

## **International Schools for Young Astronomers – ISYA**

### **Report of the 33rd ISYA 2011, Lijiang, China, 31 March - 21 April 2011**

Jean-Pierre De Greve, Chairman PG ISYA

The 33rd ISYA 2011 was held in China, hosted by the Yunnan Observatory (YNAO) and co-organised by the Lijiang Teacher's College (LTC).

The following organisations sponsored the ISYA programme:

The KAVLI Foundation and the Norwegian Academy of Science and Letters (NASL), the International Astronomical Union (IAU), the Chinese Academy of Sciences (CAS), Chinese Natural Science Foundation (CNSF), Yunnan Astronomical Observatory (YNAO), Lijiang Teachers College (LTC). KAVLI and the IAU covered travel expenses of the participants (visas, insurance, and air fare, local transport, and cultural trips), as well as some extra costs of the weekend trips.

#### *Location*

Yunnan Astronomical Observatory, founded in 1938, is a ground-based observatory for practical astrophysics in southern China. The main research areas include active galactic nuclei, stellar evolution, variable and binary systems, physics of solar active regions, astrometry, and the applications of new technologies and methods in astronomy. The Chinese Academy of Sciences has designated the Observatory as a Key Laboratory for the Structure and Evolution of Celestial Objects. There are several ground-based optical and radio telescopes in YNAO, such as 60-cm, 1-m, 1.2-m and 2.4-m optical telescopes, 10-m and 40-m radio telescopes. In addition, a new 1-m solar spectropolarimetry infrared telescope and 1.8-m adaptive optical telescope have been put into operation.

The student and lecturer accommodation was in the Linjiang Lijun Hotel, a 4- star hotel with national character located in the intersection of Lijiang ancient town and New city. It is only 30 km away from the airport and 0.5 km away from the bus station. There are 114 rooms with air conditioning. All meals were provided in the hotel restaurant, except during the PCRSAs Conference when lunch was served in the conference hotel. The hotel has a well equipped conference room which was used for the lectures in the first two weeks.

#### *Students*

Out of 48 candidates, 22 were selected for participation. Three of these withdrew, and two additional candidates were selected. Finally, 19 candidates from outside China showed up. There were four students from the DPR Korea. The number was further complemented by 18 Chinese students. In total there were students from 10 countries participating. The gender distribution was 24% female, 76% male.

#### *Arrivals and departures*

The students were met at the airport, and transported in groups in small buses, while taxis were arranged to bring the lecturers to the Lijiang Lijun Hotel. After the ISYA, the majority of students travelled as a group by train from Lijiang to the airport of Kunming.

#### *Opening ceremony*

The Opening Ceremony was held on April 1, 2011, at 9 pm. The participants were welcomed by the Vice Mayor of Lijiang government, Zhang Renbin, and by Michele Gerbaldi and Kam-Ching Leung on behalf of the organisers. In the evening, a welcome dinner was organised.

### ***Programme***

In total, there were 9 lecturers scheduled from 8 countries. Due to unforeseen circumstances, Dr. Garik Israelian (Spain) was unable to attend. Lectures started at 9:00 am and finished at 5:30 pm. Several lectures were also followed by labs to exercise the presented material. Each lecture or lab lasted 90 minutes. There were two teaching slots in the morning, and two in the afternoon, each separated by a coffee/tea break of 30 minutes. The lunch break lasted from 12:30 till 14:00.

#### *Lectures:*

Michel Dennefeld ▪ Observing Techniques (series of 3 lectures)

Michele Gerbaldi ▪ Fundamental Stellar Properties from Observations (series of 4 lectures)

Ed Guinan ▪ (4 lectures)

Thijs Kouwenhoven ▪ Dynamics of Star Clusters & Multiple Systems

Kam-Ching Leung ▪ Astrophysics of Emission-Line Stars (series of 4 lectures)

Shengbang Qian ▪ Astronomy in China and Yunnan ▪ Close Binary Systems (series of 3 lectures)

ZHU Liying ▪ IRAF, Photometry (series of 3 lectures)

Nine slots were reserved for student presentations of 15-30 minutes each. The lecturers agreed that the presentations were well prepared and of high quality:

