

1st IAA NORTH EAST ASIA SYMPOSIUM ON SMALL SATELLITES

Final Program as active
version



August 21 – 23, 2017
The Best Western
Premier Tuushin Hotel
ULAANBAATAR,
MONGOLIA



*International
Academy of
Astronautics*

Supported and hosted by



Mongolian Society of Photogrammetry
and Remote Sensing (MSPRS)



MONMAP LLC

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Rei Kawashima (UNISEC- Global – Japan)

Sungdong Park (Satreci - South Korea)

Choen Kim (Kookmin Univ, South Korea)

Meirbek Moldabekov (Kazcosmos, Kazakhstan)

Zaire Rakisheva (Kaznu, Kazakhstan)

Yuei-An Liou (National Central Univ - Taiwan)

AGENDA

Sunday, August 20, 2017

16:00 – 19:00 Registration at 5th floor, Soyombo Hall, The Best Western Premier Tuushin Hotel

19:00 – 20:00 Ice Break

Monday, August 21, 2017

08:00 – 09:00 Registration at 5th floor, Soyombo Hall, The Best Western Premier Tuushin Hotel

09:00 – 09:30 Opening:
Prof. G. Chuluunbaatar
Minister of Education, Culture, Science and Sports (MECSS)

Dr. R.Sandau
Technical Director, Satellite and Space Applications of IAA

Prof. D.Regdel
President of Mongolian Academy of Science

09:30 – 10:30 Keynote Session

10:30 – 10:50 Tea Break

10:50 – 11:50 Keynote session

11:50 – 12:30 Opening the Exhibition

12:30 – 13:30 Lunch Break

13:30 – 15:00 **Session 01: Worldwide Achievements**

Chair:
Peter Martinez, UN COPUOS, South Africa

15:00 – 15:20 Tea Break

15:20 – 16:40 **Panel 1: Benefits of small satellites**

Moderator: Rene Laufer, Baylor University, USA

16:40 – 17:40 Exhibition (Commercial presentations)

Tuesday, August 22, 2017

09:00 – 10:30 **Session 02: International Endeavours**

Chair:

Rene Laufer, Baylor University, USA

10:30 – 10:50 Tea Break

10:50 – 12:30 **Session 03: Mission of NEA**

Chair:

Igor V. Belokonov, Samara State Aerospace University, Russia

12:30 – 13:30 Lunch Break

13:30 – 15:00 **Session 04: Small Satellite Technology 1**

Chair:

Alex da Silva Curiel, SSTL, UK

15:00 – 15:20 Tea Break

15:20 – 16:40 **Session 05: Application Studies for the Region**

Chair:

Saandari Mijiddorj, MonMap, Mongolia

16:40 – 17:40 Poster Session and Exhibition (Commercial Presentation)

18:00 – 20:00 Exhibition cocktail

Wednesday, August 23, 2017

09:00 – 10:30 **Session 06: Small Satellite Technologies 2**

Chair:

Toshinori Kuwahara, Tohoku University, Japan

10:30 – 10:50 Tea Break

10:50 – 12:30 **Session 07: University Projects**

Chair:

Rei Kawashima, UNISEC-Global, Japan

12:30 – 13:30 Lunch Break

13:30 – 15:00 **Panel 2: Benefits of small satellites for the Region**

Moderator: T Christian Heipke, ISPRS, Germany

Closing the Exhibition

15:00 – 15:20 Tea Break

15:20 – 16:40 Closing and approval of the conference declaration

Honorary chairman: D. Regdel, Mongolian Academy of Science

Chairmen: R. Sandau, IAA, France, M. Saandar, MSPRS, Mongolia

General Rapporteur: Rene Laufer, Baylor University, USA

16:40 – 17:40 Visit to the Soviet - Mongolian Joint Space Flight History Museum

18:00 – 21:00 Reception with Mongolian folklore and music at the Space History Museum

Thursday, August 24, 2017

10:00 – 12:00 Visit to the Student Satellite Laboratory, the National University of Mongolia

Sightseeing country side trip

Technical Program

Keynote Session: Monday, August 21, 2017, 9:30 – 10:30, 10:50 – 11:50

Rainer Sandau, IAA, France

The IAA at the forefront of small satellite activities

Rene Laufer, Baylor University, USA

Small Satellites – A Global Perspective

Peter Martinez, UN COPUOS, South Africa

Preserving the long- term sustainability of outer space activities

Christian Heipke, ISPRS, Germany

Satellite image processing –an overview with applications

Session 01: Worldwide Achievements

Monday, August 21, 2017, 13:30 – 15:00

Chair: Peter Martinez, UN COPUOS, South Africa

Small Satellites , Big Opportunities

IAA-NEA-0101

Alex da Silva Curiel, Kasia Wisniewska, Vince Nsengumuremyi, Andrew Cawthorne, Prof. Guglielmo Aglietti, Prof. Sir Martin Sweeting, SSTL, UK

