



17TH
APRSAF

ASIA-PACIFIC REGIONAL
SPACE AGENCY FORUM

8 November 2010

FINAL ANNOUNCEMENT

The 17th Session of the Asia-Pacific Regional Space Agency Forum **(APRSAF-17)**

**“The role of space technology and industry
in addressing climate change”**

23-26 November 2010, Melbourne, Australia

Dear Sir/Madam,

Referring to the Second Announcement in September 2010, we would like to inform you of the following information as the final announcement:

- 1. The latest tentative program is attached as in the Appendix A.**
- 2. The latest tentative WG program is attached as in the Appendix B.**
- 3. The map of Melbourne is attached as in the Appendix C.**

4. The venue for APRSAF-17

Venue: Crown Conference Centre, in Melbourne, Australia

Address: 8 Whiteman Street, Southbank VIC, Australia, 3006

Telephone: +61 3 9292 6968 Fax: +61 3 9292 5397

Website: <http://www.crowneventsandconferences.com.au/>

- The Crown Promenade Hotel is the same building as the venue, the Crown Conference Centre.
- Travelodge Southbank is located seven-minute walk from the Crown Conference Centre.

Registration Desk: The registration desk will be located in the Pre Function area on the level 1 floor at the Crown Conference Centre from November 22 to November 25. Registration desk will open as follows:

- 22nd 10:30-13:00
- 23rd 8:00-9:00
- 24th 8:30-9:00
- 25th 8:00-8:45

*Participants who wish to register except the time above, please visit the Secretariat room, M9&M10, Level 1.

Working Group Sessions: The four-working group sessions will be held in parallel on November 23 and 24.

- A. Earth Observation (EO): Promenade 1, Level 1
- B. Space Environment Utilization (SEU): Promenade 2, Level 1
- C. Space Education Awareness (SEA): Promenade 3, Level 1
- D. Communication Satellite Applications (CSA): M1 & M2 Meeting room, Level 1

The Space Applications For Environment (SAFE) workshop will be held on the afternoon of November 22 at Promenade 3, Level 1.

Plenary Session: The Plenary session will be held on November 25 and 26 at the Promenade 1, Level 1.

For details such as start/end time of each working group and plenary sessions, please refer to the programs (Appendix A and B).

5. Transportation between the airport and the venue

Transportation between the Melbourne International Airport and the Crown Promenade Hotel / Travelodge Southbank will be provided on November 22 and 23 for arrival and on November 26 and 27 for departure, according to participants' flight schedules informed by November 3, 2010. **Please Note:** Delegate transportation will not be provided to other hotel locations.

International delegates will proceed through immigration and customs and meet APRSAF staff in the arrivals hall. Delegates should look out for people wearing APRSAF shirts who will direct them to the appropriate bus.

Delegates arriving at the domestic terminal are to walk over to the international terminal and look out for the same APRSAF staff in the arrivals hall. See the attached Melbourne Airport Map for assistance **Appendix D.**

The time schedule for chartered buses will be posted on the APRSAF website (<http://www.aprsaf.org/>) shortly.

6. Evening Receptions

- Evening on 24 November, starting at 18:00, hosted by MEXT of Japan at Tonic Bar on the ground floor of the Crown Promenade Hotel, accessible from Crown Promenade Hotel's lobby, or from the airbridge that links the hotel to the Crown Entertainment Complex.
- Evening on 25 November, hosted by DIISR of Australia at the Melbourne zoo. Buses will depart from both hotels approximately 18:30 to arrive at the Melbourne Zoo at 19:00. Dinner at the Melbourne Zoo will last for approximately 3 hours (19:00 – 22:00). Buses will depart the Melbourne zoo from 21:30 returning to both accommodation venues by approximately 22:00

7. Technical Tour (An advance application with 2nd registration is required.)

On the afternoon of 26 November, Technical Tour will be hosted by DIISR, Australia.

Destination: Bureau of Meteorology (BOM) or
Victorian Space Science Education Centre (VSSEC)
(You can select your destination when registering.)

Time: 14:00 – 17:00

14:00-15:00 Presentation will be held at Promenade Room.

15:00-17:00 Facility Tour

Tour buses for each facility are departing at 15:00.

For further information, please refer to the [Appendix E](#).

8. Poster Contest

All delegates to APRSAF-17 are invited to participate in the review and selection of the winners of the APRSAF Poster Contest. For details, please refer to the [Appendix F](#).

9. The APRSAF-17 Secretariat Office in Japan

Please note the APRSAF-17 Secretariat Office in Japan will be closed on Wednesday, November 16 at 17:00 (Japan Standard Time, GMT +9).

In case of urgency, after the APRSAF-17 Secretariat Office in Japan will be closed, please contact at the following:

- Mr. Takeshi Shiraishi +81-90-2335-1786 (mobile); or
- Mr. Adam Sandilands +61 2 6276 1994 (work) or +61 407224614 (mobile).

We look forward to seeing you at APRSAF-17 in Melbourne, Australia.

Takayuki Kawai
Senior Secretariat
Asia-Pacific Regional Space Agency Forum (APRSAF)

Tentative Program

The 17th Session of the Asia-Pacific Regional Space Agency Forum (APRSAF-17)

as of 17 November 2010

<Day 0> 22 November, Monday

[Registration : 10:30-13:00]

*Please come to a registration desk at Level 1, Crown Promenade, Crown Conference Centre

[Work Shop : 13:00-17:45]

at Promenade 3

*11:00-12:00 Pre-Review Board Meeting (Closed)

	Start 13: 00 End 17:45			
	SAFE W.S. (A. Earth Observation W.G.)	B. Communication Satellite Applications W.G.	C. Space Education & Awareness W.G.	D. Space Environment Utilization W.G.
12:00-13:00	Lunch : hosted by DIISR at Pre Function Area Central	/	/	/
13:00-15:00	[Co-chairs] Dr. Shinichi Sobue Planning Manager, Earth Observation Research Center, JAXA Dr. Adam Lewis Group Leader, National Earth Observation Group, Geospatial and Earth Monitoring Division Geoscience Australia			
15:00-16:00	Coffee Break (Review Board Meeting)			
16:00-17:45	SAFE W.S. (A. Earth Observation W.G.)			

Tentative Program

The 17th Session of the Asia-Pacific Regional Space Agency Forum (APRSAF-17)

~ Main Theme / The role of space technology and industry in addressing climate change ~

23-26 November 2010

The Crown Conference Centre, Melbourne, Australia

<Day 1> 23 November, Tuesday

[Registration : 08:00-9:00]

*Please come to a registration desk at Level 1, Crown Promenade, Crown Conference Centre

[Working Group Session : 9:00-17:00]

	Start 09: 00 End 17:00 at P1	Start 09: 00 End 17:00 at M1+M2	Start 09: 00 End 17:00 at P3	Start 09: 00 End 16:45 at P2
	A. Earth Observation W.G.	B. Communication Satellite Applications W.G.	C. Space Education & Awareness W.G.	D. Space Environment Utilization W.G.
09:00-10:30	[Co-chairs] Dr. Shinichi Sobue Planning Manager, Earth Observation Research Center, JAXA Dr. Adam Lewis Group Leader, National Earth Observation Group, Geospatial and Earth Monitoring Division Geoscience Australia	[Co-chairs] Mr. Hiroki Kohhata Senior Engineer, Satellite Applications and Promotion Center, JAXA Prof. Andrew Parfitt Pro Vice Chancellor and Vice President, Division of Information Technology, Engineering and the Environment, University of South Australia (UniSA)	[Co-chairs] Dr. Takashi Kubota Professor, Department of Spacecraft Engineering, JAXA Prof. Graham Durant Director of Questacon	[Co-Chairs] Mr. Shigeki Kamigaichi Director, Kibo Utilization Office for Asia (KUAO), Space Environment Utilization Center, JAXA Dr. Kimberley Clayfield Executive Manager CSIRO Space Sciences and Technology (CSST)
10:30-10:45	Coffee Break			
10:45-12:30	A. Earth Observation W.G.	B. Communication Satellite Applications W.G.	C. Space Education & Awareness W.G.	D. Space Environment Utilization W.G.
12:30-13:30	Lunch : hosted by DIISR at Mesh Restaurant			
13:30-15:00	A. Earth Observation W.G.	B. Communication Satellite Applications W.G.	C. Space Education & Awareness W.G.	D. Space Environment Utilization W.G.
15:00-15:15	Coffee Break			
15:15-17:00	A. Earth Observation W.G.	B. Communication Satellite Applications W.G.	C. Space Education & Awareness W.G.	D. Space Environment Utilization W.G.
17:30-18:30 (TBD)			SEA/SEU WGs joint session Activity report by Japanese Astronaut Naoko Yamazaki @Promenade 2	

Tentative Program
The 17th Session of the Asia-Pacific Regional Space Agency Forum
(APRSAF-17)

~ *Main Theme / The role of space technology and industry in addressing climate change* ~

23-26 November 2010

The Crown Conference Centre, Melbourne, Australia

<Day 2> 24 November, Wednesday

[Registration : 08:30-9:00]

*Please come to a registration desk at Level 1, if you have not registered for the WG session on 23 Nov.

