







2013 IAF World Space Award

The IAF World Space Award 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.

The the first recipient recipient is **Dr Edward C Stone**, professor of physics at the California Institute of Technology, and former director of the NASA Jet Propulsion Laboratory. Under his skilled leadership, the Mars Pathfinder and its Sojourner rover were successes. Stone became a well-known public figure through his work with NASA on the Voyager spacecraft, and has since been principal investigator on nine NASA spacecraft missions.



2013 Emil D. Allan Memorial Award

The Allan D. Emil Memorial Award is presented annually for an outstanding contribution to space science, space technology, space medicine or space law.

Dr Ma Xingrui will receive the 2013 award at the 64th IAC in Beijing. From 1999 to 2007, Dr Ma was Deputy General Manager of China Aerospace Science and Technology Corporation, and from 2007 to 2013, General Manger and Secretary of Leading Party Group, China Aerospace Science and Technology Corporation. He is currently Director of the China National Space Administration (CNSA), a vice-Minister of Industry and Information Technology, and honorary chair of the Local Organizing Committee of the 64th IAC.

Young Space Leaders Recognition Programme

The IAF also announced the winners of the 2013 Young Space Leaders (YSL) Recognition Programme. These awards are issued to students and young professionals who – in the course of their academic or professional activities – have helped promote astronautics by enhancing outreach opportunities, expanding knowledge of space among the general public or fostering deeper engagement within the international space community. The five winners will be awarded their prizes during the Closing Ceremony of the 64th IAC on 27 September. They will also be invited to the event's gala dinner as guests of honor of the IAF President, Mr. Kiyoshi Higuchi. The winners are (in alphabetical order and photos left to right):

Julio APREA, European Space Agency, France Kimberley CLAYFIELD, CSIRO Space Sciences and Technology, Australia Kat CODERRE, Lockheed Martin, USA Jacob SUTHERLUN, NOAA Satellite and Information Service International and Interagency Affairs Office, USA Trong Thu VU, FPT University in Hanoi, Vietnam











For more information, visit the IAF website at http://www.iafastro.com/index.php/articles/2013-young-space-leaders

GNF Event at the Paris Air Show

On **Wednesday 19 June**, during the week of the 50th Paris Air Show, together with the Centre National D'Etudes Spatial (CNES) the IAF organized an event on satellite applications for disaster management. The Pleiades Satellite, the International Charter and the IAF activities related to Satellite Applications were presented to the audience.



More information on the event, and the presentations that took place, will soon be available on the IAF's website.



Emerging Space Leaders Grant Winners

In Spring, the IAF revealed the recipients of the 2013 Emerging Space Leaders (ESL) Grants. These grants provide an opportunity for outstanding students or young professionals to participate in the IAC, as well as the UN/IAF Workshop and the Space Generation Congress which will take place during the week preceding the Congress. More than 130 nominations for students and young professionals from 38 countries were received. The twelve recipients are (in alphabetical order):



Kishor ACHARYA, *Tribhuwan University, Nepal* Mr Acharya is completing his Bachelor in physics at the Tribhuwan University, in Kathmandu, Nepal.



Constant CHUMA, National University of Science and Technology, Zimbabwe

Graduated from the National University of Science and Technology and the African Regional Centre for Space Science and Technology Education (Nigeria). Mr Chuma works at the Nigerian National University of Science and Technology as a lecturer.



Zorana DANCUO, University of Belgrade, Serbia Ms Dancuo has a Master's Degree from the Faculty of Mechanical Engineering of the University of Belgrade and started her PhD in 2010 on high-G human centrifuges for pilot and astronaut training and flight simulation.



Sergii KUZKOV, Main Astronautical Observatory, National Academy of Sciences of Ukraine Graduated from Taras Shevchenko National University of Kiev (Ukraine), Mr Kuzkov works at the Main Astronautical Observatory of the National



Jonathan LUN, Wits University, South Africa Mr Lun has a Master's Degree in Mechanical

Academy of Sciences of Ukraine.

Engineering from Stellenbosch University (South Africa) and started his PhD in developing new ways of improving the performance of the plasma thruster.



Mariana MANEIRO, Bolivarian Agency for Space Activities, Venezuela

Graduate from Beijing Aeronautic and Astronautic University in China, Dr Maneiro works at the Bolivarian Agency for Space Activities as Chief of Engineering and Projects Division.



Sohrob MOTTAGHI, *Rutgers, The State University* of New Jersey, USA

Mr Mottaghi has a Bachelor of Science in Mechanical Engineering from Islamic Azad University (Tehran, Iran) and started his PhD in lunar settlements.



Seyed Ali NASSERI, University of Toronto, Canada Mr Nasseri has a Bachelor of Science in Aerospace Engineering from K.N. Toosi University of Technology and started a Master's Degree in aerospace sciences and engineering.



Zubin OLIKARA, Institut d'Estudis Espacials de Catalunya, Spain

Mr Olikara started a PhD in Aerospace Engineering Sciences in University of Colorado Boulder (USA) and works as a professor in the Institut d'Estudis Espacials de Catalunya (IEEC) in Barcelona, Spain.



University of Limerick.

Norah PATTEN*, University of Limerick, Ireland

Graduated from the University of Limerick and the

International Space University (Strasbourg, France),

Dr Patten works as post-doctoral researcher at the

Tracie PRATER, United Launch Alliance, USA Dr Prater has a PhD from Vanderbilt University (Nashville, USA) in Mechanical engineering and works at the United Launch Alliance as Materials and Processes Engineer / Factory Support Engineer.



Luise WEBER-STEINHAUS, Astrium GmbH, Germany

Graduated from Humboldt, Technische and Freie Universität (Berlin, Germany) and from the International Space University, Ms Weber-Steinhaus works at Astrium GmbH as a Manager for Internal Communication and Editorial.



Olga STELMAKH, Verkhovna Rada of Ukraine (Parliament), Ukraine

Graduated from University of Paris-11, Institute of Space and Telecommunication Law (France) and works at the Parliament of Ukraine as Senior Legal Adviser.

*Will not attend IAC 2013

More detailed biographical information on the winners can be found on our website, at http://www.iafastro.com/ index.php/articles/2013emerging-space-leaders

in

Applications for the 2014 ESL Grant Programme will open in late 2013.

Find out more news on our Social Media





IPMC Lessons Learned Workshop

50 space agency and industry representatives attended a one-day workshop on "Lessons Learned in Program/Project Management" organized by the IAF's International Program/ Project Management Committee (IPMC) in collaboration with ESA, CNES, DLR, JAXA and NASA. The workshop – held in ESA's ESTEC Centre in Noordwijk, the Netherlands on 22 March 2013 – included presentations by ESA, CNES, DLR, JAXA and NASA representatives on the challenges of sharing knowledge across space organizations, experiences of collaboration among agencies and discussions among the participants concerning potential steps that could lead to further collaboration in this area. The March 2013 workshop is the second in a series of workshops on lessons learned organized by the IPMC in

collaboration with ESA and other space agencies. Copies of the 2013 lessons learned workshop proceedings are available, on request, from the IAF Secretariat.

In addition to the lessons learned workshops the IPMC – which includes representatives of space agencies, companies, and research organizations – facilitates information exchanges on project management, knowledge sharing and training, organizes a workshop for young professionals (held just before each IAC) and helps coordinate several related activities including the first European Project Management Forum that was held at DLR in Cologne, Germany on 2-3 July 2013.

IAF members from around the globe announce recent news, noteworthy accomplishments, forthcoming events or programmes and other items of interest affecting their organisation.

