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The author stresses the significance of variable stars for our ultimate understanding of the history and scale of the Milky Way and nearer extragalactic systems. For advanced students and researchers of astronomy, this is a definitive account of the modern theories surrounding RR Lyrae variable stars.

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HORACE A. SMITH

Department of Physics and Astronomy, Michigan State University



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Preface

This review of the RR Lyrae stars is written from the perspective of an observational astronomer. Without, I hope, neglecting the vital contributions of stellar evolution theory and stellar pulsation theory to the present appreciation of these variables, I have nonetheless tried to keep the emphasis of each chapter upon the observations which underlie our understanding of them. I offer my apologies to those theorists who may feel slighted by this approach.

Still, even observational astronomers may be disgruntled over at least one aspect of the text. Whatever knowledge we have of the RR Lyrae stars is based upon literally millions of observations of thousands of these variables in globular clusters, in the galactic field, and in systems beyond the bounds of the Milky Way. Many different observers have contributed in one way or another to the accumulation of these observations. There is no way to credit all students of these stars, whether they be observers or theorists, nor is there space to reference every relevant paper. Often reference has been made to just one or two salient papers in a particular field, or to papers summarizing a large corpus of work. I hope that any dissatisfaction thereby incurred is at least partially assuaged by this general acknowledgement of the efforts of numerous researchers, unnamed in this text, without whose endeavors our knowledge of the RR Lyrae stars would be much the poorer.

I was assisted by many people in the preparation of this book to whom many thanks are owed. I thank Timothy Beers, Suzanne Hawley, Nancy Silbermann, and Amelia Wehlau for reading and commenting upon draft chapters of this work. Dorrit Hoffleit made available her expertise on the history of variable star astronomy and communicated valuable information about the discovery of the first RR Lyrae variable. The staffs of the libraries of the Physics and Astronomy Department at Michigan State University and of the Dominion Astrophysical Observatory were of great help. I thank, in particular, Diane Clark and Judy Matthews for their assistance in tracking down obscure references. I thank the staff of the Dominion Astrophysical Observatory and its director, Jim Hesser, for their hospitality while I was on sabbatical leave from Michigan State University. Summer student Brian Kern assisted in the tabulation of data on field and cluster RR Lyrae stars and Tom McWilliams assisted in the sorting of references. Debbie Benedict provided valuable secretarial aid. I thank Simon Mitton for his patience during the preparation of this work. The cooperation of those who gave permission for the reproduction of previously published figures is greatly appreciated. Finally, I thank my mother and members of my family for their encouragement.