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## **Research School of Astronomy and Astrophysics**

### **Strategic Plan: 2003–2007**

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## Foreword

**The Research School of Astronomy and Astrophysics (RSAA) of the Australian National University (ANU) is a component of ANU's Institute of Advanced Studies. Combined with its rich observatory heritage on Mount Stromlo and at Siding Spring, the RSAA holds a unique position in Australian and global astronomy.**

**The last RSAA strategic plan, written to guide the School from 1995 through 2005, was updated in 1999. Several changes have occurred since that time. Both the ANU and RSAA have new leadership. Challenges and opportunities have been generated by substantial changes in funding mechanisms as ANU forfeited part of its block funding in exchange for entry into ARC schemes. The astro-engineering capabilities of the School have matured and grown; RSAA now produces instrumentation for national and international telescopes to which all Australians have access. Traditional RSAA excellence in science and science training continue; the current age distribution of staff will provide the School with opportunities to open new positions and directions.**

**Most dramatically, the January 2003 Canberra bushfires destroyed a large fraction of the infrastructure on Mt Stromlo, requiring considerable human and financial investment and a new vision for the future. It is satisfying, therefore, to discover that this Strategic Plan, drafted in November 2002 with the involvement of all RSAA staff, remains valid and vital to the reconstruction of the new Stromlo that will serve as the heart of future RSAA achievement.**

**Professor Penny D. Sackett  
Director  
21 November 2003**

## **Mission Statement**

- **Advance the observational and theoretical frontiers of astronomy and its enabling technologies**
- **Provide national and international leadership**
- **Train outstanding scientists**

## **Identity and Guiding Principles**

### **We are:**

- **An Institution of Scientific Researchers**
- **A component of a National University**
- **An Australian Observatory**
- **National Leaders**

### **We undertake:**

- **High-Calibre Astronomical Research**
- **Cutting-edge Technology for the Benefit of Astronomy**
- **Training of the Next Generation of World-class Scientists**
- **Efficient Observatory Operations**
- **Public Promotion of Astronomy**

### **We are guided by:**

- **Scientific Excellence and Integrity**
- **A National Perspective**
- **Collegiality, Equality, Opportunity, and Productivity**
- **Sustainability**

## Key Objectives

- **Maintain high international research standing**
- **Increase national leadership, engagement and visibility**
- **Foster excellence and breadth in all staff**
- **Attract the best PhD students worldwide**
- **Increase quality & professionalism of postgraduate training**
- **Maintain and grow astronomical engineering capability**
- **Support those MSSSO telescopes with high scientific return**
- **Increase access to current frontline facilities worldwide**
- **Develop leadership roles in major new facilities for 2007+**
- **Diversify funding base to increase stability and flexibility**
- **Undertake and support strategic national outreach**

Objective	Performance Indicator
<p><b>Maintain high international research standing</b></p>	<p><b>Actions:</b></p> <ul style="list-style-type: none"> <li>➤ Increase RSAA leadership in international science projects</li> <li>➤ Encourage international travel with visible outcomes</li> <li>➤ Increase international visitors through external funding</li> <li>➤ Establish prestigious sabbatical and fellowship programs</li> <li>➤ Actively market RSAA successes in all areas</li> </ul> <p><b>Performance Indicator:</b></p> <ul style="list-style-type: none"> <li>➤ Ranking in top 20 astronomical institutions worldwide</li> </ul>
<p><b>Increase national leadership, engagement and visibility</b></p>	<p><b>Actions:</b></p> <ul style="list-style-type: none"> <li>➤ Increase RSAA engagement at all governmental levels</li> <li>➤ Foster strategic partnerships with industrial partners</li> <li>➤ Work to increase astronomical activity in Australia overall</li> <li>➤ Provide visionary, proactive, and transparent leadership</li> </ul> <p><b>Performance Indicator:</b></p> <ul style="list-style-type: none"> <li>➤ RSAA leadership in increasing resources for Australian astronomical community</li> </ul>
<p><b>Foster excellence and breadth in all staff</b></p>	<p><b>Actions:</b></p> <ul style="list-style-type: none"> <li>➤ Emphasise excellence over scientific field in new hires</li> <li>➤ Expect and encourage independence in continuing staff</li> <li>➤ Facilitate cross-fertilisation and theory–observation cycle</li> <li>➤ Actively encourage staff training and development</li> <li>➤ Recognise and foster diverse talents and styles</li> <li>➤ Actively embrace equity and EEO principles</li> </ul> <p><b>Performance Indicator:</b></p> <ul style="list-style-type: none"> <li>➤ Identify, monitor, and manage against diverse, suitable academic performance measures</li> </ul>
<p><b>Actions and Principal</b></p>	<p>➤ Identify, monitor, and manage against diverse, suitable academic performance measures</p>

