



Austrian Space Law Newsletter

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"Born to Explore"

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Humanities Festival

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EDITORIAL

Irmgard Marboe



The year 2017 marks the 50th anniversary of the legal foundation of international space law, the Outer Space Treaty. Opened for signature on 27 January 1967, it entered into force on 10 October in the same year. This remarkable speed is owed to the fact that only five ratifications were required for its entry into force, including the three depositaries,

the governments of the USSR, the UK and the US. This fulminant start laid the basis for the treaty's success which, with its currently 106 state parties, continues until our time. Most, if not all provisions of the treaty have been so widely accepted that they are even recognized as customary international law, thus binding also non-parties. The continuing authority of the Outer Space Treaty is even more remarkable as the scope and nature of human activity in outer space has changed considerably since the times of the Cold War. Even activities which are not yet undertaken, but only planned for the not too near future, such as space resource mining or active debris removal, are measured against the legal regime of the Outer Space Treaty. Some of these new developments in the area of space law are reflected upon on the following pages.

This current issue of the Austrian Space Law Newsletter contains a number of interviews with eminent persons in the area of space law and policy for which we are particularly grateful. Simonetta Di Pippo, the Director of the United Nations Office for Outer Space Affairs, explains her ideas on how to bring the benefits of space to all humankind, including the UNISPACE+50 process which, by 2018, shall result in an internationally agreed vision for the future. David Kendall, the current Chair of UNCOPUOS, shares his views on the role of the Committee for international cooperation and global understanding. Andreas Geisler, the Head of the Austrian Aeronautics and Space Agency provides insights into the Austrian space sector and its perspectives and goals. Jean-Jacques Tortora, the Director of the European Space Policy Institute, gives an overview of subjects and priorities in the area of space policy, including space security and governance. Franz

Viehböck, the first and only Austrian astronaut, at the margins of the 29th Planetary Congress of the Association of Space Explorers which took place in Austria in autumn 2016, shares experiences and perspectives 25 years after the Austromir mission with Cordula Steinkogler who did not only conduct all the interviews but was also in the ÖWF (Österreichisches Weltraum Forum) organising team of the Planetary Congress. Several events related to space are also reflected in this issue. The NPOC Space Law, together with the George Washington University Space Policy Institute and the Law School of the Beijing Institute of Technology, organised an encounter between US and Chinese space and policy experts to reflect on changing international relations and legal issues facing space activities in June 2016. The launch event of "Women in Aerospace Europe Vienna" took place with representation of the NPOC Space Law, as did the first "Vienna Humanities Festival" with a session on "Space Law". Internationally, the IAF/ITU conference on the Global Information Society (GLIS) in Geneva and the International Astronautical Congress (IAC) in Guadalajara are granted a short reflection. As regards educational activities in space law, events in Warsaw, Glasgow, Paris, Graz and Vienna involved numerous interested young people with a desire to get better understanding and knowledge of this interesting area of law.

We hope that you will enjoy reading this issue of the Austrian Space Law Newsletter.

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Interview

Interview with Simonetta Di Pippo: “The Challenges Faced by the International Community Can Only Be Tackled by Working Together”

Cordula Steinkogler

Simonetta Di Pippo is Director of the United Nations Office for Outer Space Affairs (UNOOSA) since March 2014. She answered our questions about her goals and achievements as Director of UNOOSA, the main challenges currently faced by the international community with regard to the use and exploration of outer space as well as her motivation behind the foundation of Women in Aerospace Europe.

What are your goals as Director of UNOOSA? What do you believe have you achieved so far?

My primary goal as UNOOSA Director is to increase the achievements and efficiency of the Office in fulfilling its vision of bringing the benefits of space to all humankind. We're doing this in a number of ways:

Firstly, we have stepped up our capacity-building efforts to help developing countries access space. Having access to space brings countries a number of advantages since space technologies are widely used in telecommunications, to track weather, improve crops, study disease and manage disaster, amongst many other things.

We have been ramping up our Human Space Technology Initiative (HSTI) to involve more countries in activities related to human spaceflight and make space exploration a truly international effort, inclusive and open to everyone. HSTI activities include the KiboCUBE programme, a partnership with the Japan Aerospace Exploration Agency (JAXA) that offers educational and research institutions from developing countries the opportunity to deploy CubeSats from the Japanese Kibo module of the International Space Station (ISS). Also under the HSTI, an agreement signed in 2016 between UNOOSA and



Simonetta Di Pippo has been Director of UNOOSA since 2014 and was previously Head of the European Space Policy Observatory at Agenzia Spaziale Italiana (ASI) in Brussels. She also served as Director of Human Spaceflight of the European Space Agency from 2008 to 2011, and Director of the Observation of the Universe at ASI from 2002 to 2008.

the China Manned Space Agency will enable member states to conduct space experiments in microgravity conditions on board China's future space station.

In addition, UNOOSA has signed a Memorandum of Understanding with Sierra Nevada Corporation (SNC) to develop the first United Nations space mission in 2021 using SNC's Dream Chaser spacecraft. This will in particular enable developing countries that cannot afford their own standalone space programmes to conduct research in space in pursuit of the Sustainable Development Goals.

This brings me to the second way we are trying to increase our impact: by developing our cooperation with private sec-

The United Nations Office for Outer Space Affairs (UNOOSA) works to bring the benefits of space to humankind. The Office promotes international cooperation in the peaceful uses of outer space and facilitates the use of space science and technology for sustainable economic and social development. It also assists states in establishing legal and regulatory frameworks to govern space activities. UNOOSA serves as the Secretariat for the General Assembly's only committee dealing exclusively with international cooperation in the peaceful uses of outer space: the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS). UNOOSA is located at the United Nations Office at Vienna in Austria.

tor entities. Private industry is an increasingly important player in the space sector and can make significant contributions to the Office's goals and the wider 2030 Agenda for Sustainable Development.

Thirdly, UNOOSA was mandated by the Committee on the Peaceful Uses of Outer Space (COPUOS) to organise UNISPACE+50, which will be an important opportunity for the international community to set the future course of international space cooperation for the benefit of humankind.

Could you tell us a little bit more about UNISPACE+50? What is planned for this event? What do you expect as outcome?

UNISPACE+50 will be a special segment of the June 2018 session of COPUOS to mark the 50th anniversary of the first UN Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE). This will be an opportunity to take stock of the contributions of the three global UNISPACE conferences, held in Vienna in 1968, 1982 and 1999, and to shape the future of space activities.

The outcome of UNISPACE+50 will be "Space2030", an internationally agreed vision for the future course of global space cooperation for the benefit and development of humanity. It will comprise new, collectively negotiated norms to ensure the benefits of space for future generations. Space2030 will be based around four pillars:

- Space accessibility: all communities using and benefitting from space technologies

- Space diplomacy: building and strengthening international cooperation in space activities
- Space economy: development of space-derived economic benefits
- Space society: evolution of society and societal benefits stemming from space-related activities

As part of the preparations for UNISPACE+50, UNOOSA is organising a series of High Level Fora on "space as a driver for socio-economic development" to bring together the broader space community from around the world to consider issues based on these four pillars. The first High Level Forum was held in Dubai in November 2016 and resulted in the "Dubai Declaration", which outlined how to move forward in utilising space for development.

At its June 2016 session, COPUOS also approved seven thematic priorities to be addressed in the framework of the UNISPACE+50 process in order to contribute to Space2030. These are:

- Global partnership in space exploration and innovation
- Legal regime of outer space and global space governance: current and future perspectives
- Enhanced information exchange on space objects and events
- International framework for space weather services
- Strengthened space cooperation for global health
- International cooperation towards low-emission and resilient societies
- Capacity-building for the twenty-first century

One of our main goals for the UNISPACE+50 process and the future of space is to have more collaboration in the sector. We want to build, together with all stakeholders, a new concept of space governance that aims at achieving the Sustainable Development Goals and is based on the peaceful exploration and uses of outer space. In our view, there are two main aspects to be considered in this process: firstly, ensuring that all states can access space and its benefits for all of humankind, and secondly, ensuring that space stays sustainable, thus safeguarding its use by future generations. For that reason the great majority of our initiatives are focused on future space-faring and developing countries, while at the same time UNOOSA facilitates discussions concerning the sustainability of space activities.

In your view, what are currently the most important challenges the international community needs to tackle with regard to the use and exploration of outer space?

The challenges faced by the international community when

it comes to the use and exploration of outer space are complex, but it is clear that whatever these challenges are, they can only be tackled by working together. The international community needs to build stronger partnerships and foster international cooperation in the space sector at all levels, including with private industry.

Another relevant and current issue is the need for open access to data in the space sector. Access to data directly contributes to the distribution of opportunities, broadens economic gain, fosters research and innovation and supports transparent decision-making processes. The global challenges the world faces today, from impacts of climate change to food security, can only be collectively addressed if there is open and fair access to data, so that no one is left behind.

Furthermore, space can only strengthen socio-economic development when we have a better understanding of the needs of end-users and society at large. This requires an integrated approach by the space sector and other sectors, such as environment and climate change, health, water, information and communication technology as well as resource management, to name only a few.

International cooperation is also essential when it comes to space law. The increase in commercial and private activities in the space sector generates demands for regulatory certainty at the national level. But national legislation in the space sector needs to be in accordance with international treaties and agreements. That is essential in meeting the needs of new actors and beneficiaries of spacefaring nations, space middle powers, and emerging space nations.

What role does space law play in your work?

UNOOSA facilitates international space law by working closely with states on this topic and by serving as the Secretariat for COPUOS and its two Subcommittees. COPUOS is the prime multilateral body with a mandate to promote the progressive development of international space law. It is an international forum that enables international cooperation and offers states a place to discuss issues such as the definition and delimitation of outer space, the use of nuclear power sources in outer space or legal mechanisms on space debris mitigation measures. We also support COPUOS working groups, such as the Working Group on the Long-term Sustainability of Outer Space Activities, which elaborates guidelines that represent the standard of good practices in the conduct of space activities.

With the increasing number of states and other actors involved in space activities, effective laws and policies on space

activities at the international level as well as at the national level are needed more and more. UNOOSA helps build the capacity of member states in national and international space law, for example by organising space law workshops and publishing educational materials.

