

# 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:  $c = \lambda \nu$       Energy =  $h\nu$

Wein's Law:  $\lambda_{\text{max energy}} \propto \frac{1}{T}$

Stefan's Law:  $L = A T^4$  where the area  $A = 4\pi r^2$  for a sphere