Virgin Galactic breaks speed of sound in 1st rocket-powered flight of SpaceShipTwo

On 29 April, Virgin Galactic successfully completed the first rocket-powered flight of its suborbital spaceplane, SpaceShipTwo (SS2). The test – conducted by teams from Scaled Composites (Scaled) and Virgin Galactic – officially marks Virgin Galactic's entrance into the final phase of vehicle testing prior to commercial service. Virgin Galactic Founder Sir Richard Branson stated: "Today's supersonic success opens the way for a rapid expansion of the spaceship's powered flight envelope, with a very realistic goal of full space flight by the year's end." Upon reaching 47,000 feet altitude and approximately 45 minutes into the flight, SS2 was released from its custom-built mothership, WhiteKnightTwo. After cross-checking data and verifying stable control, the pilots triggered ignition of the rocket motor, causing the main oxidizer valve to open and igniters to fire within the fuel case. The entire engine burn lasted 16 seconds, as planned. During this time, SS2 went supersonic, achieving Mach 1.2.



More information can be found at: http://www.virgingalactic.com/news/item/virgin-galacticbreaks-speed-of-sound-in-first-rocket-powered-flight-ofspaceshiptwo/

GMV present at the Vega launch

On 7 May the second successful launch of the new launch vehicle Vega took place. Vega is the smallest of the whole European fleet, and capable of placing up to 1.5 tons in orbit for scientific and earth-observation missions, in both polar and low-earth orbits. The launch, from Europe's Spaceport in Kourou, French Guiana, was watched on the spot by GMV personnel. Its main payload was the Proba-V satellite together with two smaller satellites: VNEREDSat-1A and ESTCube-1. This VEGA launch now forms part of the Vega Research and Technology Accompaniment (VERTA) program of the European Space Agency (ESA), representing the debut of the launcher's new Flight Program Software Alternative (FPSA). GMV has been playing a key role in various areas of Vega's FPSA over the last three years, especially in Guidance, Navigation and Control (GNC) design and validation, with responsibility for developing both the guidance and navigation algorithms and also the Roll and Altitude Control System (RACS). GMV personnel have carried out various tasks within their respective range of expertise, such as requisite analysis, architecture design, detailed algorithm design and preliminary validation of software prototypes within VEGA's flight simulator. GMV has also been responsible for FPSA's Software Quality Assurance (SW-QA) while providing support for Reliability, Availability Maintainability and Safety (RAMS) activities as part of the software development team.

For more information, go to: http://www.esa.int/For_Media/Press_Releases/ESA_s_ Vega_launcher_scores_new_success_with_Proba-V



TUGSAT-1/BRITE-Austria Nanosatellite Launch

The first Austrian nanosatellite was built, tested and qualified at the Institute of Communication Networks and Satellite Communications (IKS) of Graz University of Technology (TUG). It was successfully launched on 25 February by PSLV-C20, from India. The craft was named TUGSAT-1 and its mission name is BRITE-Austria. (BRITE: Bright Target Explorer). The goal of the BRITE mission consists in the long-term observation of the brightness variations of massive luminous stars by a constellation of six nanosatellites, each carrying a small astronomical telescope. TUGSAT-1 and its sister satellite UniBRITE (procured by the University of Vienna from the Spaceflight Lab of the University of Toronto – UTIAS/SFL) are the first ones of this constellation. In 2013 and 2014, two Polish and two Canadian satellites will join the constellation and carry out photometry of target stars of typical magnitude of 3.5 with high accuracy. All BRITE satellites are based on pioneering technology and developments by UTIAS/SFL. Such photometric measurements can only be made from Space, since the turbulent Earth atmosphere prevents the determination of small brightness variations. BRITE-Austria and UniBRITE are currently in the commissioning phase.



Tracking Station for TUGSAT-1 in Graz



TUGSAT-1 Flight Model

Update from the Canadian Space Society

The past few months have seen a number of exciting changes within the **Canadian Space Society**.

On **25 February**, Canada saw the launch of Sapphire, NEOSSat (the latest sentinels in the search for near-Earth objects), Brite and UniBrite. Congratulations to all those who contributed to these important missions. At the Society's AGM last November, Wayne Ellis was elected as President, succeeding Kevin Shortt after a 4-year term. Mr. Shortt will continue working as the Society's new International Relations Officer. The Society also welcomes Jimmy Hazin and Leslie Swartman as the newest members of the Board. Mr. Ellis welcomed members of the Netherlands Space Society (NVR) during an official visit in January. Mr. Ellis and Mr. Shortt look forward to similar visits in the future to help build stronger relations between the Canadian industry and the international community.



Astronaut Chris Hadfield through the looking glass... actually a drop of water on ISS

The Society will be hosting its Annual Space Summit in Ottawa from **14** - **16 November** under the theme "Canada's Space Economy". Canada's economy is supported by an invisible infrastructure high above the Earth. Space science and technology has dramatically changed the country since the launch of Alouette-1 in 1962, from the communication across Canada and around the globe, the way financial transactions are tracked and processed, to how the Arctic, the natural resources and critical infrastructure are monitored. At the same time, Canada's domestic space industry includes space manufacturers, satellite operators, the value-added sector for space data and "Commercial Space" or "New Space" entrepreneurs. The deadline for abstracts for this year's Annual Canadian Space Summit is 28 June. More information: www.css.ca

The Canadian Space Society would also like to extend a warm welcome home to Canadian astronaut Chris Hadfield. During his 5-month stay on the ISS, he managed to change the way in which we all look at space exploration. Congratulations Commander Hadfield!

1st Yuri's Night party of the University of the Western Cape



On **12 April**, the University of the Western Cape branch of the South African Space Association held its first Yuri's Night party. It continued with its fortnightly stargazing sessions on the roof of the Physics building, the university recently having enrolled its two hundredth member.

The Executive voted unanimously to permit students from neighbouring educational institutions to join.



JAXA's new President

On **1** April, Dr. Naoki Okumura became the new President of JAXA. Dr. Okumura has previously been engaged in technological development and corporate management. He was also an executive member of the Council for Science and Technology Policy, responsible for Japan's national science and technology policy to create innovation in Japan. Dr. Okumura places particular emphasis on the following three directions for JAXA:

- To boldly tackle new tasks and challenges, in order to fulfill the role as a "core implementation organisation to technologically support the government" as stipulated in the Basic Plan for Space Policy;
- To achieve internationally high-level results and accumulating success, while making efforts to maintain and improve international competitiveness in the mid- and long-term;
- 3. To generate high-value projects from new ideas and concepts, and make proposals to the government for future space development.



Epsilon rocket lift-off image. Copyright JAXA 2013

Under the new leadership, JAXA is planning a number of exciting missions for the near future, including the H-II Transfer Vehicle "KOUNOTORI"4 (HTV4) on board H-IIB Launch Vehicle scheduled for launch in August from Tanegashima Space Center; the Epsilon Launch Extreme Vehicle carrying the ultraviolet spectroscope for Exospheric Dynamics "SPRINT-A" to be launched also in August from Uchinoura Space Center; the Global Precipitation Measurement / Dualfrequency Precipitation Radar (GPM/ DPR) jointly developed with NASA; Cloud Profiling Radar (CPR) to be launched on board ESA's EarthCARE mission; and the Advanced Land (ALOS-2) Observing Satellite-2 scheduled to be launched in the Japanese Fiscal Year 2013; and many upcoming programmes to follow.

ISA (Israel Space Agency) announces new Ministry's title

The Ministry of Science and Technology is now known as the Ministry of Science, Technology and Space, following the decision of the newly appointed Minister Mr. Yaakov Perry with the approval of the Cabinet on 14 **April**. This significant name change aims to promote space domain to a high position in the government's list of priorities.