Supachai Awiphan (Thailand) Variations in orbital periods of contact binaries

Samanta Acharya (Nepal) Astronomical opportunities in Nepal

Johan Muhamad (Indonesia) Solar radio research in Indonesia

Dr Kai Li (China) Variable stars in the globular clusters

Sirinapa Arjyotha (Thailand) Photometric observations of 2 new long periods CVs

Jujia Zhang (China) Integral Field Unit for the 2.4 telescope

Putri Siti Rahma (Indonesia) Photometric studies of field stars in the region of M6 and M7 open cluster

Dr Jia Zhang (China) Algol type binaries

Chutipong Suwannajak (Thailand) Star formation activity in nearby galaxies

Dr Lijiang Li (China) The long term period changes in two delta scuti type stars : DY Peg and AN Lyn

Rishi Ram Paudel (Nepal) Spatial orientation of angular momentum in three merging clusters

Sonam Arora (India) Indian astronomical observatory HCT – Supernova 2007rw (photometric observations)

Dr Ergang Zhao (China) Period search of massive binary stars

Jingjing Wang (China) G-type solar like contact binary

Linqiao Jiang (China) An introduction of M star

Anh Tuan Pham (Vietnam) Radio detection of the Sun

Xu Yonghua (China) Helioseismology, solar site survey, solar telescope in China

Lam Duc Hoan (Vietnam) A photometric exercise to understand stellar evolution

Erika Valdueza (Philippines) Astronomy in the Philippines

Wen Xiao (China) Helioseismology, solar site survey, solar telescopes in China

Janette Suherli (Indonesia) Brief introduction to astronomy study at Bandung

Institute of Research & at Bosscha Observatory

Janette Suherli (Indonesia) Photometric study of V899 Her

Kim Kyong Chol (DPR Korea) BC 3000 ~200 star maps Korean dolmen

Students got both theoretical aspects of observing as well as tutorials to analyze the practical aspects. On several evenings, groups of students visited the telescopes of the Yunnan Observatory, where they got demonstrations from residents of the observatory. practical training sessions:

Jia Zhang ▪ preparation for observations (introduce 2.4-m telescope and CCD camera) :

Zhu Liying ▪ preparation for observations (selected objects for photometry); introduction to IRAF

Michel Dennefeld ▪ preparation for observations (Selected objects for spectroscopic observations) ▪ introduction to spectroscopic data reduction ▪ CCDs practical exercises ▪ IRAF photometric data reduction (seven sessions) evening visits: ▪ visits to the observatory and introduction to photometry, with observations done by the technicians. ▪ introduction to the Echelle Spectrograph, with observations done by technicians

A special seminar was given on 2 topics related to the scientific career:

J.P. De Greve ▪ How to write and publish a research paper ▪ Applying for a position In the last week, the Summer School coincided with the PRCSA. For the ISYA participants, this represented a unique opportunity to attend a professional international conference. Some students presented a paper, and several of them participated in the discussion after each presentation. During the coffee break, they engaged in lively discussions with other participants on the research presented in the posters.

### ***Evaluation***

At the end of the ISYA, students filled in a 4-page evaluation sheet. The feedback was overwhelmingly positive, with some suggestions for improvement:

*Comments on observation training:*

- More was expected from the observation training. They learned to handle the telescope in groups, but found the groups too large and the time too short. Small. Moreover, the training was a demonstration by a technician. The students preferred hand-on experience, and more time, to perform group projects.

*Comments on the PRCSA Conference:*

- Some of the presentations were fine, some others were at a too high level. Moreover, some speakers were talking quite fast and sometimes mumbling. The abstracts in the programme book were not in order, which made it difficult to use the programme book.

*Comments on accommodation:*

- The meals were mostly very good, and well arranged, though some students found the breakfast monotonous and with food sometimes badly prepared.

- Students noted a difference between the services announced in the programme guide and the reality. This was specifically the case for the available computers and the wireless internet connection.

*Comments on cultural tours and leisure:*

- The cultural part was very much appreciated. One improvement could be the availability of sports facilities.

*Overall comments:*

- The ISYA was very well organised. The LOC made large efforts to make the stay comfortable. Students appreciated the assistance of the local students. It was recommended to organise some after dinner activities during the first days, so the students would get better acquainted with each other. The next ISYA will be held in South Africa in February 2012, hosted by the South African Astronomical Observatory (SAAO).



*The 33rd ISYA 2011, Lijiang, China, in 2011*