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An update on SKA1

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The first phase of the Square Kilometre Array (SKA1) will consist of a low frequency array of dipoles in Western Australia (SKA1-LOW) and a mid to high-frequency array of dishes (SKA1-MID) in the Karoo of South Africa. When completed in the middle of the next decade, these telescopes will become the largest radio-wavelength interferometers on the planet. The designs of SKA1-LOW and SKA1-MID have been the effort of the global radio astronomy community and the formal design reviews should be completed by 2019. The expectation is that SKA1 construction activities would then begin in 2020. There are currently 12 member countries of the SKA organization, a private company which should evolve into an intergovernmental organization before construction begins.

In this summary, I will give an update on the status of SKA1 and highlight some of the high-level science objectives of the two telescopes. Using SKA1 we expect to address a broad range of scientific problems, ranging from the process of planet formation, to testing General Relativity through pulsar timing. It is anticipated that a significant fraction of the observing time on both telescopes will be devoted to large projects aimed at addressing key open questions in different areas of astronomy. The competitive process for selecting these projects will begin before the end of construction. Although the initial science data processing for SKA1-MID and SKA1-LOW will take place at HPC facilities in Perth and Cape Town, data processing for the large programmes should be distributed across SKA regional centres located throughout the world.