## Contents

1	Presenting the Milky Way  The Milky Way • Telescopic Views • Photographic  Appearance • Our Milky Way: A Model • Tools  and Terminology	1
2	The Data of Observation  Stellar Brightnesses · Photoelectric Photometry · Stellar Colors · Standard Sequences of Stellar Magnitudes · Distances and Parallaxes · Absolute  Magnitude · Spectral Classification · Proper Motions · Radial Velocities · Coöperation in Research	31
3	The Sun's Nearest Neighbors The Hertzsprung-Russell Diagram • The Luminosity Function	63
4	Reaching Out—The System Takes Shape Our Distant Neighbors • Galactic Clusters • Associations and Aggregates • Pulsating Stars • The System of Globular Clusters • Population Characteristics of Globular Clusters • The Nucleus of Our Galaxy	81
5	The Whirling Galaxy The Sun's Motion Around the Galactic Center • The Stars of High Velocity • Solar Motion and Star Streaming • Galactic Rotation	119

6	The Interstellar Gas  Diffuse Bright Nebulae • Interstellar Absorption Lines • Cloud Structure and Galactic Structure	135
7	Dark Nebulae and Cosmic Dust Reflection Nebulae · Dark Nebulae · Ratio of Gas to Dust · The Cosmic Dust · Interstellar Polarization	163
8	Radio Astronomy and the Milky Way Continuous Background Radiation from the Galaxy Discrete Radio Sources • The 21-Centimeter Line of Neutral Hydrogen	
9	The Spiral Structure of the Galaxy Outline of Our Galaxy · Properties of Spiral Galaxies · Spiral Structure of Our Galaxy: Optical Evidence · Spiral Structure of Our Galaxy: 21-Centimeter Evidence · Further Evidence	229
10	Our Changing Galaxy Large-Scale Changes · When Stars Meet · Evolution of Star Clusters · The Expanding Universe and the Cosmic Time Scale · Star Birth and Evolution · Looking Ahead	249
	Index	265