

## **IP Competition Shortlisted**



Category	IP Co	de	Name	Country	Presentation Title		Symposium
	IAC-19/A1/IP.5	ID: 54993	Mr. Simon Engler	United States	Results from HI-SEAS Long Duration Mars Analog Simulations Nasa human exploration research analog (hera) research study	A1	Symposium A1 - IAF/IAA SPACE LIFE SCIENCES SYMPOSIUM
A - Science and Exploration	IAC-19/A1/IP.6	ID: 49849	Mrs. Jonna Ocampo	United States	assesses crew fitness for long-duration space travel  Cardiovascular deconditioning during two months of bed rest:	A1	Symposium A1 - IAF/IAA SPACE LIFE SCIENCES SYMPOSIUM
	IAC-19/A1/IP.10	ID: 53884	Mr. Jeremy Rabineau	Belgium	Comparison of wearable monitoring based on ballisto- and seismo-cardiography with MRI	A1	Symposium A1 - IAF/IAA SPACE LIFE SCIENCES SYMPOSIUM
	IAC-19/A3/IP.12	ID: 50251	Mr. Maneesh Kumar Verma	The Netherlands	mission concept for lunar low frequency antennas for radio astronomy (lufar)	A3	Symposium A3 - IAF SPACE EXPLORATION SYMPOSIUM
	IAC-19/A3/IP.15	ID: 55016	Mr. Samuel Ximenes	United States	From Dust to Gas, LEAP2 Technologies for Lunar Site Development at the Marius Hills Skylight	A3	Symposium A3 - IAF SPACE EXPLORATION SYMPOSIUM
	IAC-19/A4/IP.1	ID: 55126	Dr. Jill Tarter	United States	Technosearch.seti.org: The Power of the Past: The Promise of the Future	A4	Symposium A4 - 48th IAA SYMPOSIUM ON THE SEARCH FOR EXTRATERRESTRIAL INTELLIGENCE (SETI) – The Next Steps
	IAC-19/A4/IP.3	ID: 52287	Ms. Lori Walton	Canada	The Search for Resource Extraction Technosignatures in the Solar System	A4	Symposium A4 - 48th IAA SYMPOSIUM ON THE SEARCH FOR EXTRATERRESTRIAL INTELLIGENCE (SETI) – The Next Steps
	IAC-19/A5/IP.3	ID: 53463	Prof. Geraldo Magela Couto Oliveira	Brazil	Finding trajectories to send a spacecraft to an asteroid to change its orbit around the Sun	A5	Symposium A5 - 22nd IAA SYMPOSIUM ON HUMAN EXPLORATIO THE SOLAR SYSTEM
	IAC-19/A5/IP.4	ID: 49061	Ms. Alina Kunitskaya	Canada	Oxygen Production on Mars with In-Situ Resource Utilization	A5	Symposium A5 - 22nd IAA SYMPOSIUM ON HUMAN EXPLORATIO THE SOLAR SYSTEM
	IAC-19/A5/IP.5	ID: 50100	Mr. Jeffrey Nosanov	United States	PERISCOPE: PERIapsis Subsurface Cave OPtical Explorer: lunar cave characterization from orbit	A5	Symposium A5 - 22nd IAA SYMPOSIUM ON HUMAN EXPLORATION THE SOLAR SYSTEM
	IAC-19/A6/IP.20 IAC-19/A6/IP.6		Mr. Luis Sanchez Mr. Harvey Reed	United Kingdom United States	Al to Support Decision Making in Collision Risk Assessment Blockchain Enabled Space Traffic Awareness (BESTA)		Symposium A6 - 17th IAA SYMPOSIUM ON SPACE DEBRIS Symposium A6 - 17th IAA SYMPOSIUM ON SPACE DEBRIS
	IAC-19/A6/IP.13	ID: 53781	Dr. Alexis Petit	Italy	Collision risk assessment for the proposed large constellations	A6	Symposium A6 - 17th IAA SYMPOSIUM ON SPACE DEBRIS
					Knowledge Utilization and Open Science Policies: Noble aims that ensure quality research or Ordering discoveries like a pizza		Symposium A7 - IAF SYMPOSIUM ON FUTURE SPACE ASTRONOM
	IAC-19/A7/IP.3		Ms. Julia Heuritsch	Germany	? radio frequency interference: using deep learning tools to	A7	AND SOLAR-SYSTEM SCIENCE MISSIONS Symposium A7 - IAF SYMPOSIUM ON FUTURE SPACE ASTRONOM
	IAC-19/A7/IP.4	ID: 54319	Mr. Zaid Rana	Canada	mitigate the impact to space operations	A7	AND SOLAR-SYSTEM SCIENCE MISSIONS
					Automatic Ship Detection from High Resolution Satellite images		
	IAC-19/B1/IP.4	ID: 50943	Mr. Saeed Al Mansoori	United Arab Emirates	based on a Deep Convolutional Neural Network (DCNN) Model Microwave observations of mesospheric ozone loss over	B1	Symposium B1 - IAF EARTH OBSERVATION SYMPOSIUM
	IAC-19/B1/IP.5	ID: 50289	Ms. Elise Wright Knutsen	Norway	Antarctica associated with particle precipitation  Monitoring and Predicting the Land Use and Land Cover	81	Symposium B1 - IAF EARTH OBSERVATION SYMPOSIUM
- Annlications and					Changes from Multi-Temporal DubaiSat-2 Data using Remote Sensing and GIS techniques ,Äi A Case Study of Al Marmoom		Commenter Da Las FAD
	IAC-19/B1/IP.12		Ms. Shaikha AlBesher	United Arab Emirates	Desert Conservation Reserve Astronaut Resilience Training for the Future Manned Space	81	Symposium B1 - IAF EARTH OBSERVATION SYMPOSIUM
	IAC-19/B3/IP.3	ID: 49796	Mrs. Yumi Ohama	Japan	Mission An Eye on the Horizon: Analog Mars Rover Localization and	B3	Symposium B3 - IAF HUMAN SPACEFLIGHT SYMPOSIUM
Applications and Operations		ID: 49618	Mr. Bradley Hoffmann	United States	Astronaut Detection Adjustable IVA Spacesuit Ergonomics ,Äl Upper Body Motion Envelope Reference Model	B3	Symposium B3 - IAF HUMAN SPACEFLIGHT SYMPOSIUM  Symposium B3 - IAF HUMAN SPACEFLIGHT SYMPOSIUM
	IAC-19/B3/IP.1	ID: 50341	Dr. Ondrej Doule	United States	Flight results of an advanced multiband communication SDR	D4	Symposium B3 - IAF HUMAN SPACEFLIGHT SYMPOSIUM Symposium B4 - 26th IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS
	IAC-19/B4/IP.4	ID: 51922 ID: 53270	Mr. Diego Nodar  Dr. Vladimir Ten	Spain Kazakhstan	payload in LUME-1 satellite  First in-orbit results from KazSTSAT	B.4	Symposium B4 - 26th IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS
