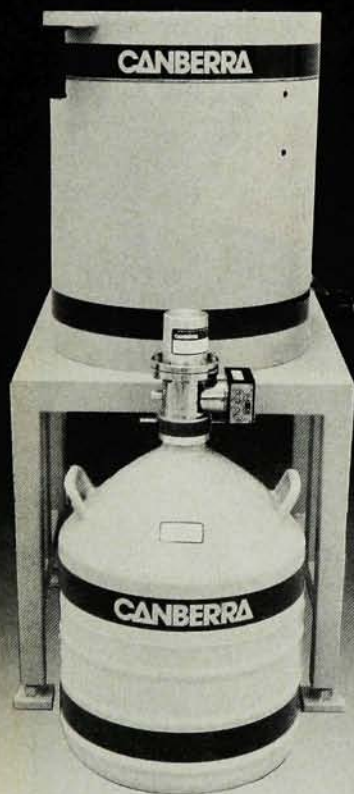


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tion. The chapter on controlled nuclear fusion has been left out completely. The author promises to provide an expanded version of this chapter as Volume 2. As the chapter on fusion devices was not very detailed in the first edition, the decision seems to be a sound one—although the book will remain a torso until the second volume is actually published. Probably the greatest improvement is in the area of homework assignments. The number of problems has dramatically increased, a feature that both students and professors will equally appreciate.

The first edition of Chen's book has helped numerous students and newcomers to fusion to become acquainted with the basic concepts of plasma physics; I expect that the second edition will serve the same useful purpose.

SCHWEICKHARD E. VON GOELER
Princeton University

Eddington: The Most Distinguished Astrophysicist of his time

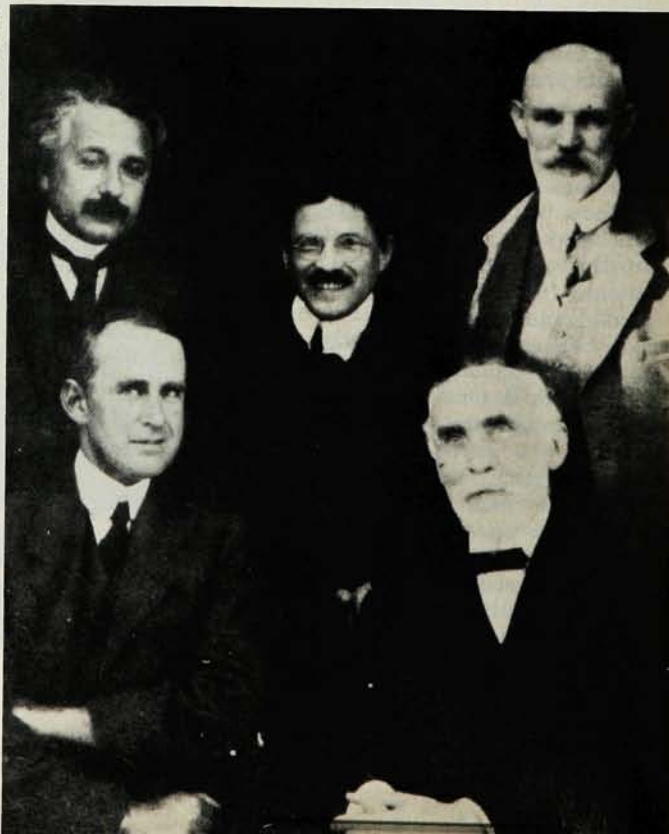
S. Chandrasekhar
64 pp. Cambridge U. P., 1983. \$12.50

The high point of Arthur Stanley Eddington's scientific career was probably the publication in 1926 of his *Internal Constitution of the Stars*. It was hailed as a masterpiece and sealed his reputation as the greatest living astrophysicist. With the benefit of hindsight, one can also argue that it was his most influential work, for it laid the basis for modern research on

the structure, the constitution and the evolution of the stars. But Eddington's carrier encompassed not just astrophysics; he was also prominent in expounding Einstein's general theory of relativity. In addition, he was a leader in bringing the theory to wide attention in the late 1910s and 1920s, in part by participating in the famous 1919 eclipse expeditions to test general relativity by measuring the deflection of starlight passing close by the Sun. Nor is he remembered for his technical papers and books alone, for he was also a brilliant and highly successful popularizer of science. Eddington's reputation, however, has been tarnished by his later researches into his so-called "Fundamental Theory" by which he sought to unify quantum theory and relativity theory. The obscure path he thereby beat is one that very few have been prepared to follow.

