

# **Astro 105 2020 Fall Exam I Study Guide**

*Topics (not exhaustive, but covers the most important material)*

Absorption Spectra  
Astronomy  
Atom's Structure (and forces that hold them together)  
AU  
Blackbody Plots for the Different Surface Temp Stars  
Blueshift  
Brown Dwarfs  
Chromosphere  
Corona  
Density Formula (of celestial object)  
Distance-Luminosity Relation  
Doppler Effect (and formula)  
Duality of Light  
Electromagnetic (EM) Spectrum  
Energy (per atom) of Chemical Reactions  
Energy (per atom) of Nuclear Reactions  
Galileo  
Giants  
Hertzsprung-Russell, H-R Diagrams  
Isaac Newton  
James Maxwell (Maxwell Equations)  
Kelvin and Helmholtz Theory  
Keplers Third Law (used to find mass sum of binary)  
Leptons  
Luminosity (Absolute Magnitude)  
Magnitude (Absolute and Apparent)  
Magnitude-Distance Formula  
Main-Sequence Star  
Max Planck (Photon Energy Formula and his Constant)  
Multiplying Large Numbers  
Neutrino Flavors/Types (and associated particles)  
Niels Bohr  
Orders of Magnitude  
Parallax (drawing and formula)  
Photometry  
Photosphere  
Prefix Names (common ones)

Prominences  
Proton-Proton Chain (know all the details)  
Quarks  
Radiation Zone and Convection Zone  
Ray Davis  
Red Dwarfs  
Redshift  
Rule for Like/Unlike Electrical Charges  
Scientific Notation  
Solar Intensity at Earth  
Solar Neutrino Problem  
Special Relativity  
Spectra (emission)  
Spectral Classes of Stars  
Spectroscopic Parallax (formula)  
Spectroscopy  
Speed of Light (and its value in m/s)  
Stefan-Boltzmann  
Stellar Evolution  
Stellar Spectroscopy  
Supergiants  
Temperature of Sun (core and surface)  
Temperature Scales  
The Four Forces (gravity, EM, strong, and weak)  
Water Molecule  
Wavelength and Frequency (inversely related)  
White Dwarfs  
White Light  
Wien's Law