Creation of Rocketry Park in Space Capital of Ukraine

On 12 April, the International Day of Human Space Flight, on the premises of Dneprotyazhmash PJSC (enterprise of Dneprotechservice LLC Group), a signing ceremony was held for the planned schedule of the Rocketry Park creation in the city of Dnipropetrovsk, the 'space capital' of the Ukraine. The ceremony was attended by the Governor of the Dnipropetrovsk region Dmitriy Kolesnikov, Speaker of Dnipropetrovsk Regional Council Evgeniy Udod, Director of Dneprotechservice LLC, IAA corresponding member Oleksii M. Zinoviev and a number of other politicians, scientists, and engineers. Rocketry Park will be situated in the very center of the city, in a public garden. It will consist of a pavilion composed of rocket and space units, and vertically installed decommissioned rockets created by Yuzhnoye Design Office and Yuzhmash plant. The Park will also be created with the help of Oles Honchar Dnipropetrovsk National University, Dnipropetrovsk Design Institute and Dneprotechservice LLC. The Park Opening Ceremony will be held on Dnipropetrovsk City Day, in the beginning of September, with the participation of the President Victor Yanukovich.





The signing ceremony of the Rocketry Park in Dnipropetrovsk



1st EO Satellite launch by the Space Technology Institute (STI)

On 7 May, the first EO satellite of Vietnam (VNREDSat-1) was successfully launched from Kourou. This launch of the VNREDSat-1 Earth observation satellite marks the successful entry of Vietnam into the group of nations involved in advanced space research. This first Vietnam small satellite for Natural Resource, Environment and Disaster management was launched at 02:06 GMT (9:06AM, Vietnam time) by VEGA launcher from the French Guiana space station. Two days later, the first images had been captured and transmitted to the ground station in Vietnam. VNREDSat-1 is an optical satellite working in one panchromatic and four multispectral bands, with a revisit time of three days. The spatial resolution is 2.5 meters (panchromatic)

and 10 meters (multispectral). The designed life-time is five years. The satellite was placed in Sun-synchronous orbit at an altitude of 665 km to carry out its optical observation mission, with local time of descending node at 10:42AM. VNREDSat-1 was built by EADS Astrium, which supplied the complete satellite and ground stations to Vietnam. Through the project, a team of young engineers has been trained in Toulouse, France, for satellite technology, control and to operate the satellite. After the satellite stably working on the orbit, STI-VAST (Space Technology Institute, Vietnam Academy of Science and Technology) is responsible for its control and investigation. The VNREDSat-1 program is the result of an initiative by the Vietnam Government to create

a space infrastructure enabling the country to better study and monitor the natural resources and environment, effects of climate change, predict and take measures for mitigation of the natural disasters.



First VNREDSat-1 image captured in Vietnam territory on 9 May 2013. Source http://vast.ac.vn

Success of maiden EGNOS flight trials in Eastern Europe

These flight trials form part of a European Commission FP7 Project that aims to extend the use of EGNOS by demonstrating its potential benefits. **GMV** has developed the equipment and tools used in these trials. Maiden flight trials have recently been successfully conducted in Moldova using GMV's magicSBAS solution. In 2011, the European GNSS Agency (GSA) awarded GMV the EEGS2 project (EGNOS Extension to Eastern Europe). The main objective of the project is to demonstrate through flight trials the benefits of the European Geostationary



Navigation Overlay Service (EGNOS) in areas of Eastern Europe where it is not yet available, such as Poland, Romania, Ukraine, Moldova and Russia, and to prepare civil aviation authorities and air navigation service providers for future use of the system. Maiden flight demonstrations in Moldova have given pilots and service providers a clear idea of the potential benefits of EGNOS and the flying procedures of the near future. The magicLPV system enables LPV approaches (Localizer Performance with Vertical Guidance) to be carried out using the signal generated by



the magicSBAS application. This test environment allows any region of the world to analyze the air-navigation benefits to be obtained with deployment of a Space Based Augmentation System (SBAS). This signal is read by internet and transmitted by radio frequency in the vicinity of the airport, allowing LPV approaches to be made in places where SBAS is either completely unavailable or available only on a very limited basis. Eight flights in all were carried out in various Moldovan airports, and test results were highly satisfactory, demonstrating the simplicity of equipment configuration and operation, and the excellent performance of the magicSBAS signal. Miguel Romay, Executive Director of GNSS-Aerospace, said: "these trials are an important milestone for GMV, for the project and, fundamentally, for the use of EGNOS in the countries of Eastern Europe in the near future". GMV will continue with these demonstrations in other countries of Eastern Europe.



EUMETSAT announces the 1st International Ocean Colour Science symposium

The first International Ocean Colour Science (IOCS) meeting took place in Darmstadt, Germany, from 6 to 8 May. It was the first in a series of IOCS meetings which are scheduled to take place every two years, to bring together ocean colour scientists from around the world. The symposium was convened by the International Ocean Colour Coordinating Group, in partnership with **EUMETSAT** and the US National Aeronautics and Space Administration (NASA). Other meeting sponsors included the European Space Agency (ESA) and Centre National d'Etudes Spatiales (CNES), the French space agency.

The primary focus of the meeting was to build and strengthen the international ocean colour community by providing a structure and mechanisms to collectively address common issues and goals.

The meeting made recommendations on the following topics:

- satellite instrument calibration
- in situ data and protocols for calibration/validation
- data infrastructure, formats and distribution
- algorithms and products
- applications, user services and tools
- international training opportunities

More information: www.iocs.iocgg.org

SES innovates in satellite TV reception

Luxembourg-based **SES**, one of the world's leading telecommunications satellite operators, has unveiled innovative projects to further improve the satellite TV viewing experience. SES, which broadcasts 1,500 HD channels worldwide and is today the world's leading satellite platform for the distribution of high definition content, is now actively supporting the emergence of an Ultra HD value chain. Ultra HD features an image resolution of 3,840x2,160 pixels – multiple times HD – and produces a stunning picture quality. In order to stimulate the development of an Ultra HD ecosystem, SES introduced its "Ultra HD Experience" initiative at the MIPTV event in Cannes, France. The initiative is designed to incentivise content production in Ultra HD (www. ses.com/ultrahd-experience).

Later in April, at the company's "Industry Days" event in Luxembourg, SES and its partners Harmonic and Broadcom Corporation demonstrated the first Ultra HD transmission in the new HEVC standard. HEVC features a 50% encoding efficiency improvement compared to MPEG-4 AVC, and allows for the first time to transmit Ultra HD content under commercially realistic conditions. SES also works on adapting the in-home distribution of satellite signals to new media consumption patterns. In 2012, SES had introduced SAT>IP, a satellite-to-IP bridging technology that translates satellite signals into the IP format and enables satellite-delivered content to be viewed on fixed and mobile devices in the home. Now, with the demonstration of the first IP-LNB prototype, this development has been taken further. The IP-LNB device locates the satellite reception and the IP-bridging functions directly in the antenna. It enables satellite distribution to the home via a single Ethernet cable (or WiFi system), greatly reducing the cost and the power consumption of the system.

5th Anniversary of the Center for Planetary Science and Exploration, Western University

This year the Centre for Planetary Science and Exploration (CPSX) at Western University, Canada, celebrates its 5th anniversary. CPSX continues to grow, and is happy to report that it has secured \$475,000 over the next 3 years to develop a new Integrated Training Program in Space Science and Exploration. The successful proposal was led by CPSX Associate Director Dr. Gordon Osinski, CPSX Director Dr. Peter Brown, and a number of co-investigators. Funding will support 3 key aspects of the integrated training program: a Planetary Science undergraduate degree; a Professional Masters in Space Science and Exploration; and a Collaborative Graduate Program in Planetary Science and Exploration. Additionally, they are pleased to announce their newly appointed CPSX Advisory Council. Council members include: Bob McDonald, Host of Quirks & Quarks, CBC Radio; Robert (Bob) Richards, Co-Founder and CEO of Moon Express, Inc.; Marc Boucher, Co-Founder and CEO of SpaceRef; Cameron Ower, Director, Research and Development, MacDonald, Dettwiler and Associates (MDA) Inc.; Greg Schmidt, Deputy Director, NASA Lunar Science Institute (NLSI); and Eric Laliberte, Director General, Space Science and Technology, Canadian Space Agency. Further expansion and exciting changes to CPSX will occur later in 2013, including hiring a new Program Director and Coordinator.

