

# APRSAF No. 12

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# NEWS



**APRSAF**

ASIA-PACIFIC REGIONAL  
SPACE AGENCY FORUM

# LETTER

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# APRSAF-19

THE NINETEENTH SESSION OF  
THE ASIA-PACIFIC REGIONAL  
SPACE AGENCY FORUM



**19TH**  
**APRSAF**  
ASIA-PACIFIC REGIONAL  
SPACE AGENCY FORUM  
MALAYSIA



The nineteenth session of the Asia-Pacific Regional Space Agency Forum (APRSAF-19) will be held from December 11 to 14, 2012, in Kuala Lumpur, Malaysia, under the theme entitled "Enriching the quality of life through innovative space programs". This session will be the second time for Malaysia to host APRSAF, following APRSAF-8 in 2001, also in Kuala Lumpur, Malaysia.

#### DATE

December 11-14, 2012

#### VENUE

Berjaya Times Square Hotel, Kuala Lumpur, Malaysia

#### ORGANIZERS

**Malaysia:** Ministry of Science, Technology and Innovation (MOSTI)  
National Space Agency (ANGKASA)

**Japan:** Ministry of Education, Culture, Sports, Science and Technology (MEXT)  
Japan Aerospace Exploration Agency (JAXA)

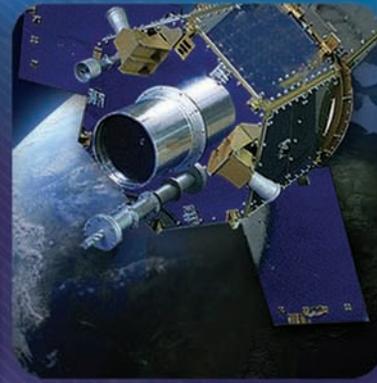
## ABOUT ANGKASA

**A**NGKASA is the agency mandated by the government of Malaysia to develop space sector in Malaysia. Malaysia is envisioning having the capability and capacity to capitalize space as a strategic sector for the well-being of the nation toward achieving Vision 2020 and beyond. The agency has a mission to develop the country's potential in space sector to support the economic growth and social development, and strengthening national security.

ANGKASA's history begins with the Planetarium Division established under the Prime Minister's Department in 1989. With an extended sphere of responsibilities that it was envisioned to undertake, Space Science Studies Division (BAKSA) was established in 1993. In July 1995, BAKSA was placed under the Ministry of Science, Technology and Environment (MOSTE) after 18 months in operation. In 2002, the National Space Agency of Malaysia (ANGKASA) was established with a mandate to formulate policy, regulate, coordinate, implement, and monitor space activities within the country. In 2004, BAKSA was amalgamated with ANGKASA.

The agency's major programs include building space-related infrastructures such as satellite systems and their related ground facilities; capitalizing the applications of space-related technologies and systems; developing local industries to support sustainable, affordable, and guaranteed economic benefits; and putting space legal framework in place. On the other hand, fundamental programs in promoting public education on the importance of space ventures will always be our major point to emphasize. The agency is also responsible in leading and monitoring the development of space science in Malaysia through providing leadership in education and research in space science.

ANGKASA has four divisions including, Operations and Space System Division and Technology Development & Space Applications Division with their operations center based at the National Space Centre at Banting in the state of Selangor, Space Science & Education Division based at National Planetarium in Kuala Lumpur, Administration & Human Resource Division based in the Headquarters at Putrajaya, and the National Observatory at Langkawi Island in the northern part of Peninsula Malaysia.



*National Space Agency, Malaysia*

# *Welcome Message From ANGKASA*

**Noordin Ahmad**

Deputy Director General  
National Space Agency (ANGKASA)

I begin this message with Malaysian proud greeting of “Selamat Datang” to all the participants of the 19th Session of the Asia-Pacific Regional Space Agency Forum (APRSAF-19). Malaysia is very honored to host an international and prestigious annual event this year. APRSAF has a long history of being a point of meeting and collaboration between various space agencies in the world especially in the Asia-Pacific region. In addition, being the largest space-related conference in the Asia-Pacific region, it offers enormous opportunities for space agencies to discuss international cooperation in concrete terms.

