AST 301
Review questions for Exam #1
Exam date: Friday Sep. 19

1. To order-of-magnitude accuracy, know the relative sizes of the Earth, Sun, Solar System, Milky Way Galaxy, and Universe.
2. Understand the meaning of scientific notation and how to multiply and divide numbers in scientific notation.
3. Know how rotation of the Earth makes the stars appear to move across the sky during a night.
4. Be able to describe the apparent motion of stars near the celestial poles or on the celestial equator as seen from different locations on the Earth.
5. Know what the magnitudes of stars tell you about their relative brightnesses.
6. Describe and explain the apparent motion of the Sun relative to the stars during a year.
7. Explain how the tilt of the Earth's axis causes the seasons.
8. Describe how the path of the Sun across the sky during a day differs during different seasons.
9. Describe and explain the phases of the Moon and the motion of the Moon relative to the stars during a month. Be able to figure out when the Moon rises and sets at different phases.
10. Explain how lunar and solar eclipses occur.
11. Describe the models of Aristotle, Copernicus, and Kepler. How correct and how accurate was each? How did each explain retrograde motion of the planets?
12. State each of Kepler's 3 laws and be able to use them to compare speeds of different planets and of one planet at different points in its orbit.
13. What arguments did Galileo make in favor of the Copernican model?
14. What did Newton add to our understanding of Kepler's laws?
15. State Newton's 4 laws. Know what the words in each mean. Apply them to the problem of falling balls.