APRSAF-15 Water Rocket Event

Students from Asian and Pacific countries gather to share the excitement of water rocket launch

APRSAF Space Education and Awareness Working Group organized the Water Rocket Convention, held on December 13 and 14 in Hanoi after the end of APRSAF-15.

In the course of the orientation, students introduced their countries in their own way, which made for a very friendly atmosphere.

There were lectures on space at VAST on the first day of the Water Rocket Convention. And on the second day, a competition of launching water rockets, in which thirty-one students aged twelve to sixteen from nine countries participated, was held on the grounds of the Vietnam National University, Hanoi.

At the convention, the competitors were interested in the rockets of their opponents because the shapes of the rockets and how they had been made differed, even though the same materials had been used, and there was international exchange thanks to that interest. We realized that we could truly practice space education through these rockets.

First Prize: IAN CHER HAN TAN (SINGAPORE)
Second Prize: AYUMI DOI (JAPAN)
Third Prize: (5 students in the same score)
  ANAM ARAFAT AMIT (BANGLADESH)
  KAZUKI FUJITA (JAPAN)
  NIPUNA SUDHARAKA WIJESINGHE HAKMANAGE (SRI LANKA)
  JUN WEI QUEK (SINGAPORE)
  THEERAWAT WARAKAENSAT (THAILAND)
APRSAF-15 WATER ROCKET EVENT: OUTLINE

1. **Date:**
   13-14 December 2008 (Saturday - Sunday)
   (NB: Excluding arrival and departure dates.)

2. **Venue:**
   Athletic field of the Pedagogic University, Ha Noi, Vietnam

3. **Lodging:**
   Quan Hoa Hotel
   Address: 20/165 Duong Cau Giay, Ha Noi
   Telephone: +84 4 833 8075; Fax: +84 4 833 8075

4. **Official Language:**
   English

5. **Tentative Schedule:**
   12 December (Fri.)
   Evening: Arrival at Ha Noi: transportation to the lodging

   13 December (Sat.)
   Morning: Arrival at Ha Noi: transportation to the lodging (continued)
   Registration (at the hotel)
   Afternoon:
   Lunch (at VAST)
   Orientation (at VAST)
   Lectures on space activities (at VAST)
   Evening: Welcome Reception, hosted by VAST and JAXA

   14 December (Sun)
   Morning: Briefing on the Water Rocket Launch Competition:
   schedule and rules of the competition
   Making of water rockets
   (at VAST or at the Pedagogic University)
   Afternoon:
   Lunch (at VAST)
   Group photo (for all participants)
   Launch competition (at the Pedagogic University)
   Award ceremony (at the Pedagogic University)
   Evening:
   Friendship party, hosted by VAST (venue to be determined)
   Late night:
   Departure: transportation to the airport

   15 December (Mon)
   Departure: transportation to the airport (continued)
6. **Participants:**

1) **Competitors:** School students at age between 12 and 16 years old from countries in the region of Asia and the Pacific

2) **Selection:** A participating country should hold its national Water Rocket Competition to select competitors.

   (NB: It is suggested that the competitors be selected based on not only their performance in launching water rockets but also their interest in space activities and in friendship and cultural exchange. The selected students should preferably have adequate English language proficiency.)

3) **Teachers/Leaders:** The students shall be accompanied by teachers or leaders of youth activities to travel to Vietnam. The accompanying teachers or leaders must be interested in space and science education, willing to engage in the exchange of knowledge, experience and skills with water rocket and other educational activities with those from other countries and committed to promoting space and science education activities among young people in their home countries.

   (NB: In view of the limited capacity of the venue and accommodation, each participating country should **limit the number of students to 6 and accompanying teachers/leaders to 2 to participate.**) 

7. **Application Deadline:** The final list of all participants must reach VAST, Vietnam, no later than **10 October (Friday), 2008.**

8. **Local Organizer:** Vietnamese Academy of Science and Technology (VAST)
   
   Local Contact: Mr. Phung duc Thuong, Space Technology Institute (STI), VAST
   
   Tel: +84 4 791 3801
   
   Fax: +84 4 791 4622
   
   E-mail: phungducthuong@gmail.com
   
   CC (copy) to: Mr. Nguyen Thanh Long
   
   E-mail: ntlong@iop.vast.ac.vn

**Co-Organizer:** Japan Aerospace Exploration Agency (JAXA)

Contact Office: APRSAF Water Rocket Event Secretariat

Tel: +81 42 759 8585

Fax: +81 42 759 8612

E-mail: awre2008@edu.jaxa.jp
APRSAF-15 WATER ROCKET EVENT: Rules for Launch Competition

1. APRSAF-15 Water Rocket Launch Competition will be held at the University of Pedagogy, Ha Noi, Vietnam. All competitors should make their water rockets and launch them at the designated places (See map and layout below).

2. All materials to make and launch water rockets, including 1.5-liter PET bottles, tools, nozzles and launchers, will be provided by the organizer.

3. Each competitor should make 2 rockets, one as the main rocket and the other as a back-up.

4. The competitors are encouraged to be creative in designing nose cones and fins of their water rockets.

5. At the time of launch, each competitor may adjust the volume of water. Within the maximum limit to be notified by the organizer, the competitors may also adjust the air pressure.

6. Each competitor will be given an opportunity to conduct one test launch.

7. Each competitor will be given opportunities to conduct 2 launches.

8. The score is determined by the impact point, or the point where the water rocket makes the initial contact with the ground. The highest score is 100 points per launch, which will be given if the rocket hits the target point of 57.5 m from the launcher, or the impact point is within the range of $\pm 1.5$ m from the target point (Zone I). Less points will be given if the impact point is farther away from the target point as indicated below:

   a. Zone I:  56.0-59.0m: 100 points
   b. Zone II:  53.5-56.0m and 59.0-61.5m: 80 points
   c. Zone III:  50.0-53.5m and 61.5-65.0m: 60 points
   d. Zone IV:  45.0-50.0m and 65.0-70.0m: 40 points
9. If the impact point is exactly on the zone marker, i.e. the line between two zones, the points for the zone closer to the target line, i.e. the middle of Zone I, will be awarded.

10. If the impact point is outside the dedicated zone, i.e. Zones I, II, III and IV, no point will be awarded.

11. There will be 3 launchers set up at 3 m apart from each other. The organizers will assign one of those 3 launchers to the competitors for each of their launches.

12. The organizers will announce the maximum level of air pressure that must be observed by the competitors. The competitors will be allowed to adjust the following: i) launch angle; ii) launch direction; iii) volume of water; iv) air pressure up to the maximum level to be announced by the organizers.

13. A competitor who scores the most points after two launches will be declared the winner of the Launch Competition.

*LAYOUT of the competition site [TO BE INSERTED IN DUE COURSE]*