In this paper, I am asking you to reflect upon some aspect of the material in Kragh, Conceptions of Cosmos, and to expand Kragh's discussion via research, whether on the internet or in the SF State Library, on one of the topics listed in the section below. Aim your paper at a physicist who has not read Kragh, but is familiar with the current cosmological model (do not spend a lot of time explaining the current Big Bang model).

This first paper should consist primarily of historical discussion; the second and third papers in the course will be primarily scientific/mathematical in nature. However, even within this first paper, there are opportunities to include some mathematics should you wish.

You are to use a minimum of 5 outside sources other than Kragh in your discussion. While I encourage you to use Wikipedia for initial background reading, you may not use Wikipedia itself or other encyclopedias as one of your sources. Your source must be a reputable authority on the history of astronomy or physics (i.e., either the author of a published paper book, or if a purely online source, an academic or journalist at a reputable publishing or academic institution. If in doubt, ask me).

The paper must include citations when appropriate, either when directly quoting a source, or when making use of an idea primarily taken from a source. The paper should also include a bibliography.

Topics (select one):

**Paper 1, Topic 1:** Contrast your own modern belief system with the beliefs expressed in one of the creations myths in Sproul. You must flesh out your own positions concerning the reality of matter and the model problem, the perception of the self and the mind-body problem, the problem of non-being and the paradox of the frame, as well as any other metaphysical beliefs you wish to include (e.g. the existence or non-existence of God or gods). Explain your positions using the standard philosophical terminology (above) and referring to at least one modern metaphysical reading (see examples at Readings) - you may agree or disagree with the modern reading you choose. Then flesh out the metaphysical belief system implied by the myth: What (if anything) is fundamentally true? What (if anything) is illusion? What types of things exist in the world of the myth, and how do they interact? Finally, compare the belief system expressed in the myth to your own, and speculate on what cultural differences might influence or express these differences in beliefs.

**Paper 1, Topic 2:** From ancient times through the writings of Ptolemy, Galileo, Copernicus, Kepler, Newton, through the early 20th century, there have been many cosmological models. Most of these models in one way or another are inconsistent with observations, i.e. "wrong". However, in many cases, the proponents of these flawed models did consider the answer we now consider correct, only to reject it based on either flawed reasoning, poor data, or philosophical prejudice. Trace the theme of the correct answer considered, but then rejected, throughout out two or more historical periods of your choosing. Be sure to address mathematical, philosophical, and technological reasons for this phenomenon.

**Paper 1, Topic 3:** Explore an ancient culture's astronomy. Use a specific archaeological site as your case study. Cover the astronomical alignments and other evidence of ancient astronomy at the site, and relate it to the culture's history (as interpreted by modern archeology), as well as the mythological and cosmological beliefs of the this culture or their descendents (for example, unlike the Mayans, the Mississippian culture left no written records of their myths, but we do have the myths of their descendents the Cherokee, see Sproul).