Objective	Actions and Principal Performance Indicator
Attract the best PhD students worldwide	<p><b>Actions:</b></p> <ul style="list-style-type: none"> <li>➤ Aggressively advertise graduate program (inter)nationally</li> <li>➤ Raise entrance requirements into RSAA PhD program</li> <li>➤ Personalise and raise internet profile of PhD program</li> <li>➤ Concentrate on and publicise post-PhD job placements</li> </ul> <p><b>Performance Indicator:</b></p> <ul style="list-style-type: none"> <li>➤ Successful competition with Arizona, Leiden, MIT, Cambridge, and similar institutions for PhD students</li> </ul>
Increase quality & professionalism of postgraduate training	<p><b>Actions:</b></p> <ul style="list-style-type: none"> <li>➤ Tighten management of student progress using feedback</li> <li>➤ Actively develop the careers of students and postdocs</li> <li>➤ Assume global RSAA responsibility for student training</li> </ul> <p><b>Performance Indicator:</b></p> <ul style="list-style-type: none"> <li>➤ 85% of PhD students complete within four years of commencement</li> </ul>
Maintain and grow astronomical engineering capability	<p><b>Actions:</b></p> <ul style="list-style-type: none"> <li>➤ Foster those elements that are strong and unique nationally</li> <li>➤ Stress RSAA-led school, national &amp; international projects</li> <li>➤ Increase capabilities of telescopes used by Australians</li> <li>➤ Maintain critical mass in key areas</li> <li>➤ Introduce tight resource management and oversight</li> <li>➤ Increase worldwide visibility and funding diversity for RSAA astro-engineering</li> </ul> <p><b>Performance Indicator:</b></p> <ul style="list-style-type: none"> <li>➤ Self-sustaining astro-engineering activities producing scientifically and technically excellent projects</li> </ul>

Objective	Actions and Principal Performance Indicator
<p><b>Support those MSSSO telescopes with high scientific return</b></p>	<p><b>Actions:</b></p> <ul style="list-style-type: none"> <li>➤ Closely monitor SII upgrades for successful completion</li> <li>➤ Where cost-savings would result, discontinue support for least-used MSSSO telescopes as new telescopes such as Phoenix and SkyMapper are commissioned</li> <li>➤ Increase scientific activity and visibility of RSAA at SSO</li> <li>➤ Maintain realistic cost estimates for MSSSO telescopes</li> </ul> <p><b>Performance Indicator:</b></p> <ul style="list-style-type: none"> <li>➤ Decrease average cost of papers based on MSSSO telescopes by 30%</li> </ul>
<p><b>Increase access to current frontline facilities worldwide</b></p>	<p><b>Actions:</b></p> <ul style="list-style-type: none"> <li>➤ Use MSSSO facilities strategically to obtain external access</li> <li>➤ Consider new international partnerships</li> <li>➤ Use any discretionary monies to balance short- and intermediate-term needs with investments for future</li> </ul> <p><b>Performance Indicator:</b></p> <ul style="list-style-type: none"> <li>➤ Significant new scientific capabilities in place by 2007</li> </ul>
<p><b>Develop leadership roles in major new facilities for 2007+</b></p>	<p><b>Actions:</b></p> <ul style="list-style-type: none"> <li>➤ Identify most scientifically useful future facilities</li> <li>➤ Identify those suitable for RSAA leadership and partnership</li> <li>➤ Identify and engage in enabling technologies</li> </ul> <p><b>Performance Indicator:</b></p> <ul style="list-style-type: none"> <li>➤ Aim for 10% partnership developed by 2007 in next generation facilities</li> </ul>

## **Objective**

## **Actions and Principal Performance Indicator**

**Diversify funding base to increase stability and flexibility**

### **Actions:**

- **Use external funds for some activities previously supported by recurrent**
- **Monitor and increase IGS, RIBG and RTS returns**
- **Set aside funds to be used for new initiatives**
- **Expect and encourage ARC funding for all academic staff**
- **Critically review and improve managerial structures**

### **Performance Indicator:**

- **Obtain and sustain 50% of total budget from external sources (all via growth)**

**Undertake and support strategic national outreach**

### **Actions:**

- **Design outreach for maximum national impact**
- **Publicize RSAA scientific outcomes**
- **Engage government in outreach activities**
- **Use robotic telescopes and surveys to engage public**
- **Increase evening viewing and electronic outreach media**
- **Encourage partnerships that emphasize RSAA-controlled content whilst minimising RSAA human resource**

### **Performance Indicator:**

- **Increased national awareness of RSAA and its mission**