Astro 105 2025 Summer Exam I Study Guide

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

Absoprtion Spectra
Astronomy
AU
Blackbody Radiator
Blueshift
Brown Dwarfs
Chromosphere
Corona
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 and Russell and the H-R Diagrams
Isaac Newton
James Maxwell
Kelvin and Helmholtz
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 and his Constant
Multiplying Large Numbers
Neutrino Flavors/Types (and associated particles)
Niels Bohr
Orders of Magnitude
Parallax (drawing and formula)
Photometry
Photospshere
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