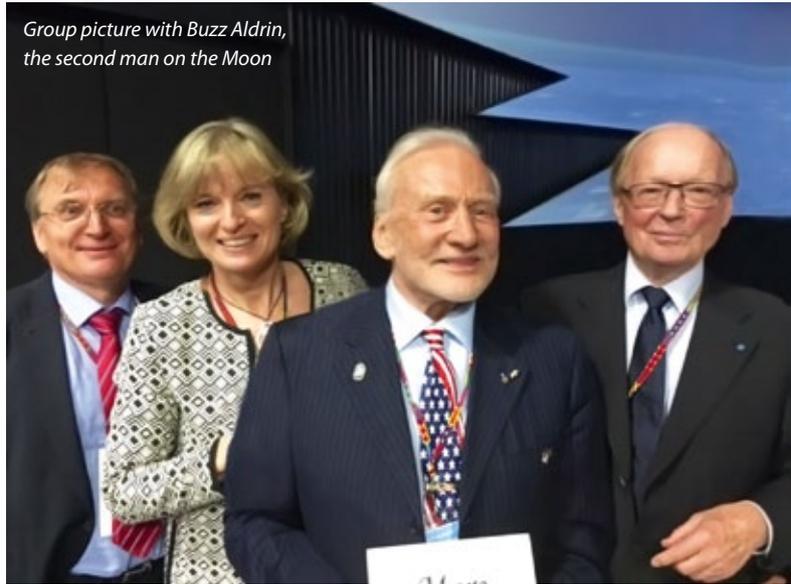
Lastly, UNOOSA discharges the United Nations Secretary General's responsibilities under international space law, including maintaining the United Nations Register of Objects Launched into Outer Space.

You are also co-founder and Honorary President of the association Women in Aerospace (WIA) Europe. What was your motivation behind the foundation of WIA Europe? What do you think is needed to support women in the space sector?

I am very passionate about expanding women's opportunities for leadership in the aerospace sector. Diversity brings new and creative approaches to problems and ensures that women's perspectives are included. I know how difficult it can be for a woman to achieve leadership positions. It has therefore become one of my personal goals to support women in the aerospace field and encourage gender equality in this sector.

To achieve this goal, I jointly founded Women in Aerospace Europe, which offers many advantages for those who become a part of the network. They have access to a number of programmes, such as grants, training workshops, mentoring programmes and networking local groups, and are connected with like-minded professionals in the aerospace community. That is not only very encouraging, but also very enriching because it allows members to exchange experiences, and support and help each other.

While I continue to act as Honorary President of WIA Europe, women in space is also a key focus in my role as Director of UNOOSA. Under the UNISPACE+50 thematic priority of "Capacity-building for the 21st century", the Office is developing a "Space for Women" project to increase the involvement of women and girls in developing countries in science, technology, engineering and mathematics (STEM) programmes and promote gender mainstreaming in the space sector. This project will be launched after UNISPACE+50 in 2018 and we are currently in the research and preparation phase. We are organising with UN Women a Space for Women Expert Meeting in New York from 4 to 6 October 2017 to bring together experts to make recommendations for the project. We welcome the support of the entire global community on this project.



The International Astronautical Congress (IAC) in Guadalajara

Irmgard Marboe

The International Astronautical Federation (IAF), the International Academy of Astronautics (IAA), and the International Institute of Space Law (IISL) are the organisers of the annual International Astronautical Congress (IAC). In 2016, it took place in Guadalajara, the “Silicon Valley” of Mexico.

The general theme of the 67th IAC was “Making space accessible and affordable to all countries”. In Latin-America, an emerging region where an increasing number of states progresses their space programmes, the challenge to make space accessible for all is particularly important. While space technology is becoming more affordable, there are still a lot of challenges to overcome for the development of a robust and sustainable space industry and for realizing the benefits of space activities in society as a whole. The State of Jalisco, of which Guadalajara is the capital, is known for its efforts to join forces of academia, industry and governmental institutions to create a centre of innovation and technological development. A large number of international firms have regional offices and manufacturing facilities in the area in and around Guadalajara, and hundreds of domestic IT companies are headquartered in the city which is the reason for its repu-

tation as the “Silicon Valley” of Mexico. More than 3000 participants came to Guadalajara to attend the congress and take the opportunity to learn more about the latest technological breakthroughs and developments in space exploration and space application. The rich technical programme included a broad variety of scientific disciplines ranging from fundamental physics to communication, navigation, Earth observation, propulsion, launch vehicle development, human space flight, and even behaviour and psychosocial issues in space.

The technical programme was complemented by plenary events, such as the heads of agencies plenary event, a plenary on the digital divide or on climate change. The most popular was the special keynote entitled “Making Humans a Multiplanetary Species” by Elon Musk, the founder and CEO of SpaceX. He discussed the long-term technical challenges that need to be solved to support the creation of a permanent, self-sustaining human presence on Mars. He presented potential architectures and encouraged the representatives of industry, government and the scientific community to collaborate on these developments in the years ahead.

A traditional pillar of the IAC is the IISL Colloquium on Space Law which gathers space law experts and interested people



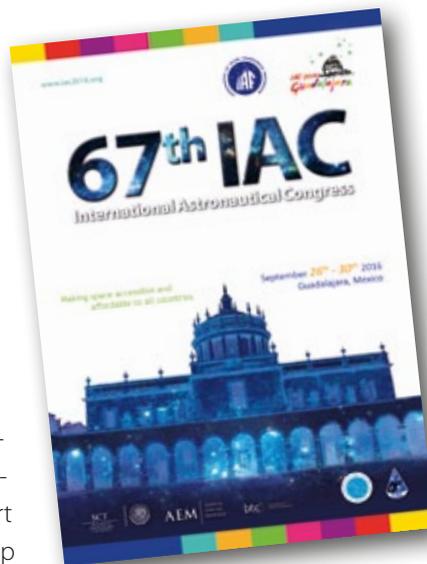
IAC opening ceremony



IISL Award

At the margins of the 67th IAC, Irmgard Marboe was awarded the full membership of the IAA and the "Distinguished Service Award" of the IISL for her "outstanding and dedicated services to the development of international space law and to the international legal community".

to discuss topical questions of space law. One of the liveliest debates concentrated around the issue of "Legal Perspectives on Space Exploration and Off-Earth Mining". Representatives of academia, space agencies and industry exchanged their views about the legality of the taking of space resources. After the initiative of the US by its Commercial Space Launch Competitiveness Act of November 2015, the Government of Luxembourg had announced initiatives to support space mining activities in 2016, to open up opportunities also for companies in Europe including by governmental and legal support. While most of the speakers agreed with respect to the importance of international law, in particular the Outer Space Treaty of 1967, differences arise in the discussion on the interpretation of the principle of the freedom of exploration and use and the obligation of non-discrimination and non-appropriation. The meaning of the term "province of all mankind" of the Outer Space Treaty in contrast to the term "common heritage of mankind" was vividly debated. In this respect, based on a written input given by the representative of the Austrian NPOC Space Law, it was discussed whether the principle of the "common heritage of mankind" could become "obsolete", if the state parties



to the Moon Agreement would not protest against unilateral initiatives of exploitation and granting private property rights. The reaction of the state parties of the Moon Agreement is politically sensitive, as Belgium, the Netherlands, and Austria are, as Luxembourg, members of the European Union, the two former even founding members and politically and economically connected for a long time.

Another input by the NPOC Space Law was provided in the framework of the 29th IAA Symposium on Space Policy,

Regulations and Economics to which Cordula Steinkogler contributed with a presentation on "Legal and Political Challenges of Active Space Debris Removal: Towards an International Normative Framework" addressing the newly emerged topic of active removal versus the mere mitigation of space debris. At the margins of the IAC, Irmgard Marboe was awarded the full membership of the IAA and the "Distinguished Service Award" of the IISL for her "outstanding and dedicated services to the development of international space law and to the international legal community, her rare scholarship, ... and her notable role in the elaboration and adoption of the Austrian Outer Space Act". The 68th IAC will take place in Adelaide, Australia, in September 2017.

Interview

Interview with Andreas Geisler: "The Aerospace Sector Has Its Very Specific Attractiveness"

Cordula Steinkogler



Andreas Geisler assumed the post as Head of the Austrian Aeronautics and Space Agency (Agentur für Luft- und Raumfahrt – ALR) in 2015. We had the chance to speak with him about the first one and a half years in this position, the strengths and challenges of the Austrian space sector, and why he chose to work in the aerospace field.

Since July 2015 you have been the Head of the Austrian Aeronautics and Space Agency. What has the ALR achieved since then? What were, in your view, the most successful and significant events for the ALR and for the Austrian space sector in the past one and a half years?

I believe that the main achievement of the past one and a half years was the successful completion of the Ministerial Council of the European Space Agency (ESA), which took place in Lucerne, Switzerland from 1 to 2 December 2016. During the Council, the ministers in charge of space issues from the 22 ESA member states met to decide on future space activities in Europe. As an agency, our task was to provide the Austrian Ministry for Transport, Innovation and Technology (BMVIT), which is in charge of space activities in Austria, with comprehensive and well-grounded input. For this purpose, we held in-depth discussions with the Austrian space industry and national research institutions, undertook a comprehensive consultation process with ESA, and conducted a critical assessment with our experts in the agency. All in all, we received very positive feedback and I believe we achieved very good framework conditions for the Austrian space sector for the next three years.

The openings of the ESA Business Incubation Centre in Graz, the European Space Education Resource Office Austria (ESE-RO-AT) in Linz and of Harald Posch Testing of Electronic Components TEC-Laboratory Seibersdorf are further highlights. The management of Austria's participation in Ariane 6 has been very challenging and still is. Since 31 May 2016 Copernicus Sentinel data are publicly available with high speed and free of charge via the online portal "Sentinel National Mirror Austria".

