

## **APRSAF-13 Concept Paper: Space Education and Awareness WG**

### **PROVISIONAL AGENDA**

- 1. Opening of the session**
- 2. Adoption of the agenda**
- 3. General exchange of views on space education and awareness increase**
- 4. Joint educational activities for primary and secondary school students and teachers**
  - a. Water rocket event**
  - b. Poster contest**
  - c. Space education forum and seminar**
- 5. Possible joint educational initiatives for university and graduate students and young professionals**
- 6. Ways and means to promote collaborations among space scientists and engineers and educators in expanding space education activities for young people**
- 7. Other matters**

**Annex: Indicative schedule of work**

## **ANNOTATIONS<sup>i</sup>**

### **1. Opening of the session**

Following the customary practice, the thirteenth session of the Asia-Pacific Regional Space Agency Forum (APRSAF) Space Education and Awareness Working Group would be co-chaired by Prof. K. Oyama of Japan Aerospace Exploration Agency (JAXA), representing the Japanese co-organizers of APRSAF, and by Dr. Herudi Kartowisastro of Science and Technology Center (PPIPTEK) of Taman Mini Indonesia Indah (TMII), representing the Indonesian host organizers. The co-chairs may make opening remarks, outlining the work of the Working Group.

### **2. Adoption of the agenda**

The Working Group would be invited to review the provisional agenda for adoption.

### **3. General exchange of views on space education and awareness increase**

Each participating member of the Working Group, serving as the focal point of the Working Group for his or her country, would be invited to report on the major developments and activities relating to space education and increasing awareness of the benefits and importance of space activities. The maximum of 10 minutes each would be allocated.

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

#### **a. Water rocket event**

Following the agreement of the Working Group at its last session, the second APRSAF Water Rocket Event will be held from 7 to 9 December with the participation of school children at the age between twelve and eighteen years old from countries in Asia and the Pacific. The Secretariat will brief the Working Group on the status of the preparations for the Event.

The Working Group should determine whether to continue the Water Rocket Event as an annual

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<sup>i</sup> The annotations are not part of the agenda adopted by the APRSAF Space Education and Awareness Working Group.

regional activity for those school children and, if so, identify a venue and determine likely dates for the next Event.

Should the Working Group decide to convene the Water Rocket Event as its annual activity within the framework of ARP SAF, the Working Group should address the question of sponsorship to organize the Event and to support the participation of school children and their accompanying teachers.

The Space Education Center of Japan Aerospace Exploration Agency (JAXA) is developing English versions of an updated instructor's manual and DVD on water rocket activities for educational purposes. Sets of those manuals and DVDs are intended for use by the teachers participating in the second ARP SAF Water Rocket Event as teaching materials to carry out water rocket activities in their countries and will be made available for the members of the Working Group.

Consideration could be given to convening in the future an international seminar for school teachers and educators to discuss how to promote water rocket activities for educational purposes and to exchange ideas and information on teaching materials and methods for carrying out water rocket activities, with the purpose of encouraging all countries in the region to organize water rocket activities as recurrent activities for educational purposes.

**b. Poster contest**

Following the agreement of the Working Group at its last session, the Poster Contest is being held under the theme "Importance of Space" for participation by school children at the age between eight and eleven years old in Asia and the Pacific. The final selection of the winners will take place during the thirteenth session of ARP SAF. Prior to that session, the members of the Working Group will be provided with further information on the awards to be announced and the methods of selecting the winners. At its next meeting of the Working Group, the Secretariat will brief the Working Group on the status of participation in the Poster Contest.

The Working Group should determine whether to continue the Poster Contest as an annual regional activity for those school children and, if so, agree on a theme for the next Poster Contest and the schedule of associated work.

**c. Space education forum and seminar**

Pursuant to the agreement of the Working Group at its last session, a Space Education Forum was held in March 2006 in Hanoi, Vietnam within the framework of APRSAF. The Forum was organized by JAXA and the Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan in cooperation with UNESCO and with the support of Vietnamese Academy of Science and Technology (VAST) as the local coordinator. The Working Group will be provided with the report of the APRSAF/UNESCO Space Education Forum.

Following the agreement of the Working Group, JAXA and UNESCO intend to jointly organize, with the support of the National Institute of Aeronautics and Space of Indonesia (LAPAN), a Space Education Seminar in Jakarta, Indonesia for within the framework of APRSAF from 11 to 12 December, immediately following the conclusion of APRSAF Water Rocket Event. The Working Group will be briefed on the preparations for the Space Education Seminar, which will be held for the benefit of school teachers.

The Working Group may wish to discuss plans for future space education forums and seminars to be held in other countries in Asia and the Pacific.