In his *Eddington: The Most Distinguished Astrophysicist of his Time*, Subrahmanyan Chandrasekhar, joint winner of the 1983 Nobel prize in physics for his theoretical investigations of white dwarfs, agrees with the argument that Eddington's later researches were not nearly as distinguished as his earlier ones. Chandrasekhar's slim volume is directed towards physicists and astrophysicists and is based on the lectures he gave in 1982 in Cambridge, England, to celebrate the centenary of Eddington's birth. The book is largely a commentary on the main strands of Eddington's scientific thought, illustrated with extracts from his correspondence and publications. It is divided into two

Arthur Eddington in a group photo taken on 26 September 1923 in Willem deSitter's study. Eddington is sitting on the left, next to him is Hendrik Lorentz, and behind him, from the left to the right are Albert Einstein, Paul Ehrenfest and deSitter. (Photo courtesy of AIP Niels Bohr Library.)



main sections: The first deals with Eddington and astronomy and astrophysics, and the second is concerned with Eddington as the expositor and exponent of general relativity. The author knew Eddington well at Cambridge in the early and mid-1930s (see *PHYSICS TODAY*, October 1982, page 33), but he does not pretend to have written a biography, and A. Vibert Douglas's *The Life of Arthur Stanley Eddington* is still unchallenged as the central source on Eddington.

Chandrasekhar does not doubt that Eddington made fundamental contributions to astronomy, astrophysics and general relativity. Nor does he question the accepted view of Eddington as kindly, brave and sometimes painfully shy in his private life. Nevertheless, Chandrasekhar's Eddington does display a tougher, more aggressive and less flexible side in scientific matters than one might have expected from other published writings. Chandrasekhar states bluntly that Eddington was not always fair in the way he treated his scientific adversaries. He is also critical of Eddington's attitude in later life towards scientific research, an attitude he describes as "cocksure" and which he contrasts with the more modest approach he believes Eddington displayed in the earlier part of his career.

Although Chandrasekhar's treatment of the historical context in which Eddington performed his studies is shaky on occasion (Eddington did not favor the de Sitter universe over the Einstein universe in his *The Mathematical Theory of Relativity*, for example), he has produced an absorbing cameo of a fascinating and original astrophysicist and physicist, and one that also tells us something of Chandrasekhar.

ROBERT W. SMITH
Smithsonian Institution and
John Hopkins University

new books

Particles, Nuclei and High-Energy Physics

Advances in Nuclear Physics. Vol. 14. J. W. Negele, E. Vogt, eds. 289 pp. Plenum, New York, 1984. \$49.50. *Compendium*

Forward Electron Ejection in Ion Collisions. *Lecture Notes in Physics 213.* Proc. Symp. Physics Inst., University of Aarhus, Aarhus, Denmark, June, 1984. K. O. Groenewald, W. Meckbach I. A. Sellin, eds. 165 pp. Springer-Verlag, New York, 1984. \$9.00

An Introduction to Nuclear Reactor Theory. C. E. Iliffe. 299 pp. Manchester U. P., Dover, N.H., 1984. \$34.00. *Text*

Leptons, Hadrons, and Nuclei. F. Scheck. 388 pp. North-Holland, New York, 1984. \$61.50. *Graduate text*

The Atomic Nucleus. Second Edition. J. M. Reid. 279 pp. Manchester U.P., Dover, N.H., 1984. \$8.50. *Undergraduate text*

Two-Photon Physics at e^+e^- Storage Rings. *Springer Tracts in Modern Physics 105.* H. Kolanoski. 187 pp. Springer-Verlag, New York, 1984. \$27.00. *Monograph*

