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Astronomy Australia Ltd.

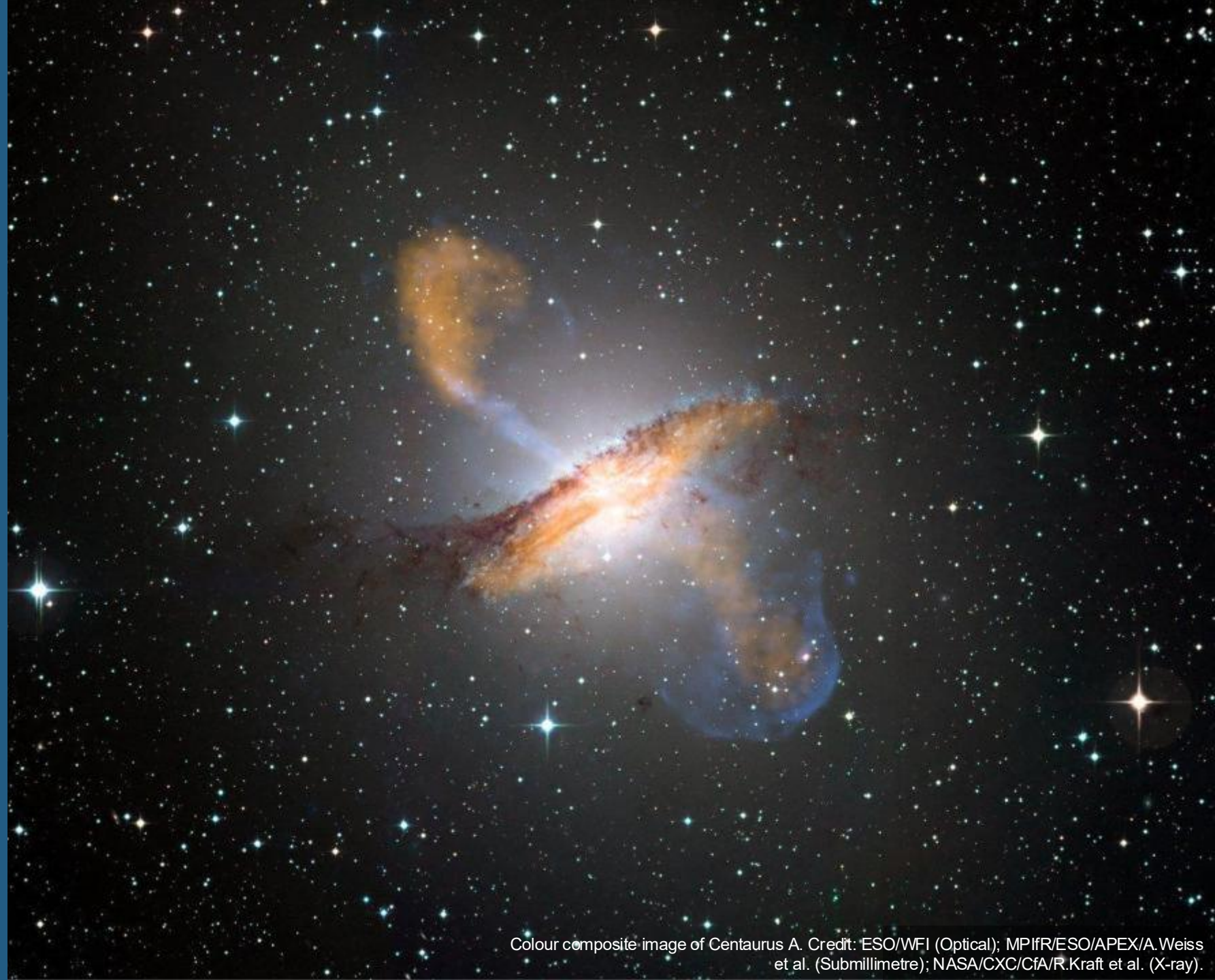
Securing access to large optical telescopes beyond the ESO Strategic Partnership

Town hall

8 May 2026

Prof Sarah Brough
Chair National Committee for Astronomy

Dr Alexander Cooke
CEO Astronomy Australia Ltd



Colour composite image of Centaurus A. Credit: ESO/WFI (Optical); MPIfR/ESO/APEX/A.Weiss et al. (Submillimetre); NASA/CXC/CfA/R.Kraft et al. (X-ray).

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The Australian Academy of Science and Astronomy Australia Limited acknowledge and pay respects to the Traditional Owners of all the lands on which they operate, and where their Fellows and employees live and work.

