

Space Resources Week 2023



WEDNESDAY	Time	Duration	Room	Chair	What's happening	Name	Institution	Working title
	08:00	01:00	Lobby		Registration and coffee			
OPENING SESSION	09:00	01:25	Main	Lisa Burke	Welcome and introduction	Lisa Burke		
						Franz Fayot	Luxembourg Ministry of Economy	
						Bill Nelson	NASA	
						Josef Aschbacher	ESA	
						Bernhard Hufenbach	ESA	
						Kathryn Hadler	ESRIC	
						Gerald Sanders	NASA	
						Kyeong Ja Kim	Korea Institute of Geoscience and Mineral Resources	
Matthias Maurer	European Astronaut Centre							
Coffee break	10:25	00:45	Lobby		UK Space Agency partnership			
ACCELERATING COOPERATION IN THE FIELD OF SPACE RESOURCES				Lisa Burke	Individual presentations	Giorgio Magistrati	ESA	
						Charles Hibbits	Johns Hopkins University	NASA STMD LSII ISRU Focus Group Update and Path Forward
						Dale Boucher		Engaging Terrestrial Mining sector via Spin in and spin out
					Research Overviews	Clive Neal	University of Notre Dame	International Lunar Resource Evaluation Campaign - Update and Next Steps
						Dennis Harries	ESRIC	
						Angel Abbad Madrid	Colorado School of Mines	
						Usui Tomohiro	JAXA	
						Stanley Starr	Imperial College London	
						Philipp Reiss	Technical University of Munich	
						David Karl	Technical University of Berlin	
						Paul Zabel	German Aerospace Center	
						Bertrand Baratte	EURO2MOON	Leverage lunar resources exploration to foster international collaboration and benefit sustainability in Space and Earth
						Lunch	12:30	01:00
TERRESTRIAL PILOT PLANT				Roundtable discussion	Session presented by: Brigitte Lamaze and Melchiorre Conti (ESA) Discussion with: Charles Hibbits, Kathryn Hadler, Daniel Inocente, Ian Mellor, Pascal Barbier Moderated by: Bernhard Hufenbach			
EARTH-SPACE SYNERGIES					Advenit Makaya	ESA	Space based solar power: a space resource for the benefit of Earth and a potential enabler for an in-space resource market	
					Julian Schroth & Christian Walter	ESA	Lunar Economy on how opportunities in space can improve business and life on earth (MOONLIGHT project)	
					Pascal Barbier	AirLiquide	Development of novel structured adsorbent to increase trapping efficiency for H2O and CO2	
					Nancy C. Wolfson	University of Minnesota	Space Resources Synergies for Sustainability and New Space Markets	
					Arthur Woods	Astrostrom	The Greater Earth Lunar Power Station	
					Ben Bussey	Intuitive Machines	Intuitive machines: commercially enabling international lunar scientific exploration	
Community Q&A				Kathryn Hadler	Roundtable discussion			
Group photo	16:05	00:10	Outside					
Coffee break	16:15	00:30	Lobby		EURO2MOON partnership			
ESA-ESRIC CHALLENGE	16:45	01:15	Main	Franziska Zaunig and Aidan Cowley	Individual presentations	Introduction and context		
						Hendrik Kolvenbach	ETH Zurich	
						Tristan Schnell	FZI	
						Grzegorz Gawdzik	PIAP	
						Miguel Olivares-Mendez	SnT Luxembourg	
						Matt Cross	Mission Control	
Roundtable discussion								
Conclusions and next call for ideas								
Poster networking	18:00	01:30:00	Lobby					

