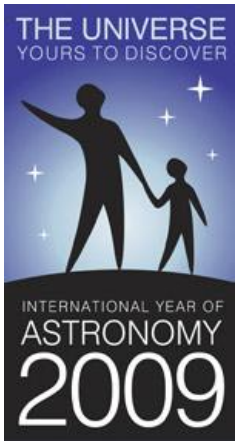

Summary from Education and Popularisation of Astronomy Session in 10th APRIM
Report by Avivah Yamani

From 3-6 August 2008, astronomers from Asia and the Pacific gathered in Kunming to attend the 10th Asian-Pacific Regional IAU Meeting. The meeting itself ended just before the Olympic Games began, perhaps conveniently providing the chance for participants to travel around China and see the Olympics.

After the opening ceremony by the local authority, 10th APRIM started with an explanation about the International Year of Astronomy 2009 (IYA2009) from **Prof. Norio Kaifu** in a plenary session. In his talk he explained about IYA2009's purpose, the Cornerstone projects and also IYA2009 activity in Japan. There they have made Galileo into a cartoon character to introduce astronomy to the public. This approach is relatively common because of Japan's popular cartoons. In addition to the Galileo cartoon (which is also an icon of the Japanese IYA2009), they have made several types of Galileoscope. With these 'scopes they will make a programme called **we are Galileo, sketching the moon**. Other than that, Japan will also have exhibitions, TV programmes, and education programmes for the public.

In his talk he emphasised why we should promote IYA2009. According to Prof. Norio Kaifu, through IYA2009 we can educate, excite and encourage children / the public through astronomy, and well as building awareness of the importance of science and understanding Nature. Another thing Prof. Kaifu emphasised is a proposal to collaborate with countries in Asia Pacific in a programme called Asian Stars. This is a collaboration between countries in Asia Pacific to collect stories and legends about the skies.

In the plenary session IYA2009 was the only topic from Education and Popularisation of Astronomy. APRIM itself held eight sessions including Education and Popularisation of Astronomy in session eight.

Education and General Reports

Session eight began on 4 August with a presentation from **Dr. Masafumi Matsumura** of **Education Activities of Astronomy in Japan**. His talks covered Society for Teaching and Popularisation of Astronomy (STPA), Astronomy Education in Elementary and Junior High Schools, Astronomy Education in Senior High Schools, and other activities. STPA aims to promote astronomy education and popularisation in schools and other locations with activities like general meetings, publications, and activities with various astronomical societies. According to Dr. Matsumura, in Japan astronomy courses have already been added to the school curriculum. In the old curriculum there was a gap in the 4th grade but in the new curriculum astronomy courses in the 4th and 6th have already been added with new material for 6th grade and Junior High. Right now they also have certificates for astronomy guides.

Another report from Japan comes from **Hideo Shinohara** who talked about **Astro-HS: An Astronomical Observation Network for High School Students in Japan.** This programme started in 1998 as a nationwide network of high school astronomy clubs, observing astronomical phenomena. It began with the Leonids network in 1998, letting students see real meteorites for themselves. The network's method was simple: count the meteors, calculate the rate and send the data to a steering committee. Since that time, each year's networking programme has had a different theme. Other activities by Astro-HS include observation guidebooks, renting observing instruments and the Forum (annual meeting). In 2008, the theme is observing sunspots and there is a guidebook on how to observe the Sun. But the main problem is human resources because all the staff are volunteers and have their own work. In 2009, the plan is to observe a solar eclipse.

After Japan, we move topics to astronomy in **Azerbaijan** with **Dr. Elchin Safaraly-oghlu Babayev**. Azerbaijan is a gate between Asia and Europe, having put their first step into the world of astronomical research in 1960 with the Shamakhy Astrophysical Observatory (ShAO). But from 1991-1997 they had stagnation periods although since 1997 they have begun a new era by establishing a second observatory in Nakhchyvan (Batabat). For education and popularisation, they teach astronomy as an independent subject in schools and fundamental astronomy in universities. They are also involved with "Yuri's Night" World Space Party, the Permanent Annual Tusi Summer Astronomical School (made popular through newspaper and

media articles), host special astronomy related events, astronomy museums in ShAO, public seminars, collaborative scientific projects with others, and design works on planetarium and school tutorial observatories. They also have an international journal "Sun and Geosphere", and if they make a popular article it will be published in other journals too.

