

Light & Birth of Modern Astronomy

DUE: Monday, September 14
Q 11-15 - due by 3 pm in my office mailbox (NSC 140) or by email
Q 1-10 - due online by 10 pm

READ: Chapters 5:1-2 & 3:3-4

HOMEWORK:

Answer questions 1-10 on-line at the MasteringAstronomy website.

Answer questions 11-15 on a separate sheet; sign the honor code in full at the end.

AUTHORIZED AIDE: You are to do your own work on this assignment. You may refer to your textbook. If you have difficulty with a question, you may discuss it with me or with another student, but you must write your own answer, in your own words.

TO DO ON-LINE

1. Text 5-30 (atom) (1 points)
2. Text 5-32 light) (1 points)
3. Energy levels (3 points)
4. similar to Text 5-34 (spectral lines) (1 points)
5. Doppler effect (3 points)
6. Kepler's 2nd law (5 points)
7. Kepler's 3rd law (4 points)
8. Text 3-26 (orbital speed) (1 points)
9. Text 3-24 (Copernican theory) (1 points)
10. Text 3-31 (scientific theory) (1 points)

TO HAND IN

11. List the following wavelengths in order of increasing (smallest to largest)
(a) wavelength, (b) frequency, and (c) energy. (2 points)
ultraviolet, visible, radio, x-ray, infrared
12. Text 5-41 (energy level transitions) (2 points)
13. Text 5-43 (Doppler effect) (2 points)
14. Text 5-50 (hotter Sun) (3 points)
15. (a) What is the wavelength of maximum emitted energy for a thermal radiator with a temperature of 6,000 K? (3 points)
(b) What color would it appear?

Tutorial Session (with tutor): Thursday, Sept. 10, 7:00-8:00 pm in NSC 119

Office Hour/Help Session (with Prof. Hrivnak): Monday, Sep 14, 2:00-3:00 pm in NSC 119