[Working Group Session : 09:00 - 17:00]

	Start 09: 00 End 17:00 at P1	Start 09: 00 End 17:00 at M1+M2	Start 09: 00 End 17:00 at P3	Start 09: 00 End 16:00 at P2
	A. Earth Observation W.G.	B. Communication Satellite Applications W.G.	C. Space Education & Awareness W.G.	D. Space Environment Utilization W.G.
	09:20-10:20 Joint Session with SEU WG @ Promenade 1			09:20-10:20 Joint Session with EO WG @ Promenade 1
09:00-10:45	[Co-chairs] Dr. Shinichi Sobue Planning Manager, Earth Observation Research Center, JAXA Dr. Adam Lewis Group Leader, National Earth Observation Group, Geospatial and Earth Monitoring Division Geoscience Australia	[Co-chairs] Mr. Hiroki Kohhata Senior Engineer, Satellite Applications and Promotion Center, JAXA Prof. Andrew Parfitt Pro Vice Chancellor and Vice President, Division of Information Technology, Engineering and the Environment, University of South Australia (UniSA)	[Co-chairs] Dr. Takashi Kubota Professor, Department of Spacecraft Engineering, JAXA Prof. Graham Durant Director of Questacon	[Co-Chairs] Mr. Shigeki Kamigaichi Kibo Utilization Office for Asia (KUOA), Space Environment Utilization Center, JAXA Dr. Kimberley Clayfield Executive Manager CSIRO Space Sciences and Technology (CSST)
10:45-11:00	Coffee Break			
11:00-12:30	A. Earth Observation W.G.	B. Communication Satellite Applications W.G.	C. Space Education & Awareness W.G.	D. Space Environment Utilization W.G.
12:30-13:30	Lunch : hosted by DIISR at Pre Function Area Central			
13:30-14:30	A. Earth Observation W.G.	B. Communication Satellite Applications W.G.	C. Space Education & Awareness W.G.	D. Space Environment Utilization W.G.
14:30-14:45	Coffee Break			
14:45-17:00	A. Earth Observation W.G.	B. Communication Satellite Applications W.G.	C. Space Education & Awareness W.G.	D. Space Environment Utilization W.G.
18:00	Reception : hosted by MEXT, JAPAN at Tonic Bar			

Tentative Program

The 17th Session of the Asia-Pacific Regional Space Agency Forum (APRSAF-17)

~ Main Theme / The role of space technology and industry in addressing climate change ~

23-26 November 2010

The Crown Conference Centre, Melbourne, Australia

<Day 3> 25 November, Thursday

General Co-Chairs

Australia : Dr. Michael Green, General Manager

Innovation and Space Branch, Department of Innovation, Industry, Science and Research (DIISR)

Japan : Dr. Tetsuhiko Ikegami, Chairman, Space Activities Commission (SAC) / MEXT

[Registration : 08:00-08:45] *Please come to a registration desk at Level 1, Crown Promenade, Crown Conference Centre

[Plenary Session : 08:45-12:00] at Promenade 1+2

Time	Title	Speaker
08:45-09:00	Australian Indigenous welcoming dance	
09:00-09:05	Opening remarks	Dr. Michael Green General Manager, Innovation and Space Branch Department of Innovation, Industry, Science and Research (DIISR) AUSTRALIA
09:05-09:20	Key note addresses by co-host organizations	Ms. Patricia Kelly Deputy Secretary, Department of Innovation, Industry, Science and Research (DIISR), AUSTRALIA
09:20-09:35		Dr. Tetsuhiko Ikegami Chairman, Space Activities Commission (SAC) Ministry of Education, Culture, Sports, Science and Technology (MEXT), JAPAN
09:35-09:50	Special Address	Mr. Arjun Thapan Special Senior Advisor for Infrastructure and Water Office of the President, Asian Development Bank (ADB)
09:50-10:10	Summary of APRSAF-16	Dr. Anond Snidvongs Acting Executive Director, Geo-Informatics and Space Technology Development Agency (GISTDA), THAILAND
10:10-10:30	Photo Session and Coffee Break	
10:30-10:45	Country reports	Dr. Michael Green General Manager, Innovation and Space Branch Department of Innovation, Industry, Science and Research (DIISR) AUSTRALIA
10:45-11:00		Dr. Partha Sarathi Roy Indian Space Research Organization (ISRO) INDIA
11:00-11:15		Mr. Bambang S. Tejasukmana Deputy Chairman, National Institute of Aeronautics and Space (LAPAN), INDONESIA
11:15-11:30		Dr. Keiji Tachikawa President, Japan Aerospace Exploration Agency (JAXA) JAPAN
11:30-11:45		Dr. Talgat Mussabayev Chairman, National Space Agency of the Republic of Kazakhstan (KAZCOSMOS), KAZAKHSTAN
11:45-12:00		Dr. Gihyuk Choi Head of International Relations Department, Korea Aerospace Research Institute (KARI), KOREA
12:00-13:00	Lunch : hosted by DIISR at Mesh Restaurant	

Tentative Program
The 17th Session of the Asia-Pacific Regional Space Agency Forum
(APRSAF-17)

~ *Main Theme / The role of space technology and industry in addressing climate change* ~

23-26 November 2010

The Crown Conference Centre, Melbourne, Australia

<Day 3> 25 November, Thursday

[Plenary Session : 13:00-17:30] at Promenade 1+2

Time	Title	Speaker
13:00-13:15	Country reports	Mr. Maszlan Ismail Director, National Space Agency of Malaysia (ANGKASA) MALAYSIA
13:15-13:30		Hon. Wilfred Bandara Ekanayake Deputy Minister, Ministry of Disaster Management of Sri Lanka SRI LANKA
13:30-13:45		Dr. Anond Snidvongs Acting Executive Director, Geo-Informatics and Space Technology Development Agency (GISTDA), THAILAND
13:45-14:00		Prof. Nguyen Khoa Son Chairman, National Research Program on Space Science and Technology, Vietnam Academy of Science and Technology (VAST), VIETNAM
14:00-15:00	Panel Discussion	Theme: The role of space technology in addressing climate change Chair: Dr Gary Richards (Department of Climate Change & Energy Efficiency) Panelists: •Dr John Zillmann (GCOS, Former head of WMO and BOM, Australia) •Mr. Arjun Thapan (Infrastructure and Water, Asian Development Bank) •Dr. Olivia la O'Catillo (UN Secretary General's Advisory board on Water and Sanitation (UNSGAB) / Sustainable Development Solutions for Asia and Pacific (SDSAP)) •Ms. Ratih Dewanti Dimiyati (National Institute of Aeronautics and Space, LAPAN) •Dr. Yasushi Horikawa (JAXA, and Designated Chairman, UN COPUOS (2012- 2013))
15:00-15:15	Coffee Break	
15:15-17:30	Report sessions	15:15-16:15 Sentinel Asia: Disaster Management Support System in the Asia-Pacific Region
		16:15-16:45 STAR: Satellite Technology for the Asia-Pacific Region
		16:45-17:30 SAFE: Space Applications For Environment
18:30	Gather hotel lobby of Travelodge and Crown to be picked up by bus*	
19:00	Reception hosted by DIISR, AUSTRALIA at Melbourne Zoo	
21:30	Transported back to hotels by bus* (* 10-20 minutes by bus)	

Tentative Program

The 17th Session of the Asia-Pacific Regional Space Agency Forum (APRSAF-17)

~ Main Theme / The role of space technology and industry in addressing climate change ~

23-26 November 2010

The Crown Conference Centre, Melbourne, Australia

<Day 4> 26 November, Friday

[Registration] *Please come to a registration desk or the Secretariat room (M9&M10) at Level 1, if you have not registered.

[Closing Plenary : 09:00-13:00] at Promenade 1+2

Time	Title	Speaker
08:30-09:00	Australian Cultural Experience at Pre Function Area	
09:00-09:10	Opening Remarks of the Day 4	
9:10-9:25	Speeches by international organizations	Ambassador Dumitru-Dorin Prunariu Chairman, United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS)
9:25-9:40		Dr. Zhang Wei Secretary General, Asia-Pacific Space Cooperation Organization (APSCO)
9:40-10:40	Special Session "Regional Capacity Building Programs"	<p>1. Capacity Building Programs Provided by JAPAN "Overview of Capacity Building Programs Provided by Japan" Dr. Shigekazu Matsuura, Director, Office for Space Utilization Promotion, Research and Development Bureau, MEXT "Capacity Building Programs Provided by JAXA" Dr. Masahiko Nagai, Associate Director, Space Application Promotion Center, JAXA "Remote Sensing Training & Capacity Building Provided by RESTEC" Mr. Kyoichi Ito, Deputy General Manager, Remote Sensing Technology Center of Japan(RESTEC) " MEXT's Program called UNIFORM" Prof. Shinichi Nakasuka, University of Tokyo</p> <p>2. Capacity Building Programs Provided by INDIA "Capacity Building Programs Provided by INDIA" Dr. Parth Sarathi Roy</p>
10:40-10:55	Coffee Break	
10:55-11:10	Summary reports of WGs	Earth Observation WG
11:10-11:30		Communication Satellite Applications WG (including Summary Report of GNSS Workshop)
11:30-11:45		Space Education & Awareness WG
11:45-12:15		Space Environment Utilization WG
12:15-12:45	Adoption of Recommendations of APRSAF-17	
12:45-12:55	Closing remarks	Dr. Michael Green General Manager, Innovation and Space Branch Department of Innovation, Industry, Science and Research (DIISR) AUSTRALIA
		Dr. Tetsuhiko Ikegami Chairman, Space Activities Commission (SAC) Ministry of Education, Culture, Sports, Science and Technology (MEXT), JAPAN
12:55-14:00	Lunch : hosted by DIISR at Pre Function Area	
14:00-15:00	Technical Tour (Presentations)	The Bureau of Meteorology (BOM)
		Victorian Space Science Education Centre (VSSEC)
15:00	Gather Crown Hotel Lobby and leave hotel by bus - Please follow the sign for BOM and VSSEC	
15:00-17:00	Technical Tour (Facility Tour)	The Bureau of Meteorology (BOM)
		Victorian Space Science Education Centre (VSSEC)

*Seventeenth Session of the Asia-Pacific Regional Space Agency Forum
(APRSAF-17)
EO(Earth Observation)WG activities
Proposed Outline*

1. The Scope/Objectives of EO WG activities

The EOWG has been exploring opportunities to expand the potential use of EO satellite data for disaster applications (Sentinel Asia) and the environment (SAFE: Space Application for Environment). The upcoming EOWG will focus on monitoring the progress of SAFE, and stimulating discussion to start up new activities that respond to a wider spectrum of user requirements.

1) SAFE Progress Report

SAFE workshop will be held at day 0 of EO working group. New proposal of SAFE prototyping will be presented, reviewed by SAFE review board members and approved by SAFE workshop participants. SAFE on-going prototyping activities will be also reported.

In addition, the SAFE secretariat will report on current SAFE updates at day 1 of EO working group; in particular, new SAFE prototyping activities approved by SAFE 2nd workshop in Sri Lanka this June, ongoing SAFE prototyping activities, successful story of SAFE prototyping activities, and will ask participants of the EOWG to discuss about the promotion of SAFE prototype activities and its successful results to participating entities through knowledge transfer and capacity building.