AIAA's Awards

The American Institute of Aeronautics and Astronautics (AIAA) presented its most prestigious awards, as well as inducted four new Honorary Fellows and 23 new Fellows of the Institute, at the AIAA Aerospace Spotlight Awards Gala on **8 May**, at the Ronald Reagan Building and International Trade Center in Washington, D.C. This annual black-tie event recognizes the most influential and inspiring individuals in aerospace, whose outstanding contributions merit the highest accolades. This year's AIAA International Cooperation Award was presented to Scott Pace, Space Policy Institute, Elliott School of International Affairs, George Washington University, Washington, D.C. David Ian Poll, Emeritus Professor of Aerospace Engineering, Cranfield University, United Kingdom, was awarded the highest distinction of Honorary Fellow.

Moreinformation: https://www.aiaa.org/SecondaryTwoColumn. aspx?id=15863



ALMA Observatory

Thales Alenia Space has completed the delivery of 25 dishes, each 12 meters in diameter, for the antennas making up the Atacama Large Millimeter/submillimeter Array (ALMA) astronomical observatory in northern Chile. ALMA is a huge international program built in partnership by Europe, North America and East Asia. ALMA construction and operations are led on behalf of Europe by the European Southern Observatory (ESO), on behalf of North America by the National Radio Astronomy.

Observatory (NRAO) and on behalf of East Asia by the National Astronomical Observatory of Japan (NAOJ). The 25 antennas provided by Europe (out of a total of 66) are made by a Thales Alenia Space-led consortium, including European Industrial Engineering (Italy) and MT-Mechatronics (Germany). The ALMA antennas weight approximately hundred tons, and necessitate a special 28-wheel vehicle and a reinforced road to be moved from the assembly plant to its final destination. The dishes of these antennas have been implemented under the management of Thales Alenia Space Italy.

Launch of Australian Space Policy

Australia's first ever space policy - Australia's Satellite Utilisation Policy - has been released, providing certainty and strategic direction for Australian users of satellite technology. Launching the policy at ANU's Stromlo Observatory, the Minister Assisting for Industry and Innovation Senator Kate Lundy said on-going, cost effective access to satellite capabilities was essential to Australia's future. She stated: "Australians, whether they know it or not, rely on satellites every day. Whether it's for navigation, getting accurate weather forecasts, or communication in remote areas, Australians have a growing appetite for satellite services. This space policy will ensure that Australians can continue to access the satellite capacity we need through partnerships with other countries and commercial suppliers." Senator Lundy explained that this space policy is not only important for end-users, but a good space policy will also pay economic dividends for Australia. Satellite imagery alone was estimated in a 2010 report to contribute about \$3.3 billion per year to GDP. Positioning technologies, such as GPS, were estimated in 2008 to have added \$1 billion per year to GDP, and this is forecast to grow to between \$6 and \$12 billion by 2030. Senator Lundy said: "The most effective contributions Australia can make to the space industry are those that leverage off our areas of niche expertise. That is why this policy focuses on supporting space-related research, education and innovation activities to nurture and grow our space industry."

From **1 July**, a new Space Coordination Office in the Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education will be responsible for coordinating Australia's domestic civilian space activities and showcasing that excellence.



One of Thales Alenia's 12m satellites being delivered.

Key aspects of Australia's Satellite Utilisation Policy include:

- Giving priority to earth observations from space; satellite communications; and position, navigation and timing;
- contributing to international 'rules of the road' for space through Australian space situational awareness infrastructure and diplomatic efforts;
- building and retaining high quality Australian space expertise; and
- developing a plan to meet projected growth in Australia's satellite information needs by modernising and consolidating Australia's ground infrastructure.

The launch event was held at Mt Stromlo and showcased the fourteen Australian Space Research projects that have put Australia at the cutting edge of space research and education. These projects are being funded by a \$40 million Gillard Government investment to support space-related research, education and innovation activities. The projects showcased included:

- trialling hypersonic combustion ramjets scramjets capable of travelling at 8600 km per hour; automated tracking of space debris to prevent damaging collisions between satellites and man-made junk in orbit;
- Australia's first two-year Masters' program in satellite systems engineering; and
- the development of Antarctic broadband, to provide broadband data and voice communications systems for the frozen continent.

More information: www.space.gov.au



APL Particle Camera and Spectrometer Selected for JUICE

NASA has selected The Johns Hopkins University Applied Physics Laboratory (APL) in Laurel, Md., to build an innovative particle camera and instrument for flight aboard the JUpiter ICy moon Explorer (JUICE), a European Space Agency mission to be launched in 2022 to study the Jupiter system and three of its largest moons in unprecedented detail. APL is one of 15 scientific teams from Europe, Japan and the United States selected to develop instrumentation for JUICE. Pontus Brandt will direct JEPI, APL's suite of the Jupiter Energetic Neutrals and Ions (JENI) and the Jovian Energetic Electrons (JoEE) sensors, as part of the mission's largest investigation, the Particle Environment Package (PEP). JENI advances a technique that APL has previously used at Saturn and Earth to image the otherwise invisible vast cloud of plasma and gas that surrounds Jupiter. The JoEE spectrometer will be used to understand the processes that make Jupiter the biggest particle accelerator in the solar system. Twelve countries participate in building the PEP suite under the lead of Stas Barabash of the Swedish Institute of Space Physics in Kiruna.

For a simulation of what JEPI may reveal at Jupiter, visit: http://sd-www.jhuapl.edu/JUICE/

KSAT wins new contract for vessel detection service to combat illegal fishing

Kongsberg Satellite Services (KSAT) has recently finalized a contract to monitor vessel traffic in the waters around in



the southeastern Pacific Ocean. Using multiple sensors from a variety of satellite missions (including synthetic aperture radar [SAR], electro-optical imagery, and satellite AIS data streams) KSAT will acquire, analyze and distribute information in order to evaluate the existence and extent of illegal fishing in the area. With this contract, KSAT strengthens its position as a world-leading entity for vessel detection services. With multi-sensor and cutting-edge technology; KSAT is able to tailor services to clients around the world, has a team of analysts working 24/7 and can deliver reports from the information gathered from space-borne sensors to local monitoring centers worldwide at any time.

SGAC prepares for the 2013 Space Generation Congress: Scholarships, Competitions and more!

After the successful conclusion of the Space Generation Fusion Forum in April, the Space Generation Advisory Council (SGAC) is heading into one of the busiest periods of the year. The current major focus for SGAC is the preparation of the Space Generation Congress (SGC), to be held 19-21 September, in conjunction with the IAC in Beijing. The Space Generation Congress is a three-day event where students and young professionals will gather to work on the responses of the next generation of space sector leaders to key space issues. Applications are now open for the congress. For more information on SGC, visit www.spacegenerationcongress.org.

SGAC has launched its three biggest paper competitions, the Move An Asteroid, Space Is Business, and Space Solar Power competitions. These competitions allow winners to attend SGC and IAC where they will present their work (more information available at spacegeneration.org/competitions).

SGAC has also launched Find An Asteroid, giving students and young professionals the opportunity to directly take part in the discovery of asteroids. For more information, visit spacegeneration.org/faa.

Finally, SGAC, due to its permanent observer status, will attend the fifty-sixth session of the Committee on the Peaceful Uses of Outer Space (UNCOPUOS) in June, ensuring that the opinions of the next generation of space leaders are heard by the policymakers from around the globe.

Galaxy Forum China 2013, 22 September in Beijing

Under the theme "Human Moon Missions: Giant Steps Into The Galaxy", the International Lunar Observatory Association (ILOA) cordially invites IAC scientists, explorers and entrepreneurs to consider 21st Century education and enterprise at Galaxy Forum



China 2013 – Beijing, on Sunday 22 September 13:30-17:00 at the China National Convention Center, Room 308. ILOA, based in Hawaii and an IAF member, supports human understanding of the Cosmos through observation from our Moon and hosts Galaxy Forums to help develop this understanding and realize its 4 Moon missions – robotic and human.

