Astro 105 2025 Summer Exam II Study Guide

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

Chandrasekhar Limit
Dark matter
Dwarf stars (red, brown, etc.)
Edwin Hubble
Equivalence Principle
Fusion of Helium
Galaxies
Galaxy types/shapes (spiral, barred, lenticulars etc.)
Giant and Supergiant stars
Globular clusters
Interstellar medium (know details)
Interstellar reddening
Milky Way (dimensions, number of stars, etc.)
Neutron stars (data, size limits, formation, etc.)
No-Hair theorem
Nova
Nuclear bulge (Galactic nucleus, center)
Pauli 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 (Keplerian, solid-body, etc.)
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
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