	IAC-19/B4/IP.8 IAC-19/B4/IP.24	ID: 53270	Mr. Sergio Tiraplegui Riveras	Kazakhstan Spain	On-board management of autonomous formation flying smallsats in Proba-3 mission	R4	Symposium B4 - 26th IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS
	IAC-19/B6/IP.11		Ms. Ella Herz	United States	Optimized Contact Scheduling for NOAA Search and Rescue Using UX design techniques to increase the efficiency and	B6	Symposium B6 - IAF SPACE OPERATIONS SYMPOSIUM
	IAC-19/B6/IP.9	ID: 54547	Mr. Sean Stellingwerff	Germany	confidence of mission operators The Analysis and Potential of High Reliability Organization	В6	Symposium B6 - IAF SPACE OPERATIONS SYMPOSIUM
	IAC-19/B6/IP.10	ID: 52167	Mr. Jason Long	United States	Principles in NOAA Satellite Operations	В6	Symposium B6 - IAF SPACE OPERATIONS SYMPOSIUM
C - Technology	IAC-19/C1/IP.11	ID: 51656	Mr. Kent Yoshikawa	Japan	Hayabusa2 operational design and evaluation of MINERVAII- 1A/B rovers deployment	C1	Symposium C1 - IAF ASTRODYNAMICS SYMPOSIUM
	IAC-19/C1/IP.7	ID: 50351	Dr. Joan Pau Sanchez Cuartielles	United Kingdom	ESA F-Class Comet Interceptor: A first close-up study of a dynamically ,Äúnew,Äù object	C1	Symposium C1 - IAF ASTRODYNAMICS SYMPOSIUM
	IAC-19/C1/IP.15	ID: 53334	Mr. Juan Carlos Bastante	Germany	Qualitative and quantitative characterisation of solutions for the low thrust transfer GTO to GEO	C1	Symposium C1 - IAF ASTRODYNAMICS SYMPOSIUM
	IAC-19/C2/IP.9		Dr. Jinhyuk Kim	Korea, Republic of	Vibration test for 7 ton-class liquid propellant rocket engine Integration of a Reaction Wheel System into a Sounding Rocket	C2	Symposium C2 - IAF MATERIALS AND STRUCTURES SYMPOSIUM
	IAC-19/C2/IP.12	ID: 51359	Mr. Harry Byers	United States	to Increase Stability and Performance PW-SAT2 DEORBIT SAIL TEST CAMPAIGN AT DROP TOWER and	C2	Symposium C2 - IAF MATERIALS AND STRUCTURES SYMPOSIUM
	IAC-19/C2/IP.21	ID: 54524	Ms. Inna Uwarowa	Poland	verification on orbit  Development of CubeSat Electric Power System Simulator with	C2	Symposium C2 - IAF MATERIALS AND STRUCTURES SYMPOSIUM
	IAC-19/C3/IP.1 IAC-19/C3/IP.5	ID: 54845 ID: 51702	Mr. Victor Perez Mr. Valerio Giuliani	United States Italy	Complex Geometry  Development of a modular Li-ion battery for LEO satellites	C3	Symposium C3 - IAF SPACE POWER SYMPOSIUM Symposium C3 - IAF SPACE POWER SYMPOSIUM
	IAC-19/C3/IP.6	ID: 54356	Mr. Nihal Singh	India	Hardware Architecture of Electrical Power System for 3U Hyperspectral Imaging Cubesat	C3	Symposium C3 - IAF SPACE POWER SYMPOSIUM
					Development of Adaptable Electrodeless Plasma Propulsion Systems Using Evolutionary Topology Optimisation and Particle		
					in Cell Simulation	C4	Symposium C4 - IAF SPACE PROPULSION SYMPOSIUM
	IAC-19/C4/IP.9	ID: 51982	Mr. Alexander Ryan	Australia	The P-5 Engine: A Costa Rican, Cost-effective, Low Power Liquid		
	IAC-19/C4/IP.9		Mr. Alexander Ryan Mr. Roy Ramirez	United States	The P-5 Engine: A Costa Rican, Cost-effective, Low Power Liquid Rocket Engine	C4	Symposium C4 - IAF SPACE PROPULSION SYMPOSIUM
	IAC-19/C4/IP.10	ID: 50933				C4 C4	
	IAC-19/C4/IP.10	ID: 50933	Mr. Roy Ramirez Mr. Junyeong Jeong	United States  Korea, Republic of	Rocket Engine development and validation of high-performance hypergolic hybrid rocket fuel ignitor with hydrogen peroxide	C4 C4	Symposium C4 - IAF SPACE PROPULSION SYMPOSIUM
	IAC-19/C4/IP.10	ID: 50933	Mr. Roy Ramirez	United States	Rocket Engine development and validation of high-performance hypergolic hybrid rocket fuel lightor with hydrogen peroxide  Modular Architecture Design and Evaluation of Large Spacecraft The Open Source Satellite: Spinnafe	C4 C4	
	IAC-19/C4/IP.10	ID: 50933	Mr. Roy Ramirez Mr. Junyeong Jeong	United States  Korea, Republic of	Rocket Engine development and validation of high-performance hypergolic hybrid rocket fuel ignitor with hydrogen peroxide  Modular Architecture Design and Evaluation of Large Spacecraft	C4  D1	Symposium C4 - IAF SPACE PROPULSION SYMPOSIUM
	IAC-19/C4/IP.10 IAC-19/C4/IP.14 IAC-19/D1/IP.2 IAC-19/D1/IP.3	ID: 50933 ID: 50231 ID: 51791 ID: 50820	Mr. Roy Ramirez  Mr. Junyeong Jeong  Mr. Dong Yang  Mrs. Anita Bernie	United States  Korea, Republic of  China  United Kingdom	Rocket Engine development and validation of high-performance hypergolic hybrid rocket fivel lignitor with hydrogen peroxide hydrogen hydr	C4  D1  D1	Symposium C1 - IAF SPACE PROPULSION SYMPOSIUM  Symposium D1 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D1 - IAF SPACE SYSTEMS SYMPOSIUM
	IAC-19/C4/IP.10 IAC-19/C4/IP.14 IAC-19/D1/IP.2 IAC-19/D1/IP.3 IAC-19/D1/IP.5	ID: 50933 ID: 50231 ID: 51791 ID: 50820 ID: 48738	Mr. Roy Ramirez  Mr. Junyeong Jeong  Mr. Dong Yang  Mrs. Anita Bernie  Mr. Paolo Guardabasso	United States  Korea, Republic of  China  United Kingdom  Portugal	Rocket Engine development and validation of high-performance hypergolic hybrid rocket fuel ignitor with hydrogen peroxide  Modular Architecture Design and Svaluation of Large Spacecraft. The Open Source Satellite: Spinning in ,Aüßest-of-Breed,Aü space and terrestrial innovations to Spin-Out affordable new mission ideas  Evaluation of the Learning Process of a Data-Driven Systems Engineering Methodology in a Workshop Environment Comparative analysis of upper stage and built-in propulsion	D1	Symposium D1 - IAF SPACE PROPULSION SYMPOSIUM  Symposium D1 - IAF SPACE SYSTEMS SYMPOSIUM
