Australian Academy of Science

A Submission to the
Inquiry into the Current State of Australia's
Space Science & Industry Sector

Senate Standing Committee on Economics
Parliament House
Canberra

14 April 2008

Space science and technology is an important component of Australia's infrastructure as well as part of the human adventure in science.

Spacecraft technology provides daily monitoring of the planet, including Australia, its territories, and its offshore areas. This includes weather and climate, the state of the ocean surface, changes in vegetation, surface and ground water, and Antarctic ice. It includes the geological and geophysical mapping of the continent including the occurrence of and aftermaths of natural upheavals of the crust. These observations are often of both strategic and scientific importance. Spacecraft technology also underpins the communications and mapping and tracking needs that are part of the country's modern infrastructure.

Most of this monitoring is done by non-Australian agencies with the result that they potentially have better and more rapid information on the state of the continent than our own agencies and scientists. For example:

> A Japanese satellite, ALOS, regularly maps the continent but, with resource constraints, Australian scientists are struggling to make effective use of the data. China has an ambitious space program that includes earth monitoring satellites but again, if this information is made available, our effectiveness in using it for understanding our changing environment will be restricted by available resources.

Space science, like astronomy, also provides intellectual challenges to some of the basic questions asked about the origins of the universe, our planet, and life. In an economically driven world such questions may seem unimportant but many of the modern science and technology developments have come out of them .

Australian scientists and technologists have played significant roles at various stages of the developments of space science and its applications, both within Australia and overseas, and there is a resident core of expertise in a number of areas. Thus we are well positioned to observe and understand developments, to play small roles in future developments, and to apply the developments to Australian needs. The Australian Academy of Science's National Committee for Space Science was specifically created for monitoring space science developments and for facilitating the international links to the wider space science community through international bodies such as the international Committee on Space Research (COSPAR).

The obvious question is whether this is enough? Is it sufficient to be primarily on-lookers or will the developments in space science be such that we must be more active participants in order to reap the benefits of what is occurring worldwide and to avoid being at the mercy of others? We don't believe that being on-lookers is sufficient. For this reason the Academy of Science encouraged the National Committee for Space Science to develop a national decadal plan for space science, a draft of which is before the Senate Standing Committee. This draft is currently under rigorous discussion, and will be substantially revised before a final draft is released.

The National Committee's draft plan has not yet been commented on by the wider community nor has it yet been commented on by the Academy's Council. It is an ambitious statement that contains many elements that the Academy believes will be supported by the broader community and that will merit further development in

consultation with that community. But we are supportive of its basic tenet that the benefits of a more active role in space science in Australia has wide benefits across many areas of science, including the underpinning of the environmental and geological sciences, as well as for developing Australia's future physical infrastructures for mapping and communication. The Academy concurs that space science and technology cuts across many areas of science and technology and across many branches of the S&T institutions and that a national focus through the establishment of a national coordinating committee in some form will be beneficial. The Academy recognises that out of creative science creative technological developments occur. To ensure that such developments will be relevant and beneficial to future Australians the Academy endorses fully the concept that Australia must be involved to a much greater extent than has hitherto been the case.

I am happy to discuss any of the above further, and can be contacted at the details on the cover sheet.

Yours sincerely

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President