

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

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

Accelerated Expansion  
Age of universe (and the details)  
Alan Guth  
Big Bang Theory (and the evidence for it)  
Big Crunch  
Blazars  
Clusters, Superclusters  
Cosmic Horizon Distance (CHD)  
Cosmic Microwave Background Radiation (CMBR)  
Cosmological Constant  
Cosmological Redshift  
Cosmology  
Dark energy  
Dark matter  
Doppler Redshift  
Edwin Hubble  
Electromagnetic force  
Electroweak Theory  
Four fundamental forces  
Galactic collisions  
Gamma-Ray Burst  
General Relativity (GR) theory, equation, and terms  
Gravity force  
High Energy Physics, Length Scales  
Hubble flow  
Hubble's Constant (Parameter) and Hubble's Law  
Inflation  
Lawrence Krauss  
Local Group  
Matter Density of Universe and the Critical Value  
Matter-dominated and Radiation-dominated universe  
Neutron Decay (all the details)  
Planck's Formula  
Quasars  
Quintessence (solution to fine-tuning problem)  
Radio Galaxies  
Recessional velocity

Richard Feynman, Feynman Diagrams  
Special Relativity's Constraint on Fluctuating Objects  
Steven Weinberg  
Strong force  
Superstrings and Brane Theory  
Tully & Fisher's relation and law  
Universe's possible structure (Hyperbolic, Flat, Spherical)  
Vacuum energy  
Wavelength Rule of Light  
Weak force