Coordinated operations of small satellites targeted to Earth Observation

IAA-NEA-0102

Giovanni B. Palmerini, Scuola di Ingegneria Aerospaziale, Sapienza Università di Roma, Italy

The DLR Microsatellite Development Line

IAA-NEA-0103

Winfried Halle, Rainer Sandau, Thomas Terzibaschian, Wolfgang Bärwald, Christian Schultz, Matthias Hetscher, German Aerospace Center – DLR, Germany

Analysis of mini-magnetospheric plasma propulsion for small earth observation satellite

IAA-NEA-0104

Harijono Djodihardjo, The Institute for the Advancement of Aerospace Science and Technology, Indonesia

Panel 1: Benefits of small satellites

Monday, August 21, 2017, 15:20 – 16:40

Moderator: Rene Laufer, Baylor University, USA

Panelists:

Rainer Sandau, IAA, France,

Peter Martinez, UN COPUOS, South Africa

Christian Heipke, ISPRS, Germany

Rei Kawashima, UNISEC-Global, Japan

Alex da Silva Curiel, SSTL, UK

Chair: Rene Laufer, Baylor University, USA

- The development of space policy in an emerging space nation- the South African experience** IAA-NEA-0201
Peter Martinez, UN COPUOS, South Africa
- ISPRS - the International Society for Photogrammetry and Remote Sensing and its programme for 2016 - 2020** IAA-NEA-0202
Christian Heipke, Leibniz University, Hannover, Germany
- Introduction to UNISEC-Global** IAA-NEA-0203
Rei Kawashima, UNISEC-Global, Japan
- The importance of information interrelation** IAA-NEA-0204
Can Unlusoy, Erdene Namjilmaa, Navid Alae, York University, Canada

Chair: Igor V. Belokonov, Samara State University, Russia

- Dimensional Stability Analysis of high performance compact satellite SpaceEye-X** IAA-NEA-0301
Eundeok Bae, Satreci, South Korea
- Mongolian first satellite and possibility to develop space technology in Mongolia** IAA-NEA-0302
Erdenebaatar Dashdondog, Turtogtokh Tumenjargal, Amartuvshin Dagvasumberel, Ulam-Orgikh Duger, Suvdantsetseg Balt, Tsolmon Renchin, Mengu Cho, National University of Mongolia, Mongolia
- Design Policy of Micro Satellite (In case of On-demand Micro Satellite with X-band SAR)** IAA-NEA-0303
Kei-ichi Hirako, Seiko Shirasaka, Toshihiro Obata, Shin-ichi Nakasuka, Ken-ichi Anma, Shinobu Nakamura, Takeshi Tohara, Keio University of Japan, Japan
- Small Remote Sensing Satellites based on HT-100 and HT-500 platforms in Russia** IAA-NEA-0304
M.F.Reshetnev, Information Satellite Systems Ltd, Russia

Chair: Alex da Silva Curiel, SSTL, UK

- The BIROS satellite- New Technologies for improvement of small satellite performance** IAA-NEA-0401
Matthias Hetscher, Winfried Halle, Ekkehard Lorenz, Axel Lauterbach, Christian Raschke and Wolfgang Bärwald, German Aerospace Center – DLR, Germany
- Microsatellite bus system Technologies of Tohoku University** IAA-NEA-0402
Toshinori Kuwahara, Yuji Sakamoto, Shinya Fujita, Yuji Sato, Ryo Taba, Hiroto Katagiri, Masafumi Endo, Kazuya Yoshida, Tohoku University of Japan, Japan
- Development and research 3D-track gas detector for the analysis of space radiations in low orbits by means of nanosatellites** IAA-NEA-0403
O.V. Phylonin, I.V. Belokonov, M.A. Petrov, K.S. Nasonov, Samara National Research University, Russia
- Safety assessment and verification results for Micro and Nano Satellites with deployable mechanism** IAA-NEA-0404
Yuji Sakamoto, Shinya Fujita, Toshinori Kuwahara, Kazuya Yoshida, Department of Aerospace Engineering, Tohoku University, Japan

Session 05: Application Studies for the Region. Tuesday, August 22, 2017, 15:20 – 16:40