The change management for the new strategy of the European Space Policy Institute including the inauguration of the new Director Jean-Jacques Tortora also mirror the dynamics of ALR's activities. Moreover, "New Space" becomes increasingly apparent also in Austria. This is reflected in the 12th and 13th call of our Austrian Space Applications Programme for which applications have increased by 25%. Another successful event was the Association of Space Explorers' Congress with around 100 astronauts from all over the world. Finally, we are also pleased that the ESA Director General Johann-Dietrich Wörner visited Austria already four times since his inauguration.

Why did you choose to work in the space field? What do you like most about your work?

I have to reflect a little bit on my CV in that regard. I attended a technical high school on electronics and communication technology, because I originally wanted to become a pilot. However, after finishing school, I wanted to get a "broader picture of the world" and decided to study biology and economics at the University of Vienna, where I joined an urban ecology research team and concentrated on material flow and energy analyses. Interested in managing research programmes, I then worked at the Federal Ministry of Science and Research, where I was in charge of the internationalisati-

on of Austrian environmental research activities. Looking for a further development path, I applied for the programme management of the aeronautics research programme TAKE OFF of the former Austrian Space Agency because I was still very interested in aeronautics in my private life and could combine this interest with knowledge of the Austrian innovation system. During this time, I was also appointed as expert for the 5th and 6th EU framework programme for aeronautics, joined the Advisory Council for Aviation Research and Innovation in Europe (ACARE) and the Airbus Intergovernmental Committee and was also part of the team that set up the Austrian aeronautics research strategy. In 2009, I took the opportunity to head the fast-growing energy team of the Austrian Research Promotion Agency (FFG). So I was lucky to gain experience in several fields of research funding, such as environmental research, the Austrian and European innovation sector, energy, mobility, aeronautics and also a little bit in the space sector. However, I was not a space expert.

In 2015, when the position of the Head of the ALR sadly became vacant, I decided to apply because I felt that the aerospace sector has its very specific attractiveness that was still working in me, so to speak. After I was appointed for the position, from day one in my new job, I started to learn things I did not know about the space sector and that has been, still is, and will surely continue to be a very interesting and rewarding experience.

What are your main objectives as Head of the ALR?

My main objective is to assure a good and sustainable framework for the further development of a competitive Austrian space sector. This is based on the implementation of the goals defined in the Austrian Space Strategy and the advancement of the Space Strategy with regard to the fast-changing environment according to the space strategies of ESA, the European Union and the private sector. The operationalisation of these goals has to be achieved on the national, European (ESA, EU) and international level. This means we have to take very different sectors into account:

- the upstream sector which comprises mainly the hardware and software for carrying out space activities, such as the development of satellites, as well as the research and science included in space missions,
- the midstream sector which includes the launcher business as well as the provision of raw data for example for Earth observation services and
- the downstream sector which mainly concerns the provision of Earth observation, telecommunication, navigati-

The Aeronautics and Space Agency (ALR) of the Austrian Research Promotion Agency (FFG) is the management interface between Austrian and international space actors including industry, research institutes, ESA, EUMETSAT, EU, and national space agencies such as DLR, CNES, SSO, ASI and NASA. The Agency implements the Austrian Space Strategy and the Austrian Space Applications Programme and represents Austria in national, European and international space boards. Austrian representation in the European Space Agency is of major strategic importance in this context. The main objective of the ALR is to support the competitiveness of the Austrian space industry and research institutes in order to foster economic and technological development and the advancement of space sciences. To this end, the Agency also supports educational and awareness-raising activities.

on and other space related services for the end user. The downstream sector is a very lively element at the moment with the setting up of the collaborative ground segment for the Copernicus programme as well as new applications for the Galileo constellation and a multitude of new telecommunication activities.

These different sectors imply very different goals that we need to support.

How does the ALR support the Austrian space sector?

Firstly, we provide a solid base of information for the Ministry for Transport, Innovation and Technology. This includes ensuring that the Ministry obtains all relevant information needed to financially subscribe to ESA and EUMETSAT programmes and thus sufficiently support national competences and activities for successful procurement processes. Very importantly we also provide and steadily advance a knowledge base on the specific strategies and competences of the Austrian, European and international space actors from the industry and the research side.

Based on tailored financing and funding to support the strategies and activities of the Austrian space actors, we are responsible for the operational day to day business. This includes managing Austria's participation in ESA, EUMETSAT, Copernicus, Galileo and Horizon 2020, achieving good results

from the Austrian Space Applications Programme (ASAP), as well as funding several space educational activities in Austria, such as the Alpbach Summer School. This means that from the operational perspective we do not only try to efficiently support existing competences but we also seek to look for and support new opportunities for the Austrian space actors.

What are in your opinion the greatest strengths of the Austrian space sector? In which areas do you think Austria will play an important role in the future?

The Austrian space sector has different fields of expertise which have mainly evolved over the last 30 years. In the upstream sector the Austrian competences especially lie in the area of satellite structures, mechanisms, thermal protection and on-board computers and electronics. The sector also provides hardware for launchers, in particular for the European heavy lift launch vehicle Ariane. In addition, there are multiple activities in the telecommunication and navigation sector, for instance specific test equipment for satellites, signal propagation studies for ultra-high frequency bands, GNSS receivers and quantum communication technologies.

The specific capabilities of the Austrian space sector are reflected in the overall distribution of the Austrian participation in ESA, where we have two main foci: one is Earth observation with a fast-developing downstream sector, mainly due to Copernicus, and the other is telecommunications and navigation. In addition, via the ESA General Support Technology Programme (GSTP) we are supporting the development of technologies that are needed for example for space situational awareness, the advancement of space qualified materials, 3D printing, electronics and micro propulsion. PRODEX is another mechanism to ensure that scientific instruments developed in Austria, such as magnetometers, have the possibility to participate in ESA missions. In addition, Austria is increasingly involved in the small satellite business. The third Austrian nanosatellite was launched in June 2017, the fourth – which is contracted by ESA – has just passed a major milestone, and number five is being studied.

Another particular strength of the Austrian space sector is in the area of space policy and space law. Vienna is very well positioned in this field as the seat of the United Nations Office for Outer Space Affairs (UNOOSA) and the United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS), as well as the European Space Policy Institute (ESPI) and the National Point of Contact for Space Law Austria (NPOC). I believe that this competence will become increasingly important in the future and will play an increasing role for the ALR.

Is there anything that should, in your view, be improved with regard to the Austrian involvement in space activities? Are there any activities that Austria is not involved in at the moment but that you believe the Austrian space sector should get involved in in the future? If so, how could this be achieved?

Austria is a medium space country, meaning that we do not have a prime space company. We therefore need to find ways to efficiently integrate the Austrian competences into the different missions and upstream activities that are going to be developed by ESA in the future. This is not an easy task because when you step into the space business, you have to do it very carefully and you have to increase the complexity of the products that you offer step by step. Each increase in complexity bears a high risk and your products really need to be “flight-proven” before you take the next step. The establishment of new competences therefore shows a rather slow path compared to other industries like the IT or car sector for instance. Nevertheless, the so called “New Space” activities, which are calling for an integration of components “off the shelf”, not yet specifically designed hardware for space activities, also offer new opportunities. Austrian industry is already part of these activities, for instance the OneWeb constellation, and will certainly try to increase its involvement as much as possible. We are carefully managing the continuous adaptation of our portfolio and trying to set further seeds for example in big data Earth observation services, advanced layer manufacturing, new composite products, micro propulsion, electronics, laser tracking and quantum communication technology.

For the upstream and midstream sector, we need to strengthen competences at system level and for high complexity products and concentrate on niches with leverage effects. The exploitation of synergies of multinational groups and concurrent developments with primes and the launching of new space activities, such as megaconstellations, launchers and small satellites, are essential for industry as well as for finding ways to commercialise know-how for research establishments. In the downstream sector, we need to further expand big data competencies and to establish a critical mass of infrastructures. The sector also has to develop new business models with the non-space world but we have to keep in mind that ESA industrial policy is the precondition for competitiveness.

In your opinion, what are the most important challenges today with regard to space activities that need to

be tackled at the European level and by the international community?

Even though the European Commission and ESA have each established a space strategy and have also agreed on a joint statement, which presents a common roof for their individual space strategies, I am of the opinion, that there is still a lack of a real European space vision and strategy, which sets forth a clear role for Europe as a space power in the global context. Today, we have many individual European space actors on the international stage. The role and influence of Europe could be strengthened, if Europe would appear as one single actor at the international level, with an overall strategy for areas such as launchers, human spaceflight, satellite navigation, Earth observation or space surveillance and tracking (SST). Moreover, in many of these areas Europe is dependent on other international space actors, in particular the United States. For example, the European SST network, that is going to be established in the coming years, mainly builds upon data from the United States. The situation is similar in many other areas.

A clear common European strategy would enable Europe to really have a say on the issues that, in my view, urgently need to be addressed at the international level, such as the management of space traffic and solutions for the increasingly crowded orbits. The issue of space debris is a growing problem, in particular against the background of new developments such as megaconstellations and small satellite activities, which entail a drastic increase of the number of objects in outer space. Having a background in the environmental field, I believe it is crucial to apply the sustainability principle also in space and clean up what has been shot up into Earth orbit. There is an urgent need to come up with new solutions in this field and Europe could take the lead in niches at least. The technical possibilities and developments should also be accompanied by modern international rules. That is why ALR is committed to supporting the development of the UNCO-PUOS Guidelines for the long-term sustainability of outer space activities.



“Big Data” at the Global Conference on Space and the Information Society (GLIS)

Irmgard Marboe

The International Astronautical Federation (IAF), together with the International Telecommunication Union (ITU), organised the Global Conference on Space and the Information Society (GLIS) in Geneva. At the plenary on “Big Data – Information Society” technical and legal aspects of the increasing amount of available data were discussed.

The cooperation between the IAF and the ITU on the “information society” at the occasion of the organisation of GLIS between 6 and 7 June 2016 was both logical and surprising. Logical, because both organisations are dealing with technology connecting states and people worldwide. Surprising, because of the very different history and nature of the two organisations. The ITU, founded in 1865 as the International Te-

legraph Union, is the oldest intergovernmental organisation aiming at the coordination of frequencies in order to enable international communication and avoid harmful interference. These aims precede the “Space Age” for almost 100 years. Nevertheless, the ITU was able to adapt to new times and needs and included the administration of spectrum/orbit resources in its scope of work. One of its greatest innovations was the introduction and acceptance of so-called “sector members”, private sector entities and academic institution, currently 800, which participate in agenda setting and in the discussions. Nevertheless, the ITU remained the single authoritative intergovernmental body to develop the Radio Regulations which provide the rules for frequency allocation and coordination and which are binding upon all states.