	IAC-19/C4/IP.10 IAC-19/C4/IP.14 IAC-19/D1/IP.2 IAC-19/D1/IP.3	ID: 50933 ID: 50231 ID: 51791 ID: 50820	Mr. Roy Ramirez  Mr. Junyeong Jeong  Mr. Dong Yang  Mrs. Anita Bernie	United States  Korea, Republic of  China  United Kingdom	Rocket Engine development and validation of high-performance hypergolic hybrid rocket fuel ignitor with hydrogen peroxide hybrid rocket fuel ignitor with hydrogen peroxide Modular Architecture Design and Evaluation of Large Spacecraft The Open Source Satellite: Spinning in "Aüßest-of-Breed-Aü space and terrestrial innovations to Spin-Out affordable new mission ideas Evaluation of the Learning Process of a Data-Driven Systems Engineering Methodology in a Workshop Environment Comparative analysis of upper stage and built-in propulsion system for EEO satellite launches the design and development of a medium-scale liquid	C4  D1  D1  D1  D2	Symposium D1 - IAF SPACE PROPULSION SYMPOSIUM  Symposium D1 - IAF SPACE SYSTEMS SYMPOSIUM  INNOVATIONS SYMPOSIUM
- Infrastructure	IAC-19/C4/IP.10 IAC-19/C4/IP.14 IAC-19/D1/IP.2 IAC-19/D1/IP.3 IAC-19/D1/IP.5	ID: 50933 ID: 50231 ID: 51791 ID: 50820 ID: 48738 ID: 50706	Mr. Roy Ramirez  Mr. Junyeong Jeong  Mr. Dong Yang  Mrs. Anita Bernie  Mr. Paolo Guardabasso	United States  Korea, Republic of  China  United Kingdom  Portugal	Recket Engine development and validation of high-performance hypergolic hybrid rocket fuel ignitor with hydrogen peroxide hybrid rocket fuel ignitor with hydrogen peroxide Modular Architecture Design and Evaluation of Large Spacecraft The Open Source Satellite: Spinning in "Aüßest-of-Breed-Aü space and terrestrial innovations to Spin-Out affordable new mission ideas Evaluation of the Learning Process of a Data-Driven Systems Engineering Methodology in a Workshop Environment Comparative analysis of upper stage and built-in propulsion system for EEO satellite launches the design and development of a medium-scale liquid commercial launch vehicle named sq-2 based on liquid oxygen and liquid methane propulsion system and liquid methan propulsion system.	D1	Symposium C1 - IAF SPACE PROPULSION SYMPOSIUM  Symposium D1 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D1 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D1 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM
- Infrastructure	IAC-19/C4/IP.10 IAC-19/C4/IP.14 IAC-19/D1/IP.2 IAC-19/D1/IP.3 IAC-19/D1/IP.5 IAC-19/D2/IP.8	ID: 50933 ID: 50231 ID: 51791 ID: 50820 ID: 48738 ID: 50706	Mr. Roy Ramirez  Mr. Junyeong Jeong  Mr. Dong Yang  Mrs. Anita Bernie  Mr. Paolo Guardabasso  Mr. Roman Mykhalchyshyn	United States  Korea, Republic of  China  United Kingdom  Portugal  Ukraine	Recket Engine  development and validation of high-performance hypergolic hybrid rocket fuel ignitor with hydrogen peroxide  Modular Architecture Design and Evaluation of Large Spacecraft. The Open Source Settlies: Spinning in "Aúßest-of-Breed-Aü space and terrestrial innovations to Spin-Out affordable new mission ideas  Evaluation of the Learning Process of a Data-Driven Systems Engineering Methodology in a Workshop Environment Comparative analysis of upper stage and built-in propulsion system for GEO statellite launches the design and development of a medium-scale liquid commercial launch vehicle amed sq-2 based on liquid overgen and liquid methane propulsion system for GEO statellite launches  the design and development of a medium-scale liquid commercial launch vehicle amed sq-2 based on liquid oxygen and liquid methane propulsion system for an automated streamlined body for launch vehicles and teo transportation	D1	Symposium C4 - IAF SPACE PROPULSION SYMPOSIUM  Symposium D1 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D1 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D1 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D1 - IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM
- Infrastructure	IAC-19/C4/IP.10 IAC-19/D1/IP.2 IAC-19/D1/IP.3 IAC-19/D1/IP.5 IAC-19/D2/IP.8 IAC-19/D2/IP.9 IAC-19/D2/IP.9	ID: 50933  ID: 50231  ID: 51791  ID: 50820  ID: 48738  ID: 50706  ID: 54580  ID: 54097	Mr. Roy Ramirez  Mr. Junyeong Jeong  Mr. Dong Yang  Mrs. Anita Bernie  Mr. Paolo Guardabasso  Mr. Roman Mykhalchyshyn  Mr. Yawel Xu  Mr. Paratik Sarkar	United States  Korea, Republic of  China  United Kingdom  Portugal  Ukraine  China  India	Rocket Engine  development and validation of high-performance hypergolic hybrid rocket fuel ignitor with hydrogen peroxide  Modular Architecture Design and Evaluation of Large Spacecraft. The Open Source stellite. Spinning in "Aúßest-of-Breed-Aü space and terrestrial innovations to Spin-Out affordable new mission ideas  Evaluation of the Learning Process of a Data-Driven Systems Engineering Methodology in a Workshop Environment. Comparative