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Jodrell Bank to host radio telescope project's global head office

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The €1,5-billion international Square Kilometre Array (SKA) radio telescope project, which South Africa and Australia are shortlisted to host, has taken a further step forward with an agreement to site its global head office in the UK. SKA headquarters will be hosted by the University of Manchester's world- renowned Jodrell Bank Centre for Astrophysics, which already hosts the UK's national radio astronomy facility, known as Merlin.

Merlin is an array of seven radio telescopes, including Jodrell Bank's own iconic 76-m-diameter Lovell radio telescope, which this year celebrated its fiftieth anniversary and is still the second- largest fully steerable radio telescope dish in the world. The Merlin array stretches 217 km across England and when optical fibre links between the component telescopes are completed next year, e-Merlin (as it will become) will be the first of the world's next generation of ultrasensitive tele- scopes. Thus, it makes a lot of sense to base the SKA head office at Jodrell Bank.

The SKA, of course, will be on a much greater scale than Merlin, or anything else available today. It will be composed of thousands of antennas, with half concentrated in a core about 5 km in diameter and the other half spread out over 3 000 km. Linked to ultrafast computing systems, the SKA will be able to look in many different directions at the same time, making it a very powerful and flexible instrument.

Meanwhile, South Africa and Australia are both advancing their SKA-related programmes.

South Africa is proposing a site in the Karoo, and this country's SKA programme is forging ahead. The testing of the XDM prototype dish for the MeerKAT radio telescope – intended as a precursor and demonstrator for the SKA – is going well. The surface accuracy and pointing and tracking performance of the dish are both significantly better than specified. The XDM is 15 m in diameter but this is likely to be reduced to 12 m, as this is more likely to be the diameter of dishes employed in the SKA.

The reference design specification for the full MeerKAT is now 80 dishes each of 12-m diam- eter, with single-pixel wideband feeds covering the 500-MHz to 2,5-GHz frequency range. The full MeerKAT will have a central core, but with some dishes spread out nearly 10 km, thus replicating the SKA on a small scale.

MeerKAT will be built in stages. The first stage is designated KAT-7, and will comprise seven dishes located at the Karoo site. A prototype array, KAT-7, will serve as both an engineering test-bed and as an operational radio telescope.

In another important development, last month saw the approval and adoption of the Astronomy Geographic Advantage Bill by the National Assembly, which seeks to protect identified astronomy advantage areas from both radio and light interference.

Last month, Australian Federal Education, Science and Training Minister Julie Bishop compared being chosen to host the SKA with "winning the Sydney Olympics every year for decades to come", adding that it would "place Australia at the forefront of radio astronomy and related technology worldwide". She was announcing the creation of a high-level intergovernmental (Federal and State) committee to oversee Australia's SKA project.

The country is proposing a site in the mid-west of Western Australia, and the Australian Communications and Media Authority has already authorised a Radio Communications Assignment and Licensing Instruction covering the proposed site, which will help protect its radio quiet status.

To date, the Australian government has committed Aus$117-million to the SKA, including Aus$56,7-million for the

design and construction of the Aus-tralian SKA Pathfinder (Askap) radio telescope.

And while there is friendly competition between South Africa and Australia over the SKA, there is also very important cooperation – in the development of the convergent radio astronomy demonstrator computing architecture, which will be employed by both the MeerKAT and Askap.

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