The IAF, on the other hand, is a non-governmental organisation founded in 1951 to foster international cooperation between institutions, societies, and associations for the advancement of astronautics for peaceful purposes and the dissemination of scientific and technical information related to space. It is driven by the innovative spirit of its members, almost everybody working pro bono but enjoying the possibility to connect, exchange ideas, and cooperate. Sometimes, administration and innovative spirits may conflict. The perhaps less inspiring administrative tasks of the ITU are, however, the necessary prerequisites and tools for enthusiastic engineers and scientists to make their dreams come true. At the GLIS conference, the two worlds were brought together to discuss issues of common interest and concern.

The different plenaries dealt with “The ITU and its Impact on Space Activities” and the “Sustainable Development Goals (SDG) and the Contribution of Satellite Communication”. They facilitated an exchange of ideas in the framework of “Space Economy meets Information Economy” and addressed “Space Service and Security”. The plenary on “Big Data – Information Society” discussed opportunities and challenges connected to the use of Big Data from, with, and for space systems. The speakers, including Josef Aschbacher, the new ESA Director for Earth Observation, Roberto Battiston, the President of the Italian Space Agency, Ingo Baumann, lawyer at BHO Legal, Hector Fenech, Director of EUTELSAT Future Satellite Systems, and Andreas Veispak from the European Commission, provided insights into the ongoing discussions and presented options and ways ahead to better utilise the benefits of Big Data for the human society. The technical challenges discussed included the development of a robust data distribution and access architecture, improving the usability and interoperability of Earth observation data with other data sources, as well



as the translation of space data into products relevant for the society and the decision makers.

From the legal perspective, the issue of privacy and protection of personal data was addressed. International human rights documents, such as the UN Covenant on Civil and Political Rights and the European Convention on Human Rights provide for the respect for everyone’s private and family life, home and correspondence. These instruments are binding upon states and have to be implemented by national legal and other appropriate measures. In addition, for the members of the European Union, directives on data protection provide that personal data must only be collected for specified and legitimate purposes, in a way that is adequate, relevant and not excessive in relation to the purpose. The data must be accurate and kept up to date. They must not be kept for longer than necessary for the purposes, except for historical, statistical or scientific use, against appropriate safeguards. In addition, data may be processed only if the data subject has given his/her consent or if it is necessary for the performance of a contract or a legal obligation, to protect the vital interests of the data subject or for the performance of a task carried out in the public interest or in the exercise of official authority. It was discussed to what extent the collection of “Big Data” was or could be made in conformity with these legal rules and principles.

A few days before the GLIS conference, the European Union had adopted the new General Data Protection Regulation (EU 2016/679), which would be applicable from May 2018 onward. Its aim is to establish a uniform European regime on the protection of data and harmonise the different approaches adopted in member states. On the one hand, it confirms all the principles developed so far in previous legal instruments. On the other, it adds a number of mechanisms which should ensure that these principles are complied with in practice and can be verified and controlled more easily. Member states will undoubtedly need a certain period of time to implement these new mechanisms and explain them to the other parts of the society. The plenary and the audience discussed with great interest to what extent the new Regulation would affect the handling of “Big Data” in the years to come.

Interview

Interview with David Kendall: "The transparency and confidence building facilitated by COPUOS is vital and necessary to achieve a global space understanding"

Cordula Steinkogler

David Kendall is Chairman of the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) for the period of 2016-2017. At the COPUOS session in June 2016 we had the chance to meet him at the Vienna International Centre to speak to him about why he chose to work in the space field, what he is trying to achieve during his COPUOS chairmanship and how the role of the Committee could be enhanced.

Could you tell us something about your background and involvement in space activities? Why did you choose to work in the space field and how did you get to work at the Canadian Space Agency?

The first satellite Sputnik went up into space when I was nine years old. So I was part of what you might call the "Space Age". During my formative years, space was very different than it is today. It was a buzz all the time with the media full of thrilling new exploits in space. Everything that went up was new and different, many scientific discoveries were made. With every mission into space something new would come back. It was an incredibly exciting time and I just became enthralled with it.

During my undergraduate degree in the UK there were no space activities at the university I went to, but with a little bit of serendipity I ended up at a quite young university in Canada, the University of Calgary, which had as part of the physics department a prominent space group. This group was developing a new, innovative experiment for a series of ionospheric satellites that were being built in Canada at that time. I was not personally involved with the satellite instruments, except through interaction with my fellow graduate students, but I



David Kendall holds a Bachelor of Science degree in Physics from Swansea University (United Kingdom) and a Master of Science and a PhD in Atmospheric Physics from the University

of Calgary (Canada). After working in private industry as an R&D scientist and for the National Research Council of Canada, he joined the Canadian Space Agency upon its creation in 1989, where he held various positions including Director General of the Space Science and Technology and Space Science branches of the agency as well as Senior Executive Advisor to the President. He is also a faculty member of the International Space University (ISU) and an academician of the International Academy of Astronautics (IAA). He has acted in various capacities on a number of international bodies, including Bureau Member of the Committee on Space Research (COSPAR), Chairman of the Inter-Agency Space Debris Coordination Committee (IADC) and Vice-President of the International Astronautical Federation (IAF). Currently he is Chairman of the United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS).



UNCOPUOS meets annually in Vienna, Austria, to discuss questions relating to current and future activities in space

did get involved with high altitude balloons for atmospheric measurements. Since my background is in experimental space physics, especially in spectroscopy, I was building far-infrared interferometers and conducting measurements in the stratosphere. At the time, the destruction of the ozone layer was starting to become an issue, so for my thesis work, I developed instruments to find out more about this depletion. After my studies, I was offered a job at a Canadian company that was developing and building the type of spectrometers I had constructed for my doctoral thesis, although with infinitely more sophistication! I worked there for four years but then decided that I wanted to get back to my scientific roots and accepted a position as a programme scientist at the Space Science Division of the National Research Council of Canada. When the Space Agency was created in 1989, my position was transferred over to the newly formed Agency. In conclusion, I would say I was very lucky to get many great opportunities with amazing people during a very exciting time in the development of space activities and I was also in the right place at the right time to be able to take advantage of these opportunities that allowed me to pursue a career in such an interesting field.

What was your motivation for becoming Chair of COPUOS? What do you think is so special about this Committee?

During my work at the Canadian Space Agency, I gradually became more and more interested in the policy aspects of my work rather than just the scientific and technical issues. I also became increasingly interested in the international considerations of where space was going and what organisations influenced these directions. I realised that it is crucial to look at international space activities in a holistic, global way and the most global of the space governance bodies is clearly COPUOS.

I have held Bureau positions with both the Committee on Space Research (COSPAR) and the International Astronautical Federation (IAF), and in 2008 an opportunity arose to attend the Scientific and Technical Subcommittee (STSC) of COPUOS. From that time onwards, I regularly attended the STSC and the main Committee, including as head of the Canadian delegation. Gradually over the years I became very interested in the processes and the ways of working of the Committee and its Subcommittees and recognized the unique contribution that the Committee was making to global space governance. From the outside, it might seem that COPUOS moves very slowly and does not achieve very much, whereas, in reality, it is accomplishing a great deal. It makes progress through dialogue, through the transparency of the statements, through the confidence building of the meetings and the discussions that go on inside and outside of the regular meetings and through the collegial, intense work of the Working Groups that are tackling some very challenging issues. This transparency and confidence building facilitated by COPUOS is in my view vital and necessary to achieve a global space understanding.

While I was very interested in the work of the Committee, I honestly had no aspirations to become the chairman. However, when the Western European and Others Group (WEOG) needed to nominate the chair, my name was put forward and that led to my nomination by WEOG for this position.

What are you trying to achieve during your chairmanship? What are your main priorities as Chair?

Firstly, I would very much like to help reduce the occasional level of tension in the Committee. Due to geopolitics, the Committee can be, from time to time, relatively tense. I continue to be impressed by the competency, engagement and positive intentions of the delegates who represent the various states in the Committee, however, they have to follow the

instructions they receive from their governments. This can lead to stress and to tensions, because what we are talking about here is much bigger than just the space business, it is a reflection of what is happening globally in the world of diplomacy. I would therefore very much like to see if I can work, along with my delegation, on ways to help reduce these tensions, although I am certainly realistic enough to know that this is, in many ways, outside of my control.

Secondly, the Canadian delegation and I are very interested in the question of safety, security and sustainability of outer space activities. I think that we have made tremendous progress on this question over the past ten years. If I can move that progress forward and help achieve better understanding between the various points of view among member states, then clearly this would be a great achievement.

My third priority is to work with both the Legal Subcommittee and the Scientific and Technical Subcommittee to encourage both Subcommittees to work together more closely. This is something that I feel very strongly about and which is also of great importance in the UNISPACE+50 process. If we take a look at the seven thematic priorities for UNISPACE+50 that have been approved by the Committee, most of them have a strong relationship with both the scientific and technical as well as the legal and policy domains. If we continue to discuss these thematic priorities in just the one or the other of the two Subcommittees, we will be considering only half of the issues.

This leads me to the last of my priorities which is UNISPACE+50. With UNISPACE+50 we have the opportunity to develop some major new thrusts with respect to the agenda of COPUOS over the next decade, which is highly important. The ideas that are coming forward through the UNISPACE+50 process are crucial for COPUOS to remain relevant and deal with the many current challenges related to the governance of outer space activities. Working through the UNISPACE+50 Steering Committee, alongside the United Nations Office for Outer Space Affairs (UNOOSA) and with the support of all delegations, I am optimistic that we will collectively ensure that we will have a successful outcome of this process in June 2018.

What are in your view the most challenging questions discussed in COPUOS at the moment?

