

Study Guide Astronomy Final 2nd Semester 2009

Constellations - Can you identify the following constellations on a star chart?

Spring: Ursa Major, Ursa Minor, Draco, Bootes, Corona Borealis, Virgo, Hercules, Leo

Electromagnetic Spectrum

Can you name the different kinds of light in the EM spectrum, in order of increasing energy?

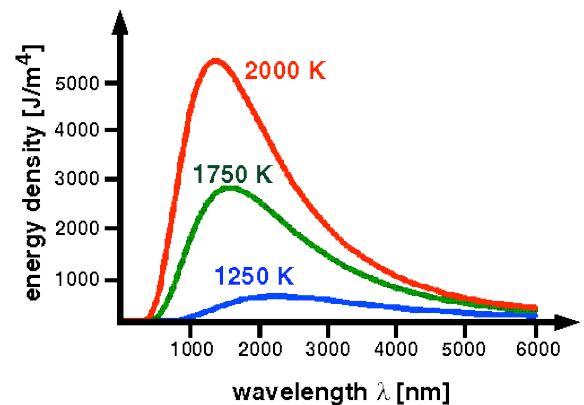
Can you explain the relationship between the wavelength & energy in the EM spectrum?

Can you explain how filters work - what they do & don't do?

Can you explain this [diagram](#) (on last page)?



Can you explain what a [blackbody curve diagram](#) ----->



Can you explain the relationship between color & temp in stars?

Can you explain the relationship between a star's blackbody diagram & its temperature?

Can you define the term peak wavelength and explain how it is related to temperature?

Can you identify the peak temperature in a spectral curve? (use blackbody curve diagram above)

Can you use Wein's Law to calculate a stars temp (if given peak wavelength) or peak wavelength (if given temp)?

Can you identify what wavelengths the following telescopes "see" and explain why each telescope is placed where it is to view the sky?

Hubble Space Telescope (optical)

SOFIA

Chandra Observatory

Compton Observatory

VLA (Very Large Array)

COBE (Cosmic Background Explorer)

Spectra

Can you identify the 3 types of spectra - what they are and what causes them at the atomic level?

Can you explain Kirchhoff's 3 Laws of spectra?

Can you explain the obafgkm classification of spectra?

Can you describe the basic types of substances (neutral elements, ions or molecules) present in stars of different temperatures and why they are there or not according to present theory?

Can you describe the contributions of the following people to the history of spectra?

Isaac Newton;

William Wollaston & solar spectra;

Joseph von Fraunhofer & solar spectrum lines;

Robert Bunsen & Gustav Kirchhoff;

Sir William Huggins & stars;

Norman Lockyer & Helium;

Annie Jump Cannon & classification

Star Life Cycle

Can you diagram the life cycle stages of a low mass star, a high mass star and a giant (very high mass) star?

Can you explain how stars begin in nebulae?

Can you explain the idea of the forces in a main sequence star being in balance?

Can you describe how a main sequence star becomes a red giant?

Can you identify the following on a HR diagram?

main sequence stars, red giants, super red giants, white dwarfs,

Can you define the following terms:

nebula, main sequence star, red giant, planetary nebula, white dwarf, red super giant, supernova, neutron star, black hole

Big Bang

Can you explain what red shift of light is and what blue shift of light is and how it relates to the doppler effect of sound waves?

Can you describe the theory of the Big Bang and the evidence found to back it up:

Edwin Hubble & redshift & distance and what pattern he found with galaxies

Cosmic Background Radiation

Ratio of Hydrogen and Helium found in the universe

Can you explain what the following diagrams are showing? Can you identify red shift and blue shift on spectra, if given a standard non moving object's spectra?

