

tions empirical? Are the assumptions of modern theory plausible for real economic agents? Are they consistent? Do applied economists particularize modern theory's conclusions and check them against real economies? Is general economic equilibrium a scientific theory yet? Many economists, physicists, and historians and philosophers of economics and science will want to ponder these questions. *The Invisible Hand* is excellent food for such thought.

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A Southward Endeavor

The Creation of the Anglo-Australian Observatory. S. C. B. GASCOIGNE, K. M. PROUST, and M. O. ROBINS. Cambridge University Press, New York, 1991. xiv, 301 pp., illus. \$59.50.

Nearly all large optical telescopes have, until fairly recently, been sited in the Northern Hemisphere. Astronomers in Britain as elsewhere have long pressed for better views of the southern heavens. In the 1830s, for example, John Herschel transported a big reflecting telescope from England to the Cape of Good Hope. There he extended the surveys of nebulae and star clusters that his father, William, had begun in the late 18th century. In 1869, a 48-inch reflector—probably the first large telescope that a commit-

tee played a key role in planning—was shipped from Britain and put into service at Melbourne in Australia. It was a failure.

The Anglo-Australian Observatory is a far more recent example of an astronomical enterprise involving Britain and Australia. The result of many years of lobbying and politicking by astronomers, civil servants, and politicians in Australia and Britain, the observatory was in effect established in 1970 with the Anglo-Australian Telescope Agreement. The observatory is now most famous for the Anglo-Australian Telescope (AAT), a powerful reflector with a primary mirror 3.9 meters in diameter sited at Siding Spring in Australia. Regular observations with this instrument commenced in 1975. It has won a reputation among astronomers as a very successful and cost-effective telescope.

The Creation of the Anglo-Australian Observatory describes the events leading up to the founding, as well as the early years, of the observatory, most particularly the planning for and construction of the AAT. There is much here for those interested not just in the scientific and technical aspects of the observatory but also in its managerial and political history. The authors also make a good case that to understand the observatory's history all these factors have to be taken into account. In so doing, the authors shift easily between the discussions at the working levels of engineers and scientists to those that took place at high political levels, occasionally involving government ministers in

both Australia and Britain. A long and acrimonious debate over the role the Australian National University would play in running the observatory is also well treated.

The book, however, has some problems. All three authors have participated to various degrees in the observatory's history. Though this has provided them with inside information, it has had two unfortunate consequences. First, long slabs of text seem simply to be personal recollections and opinions, and not the products of careful historical research and synthesis. Whether or not this is truly the case is hard to judge because of the small number of footnotes. Those included are not always of much help. To be informed, for instance, that "correspondence quoted in this chapter is found in the archives of the Australian Government agency" is useless. The authors are also inclined on occasion to write text that is overburdened with details or resembles official minutes. Sometimes when we are told of a particular decision, for example, we are given no clear sense of the process that brought it about. Nor have the authors made much of an attempt to connect issues and themes in the text to a broader literature. Early in the book there are a few references to big science, yet this potential theme is promptly dropped, and there are also several other themes implicit in the text that are never fully probed or connected with each other.

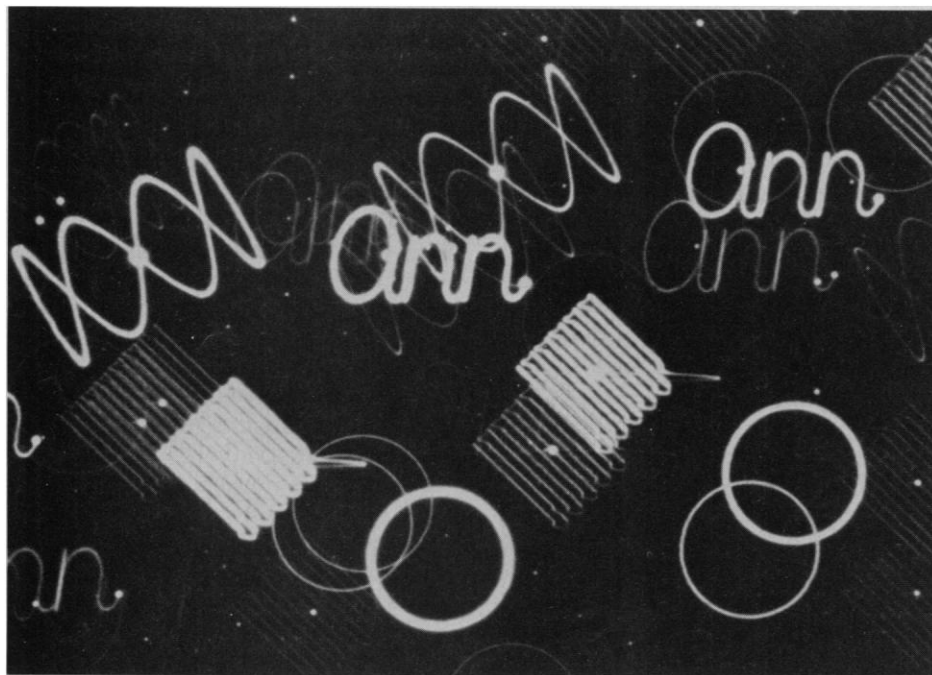
The Creation of the Anglo-Australian Observatory will be of interest to those who worked to create, and who have worked at, the observatory. It will also doubtless provide policymakers and future historians with material and pointers, but it is some way from a properly documented and well-rounded work of history.

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Music Producers

The Physics of Musical Instruments. NEVILLE H. FLETCHER and THOMAS D. ROSSING. Springer-Verlag, New York, 1990. xviii, 620 pp., illus. \$69.

A well-built musical instrument is a thing of great beauty, and not only in the obvious sense of producing exquisite sounds. It is also a piece of visual art, sometimes explicitly in its elaborate decorations but always in its marriage of form with function. Put this together with the intimate relationship a great performer achieves with the instrument, and you may well be discouraged from performing an analytic dissection to



"The Ann plate. This was taken to demonstrate the variety of patterns which the computer can cause the [Anglo-Australian Telescope] to trace on the sky. Stars which happen to be in the field mark out the patterns made by the moving telescope. The lines in the raster scans are separated by 10 arc seconds." [From *The Creation of the Anglo-Australian Observatory*]