



## 2022 INTERNATIONAL SYMPOSIUM ON THE PEACEFUL USE OF SPACE TECHNOLOGY-HEALTH

### IPSPACE 2022

Nov. 18, 2022

Beijing, China

#### I. General Program

Date	Time (UTC+8)	Program	Organizers
Nov. 16 WED	16:00-17:00	<a href="#">Press Conference</a>	/
	21:00	Zoom audio and video check (with speakers)	
Nov. 17 THU	21:00	Zoom audio and video check (with speakers)	
Nov. 18 FRI	14:00-17:40	<a href="#">Plenary Session: Research - Innovation - Popularization, Part I</a>	/
	21:00-22:00	<a href="#">Opening Ceremony</a>	/
	22:10-23:30	<a href="#">Plenary Session: Research - Innovation - Popularization, Part II</a>	/
Nov. 19 SAT	09:00-12:10	<a href="#">Track: Spatial IT in Addressing Climate Change and Food Security</a>	China Association of Remote Sensing Application (CARSA), GNSS and LBS Association of China (GLAC), China Communications Industry Association (CCIA)
	09:00-11:50	<a href="#">Track: Space Elevators</a>	International Academy of Astronautics
	14:00-17:50	<a href="#">Track: Life Sciences and Human Health</a>	State-Guest Health Management Center
	14:00-18:40	<a href="#">Track: Space Traffic Management</a>	International Academy of Astronautics; Beijing Institute of Technology School of Law
Nov. 20 SUN	09:00-11:40	<a href="#">Track: Space Breeding and Ecological Civilization, High-Quality Development</a>	China High-Tech Industrialization Association
	09:00-11:30	<a href="#">Track: Space Power and Terrestrial Energy</a>	International Academy of Astronautics
	14:00-18:10	<a href="#">Track: Space Technologies and Industrial Investment</a>	Wingo Fund
	14:30-18:10	<a href="#">Track: Commercial Space</a>	Zhongguancun Lingchuang Commercial Aeros Industrial Innovation Alliance

	14:30-16:50	<a href="#">Track: Space Education</a>	International Peace Alliance (Space)
	14:00-17:10	<a href="#">Track: Moon Protection</a>	International Academy of Astronautics
	21:00-22:00	<a href="#">Closing Ceremony</a>	/

## Detailed Program

### Wednesday, Nov. 16, 2022

Time (UTC+8)	Content
16:00-17:00	Press Conference
21:00	Zoom audio and video check with speakers

### Thursday, Nov. 17, 2022

Time (UTC+8)	Content
21:00	Zoom audio and video check with speakers

### Friday, Nov. 18, 2022

09:00-12:00	Sign-in (on-site)
<b>Plenary Session Part I</b> <b>Research - Innovation - Popularization</b>	
<b>Time (UTC+8):</b> 14:00-18:10, Nov. 18 <b>Venue:</b> Ballroom, F2, the Presidential Hotel <b>Moderator:</b> WEI Zheng, Secretary General of China Association of Remote Sensing Application (CARSA) Peaceful applications and translation of space technologies, technological innovation, talents training, and more.	
14:00-14:05	<b>Remarks</b> ➤ Steve EISENHART, IPSPACE Co-Chair, Senior Vice President - Strategic & International Affairs, Space Foundation
14:05-14:25	<b>China Earth Observation Missions and Application</b> LI Deren, IAA member, Academician of Chinese Academy of Sciences, Academician of Chinese Academy of Engineering
14:25-14:45	<b>Hypothesis of the Etiology Spaceflight-Associated Neuro-Ocular Syndrome (SANS)</b>

	O.M. MANKO, Doctor of Medical Sciences, Leading Researcher, Head of the Scientific Group "Physiology and Psychophysiology of Vision", IBMP RAS
<b>14:45-15:05</b>	<b>Space Commercialization - The Journey from the Old Days to NewSpace and Beyond - A Global Perspective</b> Joerg KREISEL, CEO of JKIC, Chairman + Co-Founder of iBOSS, Vice-Chair of CONFERS, Co-Founder and Vice-Chair of the IAF Space Entrepreneurship and investment Committee (SEIC), Board Member + Director New Initiatives of Women in Aerospace Europe (WIA-Europe), Associate Editor of the NewSpace Journal, Associate Fellow of the American Institute of Aeronautics and Astronautics (AIAA)
<b>15:05-15:25</b>	<b>The Long-Term Sustainability of Space Activities as a Prerequisite for The Peaceful Exploration and Use of Outer Space</b> Tanja MASSON-ZWAAN, Leiden University, Assistant Professor and Deputy Director of the International Institute of Air and Space Law (IIASL), Former President of the International Institute for Space Law (IISL), IAF VP for Science and Academic Relations, IAA Member
<b>15:25-15:45</b>	<b>Health Industry in the New Era of Space Exploration: Challenges and Opportunities</b> WU Xifeng, Director of School of Public Health, Zhejiang University, Vice President of the Second Affiliated Hospital Zhejiang University School of Medicine, President of National Institute of Health and Medical Data of Zhejiang University
<b>15:45-16:05</b>	<b>Needs in Astronautical Transportation</b> Markus JÄGER, Airbus Defense and Space GmbH, System Engineer, Chair of IAF Space Transportation Committee
<b>16:05-17:05</b>	<b>Panel Discussion: ISU Team Project - International Cooperation on the Scientific Payload of the China Space Station</b> <b>Moderator:</b> YANG Yang, Director of International Cooperation Department of Technology and Engineering Center for Space Utilization, Chinese Academy of Sciences (CSU, CAS) <b>Panelists:</b> SUN Gongling, Professor of the International Space University (ISU), IAA Member ISU team YANG Yang, Director of International Cooperation Department of Technology and Engineering Center for Space Utilization, Chinese Academy of Sciences (CSU, CAS)
<b>17:05-17:25</b>	Rosa DORAN, Chair, COSPAR Panel on Education
<b>17:25-17:35</b>	Barbara GHINELLI, Director, Clusters and Campus Development, UKRI-Science and Technology Facilities Council (STFC)
<b>17:35-17:40</b>	<b>Summary, photo opportunity</b>

## Opening Ceremony

**Time:** 21:00-22:00, Nov. 18

**Venue:** Ballroom, F2, the Presidential Hotel

Peaceful application and transformation of space technology; technology innovation and talents training.