From Azerbaijan, now we go to **India**. **Prof. Sheo Kumar Pandey** talked about **The Use of Telescopes to Supplement Classroom Teaching**. Pt Ravishankar Shukla University, Raipur, India is the largest and oldest educational institution in the state. Astronomy teaching in this area includes theory and observation. Observation usually uses small telescopes because small is beautiful, affordable and easy to maintain. Small telescopes are best suited to teaching astronomy at different levels and initiating research activities. They use small telescopes for public outreach events such as lectures, demos, simulations, films shown in schools / colleges and sky gazing programmes. This programme has effectively spread the joy of observational astronomy among students and turned their attentions toward an exciting career in pure science. The next project will continue the small telescope programme, and develop plans for slightly bigger optical telescopes.

Prof. Mohd. Zambri Zainuddin from **Malaysia** talked about **Astronomy Education Awareness in Malaysia.** In this country, astronomy education involves determining qibla direction, praying times, crescent observation and some astrology. To build awareness, the National Space Agency (NSA) and Ministry of Education organised national quiz competitions for primary and secondary schools, astronomy projects, rocket launching technology, and others too. They also embarked on an astronaut programme to the ISS last year (2007). Malaysia hosted the International School of Young Astronomers in 2007 and COSPAR 2008. For education and popularisation, Malaysia has a large format film show, exhibitions gallery, SEMESTA magazine, essay competition, astronomy club competition, public night observation, and talks. Unfortunately, there are no proper astronomy or astrophysics departments in the universities.

The last report in this session is about **Universe Awareness for Children** by **Dr. Premana Premadi** from **Indonesia**. In her talked she explained about UNAWE and its aims. She emphasised that UNAWE is especially for underprivileged children, aiming to introduce them to inspirational aspects of the sky. How to best achieve this? It is not only by observing but also from games, story telling, etc. This is about building Earth and sky awareness to inspire them.Dr. Premadi also talked about UNAWE activities in Indonesia. There they have made a "trans java star party" that visited three schools in three different places, one location housing child-victims of mudflows. Here UNAWE personnel played with them, showed films and

observed with them. Dr. Premadi also explained about UNAWE being one of the IYA2009 Cornerstone projects, and invited all participants to join the programme.

In the discussion session, participants talked and shared stories about our experiences in astronomy popularisation / education work. Tips were also shared about writing astronomy articles and how they can influence people to know more about the topic. In Malaysia there is an astronomy magazine, while in Indonesia, astronomy articles are usually published in national newspapers. The only astronomy media we have now is online (langitselatan.com). We also shared notes on how people react and are influenced by issues in the media.

Asian Astronomy Networks

The next sub-session in APRIM 2008 started with **Dr. Hakim L. Malasan** from **Indonesia.** He talked about the **South-East Asia Astronomical Network (SEAAN)**. SEAAN was proposed during the SPS5, IAU GA in Prague in 2006, and had its first meeting in conjunction with Siam Physics Congress (SPC), Thai National Astronomical Meeting (TNAM), on 22-24 March 2007 in Bangkok. SEAAN aims to establish effective mechanisms for nurturing and sharing the development and experiences of astronomy research and education among South-East Asian countries. These consist of Indonesia, Malaysia, Philippines, Thailand, Singapore, Vietnam, Myanmar, Laos, Cambodia, and Brunei. But the last four countries have no astronomers. However, Brunei is quite active with astronomy related to Islamic events. According to a report from Dr. Malasan in **Malaysia**, the key players are the National Space Agency of Malaysia (ANGKASA) especially through the National Planetarium, Al-Khwarizmi Astronomy Center, Sultan Iskandar Planetarium, Kuching, Terengganu Science Center, Universities (UM, UKM, USM, UDM), and NGO's (Starhunter Society, Astronomical Society of Malaysia, Falak Syarie Group etc.) Malaysia has the Langkawi Observatory.