“Enriching the Quality of Life through Innovative Space Programs,” the theme of this year’s forum shows great importance of space programs to the betterment of people’s life. It is evident that in many instances, space technology has been the solution to world’s problems. Its spin-off technologies have solved a range of difficulties, from upstream industries to the layperson’s day-to-day problems. ANGKASA with the assistance of their parent body, MOSTI, is very proud to be involved in this cutting-edge technology.



Despite the transformation made by space programs to the universe thus far, there are still opportunities to elevate our energy in empowering the benefit of space programs. As such, we strongly desire dynamic and innovative ideas to further enriching the quality of our life. Furthermore, as mentioned by the Director General of ANGKASA in the recent APRSAF newsletter, we need to work hand in hand to make citizens aware about the contributions of space programs to their lives. Therefore, we can gain holistic supports from all the stakeholders and the public at large.

Ultimately, on behalf of the Malaysian secretariat members, I would like to express our heartfelt gratitude to our Japanese co-organizers namely Ministry of Education, Culture, Sports, Science and Technology of Japan (MEXT) and Japanese Aerospace Exploration Agency (JAXA) for their tremendous supports and assistances. Last but not least, I would like to extend my appreciation to all the Malaysian secretariat for the contributions, sacrifice, and not to forget their sleepless nights to make this event a successful one.

# REPORTS OF APRSAF WORKING GROUPS & INITIATIVES ACTIVITIES

## Parabolic Flight Experiments

Students from Malaysia and Thailand experienced microgravity by taking part in parabolic flight experiments, which were conducted in March 2012 in Japan. Two members from ANGKASA (Malaysia) and NSTDA (Thailand) also participated in the experiments as technical consultants to the students, and spoke about their experience of the flights.

**Mr. Mohd Helmy Bin Hashim**  
**National Space Agency of Malaysia (ANGKASA)**

Mr. Helmy has been involved in promoting the parabolic flight program and in charge of the program in Malaysia since 2007. He was the first person working for ANGKASA to have an opportunity of parabolic flight experiment.



There was a 30-second call before the aircraft did the parabolic maneuver. That was the time when I felt dull. I started to feel heavy on my shoulders and chest and experienced some difficulties to breathe as usual. I could not even raise my hand or even to move some part of my body. That was the feeling I experienced during the hyper-gravity moment when the aircraft started to ascend about 45 degrees inclination.

I didn't feel that any longer when the aircraft was suddenly starting to descend about 35 degrees inclination. At that time I feel like my body was 'hurled' and then 'floating freely' and felt lighter on my chest and shoulders and easier to take a deep breath. I was in microgravity!! All of these remained for almost 20 seconds before the condition totally recovered as usual. All situations were consecutively and rapidly repeated again and again for at least 12 times during the whole boarding.

Nothing could describe my feeling at that time. It was very awesome! After three times of parabolic cycles, I started to get used to and adapt to the conditions. In this golden moment, several activities and demonstrations were successfully recorded and conducted during the microgravity moments which cover the elements of physical demonstrations, national pride, and also arts.

I felt very proud to see Malaysian flag floating in microgravity, which also reflects Malaysia's freedom and independence. It was also a historic moment when ANGKASA's

flag was floating for the first time in microgravity condition. I was also glad to use this opportunity to float JAXA-KIBO flag during the microgravity moment as a special appreciation and honor to the only participating country from Asia in the International Space Station (ISS) program.

I came back to Malaysia with a new spirit, confidence, and sense of responsibility. With my microgravity experience, I got to strive harder to assist my agency to carry out its obligations in creating awareness on the general space science and microgravity sciences to the public in my country.



What a very wonderful moment; the photos of me floating during the microgravity. Look at the G meter—the reading showed the gravity was approaching almost to zero.

Full text: [http://iss.jaxa.jp/en/kuoa/pdf/pfm2011\\_memoir\\_fin.pdf](http://iss.jaxa.jp/en/kuoa/pdf/pfm2011_memoir_fin.pdf)

**Dr. Sawat Tantiphanwadi**  
**National Science and Technology Development Agency of Thailand (NSTDA)**

Currently involved in Aerospace and aviation, Sensors, Electronics and computers, Robotics at NSTDA, Dr. Tantiphanwadi has been in charge of the parabolic flight program in Thailand for 6 years. He also was the first person working for NSTDA to have an opportunity of parabolic flight experiment.