In my view, the most challenging issue being discussed by the Committee currently is the long-term sustainability of outer space activities and the work of the Working Group of the same name. It is essential to find ways to lessen the risk of difficult situations in space, such as, for instance, the potenti-

al loss of space assets due to collisions with space debris. We have to work together to strengthen current guidelines and set new standards to guide space actors on how to mitigate risks and ensure the sustainability of space activities for the future.

One of the biggest challenges in this context is that the question of sustainability is linked to the safety and security of space activities. These three issues go together but only partly fall under the remit of COPUOS. There is an increasing realisation that the peaceful use of outer space and the disarmament aspects cannot be completely separated and that we have to work together to address these issues in a holistic way. It is very encouraging to see that positive steps are already being taken in this direction, such as the 2013 report of the Group of Governmental Experts (GGE) on transparency and confidence-building measures in outer space activities, as well as the joint meeting of the Fourth Committee (Special Political and Decolonization) and the First Committee (Disarmament and International Security) of the United Nations General Assembly that occurred in 2015 with a follow-on meeting that will take place in October of 2017.

Are there any particular topics or issues that are not discussed in the Committee at the moment but that you believe should be discussed in the future?

One topic that is not discussed in COPUOS under a specific agenda item at the moment is space exploration, which has been put forward as a thematic priority for UNISPACE+50. COPUOS clearly has, as a priority, a mandate to provide support to emerging space-faring nations in order to build up their space capabilities to benefit their citizens and that, I strongly believe, should remain its focus. However, we should not shy away from also discussing space exploration and innovation in the Committee. More and more countries are now becoming interested in this subject; it is a topic that excites interest in all people; it is one of those universal desires we all share. Therefore, I am encouraged to see this topic being discussed as a potential future COPUOS agenda item.

Do you have any general suggestions or recommendations for the future work and role of the Committee? How do you think could the role of the Committee be enhanced?

Firstly, I believe that the UNISPACE+50 process has the potential to be a very significant event for the future work of COPUOS. I am very hopeful that if we continue to structure the process leading up to UNISPACE+50 in a dynamic and trans-

The Committee on the Peaceful Uses of Outer Space (COPUOS) was set up by the United Nations General Assembly in 1959 and is the Assembly's only committee dealing exclusively with international cooperation on the peaceful uses of outer space. The mandate of the Committee and its two Subcommittees (the Legal Subcommittee and the Scientific and Technical Subcommittee) aims at strengthening the international legal regime governing outer space activities as well as at supporting efforts to maximize the benefits of the use of space science and technology and their applications. The Committee is serviced by the United Nations Office for Outer Space Affairs and meets annually in Vienna, Austria, to discuss questions relating to current and future activities in space, such as space debris, space weather, the threat from asteroids, the safe use of nuclear power in outer space, climate change and questions concerning space law and national space legislation.

parent way we will be able to achieve something very significant in 2018. The seven thematic priorities for UNISPACE+50 are well thought out and cover all topics that I believe are relevant over the next decade. We have developed the objective of each of the thematic priorities and have established mechanisms to start the work. Now we must collectively shape something that is a title and objective into a deliverable that can move us forward in the future and achieve a concrete outcome.

Other challenges we are facing in COPUOS right now, and that I would like to see discussed and proactively addressed, are two structural issues. One is how to get the two Subcommittees to work more closely together, which I have already mentioned. The other structural challenge we have is how to assimilate the opinions, aspirations and voice of the commercial space sector. Commercial space is clearly a major driver of current space activities and will only become stronger, leading to governance challenges that need to be addressed. The traditional way of working, where the national space agencies were the primary actors to develop space technologies and assets, missions and applications, is now I would say passé and this is becoming more and more evident. Governments are now looking towards the private sector to drive the space

business. So the question to COPUOS is how to ensure that those voices are heard within the Committee, because they are going to be important. The development of a series of High Level Forums provides a possible way forward, however, transparency and inclusivity are going to be key drivers.

In your view, what role does space law play in COPUOS and what could be done to enhance the role and development of space law in and by the Committee?

How and whether to update the existing space treaties and to develop new space law is a difficult and sensitive question. Currently, the Committee is developing so-called "soft law" instruments, non-binding guidelines and standards, rather than binding treaties. Many states believe, and I tend to agree with this view, that non-binding mechanisms should be an intermediate step and that the final aim should be to have binding treaties, for instance, on space debris or other critical aspects relating to the long-term sustainability of space activities.

As we talk more and more about this idea in the Committee, I see an increasing openness on the part of states that this might be a way forward and that, when the time is favourable, binding treaties or agreements about certain aspects of the ways we conduct space activities might be possible.

Looking back at your career, what is the advice you would give young people today?

I would say my advice is twofold: have a plan but be flexible. I think everybody should have a general idea of where they would like to be in five years' time. Ask yourself: What is your educational plan? What area of a career would you like? What level of management would you like to achieve? Even, where would you like to live? All these questions should lead one to be ready for new opportunities as they arise or to follow a new path if the current one is unsatisfying.

I am convinced that individuals should try and be open to new ideas and opportunities that come up. Each new opportunity gives you the prospect to continue to develop yourself as a person and, often, other opportunities start to arise which you have not even thought of before and which lead you into a completely new direction.

I sometimes look back at my career and if somebody had told me 30 years ago that I would be the Chair of COPUOS, I would not have believed it. I did not plan it; it is one of those things that came along at the right time and I was open to it. And this type of "luck" has happened throughout my career. Serendipity has played a big part in my life but I think that is because I have been open to ideas that have come along.



Three expert panels discussed the international aspects of the legal and policy issues involving the developing private sector activity in space

NPOC Symposium "Looking to the Future: Changing International Relations and Legal Issues Facing Space Activities"

Cordula Steinkogler

On 11 June 2016, the National Point of Contact for Space Law Austria (NPOC) organised a Symposium entitled "Looking to the Future: Changing International Relations and Legal Issues Facing Space Activities" in cooperation with the Institute of Space Law at the Beijing Institute of Technology and the George Washington University Space Policy Institute. The Symposium took place at the Law Faculty of the University of Vienna, at the margins of the fifty-ninth session of the UN Committee on the Peaceful Uses of Outer Space. Three panels of renowned international experts discussed the international aspects of the legal and policy issues involving the developing private sector activity in space.

The first panel, moderated by Irmgard Marboe, Professor at the University of Vienna Faculty of Law and Head of the NPOC Space Law Austria, analysed the relationships between the major space-faring nations, primarily the United States, Russia, China, and European states, from the perspective of political science. The discussion focused on the increasing importance of the role of China in space activities as well as on trends and developments in the relationship between China and the United States as well as between China and Russia.

The second panel, moderated by Henry Hertzfeld, Professor at the George Washington University Space Policy Institute, turned to the legal, financial and policy challenges entailed by the increasing involvement of the private sector in space activities. The discussion concentrated on the applicability of existing space law to private sector activities as well as on new national legislation regulating private space activities, such as the recent US Commercial Space Launch Competitiveness Act.

The third panel, moderated by Li Shouping, Professor at the Beijing Institute of Technology Law School, focused on the

issue of long-term sustainability of outer space activities. The discussion highlighted the work of the Working Group on the long-term sustainability of outer space activities in the Scientific and Technical Subcommittee of the UN Committee on the Peaceful Uses of Outer Space (COPUOS). Although the guidelines that are currently being developed by the Working Group will not be legally binding, they can serve as valuable guidance for space actors.

The Symposium was organised at the margins of the fifty-ninth session of the UN Committee on the Peaceful Uses of Outer Space which took place from 8 to 17 June 2016 in Vienna. This enabled diplomats and delegates to COPUOS to attend the Symposium together with international experts from academia and practice, as well as students. In total, more than 60 persons attended the event.

The following speakers participated in the Symposium:

- Scott Pace, Professor at the George Washington University Space Policy Institute
- Michael Simpson, Executive Director of the Secure World Foundation
- Pascale Ehrenfreund, Director of the German Aerospace Center (DLR)
- Susanne Weigelin-Schwiedrzik, Professor and former Vice-Rector of the University of Vienna
- Diane Howard, Professor at Embry-Riddle Aeronautical University
- Zhenjun Zhang, Professor at the China Institute of Space Law
- Peter Hulsroj, former Director of the European Space Policy Institute
- Marco Aliberti, Research Fellow at the European Space Policy Institute
- Ivan Kosenkov, Skolkovo Foundation

Interview

Interview with Jean-Jacques Tortora: “Vienna is certainly the best place to discuss global space policy issues”

Cordula Steinkogler



Jean-Jacques Tortora is the Director of the European Space Policy Institute (ESPI) since June 2016. We met him at the Institute in Vienna to speak with him about the role of ESPI, his aims as Director of the Institute and today's most important space policy issues.

What is in your view ESPI's main role?

In my view ESPI should be the main forum to discuss European space policy related issues. I believe that as an independent think tank ESPI should be a key contributor to the joint reflections that we need to have on these issues, especially because there is no other think tank in Europe focussing on space related matters.

Independence is of great importance in this respect since the various stakeholders involved in space affairs often have diverging interests, for instance regarding the use of space, the distribution of industrial activities throughout Europe, or the governance between the European Space Agency (ESA), the European Commission (EC) and the member states. Therefore, it is crucial for ESPI to be equidistant from all key stakeholders. The location in Vienna is a great advantage in this respect.

While Paris is certainly a good place to debate ESA matters and Brussels is the best place to discuss European Union (EU) related matters, Vienna is definitely the best place to discuss global space policy issues. ESPI is a European institute which is meant to provide European decision makers with informed views on issues relevant to European space activities but this cannot be achieved by focusing only on the European dimen-

sion. Space is a shared resource and therefore it is important to know the views of other space powers. With the presence of the United Nations (UN) and especially the UN Committee on the Peaceful Uses of Outer Space (COPUOS), Vienna is the right place for that.

What are your aims as the Director of ESPI?

