

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

31st ISYA held 7-18 December, 2009, at the University of the West Indies, Trinidad and Tobago

The 31st ISYA was the first one that benefited from the grant donated by the Norwegian Academy of Sciences. It was one week shorter than usual in order to reduce the cost to the host in difficult financial times; at the same time, it exceptionally had a special enlarged outreach component related to the International Year of Astronomy. However, the astrophysical content of the programme was hardly affected by the latter, as it was run in parallel to the normal ISYA programme.

The ISYA was held at the Department of Physics in the University of the West Indies (UWI) in St Augustine, Trinidad. The student accommodation was at the Hermitage, a Catholic retreat on Mount St Benedict – about 10 minutes from the main campus. Breakfast and dinner was provided at the main hall of the Hermitage. Professors were housed in 3-bedroom university housing about five minutes from the campus. Each person had a separate room. These houses were air-conditioned, fully furnished with 2 ½ bathrooms each and full kitchen facilities. All basic grocery items were provided for breakfast. The lecturers were transported to and from campus on a daily basis.

Out of 42 candidate students, 34 were selected for participation. Four did not come (2 from Brazil, 2 from Uruguay), and one extra student from Trinidad participated. There were in total students from 12 nationalities participating, including two from outside the region (one from Nigeria, one from Macedonia). The gender distribution was 51% female, 49% male.

The students were met at the airport, and transport in groups in small buses was arranged to bring the lecturers to their housing and the students to their dormitories. Departures were handled in the same way. The Opening Reception was offered by the Principal of the UWI, Prof. Clement K. Sankat. Unfortunately, due to illness, the Principal could not welcome the students, so this office was fulfilled by the Dean of the Faculty of Sciences and Agriculture. Lectures started at 9 a.m. and finished at 5.30 p.m. 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 am till 2 pm. The lecturers and their topics were as follows:

- Planetary astrophysics: D. Schulze-Makuch (USA)
- (Eclipsing) Binary stars, exoplanet detection, extrasolar planets, planetary science: E. Guinan (USA)
- Stellar and binary evolution, and sessions for secondary school teachers and children: J-P De Greve (Belgium)
- Virtual observatory: Data reduction, queries of databases and related practical activities: R. Barba (Chile)
- Stellar atmosphere (radiative transfer), stellar fundamental parameters, sessions for secondary school teachers and children: M. Gerbaldi (France)

- Cosmology: S. Alexander, Department of Physics and Astronomy, Haverford College (USA)

- Using remote telescopes and preparing observations: Vanessa Stroud (Venezuela)

- Seminars on writing observing proposals, and workshop for children: Louise Edwards (Caltech, born in Trinidad).

An important aspect of the first week was the preparation of the observations to be carried out in the second week. Thanks to the Faulkes Foundation, ISYA had access to the 2 meter robotic Faulkes telescopes on Maouii, Hawaii and in Australia. Several slots of 2 hours were offered throughout the two weeks of the ISYA (through the appreciated support of Paul Roche). Support and instruction was given by Vanessa Stroud, a PhD student of Paul Roche. In the first week, the students were asked to organise themselves into teams and to develop and propose a feasible observing project. In the second week observations were carried out and reduced.

In the first week the students had to give the topics for their presentations, and a schedule was developed within the slots foreseen in the second week. Several of the students consulted Ed Guinan and/or Jean-Pierre De Greve for the content of their powerpoint presentation. The presentations took place in five 1.5 hour slots, with 15 minutes allocated for each presentation and discussion.

The lecturers agreed that the presentations were well prepared and of high quality.

Additionally, seminars were given on topics related to the scientific career:

- How to write and publish a research paper (J.P. De Greve, Belgium)

- How to make a scientific presentation (E. Guinan, USA)

- How to prepare a proposal for observing time (L. Edwards, Caltech).

The outreach and extra-curricular activities relating to the International Year of Astronomy included three television appearances:

- J-P De Greve and Shirin Haque spoke on the CNC3 Early Morning Show about the 31st ISYA and different astronomical topics.

- Edward Guinan prerecorded an interview for the TV6 Morning Edition Programme on the subject of his public lecture: "The Once and Future

Sun: The Sun's Impact on Climate and Life."

- Stephon Alexander (Department of Physics and Astronomy, Haverford College, USA) appeared on television to discuss his public lecture

"Music and Cosmology." 25 teachers and teacher training students participated in the two-day teachers' workshop. The seminars were given by local lecturers and by M. Gerbaldi, E.

Guinan and J.P. De Greve. 22 children took part in the morning children's workshop at the National Science Center. Interactive presentations were given by M. Gerbaldi, L. Edwards and J.P. De Greve. The topics covered were: the sky above Trinidad, color and brightness of stars, the solar system, our Milky Way and galaxies.

The ISYA academic sessions were complemented by an extensive cultural and social programme. On the last day, 18 December 2009, the students filled in a 4 page evaluation sheet. In the following closing ceremony, the students received their certificate witnessing their participation in the ISYA2009.

Excerpted from the report submitted by Jean-Pierre De Greve, Chairman PG ISYA