

ASTR1: Exam 4 Review (Part IV)

- What is a pulsar?
- Describe a black hole?
- What is the event horizon? What is the size?
- What can escape from the event horizon?
- What is a singularity?
- What happens to time as you approach the event horizon?
- What would happen to you if you got near the event horizon?
- What is the black hole mass lower limit?
- How can we detect black holes?
- What do we think is being created in Gamma-Ray burst?
 - Know primary features of spiral galaxy
 - (i.e. bulge, disk, spiral arms, halo)
 - Where are the following located in our galaxy (sun, globular clusters, massive black hole)
 - What is the size of the milky way (Lyrs)?
 - What is the interstellar medium
 - Describe how stars orbit in the bulge, disk & halo
 - Where do stars tend to form in our galaxy?
 - What do halo stars tell us about the history of our galaxy?
 - Describe briefly how our galaxy formed?
 - What is protogalactic cloud?
 - What is in the galactic center and how massive is it?
 - What are the three types of galaxies?
 - What is the significance of blue vs red color?
 - How are galaxies grouped? Spiral vs elliptical
 - Describe the following methods to measure distance
 - ~~Radar ranging~~
 - ~~Parallax~~
 - ~~Main sequence fitting~~
 - Cepheid variables
 - Super nova standard candle
 - Hubble's law
 - How does distance tell us the age of the universe?
 - What 2 conditions in the protogalactic cloud contributes to why galaxies differ? Hint: Size & rotation
 - What happens when two spiral galaxies collide?
 - What can explain why elliptical galaxies tend to be found closer together?
 - What is a quasar?
- How do we estimate the mass of the super massive black hole in our galactic center?
- Why do we think the growth of the central black holes is related to galaxy evolution?
- What are the 4 forces & what causes them to unify?
- What evidence supports the big bang
- What 3 things does inflation explain?
- What is the geometry of space? (Curved/flat)
- Why is the night sky dark?
- What is dark matter/ dark energy?
- What percent is matter? Dark matter? Dark energy?
- How does rotation give evidence for dark matter?
- What is the evidence of dark matter in clusters of galaxies?
- What are the 2 options we have for the existence of dark matter?
- What are WIMPs?
- How do we know the universe is accelerating expansion?
- What force is causing this expansion?
- What is the fate of the universe?