2) Country Reports

In this session, participating countries and international organizations are kindly invited to contribute Country Reports. The co-chairs expect the presenters to report EO activities for each country (or organization) related to the climate change mitigation and adaptation topic by using space technology. Of course, we welcome the presenters to include proposals for new activities for EO working group in the report.

**Please understand that we cannot provide time slots for all member countries because of the schedule. The co-chairs will lead the arrangements with the APRSAF secretariat.*

3) Potential of New Subjects: Private Sector Initiatives

This is a session for participants from private sectors. The co-chairs expect the presenters to explain how their business field is related to EO, as well, to show how they may contribute to the APRSAF, especially for climate change mitigation and adaptation topic by using space technology as private sectors.

**Please understand that we cannot provide time slots for all participating companies because of the schedule. The co-chairs will lead the arrangements with the APRSAF secretariat.*

2. The Results of EOWG Activities at APRSAF-16

See APRSAF-16 adopted recommendations at the following URL:

http://www.aprsaf.org/annual_meetings/aprsaf16/recommendation.php

3. The Draft of the Agenda

- 1) Opening of the Session
- 2) Adoption of the Agenda
- 3) Self-introductions
- 4) Review of the Last EOWG in Bangkok, Thailand
- 5) Focus of EOWG
- 6) Keynote Speeches
- 7) SAFE Progress Report
- 8) Country Reports
- 9) Potential of New Subjects: Private Sector Initiatives
- 10) Overall Discussions and the Way Forward
- 11) Conclusions of EOWG and Wrap-up

**Appendix : Indicative schedule of work of the Earth Observation Working Group
(23 – 24 November 2010, Melbourne, Victoria, Australia)**

Monday 22nd November – SAFE Workshop

Tuesday 23rd November – EOWG Day 1

Wednesday 24th November – EOWG Day 2

Co-Chairs:

Dr. Adam Lewis, Group Leader - National Earth Observation Group, Geoscience Australia

Dr. Shinichi Sobue, Associate Senior Engineer, Earth Observation Research Center, JAXA

Monday 22nd November: SAFE Workshop (Room – TBC)

1	Pre-Review Board Meeting	11:00 – 12:00
LUNCH		12:00 –13:00
2	Welcome and Opening Remarks - Co-chair remarks - Introductions - Agenda adoption - Review of the 2 nd SAFE Workshop outcomes	13:00 – 14:00
3	Presentations on revised and new prototype proposals - <i>Thailand (TBD)</i> - <i>Nepal (TBD)</i> - <i>Vietnam (TBD)</i> - <i>Discussion, Q&A</i>	14:00 – 15:00
BREAK (review board meeting)		15:00 –16:00
4	Status of ongoing prototypes - <i>Indonesia</i> - <i>Sri Lanka</i> - <i>Cambodia</i> - <i>LaoPDR</i>	16:00-17:00
5	Discussion, Q&A	17:00-17:15
6	Review board meeting report	17:15-17:45
	Adjourn	17:45

Tuesday 23rd November: Earth Observation Working Group – Day 1 (Room – TBC)

1	Opening session - Co-chair remarks and introductions - Review of the last EOWG (Bangkok) - EOWG focus & agenda adoption - Geoscience Australia keynote speech	09:00 – 10:15
BREAK		10:15 – 10:30
2	SAFE initiative - <i>Overview</i> - <i>New proposal briefing</i> - <i>Review board results</i> - <i>Review of yesterday's workshop and outcomes</i>	10:30 – 12:00
LUNCH		12:00 – 13:30
3	APRSF EOWG initiatives in support of climate change theme - <i>Candidate initiatives</i> - <i>Presentation on proposed APRSAF Regional Readiness Review (R3)</i> - <i>Space Agency role in the implementation of GCOS (J Zillmann)</i> - <i>Discussion on approach and key issues</i>	13:30 – 15:10

BREAK		15:10 – 15:25
4	Australian Strategic Plan for Earth Observations from Space (J Zillmann) - <i>presentation</i> - <i>discussion, Q&A</i>	15:25 – 15:50
5	EO satellite contribution to climate information needs - <i>presentations 1- 4 (including ALOS applications)</i> 1. <i>Geoscience Australia – ALOS Bathymetry applications (S Sagar)</i> - <i>discussion, Q&A</i>	15:50 – 17:00
ADJOURN		17:00

Wednesday 24th November: Earth Observation Working Group – Day 2 (Room – TBC)

1	Opening session - <i>Review of Day 1</i> - <i>Adoption of agenda</i> - <i>Introductions for new participants</i>	09:00 – 09:20
2	Joint session with SEU Working Group - <i>Presentations EO/ISS</i> - <i>Forest Fire Detection (Prof Fukuda)</i>	09:20 – 10:20
BREAK		10:20 – 10:35
3	Private sector initiatives - <i>Presentations:</i> - <i>TBA (Sasagawa - PASCO)</i> - <i>Discussion</i>	10:35 – 11:30
4	The GEO Global Forest Observations Initiative and role for EO - <i>Background & discussion</i> - <i>ALOS forest map</i> - <i>Presentations:</i> - <i>GEO FCT National Demonstrator activities inc Tasmania & Indonesia (A Held)</i> - <i>GA as a regional data hub (A Lewis)</i>	11:30 – 12:30
LUNCH		12:30 – 13:30
5	Country Reports	13:30 – 15:10
BREAK		15:10 – 15:25
6	Conclusions and Way Forward - <i>Adoption of EOWG Conclusions and Recommendations</i> - <i>Way Forward</i>	15:25 – 17:00
ADJOURN		17:00

***Seventeenth Session of the Asia-Pacific Regional Space Agency Forum
(APRSAF-17)
CSA (Communication Satellite Application) WG activities
Proposed Outline***

1. The scope /objectives of CSA WG activities

The CSA WG has been discussing many topics on satellite communication matters and has been providing good opportunities to exchange each country's status report on, in particular, digital divide issues as well as the broadband service in the Asia-Pacific region. The CSA WG should share the experiences for realizing cooperation among countries in the region, regarding applications of satellite communication for tele-education, tele-medicine and disaster management, taking into account the needs to resolve the digital divide in the region.

Based on the previous APRSAF-16 discussion, the outline of the CSA WG in the APRSAF-17 is as follows:

1) New applications or concepts of the satellite communication for tele-education, tele-medicine and disaster management in the Asia-Pacific region

Until the previous meetings, many discussions concerning the digital divide issues have been made and useful information has been exchanged. Some applications were planned, demonstrated and organized to demonstrate in each country. The WINDS satellite communications experiments, which were proposed in the APRSAF, are conducting. The CSA WG should continue these activities under the regional cooperation and aim to promote new applications or concepts of the satellite communication for tele-education, tele-medicine and disaster management in the Asia-Pacific region with an active participation of satellite operators

2) Promotion for the activities on the Global Navigation Satellite System (GNSS) in the Asia-Pacific region

The Satellite Positioning, Navigation and Timing (PNT) is one of the important satellite applications and becomes widely used in the Asia-Pacific countries. According to the recommendation of the APRSAF-15, successful completion of the first Asia Oceania regional workshop on Global Navigation Satellite Systems (GNSS) was confirmed. The Multi GNSS demonstration campaign, which was expected to be launched in the recommendation of the APRSAF-16, is planned to be established in the second Asia Oceania regional workshop. The CSA WG should encourage

these campaign activities, which is also supported by International Committee on GNSS (ICG).

2. The result of CSA WG activities in APRSAF 16

See APRSAF-16 adopted recommendations at the following URL:
http://www.aprsaf.org/annual_meetings/aprsaf16/recommendation.php

3. The Draft of Agenda

- 1) Opening of the session
- 2) Adoption of the agenda
- 3) General introduction and guidance of CSAWG
- 4) Presentations of communications satellite systems and applications
 - a. Communications Satellite Systems
 - b. Current Status in Asia Pacific Region
- 5) Activity reports in the field of tele-education, tele-medicine and disaster management
 - a. Study report
 - b. Country report
 - c. General Discussion
- 6) Report on the Multi GNSS Workshop
- 7) Other matters
- 8) Closing of the session

**Appendix : Indicative schedule of work of the Communication Satellite Application Working Group
(23 – 24 November 2010, Melbourne, Victoria, Australia)**

Co-Chairs: Andrew Parfitt (University of South Australia, Australia)
Hiroki Kohata (Japan Aerospace Exploration Agency, Japan)

<i>Date</i>	<i>Time</i>	<i>Agenda Item(s)</i>	
<Day1> 23 November, Tuesday	09:00- 09:05	1.	Opening of the session • Remarks by the Co-Chairs
	09:05- 09:15	2.	Adoption of the agenda
	09:15- 09:45	3.	General introduction and guidance of CSAWG • Self Introduction • Review of the last CSAWG at Bangkok
	09:45- 10:25	4-a	Presentations of communications satellite systems and applications • Communications Satellite Systems
	10:25- 10:45	<i>Coffee break</i>	
	10:45- 12:30	4-b	Presentations of communications satellite systems and applications • Current Status in Asia Pacific Region
	12:30- 13:30	<i>Lunch hosted by DIISR at Mesh Restaurant</i>	
	13:30- 15:00	5-a	Activity reports on the Communications Satellite Application • Study report (WINDS Experiment)
	15:00- 15:15	<i>Coffee break</i>	
	15:15- 17:00	6.	Activity reports on the Global Navigation Satellite System (GNSS) • Country report • GNSS Workshop Report
<Day 2> 24 November, Wednesday	09:00- 09:15	7.	Opening of the session • Report of the Day 1 discussion • Self introduction for new participants
	09:15- 10:45	8-a.	Activity reports on the Communications Satellite Application • Study report (WINDS Experiment)
	10:45- 11:00	<i>Coffee break</i>	
	11:00- 12:30	8-b	Activity reports on the Communications Satellite Application • Country report
	12:30- 13:30	<i>Lunch hosted by DIISR at Pre Function Area Central</i>	
	13:30 - 14:30	8-c	Activity reports on the Communications Satellite Application • Country report
	14:30- 14:45	<i>Coffee break</i>	
	14:45- 16:50	9	Concluding Session
16:50 - 17:00	Closing of the session		

*Seventeenth Session of the Asia-Pacific Regional Space Agency Forum
(APRSAF-17)
SEA(Space Education and Awareness) WG activities
Proposed Outline*

Background and objectives

Space has been an important part of human civilization. Throughout the human history, the quest for knowledge of the universe has led humankind to learn more about where they have come from, where they stand and to expand their imagination about where they are going.

