

# The 3rd International Moon Village Workshop & Symposium

December 05-08 2019

## Program



Co-Hosted by



Keio University



Supported by





04 December 2019  
Tokyo and Kyoto, Japan

Dear Colleagues,

**We would like to welcome you to the 3rd International Moon Village Workshop & Symposium.**

The Moon Village Association (MVA) was created in November 2017 and has been registered as a non-profit organization in Vienna, Austria. The goal of the MVA is to establish an informal global forum for governments, industry, academia and the public interested in the development of the Moon Village concept, meant as a global moon community fostering permanent links among all stakeholders. In November 2017, the initial International Moon Village Workshop was organized by the MVA and the International Space University in Strasbourg, France. The MVA organized the 2nd Workshop & Symposium in November 2018 in Los Angeles, the U.S.

The 3<sup>rd</sup> Workshop & Symposium in Tokyo/Kyoto, Japan is co-hosted by Tokyo University of Science, Keio University and Kyoto University. We believe that this gathering will provide a unique opportunity for stakeholders from around the world to directly contact one another, exchange opinions, make new contacts, and build relationships. We anticipate many positive products from this event.

We look forward to serving you and working with you to make the Moon Village happen, and humanity's permanent expansion to the Moon come reality.  
With best regards,

Dr. Giuseppe Reibaldi  
President Moon Village Association

John Mankins  
Vice President Moon Village Association,  
Co-Chair International Program Committee 2019

Prof. Yoshifumi Inatani  
Chair Local Organizing Committee  
Co-Chair International Program  
Committee 2019  
ISAS/JAXA

# Moon Village Association Institutional Members



Space Treaty Project



# The 3rd Moon Village Workshop & Symposium

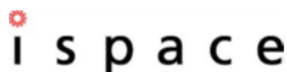
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# 3rd Moon Village Workshop & Symposium

## 05-08 December 2019

### CONTENTS

Letter of Welcome	Page 1
List of IPC and LOC	Page 5
Program	Page 6
Venue Information (Tokyo)	Page 16
Access from Tokyo to Kyoto	Page 18
Venue Information (Kyoto)	Page 19
Kyoto Historic Excursion Tour	Page 20
Sponsor Information	Page 22

## International Program Committee (IPC)

Co-Chair : John C. Mankins (Moon Village Association )  
Yoshifumi Inatani (ISAS/JAXA)  
Member : Yuko Inatomi (ISAS/JAXA)  
Shinichi Kimura (Tokyo Science University)  
Oleg Ventskovsky (Yuzhnoye Design Office)  
Tai Sik Lee (Hanyang University)  
Dorin Prumariu (United Nations)  
Sundaram Ramakrishnan (ISRO Vikram Sarabhai)  
Yuri Razoumni (RUDN University)  
Christian Feichtinger (IAF)  
Gongling Sun (International Space University)  
Henk Rogers (International MoonBase Alliance)

## MVA Local Organizing Committee (LOC)

Chairman : Yoshifumi Inatani (ISAS/JAXA)  
Symposium Co-chair : Chiaki Mukai (Tokyo Science University)  
Setsuko Aoki (Keio University)  
Takao Doi (Kyoto University)  
Adviser : Kiyoshi Higuchi (Former IAF President)  
Seishiro Kibe (JAXA)  
Managing Board : Yuko inatomi (ISAS/JAXA)  
Misuzu Onuki (Space Access)  
Mika Ochiai (JAXA) ,  
Shinichi Kimura (Tokyo Science University)  
Masahiro Terada (Kyoto University)  
Kunihiko Tanaka (Gifu University of Medical Science)  
Akihisa Takahashi (Gunma University)  
Mihoko Fukunaga (IHI Aerospace)

# Program of the 3<sup>rd</sup> Moon Village Workshop & Symposium

Tokyo & Kyoto 5-8. Dec. 2019



4-Dec (wed)	18:00	Reception & Registration Cocktail Place : Riso-kai Club, Tokyo University of Science (TUS)
5-Dec (Thu)	Place : 17 <sup>th</sup> Floor, 1 <sup>st</sup> Building, Kagurazaka Campus, Tokyo University of Science (TUS)	
	9:00-12:20	Opening Program
	12:20-13:00	Sponsored Lunch
	13:00-15:20	Keynote Lectures & General Talks
	15:30-17:30	Breakout Sessions - <i>Five splinter sessions held in parallel</i>
	18:00-20:00	Sponsored Dinner (MVA, Guests & Sponsor Speeches) Place : Canal Café
6-Dec (Fri)	Place : 17 <sup>th</sup> Floor, 1 <sup>st</sup> Building, Kagurazaka Campus, Tokyo University of Science (TUS)	
	9:00-9:35	Special Session
	9:35-12:30	General Talks
	12:30-13:10	Sponsored Lunch
	13:10-15:30	Keynote Lectures & General Talks
	15:45-17:00	Panel Session
	17:00-17:50	Closing & Wrap-up of Tokyo Session
7-Dec (Sat)	Travel to Kyoto	
	17:00	Kyoto Reception Place : Former Head Office of Forest Research Station & Garden Hokubu (North) Campus, Kyoto University
8-Dec (Sun)	Place : Maskawa Nobel Laureat Memorial Building for Education and Research, Hokubu (North) Campus, Kyoto University	
	9:00-9:15	Opening Remarks
	9:15-12:15	Session I & II
	12:15-13:15	Lunch
	13:15-15:15	Poster Session
	15:30-17:00	Session for Education
	17:00-17:30	Summary and Closing remarks of Kyoto Session

# Tokyo Session Program

Place : 17<sup>th</sup> Floor, Building No. 1, Kagurazaka Campus, Tokyo University of Science (TUS)

