

# **Astro 105 2021 Spring Exam II Study Guide**

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

Black Holes (including evaporation)  
Chandrasekhar and his Limit  
Dark matter  
Density equation (from mass and volume)  
Dwarf stars (red, brown, etc.)  
Edwin Hubble  
Equivalence Principle  
Fusion of Helium  
Galaxies  
Galaxy types/shapes (spiral, barred, lenticulars etc.)  
General Relativity  
Giant and Supergiant stars (incl details of inner structure)  
Globular clusters  
Interstellar medium (know details)  
Interstellar reddening  
Mercury's Perihelion Shift  
Milky Way (dimensions, number of stars, etc.)  
Neutron stars (data, size limits, formation, etc.)  
No-Hair theorem  
Nova  
Nuclear bulge (Galactic nucleus, center)  
Pauli and his Exclusion Principle  
Physics of falling into a black hole  
Post-Main-Sequence events (shell fusion, flashes, etc.)  
Postulates of both Special and General Relativity  
Protostars, Pre-Main-Sequence stars, Main-Sequence stars  
Pulsars  
Recombination photons  
Relativity  
Roche Limit  
Rotation curves (differential, Keplerian, solid-body)  
Roy Kerr  
Schwarzschild Radius Formula  
Schwarzschild's contributions  
Shell fusion reactions and products  
Spin-Flip radiation of hydrogen  
Star characterizations based on masses

Star formation mechanism

Stellar lifetimes

Stephen Hawking

Supermassive Black Holes (evidence, & how to obtain masses)

Supernova (Type II and Type Ia)

Superstrings

Synchrotron radiation

Temperatures for fusion reactions

Variable stars

White Dwarf stars (data, size limits, formation, etc.)

Worm holes

X-Ray Bursters