Chair: Saandar Mijiddorj, MonMap LLC, Mongolia

- Spectro-polarimetric BRDF measurement and optical model of green leaves with chlorophyll concentration** IAA-NEA-0501P
Begzsuren Tumendemberel, Yukihiro Takahashi, Tetsuro Ishida, Ade Purwanto, Junichi Kurihara, Hokkaido University, Japan
- Application of multi-satellite data for crop growth status in Tuv province of Mongolia** IAA-NEA-0502P
Ts.Enkhzaya, D. Ichikawa, K. Wakamori, Mongolian University of Life Sciences, Mongolia
- Agricultural crop growth monitoring and field management by using multi-satellite data** IAA-NEA-0503P
K. Wakamori, D. Ichikawa, Japan Manned Space Systems Corporation, Japan
- Multi-satellite data processing for agriculture production and management in Mongolia** IAA-NEA-0504P
D. Ichikawa, K. Wakamori, Japan Manned Space Systems Corporation, Japan
- National Land Cover and Change Detection of Mongolia based on MODIS/NDVI data** IAA-NEA-0505P
Elbegjargal Nasanbat, Khudulmur Sodov, Information and Research Institute of Meteorology, Hydrology and Environment of Mongolia, Mongolia

<p>Applications of Satellite RS for Environmental Studies in Mongolia D.Amarsaikhan, Mongolian Academy of Sciences (MAS), Mongolia</p>	IAA-NEA-0506P
<p>GNSS Geodesy Network for Geodynamics Research in Mongolia Erdenezul Danzansan, Institute of Astronomy and Geophysics, MAS, Mongolia</p>	IAA-NEA-0507P
<p>Active faults around Ulaanbaatar city Ulziibat M., Battogtokh D., Nyambayar Ts., Oyun-Erdene M., Baigalimaa G., Bayarsaikhan E., Baatarsuren G., Matthieu F and Smekalin O, Institute of Astronomy and Geophysics, MAS, Mongolia</p>	IAA-NEA-0508P
<p>The estimation lake area changes and their relations with socio-economic variables in Mongolia Tsolmon Altanchimeg, Tsolmon Renchin, Chimgee Dari, Erdenechimeg Munkhbayar, National University of Mongolia, Mongolia</p>	IAA-NEA-0509P
<p>Long-term moisture analysis using satellite and in-situ data in Mongolia Enkhjargal Natsagdorj, Tsolmon Renchin, Phillipe De Maeyer, Batchuluun Tseveen, National University of Mongolia, Mongolia</p>	IAA-NEA-0510P
<p>Crop monitoring and mapping with remote sensing technology B. Batbileg, E.Erkhembayar, D.Tuvshinbayar, D.Byambasuren, Mongolian University of Life Sciences, Mongolia</p>	IAA-NEA-0511P
<p>Monitoring forest cover change of communities between 2000 and 2015 using forest index Bayanmunkh. N, Undram.G, Tsolmon.R , Batchuluun.Ts, Ariunzul.Y, National University of Mongolia, Mongolia</p>	IAA-NEA-0512P
<p>GNSS observations applied to geophysical processes in North East Asia Rui Fernandes, Machiel Bos, Mijiddorj Saandar, Maksim Tretyakov, SEGAL(UBI/IDL) , Portugal, Mongolia and Russia</p>	IAA-NEA-0513P
<p>Remote lithofacies mapping of the Shine Jinst area Undariya Jalbaa and Sersmaa Gonchigdorj, The Mongolian University of Science and Technology, Mongolia</p>	IAA-NEA-0514P

Session 06: Small Satellite Technologies 2 ***Wednesday, August 23, 2017, 09:00 – 10:30***

Chair: Toshinori Kuwahara, Tohoku University of Japan, Japan

Magnetic-induction system launch of nanosatellites on a given orbit IAA-NEA-0601
Zafar Gimranov, Samara National Research University, Russia

Next generation remote sensing and applications realized by micro-satellite and its international collaboration IAA-NEA-0602
Yukihiro Takahashi, Hokkaido University, Japan

Creating the " Total package " through Spatial and Temporal Resolution of Satellite Imagery IAA-NEA-0603
Andrew Steele, Digital Globe Inc, USA

Development of Student's Pico-satellite based on PocketQube standard for Space Radiation Measurement IAA-NEA-0604
R. C. Prajapati, S. McAndrew, S. Paudel, J. Thapa, S. Shrestha, Orion Space, Nepal

Session 07: University Projects ***Wednesday, August 23, 2017, 10:50 – 12:30***

Chair: Rei Kawashima, UNISEC-Global, Japan

The program of Samara University for developing scientific-educational nanosatellites IAA-NEA-0701
Igor Belokonov, Samara National Research University, Russia

Student Small Satellite (SSS) project for Mongolian Space Education and Science Development IAA-NEA-0702
Suvdantsetseg .B and Batbayar. V, National University of Mongolia, Communication and Information Technology Authority of Mongolia, Mongolia

Teaching GNSS technologies in a modern University IAA-NEA-0703
Ilya Kudryavtsev, Samara National Research University, Russia

University Project IAA-NEA-0704
R. Tsolmon, National University of Mongolia, Mongolia