By fusing astrophysics and astronautics, the ILOA Galaxy Forum will preview Human Moon intentions of major spacefaring nations China, India, Russia and Japan, of aspiring spacefarers Brazil, Korea, Malaysia, South Africa, France, Germany, Canada, amongst others, and of the remarkable enterprises at the forefront of the American Lunar Renaissance: Google Lunar X-Prize competitors, ILOA, Golden Spike Company, Bigelow Aerospace, Shackleton Energy Company.

Galaxy Forums are public events with presentations, panel discussions and attendee participation. Efforts are made to integrate local cultures, perspectives, and traditional knowledge. Galaxy Forums have been held in Hawaii, Silicon Valley, Canada, China, India, Southeast Asia, Japan, Europe, Africa, Chile, Brazil, Kansas and New York.

More information: www.iloa.org, www.galaxyforum.org





Wyle Wins NASA contract valued at nearly \$2 Billion Over 10 Years

Wyle has been awarded a contract valued at nearly \$2 billion over a 10-year span to provide comprehensive health, safety, science and engineering support to NASA human space flight missions supporting the International Space Station, Orion, commercial space initiatives and exploration human systems development. Called the Human Health and Performance Contract, Wyle will perform the work primarily at the NASA Johnson Space Center in Houston, Texas with the aid of a core team of 10 subcontractors. The contract has a five-year base award with one three year and one two year option.

Wyle has been providing similar services to NASA since 1968 and with the award of this new contract expects to provide critical support to NASA JSC until 2023. The contract will focus on crew and occupational health care, medical operations and informatics, biomedical and physiological research, space flight habitability and environmental health, development and integration of flight hardware and the integration of flight experiments. Wyle's subcontractors include Lockheed Martin; Barrios Technology, Inc.; CSC-Dynamac; Eagle Applied Sciences, LLC; Enterprise Advisory Services; Geocontrols Systems, Inc.; JES Tech; MEI Technologies, Inc.; University of Houston; and the University of Texas Medical Branch.

More information: www.wyle.com

South Dakota School of Mines & Technology's 1st female President and other news

Heather Wilson, D.Phil., a former member of Congress, Rhodes Scholar and consultant who has worked with large defense and scientific companies, has become the 18th President of the South Dakota School of Mines & Technology. Wilson succeeds the late Robert Wharton, who passed away in September. She has begun her duties on **17 June** and became the first female president in the school's 128-year history. NASA has awarded a team of a team of researchers a \$750,000 grant to develop new materials and technologies for space applications, including artificial skin for astronaut suits and sensors that can be integrated on the surface of spaceships. The new materials will be lightweight, conformable, flexible and stretchable electronic devices and sensors based on inorganic and organic materials. The research involves a multi-disciplinary approach through a partnership with South Dakota State University, as well as collaboration with NASA centers. The School of Mines' technique is to grow semiconductors and transfer them to flexible substrates. The grant is funded through the South Dakota Space Grant Consortium and the NASA EPSCoR program.

Incoming committee for Space Industry Association of Australia

The **Space Industry Associating of Australia (SIAA)**, an IAF Member since 2012, has welcomed a new leadership committee for 2013. Michael Davis has been appointed Chair of the SIAA, bringing with him a wealth of experience as a legal practitioner in the Australian space industry and in other sectors. Graduate of the Master of Space Studies program at the International Space University, he has been involved in a wide range of space related pursuits including chairing the Advisory Board of the UniSA institute of Telecommunications Research, attending UN and ITU space meetings, representing Australian and overseas clients involved in commercial launch, satellite and other space-related projects, co-authoring policy submissions on behalf of the association and organising the 2004 ISU Space Studies Program and the 2011, 2012 and 2013 Southern Hemisphere Summer Space Programs in Adelaide.

Mr. Davis will be assisted by the following office holders who were re-elected at the same meeting: Deputy Chairs Roger Franzen and Stephen Ward, Secretary Michael Brett and Treasurer David Ball. On taking the Chair, Mr. Davis recognised the hard work of the association's outgoing Chair, Brett Biddington, for his leadership in developing a voice for Australia's space industry over many years and leading its introduction and participation in the IAF.

Euro Space Center

Since 1991, the Euro Space Center has launched several educational programs in order to raise the public's interest in aerospace subjects. The Euro Space Center can accommodate schools or individuals and offer them a unique experience of human exploration of the universe. Several training courses are available for youngsters based on workshops and simulation exercises, such as the "Space Adventure Camps" or the "Rocket Camps". The ESC also offers the general public a chance to discover the dazzling world of aerospace science and history through "A Space Odyssey" tour. The ESC is currently hosting two temporary exhibitions:

"Dawn to earth", or how airbag systems, smoke detectors, heart pumps and many other inventions present in our everyday life are related to space innovations.

"Saveurs spatiales": What did Yuri Gagarin eat during his first flight on orbit? What kind of food can one find aboard the International Space Station? This exhibit will teach you everything you need to know about space gastronomy, such as the MELiSSA (Micro Ecological Life Support System Alternative) project or how could life on mars be possible.

More information: www.eurospacecenter.be



Von Karman Institute for Fluid Dynamics: Advanced training in research through research.

Located near Brussels, the von Karman Institute for Fluid Dynamics is an international educational and scientific organization specialized in fluid dynamics in the fields of aeronautics, aerospace, environmental and applied fluid dynamics, turbomachinery and propulsion. The Institute prides itself in providing *"advanced training in research* through research". The VKI operates about fifty different wind tunnels, turbomachinery and other facilities; some of them are unique in the world such as the 1200 KW Plasmatron for thermal protection testing; the Mach 14 hypersonic free piston driven Longshot for aerothermodynamic data basing of earth re-entry and planetary entry vehicles and the annular cascade facility CT3 for advanced turbomachinery performance testing. The VKI also possesses the largest Belgium subsonic wind tunnel with a test section diameter of 3m. VKI is recognized as a world-class research center of excellence by its peers. As an example, it has been recognized as one of the main research partners of Snecma, the French aero-engine manufacturer. In the turbomachinery department, advanced aero-thermal research is carried out on the colder fan and compressor side, as well as on the hotter turbine extremity. On the energy side, the department recently completed the aero-mechanical design of the primary cooling pump of the Myrrha reactor for SCK•CEN in Mol, and contributed to product development in several sectors of the energy conversion industry.



Stream tube VKI Facility – Reproduce at real scale the swirling flow behind the fan of a modern turbofan engine

SSTL's new Telecommunications Business Development Manager

Surrey Satellite Technology Limited (SSTL) has appointed Mr. Toru Yunoki as Business Development Manager for its telecommunications products. In his new role, Mr. Yunoki will promote SSTL's range of telecommunications solutions, including GEO platforms, subsystems and services to the global market. The SSTL telecommunications product range – Geostationary Minisatellite Platform (GMP) – is designed to provide rapid, reliable, cost effective solutions to meet customer requirements for geostationary missions across a wide-variety of applications.

Astrium

This world space leader has also become a fully-fledged global satellite operator thanks to the successful in orbit validations of the Earth Observation satellites Pleiades 1B and Spot 6, as well as the secure satcom Skynet 5D in 2013. Astrium is the only company that covers the whole range of civil and defence space systems and services. Its three business units are:

- Astrium Space Transportation for launchers (including Ariane 5, the most reliable launch vehicle) and orbital infrastructures such as the automated transfer vehicle ATV
- Astrium Satellites for all types of spacecraft and ground segments including the Galileo IOV' satellites and Metop A,B and C
- Astrium Services, which is now the only operator in the world providing near-global X-band coverage reserved exclusively for government and military usage and also the only operator in the world able to offer high to very-highresolution optical images thanks to a constellation of satellites offering complementary performance in terms of image size and resolution. Astrium Services also offers optical and radar remote sensing solutions.

