

Decadal plan for Australian astronomy 2026–2035

2026-2035 Decadal Plan Timelines and Working Groups

The Australian astronomical community carries out a formal strategic planning process on a 10-year time scale, with reviews as/when appropriate. This process is run by the National Committee for Astronomy (NCA) and provides the opportunity for Australian astronomy to carry out a stock take of its capabilities, assess its impact both nationally and internationally, provide a vision for the future, and to set priorities and develop strategies on how that vision might be implemented.

The resultant Decadal Plan can then be used as a highly influential document to present our vision to key stakeholders outside the research sector. This includes Australian Astronomy's key stakeholders, the Commonwealth Government, as well as industrial/research partners both nationally and internationally. The currency of the last decadal planning process ran from 2016 and will conclude in 2025. There was a midterm review published in 2020. It is now time, therefore, to consider the next decadal planning process for the period 2026-35.

The following timetable outlines for decadal planning activities:

Timeline

Date (2023)	Activity
June	<ul style="list-style-type: none"> • Launch a decadal plan public website • Finalise timeline and budget • Set terms of reference for working groups and decadal plan • Propose a working group structure
July	<ul style="list-style-type: none"> • Present structure and timeline at the ASA conference • Solicit feedback on the structure of working groups and process • Solicit interest in working group membership
August- October	<ul style="list-style-type: none"> • Deadline for feedback on structure and expressions of interest in WG
October-November	<ul style="list-style-type: none"> • Select working group chairs and members • Publish membership of working groups
December	<ul style="list-style-type: none"> • Working groups present a work plan to NCA
2024	
February - May	<ul style="list-style-type: none"> • Establish an editorial committee • Working groups conduct town hall meetings
July	<ul style="list-style-type: none"> • National workshop reporting on outcomes of working groups

September	<ul style="list-style-type: none"> Working group reports provided to the NCA Incorporation into the first draft of the decadal plan by the editorial committee
October	<ul style="list-style-type: none"> Review of first draft by NCA
November	<ul style="list-style-type: none"> First draft submitted to Academy Council for comment
December	<ul style="list-style-type: none"> Review of the final draft by NCA at the annual meeting
2025	
January	<ul style="list-style-type: none"> Release exposure draft to the Australian community Roadshow to present major findings and recommendations of the plan
March	<ul style="list-style-type: none"> Submission of Decadal Plan to Academy Council for endorsement
March-June	<ul style="list-style-type: none"> Prepublication activities
July	<ul style="list-style-type: none"> Launch of the decadal plan at the ASA conference

Decadal Plan Working Group Context

Reports provided by Working Groups will provide the basis for the Australian Astronomy Decadal Plan for 2026-35, to be drafted by an Editorial Board appointed by the NCA. The plan will seek to identify opportunities and prioritise requirements, with the goal of maximising the benefit to Australia from astronomical research over the coming decade.

The Editorial Board will compile the draft Plan based primarily on the Decadal Plan Working Group reports, with further input from the Working Group chairs as appropriate. In drafting the Decadal Plan, the Editorial Board will be charged with joint consideration of the implications of outcomes and recommendations from all working groups.

It is currently envisaged that the Editorial Board will draft the Plan in the context of the Big Questions in astronomy, which in the 2016-2025 decadal plan are:

1. How did the first stars and galaxies transform the Universe?
2. What is the nature of dark matter and dark energy?
3. How do galaxies form and evolve across cosmic time?
4. How do stars and planets form?
5. How are elements produced by stars and recycled through galaxies?
6. What is the nature of matter and gravity at extreme densities?

Where appropriate, Working Groups may wish to frame their reports addressing these, and any other "Big Questions" they may wish to identify

Decadal Plan Working Groups

Working Group	Chair	Inclusions
1.0 Research:		
1.1 Galaxies and Cosmology	Professor Scott Croom	Including dark matter and dark energy as constituents of the universe

1.2 Stars, Planets, and the Galaxy	Associate Professor Sarah Martell	Including star formation and evolution, and planet formation
1.3 Time Domain and Multi-Messenger Astrophysics	Professor Eric Thrane Associate Professor Katie Auchettl	Including high-energy astrophysics and gravitational waves
1.4 Theoretical Astrophysics	Professor Mark Krumholz	Including computational simulations
1.5 Aboriginal and Torres Strait Islander Astronomy	Dr Brad Tucker Ms. Karlie Noon	
2.0 Facilities:		
2.1 International and Space Facilities	Professor Simon Driver Associate Professor Emily Wisnioski	Including Indigenous astronomy perspectives, astronomy from space, and astronomy infrastructure supporting space science
2.2 National and University Facilities	Professor Andrew Cole Dr Vanessa Moss	Including Indigenous astronomy perspectives
2.3 Data and Computing	Dr Minh Huynh Professor Chris Power	Including software and the use of data in computing
2.4 Instrumentation	Professor Richard McDermid	
3.0 Impact and Engagement:		
3.1 Demographics, Society, and Workforce	Associate Professor Stas Shabala Associate Professor Emma Ryan Weber	Including scientific demographics, the broad impacts of astronomy-trained graduates in society, sustainability and impacts on the region/internationally
3.2 Outreach, Education and Training	Dr Brad Tucker	Including Indigenous astronomy programs, and Indigenous astronomers
3.3 Industry and Translation	Associate Professor Francis Bennet	
3.4 Research Funding	Professor Simon Ellingsen	

Decadal Plan Working Group Terms of Reference:

1. By considering how best to position Australia in the international astronomical landscape of the coming decade, the Decadal Plan Working Groups are each requested to compile a report that:
 - a. Reports on progress against objectives of the previous Decadal Plan
 - b. Provides a stock take of current or future capabilities/resources in the area

- c. Identifies any new national or international opportunities/requirements in the area over the period 2026-35
 - d. Suggests strategies and the resourcing levels required to maximise these new opportunities
2. The working groups are encouraged to consult widely, through whatever means appropriate, with all key stakeholders (both national and international) in developing their report.
 3. Each of the Working Groups 1.0 – 1.4 should form sub-groups with responsibility for reporting, as part of the working group report, on the progress and opportunities for survey science, theoretical astrophysics, and radio/sub-mm, and optical/IR observation.
 4. Each working group is asked to submit a report on planned activities and an outline plan (with milestones) for the delivery of the final Working Group report for presentation at the 11 December 2023 meeting of the NCA. The Working Group chair will be required to present this plan (virtually) to the NCA at this meeting.
 5. Each working group should submit their final Working Group report to the NCA, through the Chair, no later than November 30, 2024.

Decadal Plan Working Group Guidelines:

The terms of reference are intended to enable the working groups to approach their task from a number of different directions. The working groups may wish to look at the issues in their area from a variety perspective e.g., current resources vs future needs, existing capability mapping, SWOT (Strengths, Weaknesses, Opportunities & Threats) analysis.

Inevitably, there will be overlaps between different working groups. Working groups should (i) check with other groups regarding potential overlaps, and (ii) tend to be inclusive and cover anything they think is relevant to their topic, even if it is being covered by another working group.

Working groups should focus on producing strong arguments, meaningful statistics, telling examples and comprehensive lists. The report should include as many useful tables and figures as possible. Working groups should generate the valuable content for the decadal plan, emphasising substance over style, quantitative arguments over qualitative, and let the Editorial Board structure and polish the material.