Time	Session Title	Theme	Speaker
9:00-9:20 Opening Program  Master of Ceremony John Mankins (MVA)	Opening	MVA Opening Remarks (5min)	Giuseppe Reibaldi & John Mankins
		Opening Note by Local Organizing Committee (5min)	Yoshifumi Inatani (LOC Chair)
		Opening Address	Hiroshi Yamakawa (JAXA President)
			Shinichi Nakasuka (Space Policy Committee, Cabinet office & University of Tokyo)
			Jan Woerner (ESA Director General) - video message
9:20-10:20	Co-Host Address & Lecture (60 min)	"Activities by Space Colony Center @TUS"	Chiaki Mukai (TUS)
		"Human Space Activities in Kyoto"	Takao Doi (Kyoto University)
		"Legal Aspects of the Moon Village"	Setsuko Aoki (Keio University)
10:20-10:30	Coffee Break (10min)		
10:30-10:45	MVA Overview (15min)	"MVA Overview"	Giuseppe Reibaldi (MVA)
10:45-12:05	Key Note Lectures I	"From ISS to the Moon and our Vision"	Koichi Wakata (JAXA Vice-President and Astronaut)
		"Gateway, Artemis and beyond"	Jim Green (Garvey McIntosh, NASA)
		"Chinese Lunar Programme"	Weiren Wu (CNSA)
		"Indian Lunar Programme"	Parameswaran Sreekumar (ISRO)
12:05-12:20	Award Ceremony: MVP - Mission Prizes 2019		
12:20-13:00	Sponsored Lunch		
13:00-14:20	Key Note Lectures II  Chair Oleg Ventskovsky (MVA)	"The Luxembourg Space resource Initiative [SpaceResources.lu]"	Bob Lamboray (Luxembourg Space Agency)
		"Getting There, Being There"	Brent Sherwood (Blue Origin)
		"Lunar Exploration and Utilization Activities"	Maksym Degtiarov (Yuzhnoye)
		"Sustainability of Human Space Exploration to the Moon"	Naoko Yamazaki (J-Astronaut)



Time	Session Title	Theme	Speaker
14 : 20-15 : 20	<b>General Talks I</b> <b>Chair</b> Munetaka Ueno (JAXA)	“How Lunar Society in 2040 will be Operated?”	Shigeru Imai (JAMSS)
		“Spacebit Mission One: An International Partnership to Demonstrate New Walking Rover Technologies”	Pavlo Tanasyuk (Spacebit)
		“Business promotion on the Moon”	Atsushi Uchida (Mitsubishi Research Institute)
		“Legal issues arising from utilization of space resources on the Moon”	Shimpei Ishido (Attorney-at-law, Nishimura Asahi)
15 : 20-15 : 30	<b>Coffee Break (10min)</b>		
15 : 30-17 : 30 Breakout Session ①	<b>TOPIC</b> Moon Village Architectural Considerations <b>Chairs</b> John Mankins / Yoshifumi Inatani	“Introduction with the MVA Architecture White Paper”	John Mankins (MVA)
		“Membrane distillation for polishing water originating from moon regolith reduction processes”	Dries Demey (QinetQ Space)
		“Utilizing the Moon’s most prominent features, the soil and the craters; an Architectural Concept”	Angelus Chrysovalantis Alfatzis (National Technical University of Athens)
		“Space Architecture with Centrifugal Force on the MOON”	Takuya Ono (Kajima Co.)
		“Structural Approach in Space Architecture and Social Optimization for Space Habitation Facilities”	Hiroshi Yamashita (Numerical Simulation Tech)
		Discussion/Recommendations by the Co-Chairs	
15 : 30-17 : 30 Breakout Session ②	<b>TOPIC</b> Human on the Moon Topics (incl. Culture) <b>Chairs</b> Chiaki Mukai / Michelle Hanlon	“Introduction with the MVA Cultural Consideration White Paper”	Michelle Hanlon (For All Moonkind)
		“ILOA 5 Moon Missions, Galaxy Forum, First Women on the Moon Update Toward 2020”	Steve Durst (International Lunar Observatory Association)
		“Life at the “Moon Village”: how imagination and environment entangle to bring new ‘worlds’	Aliça Okumura-Zimmerlin (UCLondon)
		“Assessment of Cancer Risk from Radiation Hazard in Space”	Akihisa Takahashi (Gunma University)
		Discussion/Recommendations by the Co-Chairs	

Time	Session Title	Theme	Speaker
15 : 30-17 : 30 Breakout Sessions ③	<div>TOPIC</div> <div>Roadmap to a Market on the Moon (Business &amp; Commerce Topics)</div>	“Introduction with the MVA B&C White Paper”	Oleg Ventskovsky (MVA)
	<div>Chairs</div> <div>Misuzu Onuki / Oleg Ventskovsky</div>	“Marketing strategies & applications to help build the Moon society”	Makoto Arai (Dentsu Inc.)
		“Applications of Space Technologies to Sustainable Construction Business Opportunities”	Yoonsun Lee (Hanyang University)
		“Supply Chains and End Users – The Business Case for the Lunar Frontier”	Jim Keravala (OffWorld)
		“Blockchain Systems supporting the Moon society”	Pavlo Tanasyuk (Spacebit)
		“Legal challenges to promote space ventures”	Motoko Mizuno (JAXA)
		Creating Lunar Cultures – Fashion Shows on the Moon for QOL	Hiroki Sugimoto (CREST ASTRA Japan)
		Discussion/Recommendations by the Co-Chairs	
	15 : 30-17 : 30 Breakout Sessions ④	<div>TOPIC</div> <div>Coordination &amp; Cooperation (including Legal Topics)</div>	“Introduction with the MVA C&C White Papers”
<div>Chairs</div> <div>Giuseppe Reibaldi / Setsuko Aoki</div>		“Closing the Gap in Space Law: An Implementation Agreement for the Moon Treaty”	Dennis C. O'Brien (The Space Treaty Project)
		“Jurisdiction and nationality on the Moon”	Naohiro Kitamura (Century Law Office)
		“Applying the space law to the community on the Moon?”	Tetsuji Odan (Mori Hamada & Matsumoto)
		“Harmonization of Interfaces for Moon Exploration”	Maria Terekhova (Yuzhnoye State Design Office)
		“Realizing the Moon Village: Participation of Emerging Space Countries”	Ghanim Alotaibi (Kuwait University)
		Discussion/Recommendations by the Co-Chairs	
15 : 30-17 : 30 Breakout Sessions ⑤		<div>TOPIC</div> <div>Science on the Moon &amp; the First MVA Payload</div>	“Introduction with the MVA Payload Pre-Phase A results”
	<div>Chairs</div> <div>Junichi Haruyama / Elissavet Koumi</div>	“UZUME: Pioneer Missions to Establish Moon Villages in Lunar Caverns such as Lava Tubes”	Junichi Haruyama (JAXA)
		“Astrophysics on the Lunar Surface”	Abdulaziz Mohammad (PAAET)
		Gravitational-wave observatory on the Moon”	Munetaka Ueno (JAXA)
		Discussion/Recommendations by the Co-Chairs	
18 : 00-20 : 00	Sponsored Dinner@ Canal Café - Guests & Sponsor Speeches		

