

3. (4 pts) Provide four pieces of evidence that we have discussed for the big bang?

Can you see the fireball of the big bang? If so, does it appear very hot? Why or why not?

4. (4 pts) You are walking down the street at 1 km/hour (100,000 cm/hour or 28 cm/s)

- a. Calculate your de Broglie wavelength.

$$\text{wavelength} = h/mv$$

$h = 6.626 \times 10^{-27}$ erg seconds, m is in grams and v is in centimeters per second

$m =$ your mass in grams (1 lb = 454 gms)

$v =$ velocity in cm per second

the wavelength will be in centimeter per second

- b. Now pretend you had the mass of an electron (9×10^{-28} gm). Calculate your wavelength.

HW 8 A2020 Extra credit, due on 04/29/2010

5. (5 pts extra credit) In a closed universe, the universe collapses and heats up – sort of the big bang in reverse. Describe what happens to atoms as the temperature heats up.

6. (5 pts extra credit) write the Drake Equation for finding the number of planets in the galaxy with aquatic, pink & mauve, dolphin-like creatures.