My highest ambition is to make ESPI a central place for debating and I would like to attract the key players and experts having a say on space issues. In addition, I would like to increase the visibility of ESPI on the international scene as a contributor to the reflections on space policy issues. It should not only be a matter of meeting and debating but also of coming up with substantial and relevant recommendations. To reach this objective I believe that ESPI should further strengthen some in-house expertise and be a key player in three areas:

The first area is space economy. Space economy is certainly the main criterion stakeholders consider when weighing the opportunity to invest in space. However, today there is no dedicated European organisation focusing on the analysis of issues related to space economy.

The second area is the monitoring of space activities and space related developments worldwide. We should be aware of what the United States, Russia, China but also Korea, India, or Japan are doing in space. Also, we should not neglect any of the current initiatives and should therefore take into account governmental and private activities.

The third area is space law. While I am not trying to establish ESPI as an expert at the level of universities which have developed a strong expertise in space law, ESPI should be a member of the club and should know what is going on in this area. I think this is important because any finding, recommendation or proposal that ESPI will make in the future should include the requirements of space law. To reach this objective we must be aware of the international trends and the concerns of the space actors with regard to legal issues. This also forms part of the monitoring of global space activities. Space law is certainly a good way to anticipate the intentions, objectives, policies and strategies of the key players in the space field.

In your opinion, what are the most important European space policy issues today? Which issues do you believe ESPI should particularly focus on in its work?

I believe that currently the most important issue at stake regarding European space policy is security in space. In my

view, the primary objective of European space policy should be to ensure that space remains accessible for Europe and safe to operate. This has many implications:

Firstly, to ensure that space is accessible for Europe is not only a matter of space transportation, but also of access to the right technologies, delivering the highest level of performance at affordable conditions with the required level of autonomy. The main question is whether Europe wants to be a space power or just a spacefaring "nation". There is a slight difference between these two concepts. While a spacefaring nation certainly has some capabilities to act in space, a space power can do whatever it wants in space without having to request authorisation from anybody, which means that it must achieve a substantial level of autonomy in technologies. In Europe at the moment, we are relying on many non-European sources of supply. Europe can do whatever it wants in space but only as long as the critical technology providers do not object. I believe that the question should be raised at the political level: Is this the positioning that Europe wants in space or should we reflect on higher ambitions?

The second aspect is to ensure that space remains safe to operate. This issue of security in space is a growing concern

for many reasons. One example is the New Space initiative. The New Space entails new threats due to the multiplication of objects that will be launched into space, the multiplication of debris in outer space and the multiplication of space actors. Another concern is the increasing hidden weaponization of outer space. We need to be aware that outer space is a common good that is used by most citizens on our planet on a daily basis. At the same time, no global governance has been established so far.

Several questions that arise in this regard need to be openly discussed at the international level: How can we ensure that all the various stakeholders can participate in the discussions, not only the growing number of governments, but also the private players? How can we establish the necessary regulations and how will we make these regulations binding? What kind of policy will we implement if there is a breach of these regulations? We need to engage in inclusive discussions that allow for fast reactions to the developments in space and to agree on a legal framework that defines how to behave in the current space environment.

Could you give us an overview of upcoming ESPI events and activities?

We are planning to organise a workshop on Galileo which is planned as a follow-up of an event on the same topic that we organised last year and which will be based on the findings of a study we are elaborating at the moment regarding the governance of GNSS systems worldwide. The discussion will focus on the deployment of the competing or complementary GNSS infrastructures GPS, Galileo, GLONASS and BeiDou.

We would also like to contribute through a workshop to take place in early July at ESA/ESRIN in Frascati to the discussions regarding the digital agenda for science and in particular the challenges of the fair and open distribution of space related scientific data.

We will also continue to organise evening events in ESPI during the COPUOS meetings.

In addition, we will continue our contribution to the preparation of UNISPACE+50. Last year, we had a successful conference on space and sustainable development and we will continue to accompany the development of the reflections in this regard together with UNOOSA.

Finally, we will also organise our annual autumn conference in September, which will be dedicated to the topic of innovation and space economy.

The European Space Policy Institute (ESPI) provides decision makers with an informed view on issues relevant to Europe's space activities and acts as an independent platform for developing positions and strategies. The main goals of the Institute include the promotion of European space policy on a global level by setting up an active forum for analysis and discussion and the facilitation of European space policy research, academic interaction, and the exchange of information and opinions between those interested in space policy. The Institute was established in 2003 by its two Founding Members the European Space Agency (ESA) and the Austrian Research Promotion Agency (FFG). It is funded by the two Founding Members and its regular Members, which include various institutions drawn from European agencies, operators and private companies as well as the European Commission. It is based in Vienna, Austria.



“Born to Explore”: the 29th Planetary Congress of the Association of Space Explorers

Cordula Steinkogler

The Association of Space Explorers (ASE) brings together over 400 astronauts and cosmonauts from 37 nations. In 2016, the annual ASE Congress, the 29th Planetary Congress, was held in Vienna, Austria, from 3 to 7 October 2016. During the “Community Day” on 5 October 2016, the 100 participating astronauts and cosmonauts conveyed the fascination of space exploration across Austria.

Since 1985, the ASE convenes for the Planetary Congress each year in a different country. In 2016, the Congress took place in Austria for the second time and was hosted by the Austrian cosmonaut Franz Viehböck in cooperation with the Austrian Space Forum (ÖWF). It was organised at the occasion of the 25th anniversary of Franz Viehböck’s spaceflight during the Austromir mission in 1991. Under the theme “Born to Explore” 100 astronauts and cosmonauts from all over the world came together for five days in Vienna to participate in technical and scientific lectures as well as in cultural events and outreach activities.

The Congress is the organisation’s primary forum for professional exchange among US, Russian and international astronauts and cosmonauts. Therefore, the main part of the

Congress in Vienna consisted of technical sessions, which included keynote speeches, presentations as well as panel discussions. They were designed to combine the experiences and results from human spaceflight activities with some of the main challenges faced by today’s society, ranging from

The Association of Space Explorers (ASE) is an international non-profit professional and educational organisation which was founded in 1985 by small group of US, Russian and international fliers. Today its membership has grown to over 400 flown astronauts and cosmonauts from 37 nations. ASE supports the advancement of space exploration by providing opportunities for communication among space professionals at the international level and seeks to raise interest in science, technology, engineering and mathematics education. ASE provides its members with opportunities to communicate their unique perspective of Earth to help stimulate humanity’s sense of responsibility for our home planet.



From left to right: Alexey Leonov at the ASE opening ceremony at the House of Industry in Vienna; Chris Hadfield performing at the Crystal Helmet Award Dinner at Kursalon Wien; Congress host Franz Viehböck at the ASE opening ceremony at the at the House of Industry; Rusty Schweickart at the ASE opening ceremony at the House of Industry in Vienna

They exchanged space flight experiences and technical information concerning space operations and exploration, scientific research, mission development, future technologies and astronaut training.

Speakers included the Austrian Federal Minister for Transport, Innovation and Technology, Jörg Leichtfried, the Head of the Austrian Aeronautics and Space Agency (ALR), Andreas Geisler, the Head of the German Aerospace Center (DLR), Pascale Ehrenfreund, as well as participating astronauts such as Alexey Leonov, who performed the first space walk in 1965, and representatives from industry, academia and organisations in the space field.

health and environmental concerns to socio-economic development. Speakers and participants discussed topics such as the future of space industry and commercial human spaceflight and gave a review of international space programmes.

Group picture of the ASE participants





ÖWF / Bernhard Gmeiner



ÖWF / Leo Schreiner



Stadtgemeinde Mödling / Garanus



ÖWF / Sabine Vollenhofer-Schrumpf

German astronaut Thomas Reiter giving a presentation in Waidhofen an der Thaya; Shannon Lucid and Oleg Kotov at the Austrian Biotech University of Applied Sciences in Tulln; Astronauts James Voss, Mary Ellen Weber and Randolph Bresnik at a school visit in Mödling; Ulf Merbold and Bonnie Dunbar being welcomed with a song at an elementary school in Neusiedl am See

The astronauts and cosmonauts also had the opportunity to participate in cultural activities during their stay in Vienna. This included a guided tour through the old city of Vienna, a boat trip on the Danube river and a visit of the monasteries in Melk and Klosterneuburg as well as a classical concert at the Musikverein in Vienna.

One of the highlights of the Congress was the traditional "Crystal Helmet" award ceremony. Each year at its Planetary Congress, the ASE presents its Planetary Award, the Crystal Helmet, to an individual who has made an outstanding contribution to the advancement and understanding of the theme subject of that year's Congress. The Crystal Helmet is one of the most prestigious awards in astronautics. At the 29th Planetary Congress in Vienna, the Crystal Helmet was awarded to the Austrian geophysicist and former Head of the Austrian Space Agency Johannes Ortner.

A major focus of the Congress was on raising awareness of the general public, in particular of young people, in space activities, space science and space exploration. During the "Community Day" on 5 October 2016 the astronauts and

cosmonauts split into small groups and travelled all over Austria to participate in more than 130 events across the country. They gave lectures and presentations at schools and universities, met with opinion leaders, regional and local decision makers and industry representatives, engaged with the general public and the media in open lectures, public discussions and press conferences and made television and radio appearances.

In particular school visits and the interaction with students and young professionals were a central element of the Congress aimed at encouraging young people to enrol in science, technology, engineering and mathematics (STEM) programmes and become a part of space exploration. "It was one of the main objectives of the Congress to transmit the fascination of space activities and inspire the next generation of space explorers" stressed conference host Franz Viehböck. The number of roughly 12000 school children and university students directly reached by the multitude of events during the "Community Day" shows the importance and impact the 29th Planetary Congress had in Austria.

Interview

Interview with Franz Viehböck: "Create Dreams and Visions and Follow Them"

Cordula Steinkogler



Franz Viehböck is Austria's first and so far only cosmonaut. On the 25th anniversary of his spaceflight, we had the chance to speak to him about his experience in space, the lessons he learned from his spaceflight, the question of where to

go next in outer space and the Association of Space Explorers' Conference, which he hosted in Austria in October 2016.

In the framework of the Austromir mission you spent 7 days and 22 hours in space. What was the best experience for you during your spaceflight and what was the biggest challenge you faced?

