

Assignment 3

Due date: _____

Ch. 2.1, "The Stars" and 2.2, "The Celestial Sphere", pp. 12-21

Q. 1,2,4; P. 2,3,5 (HINT: Get answers from Table 2.1 on p.17.);
D. celestial sphere

Ch. 6.1, "Radiation: Info from Space", pp. 102-106

P. 2; D. nanometer, Angstrom, cosmic rays

Ch. 7.1, "Starlight", pp. 127-131; sub-section "Lum., Radius, and Temp." in Ch. 9.3, pp. 180,181

Q. 8; P. 1-4; D. thermal energy

"Kirchhoff's Laws" back in Ch. 7, p. 136

Focus on Fundamentals: "Temp, Heat, Thermal Energy", p. 133

List significant points

TEST 1 Date: _____

Assignment 3N

Due date: _____

Ch. 7.2, "Interactions...Light & Matter" to end of Chapter, pp. 131-146, skip Kirchhoff's Laws on p. 136

Q. 2,4,5,11; P. 6-9; D. molecule

How/know? 22.1: "Data Manipulation", p. 487

list significant points

How/know? 21.1: "How...Unify the Details", p. 466

list significant points

How/know? 8.2: "Building Confidence, p. 179

list significant points

Ch. 6.2, "Optical Telescopes" to end of chapter, pp. 106-124

Q. 1,2,4,7; D. seeing, CCD

Assignment 4

Due date: _____

Ch. 1, "The Scale of the Cosmos", pp. 1-9

Q. 3,5; P. 7,8

Ch. 9, "The Family of Stars", pp. 174-194 up to Sections 9.4 and 9.5, both sections covered in Ass't. 5, and Sub-section, "Lum, Radius, Temp" of Sec 9.3 (Covered in Ass't. 3)

Q. 1,2,4; P. 1,3 (distance and parallax columns only),5-8,10
(You may use Table 2.1 on page 17 and Table 9.1 on page 179);
D. proper motion

TEST 2 Date: _____

Assignment 5

Due date: _____

Ch. 9.4, "The Masses of Stars", pp. 187-194

Q. 9; P. 11

Ch. 9.5, "A Survey of Stars", pp. 194-198

P. 15

Ch. 15.2, read only "Stellar Populations"

including Fig. 15.12 and Table 15.1, pp. 323,324

Ch. 10, "The Interstellar Medium", pp. 203-218

Q. 6; P. 2; D. emission nebula, reflection nebula, dark nebula

Ch. 11, "The Formation of Stars", pp. 220-239

Q. 4,6; P. 11; D. neutrino (See glossary.)

How/know? 9.1: Chains of Inference, p. 189

list significant points

How/know? 10.1: "Facts/Theories", p. 215

list significant points

How/know? 24.1: "Sci Discoveries", p. 546

list significant points

Assignment 6

Due date: _____

Ch. 12, "Stellar Evolution", pp. 241-262

Q. 1-4,8-12; P. 2 (ages in years); D. open clusters and globular clusters

How/know? 12.1: "Mathematical Models", p. 244

list significant points

How/know? 23.1: "Science, Tech, Eng", p. 517

list significant points

How/know? 23.2: "Who Pays for Sci?", p. 534

list significant points

Assignment 6N**Due date:** _____NOTE: The problems (only) in this assignment may be handed in for extra credit.

Ch. 13, "The Deaths of Stars", pp. 264-284

Q. 1-3,5,6,8,9,11; P. 1,4; D. Chandrasekhar limit, supernovas of both Types I and II

Ch. 14, "Neutron Stars & Black Holes", pp. 287-310

Q. 1,4,11,13; P. 1 (HINT: $C=2\pi R$),7; D. black hole, event horizon, R_S , time dilation, gravitational red shift

How/know? 11.1: "Proof", p. 226

list significant points

How/know? 14.1: "Fraud in Science", p. 305

list significant points

How/know? 26.1: "Judging Evidence", p. 610

list significant points + optional personal response

TEST 3 Date: _____**Assignment 7****Due date:** _____

Ch. 26, subsection "Life in Other Planetary Systems" to end (Skip Summary), pp. 598-613

Q. 9-12; P. 4,5; D. life (habitable) zone, SETI, Drake Eqn.

How/know? 25.1: "Selection Effects", p. 575

list significant points

How/know? 18.1: "Reasoning/Analogy", p. 392

list significant points

Assignment 8**Due date:** _____

Ch. 15, "The Milky Way", (except "Stellar Pops", covered in Ass't. 5), pp. 314-339

Q. 1,2,6 P. 2 (Note: $A=\pi r^2$),9 (Note: use more correct age of 4.6 Ga)

Ch. 16, "Galaxies", pp. 342-364

Q. 1,5,6,8; P. 6

How/know? 7.1: "Quantum Mechanics", p. 130

list significant points

Assignment 8N**Due date:** _____

Ch. 17, "Galaxies w/Active Nuclei," pp. 367-386

Q. 4,7-9,13; P. 1 (Note: express "c" in m/s)

How/know? 17.1: "Statistical Evidence", p. 370

list significant points

Ch. 18, "Cosmology", pp. 389-413

Q. 4,5,8,9; D. flatness

TEST 4 Date: _____**Assignment 9****Due date:** _____

"Afterword", pp. 615,616

list significant points—hand in with Test 4

"Never regard study as a duty but as an enviable opportunity to learn...for your personal joy and to the profit of the community to which your later works belong."

— Albert Einstein