<b>21:00-21:10</b>	Opening Video
<b>21:10-22:00</b>	<p><b>Remarks</b></p> <ul style="list-style-type: none"> <li>➤ WANG Tianyi, IPSPACE Executive Chairman, Executive Chairman of the International Peace Alliance (Space), IAA member</li> <li>➤ LIU Jiyuan, IPSPACE Honorary Chair, Former president of the China National Space Administration, Former Vice-President of International Academy of Astronautics (IAA)</li> <li>➤ Christian FEICHTINGER, IPSPACE Co-Chair, Executive Director, International Astronautical Federation (IAF), IAA Member</li> <li>➤ China Association for Science and Technology</li> <li>➤ * China National Space Administration</li> <li>➤ Steve EISENHART, IPSPACE Co-Chair, Senior Vice President - Strategic &amp; International Affairs, Space Foundation</li> <li>➤ * WU Yansheng, Chairman of Chinese Society of Astronautics, IAA member</li> <li>➤ YUAN Jie, IPSPACE Co-Chair, Vice Chairman of Chinese Society of Astronautics</li> <li>➤ George ABBEY, IPSPACE Honorary Chair, Chair, Rice University's Baker Institute's International Space Medicine Summit (RICE ISMS), former director of NASA Johnson Space Center (JSC)</li> <li>➤ YANG Baohua, IPSPACE Co-Chair, Vice President of the Chinese Society of Astronautics, IAA member</li> <li>➤ Neil BUSH, IPSPACE Honorary Chair, Chairman, George H. W. Bush Foundation for U.S.-China Relations</li> <li>➤ *BAO Weimin, IPSPACE Co-Chair, Vice President of China Association for Science and Technology (CAST), President of China High-Tech Industrialization Association (CHIA), Academician of Chinese Academy of Sciences (CAS), IAA member</li> <li>➤ LUO Ge, Director General of China Association of Remote Sensing Application (CARSA), IAA member</li> <li>➤ Terry BRANSTAD, former U.S. Ambassador to China</li> <li>➤ LIANG Xiaohong, IPSPACE Co-Chair, Executive Vice President of China High-Tech Industrialization Association (CHIA)</li> <li>➤ GUO Yong, Standing Director, Chinese Society of Astronautics</li> <li>➤ YUE Tao, Director, China Centre for Resources Satellite Data and Application</li> </ul>

	➤ Remarks and declaring opening of IPSPACE 2022: Jean-Michel CONTANT, IPSPACE Co-Chair, Secretary-General of IAA
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<b>Plenary Session Part II</b>	
<b>Research - Innovation - Popularization</b>	
<b>Time (UTC+8):</b> 22:10-23:30, Nov. 18	
<b>Venue:</b> Ballroom, F2, the Presidential Hotel	
Peaceful application and transformation of space technology; technology innovation and talents training	
<b>22:10-22:30</b>	ZHANG Rongqiao, Researcher, Lunar Exploration and Space Engineering Center (LESEC), CNSA; Chief Designer of China's planetary exploration project
<b>22:30-22:50</b>	<b>Women - A Prominent Force in Space Exploration</b> Pascale EHRENFREUND, IPSPACE Co-Chair, President of the International Space University (ISU), Board Member, Space Foundation, IAA Member
<b>22:50-23:10</b>	<b>Introduction to China Space Science Program</b> WANG Chi, space physicist, Academician of the Chinese Academy of Sciences
<b>23:10-23:30</b>	<b>The Effects of Spaceflight Factors on the Human Plasma Proteome, Including Both Real Space Missions and Ground-Based Experiments</b> Evgeny N. NIKOLAEV, Scientific Director of the Institute of Energy Problems of Chemical Physics of RAS, Corresponding Member of RAS, Full Professor of Skoltech

**Saturday, Nov. 19, 2022**

<b>Track: Spatial IT in Addressing Climate Change and Food Security</b>	
<b>Time (UTC+8):</b> 09:00-12:10, Nov. 19	
<b>Venue:</b> Ballroom, F2, the Presidential Hotel	
<b>Organizer(s):</b> China Association of Remote Sensing Application (CARSA); GNSS and LBS Association of China (GLAC); China Communications Industry Association (CCIA)	
Humanity faces major challenges such as environmental degradation, climate change, food security and public security. This Track is expected to enhance global communication and cooperation to promote and deepen the application of spatial IT in major fields like resource management, environmental monitoring, disaster prevention and mitigation, thus, to further promote the peaceful use of space science and technology and make benefits for the well-being of humankind.	
<b>09:00-09:20</b>	<b>Moderator:</b> WEI Zheng, Secretary General of China Association of Remote Sensing Application (CARSA) <b>Remarks</b> ➤ Jean-Michel CONTANT, IPSPACE Co-Chair, Secretary-General of IAA

