

**ASTR108: Descriptive Astronomy**  
**Exam 3 Review Sheet**  
May 7, 2008

Exam 3 (the final exam) is scheduled for Monday May 12, 2008. In general, the material covered on this exam may include all of the topics discussed in class since the last exam. This sheet provides a list (not necessarily complete, but close) of topics to be covered on this exam. While this sheet can help guide your preparation for this exam, your class notes, the text, and slides from lectures will help you master the material.

The exam will consist of approximately 40 multiple choice questions on our overview of light; the properties, formation and lives of stars; star clusters and a question or two from the last lecture on galaxies. Some questions will be factual in nature (e.g., questions on specific properties of objects). Other questions will deal with astronomy concepts (e.g., spectra).

Disclaimer: While I have tried to make this review sheet complete, I may have missed a topic or concept. This exam may cover all material discussed in class (and supporting text reading) since the last exam even if that item was omitted (accidentally) from this review sheet.

**Topic List:**

Light and electromagnetic radiation  
(Bennett et al. Chapter 5.1, 5.2 and 5.4)  
wavelength of the wave  
frequency of the wave  
speed of the wave  
electromagnetic spectra,  
continuous (continuous, emission, absorption)

## Sun (Bennett et al. Chapter 14)

- Energy source and balance
  - between outward internal pressure and gravitational collapse
- Structure and regions of the sun
  - (core, radiative zone, convection zone, photosphere, chromosphere, corona). Note properties of different regions including relative temperature differences.
- Length of time it takes radiation in the produced in the core to reach the surface of the sun
- Solar wind
- Sunspots (characteristics and sunspot cycle)
- Solar magnetic field and changes with time

## Properties of Stars (Bennett et al. Chapter 15)

- Distances to stars (how are the measured?)
- Brightness of stars (the magnitude scale, actual and apparent brightness)
- Stellar spectra (formation, spectral classification (OBAFGKM), relationship to temperature, relationship to composition)
- Hertzsprung-Russell diagrams
  - (description and purpose, main sequence, red giant branch, white dwarf region, etc. ...)
- Binary stars
- Stellar mass (determination, range, importance)
- Stellar size and representation in the H-R Diagram
- Mass-Luminosity Relationship
- Star Clusters
- Turnoff points

Star Formation and Evolution (Bennett et al. Chapter 16 and Chapter 17)

Interplanetary medium

Molecular clouds (absorption, emission, reflection)

Star formation (cloud

fragmentation and collapse,

protostar formation, birth of

star, path along the H-R

diagram, star lifetimes, time to arrive on the main sequence)

Evolution of low mass star (what

happens when the hydrogen in

the core runs out, leaving main

sequence, red giant, horizontal

branch, super red giant,

planetary nebula, white dwarf)

Evolution of high mass stars (what

happens when the helium runs

out, composition structure of

the star, onset of supernova,

supernova and consequences)

Galaxies (Bennett et al. Chapter 20)

Types of galaxies

Cepheid stars

Hubble's Law

Study together, learn something new  
while you study, do your best, Good  
Luck.