
These are the definitions and concepts you have to know:

Chapter 16:

• Stars form in dark (10-30 K) clouds, cooled by CO
• Clouds contain large amounts of interstellar dust, reddening light passing through
• Newborn stars are observed in infrared
• Star formation requires gravity overcomes thermal pressure
• Star forming molecular clouds need to be a few hundred solar masses large, and be effectively cooled
• Magnetic fields and turbulence resist star formation
• Clouds fragment and fragments form stars
• Small very dense clouds can produce individual stars
• The first stars did not have molecules like CO for cooling, hence clouds were warmer and needed more mass to contract
• Protostars form through contraction pressure build-up
• End of formation when remaining gas is blown away
• Conservation of angular momentum leads to increased rotation and disk formation with jets
• Contraction stops when fusion builds up enough, resisting pressure
• Study pre main sequence evolution tracks of protostars
• Heavier stars reach the main sequence and burn faster
• Understand mass distribution of stars, including upper and lower limit
• Distinguish thermal and degeneracy pressure
• Brown dwarfs and white dwarfs

Chapter 17:

• Nuclear burning as a function of stellar mass
• Lifetime and luminosity as a function of mass
• The life story of brown dwarfs, low-mass, intermediate mass, and high mass stars
• Life track after the main sequence for all these types of stars
• Types of fusion, including CNO; the end of fusion
• Double and multiple shell burning
• Planetary nebulae
• Two types of supernovas
• Novas
• Mass exchange, resolution of Algol paradox

Chapter 18:

• White dwarfs: characteristics, life track, mass limit, degeneracy pressure
• Dwarfs in binaries, accretion disks, novas
• White dwarf supernova
• Neutron stars: characteristics, life track, mass limits, degeneracy pressure
• Pulsars: nature, discovery, why neutron stars?
• Neutron stars in close binaries, X-ray bursts
• Black holes: formation, characteristics, Schwarzschild radius, singularity
• Even horizon: what happens there?
• Observational evidence for black holes, gamma ray bursts