# Tokyo Session Program

Place : 17<sup>th</sup> Floor, Building No. 1, Kagurazaka Campus, Tokyo University of Science (TUS)

Time	Session Title	Theme	Speaker
9 : 00-9 : 35	Special Session <b>Chairs</b> Giuseppe Reibaldi (MVA)	"Using Starship to Build a Base on the Moon"	Paul Wooster (SpaceX)
9 : 35-10 : 50	General Talks II <b>TOPIC</b> Moon Village Architectural Considerations <b>Chairs</b> Jan Kolar (MVA)	"Common Lunar Landing Pads – Built In-Situ – Are a Legal and Economic Imperative"	Michelle Hanlon (For All Moonkind and the Center for Air and Space Law)
		"Universal Design for All Space Habitat (U-DASH): A Study on Architectural Planning Criteria of Moon Village"	Huai-Chien Chang (HelioX Cosmos Co.)
		"General Rules on How to Live on the Moon and the Related Research"	Yoji Ishikawa (Obayashi Co.)
		"Solar Flare Prediction and Space Weather Forecast"	Naoto Nishizuka (NICT)
		"The OffWorld Solar System Toolkit – How to Build Civilization to the Stars"	Jim Keravala (OffWorld)
10 : 50-11 : 00	Coffee Break (10min)		
11 : 00-12 : 30	General Talks III <b>TOPIC</b> Moon Village Architectural Considerations <b>Chairs</b> Kaori Sasaki (JAXA)	"Envision of Space Colony Construction via Moon"	Shoyo Hyodo (MHI)
		"Consumer and Producer in the Moon Surface Society"	Michio Isayama (IHI AEROSPACE Co., Ltd.)
		"TOYOTA Contributes to Human Exploration through Pressurized Crew Rover"	Hirofumi Inoue (TOYOTA)
		"Elastic Wheel for Lunar Rover"	Makoto Ishiyama (Bridgestone)
		"ASTRAX Lunar City Development Project Overview"	Taichi Yamazaki (ASTRAX)
		"To the Moon and back, your comms made simple: Relay communications services around the Moon in 2023"	Nelly Offord (Surrey Satellites Technology Ltd)
12 : 30-13 : 10	Sponsored Lunch		

Time	Session Title	Theme	Speaker
13 : 10-14 : 30	Keynote Lecture III <b>Chairs</b> Shinichi Kimura (TUS)	“What ispace is going to do on the Moon (TBC)”	Takeshi Hakamada (ispace)
		“The Moon: How we got there, why we went, and what it means?”	John Horack (Ohio State University)
		“MVA and UN COPUOS, promoting cooperation, norms and synergies”	Dorin Prunariu (Astronaut and former Chairman of COPUOS)
		“The International Astronautical Federation – Connecting @II Space People to Move Forward to the Moon”	Christian Feichtinger (IAF Executive Director)
14 : 30-15 : 30	General Talks IV <b>TOPIC</b> Human on the Moon Topics <b>Chairs</b> Yuko Inatomi (JAXA)	“Functional space foods improve the QOL in moon village”	Takeshi Nikawa (Tokushima University)
		“Effect of hypogravity on human physiology on the Moon surface”	Satoshi Iwase (Aichi Medical University)
		“Effect of the Hybrid Training Method on the Disuse Atrophy of the Musculoskeletal System of the Astronauts Staying in the International Space Station for a Long Term”	Naoto Shiba (Kurume University)
		“Moon Olympics”	Makoto Arai (Dentsu Inc.)
15 : 30-15 : 45	Coffee Break (15min)		
15 : 45-17 : 00	Panel Session <b>Moderator / Chair</b> Taro Asazuma (ispace)	“How to Make Moon Village Happen”	Naoko Yamazaki (Astronaut) Pavlo Tanasyuk (Spacebit) Dorin Prunariu (Astronaut and former Chairman of COPUOS) Shigeru Imai (JAMSS) Naohiro Uyama (Shimizu Co.) Kae Masuhara (Dentsu Inc.)
17 : 00-17 : 50	Closing & Wrap-up of Tokyo Session <b>Chair</b> Giuseppe Reibaldi(MVA)	Report from Breakout Sessions	John Mankins (MVA)
		Summary of WS and Symposium MVP – Activities Prize Award Next (4th) MV Workshop & Symposium Announcement Introduction to Kyoto Session	
		Concluding Remarks	Giuseppe Reibaldi (MVA)
18 : 05-18 : 50	Press Conference	Giuseppe Reibaldi, John Mankins (MVA) Chiaki Mukai (TUS), Takao Doi (Kyoto University), Setsuko Aoki (Keio University), Yoshifumi Inatani (LOC, JAXA)	

## Kyoto Program

### Travel to Kyoto

- **Kyoto historic site excursion (optional)**
- **Kyoto Reception (17:00) @Former Head Office of Forest Research Station & Garden  
Hokubu (North) Campus, Kyoto University**

