Review for Test #1 February 13

Topics:
• Foundations of Astronomy - measurement, exponential notation, etc.
• The Copernican Revolution - Newton’s Laws, Gravitation, etc.
• Radiation and the Electromagnetic Spectrum - Black bodies
• Atoms and Spectroscopy - Doppler Effect, Bohr model
• Telescopes

Methods
• Conceptual Review and Practice Problems Chapters 0 - 3
• Review lectures (on-line) and know answers to clicker questions
• Try practice quizzes on-line
• Bring:
  • Two Number 2 pencils
  • Simple calculator (no electronic notes)

Reminder: There are NO make-up tests for this class
Test #1 Review

How to take a multiple choice test

1) Before the Test:
   • Study hard (~2 hours/day Friday through Wednesday)
   • Get plenty of rest the night before

2) During the Test:
   • Draw simple sketches to help visualize problems
   • Solve numerical problems in the margin
   • Come up with your answer first, then look for it in the choices
   • If you can’t find the answer, try process of elimination
   • If you don’t know the answer, Go on to the next problem and come back to this one later
   • TAKE YOUR TIME, don’t hurry
   • If you don’t understand something, ask me.
Test #1 Useful Equations

Kepler’s laws, including: \( P^2 \propto a^3 \)

Newton’s laws, including: \( F = ma \)

Gravitation:
\[
F = \frac{G m_1 m_2}{R^2}
\]

Speed of electromagnetic waves: \( c = \lambda \nu \)  \quad \text{Energy} = h \nu

Wein’s Law:
\[
\lambda_{\text{max energy}} \propto \frac{1}{T}
\]

Stefan’s Law: \( L = A T^4 \)  \quad \text{where the area}  \ A = 4\pi r^2 \text{ for a sphere}