It is difficult to say which was the best experience during my spaceflight, because I had so many good experiences. But I would say that the three most positive experiences for me were:

Firstly, the spaceflight from a technical point of view. The launch with the firing of ignition, the acceleration, the different manoeuvres in orbit, the automatic approach, the docking, the manoeuvring of the space station, the undocking, the slowing down before entering the Earth's atmosphere and then the landing. All the technical aspects of the spaceflight were fascinating for me. The second most positive experience for me was the view. The view into space on the one hand and the view from space to Earth on the other hand were breath-taking. Finally, experiencing and living in the zero-gravity environment was an unforgettable experience for me. The most challenging aspect of the space flight was to realise right after landing that the spaceflight was over.

After the completion of the Austromir mission you held high-ranking positions in international companies in the United States and in Austria. From today's perspective, looking back at your career, what was the most important lesson you learned from your spaceflight?

A very important lesson I learned is that you are much more successful when you work in a team. This was especially true when I was one of the three cosmonauts in our crew during the Austromir mission but the team consisted of many more people than just the three cosmonauts. It also included all the scientists, engineers and technical experts who made the mission possible. So I would say that working together in a team is the biggest lesson I learned from the spaceflight, which I experienced and applied also later in my management career. I believe that if you are able to create a positive environment where people enjoy working together, the result is much better and much more satisfying than if you let people work on their own.

Did space law play a role during the Austromir mission or in your work in the different positions you held after the mission? In your view, what role does or should space law play today?

When we speak of international cooperation in space, advanced space exploration, or the launching of commercial space vehicles, legal issues are always involved. This was also the case during the Austromir mission and my later work in the space sector. As commercial space activities are increasing and the exploration of outer space as well as international cooperation in space activities are advancing, I believe that space law is becoming an area of increasing importance. I must confess, however, that legal issues are not one of my favourite topics, so I am glad that there are experts who deal with these issues.



Franz Viehböck studied electrical engineering and worked as research assistant at the Vienna University of Technology (TU Wien) before he was selected as cosmonaut for the Soviet-Austrian space project Austromir. After two years of training he was launched on 2 October 1991 from Baikonur spaceport to the space station Mir, where he conducted experiments in the fields of space medicine, physics and space technology. He returned on 10 October 1991 after spending 7 days and 22 hours in space. The following two years he worked for the Austrian government giving lectures about his experience and the scientific research he conducted on board of the space station Mir. He then worked for Rockwell Space Systems and Boeing in the United States and Austria. Later he became the technology coordinator of the Austrian province of Lower Austria. Today he is a member of the management board at Berndorf AG.

In 2016 we celebrated the 25th anniversary of the Austromir mission. What do you believe has changed during the past 25 years in the space sector? What is different today from 25 years ago?

Let us maybe first focus on what has not changed. Unfortunately, we have not seen any major technological advancements in space exploration in the past 25 years. The rocket technology is more or less the same today as it was 25 years ago. We have flown to space stations 25 years ago and we are still doing it now. There have not been any major changes in this respect.

What has changed is that, while 25 years ago the iron curtain was just disintegrating and international cooperation, especially between the US and Russia, was only starting, today, within the space station programme and other exploration programmes, there is a real working together despite all the political discrepancies. I would say that international cooperation in space exploration is much more intense now than it was 25 years ago.

Another important change is the increase of commercial initiatives in the human space exploration sector. 25 years ago, commercial space activities were mainly focused on commercial launches, commercial communication satellites and the commercial utilisation of remote sensing satellites. Today there is a much broader involvement of the private sector and we see many new initiatives in this regard, especially in the United States.

Is the increasing involvement of the private sector in your view a positive development?

I think it is a very positive development because it brings a new thrust to the space business. For instance, today we have quite a large number of so called “space tourists” who were able to privately afford a spaceflight. We are also on the brink of having soon a first commercial suborbital flight. This is certainly a big change and it is, in my view, a good development.

In your opinion, what are the most important issues in human spaceflight today?

I think the most important issue today is the question of where to go next. There are several ideas and initiatives of going to the Moon, going to Mars, going to an asteroid etc.

I have the feeling that a clear picture of what should be the next step is missing.

Another important issue is that, while we have an international space station, it is still not an international cooperation as it should be, because some major nations, like China or India, are not participating. I believe that when we go for instance to Mars it should be a real international adventure.

Where do you think should we go next? The Moon? Mars? Asteroids?

I think the goal should certainly be to go to Mars. However, it would probably make sense to go back to the Moon first. We have been there almost 50 years ago and it would be good to refresh the knowledge. Also, the Moon is much closer to Earth and easier to reach than Mars. After going back to the Moon, Mars would certainly be a very interesting planet to reach.

In your view, what is the state of the Austrian space sector? Is there anything that could or should be improved?

I wouldn't say that the Austrian space sector is doing too badly, but there is always room for improvement. Compared to the size of Austria and its financial power, Austria could generally increase its participation in the space programmes of the European Space Agency, as a result we would also benefit much more. In addition, I believe that the participation in human space programmes would be beneficial for Austria. Austria would not be able to participate by building a rocket, a capsule, or a crew vehicle but we have our niche technologies which could contribute to the overall programmes. And of course, I would be very happy to soon welcome the second Austrian who has been in space.

On the occasion of the 25th anniversary of your space-flight, you hosted the Association of Space Explorers' annual conference, the 29th Planetary Congress, in Austria in October 2016. What was your motivation behind the organisation of this conference and why do you think was it important for Austria?

The Association of Space Explorers' Congress is organised every year in a different country by a local astronaut or cosmonaut. I had the feeling that the 25th anniversary of my space-



In 1991 Franz Viehböck participated in the Soviet-Austrian space project Austromir. He was launched to the space station Mir on 2 October 1991 and returned on 10 October 1991

flight was a good occasion to host this conference in Austria again.

I think the Congress was very successful and very important for Austria because it provided an opportunity to raise the interest of the public, especially of young people, in science, technology and research by having astronauts from all over the world go to schools and universities and participate in many different events to speak about their experiences. I believe that a country like Austria needs on the one hand its traditional assets like mountains, lakes, Mozart balls, Lipizzaner, classical music etc. but on the other hand I think we are a high-tech industrialised nation and therefore we also need young talents who work in the field of science and technology.

Which advice would you give young people today?

I quote one of my colleagues, Chris Hadfield from Canada, who said "I was not born as an astronaut, I made myself an astronaut". My message is: create dreams and visions and follow them. Don't wait for somebody else to make you something, take your destiny in your own hands and do it.



Simon Brugner (2)



Space Law at the Vienna Humanities Festival

Irmgard Marboe

The Vienna Humanities Festival took place from 23 to 25 September 2016 for the first time. Irmgard Marboe, Head of the National Point of Contact for Space Law, was invited to give a lecture on "Space Law" at the Technical University of Vienna.

Inspired by the Chicago Humanities Festival, which since 1989 aims at extending the riches of the humanities to all who might benefit, Matti Bunzl, the Director of the Wien Museum, initiated the first Vienna Humanities Festival which took place between 23 and 25 September 2016 at various locations at and around Vienna's Karlsplatz. The motto of this premiere was "Andernorts/Out of Place". It had its origins in the current refugees crisis, but went far beyond this theme to search for a better understanding of the movement of people, objects, and ideas as the fundament of cultural history.

While originating in the "humanities", the Festival also opened its doors for the technical and the legal disciplines and provided space and time for a lecture on "Space Law" at the premises of the Technical University of Vienna, which is situated just opposite the Wien Museum. The main idea was to foster curiosity and exchange ideas about the legal regime of the "ultimate different place". While the "final frontier", as it was called in the TV series "Star Trek", represents an area beyond our daily reality, it is not only a playground for science fiction but actually highly organized also in the legal sense.

The three day festival was open to the public and offered a large variety of presentations and discussions on very different topics. The encompassing question was: What do leading intellectuals have to say on the most pressing issues of our time? Writers, philosophers, scientists, artists and journa-

lists contributed to the rich programme. The intention was the creation of an "urban parlour", a discussion lounge, to facilitate personal contacts and a direct exchange of ideas and experiences. Over 3000 participants followed the invitation and contributed to the lively and creative atmosphere. The organisers were satisfied with the success of the first Vienna Humanities Festival and saw it as a signal of the existing thirst for information and personal exchange in society.

The lecture on Space Law addressed the various phases of the space age, starting from competition at the times of the "Space Race", to more cooperative endeavours, exemplified by the agreement on the International Space Station in 1998, until today's "New Space" with its increasingly private and commercial space activities. Mining of the Moon and other celestial bodies by private companies was discussed as one of the legal challenges of today. In addition, the lecture tried to raise awareness that the increasing development and launch of small satellites as a convenient and inexpensive way of exploring and using outer space has to be subject to responsible legal rules for the benefit of the international community in the long term. This includes, in particular, the so-called "Mega-Constellations" which are currently under development. The problem of space debris, which is exacerbated by the increase of the number of space objects, and in particular of those who are not functional or not manoeuvrable, jeopardizes the safety and long-term sustainability of space activities. The audience participated actively in the discussion. The Vienna Humanities Festival has perhaps contributed to moving space law from its "out of place"-position slightly towards the center of society.

Women in Aerospace Europe: Vienna Local Group Launch Event

Cordula Steinkogler

On the occasion of the opening of a new chapter in Vienna, the association Women in Aerospace (WIA) Europe organised a round table event on 9 May 2016 at the Vienna Museum of Natural History.

WIA Europe's vision is to create a European aerospace sector with an inclusive representation. It aims at expanding women's opportunities for leadership and increasing their involvement and visibility in the aerospace sector. It provides a stable network for female professionals to enhance their outreach in this highly dynamic sector and offers mentoring programmes, awards, grants and training workshops to support women in the aerospace field. The association was founded in the Netherlands in 2009 and today has around 500 members and local groups in many European cities, such as Brussels, Cologne, Geneva, Leiden, Munich, Paris and Rome.

