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## Press release

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### South Africa shortlisted as the site of the huge Square Kilometre Array Telescope (SKA)

The Minister for Science and Technology, Mosibudi Mangena, said today that South Africa's shortlisting as one of two possible sites for the Square Kilometre Array telescope is a great step for science in South Africa. The final decision on where to site the SKA will be taken by the major international science funding agencies by 2008. South Africa's site bid has been led by a Steering Committee chaired by Dr Rob Adam, previous Director General of the DST, Dr Khotso Mokhele, previous President of the National Research Foundation and the current Director General of the DST, Dr Phil Mjwara.

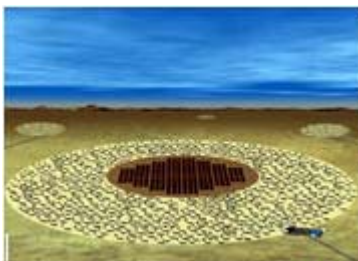
The Minister said that the SKA will be unique - it will be the biggest telescope ever built and will be the only one of its kind to be built in the world. It is the only instrument which can solve the most basic questions of the origin of the Universe and the birth and evolution of stars and galaxies. It is expected to solve the problem of the Dark Energy which has recently been found to fill the Universe and will test Einstein's Theory of General Relativity to greater precision than any other instrument can do. It will investigate the origin of magnetism in the Universe and will be the most powerful instrument ever to search for extra-terrestrial intelligence. Nobel Prizes will come from the research done with the SKA. The Minister said that this immense telescope will bring great prestige to the host country.

Professor Justin Jonas, the Project Scientist for the SKA in South Africa, says that the technology to be used for the SKA is also at the cutting edge. It will have the fastest and largest data transport and computing capacity anywhere in the world and will use new and exciting wireless and digital signal processing technologies. It will therefore also generate very exciting opportunities for technology development and research and for new high tech industries in the host country.

Press release issued by the SKA International Office  
**Australia and Southern Africa short-listed for giant radio telescope**

#### MEDIA PHOTOGRAPHS

An artist's impressions of part of the core of the SKA. Tile-shaped antennas making up the central focal plane array is surrounded by dish-shaped antennas. The SKA will consist of thousands of antennas, spread over 3 000 kilometres. About half of the antennas will be in a central region about 5 kilometres across.



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An artist's impression of the twenty dishes of the Karoo Array Telescope on site near Carnarvon in the Northern Cape. Each of the 20 dishes will be 15 m in diameter and about 19 m high.

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A close-up view of four of the 20 dishes of the Karoo Array Telescope, with the control room in the background.

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Photographs: Xilostudios

Minister Mangena said that South Africa entered the race for the SKA site late and has done extremely well to be recognised as an excellent site in such a short time. The proposed core site for the telescope is in the Karoo in the Northern Cape. If the SKA is built in South Africa, the face of the Northern Cape will be transformed and it will have the opportunity to become a centre of high tech expertise.

South Africa initially intended only to be considered as a site for the SKA, but it soon became clear that we could play a key role in the development of the technology and science as well. South Africa has assembled an excellent team to build the Karoo Array Telescope (the KAT), which will be equivalent to approximately 1% of the SKA, and has in a short time been able to take a leading role in the global SKA development. The South African team has been recognised for its competence and is being called upon to assist and advise the International SKA Project Office on system engineering, costing and other technology areas. The KAT team, led by KAT Project Manager Anita Loots, is playing a leading role in collaboration with researchers in the UK, Holland, Australia and the USA in the development of digital signal processing for the telescope, software development and the development (with industry) of innovative telescope antennas, using composites. The South African SKA / KAT office will host a major international workshop in December 2006 on wide-field imaging and calibration, which is a key technology for the SKA and which pushes the boundaries on high-speed computing and software.

Minister Mangena emphasized the importance of the SKA and KAT projects for the development of high-level skills and expertise in South Africa. In order to benefit as much as possible from the opportunities for exciting science and engineering projects associated with the SKA and the KAT, the Department of Science and Technology has provided funding for graduate study associated with the KAT and SKA. There are already twenty students in this programme, carrying out research for PhD and MSc degrees at South African universities, as well as two post-doctoral fellows. Particular emphasis is being placed on bringing Black students into astronomy and high tech engineering through this programme. Students and universities from Mozambique, Mauritius and Madagascar have also been included. Students are being given the opportunity to be co-supervised by leading researchers from some of the best universities in the world, such as Oxford, Cambridge, Manchester and Caltech.

The Minister said that South Africa stands to gain tremendously if it is chosen as the site for the SKA. The telescope itself is currently budgeted to cost €1.5 billion to build and about €150 million per year to operate. A significant part of both the capital and operating cost is likely to be spent in South and Southern Africa, and particularly in the Northern Cape. Equally important, however, is that the SKA will be unique, and so South Africa would become one of the major centres in the world for fundamental physics, astronomy and high tech engineering (such as very fast computing, radio frequency engineering etc.) and would attract some of the best scientists and engineers in the world. The SKA would therefore provide a tremendous boost to South Africa's development of very high-level skills and

expertise and would strengthen its ability to compete effectively in the global knowledge economy.

Issued by the SKA South Africa Office, for the Department of Science and Technology

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