In **Indonesia**, the key players are the Institute of Technology Bandung, National Institute of Aeronautics & Space (LAPAN), Meteorological & Geophysical Agency (BMG), Jakarta Planetarium and Clubs and Communities. In Indonesia, we have an astronomy department under Institut Teknologi Bandung (ITB), with three subdivisions (galaxies and cosmology, stellar physics, Solar System), with each subdivision having various research topics. In the National Institute of Aeronautics & Space (LAPAN), their research is in solar activity, space environment, satellite orbital pertubation, geomagnetic and space magnetic, ionospheric dynamic, middle and upper atmospheric dynamic, and early warning system of HF radio communication. In 2006 the Meteorological & Geophysical Agency revitalised the transit telescope drift-scan CCD imager in Jakarta.

In the **Philippines**, the key players for astronomy are the Philippines Atmospheric, Geophysicsal and Astronomical Service Administration (PAGASA), Rizal Institute of Technology, and University of The Philippines. Filipino astronomers mostly work in optical astronomy, theoretical astrophysics, radio astronomy, cosmology and solar physics. Right now they have a 45 cm telescope with support from GAO, JAPAN.

In **Thailand,** on 20 July 2004, they established a National Astronomical Research Institute of Thailand (NARIT). Their observatory, the National Observatory of Thailand, is located in Doi Intanon Mountain, Chiang Mai and hosts the 2.4 metre Thai National Telescope. First light will be in 2009. Research topics in Thailand include solar physics, high-energy astrophysics, cosmology, radio astronomy and variable stars.

In **Vietnam**, research is being carried out in celestial mechanics and cosmology, with the key astronomy players being the Hanoi Pedagogical University (HPU), Ho Chi Minh Pedagogical University (HCMPU), and Vinh University. Since 2000, observational equipment (20 cm telescopes and CCDs) in HPU and HCMPU have been working and new staff training was conducted in GAO, Japan. From **Laos**, the key player in astronomy is the National University of Laos in Vientiane.

After Dr. Malasan spoke, **Dr. Busaba Kramer** from **Thailand**, the coordinator for SEAAN, also talked about **Information System for SEAAN.** According to Dr. Busaba, IS-SEAAN aims to provide up-to-date information among SEAAN members, provide search engines (e.g. of people, research areas, observatories, etc.) and provide accurate key figures for SEAAN (e.g. number of researchers in each country). SEAAN's website is: www.narit.or.th/seaan.

The last speaker in this sub-session was **Dr. Osamu Hashimoto** from the Gunma Astronomical Observatory, **Japan**. He talked about **international collaboration activities of Gunma Astronomical Observatory (GAO)**. GAO is designed for both astronomical research and public use. Of GAO's five missions, one is cooperating with the research and education of astronomy, joint observations, international campaigns, aid to young astronomers and students, etc. GAO opened their doors for training and study to many visitors from different countries. Several international collaborations have been developing with PAGASA (Philippines), Hanoi University of Education (Vietnam), Ho Chi Minh University of Education (Vietnam), and Bosscha Observatory, ITB (Indonesia). Collaboration with the Bosscha Observatory named GAO ITB started in 2002 and still continues now. The last activity of GAO – ITB RTS was remote service observation between both countries on 5 July. Remote access programmes between both countries give opportunities for astronomical experiences of the opposite hemisphere from

each country. Collaboration between both countries has also developed research programmes. Collaboration between Gunma has been made with SEAAN too.

In the discussion session we got the chance to better know each other, especially meeting several people from South East Asia like the Philippines, Indonesia, and Malaysia. In this discussion session we also talked about opportunities to develop education networks in this region. Avivah Yamani from Indonesia also proposed to develop Hands On Universe networking in the area. And this region will also feature networking and collaboration for IYA2009. One of the other many side collaborations will be developing relations with Gunma Astronomical Observatory.

Popularisation and IYA2009

For this sub-session, the first speaker was **Dr. Jin Zhu** from **China**. He talked about **Popularisation Activities in Mainland China.** The Chinese Astronomical Society (CAS) has two working committees: the popularisation working committee and education working committee. CAS activities include planetarium shows, astronomical exhibitions, observational activities, astronomy classes, astronomical lectures, astronomical interest group, astronomical Olympiad, astronomical magazine, professional research, activities with societies/associations and international cooperation. Non-CAS activities are small planetariums, sidewalk astronomy, astronomy associations in universities, amateur clubs, internet forums, and astronomy education in schools.

