physics, then space exploration, cosmological evolution and biological evolution. The cement that made a meaningful mosaic of it all was Jastrow's curiosity about anything capable of stimulating the intellect.

The reader will, I think, enjoy the style of the book. Its words are those of someone who knows he must hold his audience. In addition many chapters end with collections of photographs presented in picture-magazine style. The pictures illustrate the preceding prose; long captions repeat the message in abbreviated, summary form.

While many of the people watchers in and around physics are worrying about failing interest and declining registrations, they might learn from a good look at this book. Its success on the bookstands may tell us that we are underestimating our audience.

* * *

The reviewer is editor of PHYSICS TODAY.

Basic processes in the sun

A GUIDE TO THE SOLAR CORONA. By Donald E. Billings. 323 pp. Academic Press, New York, 1966. $14.00

by Jules Aarons

A very delicate balance is achieved by Donald E. Billings of the University of Colorado in his *Guide to the Solar Corona*. The volume stresses a physical understanding of processes in the solar corona, but current observations always buttress and supplement the basic physics. The balance allows the graduate student and research worker in allied fields to move from the basic physics of solar processes to current references that emphasize observations.

The book was planned by Billings and many members of the staff of the department of astrogeophysics of the University of Colorado. The author, a member of that staff and a prominent researcher specializing in coronal optical measurements, has turned out a very readable advanced text, with references at the end of each chapter and a good appendix.

The volume starts with a historical summary and moves into a description of optical and radio observational methods. The theories of emission and radiation processes are excellent; they are developed at the graduate-school level without moving into the rarified air of the theoreticians. A brief discussion of the extent of the corona and its transition into the solar wind complete the book. The solar wind, with its literature and its measurements expanding at very high accelerations, is correctly discussed only sparsely since it is best treated in current review articles and in the periodicals.

This addition to the small list of books on the sun is slanted towards audiences different from those of recent books such as *The Solar Corona* edited by J. Evans, which is a conference proceedings oriented toward the solar physicist and the new edition of *Our Sun* by D. Menzel, which is slanted towards the undergraduate.

The volume emphasizes optical coronal measurements and to some extent (possibly because of the reviewer's bias) omits the contribution of the radio measurements. For example, although the techniques are outlined, the observations of the angular diameter and apparent temperature of the radio sources are not discussed. This, however, is a minor criticism since the volume does describe the basic processes and mechanism for emission of the active regions.

Well written and clear, amply illustrated, delving into theory and outlining important observations, *A Guide to the Solar Corona* is recommended both for the astronomer and for the geophysicist.

* * *

Jules Aarons, chief of the radio astronomy branch at US Air Force Cambridge Research Laboratories, Bedford, Mass., is editor of a recent volume Solar System Radio Astronomy.

Nonequilibrium systems and surroundings

THERMODYNAMICS OF STEADY STATES. By Ralph J. Tykodi. 217 pp. Macmillan, New York, 1967. $10.95

by Ralph J. Nossal

In recent years significant success has been achieved in formulation of the molecular basis of irreversible thermodynamics. Kinetic expressions have been established for many of the linear transport coefficients, and the origin of various "phenomenological" transport equations is increasingly better understood. However, most investigations of the properties of nonequilibrium thermodynamic systems have been presented for assemblies of infinite ex-

CORONAGRAPH SPECTRUM of green coronal line at 5000-km intervals above solar limb. A curved slit, with solar-image diameter, is parallel to the limb. The absorption lines are Frauenhofer lines in the spectrum of scattered sunlight.

HIGH ALTITUDE OBSERVATORY