analysis of upper stage and built-in propulsion system for GEO statellite launches the design and development of a medium-scale liquid commercial launch vehicle samed sq-2 based on liquid ordense propulsion system for GEO statellite launches  the design and development of a medium-scale liquid commercial launch vehicle samed sq-2 based on liquid oxygen and liquid methane propulsion system. Feasibility of an automated streamlined body for launch vehicles and let utampsortation incorporating Sustainability into Planned Lunar Missions:  Building Biocks of runar Settlement Hrough Lunar  Building Biocks of runar Settlement Hrough Lunar	D1 D2 D2 D2	Symposium C1 - IAF SPACE PROPULSION SYMPOSIUM  Symposium D1 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D1 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D1 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INMOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INMOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INMOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INMOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INMOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INMOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INMOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INMOVATIONS SYMPOSIUM ON BUILDING BLOCKS FO
- Infrastructure	IAC-19/CA/IP.10 IAC-19/CA/IP.14 IAC-19/O1/IP.2 IAC-19/O1/IP.3 IAC-19/O1/IP.5 IAC-19/O2/IP.8 IAC-19/O2/IP.8 IAC-19/O2/IP.8 IAC-19/O2/IP.8	ID: 50933  ID: 50231  ID: 51791  ID: 50820  ID: 48738  ID: 50706  ID: 54580  ID: 54097	Mr. Roy Ramirez  Mr. Junyeong Jeong  Mr. Dong Yang  Mrs. Anita Bernie  Mr. Paolo Guardabasso  Mr. Roman Mykhalchyshyn  Mr. Yawel Xu  Mr. Pratik Sarkar	United States  Korea, Republic of  China  United Kingdom  Portugal  Ukraine  China  India	Rocket Engine development and validation of high-performance hypergolic hybrid rocket fuel ignitor with hydrogen peroxide  Modular Architecture Design and Evaluation of Large Spacecraft. The Open Source Settlities. Spinning in "Aúßest-of-Breed-Aü space and terrestrial innovations to Spin-Out affordable new mission ideas  Evaluation of the Learning Process of a Data-Oriven Systems Engineering Methodology in a Workshop Environment Comparative analysis of upper stage and butli-in propulsion system for EED satellite launches the design and development of a medium-scale liquid commercial launch vehicle named ra-2 based on liquid ordenser Feasbillity of an automated streamlined body for launch vehicles and leto transportation Incorporating Sustainability into Planned Lunar Missions: Bulliding Blocks for Lunar Settlement through Lunar Sustainability Goals	D1 D2 D2 D2 D2	Symposium C1 - IAF SPACE PROPULSION SYMPOSIUM  Symposium D1 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D1 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D1 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D1 - IAF SPACE THANSFORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSFORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSFORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSFORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSFORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D3 - 17th IAR SYMPOSIUM ON BUILDING BLOCKS FO FUTURE SPACE EXPLORATION AND DEVELOPMENT
- Infrastructure	IAC-19/C4/IP-10 IAC-19/C1/IP-2 IAC-19/D1/IP-2 IAC-19/D1/IP-3 IAC-19/D1/IP-5 IAC-19/D2/IP-8 IAC-19/D2/IP-9 IAC-19/D3/IP-3 IAC-19/D3/IP-3 IAC-19/D3/IP-3	ID: 50933 ID: 50231 ID: 51791 ID: 50820 ID: 48738 ID: 50706 ID: 54580 ID: 54097 ID: 50245 ID: 52544	Mr. Janyeong Jeong Mr. Jong Yang Mrs. Anita Bernie Mr. Paolo Guardabasso Mr. Roman Mykhalchyshyn Mr. Yawei Xu Mr. Pratik Sarkar Mr. Stott Ritter Mr. Troy Cordie	United States  Korea, Republic of  China  United Kingdom  Portugal  Ukraine  China  India  France  Australia	Recket Engine  development and validation of high-performance hypergolic hybrid rocket fuel ignitor with hydrogen peroxide  Modular Architecture Design and Evaluation of Large Spacecraft. The Open Source Satellite: Spinning in "Aüßest-of-Breed-Aü space and terrestrial innovations to Spin-Out affordable new mission ideas  Evaluation of the Learning Process of a Data-Driven Systems Engineering Methodology in a Workshop Environment Comparative analysis of upper stage and built-in propulsion system for GEO satellite launches the design and development of a medium-scale liquid commercial launch vehicle anamed sq-2 based on liquid comparative analysis of upper stage and built-in propulsion system for GEO satellite launches the design and development of a medium-scale liquid commercial launch vehicle anal fliquid methane propulsion system reasbillity of an automated streamlined body for launch vehicles and teo transportation incorporating Sustainability Goals  Modular Field Robots for Extraterrestrial Exploration	D1 D2 D2 D2	Symposium C1 - IAF SPACE PROPULSION SYMPOSIUM  Symposium D1 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSFORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSFORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSFORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSFORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSFORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D3 - 17th IAA SYMPOSIUM ON BUILDING BLOCKS FO FUTURE SPACE EXPLORATION AND DEVELOPMENT
