The project

The SKA project is an international effort to build the world's largest radio telescope, with a square kilometre (one million square metres) of collecting area.

The scale of the SKA represents a huge leap forward in both engineering and research & development towards building and delivering a radio telescope, and will deliver a correspondingly transformational increase in science capability when operational.

Deploying thousands of radio telescopes, in three unique configurations, it will enable astronomers to monitor the sky in unprecedented detail and survey the entire sky thousands of times faster than any system currently in existence.

The SKA telescope will be co-located in Africa and in Australia. It will have an unprecedented scope in observations, exceeding the image resolution quality of the Hubble Space Telescope by a factor of 50 times, whilst also having the ability to image huge areas of sky in parallel. With a range of other large telescopes in the optical and infrared being built and launched into space over the coming decades, the SKA will perfectly augment, complement and lead the way in scientific discovery.

The SKA Organisation, with its headquarters at Jodrell Bank Observatory, near Manchester, UK, was established in December 2011 as a not-for-profit company in order to formalise relationships between the international partners and to centralise the leadership of the project. Eleven countries are currently members of the SKA Organisation – Australia, Canada, China, Germany, India (associate member), Italy, New Zealand, South Africa, Sweden, the Netherlands and the United Kingdom.

The SKA in Africa

South Africa has already demonstrated its excellent science and engineering skills by designing and building the MeerKAT telescope – as a pathfinder to the SKA. The first seven dishes, KAT-7, are complete and have already produced its first pictures. MeerKAT is attracting great interest internationally – more than 500 international astronomers and 58 from Africa submitted proposals to do science with MeerKAT once it is complete.

The technology being developed for MeerKAT is cutting-edge and the project is creating a large group of young scientists and engineers with world-class expertise in the technologies which will be crucial in the next 10 – 20 years, such as very fast computing, very fast data transport, large networks of sensors, software radios and imaging algorithms.

Since 2005, the African SKA Human Capital Development Programme has awarded close to 1000 grants (2017) for studies in astronomy and engineering from undergraduate to post-doctoral level, while also investing in training programmes for technicians. Astronomy courses are being taught as a result of the SKA Africa project in Kenya, Mozambique, Madagascar and Mauritius (which has had a radio telescope for many years) and are soon to start in other countries.