

35. COMMISSION DE LA CONSTITUTION DES ÉTOILES

PRÉSIDENT: Sir ARTHUR EDDINGTON, *Director of the Cambridge University Observatory, Cambridge, England.*

MEMBRES: MM. Emden, R. H. Fowler, Jeans, Milne, Pannekoek, Rosseland, Russell, Vogt, Woltjer.

This Commission deals with a subject in which there is little scope for organizing activity. The organization of the observations, which provide the data used in research on the constitution of the stars, is assigned to other Commissions. Theoretical investigations are a matter for individual effort, and cannot be organized by a Committee except in special cases where they involve long computations of routine character.

Individual research has been very active in the last four years. We may mention in particular the study of the properties of superdense matter according to the theories of atomic physics. Evidence is growing that both in the exterior and interior of a star there is a very high abundance of hydrogen, and theories have been revised in conformity with this. Numerous solutions by quadratures by various investigators have been made to test the effect of different hypotheses as to the opacity, etc., on the internal distribution of density and temperature.

The models provided by Emden's polytropes are widely employed to represent the whole or part of the star; and the need has been felt for fuller tables than those calculated by Emden himself. In 1931 an opportunity arose of having this work undertaken by the British Association Committee for the Calculation of Mathematical Tables. The arrangements were made between Dr Comrie, representing the latter Committee, and Prof. Milne and Sir A. S. Eddington, representing this Commission; and the scope of the tables and functions to be computed were settled in consultation. For the computation Mr D. H. Sadler was primarily responsible, with valuable assistance from Mr J. C. P. Miller. The British Association gave a grant towards the preparation of the tables, and the expense of printing has been borne by the I.A.U. It is expected that publication will take place before September.

A. S. EDDINGTON

President of the Commission