- Infrastructure	IAC-19/C4/IP.10 IAC-19/C1/IP.2 IAC-19/D1/IP.2 IAC-19/D1/IP.3 IAC-19/D1/IP.5 IAC-19/D2/IP.8 IAC-19/D2/IP.9 IAC-19/D2/IP.9 IAC-19/D2/IP.9 IAC-19/D3/IP.5 IAC-19/D3/IP.5 IAC-19/D3/IP.5 IAC-19/D4/IP.6	ID: 50933 ID: 50231 ID: 51791 ID: 51820 ID: 48738 ID: 50706 ID: 54860 ID: 54097 ID: 50245 ID: 52544 ID: 54865	Mr. Pong Yang  Mr. Junyeong Jeong  Mr. Dong Yang  Mrs. Anta Bernie  Mr. Paolo Guardabasso  Mr. Roman Mykhalchyshyn  Mr. Yawei Xu  Mr. Prattik Sarkar  Mr. Scott Ritter  Mr. Troy Cordie  Mr. Pavlo Tanasyuk	United States  Korea, Republic of  China  United Kingdom  Portugal  Ukraine  China  India  France  Australia  United Kingdom	Rocket Engine  development and validation of high-performance hypergolic hybrid rocket fuel ignitor with hydrogen peroxide  Modular Architecture Design and Evaluation of Large Spacecraft The Open Source Satellite: Spinning in "Aüßest-of-Breed-Aü space and terrestrial innovations to Spin-Out affordable new mission ideas  Evaluation of the Learning Process of a Data-Driven Systems Engineering Methodology in a Workshop Environment Comparative analysis of upper stage and built-in propulsion system for GEO satellite launches the design and development of a medium-scale liquid commercial launch vehicle named 3r <sub>2</sub> 2 based on liquid owighen for GEO satellite launches the design and development of a medium-scale liquid commercial launch vehicle named 3r <sub>2</sub> 2 based on liquid oxygen and liquid methan propulsion system Feasibility of an automated streamlined body for launch vehicles and teo transportation incorporating Sustainability into Planned unar Missions: Building Biokos for Lunar Settlement through Lunar Sustainability Goals  Modular Field Robots for Extraterrestrial Exploration New supply chain methods using blockchain, 'Next Generation of	D1 D2 D2 D2 D3 D3 D4	Symposium C4 - IAF SPACE PROPULSION SYMPOSIUM  Symposium D1 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSFORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSFORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSFORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSFORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSFORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D3 - ITTH IAM SYMPOSIUM ON BUILDING BLOCKS FO FUTURE SPACE EXPLORATION AND DEVELOPMENT  FUTURE SYMPOSIUM ON SYMPOSIUM ON VISIONS AND STRATE- FOR THE FUTURE  SYMPOSIUM D3 - ITTH IAM SYMPOSIUM ON VISIONS AND STRATE- FOR THE FUTURE  SYMPOSIUM D3 - ITTH IAM SYMPOSIUM ON VISIONS AND STRATE- FOR THE FUTURE
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- Infrastructure	IAC-19/C4/IP.10 IAC-19/O1/IP.2 IAC-19/D1/IP.3 IAC-19/D1/IP.3 IAC-19/D1/IP.5 IAC-19/D2/IP.8 IAC-19/D2/IP.9 IAC-19/D2/IP.9 IAC-19/D2/IP.9 IAC-19/D2/IP.9 IAC-19/D2/IP.9 IAC-19/D2/IP.9 IAC-19/D2/IP.9 IAC-19/D2/IP.9 IAC-19/D2/IP.9	ID: 50933  ID: 50931  ID: 50231  ID: 51791  ID: 50820  ID: 48738  ID: 50706  ID: 54580  ID: 54097  ID: 52544  ID: 52544  ID: 54865  ID: 49599  ID: 53578	Mr. Roy Ramirez  Mr. Junyeong Jeong  Mr. Dong Yang  Mrs. Anita Bernie  Mr. Paolo Guardabasso  Mr. Roman Mykhalchyshyn  Mr. Yawei Xu  Mr. Prattik Sarkar  Mr. Scott Ritter  Mr. Troy Cordie  Mr. Pavio Tanasyuk  Dr. Martin Elvis	United States  Korea, Republic of  China  United Kingdom  Portugal  Ukraine  China  India  India  India  United Kingdom  United Kingdom  United Kingdom  United Kingdom  United States	Recket Engine  development and validation of high-performance hypergolic hybrid rocket fuel ignitor with hydrogen peroxide  Modular Architecture Design and Evaluation of Large Spacecraft. The Open Source Satellite: Spinning in "Aüßest-of-Breed-Aü space and terrestrial innovations to Spin-Out affordable new mission ideas  Evaluation of the Learning Process of a Data-Driven Systems Engineering Methodology in a Workshop Environment Comparative analysis of upper stage and built-in propulsion system for GEO satellite launches the design and development of a medium-scale liquid commercial launch vehicle amed 3r <sub>2</sub> 2 based on liquid commercial launch vehicle mand liquid methane propulsion system for GEO satellite launches the design and development of a medium-scale liquid commercial launch vehicle amed 3r <sub>2</sub> 2 based on liquid overgen and liquid methane propulsion system for GEO satellite launches the design and development of a medium-scale liquid methane propulsion system of successions and liquid methane propulsion system  Feasbillity of an automated streamlined body for launch vehicles and teo transportation incorporating Sustainability Goals  Modular Field Robots for Extraterestrial Exploration  New supply chain methods using blockchain, 'Next Generation of Phobos and Mars Orbit as a Base for Main Belt