Space Resources Week 2023



THURSDAY	Time	Duration	Room	Chair	What's happening	Name	Institution	Working title
	08:30	00:30	Lobby		Registration and coffee			
MISSIONS AND MISSIONS PLANNING	09:00	01:45	Abigail Calzadas Diaz	Individual presentations		Matt Cross	Mission Control	Enabling autonomous surface prospecting and mining with lunar rovers
						Su Meng	Origin Space	The Progress of Asteroid Mining Plans at Origin Space
						Ben Jackson	Blue Origin, Honeybee Robotics, Colorado School of Mines	Mars Water Ice Prospecting mission
						Larré Logan	ESA	The Status of the ESA Elements within the ESA-NASA Mars Sample Return Campaign and the Space Resource Significance
						Clairet I. Guerra	Colorado School of Mines	Advancing the knowledge of martian hydrated minerals from their current state to a proven reserve: scientific mission concept
						Jim Hondros	Deimos Space Resources	Shifting the paradigm in off-Earth resource development
						David Binns	ESA	ISRU Demonstration mission
Jorge Alves	ESA	Pilot plant CDF						
Coffee break	10:45	00:30	Lobby		University of Luxembourg partnership			
TECHNOLOGY SHOWCASE 1.1	11:15	00:40	Main	Individual presentations		Luke Griffiths	Norwegian Geotechnical Inst.	Using digital twins to bring geotechnical testing to the lunar surface
						Alex Jerves		
						Kyle Acierno	OffWorld	Offworld's celestial and terrestrial swarm robotic and ISRU System
						Aliz Zerny	ESA / ECSAT	Lunar Highland simulant selection of the Luna Analogue Facility Dust Chamber for future missions
						Piotr Kulnowski	University of Krakow	The Rod Scraper Conveyor - efficient lunar regolith transportation device
						Hannah Sargeant	University of Central Florida & University of Leicester	Icy Simulants for Testing PSR Technologies
Susana del Carmen Fernandez	University of Oviedo	Exploring mining resources of the Moon regolith: lithium						
Community Q&A	11:55	00:15		Advent Makaya	Roundtable discussion			
TECHNOLOGY SHOWCASE 1.2	12:10	00:35	Main	Individual presentations		Igor Drozdovskiy	ESA / EAC	Identifying minerals with the PANGAEA mineralogical database and multi spectral ML classification
						Yu Yue	Imperial College London	Theory for particle motion in electrostatic traveling wave fields
						René Prissang	Free University Berlin	Operative Deposit Modelling: AI a useful tool for future space mining ventures
						Rodolfo Marin	University of Leicester	Metal extraction from meteorite proxies of metal-rich asteroids in a deep eutectic solvent
Cristina Luna	GMV	Using AI to enable human and robotic planetary resources utilisation						
Community Q&A	12:45	00:15		Advent Makaya	Roundtable discussion			
Lunch	13:00	01:00	Lobby		Polimak partnership			
ENABLING INFRASTRUCTURE 1.1	14:00	00:25	Main	Individual presentations		Connor Geiman	OrbiFab	Building the lunar storable propellant supply chain
						David Rodriguez	Ecole Polytechnique Federale de Lausanne	Design of a lunar reconnaissance drone for exploration and high-resolution mapping of extreme, hardly accessible locations
Roberto Torre	ESA	Low binder content bricks: a regolith-based solution for sustainable surface construction on the Moon ESA						
Community Q&A	14:25	00:10		Beth Lomax	Roundtable discussion			
ENABLING INFRASTRUCTURE 1.2	14:35	00:55	Main	Individual presentations		Daniel Inocente	Blue Origin	Enabling permanent lunar architecture
						Robert Lindner	ESTEC / ESA	Facilities at ESTEC
						Juergen Schutz	ESA / DLR	Preparing for Lunar Exploration: The ESA-DLR LUNA Analogue Facility in Cologne
						Jonathan Savik	Astrobotic	Low energy use construction for the moon and mars
Douglas Morrison	Centre for Excellence in Mining Innovation - Canada	Lunar Surface Station Architecture						
Community Q&A	15:30	00:10			Roundtable discussion			
Coffee break	15:40	00:30	Lobby		Robominers partnership			
COMMERCIALIZATION 1.1	16:10	00:50	Main	Individual presentations		Lari Cujko		Introduction to Commercialization
						Mateusz Jozefowicz	European Space Foundation	MIRORES far-IR spectrometer consortium service packages for Earth and space mining industries
						Alice Miller	Helios	Paving the way to space with a green steel road
						Joost van Oorschot	MaanaElectric	
						Dennis Williams	Lunar Station	Lunar Station builds ground-up Lunar Intelligence (LUNINT) Platform, MoonHacker™
						Bill Chang	Heliox	Asteroid to Interplanetary Spaceship Concept
Stela Tzatchova	European Commission, European Innovation Council	Funding in-space solar energy harvesting solutions for innovative space applications						
Community Q&A	16:50	00:20		Lari Cujko	Roundtable discussion			
COMMERCIALIZATION 1.2	17:10	01:20	Main	Individual presentations		Lari Cujko		Introduction to ESRI's Start-up Support Programme
						Sam Ximenes	Astroport	
						Marek Wilgucki	Four Point	
							Lightigo Space	
							Lunar Outpost	
	Orbital Assembly							
	Terra Luna Resources							
	Aurora Connect							
	ESA	ESON accelerator						
Individual presentation								
Networking cocktail	18:30	01:30:00	PinPin		OffWorld partnership			

