



# Contents

1	Galactic Explorations	1
	Introductory • Interruption for Definitions • The Measurement of Distances to the Stars • The Kinds of Galaxies	
2	The Star Clouds of Magellan	27
	The Harvard-Peruvian Explorations • The Loop Nebula, Star Clusters, and Peculiar Giant Stars • The Supergiant S Doradus • Distances and Dimensions • On the Future of the Clouds	
3	The Astronomical Toolhouse	45
	The Abundance of Cepheid Variables • The Period-Luminosity Relation • How Many of the Giant Stars are Cepheids? • What Period is Most Frequent? • An Indicator of Gravitational Potential, or Something • The Light Curves of Cepheids • The Luminosity Curve for Supergiants • Tools That Are Not Sharp Enough	

4	The Milky Way As a Galaxy	73
	Globular Clusters · From the Heliocentric to the Galactocentric Hypothesis · The Thickness of the Galactic System · Measuring the Boundaries · More About the Nucleus	
5	The Neighboring Galaxies	99
	The Triple in Andromeda, and Messier 33 · Distances and Dimensions · Stellar Types in Messier 31 and Messier 33 · Fifty Million Andromedan Novae on the Way · Two Other Irregular Neighbors · Unusual Neighbors in Sculptor and Fornax	
6	The Metagalaxy	125
	Census of the Inner Metagalaxy · The Region of Avoidance · The Virgo Cluster of Galaxies · The Fornax Group of Galaxies, and Others · Faint-Galaxy Surveys at Harvard, Mount Wilson, Palomar, and Lick Observatories	
7	The Expanding Universe	151
	The Space-Density Parameter · Density Gradients · The Motions of Galaxies · Red Shifts and Cosmologies · Trends	
	Index	181