Astrium, the Space Division of EADS, sales amount to some €5.5 billion and employs 18.000 persons worldwide.



GEO Constellation. Copyright: Astrium



ATV-4 in integration at Astrium Bremen.

ESA has decided to name the fourth Automated Transfer Vehicle (ATV) after Albert Einstein because his contributions to humanity and, in particular, science overturned our perception of the Universe. Copyright: Astrium / I. Wagner / 2012



New CEO for Thales Alenia Space Italia

The Board of Directors of Thales Alenia Space (joint-venture between Thales and Finmeccanica) appointed Elisio Giacomo Prette as the new President and CEO of Thales Alenia Space Italia. Mr. Prette succeeds Luigi Pasquali, who headed the leading satellite systems company from 2008 until today. Over the course of his career, Mr. Prette has acquired extensive experience in international joint ventures. He joined Thales Alenia Space when it was established, in 2005.

New President of CNES

On **3 April**, the French Government appointed Jean-Yves Le Gall as the new President of the Centre Nationale d'Etudes Spatiales (CNES), the French space agency. DrLe Gall graduated from the École Supérieure d'Optique engineering school in 1981 and obtained a doctorate in engineering from Paris-Sud University in 1983. In a statement, he said "Thanks to their efforts, CNES is now an undisputed leader setting the standard and driving innovation to create jobs. In a vibrant and fast-changing environment, I shall strive relentlessly to ensure that it remains an ambition for France."

New Chairman & CEO of Arianespace.

On **April 18**, The Board of Directors of Arianespace today named Stéphane Israël Chairman and CEO of the company. He graduated from the Ecole Nationale d'Administration (ENA), before becoming a judge in the French court of auditors. While in this position, he participated in missions concerning French space policy and the Ariane launch system. he moved to the aerospace industry in 2007, first as advisor to Louis Gallois, Chief Executive Officer of EADS, then holding various operational management positions at Astrium Space Transportation and Astrium Services.

New CEO of Telespazio

Luigi Pasquali was appointed CEO of Telespazio from 28 February 2013. Mr Pasquali graduated from "La Sapienza" University of Rome in 1982, subsequently attending courses in Finance and Business Economics at the IRI Management school and the Business Management School of the "Bocconi" University of Milan. Previously in June 2008 he joined Thales Alenia Space Joint Venture as Deputy CEO, and President & CEO of Thales Alenia Space Italia S.p.A. He is a member of the Board of Directors of Thales Alenia Space España.

HE Space: Reaching out to the space community

HE Space has been active on LinkedIn since 2009 with its own company group in order to stay in touch with employees and ex-employees. HE Space also started a group for other space enthusiasts interested in working in the space domain called "Jobs in Space", which now has more than 3000 members. Apart from finding out about job opportunities in the European space sector, these members exchange information and ideas about space projects or general space news. Members also use "Jobs in Space" to solicit professional opinions from fellow space enthusiasts around the world.

More information: www.hespace.com

MT Aerospace awarded development and production contract by Boeing for large tank components for the NASA Space Launch System.

Augsburg, June 12, 2013. MT Aerospace AG, part of the European space and technology group OHB AG (ISIN: DE0005936124, Prime Standard) signed an authorization to proceed with The Boeing Company for the development and production of large tank components for the NASA Space Launch System (SLS) core stage. Boeing is a prime contractor for the SLS, which is scheduled for first launch in 2017.

MT Aerospace was selected for the development and production of large aluminum segments of the propellant tanks for the SLS main stage. The components will be produced in Augsburg, Germany, and then shipped to the SLS main assembly plant in New Orleans, Louisiana. MT Aerospace is using an automated forming technology to provide 3-by-3 meter dome panels with a 3-dimensional curvature in just one production step. With a diameter of 8.4 meters and a length of approximately 65 meters, the SLS main-stage tanks will hold nearly 1000 tons of liquid hydrogen and liquid oxygen and will be 30 percent larger than the External Tank of the retired Space Shuttle. The SLS will be the most powerful rocket in history and is designed to be flexible and evolvable, to meet a variety of crew and cargo mission needs.

Should you wish to promote your organisation's latest news towards the 30 000 Newsletter readers, please submit a 200 words text to <u>newsletter@iafastro.org</u>

Please note that this service is offered only to IAF members. Becoming a member means visibility and promotion worldwide through mass mailings, newsletters and sponsorship, in addition to financial benefits such as discounted IAC participation. Membership is open to all companies and organisations working in space-related fields. If you are interested in becoming a member, please complete the "Application for IAF Membership" form and send it together with your company's by-law, statutes and any other relevant material to the IAF Secretariat - <u>http://www.iafastro.com/index.php/contact-us</u>



ASTRONAUTICAL CONGRE

One of the most outstanding events of the year, the 64th IAC, will be held in the historic city of Beijing, China, from 23 to 27 September.

IAC Public Programme

This year's main programme features exciting selection of high-level plenary sessions, highlight lectures and late breaking news events. There will be highlight lectures, and plenary sessions on diverse topics such as disaster management and innovation in space exploration.

More details can be found here: http://www.iafastro.org/index.php/events/iac/iac-2013/public-programme

IAC Technical Programme

The technical programme already comprises 32 different symposia and fora, each containing multiple sessions presenting groundbreaking research and discussions on the future of space issues.

To view the programme, go to: http://www.iafastro.net/iac/browse.lite/IAC-13/

IAC Associated Events

There is also a diverse array of sessions, workshops, visits and meetings organised by our partners and colleagues from the global space community. Amongst these are:

23rd UN/IAF Workshop, 20-22 September

This workshop, this year based on "Space Technology for Economic Development", aims to promote the use of space technology for benefits of the developing countries. It allows participants to establish initiatives and activities strengthening the role of space technology applications to improve the quality of life in developing countries. Four technical sessions will address the following themes:

- Space applications agriculture and land use
- Space applications for disaster management

More information: http://www.unoosa.org

5th International Meeting of Members of Parliament, 22 September

The IAF organises an annual Meeting for Members of Parliaments to provide a forum for informal discussions with the international space community (governmental representatives, space agencies, industry, universities, engineers and scientists). The event offers an opportunity for parliamentarians from governing and non-governing parties to discuss the potential of current and future space technologies to deal with key topics of major and global interest. The focus of this fifth meeting will be "Benefits of Space Technology for Economic Growth and Competitiveness of Industry". This 5th meeting will welcome eminent speakers, who will address the benefits of space technology, applications and services, as well as technology transfer for the economic growth and competitiveness of industry and give best cases. Following the presentations, all parliamentarians will be given the opportunity to make a statement on the developments and plans in their home country and to engage in a discussion with the other participants.

IAC Hosts Summit, 22 September

This one-day event – a convention of past, present and future IAC host organisations – offers reports of previous IAC host organisations to an audience consisting of selected IAC hosts, as well as member organisations who might be interested in bidding for an IAC in the future. The knowledge and experience transfer from successful hosts aims to facilitate future host organisations' preparation for the challenges of an IAC and contribute to receiving improved quality bids.



Young Professionals and Students Programmes

Almost one quarter of attendees at IAC 2012 were aged under 35 years, demonstrating the IAF's active support for activities involving students and young professionals

YOUNG PROFESSIONALS PROGRAMME

IPMC Young Professionals Workshop

The deadline for the IPMC YP workshop was extended from 28 June to 10 July. The workshop seeks to gather input from young professionals in the international space community to gain the knowledge they need to develop and empower the workforce of the next generation. More information about the workshop and eligibility criteria can be found on the IAF's website at: http://iafastro. org/index.php/articles/2013-ipmc-yp-workshop-call-for-nominations

Young Professionals Receptions

Sunday - Welcome networking event.

Be sure to schedule your travel to attend this initial Young Professionals event! This will be an opportunity to meet the other YPs who are attending the IAC, hear about the many YP specific events at the IAC this year, and talk to the president of the IAF and the people who lead the organisation of the Beijing and Toronto IACs. A cocktail with light appetisers will be served.

