

Project Director's Update – September 2020

Welcome to the latest edition of the Australian SKA Project Director's Update, where I give a rundown on developments in building the next generation of radio astronomy capability.

Australia set to become SKA Observatory founding member

I am very happy to share the news that on Tuesday this week, Australia ratified the Square Kilometre Array (SKA) Observatory Convention, our final step to becoming a founding member of the SKA Observatory. This is the culmination of years of effort by many dedicated people and I thank everyone for their contribution in reaching this important milestone.

The SKA Observatory is the Intergovernmental Organisation (IGO) that will construct and operate the SKA telescopes. Australia joins South Africa, Italy and the Netherlands in finalising their countries' preparations for the new organisation to be established. The United Kingdom, China and Portugal are set to complete their processes in the coming months.

Please see Minister Andrews' message [here](#).

Construction Proposal and delivery plan endorsed

Further exciting news for the project was announced this week, with the SKA Organisation Board having unanimously endorsed the Construction Proposal and the associated Observatory Establishment and Delivery Plan. These are critical foundation documents and the culmination of the multi-year global pre-construction design phase. They will now be considered for final approval by the SKA Observatory Council, once it is established. Congratulations to the SKA Office and the many institutional partners around the world that contributed to this mammoth effort.

Timeline

This week's big announcements speak to the commitment and determination of the SKA partnership in the face of the global *COVID-19* pandemic. This progress puts the project on a path to move into the construction phase in mid-2021, opening up contract opportunities for Australian businesses.

Negotiations around the allocation of industrial work packages have also made significant progress in recent months. As part of the agreement to join the SKA Observatory, every member country can expect to receive around 70% 'fair work return' on contributions to construction contracts.

While the details are being finalised, we know a large part of Australia's allocations will see Australian businesses developing the infrastructure around the site. This includes work on roads and tracks, a new runway, trenches for power and fibre optic cables, and constructing buildings we'll need on site. Australian businesses and institutions will also be involved in a range of more technical packages. We look forward to sharing further details about these work packages and contract timings with Australian industry over the coming months.

Jobs

The SKA will create job opportunities in the construction phase and later in the operations phase. While these jobs are yet to be advertised, vacant positions are regularly advertised within the SKA Organisation (see <https://recruitment.skatelescope.org/vacancies.html>).

While most of these positions are identified as being located in the UK, I encourage Australians to apply. If you are concerned about travel due to *COVID-19*, please let my office know and, where

possible, we will advocate for the position to be undertaken from Australia while *COVID-19* continues to be a concern.

COVID-19

COVID-19 continues to impact people all over the world and our thoughts are with everyone during this challenging time. Not for the first time, the astronomy community has demonstrated its resilience in tough times, adapting to challenges and continuing to inspire the masses.

I would like to highlight the South African Radio Astronomy Observatory's contribution to the fight against *COVID-19*, managing our co-hosting partner's national effort in design, development, production and procurement of respiratory ventilators.

Science and other updates

Earlier this year, scientists from the International Centre for Radio Astronomy Research (ICRAR) in Perth announced that they had [found the universe's 'missing matter'](#). The matter in question is the 'normal' matter that makes up the stars and planets, and everything on them. It was long predicted to exist but not detected. Astronomers solved the mystery using CSIRO's ASKAP telescope to observe Fast Radio Bursts from distant galaxies, with follow-up optical observations by the European Southern Observatory (ESO). This great result demonstrates the power of working across both the radio and optical spectrums in astronomy, and the value of Australia's involvement in ESO as a Strategic Partner.

The broadest and deepest search of the sky ever conducted at low frequencies has brought no good news for lovers of aliens. Using the Murchison Widefield Array (MWA) telescope to observe the sky around the Vela constellation, CSIRO astronomer Dr Chenoa Tremblay and Professor Steven Tingay, from the Curtin University node of ICRAR reported finding [no signs of alien technology](#).

Lastly, two new [coins](#) have been released by the Royal Australian Mint to celebrate the astronomical knowledge and traditions of Aboriginal and Torres Strait Islander people. Artwork on the Seven Sisters coin is from Wajarri-Noongar artist Christine "Jugarnu" Collard of Yamaji Art. Christine was born and raised in Mullewa, Western Australia and paints under the name Jugarnu meaning "old woman" in the Wajarri language. The Yamaji people of the Murchison region in Western Australia refer to the Pleiades star cluster as Nyarlwarri in the Wajarri language, representing seven sisters.

That's all from me at the moment. I'll be in touch with another update soon. Until then, please stay safe!

David Luchetti

Australian SKA Project Director
30 September 2020