Day 01–An Introduction to Cosmology

(1) At your table, list some of the key ideas about scientific cosmology as you understand them, and compare and contrast to other cosmologies you may be aware.

(2) In the lecture we introduced earth centered model of Ptolemy, and the sun-centered model of Copernicus. The Copernican model is not any better at predicting the orbits of planets than the Ptolemaic model, yet it was championed by many scientists of the day. At your table, discuss what factors might lead someone to accept one model over the other even though both models are similarly accurate.

(3) Gamow's predictions of remnant radiation of a time when the universe was hotter and denser have been borne out. At your table discuss the implications of the observation of the cosmic microwave background.

(4) Units: Length

   (a) Calculate the distance in km that light travels in one year

(b) A parsec(pc) is defined the distance at which 1 AU subtends 1 arcsecond. Sketch a figure that depicts 1 pc.

(c) How many parsecs in one light year?

(d) What is the parallex angle in arcseconds of Proxima Centauri (4.2 Ly from the sun)

(5) Recap the important topics covered today. Compare and constrast your results with others at your table