DEC

8

Sun

## Kyoto Session program

Place : Maskawa Nobel Laureat Memorial Building for Education and Research  
Hokubu (North) Campus, Kyoto University

Time	Session Title	Theme	Speaker
9 : 00-9 : 15	Opening <div>Chair</div> Satoko Tsujihiro (Kyoto University)	Opening Remarks	Takao Doi (Kyoto University) Setsuko Aoki (Keio University) Giuseppe Reibaldi (MVA)
9 : 15-10 : 30	Session I <div>TOPIC</div> Moon Village Association activities: Introduction to General Public <div>Chairs</div> Dorin Prunariu (Astronaut and former Chairman of COPUOS)	“MVA Overview”	Giuseppe Reibaldi (MVA)
		“Architecture needed for Moon Village”	John Mankins (MVA)
		“Making Business in the Moon Village”	Oleg Ventskovsky (MVA)
		“Education & Public outreach activities of MVA”	Elissavet Koumi (Morpheus Avatar Systems)
10 : 30-10 : 45	Coffee Break (15 min)		
10 : 45-12 : 15	Session II <div>TOPIC</div> Various activities aiming at building society on the Moon Government, Commercial sector and Ventures for Kyoto General Public <div>Chairs</div> Satoshi Iwase (Aichi Medical University)	“JAXA’s space exploration now”	Hiroshi Sasaki (JAXA)
		“Encouraging commercial sector’s activity for exploration”	Kazuyoshi Kawasaki (JAXA)
		“Building Businesses on the Moon”	Misuzu Onuki (Space Access)
		“Investing in Space”	Hideki Kanayama (Shimizu Co.)
		“A Commercial Lunar Surface Exploration Program Including the First Lunar Cave Mapping Mission”	Pavlo Tanasyuk (Spacebit)
		Q&A Session	
12 : 15-13 : 15	Lunch		
13 : 15-15 : 15	Poster Session <div>Facilitator</div> Tomoyuki Tajima (Kyoto University)	Kyoto University Space Unit is promoting and encouraging activities of young students including high school boys and girls. In the poster session, they show these student activities by 20-30 posters and on-site presentation. Exchange with attendants are to be made.  # The title/name/affiliation of the posters are listed in Page 16.	
15 : 15-15 : 30	Coffee Break (15min)		

Time	Session Title	Theme	Speaker
15 : 30-17 : 00	Session for Education	“Introduction of space unit activities”	Masahiro Terada (Kyoto University)
	<b>Chair</b> Takayuki Hoson (Osaka City University)	“Establishing an international institute for the development of next-generation space nutrition researchers”	Takeshi Nikawa (Tokushima University)
		“Space Law Education of Keio University”	Setsuko Aoki (Keio University)
		“Space Education Program of the Tokyo University of Science: Mission Oriented Space Education”	Shinichi Kimura (Tokyo University of Science)
		“JAXA space education: Space for humanity”	Kaoru Sasaki (JAXA)
		Q&A Session	
17 : 00-17 : 30	Summary and Closing Remarks of Kyoto-Session <b>Chair</b> Sin Mineshige (Kyoto University)		Takao Doi (Kyoto University) Setsuko Aoki (Keio University) Yoshifumi Inatani (LOC) Giuseppe Reibaldi (MVA)

