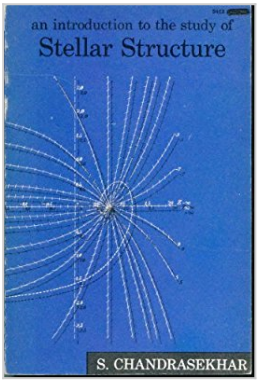

An introduction to the study of stellar structure

By Subrahmanyan Chandrasekhar

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In this monograph a leading modern astrophysicist explores a problem basic to stellar dynamics: What is the relationship between loss of energy, mass, and radius of stars in the steady state?
The monograph is divided into two distinct parts. In chapters i-iv, Chandrasekhar presents the "classical" background necessary to his argument: the laws of thermodynamics (from Carathéodory's rigorous axiomatic standpoint), adiabatic and polytropic laws, and the work of Ritter, Emden, Kelvin, and others who developed the applied mathematics of stellar structure. Chapters v-xii discuss modern results: the formal theory of radiation, the equations of radiative equilibrium, the luminosity formula, the theory of stellar envelopes, Gibbs statistical mechanics (the quantum mechanical version), white dwarfs, etc. The closing chapter outlines some general trends in current investigations of the problem.
Appendixes cover physical and astronomical constants; the masses of light atoms; the masses, luminosities, and radii of the stars, derived hydrogen contents, central densities and central temperatures, and tables of white dwarf functions.
"Extremely interesting. It reaches the highest level of scientific merit." — *Bulletin, American Mathematical Society.*

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An introduction to the study of stellar structure By Subrahmanyan Chandrasekhar Bibliography

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- Binding: Unknown Binding
- 509 pages

Editorial Review

About the Author

Subrahmanyan Chandrasekhar: A Shining Star
The great Indian astrophysicist Subrahmanyan Chandrasekhar (1910–1995), recipient of the Nobel Prize in Physics in 1983 for his work on the later evolutionary stages of massive stars, was not only the author of several books reprinted by Dover over many years, but a frequent and highly valued reviewer of titles in his field during the 1970s and 1980s. Chandrasekhar's books, published by Dover, are: *An Introduction to the Theory of Stellar Structure,* 1967; *Hydrodynamic and Hydromagnetic Stability,* 1981; *Principles of Stellar Dynamics,* 2005; *Ellipsoidal Figures of Equilibrium,* 1987; and *Radiative Transfer,* 1960.

For those concerned with the distant future ? the really distant future ? Chandrasekhar's name will always be associated with the Chandrasekhar Limit, the figure of 1.44 solar masses, the minimal mass above which a dying star will collapse into a black hole following a supernova. People on Earth need not be bothered anticipating such drama: for us, when the sun dies, the lights will just go out. In astrophysical terms, our sun will at that point be a stable white dwarf.

Critical Acclaim for Subrahmanyan Chandrasekhar:
"Any new fact or insight that I may have found has not seemed to me as a 'discovery' of mine, but rather something that had always been there and that I had chanced to pick up. I discovered true mathematical elegance from Subrahmanyan Chandrasekhar." ? Carl Sagan

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