



Dr Bernie Fanaroff, DST Minister Naledi Pandor and Deputy President Cyril Ramaphosa attending the unveiling of the 2nd of 64 MeerKAT Antennas.

By DST

The world's largest and most sensitive radio telescope, the Square Kilometre Array (SKA), took a major step towards the construction phase, with the SKA Board of Directors unanimously agreeing to move the project forward to its final pre-construction phase.

At a meeting in Manchester, UK, where the SKA Organisation has its headquarters, the Board agreed to the design of the R650 million first phase of the SKA. The design – consisting of two complementary world-class instruments – one in Australia, and one in South Africa, is now defined. Both the locations are expected to deliver exciting and transformational science.

"I was impressed by the strong support from the Board and the momentum to take the project forward," said Prof Philip Diamond, Director General of the SKA Organisation. "The SKA will fundamentally change our understanding of the Universe. We are talking about a facility that will be many times better than anything else out there."

Currently consisting of 11 nations, the SKA Organisation has spent the last 20 months in a rigorous and extremely challenging science-driven engineering process, with teams from around the world working to refine the design of SKA1.

In the first phase of the project,

South Africa will host about 200 parabolic antennas or dishes (similar to, but much larger than a standard domestic satellite dish), and Australia more than 100 000 dipole antennas, which resemble domestic TV aerials.

"This will build on South Africa's considerable investment in science and in particular radio astronomy. It's something we can rightly be very proud of," said Dr Phil Mjwara, Director-General of the South African Department of Science and Technology. "Being involved in this exciting global science project spanning two continents, alongside our colleagues from Australia and around the world, is great for the country and for the African continent."

The SKA will address fundamental unanswered questions about our Universe, including how the first stars and galaxies formed after the Big Bang, how galaxies have evolved since then, the role of magnetism in the cosmos, the nature of gravity, and the possibility of life beyond Earth.

For South Africa, its successful bid to host a large part of the SKA was a huge feather in its cap, as it placed the country's burgeoning radio astronomy sector on the global stage.

Africa has never been considered a global player in the science and technology domain, nor has it been seen as a destination for frontier sciences. However, the SKA project has played a great role in changing this perception, with South Africa showing that it has the acumen, skill and potential to construct a radio telescope that will move the discourse on the birth of the universe forward.

On 28 February 2015, Deputy President Cyril Ramaphosa visited the site outside Carnarvon (near Kimberley) where the SKA and its 64-dish precursor, the MeerKAT, will be constructed. The MeerKAT radio telescope will be integrated into the SKA during the first phase of construction.

The Deputy President's visit, hosted by Minister of Science and Technology, Naledi Pandor, took place days before the SKA Organisation announced that it was moving towards the construction phase.

The SKA project will not only benefit South Africa, but also the country's neighbours.

"It is particularly significant that eight other African countries will be involved in hosting the second phase of the project," said the Deputy President. "This promises to establish Africa as a hub for expanding scientific inquiry."

South Africa's SKA African partner countries are Botswana, Ghana, Kenya, Madagascar, Mauritius, Mozambique, Namibia and Zambia. Zambia's High Commissioner and Mozambique's Ambassador accompanied the Deputy President on his visit, as did various ambassadors from Europe and China, the Northern Cape Premier, local mayors, and ministers of the Presidential Infrastructure Coordinating



The 2nd MeerKAT Antenna unveiled by Deputy President Cyril Ramaphosa and Minister of Science and Technology was named in honour of Dr Bernie Fanaroff.

Committee.

In appreciating the broader benefits of this project to South Africa, government has identified the construction of the SKA as a strategic infrastructure project, which is overseen by the Presidential Infrastructure Coordinating Committee.

Deputy President Ramaphosa emphasised the benefits that hosting the SKA would bring, and urged South Africans to take full advantage of this huge project.

"The 699 students and postdoctoral fellows that have been supported through the SKA South Africa bursary and fellowship programme are at the forefront of this effort. This project is developing technical and artisanal skills, and producing a new cohort of young scientists", said the Deputy President.

"Scientists are not born," he added. "They are made. They are the products of a society that values knowledge, promotes learning and rewards innovation. They are products of a society that reads, schools that work, and parents that are engaged in the intellectual development of their children."

The Deputy President described the project as significant in government's efforts to alleviate poverty and improve the lives of people, and said that it would transform South Africa's economy through human capital development, innovation, value addition, industrialisation and

entrepreneurship.

He said that it would "create jobs not only during the next decade or so of construction, but also for the next 50 years of operation and maintenance." As he explained, "Science and technology can do much in the fight against poverty, unemployment and inequality."

The Deputy President commended Dr Bernie Fanaroff, Director of SKA South Africa, as well as the Minister and former Ministers of Science and Technology, for their sterling work in the development of the SKA project. The second MeerKAT dish was named in honour of Dr Fanaroff.

Minister Pandor vowed that the SKA project would meet its deadlines. "By the end of 2016, 64 of the MeerKAT dishes will be ready for commissioning, and by 2017 the telescope will be ready to do science."

"We are proud that, even before the MeerKAT has been completed, five years of observing time on it have already been allocated to more than 500 radio astronomers, 85 of them from Africa. This demonstrates massive confidence in South Africa's scientific infrastructure, in which the Department of Science and Technology continues to invest." ■

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