\* Speakers to be confirmed

	<ul style="list-style-type: none"> <li>➤ LUO Ge, Director General of China Association of Remote Sensing Application (CARSA), IAA member</li> <li>➤ ZHAO Jicheng, Executive Vice Chairman of GNSS and LBS Association of China (GLAC)</li> <li>➤ Christian FEICHTINGER, IPSPACE Co-Chair, Executive Director, International Astronautical Federation (IAF), IAA Member</li> <li>➤ ZHAO Baikuan, Vice Chairman of China Communications Industry Association (CCIA)</li> </ul>
<b>Presentations Part I</b>	
<b>Moderator:</b> WU Xiaogan, Vice Secretary General of GNSS and LBS Association of China (GLAC)	
<b>09:20-09:40</b>	<b>Remote Sensing Big Data Enabling Agricultural Precision Production</b> WU Wenbin, Director General, Researcher, Institute of Agricultural Resources and Regional Planning, CAAS
<b>09:40-10:00</b>	<b>Investigating And Analysing Sahelian Dust in Nigeria (2000-2020) And Its Impact on the Environment and Biomass Using Remote Sensing Satellite Technology</b> *Taiwo Qudus
<b>10:00-10:20</b>	<b>Geohazards Monitoring and Warning from Space Techniques</b> JIN Shuanggen, Vice President of Henan Polytechnic University, Member of the Academy of Europe
<b>10:20-10:40</b>	<b>China Beidou Enabling Agriculture and Ensuring Food Security</b> WU Caicong, Professor and Doctoral Supervisor, Department of Big Data, College of Information and Electrical Engineering, China Agricultural University
<b>10:40-10:50</b>	<b>Break</b>
<b>Presentations Part II</b>	
<b>Moderator:</b> ZHOU Zikuan, Vice Secretary General of China Association of Remote Sensing Application (CARSA)	
<b>10:50-11:10</b>	<b>Global Risks Assessment and Sustainable Development AGAINST CLIMATE BREAKDOWN - Innovation Opportunities in the Space Science Technology Cooperation on the base international science-technology cluster</b> Yuri OZOROVICH, International Coordinator, International Consortium Geo-InterECOS, Assistant Director, Professor, Space Research Institute of the Russian Academy of Sciences
<b>11:10-11:30</b>	<b>Spatial IT Serves Global Monitoring and Early Warning of Major Vegetation Diseases and Pests</b> HUANG Wenjiang, Researcher, Aerospace Information Research Institute, Chinese Academy of Sciences
<b>11:30-11:50</b>	<b>Global Climate Changing and Its Impact on Food Production</b> FANG Shibo, Researcher, Chinese Academy of Meteorological Sciences
<b>11:50-12:10</b>	Barbara J. RYAN, World Geospatial Industry Council (WGIC), Executive Director, IAF GLOC2023 IPC Co-Chair

## Track: Space Elevators

**Time (UTC+8):** 09:00-11:50, Nov. 19

**Venue:** Beijing Hall, F2, the Presidential Hotel

**Organizer(s):** International Academy of Astronautics (IAA)

**Moderator:** Peter SWAN, Ph.D. Senior VP Galactic Harbour Associates, President of International Space Elevator Consortium (ISEC) and member of the Academy (IAA)

Space Elevators, as permanent Transportation and Logistics infrastructures, will lift massive cargo (30,000 tons per year early on) routinely, daily, cost effectively, and with environmentally friendly operations to GEO and beyond. This track will discuss the realization that commercial ventures are entering the engineering development phase. The architectural baseline has been established and will lead to customer satisfaction in such arenas as Space Solar Power satellites to GEO, 1,000,000 tons of cargo to Mars, and direct support to cislunar region as soon as it is operational. This track will address the status of the engineering and projections of the customer needs while focusing upon the remarkable concept of Dual Space Access Strategy where the strengths of both advanced rockets and space elevators are combined. The track lead will be Peter Swan, Ph.D. President of International Space Elevator Consortium (ISEC) and member of the Academy.

<b>09:00-09:10</b>	<b>Remarks</b> Jean-Michel CONTANT, IPSPACE Co-Chair, Secretary-General of IAA
<b>09:10-09:50</b>	<b>KeyNote Lecture: Space Elevators are the Transformational Permanent Infrastructure to GEO and Beyond</b> Peter A. SWAN, Ph.D. Senior VP Galactic Harbour Associates, President of International Space Elevator Consortium (ISEC) and member of the Academy (IAA)
<b>09:50-10:00</b>	<b>Questions and Answers</b>
<b>10:00-10:40</b>	<b>Highlight Lecture: International Space Elevator Consortium, Leadership Through Research and Studies of Space Elevators</b> Dennis WRIGHT, Ph.D, retired in 2020 as a physicist in the Elementary Particle Physics Department of the SLAC National Accelerator Laboratory at Stanford
<b>10:40-10:50</b>	<b>Questions and Answers</b>
<b>10:50-11:10</b>	<b>Cooperative Game Method for Libration-Free Cargo Transfer of Floating Space Elevator</b> SHI Gefei, Associate Professor, Sun Yat-sen University, School of Aeronautics and Astronautics
<b>11:10-11:50</b>	<b>Panel Discussion</b> <b>Lead:</b> Jean-Michel CONTANT, IPSPACE Co-Chair, Secretary-General of IAA <b>Panelists:</b> ➤ Peter A. SWAN, Ph.D. Senior VP Galactic Harbour Associates, President of International Space Elevator Consortium (ISEC) and member of the Academy (IAA)