We pay our respects to, and recognise the cultural authority of, their Elders past and present.

NCG 7458 elliptical galaxy
Hyper Suprime-Cam (HSC)/Subaru Telescope

Keck telescope
Credit: Andrew Hara

Securing access to large optical telescopes beyond the ESO Strategic Partnership

Town hall

Agenda

- Background and context to the Strategic Partnership with the European Southern Observatory
- NCA and AAL's engagement with DISR and the Minister
- Progress to identify an alternative (formation of the LTAWG)
- Considerations for alternative access to large optical telescopes
- Questions, comments and discussion

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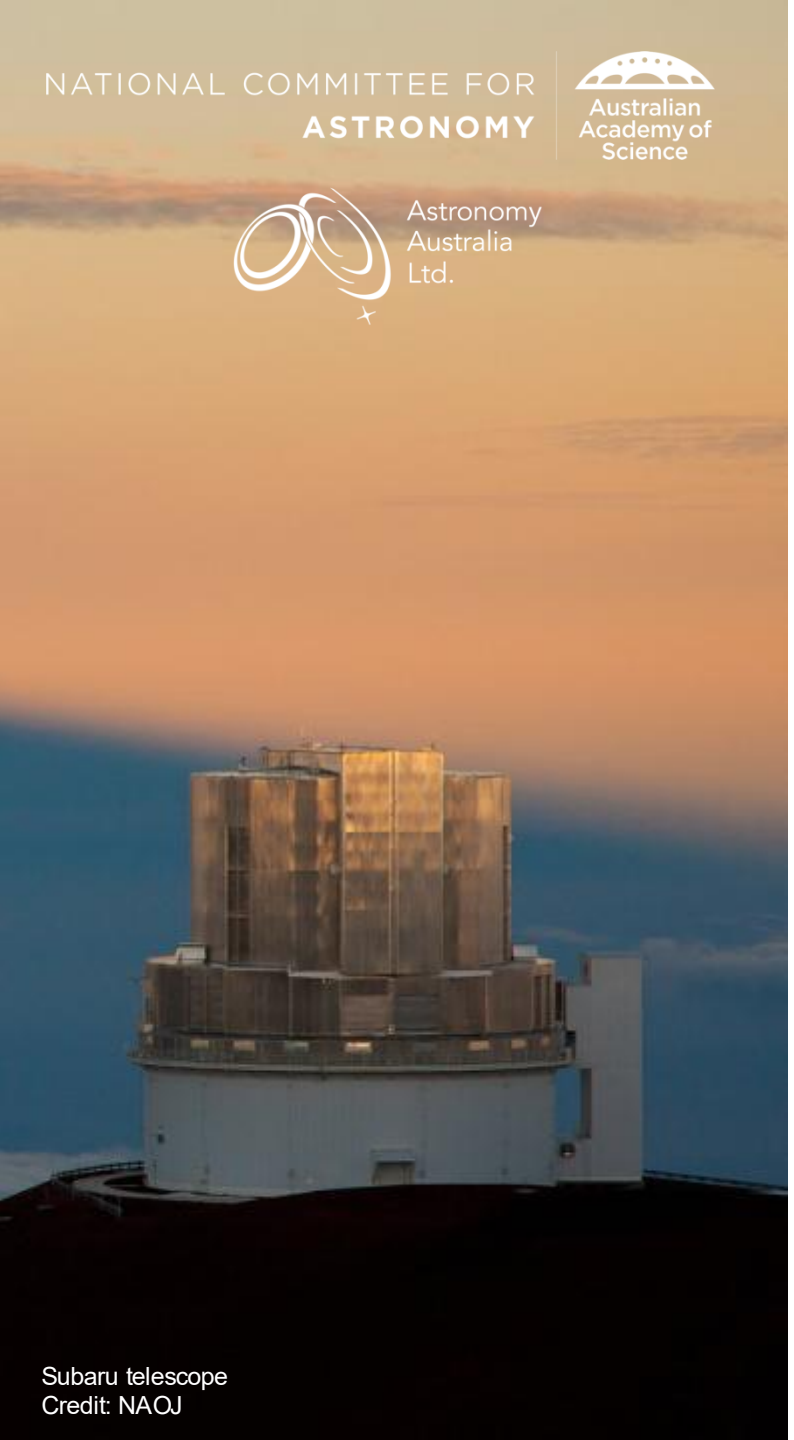
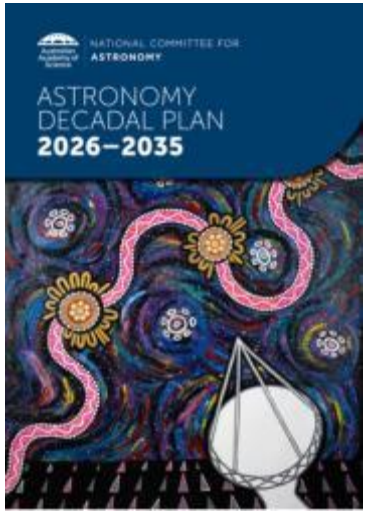