## List of the Poster Session

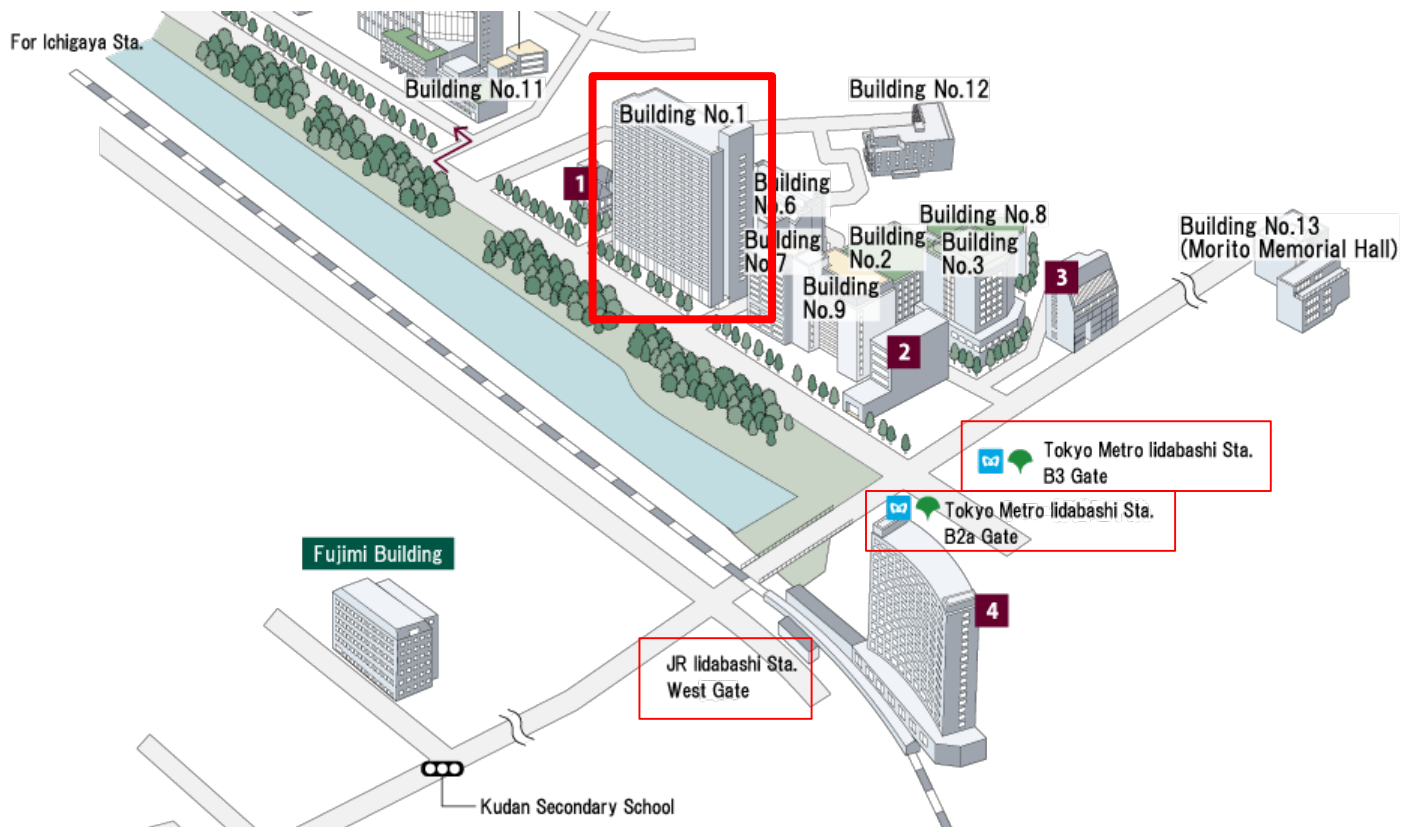
	Title	Name	Affiliation
P-1	Space and Mathematical Education	Hideobu Tsuritani	Kyoto University
P-2	Space Development Timeline with Industrial Structure	Akito D. Kawamura, 3D printer group of the Space Unit	Astronomical Observatory of Kyoto University, Kyoto University
P-3	Space Education with STEM	Takuya Inoue	Doshisha University
P-4	Moon Moto PJ	Hiro Hamada, Mitsuru Hamada, Takuya Matsumoto	RIDE DESIGN, HAL, Osaka Institute of Technology, Mikage High School
P-5	Space Camp at Kyoto University	Hirai Hayate, Kuge Maiko, Machida Iori, Matsumura Hiroki, Ohashi Hiroki, Onishi Ryutarō, Ozaki Ryu, Shirakawa Yuki, Uno Kohei	Kyoto University
P-6	3D printed Space Robot	Kohei Uno	Kyoto University
P-7	Space Experience	R.Kita, T.Matsutani Y.Nakamura, S.Ishida, M.Eda, Yui Hashimoto	Kyoto Kogakuin High School
p-8	Artificial Gravity Network for Human Space Development	Takuya Ono, Makiko Nagura, Junya Yamamoto, Hisafumi Suzuki, Genta Kurihara, Juniya Okamura	Kajima Corporation
p-9	Space Camp at Biosphere 2 ~Aim for Human Activity on Mars~	Hiroaki Sato, Ami Hashimoto, Tomomi Kubo, Yusaku Miyashita, Hayate Hirai, Masahiro Terada, Yosuke A. Yamashiki, Takao Doi	Kyoto University
p-10	Biosphere 3 ~A Human Habitat on Mars~	Hiroaki Sato, Ami Hashimoto, Tomomi Kubo, Yusaku Miyashita, Hayate Hirai, Masahiro Terada, Yosuke A. Yamashiki, Takao Doi	Kyoto University
P-11	Six-days Practice of Space Travel 2018	Azusa Ito, Motoki Sotsuka, Junichiro Nakazawa, Kaname Taniyasu, Kenji Miki, Tomoki Okamura, Nao Hoshinouchi, Gaito Masuda, Yuki Matsuda, Daichi Kazama, Aki Yoshioka, Yu Kasuya	Kyoto University
P-12	New Sensibility in Zero Gravity	Azusa Ito, Hirochika Mikami, Nao Hoshinouchi, Sachika Shibukawa, Yu Kasuya, Yuto Kanai,	KPC-4 (Kyoto-university Parabolic Challenge)
p-13	Investigation of the Spatial Cognition in Microgravity	Yusaku Sato, Sachika Shibukawa, Masaya Amo, Teruhisa Ohara, Lena Sasaki	Kyoto University
P-14	OriHime: Weaving Our Material Distance with Heart Warming and Robotics	Kunihisa Ohno, Maho Sasaki	Kyoto University
p-15	Scientific Illustration and Computer Graphics of eEoplanets in Extrasolar Planet's Catalogue EXOKyoto	Nami Kimura, Yosuke Yamashiki	Kyoto University
P-16	SPACE Development Forum 2019 Report	Atsushi Gomi	SPACE Development Forum
p-17	Medical Treatment in Space by Space Infusion Device—ENMEI—	Yuya Miyajima, Kiyosei Ogawa, Junichiro Nakazawa, Yusaku Miyashita, Mio Kobayashi, Eriko Akayama	Kyoto University
p-18	Activities to Promote Public Awareness of Space Development in Asia-Pacific Region	Muneo Takaoki	Miina Sciences
p-19	Apes on the Moon: How Primatology Contributes to Astrosociology	Tomoyuki Tajima, Hiroki Ohta, Takao Doi	Kyoto University
P-20	How to Live in the Water-Rich Satellite, Enceladus.	Nao Hoshinouchi	Kyoto University
P-21	Beginner's Guide on Exoplanet Observation in Kyoto	Kenji Miki, Takao Doi, Yosuke Yamashiki, Masaki Deguchi	Kyoto University
P-22	The Design of the Moon Base	Yu Kasuya, Soma Okaoto, Kohei Uno, Junichiro Nakazawa	Kyoto University
p-23	Society for Potential Use of Timber in Space	Kenji Miki, Takao Doi, Kaito Masuda, Azusa Ito, Tomoya Hirata, Motoki Sotsuka, Koji Murata, Masashi Nakamura, Keiichi Baba	Kyoto University
P-24	Our Eco	Nao Hoshinouchi, Daesung Huh, Hotaka Iwami, Kaito Masuda, Teruhisa Ohara, Yuichiro Ota	Team Our Eco
P-25	Conceptual Design of Wooden CubeSat	Motoki Sotsuka, Kenji Miki, Koji Murata, Masashi Nakamura, Takao Doi	Kyoto University



