Swedish students and CALM staff in joint cloud study

CALM's Perth Observatory recently hosted two research project students from the Space Sciences Department at Umea University in Kiruna, Sweden.

In their studies they have acquired a mixture of engineering and practical physical science knowledge and skills that were put to good use while working at the Observatory.

Their project work involved the calibration of a rudimentary cloud sensor system, designed and built by the

by James Biggs

Observatory's technical staff Arie Verveer and John Pearse.

Observatories world-wide are automating the positioning of their telescopes and opening of telescope enclosures, using computer control and a minimum amount of operator intervention.

The cloud sensor system is an integral part of the automation of Perth Observatory's facilities, and will determine when high probability conditions are satisfactory to open telescope enclosures for observing. (The Observatory's technical staff have also built a rain sensor that reliably operates and determines when it is safe to open the enclosures.)

One main aspect of the students' work was relating the cloud sensor's digital output to the amount of cloud visible in the night sky.

They developed a computer program that read the cloud sensor output, such as temperature and wind speed, from the on-site Bureau of Meteorology automatic weather station.

Predicting cloud cover

They then predicted the amount of cloud cover and made this information accessible to all computers on the Observatory network.

Their system works reasonably well, and is limited only by the rudimentary nature of the cloud sensor and, in common with similar systems, has difficulty detecting light, high-altitude (cirrus) cloud. Even given its limitation, this is a great advance towards automation.

Clouds were not the only topics of interest to the students. They enjoyed visiting CALM-managed places, such as the Tree Top Walk and Monkey Mia, as well as other sites of scenic beauty in WA such Esperance, Wave Rock and Rottnest Island.