The experience reminded me of my private pilot training back in 1975 during the stall-and-spin test flying when my back pressed tight against the seatback while my face was looking at the spinning ground and getting closer and closer. At the end of the spinning aircraft, I leveled off and pulled the plane up for the recovery with a 2-G pull-up. The main difference is that I was a passenger this time and had to endure 14 cycles of the 2-G and zero-G flight. To my surprise, it felt better during the microgravity than the 2-G or even 1-G of normal gravity. By the 11th cycle, I started to feel some dizziness and wondering if it would get any worse. It didn't get any worse so I pressed on and enjoyed the rest of the flight.

At the end of the flight I went up to the cockpit and congratulated both pilots for their wonderful flying skills. I appreciated very much their skills and professionalism in flying the parabolic flight profiles which is not easy to perform for most pilots.

The 20-second microgravity duration on each cycle is such a short time for researchers to conduct their experiment. Now, I see the significance of simple design with minimum operation steps to ensure its success. At NSTDA, we had helped students on all five successful parabolic flight experiments from the design, construction, verification, and testing including packing and shipping.

With my experience on this microgravity flight, we will improve our parabolic flight experiment development for Thailand. Currently, NSTDA has seen an increase in the number of parabolic flight experiment application. We hope to continue sending Thai students to Japan for this invaluable parabolic flight program. All Thai students who are involved in this program appreciate it very much. Some of them decided to further their study in Japan rather than in the United States.

Full text: [http://iss.jaxa.jp/en/kuoa/aspec/2012\\_parabolic\\_flight\\_experience.html](http://iss.jaxa.jp/en/kuoa/aspec/2012_parabolic_flight_experience.html)

## Space Education Seminar Held in Nepal

APRSAF Space Education Seminar has been conducted so far in Vietnam, Indonesia, Sri Lanka, Bangladesh, and this year in Nepal under the framework of the APRSAF Space Education and Awareness Working Group (SEA WG), targeting schoolteachers, to promote space education activities in various countries in the Asia-Pacific region. In March 10–12, 2012, Nepal Scientific Activities and Research Centre (NESARC) and JAXA Space Education Center jointly held a Space Education Seminar, “Space Science and Technology and Their Applications Into Classrooms,” in cooperation with GISTDA of Thailand, in Kathmandu, Nepal.

The Ministry of Science and Technology and Congress of Nepal supported the Space Education Seminar. Rt. Honorable Mr. Subash Chandra Nembang, Chairman, Constitution Assembly as a Chief Guest, and Secretary of Minister of Science and Technology, Mr. Keshav Bhattarai, presented it in the opening ceremony held at Lumbini Academy.

Ms. Sirikul Tungsapdongto from GISTDA delivered a lecture on “GIS Tool Kit for School”\* and did some hands-on activities to use satellite images in the classroom, such as finding your house, school, areas from satellite images with GPS data. Mr. Tetsuo Hiraiwa gave lectures on Rocket Science and its application in the classroom with hands-on activities, such as a simple film case rocket and injection rocket that can

be performed with materials easily found at home. Professor Takashi Kubota gave a lecture on Planetary Exploration With Hayabusa Mission.

The local teachers were actively involved in the lectures with enthusiasm. We hope they will return to their students and colleagues with a greater resolve to promote Space Education.

On the third day of the Seminar, NESARC held a water rocket competition with local school children. All the participants showed excitement and talked among peers about what a great time they had.

\*“GIS Tool Kit for School” is an APRSAF Space Education and Awareness working group’s activity, whose aim is to increase awareness of the school youth on remote sensing (RS), Geographic Information Systems (GIS), and Global Positioning System (GPS). This activity is led by GISTDA.



“GIS Tool Kit for School”: demonstrating use of satellite images



Participants setting up injection rockets in their launchers

For further information on this event, please visit the following website: <http://edu.jaxa.jp/news/file.cgi/2578.pdf?id=2578>

# SAEE & Climate R<sup>3</sup> Workshops Held in Perth

Two workshops, the fourth Space Applications For Environment (SAFE) workshop and the second Climate Regional Readiness Review (Climate R<sup>3</sup>) workshop, were successfully organized by APRSAF at the Novotel Perth Langley Hotel in Perth, Australia. Here are summary reports of both workshops and a comment by Dr. Shin-ichi Sobue, who chaired both workshops.