# Congress Venue in Tokyo on 5<sup>th</sup>&6<sup>th</sup> 17<sup>th</sup> Floor in Building No.1 in Kagurazaka Campus

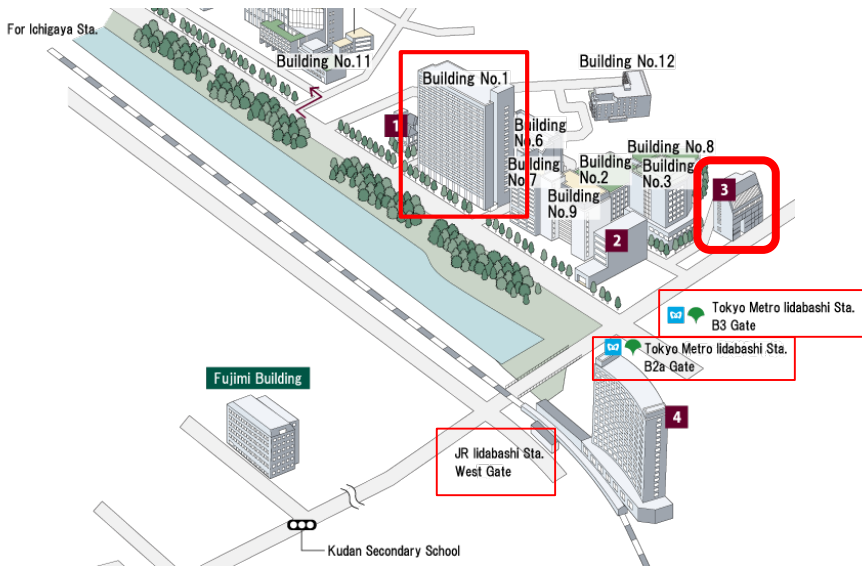
Address: Building No.1  
1-3 Kagurazaka,  
Shinjuku-ku, Tokyo  
162-8601

Tell: 03-3260-4271



Access:  
3min.Walk from B3 gate or B2a gate of  
Tokyo Metro Iidabashi Station  
or  
7min.walk from west gate of JR line

# Reception in Tokyo on 4<sup>th</sup> in RISOKAI CLUB



Time : 18:00-20:00  
4<sup>th</sup> December

Place : RISOKAI CLUB  
6th Floor Porta

Access : Kagurazaka,  
2-6-1 Kagurazaka,  
Shinjuku-ku, Tokyo

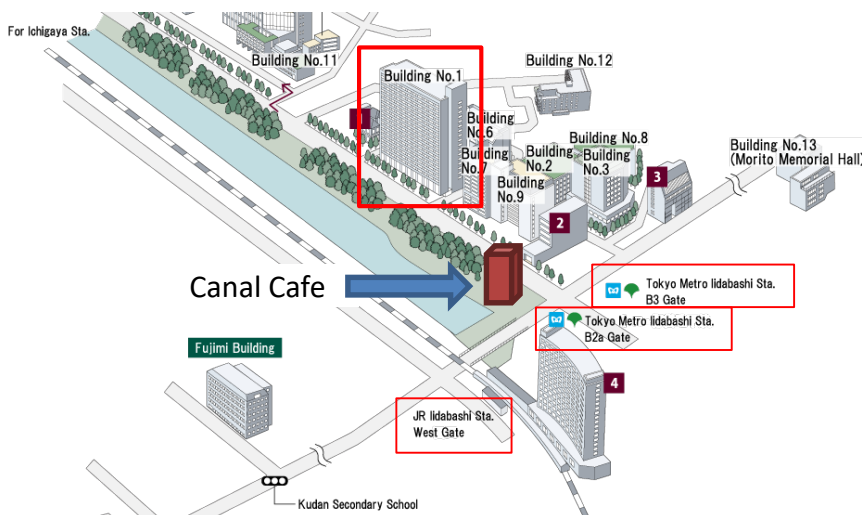
Tel : 03-3269-1570

RISOKAI CLUB is 5min  
walk from the Congress  
registration desk.

## Attention:

Please finish your registration at 17<sup>th</sup> Floor in Building No.1 before coming to the Reception.

# Sponsor Dinner on 5<sup>th</sup> in “Canal Café”



Time : 18:00-20:00  
5<sup>th</sup> December

Place : “Canal Café”

Access : 1-9 Kagurazaka,  
Shinjuku-ku, Tokyo

Tel : 03-3260-8068

# Access From Tokyo Station To Kyoto Station

## Access

From Tokyo Station to Kyoto Station

<https://www.kyotostation.com/the-tokaido-shinkansen/>

It takes about 2 hours from Tokyo Station to Kyoto Station by the Tokaido Shinkansen “Nozomi” superexpress, which links the capital city of Tokyo with Kyoto and Osaka to the south.

