

Astronomy: A Beginner's Guide to the Universe, Sixth Edition

by Eric Chaisson; Steve McMillan

Publisher: Addison-Wesley

Copyright Year: 2010

Publishing Date: 2009/06/29

eText ISBN-10: 0-321-61223-X

eText ISBN-13: 978-0-321-61223-6

Print ISBN-10: 0-321-59876-8

Print ISBN-13: 978-0-321-59876-9

Course: Introductory Astronomy

Pages: 592

<http://www.coursesmart.com/0321598768>

Fix Textbook Mapping to Starry Night College

Part 1	Foundations
Chapter 0	0. Charting the Heavens: The Foundations of Astronomy, 2
	0.1. The "Obvious" View, 4
	0.2. Earth's Orbital Motion, 7
	0.3. The Motion of the Moon, 12
	0.4. The Measurement of Distance, 17
	0.5. Science and the Scientific Method, 18
Chapter 1	1. The Copernican Revolution: The Birth of Modern Science, 24
	1.1. The Motions of the Planets, 26
	1.2. The Birth of Modern Astronomy, 29
	1.3. The Laws of Planetary Motion, 31
	1.4. Newton's Laws, 35
Chapter 2	2. Light and Matter: The Inner Workings of the Cosmos, 42
	2.1. Information from the Skies, 44
	2.2. Waves in What?, 46
	2.3. The Electromagnetic Spectrum, 48
	2.4. Thermal Radiation, 51
	2.5. Spectroscopy, 55
	2.6. The Formation of Spectral Lines, 58
	2.7. The Doppler Effect, 63
	2.8. Spectral-Line Analysis, 65
Chapter 3	3. Telescopes: The Tools of Astronomy, 68
	3.1. Optical Telescopes, 70
	3.2. Telescope Size, 77
	3.3. High-Resolution Astronomy, 80
	3.4. Radio Astronomy, 83
	3.5. Space-Based Astronomy, 89
Part 2	Part 2. Our Planetary System, 98
Chapter 4	4. The Solar System: Interplanetary Matter and the Birth of the Planets, 100

Starry Night College Units that connect to **textbook parts** are in **bold text**

Starry Night College Exercises that connect to **textbook chapters** are in plain text

Unit A									
A1	A2	A3	A4	A5	E1-E4				
A2	A4	A5	A6	A7	A8	A9	E3	E4	
A10	A11	A12	A13						
B6	F2								
B4									
Unit B									
B1	B2	B3	C3						
B4	B5	B6	B7						
B3									
B5									
B7	F2	F4	G1						
H3									
F6									
F6	G1								
F6	H3								
G3									
G3									
Unit H									
H2	H3								
H2	H3								
H2	H3								
H2	H3	G1							
Unit B	Unit C	Unit D							

	4.1. An Inventory of the Solar System, 102	B5	B6		
	4.2. Interplanetary Matter, 105	D1	D2	D3	
	4.3. The Formation of the Solar System, 118	B6			
	4.4. Planets Beyond the Solar System, 127				
Chapter 5	5. Earth and Its Moon: Our Cosmic Backyard, 134				
	5.1. Earth and the Moon in Bulk, 136	A10	A11		
	5.2. The Tides, 137	A11			
	5.3. Atmospheres, 141				
	5.4. Internal Structure of Earth and the Moon, 145	C4			
	5.5. Surface Activity on Earth, 148				
	5.6. The Surface of the Moon, 151	A10			
	5.7. Magnetospheres, 155				
	5.8. History of the Earth–Moon System, 157	C4			
Chapter 6	6. The Terrestrial Planets: A Study in Contrasts, 162	Unit C	Unit H		
	6.1. Orbital and Physical Properties, 164	B5	B6	C1	H2
	6.2. Rotation Rates, 165	C1	C3		
	6.3. Atmospheres, 167	C1	H2		
	6.4. The Surface of Mercury, 169	C1	H2		
	6.5. The Surface of Venus, 170	C1	H2		
	6.6. The Surface of Mars, 173	C1	H2		
	6.7. Internal Structure and Geological History, 183	C1	H2		
	6.8. Atmospheric Evolution on Earth, Venus, and Mars, 187	C1	H2		
chapter 7	7. The Jovian Planets: Giants of the Solar System, 192	Unit c			
	7.1. Observations of Jupiter and Saturn, 194	C2	C4	H2	
	7.2. The Discoveries of Uranus and Neptune, 196	C2	C4	H2	
	7.3. Bulk Properties of the Jovian Planets, 197	C2	C4	H2	
	7.4. Jupiter’s Atmosphere, 200	C2			
	7.5. The Atmospheres of the Outer Jovian Worlds, 203	C2			
	7.6. Jovian Interiors, 207	C2			
Chapter 8	8. Moons, Rings, and Plutoids: Small Worlds Among Giants, 214	Unit C	Unit H		
	8.1. The Galilean Moons of Jupiter, 216	C4	H2		
	8.2. The Large Moons of Saturn and Neptune, 221	C4	H2		
	8.3. The Medium-Sized Jovian Moons, 225	C4	H2		
	8.4. Planetary Rings, 228	C2	H2		
	8.5. Beyond Neptune, 233	C5	D4	H2	
Part 3	Part 3. The Stars, 240	Unit F			
Chapter 9	9. The Sun: Our Parent Star, 242	F1			
	9.1. The Sun in Bulk, 244	F1			
	9.2. The Solar Interior, 245	F1			
	9.3. The Solar Atmosphere, 249	F1			
	9.4. The Active Sun, 252	F1			
	9.5. The Heart of the Sun, 258	F1			
Chapter 10	10. Measuring the Stars: Giants, Dwarfs, and the Main Sequence, 266	Unit F			
	10.1. The Solar Neighborhood, 268	F5			
	10.2. Luminosity and Apparent Brightness, 270	F4			
	10.3. Stellar Temperatures, 274	F6			
	10.4. Stellar Sizes, 277	F6			
	10.5. The Hertzsprung–Russell Diagram, 278	F6			
	10.6. Extending the Cosmic Distance Scale, 281	F2			
	10.7. Stellar Masses, 284	F6			
Chapter 11	11. The Interstellar Medium: Star Formation in the Milky Way, 290				