## Fourth SAFE Workshop Summary

The fourth SAFE workshop was held on May 22 and 23, 2012, in Perth, Australia. A total of 37 participants from about 10 countries attended the workshop.

The workshop was jointly organized by the Department of Innovation, Industry, Science and Research (DIISR) of Australia and the Japan Aerospace Exploration Agency (JAXA). And the new initiative, that is, the Climate R<sup>3</sup> produced by the Space Policy Unit (SPU), DIISR was held continuously on May 24 and 25, 2012 after the SAFE workshop.

The SAFE workshop was on track conducted by co-chair Mr. Andrew Joe, SPU/DIISR, and Dr. Shin-ichi Sobue, the Earth Observation Research Center (EORC)/JAXA, and had a review meeting for new SAFE prototype proposals, and a report session from ongoing prototype projects.

As a result, the SAFE has five ongoing prototyping now, and three new prototypes added by the reviewing,

and then the ongoing prototyping became total eight items.

Also, toward the coming APRSAF-19 in Malaysia in December, the outcomes given below are confirmed by all participants:

- Confirmed recent successful launch of GCOM-W1 and anticipated near-future data stream, and subsequent launches of ALOS-2/3 and GCOM-C.
- Recognized importance of rice crop monitoring in support of regional food security.
- Recognized water observations are fundamental to agricultural monitoring and impacts of climate change (drought, flood, etc.).
- Useful information from local groups on EO application systems of interest to APRSAF countries

For further information, please visit the SAFE portal:  
<http://www.eorc.jaxa.jp/SAFE/index.html>

## Second Climate R<sup>3</sup> Workshop Summary

The second climate R<sup>3</sup> workshop was held on May 24 and 25, 2012 in Perth, Australia, immediately following a SAFE workshop which was held on May 22 and 23, 2012. In total there were 38 participants at the R<sup>3</sup> workshop, and many joined both the SAFE and R<sup>3</sup> workshops.

The successful launch of JAXA's GCOM-W1 was welcomed, and participants received information when data streams from this mission, and CNES-ISRO's recently launched Megha-Tropiques can be expected to come online.

A number of important topics were covered in the workshop, which focused on options to improve coordination of EO data acquisition and provision on support of key activities in the Asia-Pacific region.

Two key GEO activities were discussed—the GFOI (Global Forest Observations Initiative) and GEOGLAM (Global Agricultural Monitoring) initiatives. These were identified as important and high-profile global climate-related activities, for which APRSAF may be able to play a role in Asian data coordination. Strategic initiatives such as these are mobilizing space data supplier coordination globally, and Asia-Pacific

representation and interests should be coordinated in support of regional needs and priorities.

As a part of these efforts, an Asian Rice Crop Monitoring Team led by Dr. Shin-ichi Sobue, JAXA, is being formed to develop observational requirements and a work plan for inclusion in the GEOGLAM initiative. This team includes participation from a number of R<sup>3</sup> member countries. The group will have a side meeting at ACRS (Asian Conference on Remote Sensing) hosted by GISTDA in November in Thailand where the work plan will be developed.

Participants also agreed that growing the relationships between APRSAF and the APEC Climate Center, and the Mekong River Commission should be discussed at APRSAF-19. Several future meeting opportunities were discussed, including the sixth GEOSS Asia Pacific (A-P) Symposium to be held in India in 2013, and a GFOI coordination meeting to be hosted in Australia in February 2013.

For further information, please visit the Australian Government Space Portal:  
<http://www.space.gov.au/ClimateR3/Pages/ClimateR3Workshop2012.aspx>

## SAFE & Climate R<sup>3</sup> Co-chair's Comment

Dr. Shin-ichi Sobue, Earth Observation Research Center (EORC), Japan Aerospace Exploration Agency (JAXA)

It was a great pleasure for me to co-chair the fourth SAFE workshop with Mr. Joe Andrew of the Department of Innovation, Industry, Science and Research (DIISR) of Australia and Climate R<sup>3</sup> workshop with Dr. Adam Lewis of the Geoscience Australia (GA).