Permeating many aspects of human activities today, space has increasingly become an essential, integral part of our daily lives. Benefits derived from space applications have transformed the way we look at our environment and our planet, the way we communicate and interact with each other and the way we move from one place to another, dramatically increasing the safety, security, accuracy, predictability and convenience in our daily conduct.

In spite of the growing evidences of the usefulness of space science and technology for the society, the appreciation by the general public of their importance is still limited. Efforts should continue to increase public awareness of the usefulness and importance of space science and technology and their applications to enhance the quality of our lives and to support sustainable development of our society.

For young people, space activities provide more than useful tools and information. They serve as the source of interest, imagination and inspiration. Attractive space materials can be effectively used to spark intellectual flame in the minds of young people not only in science and technology but also in many other aspects of human activities. Effectively used, examples of the past achievements and efforts to overcome challenges in the use and exploration of outer space can motivate young people to pursue excellence in whatever they do and help them understand how important, and how rewarding, it is to work together with many others to serve the society.

It is with such conviction that the Space Education and Awareness Working Group was established at the 8th session of APRSAF, in July 2001, with the aim of: i) effectively using space materials to enhance education for young people; ii) providing education and training opportunities for young people in space science and technology; iii) contributing to enhancing mutual understanding among countries in the region through exchange opportunities for young people; and iv) increasing public awareness of the societal benefits and importance of space activities.

Achievements and on-going initiatives

The Working Group has organized the following activities since 2004.

<Water Rocket Event for young people>

The Working Group has organized the Water Rocket Event each year since 2005, immediately following the APRSAF session. Attended by 20 to 30 students aged between 12 and 16 from over 10 countries, selected through national competitions, the Water Rocket Event has provided opportunities for young people between 12 and 16 years old not only to learn about basics of rocket science and turn their knowledge into practice, but also to learn about other countries and their cultures and to build lasting friendship beyond national borders based on common interest. The next Event is planned to be held in Melbourne, Victoria, Australia from 20 to 21 November 2010, immediately preceding APRSAF-17.

<Poster Contest for young people>

The Working Group has organized the Poster Contest under a selected theme each year since 2006, during the APRSAF session, for children aged between 8 and 11. From among those posters submitted by the participating countries, the participants of the APRSAF session vote to select the best poster, for APRSAF Best Poster Award, and the second and third best posters for APRSAF Special Poster Award. To contribute to the celebration of the International Year of Astronomy (IYA) in 2009, the Working Group produced a calendar covering the period from April 2010 to March 2011 using the posters submitted for the last Contest, held under “Our Universe-Great Discoveries”. The theme for the next Poster Contest is “Space technology to Help the Earth”.

<Space Education Seminars / Forums for teachers and students>

Recognising the need for providing opportunities for primary and secondary school teachers and students particularly in developing countries to enhance their understanding of space science and technology and their applications and to participate in hands-on in education activities, the Working Group has convened space education forums and seminars in Vietnam and Indonesia in 2006 and Sri Lanka in 2009. The next seminar will be held in Bangladesh in January 2011 for local secondary school teachers and students.

<Water Rocket Education for educators>

In order to expand the pool of skilled and knowledgeable educators who can effectively use water rockets to enhance education for young people and to establish a network of such educators, the International Water Rocket Education Workshop was held in Melbourne, Australia, in July 2008. Educators and space experts from 12 countries in the region as well as Latin America participated. As a result, an Internet-based Wiki site was established to serve as an on-line forum for anyone interested to exchange information and education materials relating to water rockets.

(See Wiki site: <http://wiki.vssec.vic.edu.au/waterrockets/>).

<CanSat for university and graduate students>

The Working Group has agreed that CanSat activities could be promoted for university and graduate students and encouraged its members to participate in the International CanSat Workshop co-organized by Japan Aerospace Exploration Agency (JAXA) and University Space Engineering Consortium (UNISEC), in Tokyo, Japan, in February 2007. As a follow-up to this Workshop, the Working Group aims to organize an international meeting in the near future to exchange information and experiences in teaching how to develop CanSats and conduct their experiments as well as promoting CanSat activities among secondary school and university students.

Objectives to be achieved at APRSAF-17

- Increase the number of countries in the region and international organizations that carry out or support activities that use space materials to enhance the quality of education for young people and that contribute to the enhancement of human development at individual level;
- Increase the availability of teaching and learning materials in various languages spoken in the region to enhance space education;
- Increase training opportunities for teachers and instructors to acquire knowledge and skills to carry out space education activities for young people and establish and strengthen a mechanism to support those teachers and instructors;
- Ensure that the educational initiatives undertaken through APRSAF contribute to achieving the goals identified at the global level in the area of education and to the relevant global initiatives of entities of the United Nations system and other international organizations;
- Contribute to enhancing inter-regional cooperation by making it possible for countries outside Asia and the Pacific to benefit from the educational initiatives undertaken by APRSAF.

Issues to be discussed during APRSAF-17

For the issues to be discussed by the Working Group during APRSAF-17, see “Provisional Agenda” contained in Annex, which includes a draft indicative schedule of work. The “Provisional Agenda” will be issued as Working Group’s document APRSAF17/SEA-WG/2010/1.

The Seventeenth Session of the Asia-Pacific Regional Space Agency Forum (APRSAF-17)

Space Education and Awareness Working Group

(23 – 24 November 2010, Melbourne, Victoria, Australia)

PROVISIONAL AGENDA

1. Opening of the session
2. Adoption of the agenda
3. General exchange of views on space education and raising awareness
4. Joint educational activities for primary and secondary school students and teachers
 - a. Water rocket activities
 - b. Poster contest
 - c. Space education forum and seminar
 - d. Effective uses of satellite images for schools
 - e. Other activities
5. Joint educational initiatives for university and graduate students and young professionals
6. Ways and means to exchange space education materials effectively
7. New and innovative funding sources to support space education activities
8. Best Practice Special Report
9. Other matters
 - a. Review of the outcomes of the work of the Working Group and possibilities of revising its terms of reference and developing a plan of action
 - b. Announcement of opportunity of JAXA educational programs utilizing JEM ” KIBO”
 - c. Other matters

Appendix: Indicative schedule of work

References :

1. Format for a written report under item 3 of the provisional agenda
2. Format for a questionnaires under item 9.a. of the provisional agenda

ANNOTATIONSⁱ

1. Opening of the session

Following the customary practice, the Space Education and Awareness Working Group during the seventeenth session of the Asia-Pacific Regional Space Agency Forum (APRSAF-17) would be co-chaired by Professor Graham Durant – Chef Executive Officer of Questacon, representing of Australia, and Prof. Takashi Kubota of Japan Aerospace Exploration Agency (JAXA), representing the Japanese co-organizers of APRSAF. The co-chairs may make opening remarks, outlining the work of the Working Group.

2. Adoption of the agenda

The Working Group will review the provisional agenda for its adoption.

3. General exchange of views on space education and raising awareness

The members of the Working Group are invited to submit reports containing information on: i) highlights of formal and informal education relating to space activities in the past year; ii) future plans for educational initiatives relating to space activities; and iii) proposals, if any, for activities to be undertaken by the Working Group. The submission received by the Secretariat by 29 October 2010 would be distributed at the first meeting of the Working Group during APRSAF-17.

Each member of the Working Group or his/her alternate attending APRSAF-17 would be invited to orally report on the major developments and activities carried out in his/her country or by his/her international organization in the past year to promote space education and to increase public awareness of the benefits of space activities. The oral report should focus on those activities that are not covered in the submitted reports in writing. The maximum of 5 minutes each would be allocated.

(See the APRSAF-16 Minutes #8 and Follow Up List A/I #4.)

ⁱ The annotations are not part of the agenda to be adopted by the APRSAF Space Education and Awareness Working Group.

4. Joint educational activities for primary and secondary school students and teachers

a. Water rocket event

Pursuant to the agreement by the Working Group, the 6th APRSAF Water Rocket Event will be held with the participation of students from 12 to 16 years old from countries in Asia and the Pacific.ⁱⁱ The outline of the Water Rocket Event and the rules for the launch competition were circulated to the Working Group members on 2 June 2010.ⁱⁱⁱ The Event will be hosted by The Department of Innovation, Industry, Science and Research (DIISR) under Space Policy Unit of Australia, and facilitates by Victorian Space Science Education Centre (VSSEC) of Australia, and will take place from 20 and 21 of November at Cross Keys Reserve and VSSEC in Melbourne, Victoria, Australia. Members of the Working Group are encouraged to attend the Event. The Working Group will also hear the results of the Event.

At its last sessions, held during APRSAF-15 and 16, the Working Group agreed to work toward establishing an advanced category of the water rocket competition for high-school or pre-college students, on the assumption that APRSAF Water Rocket Event would continue. The Working Group should formally decide whether to continue APRSAF Water Rocket Event and agree on the schedule of work to prepare for the next Event. As agreed by the Working Group, participating countries of the above Water Rocket Event were invited to present and demonstrate advanced types of water rocket launch for competition. Based on such presentations and demonstrations to be made, the Working Group should select one advanced type of water rocket launch competition to be organized within the framework of the APRSAF Water Rocket Event, should the decision be made to continue holding the Event.

At its last sessions, held during APRSAF-16, the Working Group agreed to jointly produce a brochure on water rocket activities for educational purposes, to seek for sponsorship by not only space-related public entities but also commercial entities. In this regards, the working group established a small editorial group of seven members.^{iv}

With funding support by JAXA, the brochure on Water Rocket Activities has been developed and distributed to Working Group members in time for the World Space Week, to be celebrated from 4 to 10 of October 2010. During World Space Week, many countries

ⁱⁱ At its last meeting, the Working Group agreed that it was important to promote inter-regional cooperation by, among other things, sharing concrete examples of the successful joint regional initiatives in the area of space education. As the implementation of that agreement, teams from Latin America have been invited to participate APRSAF-17 Water Rocket Event as same as APRSAF-16 of which was held in January 2010 in Thailand.

