comers, may find it useful to have everything collected and easily accessible, even though a large fraction of the papers have already appeared in the scientific literature. The informal character of the lectures may make this material easier to digest than the corresponding papers published elsewhere.

The editors and publishers have done a beautiful job. Still, I think that speed of publication should be the prime consideration in publishing conference proceedings, and I would gladly sacrifice everything except accuracy to this goal.

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Stars and Stellar Systems. vol. 6, *Stellar Atmospheres*. Jesse L. Greenstein, Ed. University of Chicago Press, Chicago, Ill., 1961. xix + 724 pp. Illus. $17.50.

It has been more than a century since Auguste Comte gazed into the clouded crystal ball and prognosticated: "There are some things of which the human race must remain forever in ignorance, for example, the chemical constitution of the heavenly bodies." We now know, thanks to spectroscopy, that these same heavenly bodies provide us with an infinite variety of strange, experimental, chemical and physical laboratories and that the detailed analysis of electromagnetic radiation originating in *stellar atmospheres* has led to fundamental discoveries far beyond anything that Comte could have envisioned.

The astronomer's approach is primarily an empirical one; first comes the observation which poses a problem that, later, demands theoretical interpretation. New observational knowledge also suggests new observational problems and techniques. The 1961 sun bears little resemblance to the 1941 sun because of new instruments such as the coronagraph, the rocket-borne spectrograph, and the radio telescope. One can predict with confidence that the 1981 stars —and their atmospheres—will be quite different from the 1961 stars, as new space observatories and radio telescopes explore great regions of the electromagnetic spectrum virtually untouched at the present time. Astronomy will continue to be the science of discovery.

This book is one of the first two volumes to appear of a proposed nine-volume "Compendium of Astronomy and Astrophysics" under the general editorship of Gerard P. Kuiper and Barbara M. Middlehurst. The aim of the compendium is to present stellar astronomy and astrophysics as basically *empirical* sciences, coordinated and illuminated by the application of theory. This compendium is intended as an extension of the four-volume "Solar System" series, edited by Kuiper.

Chapters 1 through 5 outline standard methods of theoretical analysis of stellar atmospheres. The next three chapters deal with nonthermal phenomena, magnetic stars, and stellar rotation and turbulence. Chapters 9 through 11 discuss high luminosity stars and extended atmospheres, while the last eight chapters are concerned with composite spectra, long-period variables, red giants, mass loss from red giants, isotopes, novae, dwarf variables, and stars below the main sequence. The normal red dwarf, by far the commonest type of star in space, is, strangely, not discussed.

The choice of both authors and subject matter is excellent, and there is no question but that this well-edited volume will be the primary authority in its field for many years. As such, it should have a profound influence in the training of the many needed future astrophysicists. The price is refreshingly low for a book of this size and quality.

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New Books

Mathematics, Physical Sciences, and Engineering

Industrial Organic Nitrogen Compounds. Melvin J. Astle. Reinhold, New York; Chapman and Hall, London, 1961. 399 pp. $14.

Information Retrieval and Machine Translation. pt. 1. Allen Kent, Ed. Interscience, New York, 1960. 701 pp. Illus. $23. First part of a two-volume work which will record the papers and discussions of the International Conference for Standards on a Common Language for Machine Searching and Translation, September 1959.

Integral Quadratic Forms. G. L. Watson. Cambridge Univ. Press, New York, 1960. 155 pp. $5.

Kinetics and Mechanism. A study of homogeneous chemical reactions. Arthur A. Frost and Ralph G. Pearson. Wiley, New York, ed. 2, 1961. 414 pp. Illus. $11.

Linear Graphs and Electrical Networks. Sundaram Seshu and Myril B. Reed. Addison-Wesley, Reading, Mass., 1961. 325 pp. Illus. $9.75.

Manual of Cotton Spinning. vol. 2, pt. 1, *The Characteristics of Raw Cotton*. E. Lord. Textile Book (Interscience), New York; Butterworths, London, 1961. 345 pp. $8.50.

Materials for Nuclear Engineers. A. B. McIntosh and T. J. Heal, Eds. Interscience, New York, 1960. 382 pp. Illus. $11.85.

Mathematical Methods for Engineers and Technologists. P. I. Romanovskii. Translated from the Russian by M. Slater. T. Kövàry, Ed. Pergamon, New York, 1961. 265 pp. Illus. $8.50.

Matheson Gas Data Book. Matheson, East Rutherford, N.J., ed. 3, 1961. 438 pp. Illus. $8.

Mechanics of Solids and Fluids. Robert R. Long. Prentice-Hall, Englewood Cliffs, N.J., 1961. 166 pp. Illus. Trade, $9; text, $6.75.

Notes on Quantum Mechanics. A course given by Enrico Fermi. Univ. of Chicago Press, Chicago, Ill., 1961. 171 pp. Paper, $1.50. Lecture notes as prepared by Fermi for a course in early 1954.

NMR and EPR Spectrocsopy. By the staff of Varian Associates. Pergamon, New York, 1960. 296 pp. $12. A large part of the material presented at the third annual workshop sponsored by Varian, October 1959.

Optical Spectrometric Measurements of High Temperatures. Philip J. Dickerman, Ed. Univ. of Chicago Press, Chicago, Ill., 1961. 276 pp. Illus. $12.50. A series of papers and accounts of related discussions resulting from a symposium at the University of Chicago, March 1960.

The Philosophy of Physics. Vincent Edward Smith, Ed. St. John's Univ. Press, Jamaica, N.Y., 1961. 85 pp. Paper. St. John's Univ. Studies, Philosophical Series, 2.

Physical Chemistry. Farrington Daniels and Robert A. Alberty. Wiley, New York, ed, 2, 1961. 754 pp. Illus. $8.75.

Physical Gas Dynamics. A. S. Predvoditelev, Ed. Translated from the Russian by R. C. Murray and D. R. H. Phillips. Pergamon, New York, 1961. 187 pp. Plates. $7.50.

Physics and Archaeology. M. J. Aitken. Interscience, New York, 1961. 191 pp. Illus. $6.

Polynomials Orthogonal on a Circle and Interval. Ya. L. Geronimus. Translated from the Russian by D. E. Brown. Ian N. Sneddon, Ed. Pergamon, New York, 1960. 219 pp. $8.50.

Polypropylene. Theodore O. J. Kresser. Reinhold, New York; Chapman and Hall, London, 1960. 280 pp. Illus. $6.50.

Porcelain Enamels. The preparation, application, and properties of enamels. Andrew I. Andrews. Garrard Press, Champaign, Ill., ed. 2, 1961. 659 pp. Illus. $12.

Radiation Protection and Recovery. Alexander Hollaender, Ed. Pergamon, New York, 1960. 397 pp. Illus. $10.

Transistor Circuit Analysis. Maurice V. Joyce and Kenneth K. Clarke. Addison-Wesley, Reading, Mass., 1961. 475 pp. Illus. $10.75.