

Lost in Space? Setting a new direction for Australia's space science and industry sector

Chapter 1

Introduction

Lost in space?

1.1 Australia had a long and illustrious association with 'space science'. The first Australians used the patterns of the stars to guide them to seasonal food sources. Captain Cook arrived here on the way home from a voyage to chart the transit of Venus, with the goal of improving navigational technology. When Governor Phillip founded the first European settlement, he brought with him the astronomer William Dawes. Australia was the fourth nation to build and launch a satellite from its own territory. The 'big dish' at Parkes played an important role in the Apollo missions and the discovery of the first quasar.¹

1.2 But more recently Australia's involvement in space science and industry has drifted and the sense of purpose has been lost. The committee heard of the surprise expressed by some overseas observers that Australia has no space programme or agency and, other than for communications, is reliant on satellites owned by other countries.

1.3 The committee believes it is not good enough for Australia to be lost in space. It is time to set some clear directions. The Australian government should have a space policy and, like most other comparable countries, an agency to implement it. The global space industry generates global revenues of around US\$250 billion per annum², and Australia should be playing a larger role.

1.4 Accordingly, the recommendations in the report's final chapter chart a course towards Australia regaining an important place in global space science and industry by gradually developing a dedicated space agency.

1 This paragraph draws on Jeff Kingwell, 'International space year', *Year Book Australia 1992*, Australian Bureau of Statistics.

2 Space Foundation, *The Space Report 2008*, p. 14.

It's not (just) rocket science

1.5 To many people 'space science' means rockets taking people to the moon and beyond at vast expense. Manned space flight is indeed exciting and inspiring. The way it captured the popular imagination is attested to by the comments from witnesses (see especially paragraphs 5.19 to 5.29) and the lines from popular songs used to introduce many sections of this report.

1.6 However this report shows that rockets are only a small part of 'space science and industry'. The report does *not* propose to land an Australian citizen on Mars, although it would like to see an Australian contribution to such an international mission. Rather, Australia's involvement in space industry should be focused on niche areas. Australian scientists can expand their already important role in space tracking and various forms of astronomy and Australian firms can make more commercial use of data from satellites.

Conduct of the inquiry

1.7 On 19 March 2008, on a motion by a cross-party group of Senators Chapman, Hurley and Stott Despoja, the Senate referred the topic of space science and industry, and specifically the terms of reference given on page vii, to the Senate Standing Committee on Economics, for inquiry and report no later than October 2008 with an interim report by 23 June 2008. On 14 October the Senate extended the time for presentation of the final report to 12 November 2008.

1.8 The committee advertised the inquiry nationally and posted details on its internet site. In addition, it wrote to a number of organisations advising them of the inquiry and inviting them to make submissions. These included key stakeholders in space science such as the Commonwealth Scientific and Industrial Research Organisation (CSIRO), other government agencies such as the Bureau of Meteorology and Geoscience Australia, the Cooperative Research Centre for Spatial Information, and some of the Australian universities and private companies using satellites for communications or remote sensing data, or able to contribute components, software or other services to an expanded space sector. The committee received 88 submissions to its inquiry. These are listed at Appendix 1. Several supplementary submissions were also received.

1.9 The committee held six public hearings: in Canberra on 16 May, 29 July and 23 September 2008, in Adelaide on 23 May and 22 July 2008, and in Sydney on 1 August 2008. It also received a private briefing from the CSIRO. The witnesses who appeared at the public hearings are listed in Appendix 2.

1.10 Additionally, the committee had site inspections at the following places:

- Canberra Deep Space Communication Complex, Tidbinbilla, Canberra;
- Australian National University Advanced Instrument and Technology Centre, Mount Stromlo, Canberra;

- Electro Optic Systems Space Research Centre, Mount Stromlo, Canberra; and
- Optus International Earth Station, Belrose, Sydney.

1.11 Further publicity was given to the inquiry when the interim report was released on 23 June 2008, and when the chair of the committee, Senator Hurley, addressed the 10th Australian Space Development Conference in Adelaide on 23 July 2008. An indication of the space industry's interest in the inquiry was that this conference passed a resolution addressing questions in the interim report; see Appendix 4.

1.12 The Hansards of the public hearings, submissions, and the committee's interim and final reports, are all available on the committee's website at: http://www.aph.gov.au/Senate/committee/economics_ctte/space_08/index.htm.

1.13 The committee wishes to express its appreciation to all those who contributed to its inquiry by preparing written submissions, attending hearings as witnesses and hosting site visits. Their work has been of considerable value to the committee.

Outline of the report

1.14 The committee's interim report summarised what it saw as the key questions that need to be answered to assess in what ways, if any, the government needs to act to optimise Australia's capabilities in space science, industry and education. In this, its final report, the committee seeks to answer those questions and provide its conclusions and recommendations.

1.15 The report is structured around different aspects of space science and industry. The committee views the most important commercial aspect for Australia as 'looking down', the use of satellites for earth observation, described in Chapter 2. The next chapter is concerned with 'looking out', the domain of astronomers. Chapter 4 turns to 'going up', the potential for Australia as a launch centre. Chapter 5 discusses some of the roles of government in relation to space, covering support for research, education and assistance to space industry on economic and security grounds. The report concludes with a chapter on whether Australia needs a 'space policy' and an agency to implement it.