ⁱⁱⁱ Per Coordinated Universal Time (UTC).

^{iv} The Editorial Group consist of the following SEA WG members: Dr. Naomi Mathers(Australia), F.R. Sarker (Bangladesh), K.R. Adhikary (Nepal), Charles Tng(Singapore), Indika Medagangoda (Sri Lanka), Koh-Ichiro Oyama

in Asia seem to schedule national water rocket competition as further promoting education/enlightenment activities.

(See the APRSAF-16 Minutes #17~24 and Follow Up List A/I #5~11.)

b. Poster contest

Pursuant to the agreement of the Working Group, the Poster Contest is being held under the theme “Space technology to Help the Earth” for participation by students from 8 to 11 years old from countries in Asia and the Pacific. The rules for the Poster Contest were distributed to the Working Group members on 2 June 2010^v.

The final selection of the winners of APRSAF Best Poster Award and APRSAF Special Poster Awards will take place during APRSAF-17. Prior to APRSAF-17, the members of the Working Group will be informed of the submitted posters and of the methods and schedule for the final selection.

The Working Group should determine whether to continue APRSAF Poster Contest and, if so, agree on a theme for the next Contest and the schedule of work.

As agreed by the Working Group at its last session, the Secretariat had developed and distributed to Working Group members, with funding support by JAXA, the calendar covering the period from April 2010 to March 2011 and using all the submitted posters for APRSAF-16 Poster Contest. The Working Group should examine whether it would be feasible to continue publishing the calendar in the following years using posters submitted for APRSAF Poster Contests, based on the experiences with the development of the calendar since 2009 to celebrate International Year of Astronomy (IYA) .

(See the APRSAF-16 Minutes #30~36 and Follow Up List A/I #12~18.)

c. Space education forum and seminar

Following the agreement by the Working Group, the Space Education Seminar on “Space Science and Technology and their Applications into Classrooms” will be organized by the Bangladesh Astronomical Society (BAS) and JAXA within the framework of APRSAF, and hosted by BAS, for the benefit of local teachers. The Working Group will provide with latest information on the Seminar.

The Working Group may wish to consider any proposals submitted by its members to

(Former Co-chair of SEA WG, Japan) , Thanakorn Palachai (Thailand) and Emiko Ando(Secretariat of SEA WG)

^v Per Coordinated Universal Time (UTC).

organize future space education forums and seminars.

(See the APRSAF-16 Minutes #39~40 and Follow Up List A/I #19~21.)

d. Effective uses of satellite images for schools

At its last sessions, held during APRSAF-16, the Working Group expressed its appreciation to GISTDA for its project proposal on “GIS Toolkit for Schools”, and for further elaborating the proposal of which was circulated at the meeting as document APRSAF/SEA-WG/2010/8. Based on experiences of GISTDA using GIS to train students, the project focuses on the transfer of knowledge by ensuring that the result of outputs in the forms of data and tools remain at the schools for incoming students after the trained students left. The project consists of following eight stages: i) space youth camp; ii) selection of project proposals submitted by schools; iii) training of the selected schools; iv) execution of the selected projects; v) producing project outputs; vi) development of toolkits; vii) testing of the toolkits; and viii) organization of a toolkit competition. To implement the project, GISTDA will host a Three-days Technical Workshop for 20-25 persons in Thailand in February 2011 within the framework of APRSAF.

The Working Group will be provided with latest information on the Workshop.

At its last sessions, held during APRSAF-16, the Working Group noted with interest that a proposal by UNESCO for jointly producing a “School Atlas”, encouraging space agencies in Asia-Pacific region to provide satellite images for the production of the atlas. The Working Group agreed to further consideration of the proposal.

Members of the Working Group may wish to present any projects or initiatives undertaken by their organizations and/or in their countries to promote effective usage of satellite images for school support.

(See the APRSAF-16 Minutes #44~46 and Follow Up List A/I #22~25.)

e. Other activities

The Working Group may wish to consider any proposals for other activities that might be undertaken within the framework of APRSAF for primary and secondary school students and teachers in Asia and the Pacific.

5. Joint educational initiatives for university and graduate students and young professionals

At its last session, the Working Group agreed to continue efforts to promote CanSat activities for university students, and as a next step, the Working Group agreed to work toward organizing an international workshop within the framework of APRSAF to exchange information and experiences in teaching how to develop CanSats and conduct experiments. The Working Group may wish to consider any proposal submitted by its members to organize such a workshop to achieve the above objectives. Members of the Working Group are also encouraged to share information and experiences relating to CanSat activities that benefit university and graduate students and young professionals.

At its last session, the National Institute of Aeronautics and Space (LAPAN) of Indonesia introduced the annual Payload Competition “KORINDO2010”. LAPAN invited university (including graduate and undergraduate), and any interested countries to send students to participate in the next Competition, it scheduled to take place on 28 June 2010. The Working Group will also hear the results of the KORINDO2010.

In addition, JAXA Promotion Office for Collaboration with Universities and Research Institutes provides specific information relating to educational collaborations on graduate -level in Japan.

The Working Group may wish to consider any proposals that might be presented by its members to undertake joint educational initiatives within the framework of APRSAF for the benefit of university and graduate students and young professionals. Members of the Working Group are also encouraged to share information on scholarship and training opportunities for university and graduate students in any spare-related areas.

(See the APRSAF-16 Minutes #52~55 and Follow Up List A/I #27~31.)

6. Ways and means to exchange space education materials effectively

As a result of the APRSAF International Water Rocket Education Workshop held in Melbourne, Australia, from 30 June to 3 July 2008, hosted by the Victorian Space Science Education Centre (VSSEC), an Internet-based Wiki site^{vi} was established and hosted by VSSEC to provide an on-line forum to exchange information, views and

^{vi} The new URL address for this site is: <http://wiki.vssec.vic.edu.au/waterrockets/>

education materials relating to water rockets. The Wiki has relaunched with new designs and features by VSSEC since August 2010.

The above Wiki site presents one of many examples of on-line space education and training resources that are freely available through the Internet services. Members of the Working Group are encouraged to identify other useful on-line space education and training materials and share information on those materials, including the URL addresses for the relevant web sites and experiences in using those materials.

While an increasing number of education and training materials are being made available through the Internet-based services, the importance of disseminating paper-based materials should not be undermined in view of those teachers and educators who may not have easy access to the Internet services, particularly in rural areas. In this regard, members of the Working Group are encouraged to share education and training materials in the forms of books, brochures, leaflets and other paper-based publication materials. It is also encouraged to suggest ways and means to facilitate the exchange of such materials and to propose any initiative to jointly develop and disseminate such materials through international collaborations.

(See the APRSAF-16 Minutes #60~62 and Follow Up List A/I #32~35.)

7. New and innovative funding sources to support space education activities

At its last session, the Working Group agreed that efforts should be strengthened to identify funds that are made available by governments to enhance cooperation among countries, including in areas relating to education.

The Working Group members may wish to present any experiences to share useful information on the funds that could support space education activities, and to create a list.

(See the APRSAF-16 Minutes #63~64 and Follow Up List A/I #36.)

8. Best Practice Special Report

This session will focus on the challenges associated with space education and science communication. Prof. Graham Durant, Co-Chairs of SEAWG, Australia, introduces on the world science centre community and possible partnership activities, and Square Kilometre Array telescope project.

9. Other matters

a. **Review of the outcomes of the work of the Working Group and possibilities of revising its terms of reference and developing a plan of action**

The Working Group was originally established at the 8th session of APRSAF, in July 2001, with the aim of: i) effectively using space materials to enhance education for young people; ii) providing education and training opportunities for young people in space science and technology; iii) contributing to enhancing mutual understanding among countries in the region through exchange opportunities for young people; and iv) increasing public awareness of the societal benefits and importance of space activities.

The Working Group agreed to conduct a survey among the organizations represented by its members to review the effectiveness of its work in achieving the objectives listed as the above.

In order to pursue additional objective jointly by the participating countries of the Working Group, the Working Group will also use the survey results to proceed with our activities more actively.

(See the APRSAF-16 Minutes #65~67 and Follow Up List A/I #37~38.)

b. Announcement of opportunity of JAXA educational program utilizing JEM “KIBO”
APRSAF SEU WG and JAXA introduce on JAXA’s new educational program utilizing JEM “KIBO” for SEA WG participants.

c. **SGAC application for the Working Group Membership**

The Working Group will discuss this matter. (may ask SGAC members to excuse during this session.)

d. **Other matters**

Time permitting, additional matters that may come to the attention of the Working Group will be discussed.

