Review/Missouri Club—5 Dec

- All homeworks have been graded. New provisional grades for students with new homework grades.
- Final exam: Wed, Dec 10th, 3:00-5:00, 1410 BPS
  - Test and answers from 2005 is on the web.
  - 4 cheat sheets.
  - See me in BPS 1219 if you have questions.
- Please rate your class at
  - rateyourclass.msu.edu
  - Open until Friday, 12/12/2008
- Fill out Physics-Astronomy survey. Give to student volunteer, not to me.
- Review and Missouri Club
  - Big questions: "Where Do We Come From? What Are We? Where Are We Going?"
  - Recurring theme: How was a discovery made? Interpret the data from which a discovery was made.

Test 3

- Goal of the class
  - Big questions: "Where Do We Come From? What Are We? Where Are We Going?"
  - Recurring theme: How was a discovery made? Interpret the data from which a discovery was made.
- Q1a. The sun will become a giant 5 billion years from now. Will Deneb, a star of spectral class A visible in the summer, be visible then? Explain your reasoning.
  - Goal? Recurring theme?
  - Main idea?

Test 3

- Goal of the class
  - Big questions: "Where Do We Come From? What Are We? Where Are We Going?"
  - Recurring theme: How was a discovery made? Interpret the data from which a discovery was made.
- Q1b. The sun will become a planetary nebula. (3 pts.) How has the composition of the material in the outer parts changed from when it was a protostar? (3 pts.) What prevents material in the star in the center of the planetary nebula from fusing?
  - Goal? Recurring theme?
  - Main idea?

Test 3

- Goal of the class
  - Big questions: "Where Do We Come From? What Are We? Where Are We Going?"
  - Recurring theme: How was a discovery made? Interpret the data from which a discovery was made.
- Q1d. What is the evidence for the black hole in the center of our galaxy?
  - Goal? Recurring theme?
  - Main idea?

Test 3

- Goal of the class
  - Big questions: "Where Do We Come From? What Are We? Where Are We Going?"
  - Recurring theme: How was a discovery made? Interpret the data from which a discovery was made.
- Q2a,b. The box expands with the universe. Draw its contents just before helium formed (at 3 minutes, when the expansion parameter is $2.3\times10\text{-}9$). What is the temperature of the radiation in the box?
  - Goal? Recurring theme?
  - Main idea?

Test 3

- Goal of the class
  - Big questions: "Where Do We Come From? What Are We? Where Are We Going?"
  - Recurring theme: How was a discovery made? Interpret the data from which a discovery was made.
- Q3a. NGC3672. If this galaxy were moved to twice the distance, how and by how much would the speeds in lower plot change?
  - Goal? Recurring theme?
  - Main idea?

Test 3

- Goal of the class
  - Big questions: "Where Do We Come From? What Are We? Where Are We Going?"
  - Recurring theme: How was a discovery made? Interpret the data from which a discovery was made.
- Q3a. NGC3672. If this galaxy had twice as much mass, how and by how much would the speeds in the upper plot change?
  - Goal? Recurring theme?
  - Main idea?

Identifying big questions & main ideas from syllabus

- Big questions: "Where Do We Come From? What Are We? Where Are We Going?"
- Recurring theme: How was a discovery made? Interpret the data from which a discovery was made.
- For Nov 17, 19, 21, & Dec 1, identify the big questions, the application of the recurring theme, and the main ideas.