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This book surveys our understanding of stars which change in brightness because they pulsate. Pulsating variable stars are keys to distance scales inside and beyond the Milky Way galaxy. They test our understanding not only of stellar pulsation theory but also of stellar structure and evolution theory. Moreover, pulsating stars are important probes of the formation and evolution of our own and neighboring galaxies. Our understanding of pulsating stars has greatly increased in recent years as large-scale surveys of pulsating stars in the Milky Way and other Local Group galaxies have provided a wealth of new observations and as space-based instruments have studied particular pulsating stars in unprecedented detail.



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