Appendix : Indicative schedule of work of the Space Education and Awareness Working Group

(23 – 24 November 2010, Melbourne, Victoria, Australia)

Co-Chairs: Graham Durant (Questacon, Australia)
 Takashi Kubota (Japan Aerospace Exploration Agency, Japan)

<i>Date</i>	<i>Time</i>	<i>Agenda Item(s)</i>
<Day 1> 23 November, Tuesday	09:00- 09:10	1. Opening of the session • Remarks by the Co-Chairs
	09:10- 09:15	2. Adoption of the agenda • APRSAF17/SEA-WG/2010/1/Rev.1
	09:15- 10:30	3. General exchange of views ⁱ • N. Mathers (Australia) (to be confirmed) “TBC” • F. R. Sarker (Bangladesh) (to be confirmed) “TBC” • C. Chin (Cambodia) (to be confirmed) “TBC” • TBD(India)(to be confirmed) “TBC” • Ratih Dewanti Dimiyati (Indonesia) (to be confirmed) “TBC” • E. Hirohama (Japan) “Report of JAXA Space Education Center in 2010” • Omarova Gulnara(Kazakhstan) (to be confirmed) “TBC” • Ahmad Azreena(Malaysia) (to be confirmed) “TBC” • Min Aung Zaw (Myanmar) (to be confirmed) “TBC” • Krishna Raj Adhikary (Nepal)(to be confirmed) “TBC” • Siraj Arshad H(Pakistan)(to be confirmed) “TBC” • A. Cortez (Philippines) (to be confirmed) “TBC” • In-Kyu Jeon (Republic of Korea)(to be confirmed) “TBC” • Sherwin Tng (Singapore) (to be confirmed) “TBC” • I. Medagangoda (Sri Lanka) (to be confirmed) “TBC” • TBD (Thailand) (to be confirmed) “TBC” • D. M. Chung (Vietnam) (to be confirmed) “TBC” • Y. Berenguer (UNESCO) (to be confirmed) “TBC” • TBD(UN/OOSA)(to be confirmed) “TBC” • TBD(UN/)(to be confirmed) “TBC” (See also APRSAF17/SEA-WG/2010/3 to be issued)
		Coffee Break

<i>Date</i>	<i>Time</i>	<i>Agenda Item(s)</i>	
23 November, Tuesday	10:30- 10:45	4.	Joint educational activities for primary and secondary school students and teachers
	10:45- 12:30	4-a.	Water rocket event <ul style="list-style-type: none"> • Briefing by the Secretariat of the Working Group • Results of APRSAF-17 Water Rocket Event <ul style="list-style-type: none"> ➢ N. Mathers (Australia) • Discussion <ul style="list-style-type: none"> ➢ Advanced category of water rocket competition <ul style="list-style-type: none"> ✓ Briefing by the Secretariat ➢ Next APRSAF Water Rocket Event • Report of joint development of Brochure as Promotional materials by Secretariat <ul style="list-style-type: none"> ➢ E.Ando (Japan)
	12:30- 13:30	<i>Lunch hosted by DIISR at Mesh Restaurant</i>	
	13:30- 15:00	4.	Joint educational activities for primary and secondary school students and teachers
		4-b.	Poster contest ⁱⁱ <ul style="list-style-type: none"> • Briefing by the Secretariat of the Working Group • Preparations for the APRSAF Poster Contest <ul style="list-style-type: none"> ➢ N. Mathers (Australia) /Y. Miyagawa (Japan) • Discussion <ul style="list-style-type: none"> ➢ Next APRSAF Poster Contest: Theme ➢ Possible development of a calendar for April 2011-March 2012
		4-c.	Space education forum and seminar <ul style="list-style-type: none"> • Announcement on the Space Education Seminar held in Bangladesh <ul style="list-style-type: none"> ➢ F. R. Sarker (Bangladesh) • Discussion
		4-d.	Effective uses of satellite images for schools <ul style="list-style-type: none"> • “GIS Tool Kit for Schools” project <ul style="list-style-type: none"> ➢ TBD (Thailand) • “School Atlas” <ul style="list-style-type: none"> ➢ Y. Berenguer (UNESCO) • Discussion
		4-e.	Other activities <ul style="list-style-type: none"> • Discussion
		5.	Joint educational initiatives for university, graduate students and young professionals <ul style="list-style-type: none"> • “Report of KORINDO2010” <ul style="list-style-type: none"> ➢ Ratih Dewanti Dimiyati (Indonesia) • “Activities on JAXA Promotion Office for Collaboration with Universities and Research Institutes ” <ul style="list-style-type: none"> ➢ T.Abe and H.Tsuruma(Japan) • Scholarship and training opportunities

ⁱ The participating members of the Working Group are invited to indicate their intention to make brief presentations under this agenda item by 29 October 2010. The time allocated to each presentation is 5 minutes at maximum.

ⁱⁱ The item will be closed after the review and approval of the selection of the winners for APRSAF-17 Poster Contest, which is tentatively scheduled for Wednesday morning, 24 November

<i>Date</i>	<i>Time</i>	<i>Agenda Item(s)</i>	
23 November, Tuesday			<ul style="list-style-type: none"> • Discussion <ul style="list-style-type: none"> ➢ Possibilities of organizing an international workshop on CanSat training <ul style="list-style-type: none"> ✓ Briefing by the Secretariat
	15:00-15:15	<i>Coffee/tea break</i>	
	15:15 – 17:00	6.	Effective exchange of space education materials <ul style="list-style-type: none"> • Demonstration of New Wiki Site <ul style="list-style-type: none"> ➢ N. Mathers (Australia) • Examples of education materials • Discussion
		7.	New and innovative funding sources to support space education activities <ul style="list-style-type: none"> • Exchange of experiences and information on identifying sponsors for education activities • Discussion
< Day 2 > 24 November, Wednesday	09:00-09:15	8	Best Practice Special Report <ul style="list-style-type: none"> • The world science centre community and possible partnership activities • Square Kilometre Array telescope project <ul style="list-style-type: none"> ➢ G.Durant (Co-Chairs of SEAWG, Australia)
	09:15-10:45	9.	Other matters
		9-a	Review of the outcomes of the Working Group's work <ul style="list-style-type: none"> • Results of the survey <ul style="list-style-type: none"> ➢ Report the by Secretariat • Discussion
		9-b	Annoucement of Opportunity of JAXA educational programs utilizing JEM ” KIBO” <ul style="list-style-type: none"> ➢ Briefing by S.Kamigaichi(Co-Chairs of SEU WG, Japan) and E.Hirohama (Japan)
		9-c	Other matters <ul style="list-style-type: none"> • SGAC application for the Working Group Membership (TBC) <ul style="list-style-type: none"> ➢ Discussion and way forward
	10:45-11:00	<i>Coffee/tea break</i>	
	11:00-12:30	4-b.	Poster contest <ul style="list-style-type: none"> • Report by the Secretariat of the Working Group on the results of the selection of winners <ul style="list-style-type: none"> ➢ Y.Miyagawa (Japan) • Review and approval of the results • Award Ceremony
12:30-13:30	<i>Lunch hosted by DIISR at Pre Function Area Central</i>		
13:30 – 17:00 ⁱⁱⁱ	Observations and recommendations <ul style="list-style-type: none"> • Review of the draft and discussion Adoption of the conclusions and recommendations of the Working Group		

ⁱⁱⁱ The reception hosted by MEXT, Japan follows at 18:00 hrs. at a venue to be announced

*Seventeenth Session of the Asia-Pacific Regional Space Agency Forum
(APRSAF-17)*

*SEU (Space Environment Utilization) WG activities
Proposed Outline*

1. The scope /objectives of Space Environment utilization WG activities

“Space Environment Utilization WG (SEU)”, has discussed the road map in several ways to facilitate effective joint utilization of the space environment among Asia-Pacific countries since APRSAF-12, and has expanded its scope to general space environment utilization beyond International Space Station (ISS)/Kibo utilization.

The Japanese Experiment Module “Kibo” of ISS has been fully operational since 2009. The assembly of the entire ISS will be completed within a year as well. To make good use of this unique facility by promoting the further cooperation in Kibo utilization, JAXA established a new office, “Kibo Utilization Office for Asia (KUOA)” in 2010.

Space environment utilization is a rather new field of space activities but has unlimited potential. It is also a comprehensive activity in which a large variety of scientific and technological expertise has to be synthesized. Thus the ISS/Kibo utilization is not only for space development but also for every field of human activities including science, technology, education and culture. With the assembly of ISS nearing completion, space environment utilization activities will enter a new stage and further cooperation among Asia-Pacific countries in this area will become more important.

Significant cooperation on Kibo with Malaysia has started with the protein crystal growth experiment in 2009. A new proposal from Asian space agencies to launch and return the plant seeds is in preparation phase and will be realized in the next H-II Transfer Vehicle (HTV; launch 2011). The fifth in a series of parabolic flights with Asian students is scheduled to take place this December 2010.

Based on this current status, any presentations and practical proposals from the participants concerning international cooperation in scientific and technological as well as educational utilization of the space environment are welcome. Reports of current cooperation plans and activities, experiences & lessons learned, pending issues to be resolved for further cooperation, and the new proposals from agencies would be particularly appreciated.

The discussion on ISS contribution for Earth observation has started and

will be introduced in the joint session with Earth Observation Working Group as well.

2. The results of Space Environment utilization WG activities in APRSAF-16

See APRSAF-16 adopted recommendations at the following URL:
http://www.aprsaf.org/annual_meetings/aprsaf16/recommendation.php

3. The Draft Agenda

- 1) Status report on the APRSAF-16 recommendations and actions.
- 2) Status report related to ISS program
- 3) Status of bilateral cooperation
 - a) Feasibility Study
 - b) Protein Crystal Growth Experiment
 - c) Others
- 4) Status of “Space Seed for Asian Future 2010”
- 5) Status of Student Parabolic Flight Experiment
- 6) ISS contribution for Earth Observation
- 7) Discussion on lesson learned, issues and future plan (all)

**Appendix : Indicative schedule of work of the Space Environment Utilization Working Group
(23 – 24 November 2010, Melbourne, Victoria, Australia)**

Co-Chairs: Miriam Baltuck (Canberra Deep Space Communication Complex,Australia)
Shigeki Kamigaichi (Japan Aerospace Exploration Agency, Japan)

Date	Time	No.	Agenda items	Presenter
November 23rd	9:00-9:10	1	Opening remarks by Co-chairs	JAXA: Mr. Shigeki Kamigaichi
	9:10-9:20			CDSCC: Dr. Miriam Baltuck
	9:20-9:30	2	Review of the last SEU WG at the APRSAF-16	JAXA: Mr. Shigeki Kamigaichi
	9:30-9:50	3	Report from Host country(TBD)	Australia
	9:50-10:20	4	Kibo Utilization status and cooperation activities with Asia-Pacific countries	JAXA:Mr. Nobuyoshi FUJIMOTO
	10:20-10:50	5	Report from each member and agency	Each participating member and agency
	10:50 -11:00		Short Break	
	11:00 -12:30	6	Report from each member and agency (about 30 min. each)	
	12:30 -13:30		Lunch Break	
	13:30-15:00	6	Report from each member and agency (about 30 min. each)	
	15:00-15:15		Short Break	
15:15-16:45	6	Report from each member and agency (about 30 min. each)		
November 24th	9:00-9:20	7	Review of Day 1, Agenda modification,	All members
	9:20-10:20	8	Joint session with EOWG	
	10:20-10:30		Short Break	
	10:30-11:00	9	Report of Kibo Task Force Activities - Student parabolic flight - Space Seed for Asian Future 2010 Parabolic flight experiment Space Seed for Asian Future 2010	JAXA: Dr. Muneo Takaoki
	11:00-11:30		Discussion	All members
	11:30-11:50	10	Proposal for next step	JAXA: Dr. Muneo Takaoki
	11:50-12:30		Discussion	All members
	12:30-13:30		Lunch Break	
	13:30-14:30		Reserve	
	14:30-14:50		Short Break	
	14:50-15:20		Discussion about the summary of the meeting	All members
15:20-16:00	11	Draft recommendations and Action item review	All members	