Space Resources Week 2023

www.spaceresourcesweek.lu



FRIDAY	Time	Duration	Room	Chair	What's happening	Name	Institution	Working title
	08:30	00:30	Lobby		Registration and coffee			
Welcome and introduction to the day	09:00	00:05	Main		Introduction to the day	Lisa Burke		
EXTRACTING AND USING SPACE RESOURCES 1.1	09:05	00:50			Individual presentations	Victoria Levy	Open University	Updates on the development of a CubeSat compatible system to supplement lunar prospecting missions
						Jeff Plate	WGM Canada	Lunar Geological Depositional Modelling Insights for Prospecting and Exploration of Water and Volatile Resources
						Mayuko Shinohara	Chiyoda Corporation	Lunar water analysis module with direct measurement
						Veneranda Lopez Dias	LIST	Heading towards a sustainable water management on Earth, the Moon and beyond: theoretical and experimental O-H water ice isotope fractionation during sublimation under lunar polar harsh environment.
Community Q&A	09:55	00:10		Maheer Kalaji	Roundtable discussion			
EXTRACTING AND USING SPACE RESOURCES 1.1	10:05	00:40				Alberto Maulu	ESRIC	Multi-Attribute Decision Making (MADM) method for the evaluation of ISRU-enabling technology
						Stefan Linke	TU Berlin and Laserzentrum Hannover	Recent Advances of the MOONRISE FM payload for demonstration of Regolith laser melting on the lunar surface
						Beth Lomax	ESA	Sintering regolith pellets for FFC molten salt processing
						John Vrublevskis	Thales Alenia Space	Challenges for technology demonstration of In-Situ Resource Utilisation breadboards for the Metalysis FFC process for electrochemical reduction of lunar regolith into a metallic powder and oxygen in a molten salt bath
Community Q&A	10:55	00:10		Maheer Kalaji	Roundtable discussion			
Coffee break	10:55	00:30	Lobby					
EXTRACTING AND USING SPACE RESOURCES 1.2	11:25	00:40			Individual presentations	Pia Swatkowski	Blue Horizon	3D printing from renewable resources for future deep space missions
						Arturo Pajares	Flemish Institute for Technological Research	Can we use Martian regolith as catalyst for the CO2 conversion?
						Kim Minkwan	University of Southampton	Development of an All-in-One in-situ resource utilisation system for future Mars exploration missions
Community Q&A	12:05	00:10		Abigail Calzada Diaz	Roundtable discussion			
EXTRACTING AND USING SPACE RESOURCES 1.2	12:15	00:20				James Cole	Open University	Water Extraction from Icy Lunar Simulants using Low Power Microwave Heating
						Dorian Leger and Fardin Ghaffari	Spaceship EAC, ESA & Connectomix	Modelling the energy requirements for oxygen production on the Moon
						Farzaneh Gholami	Gradel	Robotic additive manufacturing implementation into in-space manufacturing process
						Michele Hollist	OxEn Energy	Scale-up and coupling of the MOXIE solid oxide electrolyzer for mission scale lunar and martian applications
Community Q&A	12:35	00:10		Abigail Calzada Diaz	Roundtable discussion			
REGULATORY SESSION	12:45	00:45			Individual presentations	Giuseppe Reibaldi	Moon Village Association	Global Expert Group on Sustainable Lunar Activities - Recommended Framework
						Masashi Sato	ispace inc.	Space Resources legislation in Japan - lessons learnt and opportunities for the future
						Steven Freeland	Working Group on Space resource Activities	COPUOS
SPACE MINING SESSION	13:30	00:45			Roundtable discussion		Discussion with: Miriam Bergvall, Karl Pardaens, Carlos Espejel, Alice Miller Moderated by Bertrand Baratte - AirLiquide	
CONCLUSION AND NEXT STEPS (posters awards)	14:15	00:10				James Carpenter	ESA	
						Kathryn Hadler	ESRIC	
Bubbles and bites	14:20	01:30	Lobby		ispace partnership			