Subaru telescope
Credit: NAOJ

Background context to the Strategic Partnership with ESO



$129 million over 10 years. A pathway to full membership

DISR divestment of AAO

Formation of Astralis with AAL commitment of $5m/annum

AAT operations transferred to ANU, with funding from DISR & 13 universities

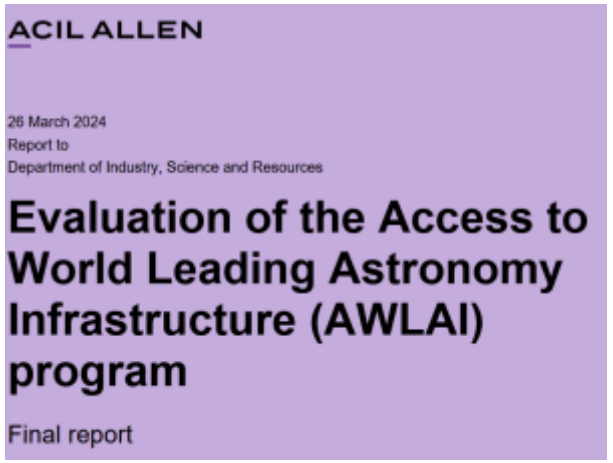
Led to an average of **49 nights/year** on ESO facilities (individual projects) and **up to 68 nights/year** (during Aus-led Large Programmes)

SECURE ACCESS TO LARGE OPTICAL TELESCOPES AND ALMA

- Ensure sustainable, ongoing access to 8-metre-class telescopes, a next-generation 30-metre-class telescope, and the millimetre-wavelength Atacama Large Millimeter/submillimeter Array (ALMA) Observatory.
- Membership of ESO achieves this goal with the best potential for return on investment for Australia.

Magellan telescopes
Credit: Yuri Beletsky

Context

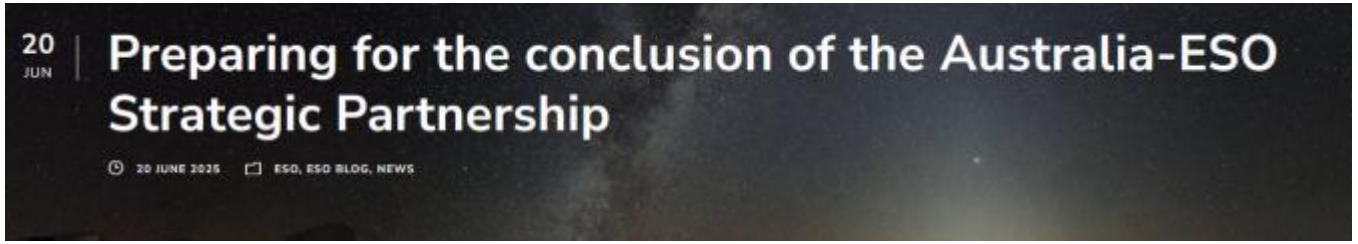

ACIL ALLEN

26 March 2024
Report to
Department of Industry, Science and Resources

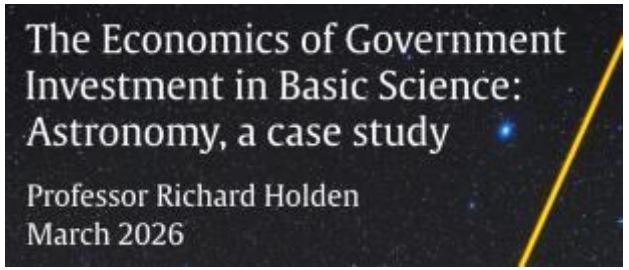
Evaluation of the Access to World Leading Astronomy Infrastructure (AWLAI) program

Final report

Found return on cost of ESO Strategic Partnership was **cost neutral**, while noting their methodology **underestimated the flow-on and long-term benefits** of cooperation.