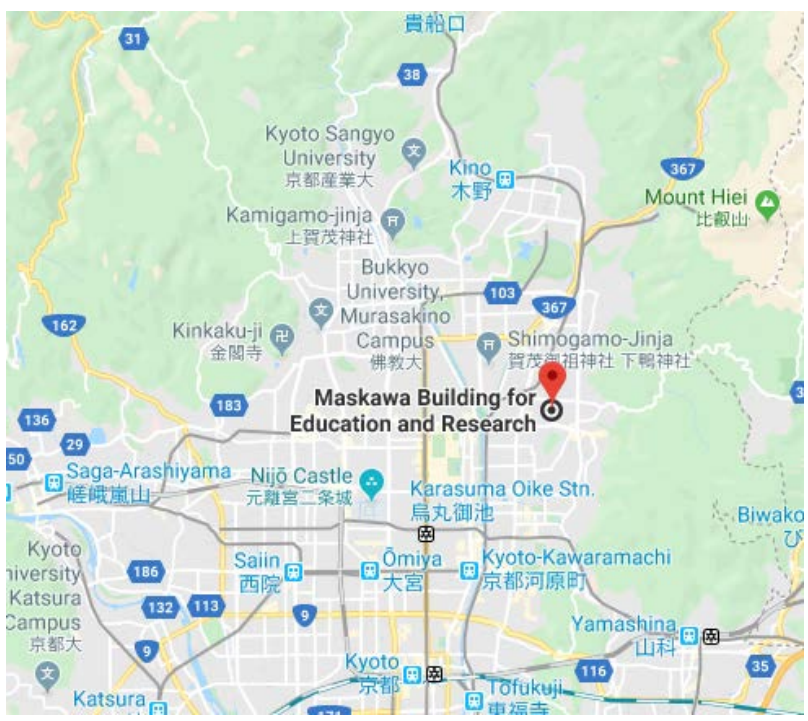


Reception Venue in Kyoto  
(Former Head Office of Forest Research Station , Yoshida  
North Campus, Kyoto University)





Symposium/Outreach Event Main Venue  
(Maskawa Building for Education and Research, Yoshida  
North Campus, Kyoto University)



# English-guided Half-day Bus Tour of Historic Kyoto

**Date & Time:** Saturday Dec. 7, 13:00-17:00

**(Arrive the meet point by 12:50!!)**

**Meeting spot:** Kyoto Station

**Places to Visit:** 1) Kinkaku-ji (Golden Pavilion)  
2) Ryoan-ji (Rock Garden)  
3) Kyoto Imperial Palace

**Finishing Point:** Kyoto University

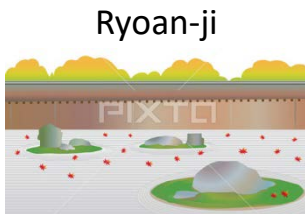
※The tour bus will take you to your hotels after Kyoto reception.

**Cost:** ¥5,000 Japanese yen/person (payable by cash only at the start of the tour)

**Capacity:** 45 persons



Kinkaku-ji



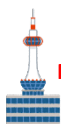
Ryoan-ji



Kyoto Imperial Palace

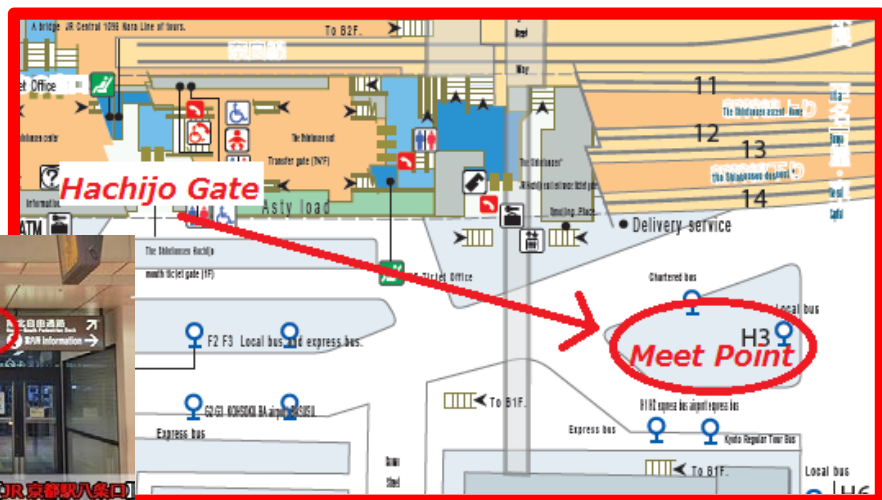


**Meet Point: Kyoto station, Bus station through Hachijo gate**



**NOT** the Kyoto tower side

Osaka  
←



Tokyo  
→



**Exit through Hachijo Gate, take left and proceed to Bus Stop H3.**

月面に私たちの街を作ろう！  
**ASTRAX LUNAR CITY PARTNERS 500**  
 第3期  
 ASTRAX LUNAR CITY  
 開拓メンバー募集中！

月の土地の  
 権利書を  
 店舗に飾ったり  
 「月面支店」  
 の住所を名刺や  
 WEBに記載したり  
 使い方はいろいろ

第3期  
 ASTRAX LUNAR CITY  
 開拓メンバー  
 募集中！  
**300** 社様 限定

**ASTRAX月面シティで宇宙ビジネス**  
**2400坪の月の土地の所有権**  
**500人の月面開拓者仲間たちと市民会議**  
**あなたの事業とコラボレーション**  
**アイディアは無限大**

ASTRAX LUNAR CITY AND  
 ITS PARTNERS ARE THE TOP  
 GOLD SPONSOR OF THE 3RD  
 INTERNATIONAL MOON  
 VILLAGE WORKSHOP AND  
 SYMPOSIUM.

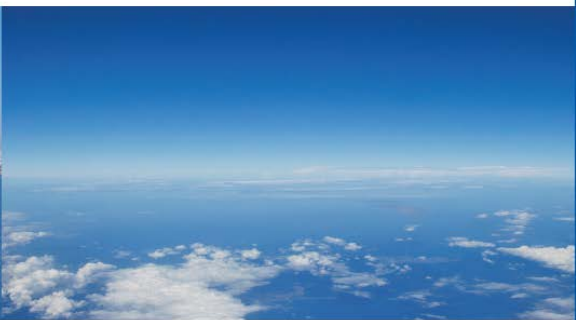


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 LUNAR BUSINESS COMMUNITY  
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 Opening up new possibilities in the skies and beyond.  
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 can we expect to realize the future we desire.  
 This is the IHI philosophy.

