CONTINUOUS RADIATION FROM STARS

GOALS: Know the magnitude scale for stellar apparent brightness and how to use it quantitatively. Understand the wave nature of light, electromagnetic spectrum, and atmospheric windows. Know how to determine the colors of stars, qualitatively and quantitatively. Know what a black body radiator is and know Planck’s Law and related radiation laws. Know how to find the distance to stars using direct method of trigonometric parallax. Know what is meant by absolute magnitude of stars.

DUE: Q 1-6: Monday, Jan 18, 2010 by 5 pm
Q 7-10: Wednesday, Jan 20, 2010 by 12 noon

READ: Chapter 2

HOMEWORK: (Sign the honor code at the end)

IMPORTANT: Show your work for all of the problems, and lay out the work neatly

1. What atmospheric windows are available from the ground?

2. 2.14 (Text Problem 2.14 from end of chapter) [BB temperature]

3. 2.13 [BB wavelength peak]

4. 2.18 [photon energy]

5. 2.19 [BB]

6. 2.12 [Planck at high v]

7. 2.10b* (* = harder problem, will count more) [BB wavelength peak eqn]
   (It is necessary to solve the problem numerically.)

8. Q 2.10 (Text Question 2.10 from end of chapter) [Finding BB temperature]

9. 2.26 [distance]

10. 2.30 [absolute mag., distance]

Help/review session: Tuesday Jan 19, 4:00-5:00 pm in NSC 119.
Office hours this next week: F, M 2:00-3:00 pm