Adopting satellite data to resolve environmental challenge and climate change facing humanity is very important and leads to a step in a favorable way. We are really pleased to have meaningful progress of ongoing prototypes and approval of three new prototypes in this SAFE workshop. I believe these activities lead to practical use and provide social benefit with this region.

For the first time the SAFE workshop was jointly held with Climate R<sup>3</sup> workshop. Some SAFE prototype executors input their experiences into Climate R<sup>3</sup> in the fields of water, land cover, and agriculture/food security. Meanwhile, we discussed on necessary output to provide information derived from satellite data according to each country's needs for response to social beneficial area impacted by climate change and to build up a systematic and practical cooperation in the Asia-Pacific region. I understand that the key message from this joint workshop was to share the knowledge and experiences in this region by making the best use of opportunities of regional workshops as well as to facilitate coordination with regional and global initiatives such as ASEAN, APEC, GMS, GEO, and CEOS through our regional scheme as well as cooperation with donor agencies and private sectors.

Our two initiatives will continue to work closely and make considerable progress in coming APRSAF meeting.



## Dr. Yasushi Horikawa, JAXA's Technical Counselor, Appointed as the Chair of UN COPUOS

On June 6, on the outset of the 55th session of the Committee on the Peaceful Uses of Outer Space (COPUOS), Dr. Yasushi Horikawa, JAXA's Technical Counselor, became its first Japanese Chair. He will chair the 55th and 56th sessions of COPUOS.

COPUOS was established as a permanent Committee of the United Nations, in 1959, to promote international

cooperation in the peaceful uses of outer space, to encourage continued research and development and the dissemination of information on outer space matters, and to study legal problems arising from the exploration of outer space.



# MESSAGE FROM APRSAF COMMUNITY

In this column, APRSAF community members take turns to provide their comment on APRSAF. This issue, following Ms. Clement (DIISR/Australia) and Dr. Subari (ANGKASA/Malaysia), focuses on LAPAN/Indonesia that has greatly contributed to APRSAF activities and dispatched many delegates every year.

## Ms. Ratih Dewanti

Head of Cooperation and Public Relation Bureau  
National Institute of Aeronautics and Space (LAPAN)

**A**PRSAF serves as a media in which regional space agencies and other users of space science, technology, and applications gather to exchange information. Through this forum, every kind of opportunities will arise, and tremendous benefits can be extracted and gained from them for humanity's welfare.



Of course LAPAN will not let such advantageous event pass. Ever since the establishment of APRSAF, LAPAN has been actively involved. Even more so after Indonesia acted as the host of the 13th APRSAF Meeting in 2006. We take special care that every member of the Indonesian delegation will have a role to play in the meeting.

We hope by taking part actively in every APRSAF activities, the horizon of scientists, experts, and

other staffs will be broaden; their knowledge of the development of space science, technology, and applications will be much improved. With its open and flexible characteristics, APRSAF creates the possibility of joint cooperations, both bilateral and multilateral ones, with agencies and institutions from other countries having common issues and interests in regards to space activities. This allows LAPAN to meet the need of building networks and developing socioeconomic aspects.

Furthermore, many tangible and intangible benefits that can be achieved by participating actively in APRSAF will be truly 'beneficial' if only LAPAN shares them back to the international space communities.

## APRSAF CALENDAR

May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
	▲22-23 SAFE WS@Australia ▲24-25 CR3 WS@Australia	▲1st Announcement ▲2-3 Sentinel Asia Tsunami WS@Japan ▲mid-Nov Astronaut Hoshide aboard ISS (to conduct Try Zero G)	▲2nd Announcement APRSAF-19 Registration			▲Final Announcement ▲Sentinel Asia JPTM*@Korea	▲11-14 APRSAF-19 ▲8-9 Water Rocket Event ▲11-14 Poster Contest ▲10 SAFE WS ▲11 Workshop on a new initiative for Asian cooperation on Kibo/ISS				

\* Joint Project Team Meeting

## APRSAF Secretariat



**APRSAF**  
ASIA-PACIFIC REGIONAL  
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We welcome your updates on space-related activities and also your comments and suggestions to the APRSAF Secretariat.

For further information about APRSAF, please visit  
<http://www.aprsaf.org>