	➤ Dennis WRIGHT, Ph.D, retired in 2020 as a physicist in the Elementary Particle Physics Department of the SLAC National Accelerator Laboratory at Stanford
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<b>Track: Life Sciences and Human Health</b>	
<b>Time (UTC+8):</b> 14:00-17:50, Nov. 19	
<b>Venue:</b> Ballroom, F2, the Presidential Hotel	
<b>Organizer:</b> State-Guest Health Management Center	
<b>Moderator:</b> DENG Yulin, Chairman of the IAA Life Sciences Commission, Chief Scientist, Institute of Engineering Medicine of Beijing Institute of Technology (BIT)	
This track discusses space medicine and exchanges views on applications of space technology in health and epidemic prevention and control.	
<b>14:00-14:15</b>	<b>Remarks</b> <ul style="list-style-type: none"> <li>➤ George ABBEY, IPSPACE Honorary Chair, Chair, Rice University’s Baker Institute’s International Space Medicine Summit (ISMS), former director of NASA Johnson Space Center (JSC)</li> <li>➤ Oleg ORLOV, IPSPACE Co-Chair, Director, Institute of Biomedical Problems (IBMP), member of the Russian Academy of Sciences, IAA member</li> <li>➤ ZHAO Zhenye, Academician of Chinese Academy of Engineering</li> <li>➤ * Olivier CONTANT, Director of Innovation and New Technology at the International Academy of Astronautics (IAA), Co-Editor of <i>Acta Astronautica</i>, President of the International Innovation Research Institute (IIRI)</li> </ul>
<b>14:15-14:30</b>	Yi-Xian QIN, SUNY Distinguished Professor and Chair, Biomedical Engineering (BME) Department; Co-Director, Institute for Engineering Driven Medicine, Stony Brook University; IAA member
<b>14:30-14:45</b>	<b>Advanced Technology in Space Biomedical Engineering and Its Application</b> DENG Yulin, Chairman of the IAA Life Sciences Commission, Chief Scientist, Institute of Engineering Medicine of Beijing Institute of Technology (BIT)
<b>14:45-15:00</b>	<b>Human Tissue Production in Space</b> Oliver ULLRICH, Director Innovation Cluster Space and Aviation (UZH Space Hub), Full Professor, Chair of Anatomy (UZH), IAA Member
<b>15:00-15:15</b>	ZHANG Shu, Director, Chinese Society of Arrhythmia, Chinese Medical Doctor Association
<b>15:15-15:30</b>	Elena FOMINA, Professor, Member of the Board of Trustees of the International Academy of Astronautics, Head of the Department of Physiology of Human Gravitational Resistance, the Institute of Biomedical Problems of the Russian Academy of Sciences
<b>15:30-15:40</b>	<b>Break</b>
<b>15:40-15:55</b>	<b>Study on Ecological Technology Regulating People's Physiological and Psychological Health in Special Isolated Environment</b>



	LIU Hui, Associate research scientist and Doctoral Supervisor, School of Biological Science and Medical Engineering, Beihang University (BUAA)
<b>15:55-16:10</b>	<b>Projection of Psychological Support for the Crews of Orbital Flights on Current Problems in Healthcare</b> I. Rozanov, Institute for Biomedical Problems of the Russian Academy of Sciences (IBMP RAS) Co-presenters: N. Diaz Rey (MSU); K. Shishenina (MSU); E. Tomilovskaya (IBMP)
<b>16:10-16:25</b>	<b>Biomedical Factors for Health Risk Assessment of Space Radiation</b> ZHOU Guangming, Professor of Soochow University, IAA member
<b>16:25-16:40</b>	<b>Risk Analysis and Geographic Information System Technologies Platform for Diarrheal Disease Prevention in Nigeria</b> Philip NJEMANZE, IAA Member, Chairman of the International Institutes of Advanced Research and Training, Chidicon Medical Center, Owerri, Imo State, Nigeria
<b>16:40-17:00</b>	ZHANG Yawei, Chair of the Department of Cancer Prevention and Control, National Cancer Center; Associate Director of the National Clinical Research Center for Cancer; member of the International Agency for Research on Cancer (IARC) Ethics Committee
<b>17:00-17:20</b>	<b>Cardioproteomics: From Space to Earth</b> V. B. RUSANOV, Head of the Laboratory of Cardiovascular and Respiratory Systems of IBMP RAS L. Kh. PASTUSHKOVA; A.R. KUSSMAUL, IAA Member; and I.M. LARINA
<b>17:20-17:40</b>	<b>Caring for Human Health: Case Study of the Revolutionary Iterative Development of Health Insurance on Critical Illness in the Chinese Market</b> LIU Jun, COO, Da Tong Insurance Broker
<b>17:40-17:50</b>	<b>Summary; photo opportunity</b>

### Track: Space Traffic Management

**Time (UTC+8):** 14:00-18:40, Nov. 19

**Venue:** Beijing Hall, F2, the Presidential Hotel

**Organizer(s):** International Academy of Astronautics; Beijing Institute of Technology School of Law; BIT Institute of Air, Space Policy and Law

**Moderator:** GAO Ruofei, Secretary-General of China Institute of Space Law

A growing number of launches from more and more launch sites and space ports, the entering of non-governmental entities, the positioning of satellite constellations, an increase in space debris and the advent of reusable launch vehicles supports this track. Conceptualizing space traffic management will turn out to become a relevant task during the next decades. Space traffic management will, however, limit the freedom of use of outer space. Therefore, an international consensus on internationally binding regulations will only be achieved, if States

<p>identify certain urgency and expect a specific as well as collective benefit from this. Space traffic touches two dimensions: the scientific and technical area, and the regulatory field.</p> <p>The forum will discuss the current challenges faced by space traffic management, the progress of relevant rules and future development trends from the technical and regulatory aspects, to provide suggestions for the construction of a fair, transparent, and sustainable space traffic management mechanism.</p>	
<b>14:00-14:15</b>	<p><b>Remarks</b></p> <p>Jean-Michel CONTANT, IPSPACE Co-Chair, Secretary-General of IAA</p> <p>WANG Tianyi, IPSPACE Executive Chairman, Executive Chairman of the International Peace Alliance (Space), IAA member</p>
<b>Keynotes Part I</b>	
<b>14:15-14:30</b>	<p><b>Construction of Space Traffic Management Mechanism</b></p> <p>LI Shouping, Member of the International Academy of Astronautics, Dean of Beijing Institute of Technology School of Law</p>
<b>14:30-14:45</b>	<p>Steven FREELAND, Co-Chair of the UNCOPUOS Working Group on Outer Space Resources, Professor Emeritus, University of Western Sydney, Australia</p>
<b>14:45-15:00</b>	<p>* Christophe BONNAL, French Space Agency (CNES), Chair of IAF Space Traffic Management Committee, IAA Member</p>
<b>Keynotes Part II</b>	
<p><b>Moderator:</b> LI Juqian, Professor, School of International Law, China University of Political Science and Law</p>	
<b>15: 00-15:15</b>	<p><b>The Recommended Principles to Determine the Right of Road in Space</b></p> <p>WANG Guoyu, Associate Professor, Beijing Institute of Technology School of Law, Dean of the Institute of Air, Space Policy and Law</p>
<b>15:15-15:30</b>	<p>Stephan HOBE, Professor, Director of the Institute of Air and Space Law, University of Cologne, Germany, IAA Member</p>
<b>15:30-15:50</b>	<p>A. K. ANILKUMAR, Indian Space Research Organisation (ISRO), Associate Director, ISTRAC and Chief General Manager, Safe &amp; Sustainable Space Operations Management, IAF VP for Relations with International Organizations, IAA Member</p>
<b>15:50-16:05</b>	<p>GONG Zizheng, Professor, Chief Researcher, China Academy of Space Technology</p>
<b>16:05-16:25</b>	<p><b>The COSPAR Planetary Protection Policy: Ensuring the Sustainability of Scientific Investigations in Outer Space</b></p> <p>Athena COUSTENIS, Director of Research with the French Center for Scientific Research (CNRS) at Paris Observatory, Trustee of the International Academy of Astronautics</p>
<b>16:25-16:30</b>	<p><b>Free Discussion</b></p>
<b>16:30-16:40</b>	<p><b>Break</b></p>

