Review for 3rd Midterm – Lectures 29-38 (chapters 11-13+15)
A110-1 (8:30-9:20am)
Friday, 20 April, 2012

Stars and Spectra, Distances, Binaries, Stellar Evolution, Our Galaxy

Stars – measurement of properties

Determination of distances – parallax
Inverse square law
Apparent luminosity vs. absolute luminosity

Basic star properties – Temperature, Luminosity, Mass, Radius

Temperature – O B A F G K M
Hertzsprung-Russell (H-R) Diagram (L vs. T)
Mass and Radius – determined using binary stars
Cluster ages – the “turnoff point” on H-R diagram
Giant Molecular Clouds – birthsites of stars and star clusters

Stellar Evolution – 5 phases
(size, temperature, energy source, creation of new elements, timescale)

Protostar (HH-objects, T-Tauri objects)
Main Sequence (Equilibrium + “Hydrogen burning” -> Helium in core)
Red Giant (luminosity classes I-IV; “Helium burning” -> Carbon, Oxygen)
Variables (RR Lyrae, Cepheids, creation of planetary nebulae)
Final Death (white dwarf, neutron star, black hole)

Our Galaxy -- The Milky Way

Parts – disk, spheroid, nucleus, halo, corona
Composition – stars (Population I and II), gas and dust
Determination of size – use properties of Cepheids and globular clusters
Sun's location – disk, spiral arms, giant molecular clouds (GMCs)
Galactic nucleus – massive black hole

40 minutes
~ 40 questions
multiple choice (2,3pts each)
true/false (2pts each)