Tuesday – Future of Human Exploration sponsored by Lockheed Martin Corporation and the American Astronautical Society.

With several different destinations proposed for human exploration from Low Earth Orbit, to the moon, an asteroid, and Mars, hear a discussion among high level managers from several space agencies on their plans and take time to engage them on their plans. This event follows on the discussion from the combined Heads of Industry and Next Generation Plenary on the same topic earlier in the day. Attend both to enhance your understanding of how Young Professionals can shape the future of human exploration. Cocktails and light appetisers will be served.

Wednesday – Near Earth Objects sponsored by the Secure World Foundation.

What is the real threat of Near Earth Objects and is there anything that can be done? Several global experts will discuss the true threat, probability, and opportunities to mitigate a major NEO event. YPs will have the opportunity to share ideas with this expert panel. Cocktails and light appetizers will be served.

More information on http://iafastro.org/index.php/about/administrative-and-technical-committees/wdypp/ypprogramme/ypp2013 or contact the organisers at ypp@iafastro.org

Virtual Forums

The Virtual Forum sessions, held at the IAC, allow to participate and interact with the international space community via the internet. They will give the opportunity to professionals, students or space enthusiasts to present a paper at IAC 2013 either virtually or in person, in real time.

4 committees are co-hosting virtual sessions with the Workforce Development/Young Professionals Programme Committee (WD/YPP):

- V1-B6.4 Space Operations (SOC): 23 September at 15:15
- V2-B3.9 Human Space Endeavours (HSE): 26 September at 14:45
- V3-B2.8 Space Communications and Navigation (SCAN): 25 September at 14:45
- V4-E2.3 Student Team Competition: 24 September 2013 at 14:45

More information on http://iafastro.org/index.php/events/iac/iac-2013/vf-2013 or contact the organisers at YPVF@iafastro.org

STUDENT PROGRAMME

International Student Competition

From 23-25 September at the IAC, the 43rd Student Conference will also take place. This involves the presentation of space-related papers by undergraduate and graduate students who participate in an international student competition. It will be coordinated by Mr. Stephen Brock from the American Institute of Aeronautics and Astronautics (AIAA), United States, and Dr. Marco Schmidt, from the University of Wuerzburg, Germany. There is also a 'national' student competition, organised by the UK, Germany, France, the US and Canada, whereby participants are chosen and funded to attend the IAC. The winners will be announced shortly.

Luigi G. Napolitano Award

The International Astronautical Federation is pleased to announce the opening of the call for nominations for the 2013 Luigi G. Napolitano Award. This award is assigned every year to a young scientist who has significantly contributed to the advancement of the Aerospace Science. Anyone who qualifies and wishes to apply for the Award should send the selection material by e-mail before the 29 August 2013 to the IAF Secretariat to: award@iafastro.org.

Criteria and selection material are online at: http://iafastro.org/index.php/articles/2013-luigi-g-napolitano-award



Tsinghua University IAF – SUAC International Student Workshop

The Tsinghua University IAF-SUAC International Student Workshop will take place on 28 September 2013 in Tsinghua University, Beijing, China in conjunction with the IAC. It will gather students and experts from all over the world to discuss near earth orbit science and exploration projects with space station/lib and satellites, deep space sciences and exploration projects with lunar/mars rover and others, and innovation in satellite/spacecraft technologies and applications.

More information can be found at:

http://iafastro.org/index.php/events/iac/iac-2013/associated-events-and-programme/2013studentworkshop

GNF Event

Again this year, the IAF Global Networking Forum will offer an intense and diversified programme. During the IAC week, various events will follow one another, from industry round tables, to heads of agencies press conferences, without forgetting networking opportunities and cocktails. On Friday, special sessions will be dedicated to the general public.

A more detailed programme of the IAF Global Networking Forum will follow in the next weeks.

Technical Visits



The IAC features an array of technical visits, including the China Academy of Launch Vehicle Technology, the China Academy of Space Technology and China Satellite Communications Co. Ltd. For each visit, the number of delegates is limited to 80, and the deadline for technical visit registration is 31 August 2013.

For more information and to register, please go to http://www.iac2013.org/ dct/page/70049

China Academy of Space Technology (CAST)

Social Excursions

Pre- or Post-Congress Tours will also enable the participants to see with their own eyes the agricultural and rural life of China. Scenic and cultural sites will be included in the proposed routes, such as the Great Wall, the Forbidden City and the Summer Palace in Beijing. Xian, Guilin, Hangzhou and Suzhou are among the China's most popular tourist destinations.



IAC 2016 Bids

The call for hosting IAC2016 closed on 26 April. Two formal proposals were addressed to the IAF by the following organisations:

- The Mexican Space Agency, for Guadalajara (Mexico);

- The State Space Agency of Ukraine and Yuzhnoye State Design Office (SDO), for Kiev (Ukraine).

IAF Executive Director Christian Feichtinger is currently visiting the candidate sites and undertaking official inspections, to assess the feasibility of successfully hosting IAC 2016 at these sites.

The winner to host the IAC 2016 will be selected by the IAF General Assembly on 27 September in Beijing.



Policy Advisory Committee (PAC): Call for Elections

The Policy Advisory Committee of IAF is defined by the Constitution. To make governance possible, a Steering Group is formed inside the PAC, with up to ten members. Thus it is important to notice the difference between PAC membership and membership of its Steering Group, although in practice all PAC members that wish to do so are invited to all activities, including SG meetings. Interested members of IAF who are not directly members of PAC can typically and effectively coordinate with their national PAC member. For countries without PAC members, please contact any of the PAC SG members.

The next elections for PAC officers will be held during the IAC in Beijing.

Please let PAC know, preferably before 15 August, the candidate(s)/country(ies) you wish to nominate, to: Jean-daniel.Dessimoz@heig-vd.ch

- PAC Steering Group membership (10 positions; all PAC members according to our member list are eligible candidates for this office)
- PAC Chairmanship (1 position; all current PAC steering group members are eligible)
- PAC Vice-Chairmanship (1 position; all current PAC steering group members are eligible)
- PAC members may find the current member list and the detailed procedure for renewal on our IAF server.

Change in leadership of CLIODN

Gerard Brachet ended a five year term as chairman of IAF's Committee on Liaison with International Organizations and Developing Nations (CLIODN) at the last Spring Meeting. He also served as Vice- President of IAF during the period 2008-2012. Through his engagement, the Federation considerably enlarged and intensified its relations with other international organisations. Gerard Brachet invigorated the UN/IAF Workshops, initiated an IAF global conference together with UNESCO (GLAC, upcoming in May 2014), for which he is cochairing the programme committee, and fostered the IAF regional groups. He is succeeded in the function of chairman of CLIODN by Kai-Uwe Schrogl, who is supported by Christina Giannopapa as committee secretary, and who is reporting to IAF Vice-President Sergey Saveliev, who is responsible for this area in the IAF Bureau. The next activity of CLIODN is the conduct of the UN/IAF Workshop in Beijing, which will take place from 20 to 22 September and which will focus on "Space technology for promoting the economy in developing countries."



The new leadership team of CLIODN

Life Sciences: a new IAF Technical Committee

The IAF Technical Committee for Space Life Sciences was approved by the IAF Bureau on 4 October 2012. It includes technical and scientific disciplines related to space associated with human and animal physiology, psychology and behavioral issues, medical care and counter-measures to the negative effects of space flight on humans, radiation effects and health conse-quences, biology of animals and plants, life support in space and on other worlds, and engineering and science of extravehicular activity. The Committee is charged with maintaining full coordination with appropriate committees of the IAA, IISL, and COSPAR as needed. To facilitate this coordination, the committee has members common to IAA Space Life Sciences Commission II and COSPAR Commission F. The first face to face meeting of the technical committee was held in Paris on 19 March with 23 attendees, including 11 committee members. Besides the discussion of the terms of references of the newly established committee, aspects of cooperation with other Space and Sciences related organizations as well as preparatory activities for the 65th IAC in Toronto 2014 with respect to the Space Life Sciences Symposium (A.1.) and joint plenary sessions were in the focus of interest.