Asteroid Mining	D1 D2 D2 D2 D3 D3 D4 D4 D4	Symposium C4 - IAF SPACE PROPULSION SYMPOSIUM  Symposium D1 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D2 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D2 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE SYMPOSIUM ON BUILDING BLOCKS FOR BUTURE SYMPOSIUM ON BUILDING BLOCKS FOR BUTURE SYMPOSIUM ON VISIONS AND STRATES FOR THE STUTURE  SYMPOSIUM D2 - ITTH IAM SYMPOSIUM ON VISIONS AND STRATES FOR THE STUTURE  SYMPOSIUM D3 - ITTH IAM SYMPOSIUM ON VISIONS AND STRATES FOR THE STUTURE  SYMPOSIUM D4 - ITTH IAM SYMPOSIUM ON VISIONS AND STRATES FOR THE STUTURE  SYMPOSIUM D4 - ITTH IAM SYMPOSIUM ON VISIONS AND STRATES FOR THE STUTURE  SYMPOSIUM D4 - ITTH IAM SYMPOSIUM ON VISIONS AND STRATES FOR THE STUTURE  SYMPOSIUM D4 - ITTH IAM SYMPOSIUM ON VISIONS AND STRATES FOR THE STUTURE  SYMPOSIUM D4 - ITTH IAM SYMPOSIUM ON SPACE POLICY,  REGULATIONS AND ECONOMICS
- Infrastructure	IAC-19/CA/IP.10 IAC-19/D1/IP.2 IAC-19/D1/IP.3 IAC-19/D1/IP.5 IAC-19/D2/IP.8 IAC-19/D2/IP.9	ID: 50933  ID: 50931  ID: 50231  ID: 51791  ID: 50820  ID: 48738  ID: 50706  ID: 54580  ID: 54097  ID: 52544  ID: 52544  ID: 54865  ID: 49599  ID: 53578	Mr. Junyeong Jeong Mr. Junyeong Jeong Mr. Dong Yang Mrs. Anita Bernie Mr. Paolo Guardabasso Mr. Roman Mykhalchyshyn Mr. Yawel Xu Mr. Pratik Sarkar Mr. Scott Ritter Mr. Troy Cordie Mr. Pavio Tanasyuk Dr. Martin Elvis Mr. Benjamin Wong	United States  Korea, Republic of  China  United Kingdom  Portugal  Ukraine  China  India  France  Australia  United Kingdom  United States  Canada	Rocket Engine  development and validation of high-performance hypergolic hybrid rocket fuel lightor with hydrogen peroxide  Modular Architecture Design and Evaluation of Large Spacecraft. The Open Source Satellite: Spinning in "Außest-of-Breed, Au space and terrestrial innovations to Spin-Out affordable new mission ideas  Evaluation of the Learning Process of a Data-Driven Systems Engineering Methodology in a Workshop Environment. Comparative analysis of upper stage and built-in propulsion system for CEO statellite launches. The design and development of a medium-scale Riquid commercial launch vehicle amend sq-2 based on liquid ordering and liquid methan propulsion system. Feasibility of an automated streamlined body for launch vehicles and liquid methan propulsion system for CEO statellite launches. The comparative analysis of the streamline body for launch vehicles and liquid methan propulsion system streamlines body for launch vehicles and liquid methan propulsion system streamling systematically into Planned Lurar Missions: Incorpor and Systemability for launch vehicles and liquid methan systematically into Planned Lurar Missions: Systemability Goals.  New supply chain methods using blockchain, "Next Generation of Phobos and Mars Orbit as a Base for Main Belt Asteroid Milning. Project HELIOS Phase I: The Extraction of Helium-3 in Lurar Regol	D1 D2 D2 D2 D3 D3 D4 D4 D4	Symposium C4 - IAF SPACE PROPULSION SYMPOSIUM  Symposium D1 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D2 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D2 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM ON BUILDING BLOCKS FOR BUTTLE SPACE EXPLORATION AND DEVELOPMENT  Symposium D2 - IAF IAM SYMPOSIUM ON BUILDING BLOCKS FOR BUTTLE SPACE EXPLORATION AND DEVELOPMENT  SYMPOSIUM D2 - IAFT IAM SYMPOSIUM ON VISIONS AND STRATES FOR THE FUTURE  SYMPOSIUM D3 - 17TH IAM SYMPOSIUM ON VISIONS AND STRATES FOR THE FUTURE  SYMPOSIUM E1 - 12TH IAM SYMPOSIUM ON VISIONS AND STRATES FOR THE FUTURE  SYMPOSIUM E1 - 12TH IAM SYMPOSIUM ON SPACE POLICY,  ERGULATIONS AND ECONOMICS  SYMPOSIUM E1 - 32301 IAM SYMPOSIUM ON SPACE POLICY,  SEGULATIONS AND ECONOMICS  SYMPOSIUM E1 - 32301 IAM SYMPOSIUM ON SPACE POLICY,
- Infrastructure	IAC-19/C4/IP-10 IAC-19/C1/IP-2 IAC-19/D1/IP-2 IAC-19/D1/IP-3 IAC-19/D1/IP-3 IAC-19/D2/IP-8 IAC-19/D2/IP-8 IAC-19/D2/IP-8 IAC-19/D2/IP-9 IAC-19/D3/IP-3 IAC-19/D3/IP-3 IAC-19/D4/IP-6 IAC-19/D4/IP-9 IAC-19/D4/IP-9 IAC-19/D4/IP-9	ID: 50933  ID: 50931  ID: 50231  ID: 50221  ID: 50820  ID: 48738  ID: 50706  ID: 54580  ID: 54580  ID: 54097  ID: 52544  ID: 52544  ID: 54865  ID: 49599  ID: 53578	Mr. Boy Ramirez  Mr. Junyeong Jeong  Mr. Dong Yang  Mrs. Anita Bernie  Mr. Paolo Guardabasso  Mr. Roman Mykhalchyshyn  Mr. Yawei Xu  Mr. Pratik Sarkar  Mr. Scott Ritter  Mr. Troy Cordie  Mr. Pavlo Tanapyuk  Dr. Martin Elvis  Mr. Barjamin Wong  Mr. Andreas Hornig	United States  Korea, Republic of  China  United Kingdom  Portugal  Ukraine  China  India  France  Australia  United Kingdom  United States  Canada  Germany	Rocket Engine  development and validation of high-performance hyper golic hybrid rocket fuel lignitor with hydrogen peroxide  Modular Architecture Design and Evaluation of Large Spacecraft The Open Source Satellite: Spinning in "Außest-of-Breed, Aü space and terrestrial innovations to Spin-Out affordable new mission ideas  Evaluation of the Learning Process of a Data-Driven Systems Engineering Methodology in a Workshop Environment Comparative