Panel 2: Benefits of small satellites for the Region ***Wed, August 23, 2017, 13:30 – 15:00***

Moderator: Christian Heipke, ISPRS, Germany

Closing and approval of the conference declaration ***Wed, August 23, 2017, 15:20 – 16:40***

Honorary chairman: D. Regdel, Mongolian Academy of Science

Chairmen: R. Sandau, IAA, France, M. Saandar, MSPRS, Mongolia

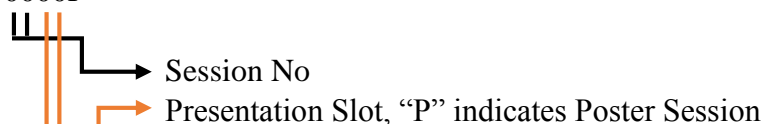
General Rapporteur: Rene Laufer, Baylor University, USA

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Thomas Terzibaschian	IAA-NEA-0103	Winfried Halle	IAA-NEA-0103
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Note: IAA-NEA-0000P



Symposium Venue

The symposium will take place in the Best Western Premier Tuushin Hotel (Soyombo Hall, 5th floor), Ulaanbaatar, Mongolia. <http://bestwesternmongolia.mn/>

More information: www.monmap.mn/iaa-symposium

On-site Registration

The Registration Desk will be set up in the Soyombo Hall, 5th floor of the Best Western Premier Tuushin Hotel. It will be open:

August 20, Sunday	16:00 – 19:00
August 21, Monday – August 23, Wednesday	08:00 – 18:00

The symposium registration fees for participants – 300 USD, for students – 50 USD and for exhibitors – 500 USD and its payment on-site by credit card or cash at the registration desk.

Name badges

Name badge must be worn at all times in order to be admitted to the sessions and social events. The following colors have been assigned:

Participants	White
Students	White
Exhibitor	Blue

Language

The official language of the symposium is English

Offices

- The symposium office will be co-located with the registration desk in the Symposium room Soyombo Hall, 5th floor of the Best Western Premier Tuushin Hotel.
- Authors are requested to arrive at the symposium session room 10 minutes before the start of the session in order to meet the session chairperson for final preparations. Please bring your final paper and short biographies (Bio note).

Publication of Papers

The proceedings will be published after the symposium (including all submitted 8-page Final Papers).

Lunch and Tea Breaks

The registration fee of the participants, students and exhibitors covers the tea breaks and the lunch.

Tours and Sightseeing

Thursday, August 24, 2017

10:00 – 12:00 Tour to the Student Satellite Laboratory, the National University of Mongolia (NUM). Who interested for this tour please contact a representing person of the student satellite laboratory of NUM at the registration desk.

Local sightseeing tours

The local sightseeing tours will be organized by local travel agent after the symposium. Who are interested for the sightseeing tour please contact local travel agent at the registration desk.

The location map the 1st IAA North-East Asia Symposium venue, Ulaanbaatar, Mongolia



The Best Western Premier Tuushin hotel



The Soyombo Hall, 5th floor, Best Western Premier Tuushin hotel



The Program of 1st IAA North-East Asia Symposium on Small Satellites, Ulaanbaatar, Mongolia

1st IAA North-East Asia Symposium on Small Satellites, Ulaanbaatar, Mongolia	MONDAY August 21, 2017	TUESDAY August 22, 2017	WEDNESDAY August 23, 2017
09:00 – 10:30 Papers	08:00 – 09:00 Registration 09:00 - 09:30 Opening Ceremony, Welcome and greetings 09:30 - 10:30 Keynote Session	Session 02 International endeavours	Session 06 Small Satellite Technologies 2
10:30 – 10:50 Tea Break			
10:50 – 12:30 Papers	Keynote Session Opening the Exhibition	Session 03 Mission of NEA	Session 07 University Projects
12:30 – 13:30 Lunch Break			
13:30 – 15:00 Papers	Session 01 Worldwide Achievements	Session 04 Small Satellite Technology 1	Panel 2: Benefits of small satellites for the region Closing the Exhibition
15:00 – 15:20 Tea Break			
15:20 – 16:40 Papers	Panel 1: Benefits of small satellites	Session 05 Application Studies for the Region	Closing and approval of the conference declaration
16:40 – 17:40 Exhibition and Poster	Exhibition (Commercial Presentation)	Poster Session and Exhibition (Commercial Presentation)	Visit to the Soviet - Mongolian Joint Space Flight History Museum
SUNDAY, August 20, 2017 16:00 – 19:00 – Registration at 5th floor, Soyombo Hall, The Best Western Premier Tuushin Hotel 19:00 – 20:00 – Ice Break	No event	Exhibition cocktail	18:00 - 21:00 Reception with Mongolian folklore and music at the Space History Museum