10th APRSAF Water Rocket Event and Educators Workshop
29th November – 30th November, 2014
Nihon University Funabashi Campus
Participants

72 students, 31 educators, and 17 Observers from 17 countries

Australia, Bangladesh, Cambodia, China, India, Indonesia, Japan, Korea, Malaysia, Myanmar, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, Vietnam
Program

- Student Presentations
- Special Lecture on CanSat
- Miraikan Tour
- Water Rocket Car demonstration
- Educator Program
  - Sharing own space education activities
- Rocket building and Launch Competition
APRSAF-21 Water Rocket Competition

- School children should be between the ages of 12 and 16 years

- 1st, 2nd, and 3rd place winners were selected based on the shortest distance from the target located 80m away in two trials.
- The special award was selected based on the combined total distance of two trials from the target.
Launch competition
Building
Launch competition
3rd Place
Tomomi Yoshimura
Japan
Score: 2.40m
2nd Place
Taiki Fukumoto
Japan
Score: 2.34m
1st Place
Nor Hafizi Bin Shaharudin
Malaysia
Score: 0.98m from the target
Special Award
Tomomi Yoshimura
Japan
Combined Score: 6.65m
APRSAF-21 WATER ROCKET EVENT: OUTLINE
(Draft Version)

1. Date: November 29th – 30th, 2014 (Saturday - Sunday)
   *(Notice: Excluding arrival and departure dates)*

2. Venue: Nihon University Funabashi Campus
   7-24-1 Narashinodai, Funabashi, Chiba, Japan 274-8501
   Tel: +81-47-469-6249
   Website: http://www.nihon-u.ac.jp/en/

3. Lodging: Hotel New Tsukamoto
   7-1 Chiba Minato, Chuo-ku, Chiba City, Chiba, Japan 260-0026
   Tel: +81-43-243-1111; Fax: +81-43-242-1250
   Website: http://www.newtsukamoto.co.jp/en/

4. Official Language: English

5. Tentative Schedule:

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>28November</td>
<td>6:30</td>
<td>Arrive in Japan at Narita airport: transportation to the accommodation. Registration Upon Arrival at Hotel. <em>(participants will be pick up at the airport and transportation will be provided)</em></td>
</tr>
<tr>
<td>(Friday)</td>
<td>8:00</td>
<td>Bus transport to Nihon University</td>
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<td></td>
<td>9:00</td>
<td>Opening Ceremony</td>
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<tr>
<td></td>
<td>9:15</td>
<td>Student Session – Students introduce their team and country. <strong>Max 5min per country.</strong> Power Point slides should be uploaded at registration or sent to the organisers before the event.</td>
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<tr>
<td></td>
<td>10:45</td>
<td>Tea break</td>
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<td></td>
<td>11:00</td>
<td>Special lectures on space activities</td>
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<tr>
<td></td>
<td>11:45</td>
<td>Lunch</td>
</tr>
<tr>
<td></td>
<td>12:30</td>
<td>Briefing on the Water Rocket Launch Competition: + Schedule of events and rules of the competition and demonstration + Questions and Answers</td>
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<td></td>
<td>14:00</td>
<td>Bus Transport to Culture Tour</td>
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<tr>
<td></td>
<td>15:00</td>
<td>Culture Tour</td>
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<td></td>
<td>17:00</td>
<td>Bus transportation to Dinner Venue</td>
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<td></td>
<td>17:45</td>
<td>Dinner</td>
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<tr>
<td></td>
<td>20:00</td>
<td>Bus transportation to Hotel</td>
</tr>
<tr>
<td>29November</td>
<td>6:30</td>
<td>Breakfast at accommodation place</td>
</tr>
<tr>
<td>(Saturday)</td>
<td>8:00</td>
<td>Bus transport to Nihon University</td>
</tr>
<tr>
<td></td>
<td>9:00</td>
<td><strong>Student Program</strong></td>
</tr>
<tr>
<td>30November</td>
<td>9:00</td>
<td><strong>Teacher Program</strong></td>
</tr>
<tr>
<td>(Sunday)</td>
<td></td>
<td>Making water rockets</td>
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<tr>
<td></td>
<td></td>
<td>Workshop</td>
</tr>
</tbody>
</table>
(2 water rockets per student) | Teaching Techniques and Regional Water Rocket Activities Sharing Session (Power Point slides should be uploaded at registration or sent to the organisers before the event)
---|---
12:00 | Lunch
13:00 | Group Photo
13:15 | Launch competition
16:45 | Special Demonstration
17:15 | Bus transport to dinner venue
18:00 | Award ceremony
18:30 | Friendship Dinner
21:00 | Departure: transportation to accommodation and the airport

6. Participants:
   i. Competitors: School students at age between 12 and 16 years old from countries in Asia Pacific region. (*Date of Birth between 29 November 1997 and 30 November 2002*)
   
   ii. Selection: A participating country should hold its national water rocket competition to select competitors.
   
   *(Notice: 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.)*
   
   iii. Teachers/Leaders: The students shall be accompanied by teachers or leaders of youth activities to travel to Japan. 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 be communicated to JAXA and JSF, no later than Friday, October 10th, 2014. For application received by this date JAXA/JSF will issue a letter of invitation and assist with visa application.
8. Local Organizer: Japan Aerospace Exploration Agency (JAXA)

Local Contact: Mr. Chris Okano
APRSAF Water Rocket Event Secretariat
Tel: +81 50 3362 6438
Fax: +81 42 759 8612
E-mail: okano.takaaki@jaxa.jp

Logistics Coordinator: Japan Space Forum (JSF)

Contact point: Ms. Asako Mochizuki
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Fax: +81 3 5296 7010
E-mail: waterrocket@jsforum.or.jp
APRSAF-21 Water Rocket Event – Rules for Launch Competition

1. APRSAF-21 Water Rocket Launch Competition will be held at Nihon University Funabashi Campus on Sunday 30\textsuperscript{th} November 2014. All competitors will make their water rockets at the same location.

![Figure 1: Nihon University Funabashi Campus](image1)

2. All materials to make and launch water rockets, including launcher and air pump, will be provided by the organizer. Pre-made materials or launchers brought in by participants will not be allowed for the competition.

3. Each competitor should make two (2) rockets. Each student will receive:
   a. Six (6) 1.5 litre PET bottles
   b. Soft Plastic sheets
   c. Tape
   d. Scissors
   e. Penknife
   f. Ruler
   g. Plasticine

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

5. The launch aims at precision flight of the rocket. A target will be placed with the centre 80m from the launcher (see Figure 2 below).

![Figure 2: Water rocket launch and target site setup plan.](image2)
6. The distance will be measured from the center of target to the point of impact. The rocket that lands closest to the target center get the best score.

7. During the competition, each competitor will be given opportunities to conduct two (2) launches. Exact distance from the point of impact and the center of target will be measured. The result of the best launch will be recorded.

8. Each competitor will be given a voucher to conduct one test launch prior to the competition.

9. In order to reduce the possibility of error. The competitors will draw lots of their launching sequence and assigned with the respective launchers. In this way, they can practice with the assigned launchers during the trial launching.

10. There will be three (3) launchers, and the competitor will launch one (1) rocket at a time. The other 2 competitors can prepare their rockets and wait for their turns.

11. At the time of launch, each competitor may adjust the volume of water, air pressure, launch angle and launch direction. There is no limit on water volume but air pressure must not exceed 80 psi (5.516 bar).

12. The competitor who achieves the best score, i.e. the best score of the 2 launches as stated in item 7, will be declared the winner of the Launch Competition.

13. In case of a draw, the two launches will be taken into consideration to determine the winner between the competitors.