The Internal Solar Angular Velocity:
Theory, observations and relationship to solar magnetic fields
edited by B. R. Durney and S. Sofia

This book is the proceedings of the Eighth National Solar Observatory Summer Symposium, held at Sunspot, New Mexico in August 1986. It reports the latest observations of rotational splitting of solar acoustic oscillations, of the type from which it will in the future be possible to infer the distribution of angular velocity throughout most, if not all, of the solar interior. It contains many theoretical discussions of angular momentum transport in the Sun, some of which have been motivated by the recent observations.

Stimulated by the new observations, the subject is entering a new era of being in fashion. The preliminary observations are not wholly consistent with what had been expected and a theoretical understanding of why they are as they are is not yet on the horizon. Consequently, these proceedings are very much in the style of a technical status report, essential for the research worker in the field but hardly bedtime reading for the amateur astronomer.

The book is edited by two of the more active research scientists in the subject and is an authoritative, though incomplete, statement of the state of the subject.

Douglas Gough
Dr Douglas Gough is Reader in Astrophysics at the Institute of Astronomy, University of Cambridge, and his main recent activities concern analysing helioseismic data in order to deduce the structure and rotation of the inside of the Sun.

Astronomical Centres of the World
by Kevin Krisicinias

At long last here we have a salute to benefactors, engineers and donors as well as the theoreticians, who played major roles in establishing the various centres throughout history. It is obvious that a lot of background research has been done on this well-illustrated book. Especially useful for the student of astronomical history is a large references section. It is a thorough introduction to the institutions that have made the important theoretical and observational advances. Krisicinias, of the Joint Astronomy Centre, Hilo, Hawaii, emphasises that it was the astronomers who made the events famous and not vice-versa. The book is packed full of thought-provoking gems such as Tycho’s visit by King James VI of Scotland and other dignitaries, comprehensive lists of instruments and data for each historical institution, the description of Mauna Kea as the ‘modern version of Uraniborg’ and comparisons in history such as Tycho to Kepler as Hipparchus was to Ptolemy. He uses the phrase ‘Great astronomical family dynasties’ to describe the Cassinis, Herschels, Struves and Bonds. The latter produced the first ever astro-photo, of Vega, on 16 July 1850.

It was refreshing to read of equal recognition for W. Struve and T. Henderson alongside W. Bessel for the first publication of a bona-fide stellar parallax. The various chapters on each centre are not restricted; relevant and contemporary developments are covered. With ancient and Arabian astronomy in the first two chapters, the remaining four-fifths are the European developments and the rise of astrophysics, with the American progress of the late nineteenth century. Finally the concept of ‘Astronomical capital of the world’ has broken down today because of the various wavelengths under investigation all around the world. One complaint I have is that not all historical centres got the coverage they deserve, e.g. Hevelius’ work at Danzig. The final chapter on the future, however, left me feeling highly optimistic. The significant collective contribution amateurs make today is emphasised in a section outlining the almost exponential growth of astronomical activity since the sixteenth century, including a study of the increasing establishment of observatories around the world, both private and institutional. Personally, I enjoyed the book because I have been to most of these centres around the world myself, but for the layman or amateur, this is an easy and relaxing way to get a good grounding of the important developments of astronomy and astrophysics.

Graham Young
Graham Young, Secretary of the Dundee Astronomical Society and the Scottish Astronomers Group, has travelled round the world photographing astronomical institutions.

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