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TO CHARLES



LAURITSEN AND HIS HERITAGE

This issue of *Engineering & Science* has been prepared as a tribute to Charles Lauritsen to coincide with the completion of the Institute's new Lauritsen Laboratory and the announcement of the Lauritsen Memorial Lectureship. The articles that follow give some indication of the flourishing and varied research that has grown out of his initial interest in high-voltage x-ray tubes 30 years ago.

The first article tells, in the words of Tom Lauritsen, how Charlie came to Pasadena and high-voltage research from a career in electrical engineering. Early investigations in the brand-new Kellogg Laboratory are described in William A. Fowler's account of the beginning of nuclear research and the way in which it quickly led to astrophysical applications. Stewart Harrison then describes radiation therapy in Kellogg—a relatively short and unfamiliar chapter in the history of the laboratory but one of Lauritsen's lifelong interests.

During the years in which he led the Kellogg and Sloan Laboratories to a position of eminence in nuclear physics, Lauritsen concentrated on two areas: the structure of light nuclei, and nuclear processes in stars. Tom Tombrello describes some of the highlights in this study of energy levels and reactions of light nuclei, and Charles Barnes

describes noteworthy experiments on nuclear beta-decay in the context of the steadily increasing understanding of the weak interaction. In discussing nuclear processes in stars, Ralph Kavanagh describes a series of experiments extending over 20 years that have led to a fairly clear picture of energy production in the sun.

The next three articles deal with research that has developed out of this interest in nuclear astrophysics: Ward Whaling and George Lawrence describe atomic spectroscopy related to stellar composition; Kip Thorne discusses theoretical studies of relativistic cosmology and stellar evolution; and Gerry Wasserburg and Don Burnett report geochemical investigations of nuclear processes in our evolving solar system. In the last article Jim Mayer describes investigations in solid state physics that make use of the instrumentation and the methods that were developed in Kellogg Laboratory under Lauritsen's guidance.

All these articles reflect the influence of Charlie Lauritsen. We hope they convey some of his spirit of "having a good time" pursuing the challenging questions and fascinating puzzles that nature continually presents.

— *Carl Anderson*