AAL begins pulling together information on **implications of a decision not to invest in ESO**, including alternative or no investment scenarios; and potential **in-kind contributions** to ensure maximum funding stays on-shore.


The Economics of Government Investment in Basic Science: Astronomy, a case study

Professor Richard Holden
March 2026

Analysis by UNSW economist Prof. Richard Holden shows **astronomy generates $330m/year to the Australian economy**, endorsing flow-on benefits from ESO membership.

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Context

PRIORITY ACTION 1A: SECURE ACCESS TO LARGE OPTICAL TELESCOPES AND ALMA

To answer the exciting astrophysical questions of the next decade – understanding our origins, explaining the dark universe, exploring black holes, and searching for life on other planets – it is critical that Australia secures access to 8-metre-class telescopes, a next-generation 30-metre-class telescope, and the Atacama Large Millimeter/submillimeter Array (ALMA). This can be achieved with maximum efficiency and return on investment through membership of ESO.

As a suite of facilities, the ESO telescopes provide the best and broadest set of optical, infrared, and millimetre capabilities to deliver Australia's highest impact science. Full access to ESO not only provides the four 8-metre telescopes of the Very Large Telescope (VLT) and the Very Large Telescope Interferometer (VLTI), but also millimetre capabilities through ALMA and access to the Extremely Large Telescope (ELT). In this decade, ELT will provide the highest combination of angular resolution and sensitivity ever built. ESO also maintains a well-developed plan to advance the international dominance of their capabilities through ongoing investment in innovative instrumentation.

Membership of ESO also provides a partnership, where Australia can (and already does) take an active role in the decision-making of the observatory. The role of partner provides additional value by facilitating Australian leadership in instrumentation. This seeds a research and innovation ecosystem that leads to industry translation as well as providing international opportunities for Australian industry.

The alternative to ESO membership would be a distributed portfolio of telescope access to multiple facilities, as described in section 5.1.4. This would include increasing Australia's share in the Giant Magellan Telescope (GMT) to at least 10%. This distributed portfolio option would carry significantly increased management overheads, no access to some key capabilities, less telescope access overall (for example GMT will not start observing until 2035), and fewer opportunities for instrumentation, industry translation, or for Australian industry more broadly. In addition, Australia would weaken its ability to strategically and holistically plan its research direction and instrumentation program. In order for Australia to maintain its world leadership in astronomy in the absence of ESO membership, this option would be critical.

The science capability built in Australia over the past decade – through ARC Centres of Excellence (CoE) and other programs – has interconnected ESO and SKAO observations at their core. Failure to continue a long-term partnership with ESO would require Australian optical astronomers to redirect their research efforts, undoing the community and scientific leadership that has been built over the current 10-year strategic partnership. While the SKAO science goals would still be achieved, Australian leadership of the multi-wavelength observations that will deliver the highest-impact science will be limited.

Report of the International and Space Facilities Working Group 2.1 for the Australian Decadal Plan 2026-2035

Co-Chairs:
Simon Driver and Emily Wisnioski

Authors:
Emily Wisnioski, Simon Driver, Andrew Battisti, Jeff Cooke, Taissa Danilovich, Jimi Green, Paul Lasky, Eduardo Trifoni, Aaron Robotham, Gavin Rowell, Rob Sharp

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NCA and AAL's engagement

June 2025

NCA/AAL worked with community to articulate SKA-ESO synergies.

Messaging demonstrates how optical astronomy maximises value of SKA.

3 July 2025

NCA and AAL briefing to Min Ayres' Office on final decadal plan

End July 2025

AAL finalised In-Kind list for DISR

AAL finalised list for DISR of costs for alternative options to ESO

Aug-Sep 2025

Advice shared with Minister Ayres for consideration

29 Oct 2025

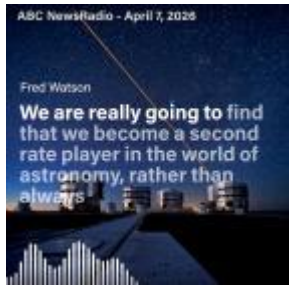
ESO DG wrote to the Minister

After careful consideration, Australia has decided not to pursue European Southern Observatory membership. The Government values our close relationship with European nations in science and research. We consider there are other opportunities to deepen that relationship, and we look forward to exploring those opportunities further.

Australia remains committed to the current Strategic Partnership and ensuring this delivers value for both the European Southern Observatory and the Australian astronomy community.