For IYA2009, China will target professional astronomers' involvement in astronomical education and outreach, amateur astronomers, public, and organisations/institutional involvement. They will encourage astronomy popularisation via electronic, printed and online media. Activities in China during 2009 include a total solar eclipse, astronomy day/week, star party and astronomy festival, local IYA2009 opening/closing ceremony, astronomy-related conferences during the whole year, planetarium shows/exhibitions on IYA2009 and/or telescopes, training of middle school teachers, astronomical content on all types of media, content on Mars and its exploration, observation campaign of mutual phenomena of planets' satellites, additional and special issues of *Amateur Astronomer* on IYA2009, astrophotography and essay competitions, popular science astronomy books, telescope kits and lectures, exhibits and sidewalk astronomy in more than 100 cities.

After China, **Dr. H. Agata** from **Japan** gave a talk called **Introduction to the New Public Understanding of Research Experiments in Japan**. He said that according to surveys, the public understanding of science in Japan is low. Inspired by Project 2061's "Science for All

Americans", they made a programme named “Science for all Japanese”. This project aims to establish guidelines for science and technology education, provide a basic outline of scientific and technological knowledge, and create a foundation for scientific and technological literacy with the national government as the driving force. With keywords such as “awareness” and “engagement”, they have made several activities for adults and children. Adult activities include an Astronomy Pub (Café Scientifique), Star Café (NAOJ Antenna Shop at a shopping centre), 4D2U (4D Digital Universe Imaging Project) and a science festival. For children, the activities are The Universe Map for all schools, 4D2U, Science Iron Man Show (a science show), Star, Forest and Picture-book Museum at NAOJ, and the **“You are Galileo!" project** (IYA2009 Japan Special International Programme). In the “You are Galileo!” programme, they will have two Galileoscope models and distribute these to children. The Galileoscope’s aim is to allow children to share the same sense of surprise and discovery through observations that Galileo experienced 400 years ago. Observations enable children to think about the cosmos, the Earth, and themselves. And not just that, children can report their observations through the web too.

Another way to popularise astronomy is by relating it to culture. In this session, one example was provided by **Dewi Pramesti** from **Indonesia** who talked about **Folklore as an Astronomical Study of Indonesian Traditional Society Case Study: Bima Sakti and Batara Kala.** This presentation related to the Asian Star Programme by Prof. Kaifu. The goal of this project is to collect folklore from all parts of Indonesia, documenting those legends in the form of well-written sources, popularise it to public, schools, etc. and participate in IYA2009’s Astronomy and World Heritage. In her presentation she gave two example of folklore related to Bima Sakti (the Indonesian term for “the Milky Way”) and lunar eclipses (Batara Kala story). But there is a lack of literature and authentic written sources in this research, and so many cultures to be explored, and in Indonesia there are many versions of each story. To make matters even worse not many people are working on the project, so it is certainly a challenge.

Another story of popularisation in astronomy comes from **Avivah Yamani** from **Indonesia**. She talked about **Communicating Astronomy through Online Media**. In APRIM 2005, Avivah and her colleagues made a poster paper about publishing an astronomy magazine (Nataresmi et. al 2005), but in the real world the magazine failed so they used online media to popularise and build awareness of astronomy. Since 2007 the website is widely known in Indonesia as the only astronomy media. Our first challenge was to provide astronomy information and address misconceptions in several topics. Heliocentric vs Geocentric was a hot topic in 2007. At first the problem seemed to be related to religion, but after long discussions with our readers we could see the problem was their lack of fundamental knowledge. So we provide basic education and understanding of astronomy regularly in our blog. But since 2008, other astronomy topics

(global warming, asteroids, meteors, the Solar System, extrasolar planets) become more popular and widely discussed by our readers. Beside that, we also provide several simple sky applications in the blog. Since 2008, our visitors increased to 1600 in an average day, up from 400 in 2007. From the blog, we can interact with many schools and the public not just in cyberspace but in real world activity too. In the future we will have a remote service observation programme (for the Indonesian public) and several workshops for teachers and students. For IYA2009, we will work with the Indonesian SPoC, GHOU and UNAWE for several events and projects in Indonesia.

After media, **Hiroyuki Naito** from **Japan** gave a talk about the **SNOW@site programme at Nishi-Harima Astronomical Observatory** (NHAO). NHAO is a public observatory which performs space science education for visitors. Here people can enjoy sightseeing of planets, binary stars, nebulae and distant galaxies through the 2.0 metre NAYUTA telescope. This telescope is not only for public education but also for scientific observations. The SNOW@Site programme is for supernovae observing in NHAO through the web and its aim is to determine supernova rates. In this project, the public experience life as an astronomer for the purposes of education and science.

