

Human capital development activities of the African Square Kilometre Array partner countries

Overview

If Africa wins the bid to host the Square Kilometre Array (SKA), the world's largest radio telescope, training for African astronomers, engineers and technicians will be required. Qualified people who can design, use and maintain it will be needed. South Africa has launched an ambitious human capital development (HCD) programme.

Bursary programmes

South Africa is investing heavily in astronomy, in particular in astronomy infrastructure, because South Africa has a geographic advantage in this area, and because such investment encourages international investment. An excellent example of this is South Africa's 32,8% stake in the Southern African Large Telescope (SALT) and its \$300 million investment in MeerKAT, the African precursor telescope for the SKA. Investment in HCD should accompany investment in infrastructure to maximise the economic impact on South Africa. The Department of Science and Technology provides bursaries for multi-wavelength astronomy projects based around the usage of SALT, Hartebeesthoek Radio Astronomy Observatory (HartRAO) and the High Energy Stereoscopic System (HESS) facilities. The DST also funds SKA bursaries. By December 2011 a total of 311 bursaries had been awarded to technicians and undergraduate students, and for postgraduate studies, postdoctoral funding for MeerKAT/SKA-related research and engineering. Of the bursary recipients, 57 bursaries were from African countries other than South Africa.

Brazil-South Africa student exchange programme

In September 2011 a call was made for Portuguese-speaking physics students interested in completing postgraduate studies in Brazil. Over 100 applicants were received and four were recommended. In 2012, these four applicants will complete a basic entrance examination for the Brazilian National Institute for Space Research (INPE). If they pass, they will receive bursaries to study in Brazil. The National Research Foundation will pay their travelling expenses.

Africa SKA Technicians Programme

For every engineer required for a radio telescope one requires about four technicians. The DST therefore launched the African SKA Technicians

Programme in 2011. Already students from South Africa and other African countries are studying to be radio astronomy technicians.

University twinning programme

The twinning of universities in South Africa with universities in other African countries will increase astronomy teaching and research on the continent. To this end the DST is encouraging the twinning of the University of South Africa (UNISA) and the University of Botswana (UBo). The DST is supporting a pilot project in which UNISA lecturers will lecture for a week at UBo in March 2012. A similar twinning programme is being explored for the University of Johannesburg and a counterpart in Ghana (institution to be announced soon).