<b>16:40-16:55</b>	XU Weidi, Professor, Researcher of the former Institute of Strategic Studies, National Defense University
<b>16:55-17:10</b>	SU Jinyuan, Professor, Wuhan University Institute of International Law, Director of the Teaching and Research Section of Public International Law
<b>17:10-17:30</b>	<b>The Safety of Tiangong (天宫空间站) &amp; Propellant Liability: Issues in Space Traffic for Satellite Constellations, Crewed and Commercial Space Activities</b> Thomas GREEN, Member of the International Institute of Space Law (IISL), the Space Law Council of Australia and New Zealand and the Royal Society of NSW
<b>17:30-18:20</b>	<b>Panel Discussion</b> <b>Moderator:</b> YANG Kuan, Associate Professor, Deputy Dean of the Institute of Air, Space Policy and Law, BIT <b>Panelists:</b> ➤ <b>Legal Challenges and Possible Solutions of Space Traffic Management</b> GAO Qi, Associate Professor, School of Law, Beijing University of Aeronautics and Astronautics ➤ <b>Space Traffic Safety Risk of Commercial Satellite Constellation and Its Legal Regulation</b> JIANG Shengli, Associate Professor, School of International Law, East China University of Political Science and Law ➤ <b>Air Traffic Management and Space Traffic Management: Reference and Integration</b> KONG Dejian, Lecturer, School of International Law, China University of Political Science and Law ➤ <b>Challenges of Space Traffic Management in the New Space Context</b> LV Zhuoyan, Lecturer, International Space University ➤ <b>Analysis of the Influence of Space Object Orbit Evolution on Space Traffic Management</b> YANG Zhitao, Senior engineer, National Astronomical Observatory, Chinese Academy of Sciences ➤ <b>Standard Foundation-- Construction of Space Traffic Rule System</b> QUAN Haofang, Director of Aerospace Standardization Institute / Senior engineer, Deputy Secretary-General of the Space Debris Sub-bid Committee of the National Astronautical Standards Committee, Responsible Representative of the Space Debris Working Group of the International Organization for Standardization (ISO) Space Sub-Committee
<b>18:20-18:30</b>	<b>Free Discussion</b>
<b>18:30-18:40</b>	<b>Summary, photo opportunity</b>

## Sunday, Nov. 20, 2022

<p><b>Track: Space Breeding and Ecological Civilization, High-Quality Development</b></p> <p><b>Time (UTC+8):</b> 09:00-11:40, Nov. 20</p> <p><b>Venue:</b> Ballroom, F2, the Presidential Hotel</p> <p><b>Organizer(s):</b> Modern Agriculture and Space Breeding Working Committee, China High-Tech Industrialization Association (CHIA); Space Breeding Industry Innovation Alliance</p> <p><b>Moderator:</b> Li Jing, Secretary General of Modern Agriculture and Space Breeding Working Committee of China High-Tech Industrialization Association, Vice Secretary General of Space Breeding Industry Innovation Alliance, General Manager of Shenzhou Lvpeng Agricultural Science &amp; Technology Co., Ltd.</p> <p>This track will introduce progress of the basic scientific research in the molecular mechanism of space mutation breeding, and display the innovation and the cultivation and release of new varieties of germplasm resources such as staple food crops, horticultural crops, cash crops, forest, grass, flowers, Chinese herbal medicines, etc. It presents the latest application examples in the fields of industrial microorganisms and food processing and nutrition, and provides innovations and breakthroughs related to drug research and development obtained by using space mutagenesis technology in the field of medicine and health.</p>	
<b>09:00-09:10</b>	<p><b>Remarks</b></p> <p>LIANG Xiaohong, IPSPACE Co-Chair, Executive Vice President of China High-Tech Industrialization Association (CHIA)</p> <p>Aleksander SAMOKUTYAEV, Hero of Russia, Vice-Captain of the Russian cosmonaut brigade, Cosmonaut</p>
<b>09:10-09:30</b>	<p><b>Development and prospect of space breeding</b></p> <p>Yu Futong, Associate Professor, Member of the Expert Committee of Space Breeding Industry Innovation Alliance, College of Resources and Environment, China Agricultural University</p>
<b>09:30-09:50</b>	<p><b>Development and utilization of landscape ecological grass resources</b></p> <p>Wu Juying, Professor, Member of the Expert Committee of Space Breeding Industry Innovation Alliance, Director of Engineering and Technology Center of Landscape Ecological Grass, National Forestry and Grassland Administration</p>
<b>09:50-10:10</b>	<p><b>Research and application of space giant reed</b></p> <p>Li Shanshan, Member of the Expert Committee of Space Breeding Industry Innovation Alliance, Director of Beijing Plant Tissue Culture Engineering Technology Research Center, Director of Plant Tissue Culture Engineering Technology Research Center, Shenzhou Lvpeng Agricultural Science &amp; Technology Co., Ltd.</p>
<b>10:10-10:30</b>	<p><b>Report on progress and industry development of space breeding new vegetable varieties</b></p> <p>Wang Aimin, Professor, Vice-Manager-General of Tianshui Shenzhou Lvpeng Agricultural Science &amp; Technology Co., Ltd.</p>