#### **5. Possible joint educational initiatives for university and graduate students and young professionals**

The Working Group may wish to discuss possible joint educational initiatives that could be undertaken within the framework of APRSAF for the benefit of university and graduate students and young professionals.

JAXA will introduce CanSat activities and a ground station network project as examples of university and graduate students activities in Japan. The Working Group may wish to consider organizing a regional CanSat seminar in 2007 to provide hands-on training for university educators and leaders of space advocate groups of university and graduate students in the region. The Working Group may also wish to consider the satellite ground station network project that provides training at a higher level, to operate the ground station to download data from CubeSats currently in orbit.

At its last session, the Working Group heard a presentation on the United Nations affiliated Regional Centre for Space Science and Technology Education in Asia and the Pacific (CSSTE-AP). Having completed a decade of educational activities for the benefit of university educators and young professionals in space science and engineering, CSSTE-AP is planning to achieve the status of an international centre of excellence in training, education and research.

The Working Group will hear a report by the United Nations Office for Outer Space Affairs on training opportunities provided by CSSTE-AP and perspectives for future regional activities to further enhance training opportunities. The Working Group may wish to discuss how its members could benefit from and contribute to the activities of CSSTE-AP.

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.

#### **6. Ways and means to promote collaborations among space scientists and engineers and educators in expanding space education activities for young people**

Immediately preceding the APRSAF/UNESCO Space Education Forum (see annotation for agenda item 4-c above), a Space Science Education Workshop was held in Hanoi, Vietnam. The report of the Workshop will be made available for the Working Group.

The Workshop made the following:

- 1) Members of the Working Group would benefit from the expertise and experience of researchers of various space science and engineering fields in enhancing space education and training opportunities for young people in the region;
- 2) In this regard, closer links should be established between the members of the Working Group and researchers in space science and engineering within each of the countries participating in APRSAF, to exchange ideas and views on how the efforts made by those researchers to enhance educational activities could be better supported within the framework of the Working Group;
- 3) At its next meeting, the Working Group could give consideration to establishing an informal group of researchers in space science and engineering and educators that could serve as resource persons to assist in the work of the Working Group in carrying out joint space education activities within the framework of APRSAF.

The Working Group may wish to take up the recommendations resulting from the above Workshop for its action.

Some countries in the region are making progress in linking space scientists and engineers with educators to enhance and expand space education activities. One of such examples can be

found in the activities of the Victorian Space Science Education Centre, which was established in July 2006 in Melbourne, Australia. The Working Group will hear a report on the activities of the Centre, including opportunities for collaborations with other countries in the region.

The Working Group member from Sri Lanka proposed to set up a Space Science Exploratorium at Arthur C. Clarke Institute for Modern Technologies (ACCIMT), with the aim of making available more teaching materials and expertise in the field of space science and astronomy to enhance space science education not only for school children but also for the general public, including those in remote areas. The Working Group may wish to discuss how this initiative could be supported within the framework of APRSAF.

Some of the global initiatives in the areas of space science and astronomy have strong educational elements., such as the celebration of the International Heliophysical Year in 2007 and the International Year of Astronomy in 2009. The activities relating to the former include, for example, the International School for Young Astronomers to be hosted by Malaysia in March 2007 and various activities under coordination by LAPAN. The Working Group may wish to exchange information on those activities planned in the region of Asia and the Pacific and discuss how the countries participating in APRSAF could participate in and benefit from those global initiatives in promoting space education.

## **7. Other matters**

The International Astronautical Academy (IAA) has been carrying out a project to develop database of space terminologies in multiple languages. The database is currently available in 16 languages.<sup>ii</sup> Interested members of the Working Group may wish to consider the desirability of having the database available in their languages and, if so, consider nominating focal points of their countries to contribute making the database available in their languages.

Due to his retirement, Prof. K. Oyama would no longer be able to serve as the Japanese co-chair of the Working Group after its next session, in December 2006, and Prof. T. Kubota of the Institute of Space and Astronautical Science of JAXA has been proposed as his successor. The question of the co-chairmanship will be taken up by the Working Group. The Working Group may

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<sup>ii</sup> [INSERT THE LIST OF LANGUAGES THAT ARE AVAILABLE.]

also wish to review the roles of its co-chairs as well as responsibilities of its members.