***Seventeenth Session of the Asia-Pacific Regional Space Agency Forum
(APRSAF-17)
Sentinel Asia activities
Proposed Outline***

1. The scope /objectives of Sentinel Asia Initiatives activities

The Sentinel Asia (SA) was established in 2005 as a collaboration between space agencies and disaster management agencies under the APRSAF initiative, applying remote sensing and Web-GIS technology to assist disaster management in the Asia-Pacific region. A step-by-step approach for implementation of this dissemination system was adopted, and SA Step1 (2006-2007) has achieved its overall goals, demonstrating recent advancement in web-mapping technology and the ICT system. At APRSAF-14 held in Bangalore, India, in November, 2007, the recommendation on SA Step2 was adopted, and the new JPT meeting was held in Kobe, Japan, in June, 2008. Thus the Sentinel Asia Step2 (2008-2012) was initiated. Now the Join Project Team (JPT) consists of 60 organizations from 24 countries/region and nine international organizations.

At APRSAF-17, it will be provided with STEP2 activity report.

2. The result of Sentinel Asia Initiative activities in APRSAF -16

See APRSAF-16 adopted recommendations at the following URL:
http://www.aprsaf.org/annual_meetings/aprsaf16/recommendation.php

3. The Draft of Agenda

Plenary Agenda as follows:

- 1) STEP2 activity report
- 2) Activity report by Asian Disaster Reduction Center (ADRC)
- 3) Activity report by Asian Institute of Technology (AIT)
- 4) Achieved result report by International Center for Integrated Mountain Development (ICIMOD)

*Seventeenth Session of the Asia-Pacific Regional Space Agency Forum
(APRSAF-17)
SAFE (Space Applications For Environment)
Proposed Outline*

1. The Scope/Objectives of SAFE activities

SAFE (Space Applications For Environment) is a voluntary initiative for environmental monitoring, endorsed at APRSAF-15.

This session aims to report the current activities of SAFE, including the discussion of the EOWG.

1) SAFE Progress Report

SAFE workshop will be held at day 0 of EO working group. New proposal of SAFE prototyping will be presented, reviewed by SAFE review board members and approved by SAFE workshop participants. SAFE on-going prototyping activities will be also reported.

In addition, the SAFE secretariat will report on current SAFE updates at day 1 of EO working group; in particular, new SAFE prototyping activities approved by SAFE 2nd workshop in Sri Lanka this June, ongoing SAFE prototyping activities, successful story of SAFE prototyping activities, and will ask participants of the EOWG to discuss about the promotion of SAFE prototype activities and its successful results to participating entities through knowledge transfer and capacity building.

2) SAFE Prototype Activities

In this session, SAFE members will report on the status of SAFE prototype activities in various phases. Some of them are finishing their prototyping activities, and others have just started.

3) Announcement of the Third SAFE Workshop

The SAFE secretariat will announce the next SAFE event, called “the Third SAFE Workshop”.

2. The result of SAFE activities in APRSAF-16

See APRSAF-16 adopted recommendations at the following URL:

http://www.aprsaf.org/annual_meetings/aprsaf16/recommendation.php

3. The Draft of the Agenda

1) SAFE Progress Report

2) SAFE Prototype Activities

a. Water Cycle & Agriculture Monitoring (Cambodia)

b. Forest Monitoring (Laos)

c. Sea Level Rise on Coastal Zone (Sri Lanka)

d. Potential Drought Monitoring (Indonesia)

e. Fishery monitoring (Sri Lanka)

f. Water resource management (Pakistan)

3) Announcement of the Third SAFE Workshop

*Seventeenth Session of the Asia-Pacific Regional Space Agency Forum
(APRSAF-17)
STAR Program activities
Proposed Outline*

1. The scope /objectives of the STAR Program activities

The STAR Program provides the opportunities to develop human resources for the space agency staff in the Asia-Pacific region. It was proposed by JAXA at APRSAF-14, Bangalore, India. It is consisted of two major activities as follows.

- 1) Development of experimental satellite, Micro-STAR (50-100kg class)
- 2) System study of Earth observation satellite, EO-STAR (300-500kg class)

Since the STAR Program started in June 2009, 14 participants from 7 organizations have joined it and stayed at the JAXA Sagami-hara campus (This number is as of October 2010 and increasing). They have studied conceptual design of the satellites and made prototype of some circuits, eagerly. Some of them teach basic space technology to others and discuss technical issues each other.

The STAR Program is an international project born in APRSAF and supported by participating organizations. JAXA provides technical support and a dedicated building for the STAR Program. Other participating organizations will contribute to dispatch staff, provide instrument and develop software.

(STAR: Satellite Technology for the Asia-Pacific Region)

2. The result of STAR Program activities in APRSAF 16

See APRSAF-16 adopted recommendations at the following URL:
http://www.aprsaf.org/annual_meetings/aprsaf16/recommendation.php

3. Draft Agenda

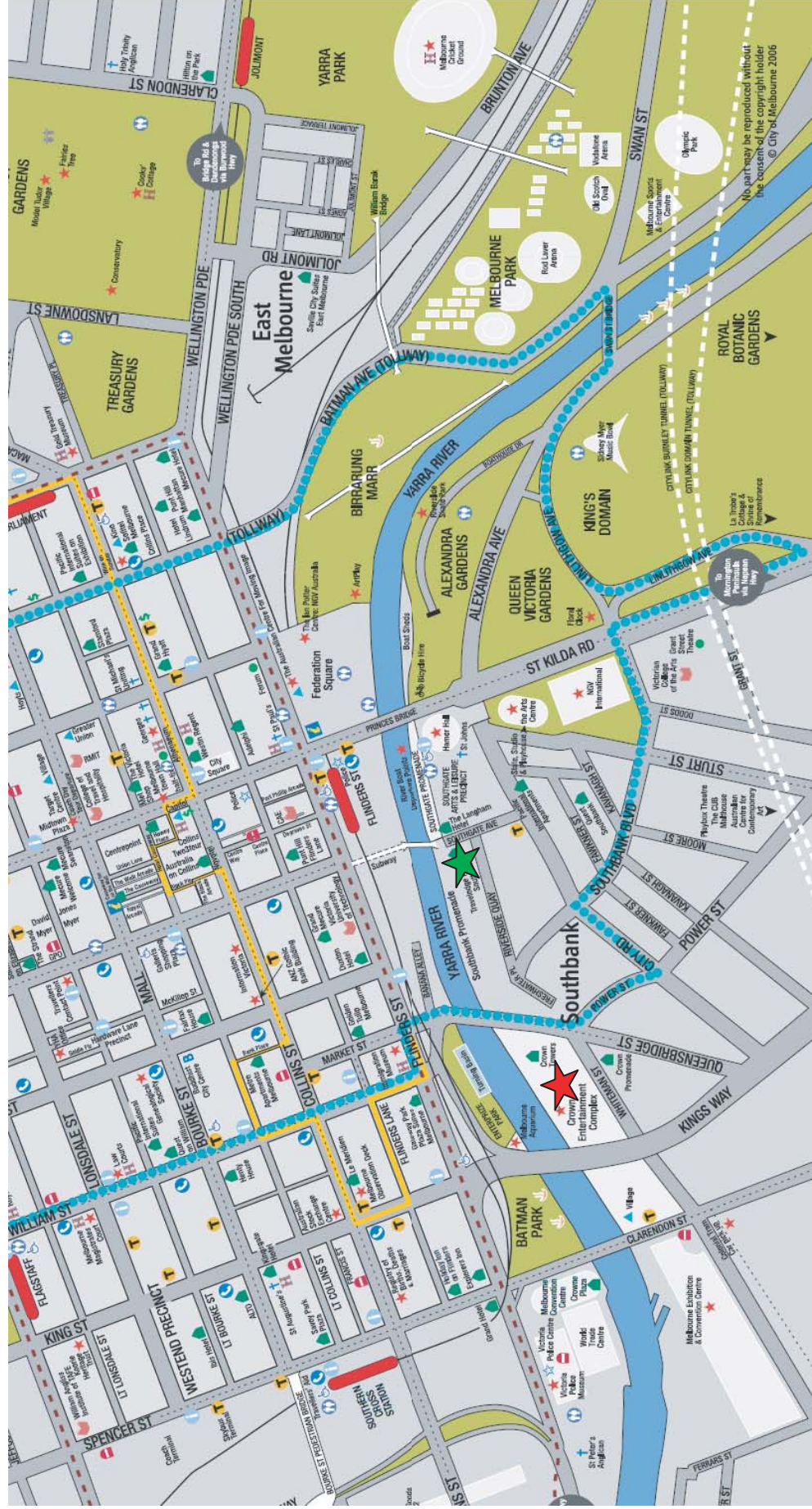
- 1) Progress of STAR program and Future plan (Mr.Masanobu Tsuji, JAXA)
- 2) Technical outcomes of STAR program (Mr.Masanobu Tsuji, JAXA)
- 3) Experience in STAR program (Dr. Pham Anh Tuan, VAST/STI)