<b>10:30-10:40</b>	<b>Break</b>
<b>10:40-11:00</b>	<p><b>Characteristics and new germplasm creation of woody plants in space mutagenesis breeding</b></p> <p>Li Yun, Ph.D. in Forest genetics and breeding, Professor, Member of the Expert Committee of Space Breeding Industry Innovation Alliance, Doctoral supervisor of Forest Genetics and Breeding, Beijing Forestry University, Vice chairman of China Society of Atomic Energy Agriculture, Vice Director of Tree Introduction and Domestication Committee of Chinese Society of Forestry, Member of Council of Chinese Society of Agricultural Biotechnology, Member of Council of Tree Genetics and Breeding Branch of Chinese Society of Forestry</p>
<b>11:00-11:20</b>	<p><b>Achievements and prospects of space breeding</b></p> <p>Li Jingzhao, Ph.D. Member of the Expert Committee of Space Breeding Industry Innovation Alliance, Head of Department of Technical Cooperation, Space Breeding Industry Innovation Alliance</p>
<b>11:20-11:40</b>	<p><b>Development of efficient agricultural facilities to support the growth of modern agriculture</b></p> <p>Zhou Zengchan, Senior Engineer (Professorship), Member of the Expert Committee of Space Breeding Industry Innovation Alliance, Beijing Agricultural Machinery Institute Co., Ltd. Chief Engineer</p>

<b>Track: Space Power and Terrestrial Energy</b>	
<b>Time (UTC+8):</b> 09:00-11:30, Nov. 20	
<b>Time (UTC-8):</b> 17:00-19:30, Nov. 19	
<b>Venue:</b> Beijing Hall, F2, the Presidential Hotel	
<b>Organizer(s):</b> International Academy of Astronautics	
<p>It is crucial to identify research, develop and deploy affordable and sustainable new energy sources. This need is driven by a demand for energy to enable economic growth for a still-increasing global population. It is also driven by concerns regarding the long-term accumulation in Earth's atmosphere of fossil fuel-derived greenhouse gases, and the prospect that annual production of petroleum will begin to decline. The challenge to transition current terrestrial energy systems into more environmentally friendly, sustainable ones is engaged. The whole range of power generation, conversion and storage will be discussed as well as the prospects for using space-based power plants to provide energy remotely to the Earth.</p>	
<b>09:00-09:10</b>	<p><b>Welcome Remarks, Introduction of Speakers</b></p> <ul style="list-style-type: none"> <li>➤ John C. MANKINS, Co-Chair, IAA Permanent Committee on Space Solar Power</li> <li>➤ Jean-Michel CONTANT, IPSPACE Co-Chair, Secretary-General of IAA</li> </ul>
<b>09:10-09:40</b>	<p><b>Global Overview of Space Solar Power and Achieving Carbon Net-Zero</b></p> <p>John C. MANKINS, Co-Chair, IAA Permanent Committee on Space Solar Power</p>

<b>09:40-10:00</b>	<b>Space Solar Power Transfer and Delivery via Wireless Beam</b> Shi-Wei DONG, National Key Lab. of Space Microwave Technology, CAST (Xi'an)
<b>10:00-10:20</b>	<b>SOLARIS Preparatory Program Planning: ESA Activities related to Space Contributions to Sustainable Energy</b> Sanjay VIJENDRAN, Lead, SOLARIS Preparatory Program Planning, ESA
<b>10:20-10:40</b>	<b>Innovation, Simulation and the Earth Prototype's Construction &amp; Experiment for OMEGA-SPS with Completed Link &amp; System</b> DUAN Baoyan, Academician of Chinese Academy of Engineering, Professor of Xidian University
<b>10:40-11:00</b>	<b>Legal and Regulatory Consideration related to Space Solar Power</b> Michelle HANLON, Founder and President, For All Moonkind; President, National Space Society
<b>11:00-11:20</b>	<b>Sustainability for Earth Environment Protection by MARS / EUROPA - Astronautic and Robotic Hybrid INPS Flagship</b> Frank JANSEN, DLR, Institute of Space Systems
<b>11:20-11:30</b>	<b>Future Plans for Activities by the IAA Permanent Committee on Space Solar Power and Closing Remarks</b> John C. MANKINS, Co-Chair, IAA Permanent Committee on Space Solar Power
<b>11:30 (UTC+8)</b>	<b>END</b>

### **Track: Space Technologies and Industrial Investment**

**Time (UTC+8):** 14:00-18:10, Nov. 20

**Venue:** Beijing Hall, F2, the Presidential Hotel

**Organizer(s):** Wingo Fund

**Co-organizer:** CIIC McFaddens Holdings Ltd.

**Supporter:** Rocket π (Taicang) Aerospace Technology Co., LTD

**Moderator:** WU Jiandong, professor, energy expert

This track discusses the trend of the space industry and shares corporate technology application cases.

