Announcements

• Check out the Course Web Site:
  http://astro.caltech.edu/~leonard/inventingreality/
On it you will always find the latest information about the class, including all handouts.

Assignment for Thursday, March 31

• Pick a Universe. Carefully read the three views of the universe presented by Hesiod, Plato, and Lucretius, and write a response to the following question (to be turned in at the start of Thursday’s class):
  Which universe would you most like to inhabit?
  
  This will also provide the backdrop for Thursday evening’s in-class discussion.

Assignment for Tuesday, April 5

• Primary Writings: Hesiod. Having read this already for Thursday’s class, now read it again with all that we discussed in your mind. Hesiod definitely belongs to that transitional period when the oral tradition was slowly coming to an end and the written one was taking its first, timid steps. Probably, Theogony was composed in the last quarter of the eighth century BC. Theogony is, essentially, a poem on the birth of the gods and the Earth and sky. There are several other epic poems, from Iceland, the Near East, and India (to name a few) that may predate Theogony, and share many of its themes. The poem begins (Greek writers had not yet settled upon prose as their main form) with an invocation of the Muses, of which just the last 11 lines are included in your Reader. Then begins the origin of the Earth and sky. Note that although Theogony is a human account of the birth of the world and of the gods, humans play an insignificant role, and that the overall world-view of Homer and Hesiod is that humans are mere pawns in the plots and intrigues of the anthropomorphic gods.

  To help with some of the names, if you’re curious: Gaia = Earth; Ouranos = sky, or father heaven; Pontos = sea; Olympos = A huge mountain that towers up from the center of the earth. Here the major gods live and hold court. The myths are somewhat vague on weather it is an actual mountain or a region of the heavens; Chaos = The Void; Tartaros = Approximately, hell; Eros = Love; Erebus: Personification of Darkness, The Abyss, region of the underworld; Ether: Bright, untainted upper atmosphere.

• Primary Writings: Lucretius. Very little is known about Lucretius, and his only surviving work is this philosophical poem, in which he tries to explain how, without the direction or intervention of supernatural agencies in any way, all natural phenomena may be accounted for. As you read this, think carefully about the thought question that is given, below. It is not believed that Lucretius himself added much to the philosophical landscape, but he did provide an eloquent and zealous summary of the line of thinking started by the ancient Ionian philosophers (e.g., Thales), continuing through Democritus, and then enhanced by Epicurus and others. Since only a few fragments from the earlier philosophers remain, it is this work that gives us the best insight into their beliefs. By the way, “Memmius”, to whom the poem is dedicated, is probably Gaius Memmius, an eminent Roman statesman.

• Primary Writings: Empedocles. A native of Sicily, Empedocles attained a remarkable personal and religious importance. On his own evidence he was a healer of the sick and one who recalled the dead to life. He considered himself a god, and this attitude comes through in the surviving fragments of his writings. In his universe, he saw change taking place as the result of the recombination of the four basic and permanent elements: air, earth, fire, and water, mixing and separating under the influence of two forces, attraction (Love) and repulsion (Strife). The universe moves through cycles according to whichever one of these is predominant. Read the poem on Love and Strife, and see if you can follow it through. What
he's ultimately trying to say is: as a result of the forces of Love and Strife, a process or “immovable circle” occurs in the world. In the first phase of the process, the elements are in a perfect mixture, due to the effects of Love in bringing them together or uniting them. As Strife enters, the elements are separated, causing the second phase of the process. With Strife dominant, the elements are completely separated and the third phase takes place. As Love enters, the uniting or coming together of the mixture takes place. By this process of separation and mixture the physical universe comes into existence. And so forth; the key here is to recognize that Empedocles believed in the reality of change, and proposed forces to account for it.


• Weather permitting: Discover what makes the “special” star you (hopefully) saw on Thursday night so special. Hint – Go out a few times Thursday after class or on a clear night over the weekend, and find the star. Compare it to the other stars. What makes it different from all of the other stars in the night sky?

Weekly Thought Question

After reading Lucretius' writings, what would you expect his beliefs to be about the nature of human free will and responsibility? That is, do you think that he allows that humans may make free, rational choices, or is everything, including our own actions, just chance events?

( Empedocles watching the end of the world.)