IPC Steering Group

The IPC Steering Group received 19 very good proposals for Plenary Events and 7 for Highlights. Plenaries and Highlights have been selected and will provide a large panorama of outstanding items to be presented to the congress participants. Taking into account the lessons learned in the past congress, the weekly schedule has been reorganized around 7 slots for plenary events and 4 slots for either High Light Lectures or late Breaking News around the morning and afternoon technical sessions. It has been decided also to enhance poster visibility through a dedicated poster session. A new record has been reached concerning the abstract submission: 3675 abstracts have been submitted for selection in the various symposium and sessions, 1465 for oral presentation, 1864 for Oral or Posters and 356 for Posters. These abstracts submission reflect a worldwide participation for numerous countries around the world and a large contribution from the Asia-Pacific area (57%). The abstracts are well balanced between the various categories such as Science and Exploration, Applications and Operations, Technologies, Infrastructures and Space & Societies. The high number of abstracts proposed by students (25%) also reflects the growing interest of the young generation in the IAC. The IPC Steering Group is looking forward to meeting you in Beijing.

Astrodynamics Committee: From Toulouse (1997) to Lisbon (2013), 7 editions of IAF International Workshop of Satellite Constellation & Formation Flying (IWSCFF)

The growth of satellite constellations over the last decades and the continuous increase of interest in formation flying missions are undoubtedly the most important and most exciting developments in commercial, institutional and scientific satellite services. The unique and novel characteristics of these satellite systems have not only rejuvenated satellite system design but have also brought new life to classical flight dynamics disciplines like orbital mechanics, attitude control, guidance and navigation. Because of the breadth and diversity of advancement, the Astrodynamics Committee decided to create this specialized forum. The seventh IWSCFF was held in Lisbon, Portugal at the Faculty of Science of Lisbon University on 13-15 March. Its main topics were as follows:

- New Mission Concepts
- Mission Analysis and Design
- Deployment and Maintenance
- Guidance, Navigation, and Control
- Services and Operations
- Simulation and Optimization
- Lessons Learnt from Past and Current Missions.

More than 120 papers from 25 countries were submitted, and 50 papers were presented at the workshop thematic sessions. The plenary events of IWSCFF included an Opening Session, Keynote Lecture, and Round Table on Satellite Constellations and Formation Flying. The workshop was opened by presentation of the development of this area in Portugal by Prof. José Manuel

Rebordão (Faculty of Sciences, Lisbon University) and a welcome speech from industry by Dr. António Neto da Silva, President of Proespaço - Portuguese Association of Space Industries. President of the IWSCFF International Program Committee Dr. Erick Lansard (VP & CEO, Thales Research & Technology France) presented the IWSCFF historical perspective and its evolution since 1997. The Keynote lecture "Networks of small satellites as a major component of the current *NewSpace* paradigm shift" delivered by Dr. Alain Dupas, Special Aerospace Advisor for the European Bank for Reconstruction and Development. A selection of the IWSCFF best papers will be recommended for publishing, after peer review, in a Special Issue of the journal Acta Astronautica.

A special effort made by the organizing committee to reduce the student's registration fee, and the support of the European Space Agency, resulted in a high participation of young researchers in the event. Several student papers were submitted for Student Paper Competition. The first place was shared by Sreeja Nag from Massachusetts Institute of Technology, USA, and Danil Ivanov from Kaldysh Institute for Applied Mathematics, Russia. The workshop owes its success to dedicated work of many colleagues and generous contributions of several institutions. We most appreciate the expert support of all members of the International Program Committee, and the extraordinary work done by the local organization committee (LOC) headed by Dr. Alexandre Cabral. We express our gratitude to all sponsors of 7th IWSCFF. In a few months, we'll be in Beijing for the 64th IAC.





Interview – GLAC 2014



Upcoming GLAC – June 2014

After the success of GLEX (the Global Space Exploration Conference), the first forum to bring together stakeholders from space agencies, industry, academia and the R&D community from all over the world on 22-24 May 2012 in Washington, a new event is planned for spring 2014: The joint IAF-UNESCO **Global Space Applications Conference (GLAC)**, which will take place from 2 – 4 June at UNESCO Headquarters in Paris.

Interview with Gerard Brachet, Co-President of the GLAC Programme Committee

Q: Could you describe what the GLAC consists of and which themes it will cover?

"The joint IAF-UNESCO GLAC will review a wide range of stateof-the-art applications in our daily life that space systems have made possible; from car navigation to weather forecasting, precision farming to water resources management, internet access from remote locations to search and rescue, and from coastal environment monitoring to pollution tracking. Hundreds of experts from the world over will gather in Paris to present the progress of space applications and exchange their experience in using satellite-based applications and services for the benefit of human society".

Q: While GLUC, which took place in Beijing in 2010, highlighted the role that China and other space powers play in lunar exploration and GLEX 2012 discussed the future opportunities provided by human and robotic space exploration, what are the objectives and expected outcomes of GLAC, based on applications?

"GLAC will focus on applying space technology to exploring and supporting the development of a very special planet: our own planet Earth, which is host to 7 billion "geonauts", most of them located in developing countries. Most of the 1000 or so spacecraft that are in operation today, and most of the hundreds of satellites that are preparing to be launched within the next ten years will provide services in telecommunication and broadcasting, navigation and positioning, metrological observations, environment and natural resources monitoring, etc., i.e. they will be devoted to serving human societies worldwide. The GLAC conference will explore how these services are implemented today, how they integrate with terrestrially-based services, what are the technical and legal barriers to accessing these services, and it will identify capacity-building requirements".

Q: How did the idea of establishing this conference in Paris emerge and why was it decided to co-organise it?

The idea for this joint IAF-UNESCO Conference came out of a high level meeting held in July 2011 between Professor. Gretchen Kalonji, Assistant Director General for Natural Sciences of UNESCO, and Professor Berndt Feuerbacher, the then-President of IAF, who were both convinced that the historically close relations between UNESCO and IAF should develop into collaboration around a major event such as an international conference, addressing topics of common interest to UNESCO and IAF. This is how the idea of the Global Space Applications Conference was born".

Q. How do you see the role of developing countries in the development of satellite-based applications over the last 20 years?

"Developing countries have played a very strong role in adopting and promoting space-based applications. Here are some examples: Indonesia was the first country to set up a domestic satellite telecommunications network in the 1970s, Brazil was the first developing nation to establish a Landsat receiving station and developed its own expertise in using satellite remote sensing data for environment monitoring in the early 1980s. India is another excellent example, with the early deployment of a satellite telecommunication network for tele-education and tele-health services in remote locations, and the development from the late 1980s of a very active domestic remote sensing satellite programme".

Q. What are the main ways in which satellite-based applications can serve sustainable development?

"Satellite-based applications are very varied and contribute directly to sustainable development: Satellite telecommunication and broadcasting are the most energy-efficient means by which to disseminate information on a large scale. Satellite-based navigation and positioning allows optimum route planning for ships and aircraft, and helps minimize energy consumption of fleets of heavy vehicles. Meteorological satellites contribute to more accurate forecasting of weather patterns and contribute in a major way to climate research. Satellite remote sensing helps manage natural resources, water bodies, coastline and forests. Thousands of satellite-based services have developed over the years, and most of them contribute to a more sustainable world".

Mr Patrick McKeever, Mr Brachet's co-President, told the IAF that "UNESCO is eager to investigate space tools of direct relevance to our mandate in education (education for sustainable development, girls' education), science (biosphere reserves, geoparks, oceans, freshwater, disasters), culture (world heritage preservation), communication and information."

The next newsletter will be issued in October 2013, and will be a special extended edition covering news from the IAC in Beijing.