<b>14:00-14:30</b>	<b>Remarks</b> <ul style="list-style-type: none"> <li>➤ Nigel S. LITTLE, Board Director of a North American oil company, Former executive of Morgan Stanley, HSBC James Capel, and Bank of America</li> <li>➤ The Lord Grade of Yarmouth, Chairman of OFCOM, Co-Chairman of CIIC McFaddens Holdings Ltd., Former Chairman of the BBC</li> <li>➤ Jennifer YU, Founding partner of Auster Capital, Chairwoman of Rothschild &amp; Co Group in Greater China</li> <li>➤ ZHOU Daoxu, Director of the Financial Security Research Center of Institute of Financial Research (IFR), Tsinghua University</li> </ul>
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<b>14:30-14:50</b>	Lu ZHANG, Founding Partner of Fusion Fund; Silicon Valley Investor; Global Young Leaders, World Economic Forum
<b>14:50-15:10</b>	<b>Thoughts on Investment under the Shared Constellation Model</b> GUAN Hongwei, General Manager of Operation Dept., Hiwing Satellite
<b>15:10-15:30</b>	Jean-Baptiste DESBOIS, CEO - Director General - SEMECCEL- Cité de l'espace / L'Envol des Pionniers
<b>15:30-15:50</b>	<b>Development of China's Commercial Remote Sensing Satellite Industry and Typical Satellite Constellation</b> WANG Yuxiang, Chairman of Piesat Information Technology Co., Ltd
<b>15:50-16:10</b>	<b>Space Market Dynamics - Is Space Changing?</b> Ken DAVIDIAN, International Space University (ISU), Vice President for North American Operations; IAA Member; Chair of IAF Space Entrepreneurial and Investment Committee (SEIC), Vice Chair of the IAF Space Economy Committee
<b>16:10-16:20</b>	<b>Break</b>
<b>16:20-16:40</b>	<b>Space+ or +Space, How Space Empowers Earth's Industrial Upgrades</b> William CHENG, Founder & CEO, Rocket π, Chairman of Space Council of the China Adventure Association
<b>16:40-17:00</b>	* Olivier CONTANT, Director of Innovation and New Technology at the International Academy of Astronautics (IAA), Co-Editor of Acta Astronautica, President of the International Innovation Research Institute (IIRI)
<b>17:00-17:20</b>	<b>Commercial Remote Sensing, the Guide Star of the Green Economy</b> FANG Zheng, President Assistant of China Siwei Surveying and Mapping Technology Co., Ltd of China Aerospace Science and Technology Corporation
<b>17:20-17:40</b>	<b>Flexible Landing on Asteroid: Concept and Technology</b> LIANG Zixuan, Professor, Beijing Institute of Technology
<b>17:40-18:00</b>	<b>The "Cultivators" in the Era of Scientific Innovation</b> Jeffrey WANG, General Manager, Beihang Investment Co. Ltd.
<b>18:00-18:10</b>	<b>Summary, photo opportunity</b>

<b>Track: Commercial Space</b>	
<b>Time (UTC+8):</b> 14:30-18:10, Nov. 20	
<b>Venue:</b> Ballroom, F2, the Presidential Hotel	
<b>Organizer(s):</b> Zhongguancun Lingchuang Commercial Aeros Industrial Innovation Alliance	
<b>Moderator:</b> LI Qiao, Zhongguancun Lingchuang Commercial Aeros Industrial Innovation Alliance	
This track discusses the peaceful development of commercial space applications and promotes international commercial collaboration.	
<b>14:30-14:45</b>	<b>Remarks</b> ➤ ZOU Hong, Chairman, Zhongguancun Lingchuang Commercial Aeros Industrial Innovation Alliance

	<ul style="list-style-type: none"> <li>➤ ZHAO Xiaolong, Member of the Russian Academy of Engineering, IAA Member</li> <li>➤ * Gustavo Sabino VACA NARVAJA, Argentine Ambassador to China</li> </ul>
<b>14:45-15:00</b>	<b>Commercial Space Development in the Space Era</b> YUAN Hongyi, Vice Chairman, Researcher, Zhongguancun Lingchuang Commercial Aeros Industrial Alliance
<b>15:00-15:20</b>	Lu ZHANG, Founding Partner of Fusion Fund; Silicon Valley Investor; Global Young Leaders, World Economic Forum
<b>15:20-15:40</b>	Jean-Baptiste DESBOIS, CEO - Director General - SEMECCEL- Cité de l'espace / L'Envol des Pionniers
<b>15:40-15:50</b>	Nobu OKADA, Founder & CEO, Astroscale; IAF VP for Space Economy and Sponsorship
<b>15:50-16:00</b>	<b>Break</b>
<b>16:00-16:15</b>	<b>Opportunities And Challenges for Commercial In-Orbit Services</b> ZHANG Guihong, President, Beijing Orbit Future Space Technology Cp., Ltd.
<b>16:15-16:40</b>	<b>Space Market Dynamics - Is Space Changing?</b> Ken DAVIDIAN, International Space University (ISU), Vice President for North American Operations; IAA Member; Chair of IAF Space Entrepreneurial and Investment Committee (SEIC), Vice Chair of the IAF Space Economy Committee
<b>16:40-17:00</b>	<b>The Exploration Company – We democratize Space Exploration</b> Markus JÄGER, Airbus Defense and Space GmbH, System Engineer, Chair of IAF Space Transportation Committee
<b>17:00-17:15</b>	<b>Supply Chain Opportunities in Commercial Space Development</b> ZHANG Minjian, Executive Director, Wuxi Hirel Spatial IT Co., Ltd.
<b>17:15-17:30</b>	<b>The “Cultivators” in the Era of Scientific Innovation</b> Jeffrey WANG, General Manager, Beihang Investment Co. Ltd.
<b>17:30-17:50</b>	Kian Kang, Director, Presales of Planet Asia Pacific
<b>17:50-18:10</b>	<b>The SpaceLand Centers to Democratize Access to Microgravity, Moon-Gravity, and Mars-Gravity</b> Carlo VIBERTI, SpaceLand President, Microgravity Flight Veteran

**Space Education**  
- Science Popularization Activity  
with the Experimental High School Attached to Beijing Normal University

**Time (UTC+8):** 14:30-16:50, Nov. 20, 2022  
**Venue:** The Experimental High School Attached to Beijing Normal University  
**Host:** International Peace Alliance (Space)  
**Organizer:** The Experimental High School Attached to Beijing Normal University  
**Supporters:** Special Fund for the Peaceful Use of Space Technology; The Association of Female Teachers in the Capital (AFTC); Space Foundation; International Space University (ISU); Cité de l'espace  
**Moderator:** Student representative, the Experimental High School Attached to Beijing Normal University