**17TH
APRSAF**
ASIA-PACIFIC REGIONAL
SPACE AGENCY FORUM

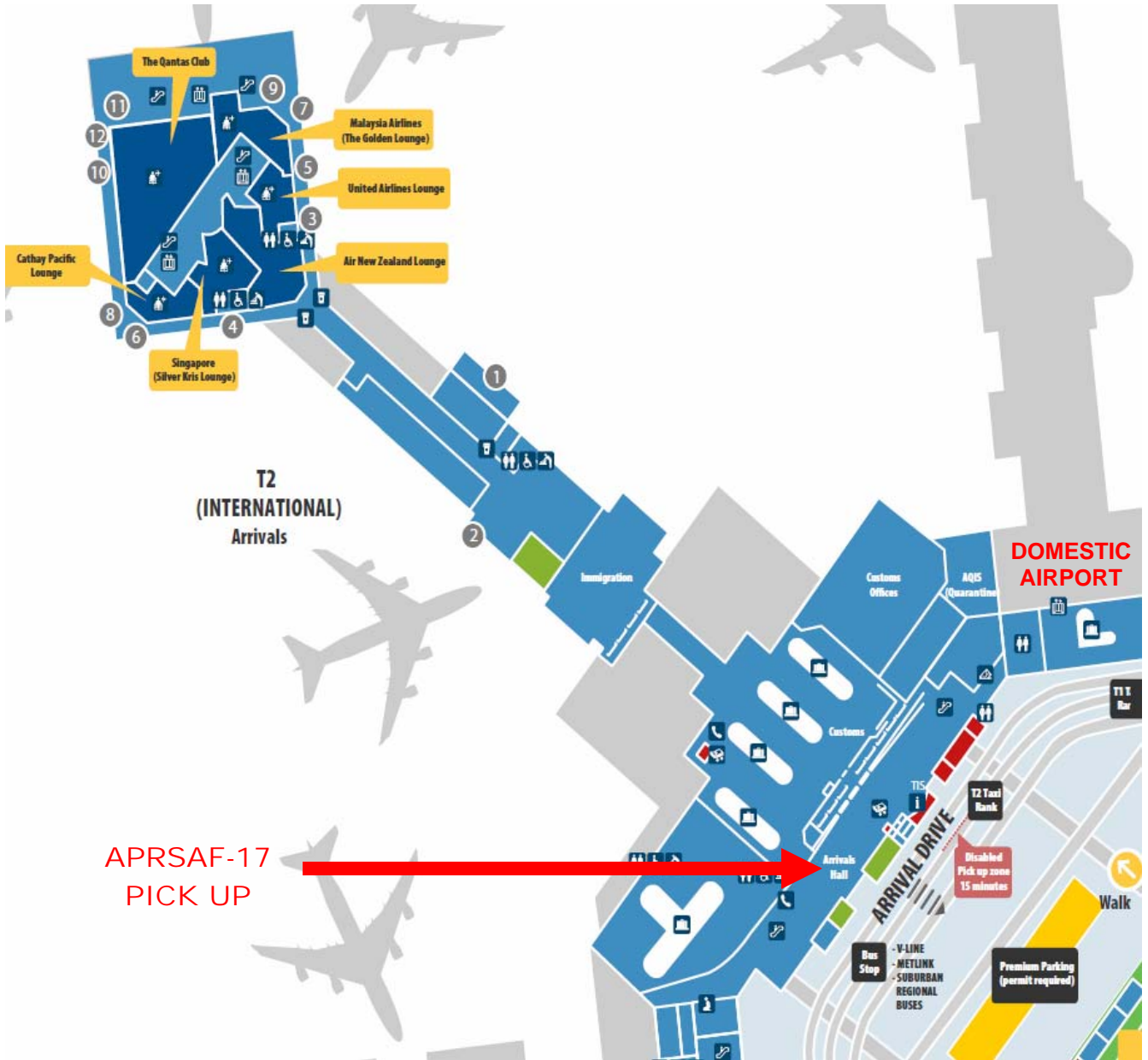
★ Crown Promenade Southbank - 8 Whiteman Street, Southbank

★ Travelodge Southbank - 9 Riverside Quay, Southbank



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Arrival at Melbourne International Airport



APRSAF-17 Technical Tour 1

Bureau of Meteorology

26 November 2010 – 3:00pm to 5:00pm

The Tour will be hosted by the Australia Bureau of Meteorology. The tour will consist of an introduction about the Bureau of Meteorology, a 30 minutes session with the Head of National Meteorological and Oceanographic Centre, a presentation on satellite data and a tour of the facility.



The Bureau of Meteorology

The first section of the tour will provide forum members with an outline of what the Bureau does, how many people it employs and how it collaborates with its Asian neighbours.

More information can be found at www.bom.gov.au. (Image of the Bureau of Meteorology's building in Melbourne, Australia)

Session with the Head of the National Meteorological and Oceanographic Centre

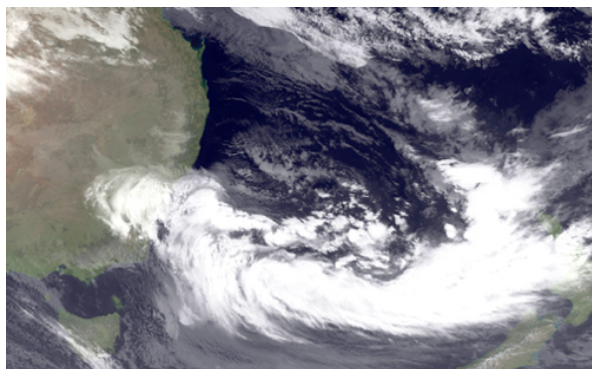


The tour will also comprise of a 30 minute session with the Head of the National Meteorological and Oceanographic Centre (NMOC), Mr Chris Ryan. His session will include information on the role of the NMOC, its national and international functions as well as provide members with information about role of different staff.

(Image of an Australian DART II tsunameter buoy being launch into the sea, the tsunameter buoy assists with tidal predictions and tsunami warnings).

Presentation on satellite data

The Bureau will also give a presentation on how satellite data is used in the Bureau including; what data is used, how it is used, some of the environmental applications of satellite data.



(Image is from Japan's Multi-functional Transport Satellite (MTSAT-1R) taken on 20 June 2007, the Satellite went fully functional on 28 June 2005). More information can be found at <http://www.bom.gov.au/sat/MTSAT/MTSAT-1Rnew.shtml>

APRSAF-17 Technical Tour 2

Victorian Space Science Education Centre

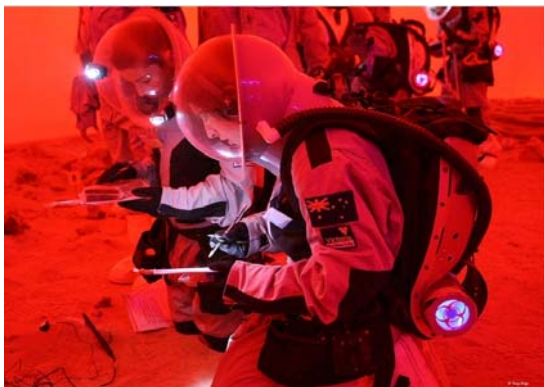
26 November 2010 – 3:00pm to 5:00pm

The Tour will be hosted by the Victorian Space Science Education Centre (VSSEC). The tour will start at Crown Conference Centre with a presentation by Dr Naomi Mathers. Members will then catch a bus to VSSEC. Dr Mathers holds a degree in Aerospace from RMIT University and a PhD in Engineering from RMIT University (Image of the VSSEC building in Strathmore, Victoria, Australia).



VSSEC is one of three Specialist Science Centres established by the Victorian State Government. It was officially opened in 2006; VSSEC uses the context of space to engage teachers and students in teaching and learning of science. All areas within the centre are supported by an integrated system technology which supports a rich learning environment. VSSEC is situated in the grounds of Strathmore Secondary College and

its inspiring spiral-galaxy shaped building, offers a stimulating environment for hands-on learning. (Image: Students on the Mars Surface).



VSSEC applies the latest educational research to develop effective programs for both students and teachers. To maintain the highest level of excellence in both pedagogy and science content VSSEC has established partnerships

with universities, industry, education and the government. VSSEC's programs support dedicated subject and cross-curricula domains. These programs are delivered in context and highlight career and study paths. VSSEC's programs include Mission to Mars and Mission to the Orbiting Space Laboratory.

Tour of VSSEC

Members will receive a tour of the facility including program facilities for the Mission to Mars and Mission to the Orbiting Space Laboratory. If time permits, members may be able to 'suit up' for a walk on the Mars surface. (Image: Mission to Mars control room).



TO ALL DELEGATIONS TO APRSAF-17

CAST YOUR VOTE !

APRSAF-17 POSTER CONTEST

ORGANIZED BY APRSAF SPACE EDUCATION AND AWARENESS (SEA) WG

All delegates to APRSAF-17 are invited to participate in the review and selection of the winners of the APRSAF Poster Contest.



Held under the theme “**Space Technology to Help the Earth**” this year, the contest is open for participation by children at the age between 8 and 11 years-old from all countries of the Asia-Pacific region; The posters submitted in time are displayed on this website as well as at the venue of APRSAF-17.

Online voting prior to APRSAF-17: Each registered delegate to APRSAF-17 is invited to cast one vote for a poster that best addresses the theme through the web site established for on-line voting. This web site, with the following URL address, is open from 0:00 a.m. 9 November to 4:00 p.m., 15 November, 2010, Japan Standard Time, and can be accessed by using the User ID and the Password.

URL: <http://edu.jaxa.jp/education/international/APRSAF/en/poster17/>

(User ID : aprsaf17 Password: EUeHzQfA)

Voting on site during APRSAF-17: The delegates who have not voted on-line can cast their votes on site during APRSAF 17 from 9:00 a.m., 23 November, to 9:00 a.m., 24 November, 2010 (Australia Standard Time)



APRSAF-16 Poster Contest
Bangkok, January 2010

Awards: Votes received online prior to APRSAF-17 as well as on site during APRSAF-17 will be taken into account in the final selection of winners of the following awards;

APRSAF Best Poster Award will be given to the poster that receives the most votes.

APRSAF Special Poster Award will be given to the posters that receive the second and third most votes;

The results will be announced in the plenary session on Friday, 26 November as part of the report of the Space Education and Awareness Working Group.

For more information, please contact:

Ms. Yayoi Miyagawa
JAXA Space Education Center
E-mail: aprsaf17@edu.jaxa.jp

Thank you.