The first report on IYA2009 comes from **Hong Kong** by **Sze-leung Cheung**. Hong Kong has one planetarium, one astronomy education centre, five astronomy clubs, one university offering astro major, and seven universities offering general courses. **Hong Kong's IYA2009 theme is Dark Skies Awareness** with activities during IYA2009 including an opening ceremony, IYA Ambassador, Asian light-off activity, total solar eclipse tour, star story book, installation of a digital projector in the Hong Kong Space Museum, completion of the 0.6 metre Robotic Remote Control Telescope, installation of educational small radio telescopes, opening of AstroPark, sidewalk parties in 18 districts, closing large scale star party, and IYA2009 TV/radio programmes. They have also made a new curriculum on astronomy and space science for secondary schools. In addition, Hong Kong is involved in the TWAN project.

National/Regional Reports of IYA2009 Activities

IYA2009 in Malaysia (Dr. M. Fairos Asillum)

Objectives:

- To support and improve formal and informal space sciences education in Malaysia; ***(Education)***
- To promote better understanding amongst the public of the importance of space science phenomena and their effects on life and the climate of the Earth ***(Public awareness/promotion)***

- To obtain a coordinated set of scientific programmes amongst Malaysian scientists, NGOs and interested parties on space science phenomena; ***(Research)***
- To communicate and foster national and international scientific cooperation on the study of space science phenomena at present and in the future; ***(Network)***

Education activities: developing an education module, space science seminar, participating in astronomy Olympiads (2010), publications (*si cilik angkasa* or space kids, space science comics, observations, and teachers' workshop).

Public awareness and promotion programmes: bringing the Solar System to you (billboards, etc.), outreach programme (combining programmes from all institutions and NGOs), fun with the Sun, astronomy on screen (movie, planetarium shows etc.) East Asian Legend (folk story competitions etc.) astronomy carnival, media, and dark skies campaign.

Research programme activities during IYA2009: Development of catalogues for variable stars and imaging Sun activity, development of atmospheric profiles using photometric technique, crescent Moon observation, Bringing the Solar System to You (a module on the ratio of the actual Solar System corresponding to the ground), Cosmic Diary (an almanac of astronomical data and events in Malaysia), introduction of radio astronomy as an alternative to optical solar, solar eclipse mission in 2009, and workshop on capacity building on UV astronomy and space optical.

IYA in Thailand (Dr. Busaba Kramer)

Activities:

Jan 2008 Launching IYA2009 Thailand website: www.narit.or.th/astronomy2009;

Mar 2008 Thai National Astronomy Meeting (TNAM2008) - communicating/promoting IYA2009 to academic members - IYA2009 National Committee Appointment;

Aug 2008 National Science and Technology Fair 2008 - promoting IYA2009 (~1 million children attending during two week period, 8-22 August) national astrophotography contest;

Oct 2008 World Space Week – exhibitions and activities by GISTDA & NARIT IYA2009 National Committee Meeting;

Jan 2009 Opening ceremony;

Mar 2009 Siam Physics Congress Thai National Astronomy Meeting (TNAM2009) and SEAAN 3rd Meeting. Hua Hin AstroFestival (promoting awareness of light pollution);

Apr 2009 100 Hours of Astronomy (2-5 April);

June 2009 Thai Astronomical Landmarks;

Aug 2009 Exhibition: National Science and Technology Fair 2009 - highlighting IYA2009 contest: national astrophotography contest award, astronomy person of the year;
Oct 2009 World Space Week;
Dec 2009 Chiang Mai Astro-Festival and the Largest Star Party.
Jan 2010 National Children Day, grand opening ceremony of the Thai National Observatory, Chiang Mai and international astronomy conference celebrating the event, IYA2009 closing events.

IYA in India (Prof. J. Narlikar)
Activities:

1. The Department of Science and Technology, through its arm called VIGYAN PRASAR (Spreading Science) is planning a 52-part serial on radio as well as a 26-part serial on television about the evolution of astronomy from ancient to modern times. Several astronomy organisations in the country will assist in this project.
2. IIA (Indian Institute of Astrophysics) will commission the construction of Galileo-type telescopes for use amongst the school children.
3. IUCAA (Inter-University Centre for Astronomy and Astrophysics) will bring out an "Astronomy Diary 2009" giving pictures and information about important aspects of astronomy.
4. The Nehru Planetarium in Mumbai will bring out a special planetarium programme to highlight how astronomy has progressed since Galileo.
5. Several institutions will organise public lectures on astronomical topics throughout IYA2009.

