Submission No. 004
(Pawsey Centre)
Date: 06/04/2010

Astronomy Australia Ltd.

6th April 2010

The Secretary
Public Works Committee
Parliament House
Canberra ACT 2600

Dear Public Works Committee,

Re: Pawsey High Performance Computer Centre for SKA Science at Kensington, Western Australia

1. The Members of Astronomy Australia Limited (AAL) include all the universities and research organisations in Australia with a radio-astronomy research capability.
2. The Australian SKA Pathfinder (ASKAP) and the Murchison Widefield Array (MWA) radio telescopes are being constructed at the Murchison Radio-astronomy Observatory (MRO) in Western Australia. ASKAP and MWA are expected to be the initial radio telescopes that deliver large quantities of astronomical data to the Pawsey Centre.
3. AAL currently manages the National Collaborative Research Infrastructure Strategy funding for astronomy, $19,200,000 of which is used to partially fund the construction of ASKAP and MWA. AAL has also submitted an Investment Plan to the Department of Innovation, Industry, Science and Research, regarding a $10,000,000 Education Investment Fund grant, $3,070,000 of which is proposed to partially fund MWA.
4. With the above context we bring the following matters to your attention regarding the need for the Pawsey Centre.
5. Australia's existing radio telescopes in New South Wales, such as the Parkes radio telescope and the Australia Telescope Compact Array, have contributed greatly to Australia's distinguished international standing in astronomy. The new radio telescopes currently being constructed in Western Australia, ASKAP and MWA, promise to build on this distinguished heritage.
6. The data output from ASKAP and MWA will greatly exceed that from Australia's existing radio telescopes. To allow these data to be appropriately stored and analysed, a high performance computer of the scale of the proposed Pawsey Centre will be required.

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7. The construction of the Pawsey Centre high performance computer in itself is not sufficient to realise the scientific return of ASKAP, MWA and other radio telescopes that may be built at the MRO. The Pawsey Centre high performance computer (the hardware) needs to be complemented by appropriate software investments to realise the proposed, "on-demand processing and database queries of ASKAP and MWA science products to produce cross catalogue identifications and/or new catalogues and high level data products".[1] AAL is currently engaging with key stakeholders, including the responsible entities for ASKAP and MWA; CSIRO and Curtin University of Technology respectively, to progress these complementary software investments.
8. The MRO is Australia's candidate site for the Square Kilometre Array (SKA). A decision on the proposed location of the SKA is expected around 2012. A full end-to-end demonstration, from ASKAP and MWA to an appropriate data archive on the Pawsey Centre, will strengthen Australia's case that Western Australia has the required infrastructure to support the SKA.

We would be pleased to respond to any questions you may have.

Yours faithfully,

Dr Martin Cole

Chair

[1] CSIRO, *STATEMENT OF EVIDENCE TO THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS The Pawsey High Performance Computing Centre for SKA Science Kensington, Western Australia March 2010*, p.6.