**IHI** Realize your dreams

IHI Corporation Toyosu IHI Building, 1-1, Toyosu 3-chome, Koto-ku, Tokyo 135-8710 Japan [www.ihi.co.jp/en/](http://www.ihi.co.jp/en/)



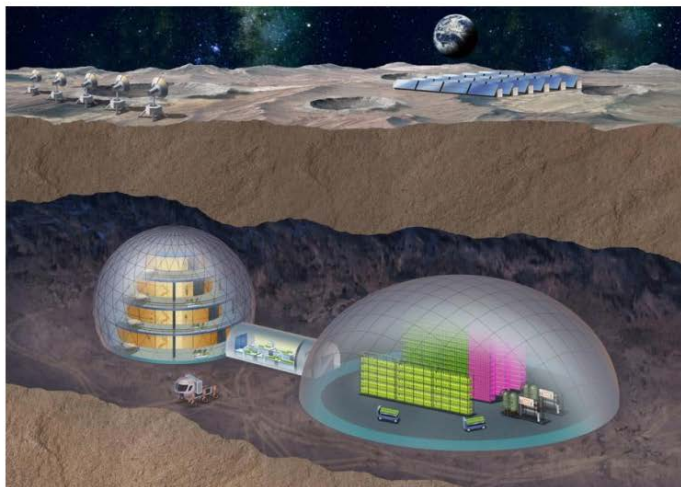


Maintaining our value to society by adapting to changing times and embracing the challenges facing humankind today, tomorrow and well into the future —on land and at sea, in the sky and in space, we move the world forward.



MOVE THE WORLD FORWARD **MITSUBISHI  
HEAVY  
INDUSTRIES  
GROUP**

TAKENAKA CORPORATION has studied on space field since 1988.  
Now, we are proceeding to research comfortable habitat  
and farm facility in space.



**TAKENAKA**



**KIRIN**

**TUS** Research Center for Space Colony,  
Tokyo University of Science

**CHIBA  
UNIVERSITY**

This figure was studied by cooperative research of  
JAXA Space Exploration Innovation Hub Center.





子どもたちに  
誇れるしごとを。

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for Liquefied Hydrogen

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Grand Award

Metal Gasket Fittings  
for Ultra High Pressure  
Hydrogen Piping

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Cho Monodzukuri  
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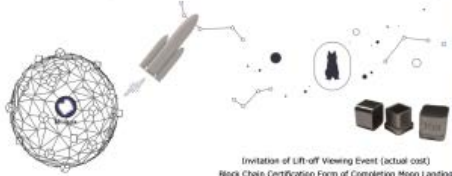
Milieux AI AR/VR by KATANA

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Fly To The Moon, All Records and Memories until The Lunar Landing

Universe Memories

A Project Brings your hope and dreams to the Moon on the Space Ship



Invitation of Lift-off Viewing Event (actual cost)  
Block Chain Certification Form of Completion Moon Landing

Website Access Rights Of Blast-off and Related Events  
App Download Rights

The Localize App of GPS Mark On The Orbiting Moon



Contact Sale / Mirai1 LLP  
Mail: [milieux@mirai1.org](mailto:milieux@mirai1.org)



Vendor / Cosmos Wonderland Corp.  
Mail: [milieux@cw1.co.jp](mailto:milieux@cw1.co.jp)

<https://milieux.jp>



Katana Project Presents  
MOON VILLAGE × Blockchain







**SPACE WALKER**

<https://www.space-walker.co.jp/>

×

**inet**

株式会社アイネット 宇宙開発事業部

<https://www.inet.co.jp/>



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人と地球と豊かな未来のために。

NECは、日本国の人工衛星「おひめ」(通信・観測・地球観測・科学観測などの人工衛星の開発や衛星搭載機器・地上システム)の技術開発を通して、60年以上にわたる宇宙開発の歴史を支えてきました。これらの人工衛星は、防災や環境監視など様々な分野で利用され、社会を豊かにする新たな価値を創出しています。

人工衛星の自社工場体制を整え、これまで培ってきた豊かな宇宙技術を基盤として、NECは、いつでも、どこでも、だれでも利用できる「宇宙ソリューション」を構築しています。

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【お客様相談室】フリーダイヤル0120-39-2936

受付時間：月～金（祝祭日は除く）9：00～12：00/13：00～17：00

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# THE 3<sup>rd</sup> INTERNATIONAL MOON VILLAGE WORKSHOP & SYMPOSIUM

5-8 DECEMBER 2019  
TOKYO/KYOTO, JAPAN



<http://www.jasma.info/mv2019/home/>

## CO-HOST



Chiaki Mukai, Prof.



Takao Doi, Prof.



Setsuko Aoki, Prof.

## SUPPORTED BY

Science Union for  
Human Planetary  
Habitation in Space  
(SUHPHS)



## INTRODUCTION

The Moon Village Association (MVA) was established in 2017, as a non-governmental organisation based in Vienna, whose goal is the creation of a permanent global informal forum for stakeholders interested in the development of the Moon Village. The MVA fosters cooperation for existing or planned global moon exploration programs, be they public or private initiatives. It comprises approximately 220 members from more than 39 countries and 26 Institutional members around the globe, representing a diverse array of technical, scientific, cultural and interdisciplinary fields.

The 3rd International Moon Village Workshop & Symposium, will present various issues for the growth of such society on the Moon, discussing various Moon related programs and future visions. The Workshop and Symposium 2019 also aims to expand the international and domestic communities for future discussions and networking people interested in Moon Village's activities in various fields of industry, government, academia, and new space ventures.

Giuseppe Reibaldi, President, Moon Village Association (MVA)

Yoshifumi Inatani, Chairperson of the Local Organizing Committee (LOC)

## DECEMBER 2019



DATE	ACTIVITIES	PLACE
5 <sup>th</sup> Thu	<b>3<sup>rd</sup> Workshop</b>	Tokyo University of Science
6 <sup>th</sup> Fri	<b>3<sup>rd</sup> Workshop</b>	Tokyo University of Science
7 <sup>th</sup> Sat	Move to Kyoto <b>Cultural/Technical Tour</b>	Kyoto
8 <sup>th</sup> Sun	<b>MVA Public Symposium</b>	Kyoto University