analysis of upper stage and built-in propulsion system for EED satellite Insuches  the design and development of a medium-scale Riquid commercial launch vehicle annexed sq-2 based on liquid onething reasibility of an automated streamlined body for launch vehicles and fluid methale propulsion system Fessibility of an automated streamlined body for launch vehicles and lost interpretability into Plaunch unex Missions: Building Blocks for Lunar Settlement through Lunar Sustainability Goals  New supply chain methods using block-chain, "Next Generation of Phobos and Mars Orbit as a Base for Main Belt Asteroid Mining Project HELIOS Phase I: The Extraction of Helium-3 in Lunar Regol  NASA's International Space Apps Challenge, 6 years of global Inac	D1 D2 D2 D2 D3 D3 D4 D4 D4	Symposium C4 - IAF SPACE PROPULSION SYMPOSIUM  Symposium D1 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D2 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D2 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM ON BUILDING BLOCKS FOR INNOVATIONS SYMPOSIUM ON BUILDING BLOCKS FOR INTOVATION SYMPOSIUM ON VISIONS AND STRATES  SYMPOSIUM D2 - IAFT IAM SYMPOSIUM ON VISIONS AND STRATES  SYMPOSIUM D3 - IAFT IAM SYMPOSIUM ON VISIONS AND STRATES  FOR THE FUTURE  SYMPOSIUM E1 - 127th IAM SYMPOSIUM ON VISIONS AND STRATES  SYMPOSIUM E1 - 127th IAM SYMPOSIUM ON SPACE POLICY,  REGULATIONS AND ECONOMICS  SYMPOSIUM E1 - 32nd IAM SYMPOSIUM ON SPACE POLICY,  SEGULATIONS AND ECONOMICS  SYMPOSIUM E1 - 32nd IAM SYMPOSIUM ON SPACE POLICY,  SEGULATIONS AND ECONOMICS  SYMPOSIUM E1 - 32nd IAM SYMPOSIUM ON SPACE POLICY,  SEGULATIONS AND ECONOMICS  SYMPOSIUM E1 - 32nd IAM SYMPOSIUM ON SPACE POLICY,  SEGULATIONS AND ECONOMICS
- Infrastructure	IAC-19/C4/IP-10 IAC-19/C1/IP-2 IAC-19/O1/IP-3 IAC-19/O1/IP-3 IAC-19/O1/IP-3 IAC-19/O2/IP-8 IAC-19/O2/IP-8 IAC-19/O2/IP-8 IAC-19/O2/IP-8 IAC-19/O2/IP-9 IAC-19/O3/IP-3 IAC-19/O3/IP-3 IAC-19/O3/IP-3 IAC-19/O3/IP-3 IAC-19/O3/IP-9 IAC-19/O3/IP-9 IAC-19/O3/IP-9 IAC-19/O3/IP-9 IAC-19/O3/IP-9	ID: 50231  ID: 50231  ID: 51791  ID: 50820  ID: 48738  ID: 50706  ID: 54580  ID: 54580  ID: 54580  ID: 54580  ID: 55544  ID: 55544  ID: 54580  ID: 54580  ID: 55544  ID: 55544  ID: 54580  ID: 54580  ID: 54580  ID: 54580	Mr. Boy Ramirez  Mr. Junyeong Jeong  Mr. Dong Yang  Mrs. Anita Bernie  Mr. Paolo Guardabasso  Mr. Roman Mykhalchyshyn  Mr. Yawei Xu  Mr. Pratik Sarkar  Mr. Scott Ritter  Mr. Troy Cordie  Mr. Pavio Tanasyuk  Dr. Martin Elvis  Mr. Benjamin Wong  Mr. Andreas Hornig  Dr. Jancy McPhee	United States  Korea, Republic of  China  United Kingdom  Portugal  Ukraine  China  India  India  Irrance  Australia  United Kingdom	Rocket Engine  development and validation of high-performance hypergolic hybrid rocket fuel ignitor with hydrogen peroxide  Modular Architecture Design and Svaluation of Large Spacecraft  The Open Source Satellite: Spinning in "Aüßest-of-Breed, Aü space and terrestrial innovations to Spin-Out affordable new mission ideas  Evaluation of the Learning Process of a Data-Oriven Systems Engineering Methodology in a Workshop Environment  Comparative analysis of upper stage and but in propulsion system for GEO statellite Isunches  the design and development of a medium-scale liquid commercial isunch vehicle amed ag-2 based on liquid overhead and liquid methan propulsion system. For GEO statellite Isunches  The design and development of a medium-scale liquid  Feasbillity of an automated streamlined body for launch vehicles and liquid methan propulsion system  Feasbillity of an automated streamlined body for launch vehicles and loc transportation. Incorporating Sistainability into Planned Lunar Missions:  Building Blocks for Lunar Settlement through Lunar Sistainability Gools  Modular Field Robots for Extraterestrial Exploration  New supply chain methods using blockchain, 'Next Generation of Phobos and Mars Orbit as a Base for Main Belt Asteroid Mining.  Protect HELIOS Phase I: The Extraction of Helium-3 in Lunar Regol  NASA's International Space Apps Challenge: 6 years of global hact  The Project Mars Competition: Engaging the Public in Space	D1 D1 D2 D2 D2 D3 D3 D4 D4 D4 E1 E1 E1	Symposium C4 - IAF SPACE PROPULSION SYMPOSIUM  Symposium D1 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D2 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM ON DEVELOPMENT  Symposium D3 - IAF IAA SYMPOSIUM ON BUILDING BLOCKS FOI PROPISION D3 - IAF IAB SYMPOSIUM ON VISIONS AND STRATES  SYMPOSIUM D3 - IAF IAA SYMPOSIUM ON VISIONS AND STRATES  FOR THE FUTURE  Symposium E1 - IAZIO IAA SYMPOSIUM ON VISIONS AND STRATES  SYMPOSIUM E1 - IAZIO IAA SYMPOSIUM ON SPACE POLICY,  REGULATIONS AND ECONOMICS  SYMPOSIUM E1 - 3230 IAA SYMPOSIUM ON SPACE POLICY,  SEGULATIONS AND ECONOMICS  SYMPOSIUM E1 - 3210 IAA SYMPOSIUM ON SPACE POLICY,  SEGULATIONS AND ECONOMICS  SYMPOSIUM E1 - 3311 IAA SYMPOSIUM ON SPACE POLICY,  SEGULATIONS AND ECONOMICS  SYMPOSIUM E1 - 3311 IAA SYMPOSIUM ON SPACE POLICY,  SEGULATIONS AND ECONOMICS  SYMPOSIUM E1 - 3311 IAA SYMPOSIUM ON SPACE POLICY,  SEGULATIONS AND ECONOMICS  SYMPOSIUM E1 - 3311 IAA SYMPOSIUM ON SPACE POLICY,  SEGULATIONS AND ECONOMICS  SYMPOSIUM E1 - 3311 IAA SYMPOSIUM ON SPACE POLICY,  SEGULATIONS AND ECONOMICS  SYMPOSIUM E1 - 3311 IAA SYMPOSIUM ON SPACE POLICY,  SEGULATIONS AND ECONOMICS  SYMPOSIUM E1 - 3311 IAA SYMPOSIUM ON SPACE POLICY,  SEGULATIONS AND ECONOMICS  SYMPOSIUM E1 - 3311 IAA SYMPOSIUM ON SPACE POLICY,  SEGULATIONS AND ECONOMICS