Mathematical and Computational Methods in Nuclear Physics. Proc. Sixth Granada Workshop, Granada, Spain, October, 1983. J. S. Dehesa, J. M. G. Gomez, A. Polls, eds. 276 pp. Springer-Verlag, New York, 1984. \$13.50

Neutron Cross Sections. Neutron Resonance Parameters and Thermal Cross Sections. Vol. 1. Part. B. Z = 51-100. S. F. Mughabghab. Academic, New York, 1984. \$45.00

Spin Excitations in Nuclei. F. Petrovich, G. E. Brown, G. T. Garvey, C. D. Goodman, R. A. Lindgren, W. G. Love, eds. 658 pp. Plenum, New York, 1984. \$95.00. *Compendium*

In-Beam Nuclear Spectroscopy. 2 Vols. Proc. Int. Symp. Debrecen, Hungary, May 1984. Z. Dombardi, T. Fenyes, eds. 395 pp. Akademiai Kiado, Budapest, 1984. \$65.00

Le Noyau Atomique. Que sais-je. T. Kahan. 127 pp. Presses Universitaires de France, Paris, 1985. \$4.95. *Introductory text*

Elementary Kinematics of Elementary Particles. G. Kopilov. 270 pp. Moscow, (US dist. Imported Publications, Chicago) 1983. \$4.95. *Introductory text*

Progress in Particle and Nuclear Physics. Vol. 12. D. Wilkinson, ed. 495 pp. Pergamon, New York, 1984. \$102.00. *Compendium*

Neutron-Nucleus Collisions: A Probe of Nuclear Structure. AIP Conf. Proc. No. 124. Burr Oak State Park, Ohio, 1984. J. Rapaport, R. W. Finlay, S. M. Grimes, F. S. Dietrich, eds. 556 pp. AIP, New York, 1985.

Theory and Mathematical Physics

Nuclear Models and the Search for Unity in Nuclear Physics. K. Kumar. 116 pp. Universitetsforlaget, Bergen, Norway, 1984. \$16.00. *Monograph*

Applications of Walsh and Related Functions: With an Introduction to Sequence Theory. K. G. Beauchamp. 308 pp. Academic, New York, 1984. \$55.00. *Monograph*

Vertex Operators in Mathematics and Physics. J. Lepowsky, S. Mandelstam, I. M. Singer, eds. 482 pp. Springer-Verlag, New York, 1985. \$29.80. *Conference proceedings*

Probabilities of the Quantum World. D. Danin. 270 pp. MIR, Moscow, (US dist. Imported Publications, Chicago) 1983. \$6.95

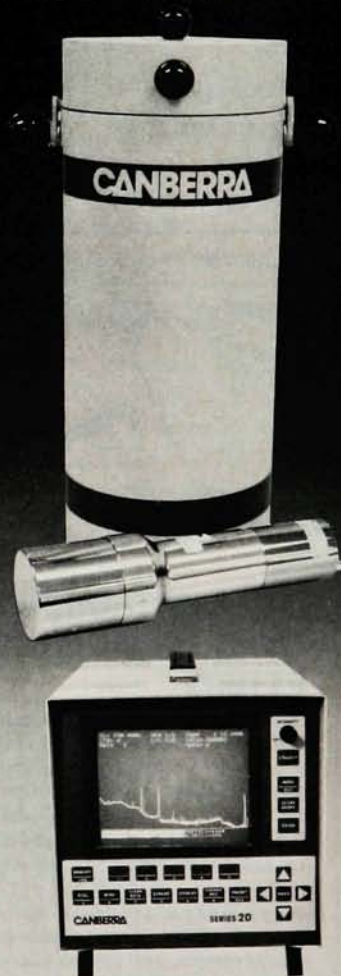
Gravitation and Elementary Particle Physics. A. A. Logunov, ed. 294 pp. MIR, Moscow, (US dist. Imported Publications, Chicago) 1984. \$8.95. *Compendium*

Classical General Relativity. Proc. of the Conf. Classical (nonquantum) General Relativity, City University, London, December 1983. W. B. Bonner, J. N. Islam, M. A. H. MacCallum, eds. 269 pp. Cambridge U. P., New York, 1985. \$44.50

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