<b>14:30-14:40</b>	<b>Welcome Remarks and Conveying Congratulatory Message from Academician QI Faren</b> LI Xiaohui, Principal of the Experimental High School Attached to Beijing Normal University
<b>14:40-14:45</b>	<b>Remarks</b> Pascale EHRENFREUND, IPSPACE Co-Chair, President of the International Space University (ISU), IAA Member
<b>14:45-14:50</b>	<b>Remarks</b> DING Wenfeng, Co-Chair of the Special Fund for the Peaceful Use of Space Technology
<b>14:50-14:55</b>	<b>Remarks</b> Steve EISENHART, IPSPACE Co-Chair, Senior Vice President - Strategic & International Affairs, Space Foundation
<b>14:55-15:05</b>	<b>Presentation</b> HE Haiyan, Chairwoman, the Association of Female Teachers in the Capital (AFTC)
<b>15:05-15:10</b>	<b>Modern Educational Technologies</b> Vitaly AFIANI, Advisor, Former Director, Archives of Russian Academy of Sciences
<b>15:10-15:25</b>	<b>The Wonderful World of Optical Communications</b> PEI Li, Professor, Doctoral Supervisor, Beijing Jiaotong University, The National Science Fund for Distinguished Young Scholars
<b>15:25-15:40</b>	<b>Research Approach with Students in Extracurricular Activities of Astronomy and Space</b> Ivo JOKIN, Principal, Municipal Center for Extracurricular Activities
<b>15:40-15:50</b>	Davide PETRILLO, Executive Director of the Space Generation Advisory Council (SGAC), IAF VP for Education and Workforce Development
<b>15:50-16:30</b>	<b>Cité de l'espace Presentation, and; Live interaction with students – comments on International Space Settlement Design Competition (ISSDC) winning works</b> Jean-Baptiste DESBOIS, CEO - Director General - SEMECCEL- Cité de l'espace / L'Envol des Pionniers
<b>16:30-16:40</b>	<b>Message from Astronauts</b> Anatolii Artsebarskii, Hero of the Soviet Union, Pilot, Cosmonaut * Taikonaut
<b>16:40-16:50</b>	<b>Summary, photo opportunity</b>

### Track: Moon Protection

**Time (UTC+8):** 14:00-17:10, Nov. 20

**Venue:** Yellow River Hall, F2, the Presidential Hotel

<b>Organizer(s):</b> International Academy of Astronautics (IAA)	
<b>Moderator:</b> Nicolò ANTONIETTI, IAC corresponding member	
<p>The Moon Farside is the only place free from radio transmissions and noises produced by ground-based and Earth-orbiting instruments. The spherical body of the Moon blocks them, acting like a shield. Thus, the Legal Protection of the Moon Farside from all kinds of non-scientific future exploitations (real estate, industry, and military) has long been a concern for many scientists. This track advocates the support to the Moon Farside Protection by all scientists working in four different areas of science: Cosmology, Astrobiology, SETI, and Planetary Defense.</p>	
<b>14:00-14:10</b>	<b>Remarks</b> Jean-Michel CONTANT, IPSPACE Co-Chair, Secretary-General of IAA
<b>14:10-14:40</b>	<b>Keynote presentation</b> Nicolò ANTONIETTI, IAC corresponding member
<b>14:40-15:00</b>	Bernard FOING, Executive Director of International Lunar Exploration Working Group (ILEWG), EuroMoonMars & ArtMoonMars Manager, Professor at the Leiden University, IAA Member, Chair IAF ITACCUS Committee
<b>15:00-15:20</b>	<b>Energy Transition and Peaceful Use of Space Technology</b> David WARDEN, Chief Executive Officer & Co-Founder, Black Moon Corporation
<b>15:20-15:30</b>	<b>Unique Radio Science from the Far Side of the Moon</b> Jack O. BURNS, NASA Network for Exploration and Space Science, Director and PI; Professor of Astrophysics, University of Colorado Boulder, IAA Member
<b>15:30-15:50</b>	Fabio TRONCHETTI, professor of space law in Beijing
<b>15:50-16:10</b>	Chuen Chern LOO, ITU Radiocommunications Bureau, Head, Space Publications and Registration Division
<b>16:10-17:10</b>	<b>Panel Discussion</b> <b>Lead:</b> Nicolò ANTONIETTI, IAC corresponding member

<b>Closing Ceremony</b>	
<b>Time (UTC+8):</b> 21:00-22:00, Nov. 20	
<b>Venue:</b> Ballroom, F2, the Presidential Hotel	
<b>21:00-21:30</b>	<b>Remarks</b> WANG Ning, IPSPACE Co-Chair, President of China Electronics Chamber of Commerce Neil BUSH, IPSPACE Honorary Chair, Chairman, George H. W. Bush Foundation for U.S.-China Relations Christian FEICHTINGER, IPSPACE Co-Chair, Executive Director, International Astronautical Federation (IAF), IAA Member * Marcos Bezerra Abbott GALVÃO, Brazillian Ambassador to China DING Wenfeng, Co-Chair of the Special Fund for the Peaceful Use of Space Technology
<b>21:30-21:50</b>	<b>Publishing</b>

	<ul style="list-style-type: none"> <li>➤ <b>Beijing Initiative by Scientists for Peaceful Use of Space</b> Announced by Jean-Michel CONTANT, IPSPACE Co-Chair, Secretary-General of IAA</li> <li>➤ <b>Outstanding Projects in Space Tech Applications and Innovation</b> Announced by DENG Yulin, Chairman of the IAA Life Sciences Commission, Chief Scientist, Institute of Engineering Medicine of Beijing Institute of Technology (BIT)</li> </ul>
<b>21:50-22:00</b>	<b>Closing of Symposium</b>

\* Speakers to be confirmed