11.1. Interstellar Matter, 292	G1		
11.2. Star-Formation Regions, 295	G1		
11.3. Dark Dust Clouds, 299	G1		
11.4. The Formation of Stars Like the Sun, 303	F1		
11.5. Stars of Other Masses, 310	F1	F6	
11.6. Star Clusters, 311	G1		
Chapter 12 12. Stellar Evolution: The Lives and Deaths of Stars, 318			
12.1. Leaving the Main Sequence, 320	F6	F7	
12.2. Evolution of a Sun-like Star, 321	F6	F7	
12.3. The Death of a Low-Mass Star, 324	F6	F7	
12.4. Evolution of Stars More Massive than the Sun, 330	F6	F8	
12.5. Supernova Explosions, 333	F7		
12.6. Observing Stellar Evolution in Star Clusters, 337	F6		
12.7. The Cycle of Stellar Evolution, 340	F7		
Chapter 13 13. Neutron Stars and Black Holes: Strange States of Matter, 346			
13.1. Neutron Stars, 348	F8		
13.2. Pulsars, 348	F8		
13.3. Neutron Star Binaries, 352	F8		
13.4. Gamma-Ray Bursts, 354			
13.5. Black Holes, 357	F8		
13.6. Einstein's Theories of Relativity, 359			
13.7. Space Travel Near Black Holes, 364			
13.8. Observational Evidence for Black Holes, 369	F8		
Part 4 Part 4. Galaxies and the Universe, 374	Unit G		
Chapter 14 14. The Milky Way Galaxy: A Spiral in Space, 376			
14.1. Our Parent Galaxy, 378	G1	H3	
14.2. Measuring the Milky Way, 379	G1		
14.3. Galactic Structure, 383	G2	H3	
14.4. The Formation of the Milky Way, 386	G1	G2	
14.5. Galactic Spiral Arms, 387	G1	G2	
14.6. The Mass of the Milky Way Galaxy, 392	G1	G2	
14.7. The Galactic Center, 395	G1	G2	H3
Chapter 15 15. Normal and Active Galaxies: Building Blocks of the Universe, 402			
15.1. Hubble's Galaxy Classification, 404	G2		
15.2. The Distribution of Galaxies in Space, 410	G4		
15.3. Hubble's Law, 413	G3		
15.4. Active Galactic Nuclei, 416			
15.5. The Central Engine of an Active Galaxy, 423			
Chapter 16 16. Galaxies and Dark Matter: The Large-Scale Structure of the Cosmos, 430			
16.1. Dark Matter in the Universe, 432	G4		
16.2. Galaxy Collisions, 435			
16.3. Galaxy Formation and Evolution, 436	G3		
16.4. Black Holes in Galaxies, 441			
16.5. The Universe on Very Large Scales, 445	G3	G4	
Chapter 17 17. Cosmology: The Big Bang and the Fate of the Universe, 456			
17.1. The Universe on the Largest Scales, 458	G3	G4	
17.2. The Expanding Universe, 459	G3	G4	
17.3. Cosmic Dynamics and the Geometry of Space, 462			
17.4. The Fate of the Cosmos, 466			
17.5. The Early Universe, 471			
17.6. The Formation of Nuclei and Atoms, 473			

17.7. Cosmic Inflation, 476

17.8. The Formation of Large-Scale Structure in the Universe, 478

G4

Chapter 18 18. Life in the Universe: Are We Alone?, 484

18.1. Cosmic Evolution, 486

18.2. Life in the Solar System, 490

18.3. Intelligent Life in the Galaxy, 493

18.4. The Search for Extraterrestrial Intelligence, 498