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Martin Elvis  Mr. Benjamin Wong  Mr. Andreas Hornig  Dr. Jancy McPhee  Ms. Ruth May  Mr. Mustapha Eleyawa Agbadi  Dr. Frank Jannon  Mr. Sundon Jenner  Mr. David Tanasyton  Mr. Mustapha Eleyawa Agbadi  Dr. Frank Jannon  Mr. Mustapha Eleyawa Agbadi  Dr. Frank Jannon  Mr. Smon Jenner  Mr. David Lopez  Mr. Mustapha Eleyawa Agbadi  Dr. Frank Jannon  Mr. Smon Jenner  Mr. David Lopez  Mr. Mustapha Eleyawa Agbadi  Mr. Smon Jenner  Mr. David Lopez  Mr. Mustapha Eleyawa Agbadi	United States  Korea, Republic of  China  United Kingdom  Portugal  Ukraine  China  Ukraine  China  Ukraine  China  Ukraine  Ukraine  United Kingdom  United States  Canada  United States  United States  Nigeria  Germany  United States  Nigeria  Germany  United States  Sweden  France	Recket Engine  development and validation of high-performance hyper golic hybrid rocket fuel lightor with hydrogen peroxide  Modular Architecture Design and Seviluation of Large Spacecraft The Open Source Satellite: Spinning in "AüBest-of-Breed-Aü space and terrestrial innovations to Spin-Out affordable new mission ideas  Evaluation of the Learning Process of a Data-Driven Systems Engineering Methodology in a Workshop Environment Comparative analysis of upper stage and built-in propulsion system for GEO satellite launches  the design and development of a medium-scale Riguid commercial launch vehicle named in 2-based on liquid onlying and fluid method in the cologian and development of a medium-scale Riguid commercial launch vehicle named in 2-based on liquid onlying realisting of an automated streamlined body for launch vehicles launch grain automated streamlined body for launch vehicles incorporating Sustainability for Planned Lunar Missions: Building Blocks for Lunar Settlement through Lunar Sustainability Goals  Modular Field Robots for Extraterrestrial Exploration  New supply chain methods using block-chain, "Next Generation of Phobos and Mars Orbit as a Base for Main Belt Asteroid Mining  Project HELIOS Phase I: The Extraction of Helium 3 in Lunar Regol  NASA's International Space Apps Challenge: 6 years of global had  The Project Mars Competition: Engaging the Public in Space  From Space Bight Hardware to University Student Designs: How for Space Southern to world Aös water crisis: a case study with remote sensing, solare and technical Considerations for Polici  Without Space  EQUILIA and the Art of International Space Law  Space Southern to world Aös water crisis: a case study with remote sensing, solar Passes in Risk in space operations - Focusing particularly on NewSpace  EAG part Assessing Space Property Rights issues and Proferental Recolutors	D1 D1 D2 D2 D2 D3 D3 D4 D4 D4 E1 E1 E1 E3 E3 E3	Symposium C4 - IAF SPACE PROPULSION SYMPOSIUM  Symposium D1 - IAF SPACE SYSTEMS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND  INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND  INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND  INNOVATIONS SYMPOSIUM  Symposium D2 - IAF SPACE TRANSPORTATION SOLUTIONS AND  INNOVATIONS SYMPOSIUM  Symposium D3 - IAF SPACE TRANSPORTATION SOLUTIONS AND  INNOVATIONS SYMPOSIUM  SYMPOSIUM ON SYMPOSIUM ON WISIONS AND STRATES  FOR THE FUTURE  Symposium D3 - IATH IAR SYMPOSIUM ON WISIONS AND STRATES  FOR THE FUTURE  Symposium D4 - IATH IAR SYMPOSIUM ON VISIONS AND STRATES  FOR THE FUTURE  Symposium D4 - IATH IAR SYMPOSIUM ON VISIONS AND STRATES  FOR THE FUTURE  Symposium D5 - IATH IAR SYMPOSIUM ON SPACE POLICY,  REGULATIONS AND ECONOMICS  Symposium E1 - 32nd IAR SYMPOSIUM ON SPACE POLICY,  REGULATIONS AND ECONOMICS  Symposium E3 - 31st IAR SYMPOSIUM ON SPACE POLICY,  REGULATIONS AND ECONOMICS  Symposium E3 - 31st IAR SYMPOSIUM ON SPACE POLICY,  SYMPOSIUM E3 - 31st IAR SYMPOSIUM ON SPACE POLICY,  SYMPOSIUM E3 - 31st IAR SYMPOSIUM ON SPACE POLICY,  SYMPOSIUM E3 - 31st IAR SYMPOSIUM ON SPACE POLICY,  SYMPOSIUM E3 - 31st IAR SYMPOSIUM ON SPACE POLICY,  SYMPOSIUM E3 - 31st IAR SYMPOSIUM ON SPACE POLICY,  SYMPOSIUM E5 - 30st IAR SYMPOSIUM ON SPACE AND SOCIETY  SYMPOSIUM E5 - 30st IAR SYMPOSIUM ON SPACE AND SOCIETY  SYMPOSIUM E5 - 30st IAR SYMPOSIUM ON SPACE AND SOCIETY  SYMPOSIUM E5 - 30st IAR SYMPOSIUM ON SPACE AND SOCIETY  SYMPOSIUM E5 - 30st IAR SYMPOSIUM ON SPACE AND SOCIETY  SYMPOSIUM E5 - 30st IAR SYMPOSIUM ON SPACE AND SOCIETY  SYMPOSIUM E5 - 30st IAR SYMPOSIUM ON SPACE AND SOCIETY  SYMPOSIUM E5 - 30st IAR SYMPOSIUM ON SPACE AND SOCIETY  SYMPOSIUM E5 - 30st IAR SYMPOSIUM ON SPACE AND SOCIETY  SYMPOSIUM E5 - 30st IAR SYMPOSIUM ON SPACE AND SOCIETY  SYMPOSIUM E5 - 30st IAR SYMPOSIUM ON SP
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