

ASTR 220 Homework #4

Spring 2005

Due Tuesday, March 15, 2005, *at the beginning of lecture.*

Please neatly write or type your homework.

Be aware of potential plagiarism: make sure to put the answer into your own words. Feel free to discuss the questions with your classmates, but write up the answers yourself - do not copy.

Make sure to show your work for any calculations - answers that appear like magic will receive no credit.

1. *ECP*: Ch. 9, Review Problems, #14.
2. *ECP*: Ch. 9, Surprising Discoveries, #24.
3. *ECP*: Ch. 6, Problems #29. (Hint: use Figure 6.28.)
4. *NCC*: The book states that about 70% of species became extinct as a result of the K-T impact. Approximately what percentage of individual organisms (both plant and animal) do you think died? Explain.
5. *NCC*: In the book, ammonites, plants, forams, and dinosaurs are used as examples to test whether the K-T impact really was the cause of the mass extinction. One reason that these organisms were used as an example is because they have been well-studied by scientists. What's another reason why they are good examples to test the Alvarez Theory?
6. *NCC*: According to the book, there are only three good K-T boundary fossil sites in the entire world. How do you think this fact affects either confirming the predictions on pg. 175 or refuting the predictions? Explain.
7. *NCC*: Explain what the "mean waiting time" is.
8. *NCC*
 - (a) Briefly describe the three theories behind the possibly 26 million yr periodicity of mass extinctions.
 - (b) Which theory do you find the most believable? Explain.