In 2016, WIA Europe formed a new local group in Vienna. On this occasion, an opening round table event was organised at the Vienna Museum of Natural History. The event was opened with welcoming remarks by Julia Walter-Roszjar of the Vienna Museum of Natural History. This was followed by two keynote speeches given by Simonetta Di Pippo, Director of the United Nations Office for Outer Space Affairs (UNOOSA) and Honorary President of WIA Europe, and Andreas Geisler, Head of the Austrian Aeronautics and Space Agency (ALR), who highlighted the importance of the WIA network for women in the aerospace sector as well as for the sector itself. They also stressed the important role women play in the aerospace field and the need for increased support to women in this sector.

During the following panel discussion, Simonetta Di Pippo, Gerda Horneck of the Institute of Aerospace Medicine at the German Aerospace Center (DLR), Lisa Kaltenecker, Associate Professor of Astronomy at Cornell University and Director of the Carl Sagan Institute, Irmgard Marboe, Professor of International Law at the University of Vienna and Head of the National Point of Contact for Space Law Austria (NPOC), and Konstanze Zwintz from the Institute for Astro- and Particle Physics at the University of Innsbruck discussed current challenges for women in a sector that is still mainly dominated by men. They recounted some of the difficulties they faced as women



in the aerospace field but also emphasised their positive experiences and spoke about strategies that helped them to overcome challenges. This included finding male or female mentors, supervisors or colleagues in the same field, who supported their ideas and helped them to find new career opportunities, as well as gaining the support of family members, be it parents, partners or children.

The speakers also gave advice to young female scientists and technicians in the aerospace sector. One advise by Lisa Kaltenecker was to "always take a seat at centre of the table in important meetings and group discussions, don't sit at the back of the room or in a corner, this will help to add weight to what you have to say". By focusing on their positive experiences and giving advice on how to cope with possible difficulties, all of the panelists encouraged and motivated young women to pursue a career in the aerospace field.

The panel discussion was followed by a cocktail in the Museum foyer, which provided the 60 attendees with an opportunity for networking and further discussions. Representatives from industry, academia and public institutions as well as students attended the event.



Manfred Lachs Space Law Moot Court Competition 2016

Stephanie Stipsits and Roman Friedrich

Imagine the following situation: A heavily damaged, potentially radioactive spacecraft crashing on foreign territory, causing damage and death to people and leading to a wide-ranging evacuation. In addition, the spacecraft's commander is surprisingly asking for political asylum. This was one of the problems we had to deal with for the Manfred Lachs Space Law Moot Court, which took place in Glasgow from 27 to 29 April 2016.

Participating at a Moot Court is one of the most valuable things a student can possibly experience. It boosts the understanding of complex problems and the ability of coming up with legal arguments suitable for one's claims or defences. The initial difficulties when dealing with a completely new legal field were quickly overcome and our five months lasting examination of this case picked up speed. In our weekly meetings, we discussed our ideas so as to find creative solutions to these quite challenging problems. During our working process we learned to adjust to each other, trying to achieve the best outcome of our teamwork. The writing process for our memorials, one for the Applicant and one for the Respondent, ended in early March. After several late-night shifts to include some final suggestions for improvement, finally on due date our memorials were complete.

The writing process was followed by our oral training. Here, we learned how to deliver a speech, including the proper em-

phasis and body language. We were also trained how to react to interruptions to our presentation by questions from the bench. Afterwards, we had nerves of steel and felt confident for the upcoming oral round in Glasgow. After tackling all endeavours, we were looking forward to travelling to Glasgow.

The presentation of our memorials took place on the first day of the European regional round at the Strathclyde University. Thanks to our extensive oral preparations, we managed the first round without any serious difficulties although we were initially very nervous.

The second day was free for sightseeing: On our sightseeing tour, we were accompanied by typical lovely Scottish weather. We nevertheless decided to spend the day indoors at a museum with a wide range of objects, ranging from Greek sculptures to classical and modern art and stuffed animals. We also had the pleasure of listening to an organ concert.

The last day was reserved for attending the final round, listening to the finalists pleading their cases. The closing ceremony was followed by a farewell dinner, with traditional Scottish food. The following day we had to get up early to make our ways back to Austria.

Although participating in this Moot Court required a lot of effort and hard work, it was an awesome experience. Therefore, we definitely recommend it to all law students ready and willing to broaden their legal horizon, especially those with an interest in international law.



51 students, young professionals and tutors from 21 countries participated in the ECSL Summer Course



25th ECSL Summer Course on Space Law and Policy 2016

Victoria Schebek

The 25th Summer Course on Space Law and Policy of the European Centre for Space Law (ECSL) took place in Warsaw, Poland from 29 August to 9 September 2016 and was organised in cooperation with the Institute of Air and Space Law at the University of Łazarski. There was a total of 51 participants, a record high number for the Summer Course. This included 44 students and seven young professionals as well as four tutors, representing 21 nationalities. Four participants represented Austria, showing the high Austrian interest in space law and policy.

During the two-week course, approximately 30 speakers from different countries and diverse professional backgrounds shared their expertise and gave an insight into the fields of space law and policy. Participants had around 50 hours of lectures dealing with a variety of topics. As the theme of the 2016 Summer Course was "suborbital flights", both space law and aspects of air law were taught. After every talk, participants had the opportunity to ask questions. The Summer Course 2016 also introduced the concept of workshops. Apart from the workshops and lectures, the participants worked together in small groups on a group project. The task was to give legal advice to the European Space Agency on a potential suborbital flight programme. For the first time groups were representing private law firms. The group project in-

cluded a written proposal and a presentation to a panel of judges at the end of the course.

During the two weeks of the Summer Course several excursions and social events took place. A welcome reception was generously hosted by the law firm Wardyński & Partners. A tour of the Space Research Centre of the Polish Academy of Sciences and a visit to the Polish Air Navigation Services Agency (PANSNA) located at the Warsaw Chopin Airport were organised. In addition, the summer course 2016 introduced a team-building exercise, which consisted of a scavenger hunt around Warsaw. The biggest event of the Summer Course was the Polish Space Industry Breakfast Get-Together.

The traditional closing ceremony took place in the Polish Parliament, where the awards for best written report, best oral presentation and best overall team were announced after the group presentations. This event was followed by the usual closing dinner at a typical Polish restaurant, where the new Student Representative was elected.

The great success of the 2016 Summer Course on Space Law and Policy would not have been possible without the dedication and hard work of Mr. Nicholas Puschman (ECSL Executive Secretary), Professor Philippe Achilleas (ECSL Summer Course Coordinator) and Professor Anna Konert (Director of the Institute of Air and Space Law at the University of Łazarski).

NPOC Space Law Austria Subpoint Graz Outreach Activities 2016

Hannes Mayer

Outreach activities have formed an important part of the activities carried out by the NPOC Subpoint Graz in 2016. Among those activities was a poster presentation on legal issues concerning planetary defence on the occasion of the Asteroid Day 2016 – a global awareness campaign where people from around the world come together to learn about asteroids and what can be done to protect our planet from asteroid impacts. Moreover, Anita Rinner held a lecture about legal, economic, political and societal aspects of spaceflight on the occasion of the “Graz in Space” Summer University at the Institute of Space Research. Professor Christian Brünner moderated a panel on cooperation and capacity building in space law at the UNOOSA Space Law Workshop “Contribution of Space Law and Policy to Space Governance and Space Security in the 21st Century” in September 2016.

The Subpoint Graz also played a role in the Graz Space Day which took place for the third time in 2016. In the morning, school children could find out interesting space law facts and information in a space law oriented “scavenger hunt”. Later



in the day, the interested public could obtain information about space law and policy at the Subpoint’s booth. As the Association of Space Explorers’ Planetary Congress was taking place during the same week in Vienna, several astronauts and cosmonauts were visiting Graz Space Day. Hannes Mayer assisted with accompanying the space travellers and with translation work. In addition, the World Space Week 2016 saw a collaborative effort by the Subpoint Graz and Skiakademie Schladming to offer space themed English lessons.

Seminar on Space Law and Space Policy at the University of Graz 2016

Maximilian Santner

The Seminars strength stems from multiple factors, first and foremost is the diversity and quality of its teaching staff. International law appears to be a bit removed from the day to day life of “ordinary” lawyers but thanks to lecturers from both academia and practice, who managed to focus our attention on the practical application of space law (especially the questions pertaining to the future of human space activity and space law), it has become increasingly clear that the preconceived wisdom is no longer applicable to this area of international law.

Having said that, it is worth mentioning that the legal basis

of space law and its core principles were covered as well. We got a sense that the problems of space law are real world problems that deserve our attention, a fact that will become even more relevant in the future as advancing technology and commerce reach ever further into outer space. Another strong point was the incorporation of all stages in the law-making process from think-tanks to the UN to its final effects in space. What is most important is that all the lecturers shared a degree of passion and excitement that rubs off on those who are new to a niche area of law and makes studying more pleasure than work.

Upcoming Events

7 July 2017:	ESA-ESPI Workshop "Space Data & Cloud Computing Infrastructures: Policies and Regulations", ESA/ESRIN, Frascati, Italy
18–27 July 2017:	41st Summer School Alpbach "The Dusty Universe", Alpbach, Austria
21 August–8 September 2017:	The Hague Academy of International Law, Centre for Studies and Research "Fifty Years of Space Law - Space Law in 50 Years", The Hague, The Netherlands
29–31 August 2017:	3rd ICAO/UNOOSA Symposium, United Nations, Vienna, Austria
3–7 September 2017:	United Nations/Austria Symposium "Access to Space: Holistic Capacity Building for the 21st Century", Graz, Austria
4–15 September 2017:	26th ECSL Summer Course on Space Law and Policy, Rome, Italy
12–13 September 2017:	11th ESPI Autumn Conference "Innovation in the New Space Economy", ESPI, Vienna, Austria
22–24 September 2017:	UN/IAF Workshop on Space Technology for Socioeconomic Benefits, Adelaide, Australia
25–29 September 2017:	68th International Astronautical Congress, Adelaide, Australia
1–5 October 2017:	International MoonBase Summit, Hawaii, USA
20–21 November 2017:	Moon Village Association Foundation Workshop, ISU, Strasbourg, France
13 January 2018:	Austrian Space Ball - Celebrating the Austrian Space Forum's 20th Anniversary, Vienna, Austria

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