IYA in Russia (Prof. B. Shustov on behalf of Dr. Oleg Malkov)
Activities:

- Organisation of a debate involving the Scientific Council for Astronomy, the Ministry of Science and Education, and the mass media;
- Support of the Hands on Universe programme and organisation of a similar national project (simple telescopes, centres of collective use etc.);
- Organisation of astronomical exhibitions, TV programmes, round tables, “Astronomy as an element of culture”, etc;
- Observations of solar totality (Siberia), 1 August 2008;
- Support / organisation of Russian astronomical conferences to promote widespread access of new knowledge to the public.

Russia will also hold several conferences during IYA2009:

- Winter schools “Physics of cosmos” (Feb 2008 and Feb 2009, Ural State University);
- Ultraviolet Universe (May 2009, Moscow);
- Prospects of Russian ground-based and space astronomy (inauguration of Kislovodsk observatory, autumn 2009);
- 100-year anniversary of Tunguska Impact (2008);
- First Radioastron space mission results (2009);
- All-Russian Astronomical Conference – 2010;

Russia plans to have bilingual sites of IYA2009 to inform people about their activity (www.astronomy2009.ru).

IYA in Canada (Prof. G. Fahlman)

Goals: to offer an engaging astronomy experience to every person in Canada, and to cultivate partnerships that sustain public interest in astronomy.

Activities: Galileo moment, Globe@Night, Astronomy Hockey Cards, Astronomy Kit for Educators, Creation of Dark Sky Preserves & Urban Sky Parks, Arts, Cultural, Entertainment Events, From Earth To The Universe Image Exhibits, *Galileo Live!* Planetarium production, Canadian Aboriginal Participation (compile night sky stories by elders and youths), postal stamps, launching participant names on 2010 mission.

IYA2009 in Indonesia (Avivah Yamani on behalf of Dr. Taufiq Hidayat)

Activities in Indonesia:

- Series of public lectures in ITB;
- Remote observations service with Gunma Astronomical Observatory (GAO) – Japan - for the public to observe the northern hemisphere (and vice-versa);
- Annular solar eclipse in South Sumatera: observations and seminar;
- Groundbreaking “Space Science Center” at the Bosscha Observatory;
- Seminar on Indonesian ancient astronomy and folklore;
- Open House of the Bosscha Observatory and science fair;
- Launching of IYA2009 stamp;
- Highlighting light pollution;
- Chamber orchestra in Wisma Kerkhoven;
- Safari astronomy (mini planetarium) in some provinces;
- Astrocamp in the Bosscha Observatory (for students and teachers with IYA theme);
- Training of astronomy and utilising small telescopes (especially for teachers);
- Distributing small telescopes for astronomy olympiad training centre in each province of Indonesia (and training);

- "STAR Party" in Pangalengan, Ranca Upas, West Java;
- Seminar on Islamic calendar for practitioners;
- National Astronomy Olympiads with IYA2009 theme;
- Culmination festival, launching of sundial monument in Pontianak;
- Asean astronomy regional meeting (invited talk from an outstanding astronomer);
- World space week on IYA2009;
- Launching Mobile Observatory (and Baron);
- TWAN Exhibitions in July 2009.

Recent activities in IYA2009 preparation:

- May 2008, astroarcheology meeting in Bosscha;
- Indonesia Dark Skies Association (Starry Skies Association) will be announced in IOAA exhibitions 25 – 26 August 2008;
- Astronomy and cultural seminar in IOAA exhibitions;
- Preparation of TWAN exhibitions in July 2009.

1 August 2008 Total Eclipse in Western Mongolia (Dr. K. Sekiguchi)

Dr. K. Sekiguchi and friends reported their trip to watch and observe the solar eclipse in Western Mongolia. And from Mongolia, we got news that they will hold an astronomical summer school at the National University of Mongolia in Ulaanbaatar.