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

**Annex:**

**Indicative schedule of work of the Space Education and Awareness Working Group  
(5-6 December 2006, Jakarta, Indonesia)**

*Co-Chairs: Koh-Ichiro Oyama (Japan Aerospace Exploration Agency, Japan)*

*Herudi Kartowisastro (Science and Technology Center, Taman Mini Indonesia  
Indha, Indonesia)*

<b>Date</b>	<b>Time</b>	<b>Agenda Item(s)</b>	
5 December, Tuesday	15:30 – 18:00 <sup>i</sup>	1.	Opening of the session • Remarks by the Co-Chairs
		2.	Adoption of the agenda • APRSAF/SEA-WG/2006/1
		3.	General exchange of views <sup>ii</sup> • F. R. Sarker (Bangladesh) “Space awareness in Bangladesh) • H. S. S. Sinha (India) “Space education and awareness in India” • E. Hirohama (Japan) “Activities of JAXA Space Education Center: achievements and perspectives” • Kyi Thwin (Myanmar) “Space education in Myanmar” • K. R. Adhikary (Nepal) “Space education and awareness activities in Nepal” • J. E. L. Aban (Philippines) TITLE OF THE PRESENTATION TO BE ANNOUNCED • Dayananda Kospalage (Sri Lanka) TITLE OF THE PRESENTATION TO BE ANNOUNCED • Sawat Tantiphanwadi (Thailand) “Moons” • D. M. Chung (Vietnam) “Space education in Vietnam” • B. Shrestha (ICIMOD) “Mountain Knowledge Hub Initiative” • Y. Berenguer (UNESCO) “Enhancing space education through international cooperation” • C. Chin (Cambodia) “Space education and awareness in Cambodia”
		4. 4-a	Joint educational activities for primary and secondary school students

<sup>i</sup> The reception hosted by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan follows at 19:00 hrs. at Sari Pan Pacific Hotel.

<sup>ii</sup> The participating members of the Working Group are invited to indicate their intention to make brief presentations under this agenda item by 28 November 2006. The time allocated to each presentation is 10 minutes at maximum.

<i>Date</i>	<i>Time</i>	<i>Agenda Item(s)</i>	
		.	Water rocket event <ul style="list-style-type: none"> <li>• Briefing by the Secretariat of the Working Group</li> <li>• Discussion</li> </ul>
6 December, Wednesday	8:30 – 10:00	4-a	Water rocket event (continued) <ul style="list-style-type: none"> <li>• Discussion (continued)</li> </ul>
		4-b	Poster contest <ul style="list-style-type: none"> <li>• Briefing by the Secretariat of the Working Group</li> <li>• Discussion</li> </ul>
	4-c	Space education forum and seminar <ul style="list-style-type: none"> <li>• Report on APRSAF/UNESCO Space Education Forum (Ha Noi, Vietnam, 4 March 2006)</li> <li>• Briefing on the preparations for APRSAF/UNESCO Space Education Seminar (Jakarta, Indonesia, 11-12 December 2006)</li> <li>• Discussion</li> </ul>	
	10:00 – 10:15	<i>Coffee/tea break</i>	
	10:15 – 12:00	5.	Possible joint educational initiatives for university and graduate students and young professionals <ul style="list-style-type: none"> <li>• Presentation by JAXA on CanSat activities</li> <li>• Presentation by JAXA on a satellite ground station network</li> <li>• Report by UN/OOSA on CSSTE-AP</li> <li>• Discussion</li> </ul>
	6	Collaborations among space scientists and engineers and educators <ul style="list-style-type: none"> <li>• Report on Space Science Education Workshop (3 March, Ha Noi, Vietnam)</li> </ul>	
	12:00 – 13:30	<i>Lunch break</i>	
	13:30 – 15:00	6.	Collaborations among space scientists and engineers and educators <ul style="list-style-type: none"> <li>• Report on the activities of VSSEC <ul style="list-style-type: none"> <li>➢ N. Mathers (Australia) <ul style="list-style-type: none"> <li>“The Victorian Space Science Education Centre: Supporting a Sustainable Future”</li> </ul> </li> </ul> </li> <li>• Presentation on a proposal for a Space Science Exploratorium (Sri Lanka)</li> <li>• Exchange of information on activities relating to the celebrations of the International Heliophysical Year and the International Year of Astronomy and other relevant initiatives <ul style="list-style-type: none"> <li>➢ H. Haubold (UN/OOSA) <ul style="list-style-type: none"> <li>“International Heliophysical Year 2007”</li> </ul> </li> </ul> </li> <li>• Discussion</li> </ul>

<b>Date</b>	<b>Time</b>	<b>Agenda Item(s)</b>
		7 Other matters <ul style="list-style-type: none"> <li>• Briefing on IAA project on space terminologies in multiple languages</li> <li>• Co-chairmanship and membership of the Working Group</li> <li>• Discussion</li> </ul>
	15:00 – 15:15	<i>Coffee/tea break</i>
	15:15 – 17:00	Observations and recommendations <ul style="list-style-type: none"> <li>• Organization of drafting work: Briefing by the Secretariat</li> </ul>
	17:00 – 17:30	Adoption of the conclusions and recommendations of the Working Group