the past and the present greatly adds to the entertainment. But what of the reader unversed in astronomy? An editor once told me that she had no patience with the history of science; trying to understand modern ideas was difficult enough, why get confused and "misled by the false ideas of the past?" Authors of history-of-science books try to avoid confusing readers who are not scientists by retailing only ideas that modern science deems correct, and recounting only the lives of scientists that modern science deems important. These authors commit the whig sin of conforming the past to the present. Yeomans, to his credit, in a masterly work, tries to solve the problem; his first eight chapters deal with the history of comets, including the 'false ideas', and the last three chapters outline recent developments. But the going gets tough, and I still wonder, is it not true that the history of science, as a learned discipline, is for scientists only? □

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Cathedrals of science

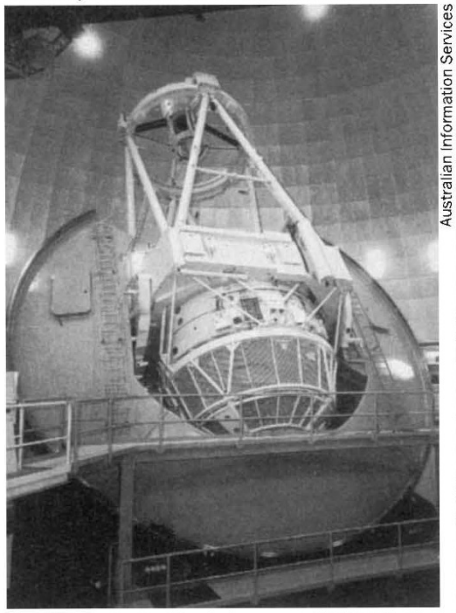
Martin Ward

The Creation of the Anglo-Australian Observatory. By S.C.B. Gascoigne, K. M. Proust and M. O. Robins. *Cambridge University Press: 1990. Pp.301. £40, $59.50.*

THE construction of a large modern telescope has been likened to the building of a mediaeval cathedral, in terms of the use of state-of-the-art contemporary technology and the aesthetic quality of the finished product. This point can be forcefully appreciated if one stands on the observing floor of the Anglo-Australian Telescope (AAT) and gazes up into the cavernous expanse inside the dome. *The Creation of the Anglo-Australian Observatory* by S. Gascoigne, K. Proust and M. Robins traces the history of the AAT from the early days of identifying the need for such a facility, through project management, technical design considerations, commissioning, and finally lists a selection of its major contributions to astronomy. Although the building of the AAT took considerably less time than the construction of a gothic cathedral, and was not interrupted by the black death, some equally traumatic problems had to be overcome.

The AAT is a major chronological landmark in the development of UK observational astronomy during this century. The book relates how it caused a fundamental change in attitude and observing practice from the previous style of pottering about with small telescopes located within Britain, at sites which are extremely poor by international standards. A gentlemanly pursuit perhaps, but not one which resulted in Britain contributing greatly to the list of fundamental observational discoveries during the first part of this century. As our first major astronomical optical national facility, the AAT catapulted Britain into the big league. As a consequence, instead of joining the brain drain of the 1960s and 1970s, young British astronomers were able to look their Californian counterparts eye-to-eye without feeling like poor relations.

Much of the book deals with the mechanics of setting up the project, negotiating for funding from the respective British and Australian grant awarding bodies, and at a higher level, the political implications of a large-scale bilateral project. Although the book does go into some technical aspects of the design, both optical/mechanical and computational, its main purpose seems to be to record the organizational and personal struggles, and how by cajolery and compromise somehow the project was brought through to a successful conclusion. In consequence, the book will probably hold particular interest for persons involved in project management and organizational structure, rather than to those wishing to learn some astronomy. Indeed, it makes no claim to be a textbook.



Australian Information Services

The Anglo-Australian telescope, Siding Spring Observatory, Coonabarabran.

Some nice touches found in this book are the incidents of human interest, such as a senior member of the Australian National University (ANU) staff reputably seen during the opening ceremony raising the university flag above that of the royal standard, in flagrant violation of protocol. Another is that we are given the opportunity to read the text of speeches by a prime minister and a royal personage, leading to interesting conclusions concerning their respective speech writers.

The authors draw some morals from their story. For example, as a first-class large telescope with state-of-the-art instrumentation and a dedicated staff, the AAT produces scientific data of the very highest quality. These factors to a large extent overcome the disadvantage that the site chosen for the AAT, although probably the best available in Australia, is only in the seocnd rank by global standards. Another conclusion is that the definition of the controlling body for the telescope should have been better defined at an early stage. This would have avoided a long running and often acrimonious dispute between the ANU and the AAT Board over who had the responsibility of running the telescope. This dispute blighted early attempts to appoint a director, and on occasion even looked like wrecking the project. Another important lesson concerns the basic design of the telescope. If a good design is available from another source, in this case the US project to build large telscopes in Chile and Arizona, there is little to be gained from re-inventing the wheel. Better to modify a sound design in the light of lessons learned or specific requirements, than to start from scratch. The latter approach would have been a recipe for extra expense and delay. The AAT was completed so quickly largely because it followed an existing design.

The book comments on some other features that contributed to the success of the AAT. For the first time at this level of sophistication, computers were closely interfaced with the operation of the telescope. This simple yet brilliant innovation resulted in the acquisition of astronomical objects, that is, the pointing of the telescope, with unprecedented accuracy. This gave the AAT its legendary reputation as a user-friendly telescope, a situation particularly valued by visiting astronomers. Finally, the symbiosis of the AAT and the nearby Schmidt Telescope used for wide-field survey work, is striking. Since 1988 the AAT and the Schmidt have been administratively combined to form the two-telescope Anglo-Australian Observatory. The book relates the curious tale of how the Schmidt Telescope was only funded originally because it fitted into a Science Research Council spend profile, thereby pushing radio astronomers aside, despite their having what was perceived at the time as a more desirable project.

The story of the AAT is certainly worth setting down, and a place should be found for *The Creation of the Anglo-Australian Observatory* in sections of libraries dealing with the history of science, project management, and general astronomy. Its publication is timely as it should serve to remind those who guide our scientific destiny that big science projects can pay back big dividends. In the case of the AAT this is fundamental knowledge about the universe. Returning to the analogy, as with cathedrals, big is beautiful too. □

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