Discussion Session

In the last discussion session, the chair invited all who wanted to speak about IYA2009 programmes. All speakers here talked about IYA2009 networking in the Asia Pacific region.

Galileoscope (Dr. H. Agata)

Goal: for children in the world to experience the impression which Galileo Galilei experienced 400 years ago.

Activities: distribute small telescopes (US $10), observe the sky just like Galileo did and make a report on the Japan IYA2009 website. This is a networking programme.

According to Dr. Agata this observing programme is open to everyone so the Japanese will share it with the entire Asia Pacific region. The telescope is easy to build and will be in an astronomical kit for education. He also showed the Galileocope sample that he brought from Japan and many participants were interested in this telescope.

Asian Stars (Prof. Norio Kaifu)

Asian Stars is a collaboration programme between countries in Asia to collect good myths/legends relating to stars and the Universe in different regions and countries. This is because for all this time stories about stars and the Universe have primarily been based on Greek or Roman culture and legends. A proposal was made to collect all the related stories and then organise a working group in each region or country to hold a workshop to discuss and report good stories for publication. The publication will be a story book in English and also in local languages. In this meeting, there was one sample from Indonesia, presented by Dewi Pramesti. So, the result is to have a meeting for Asian Stars research and working group next year.

Developing Astronomy Globally (Dr. H. Malasan)

Goals: use IYA2009 momentum to stimulate the establishment and enhancement of regional structures/networks. DAG has three focus areas with four levels of astronomy departments. This Cornerstone project has several steps for implementation, such as:

- Survey of target countries and establishment of respective status in each focus area;
- Implementation plan for each target country based on status and survey results;
- Production of generic "guidelines for development of astronomy" and "guidelines for participation in IYA2009";
- Regional meetings, rollout of guidelines and tools.

Right now, DAG is working on the first step. In this meeting, Dr. Hakim told APRIM participants to complete a DAG survey as the start of their implementation. He also asked all participants to support this project.

Galileo Teacher Training Project (GTTP) (Avivah Yamani)

In this session, Avivah talked about GTTP in IYA2009 as representative from GHOU Indonesia, and presented all information from 11th GHOU meeting in Lisbon, about GTTP in IYA2009. She also proposed a networking programme for GTTP in Asia Pacific and South East Asia through SEAAN. Regional networking will help countries to learn together, share problems and build networking for astronomy education.

GTTP's goal: to create a worldwide teacher training network and have certified ambassadors. These ambassadors will train master teachers in the effective use and transfer of astronomy education tools and resources into classroom science curricula. This project will provide the opportunity to experience the excitement of astronomy in formal education. It will present a new way to introduce astronomy to teachers and students, especially in schools without

astronomy curricula and in developing countries. In GTTP teachers will be introduced to astronomy sources and how to use them.

According to Prof. Kaifu, this project will need more discussion before Asia Pacific implementation. Help will be received from GHOU in this area (Japan, China, Indonesia) especially from Japan HOU.

Universe Awareness (Avivah Yamani)

As one of the UNAWE representatives in Indonesia, she discussed and emphasised again what Dr. Premana Premadi had said in her talk a day before. Avivah explained how important UNAWE is for disadvantaged children, and how everybody could join UNAWE. She gave an example of UNAWE Indonesia activity in remote places. And just like the GTTP project, UNAWE is also one of the IYA2009 Cornerstone projects. This venture could have a large influence if all countries join and collaborate. UNAWE also collected stories about the sky from various countries to be shared with children.

Regional Networking Project (Prof. J. Narlikar)

In this session, Prof. Narlikar gave an impression of why it is important for us to build collaborative networks. This collaboration will start with SEAAN, and also several networking projects during IYA2009, and Asia Pacific. This project will cover not just popularisation and education but research as well.

At the end of the session, all participants decided to have an Asian Star working group meeting around May 2009 in Japan.

Overall in the 10th APRIM, session eight discussed more about methods of astronomy education, one being how to share astronomy with the visually impaired. Jun Takahashi from Japan presented his topic “An Electronic Textbook with a Braille Book on Astronomy for Visually Handicapped Students” in a poster session. He brought several sample of his Braille books, and with his method all students could feel the excitement of astronomy. From the poster session, Widya Sawitar from Indonesia also presented his work about constellation names according to Indonesian culture.

In APRIM 2008, the big issues were IYA2009 and regional networking because astronomy is needed for all.

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