

The Sun; Telescopes in Space; Surveying the Stars

DUE: 7a, Q 11-13 – Friday, October 23 by 5pm in my office mailbox (NSC 140)
 7b, Q 14-19 – Friday, October 30 by 5pm in my office mailbox (NSC 140)
 Q 1-9 – Friday, October 30 by 6pm online

READ: Chapters 10.1-.2, 9 (pp. 130-135), & 11

HOMEWORK:

Answer questions 1-9 on-line at the MasteringAstronomy website.

Answer questions 10-17 on a separate sheet; **sign the honor code in full at the end; sign your name on back.** The answers should be in your own words.

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

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| 1. | Structure of the Sun (vocabulary) | (1 point) |
| 2. | Layers of the Sun | (2 points) |
| 3. | Core of the Sun | (2 points) |
| 4. | Hubble Space Telescope | (1 point) |
| 5. | H-R diagram | (1 point) |
| 6. | Luminosity, brightness, distance | (3 points) |
| 7. | Patterns | (1 points) |
| 8. | H-R diagram | (2 points) |
| 9. | Patterns (vocabulary) [note: 5. Cepheids are variable stars] | (2 points) |
| 10. | Visual understanding [note: Part B, answer is b] | (4 points) |

TO HAND IN

11. (a) Describe the source of the Sun's energy.
 (b) Describe the specific reactions that are thought to provide the energy, and
 (c) the conditions necessary for them to take place. (3 points)
12. Describe how do astronomers determine what the inside of the sun is like? (2 points)
13. Describe two of the main reasons that we put telescopes in space. (2 points)
14. Describe the method astronomers use to find the distance to the nearby stars.
 Please include a diagram. (2 points)
15. Describe in some detail how the mass of each star in a binary can be found. (3 points)
16. Describe how astronomers can find the size (diameter) of a star. (2 points)
17. Text 11-13 (H-R diagram) (3 points)
18. Text 11-38 (H-R diagram, magnitudes – hard question) (4 points)
 (I suggest that you use an H-R diagram to assist you in answering.)
19. Text 11-15 (H-R diagrams of star clusters) (2 points)

I encourage you to see me or the tutor for help to see that you understand these.

Tutorial Session (with tutor): Thursdays 7:00-8:00 pm in NSC 119

Help Session (with Prof. Hrivnak): Tuesdays 4:30-5:30 pm in NSC 119
 + after class on Friday (come to my office, NSC 140).