2 April 2026

Minister replied to ESO DG



Easter 2026

Press releases from AAL, AAS, STA, Aust. Council of Deans in Science

Media stories in Print, TV, Radio, Online

230+ media mentions with editorial reach of 12m+

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Progress to find an alternative

Nov 2025

NCA discussed likely need to develop a thorough Plan B

Dec 2025

AAL and NCA agree to form a working group for alternative options to access large optical telescopes

Focus is understanding costs involved in securing access to best facilities until one or more ELT-class facilities come online.

Feb 2026

AAL and NCA established Large Telescope Access Working Group (LTAWG)

ESO DG indicated timeframe for 'exit procedure' to start by June if no decision soon

March 2026

AAL CEO met with DISR and Minister's Office to highlight urgency of decision and need to work on fallback: ***"No relationship with ESO in the future is bad. No Plan B is catastrophic"***

April 2026

LTAWG concluded meetings. AAL consolidates advice

Today

Start of community engagement

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LTAWG Members

- Dr Alex Cooke (AAL) (Chair)
- Prof. Sarah Brough (UNSW and NCA Chair)
- Prof. Joss Bland-Hawthorn (U. Sydney)
- Prof. Céline d'Orgeville (CSIRO)
- Prof. Karl Glazebrook (Swinburne)
- Dr Melanie Kaasinen (ANU)
- Prof. Claudia Lagos (ICRAR/UWA)
- Ms Nuria Lorente (Macquarie University)
- Prof. Richard McDermid (Macquarie University)
- Dr James Murray (AAL)
- Dr Stuart Ryder (AAL)
- Prof. Chris Tinney (UNSW)
- Prof. Cathryn Trott (ICRAR/Curtin)
- A/Prof. Emily Wisnioski (ANU)
- Dr George Zhou (University of Southern Queensland)

Large Telescope Access Working Group

Key Directions **(final report to be concluded among the Group)**

1. Access to **8m-class facilities must deliver against the science needs** of the Australian astronomy community based on agreed parameters, in the range of **45-60 nights per year**.
2. Seek to **purchase time on**, **or preferably secure partnership with** one or more of the **Keck, Subaru, and Magellan telescopes**.
3. Establish **a new bilateral Strategic Partnership** with Japan and/or Chile **including securing ALMA access** in addition to optical facilities.
4. **Maintain AAT science operations** for so long as the facility continues to support Australian optical leadership and use it as an instrument testbed. In the medium term, **transition to a multi-use facility**.
5. Identify and support **in-kind contributions for additional observing time** to keep funding on-shore, including observing time on Australian-operated facilities, instrumentation, software, and data services.
6. Work to **maintain our current share of the GMT at 7.8%** as it moves to construction phase, including by contributions made through Australian-led instrumentation.

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Large Telescope Access Working Group

What we think we need to resolve:

- Confirm **key elements the community needs for selection** of 8m-equivalent facilities.
- **A national time assignment approach** to ensure merit-based national access to 8m-class optical facilities.
- An **allocation system for using guaranteed time** resulting from NCRIS-funded instrument building, data, software and staff exchange activities.
- **A single liaison point** for securing national agreements with and access to international facilities

To seamlessly replace ESO, a new 8m access agreement will need to be in place by July 2027. Other decisions can follow.

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Delivery

If we are to convince Government to invest, it is likely to want to see:

Greater focus on **translation of foundational science** into impact/non-research benefits	Synergies with **other major astronomy investments** (i.e. SKA)	Astronomy will need to **argue its case against other science disciplines**	Alignment with Government priorities such as **Future Made in Australia**, **Ambitious Australia** implementation

The financial environment for science remains severely constrained.

Government is likely thinking about astronomy funding in context of national pressures on ageing research infrastructure and facilities – CSIRO, other science agencies.

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Questions, comments, and discussion

We particularly welcome your thoughts on:

What have we missed?	Support for **research translation and other impact stories**	**Instrumentation**: opportunities for synergies, greater visibility and impact in line with Government priorities	**Data:** how do we support efforts to bring together varying datasets across optical, radio, high energy, GW	**Industry engagement:** we need to grow allies across the system by delivering value to them

We need you to:

- share these messages with your departments and follow-up these conversations, and
- engage in this process to ensure we have full input from the community.

We expect to continue this conversation in future town halls (including at the ASA ASM), with a separate discussion on the future of the AAT.

If you know of opportunities now, please let us know!

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Thank you for your support and consideration!