

INTER-DIVISION IX-X WORKING GROUP ENCOURAGING THE INTERNATIONAL DEVELOPMENT OF ANTARCTIC ASTRONOMY

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1. Overview

Two major astronomical experiments are underway at the US Amundsen-Scott South Pole Station. The first is the South Pole Telescope, a 10 m sub-millimetre telescope designed to measure primary and secondary anisotropies in the CMBR, with the aim of placing constraints on the equation of state for dark energy. The second is the IceCube neutrino observatory, which will be a cubic kilometre array designed to image sources of high energy neutrinos.

The French-Italian Concordia station at Dome C is now complete and operating through the winter. Site testing is underway through the Concordia-astro program. At Dome A, the summit of the Antarctic plateau, China are establishing a new station, and deployed the Australian-built PLATO observatory there for the austral winter of 2008, obtaining the first site testing data from that location. This was a part of an International Polar Year program.

Japan started site evaluation at Dome F in 2007.

The long duration ballooning program run from the US McMurdo Station continues to grow, with multiple programs now able to fly balloons simultaneously.

SCAR, the *Scientific Committee for Antarctic Research*, has established astronomy as an official Scientific Research Program, one of five such designated scientific programs. The IAU's application to join SCAR was recognised at the Moscow meeting of SCAR delegates in July 2008, making the IAU now the 9th scientific union member of SCAR. SCAR coordinated the International Polar Year, which ran through 2007–08.

2. Meetings held

- *Visit to the IRAIT Telescope*, 12–13 September 2006, University of Perugia, Italy. Progress, plans and launch for the IRAIT telescope for Dome C.

- *Large Astronomical Optical/IR Infrastructures at Concordia. Prospects and constraints*, 16–19 October 2006, Roscoff, France. First ARENA Conference.

- *Telescope and instrument robotization at Dome C*, 26-28 March 2006, Puerto Santiago, Tenerife, Spain. Conditions for successful implementation and future operation of robotic telescopes and instrumentation at Dome C.
- *Site testing at Dome C*, 11-13 June 2007, Rome, Italy. Status of Antarctic site testing.
- *Submillimetre astronomy at Dome C*, 25-27 June 2007, Saclay, France. Plans for sub-millimetre astronomy at Dome C.
- *The Astrophysical Science Cases at Dome C*, 17-21 September 2007, Potsdam, Germany. Second ARENA Conference.
- *Wide Field Telescopes*, 26-27 March 2007, University of Exeter, UK. Plans for wide-field astronomy in Antarctica.
- *Spectroscopy on Dome C: from UV to Sub-millimetric Wavelengths*, 16-18 April 2008, University of Granada, Spain. Prospects for astronomical spectroscopy in Antarctica.
- *Site Testing in Antarctica and New Antarctic Facilities*, 23-28 June 2008, Marseille, France. SPIE Meeting, Astronomical Instrumentation: Conference 7012, Session 3.
- *Astronomy in Antarctica*, St Petersburg, Russia, 8-11 July 2008. SCAR Meeting, Session 4.2.
- *Time-series Observations from Dome C*, 17-19 September 2008, Catania, Italy.
- *Interferometry at Concordia 2*, 13-14 October 2008, Garching-bei-München, Germany.
- *A Large Astrophysical Observatory at Dome C for the Next Decade*, 11-14 May 2009, Rome, Italy. Third ARENA Conference.

3. Major publications

- Burton, M. G., 2008, in: K. A. van der Hucht (ed.), *Transactions of the IAU*, Vol. XXVIB, Proc. Twenty Sixth General Assembly, Prague 2006 (Cambridge: CUP), p. 188, *Report on the Inter-Division IX-X Working Group on Encouraging the International Development of Antarctic Astronomy*
- Epchtein, N., & Candidi, M. (eds.), 2007, *Large Astronomical Infrastructures at CONCORDIA, Prospect and Constraints for Antarctic Optical/IR Astronomy*, Proc. 1st ARENA Conference, Roscoff, France, 16-19 October 2006, *EAS-PS*, 25
- Zinnecker, H., Rauer, H., & Epchtein, N. (eds.), 2008, *The Astrophysical Science Cases at Dome C*, Proc. 2nd ARENA Conference, Potsdam, 17-21 September 2007, *EAS-PS*, in press.

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