Assignment: Respond to the following question in the form of a typed essay of opinion:

Of the three world-views presented at the start of the course by Hesiod, Plato, and Lucretius, which one do you think most closely corresponds to the universe in which we actually live?

Note: This is a broad, philosophically based assignment for which there is no “right” answer: take your viewpoint, organize your thoughts, write carefully, and back up your opinion as best you can.

Due date: 5:00 PM, Friday May 12. This is an absolute deadline, and no late papers will be accepted for any reason (note that it is two days later than originally scheduled in the syllabus). The paper may be turned in either in class (last class Tuesday, May 9), or up until the due date at my office (Rm. 238 Physics building; there will be a box outside the door if I am not around).

Length: As always, quality is more important than quantity, but I would expect at least 3 – 4 pages to be typical.

Grading: This paper takes the place of a third midterm exam, and will be factored into your final grade in the same way as each of the first two midterm exams. That is, of the three “exam” grades (Midterm 1, Midterm 2, and final paper), the average of the top two marks will represent 50% of your course grade (see the syllabus handout for details on grade calculation). This assignment will be evaluated with roughly equal emphasis on:

1. *How well written the paper is.* That is, did you express your thoughts in an understandable, organized way? The more clearly you write, the more the reader gets the sense that you thought about the assignment and took the time to present your views coherently. *Make sure to eliminate any typos!* Nothing gives the reader a (perhaps erroneous) sense that little effort was expended on a paper than careless spelling or punctuation mistakes.

2. *Content of the paper.* For this particular assignment, which is essentially an essay of opinion, a major emphasis will be placed on how well you have supported your opinion. That is, are your arguments convincing? Are your views logically presented? Have you drawn effectively from the course material, the writings of the three thinkers as well as your own personal observation?

Grades for the paper will be assigned according to the following scale: A+++ (100%); A+ (98%); A (95%); A- (92%); B+ (88%); B (85%); B- (82%); C+ (78%); C (75%); C- (72%); D+ (68%); D (65%); D- (62%); and F, for which individual percentages will be subjectively determined.

Details and background: For the final month of the course, we shall be working our way through Bob Kirshner’s popular book, *The Extravagant Universe,* in which he describes a universe that is, in his words, “extravagant” and “wilder than anyone imagined”. As you read through this book, cast your mind back to the very first week of class, when you were introduced to three very different views of the universe presented through the ancient words of Hesiod, Plato and Lucretius. Recall that, at the start of the course, you were asked to decide whose universe you would most like to inhabit. For the final paper, you are being asked to consider this question again from a different angle, and now from the perspective of a student brimming with knowledge about our modern understanding of the physical universe.

To refresh your memory of the ancient thinkers, the reading passages that we read at the start of the course are attached to this assignment. In class, we concluded that the beliefs embodied in the readings could be broadly summarized as follows:

- Hesiod: A fickle, random universe, with anthropomorphic (human-like) deities constantly meddling in human affairs. Nothing is predictable due to this constant divine intervention. Some in class described this
universe as a “magical” universe, since there seem to be no “laws” governing things; anything can happen at any time, based solely on the whims of the gods.

• Plato: A very rational universe, created as part of a divine plan. Having set up the universe according to a rational plan, the Creator (or “Demiurge”, in Plato’s words) appears content to now let things play out according to the rules established at the start. This universe is not filled with the meddling deities of Hesiod. Plato concludes that the ultimate workings of this universe may be difficult for humans to discover; to pursue them, however, humans should always be guided by, and put trust in, reason and pure, rational thought, over observation.

• Lucretius: In this world-view, there is no need for a deity, and nature operates “without a master”. In his writing, Lucretius refers specifically to a more ancient philosophy (the so-called Milesian school of thought), which sought a fundamental unity underlying all of the diversity seen in the universe. This unity, which today we may associate with the underlying principles by which the universe operates, may ultimately be discoverable by humans. In pursuit of the fundamental workings of nature, however, humans must steadfastly resist any temptation to resort to “will of god” as the responsible agent.

These reading excerpts and summaries present you with just the “tips of the icebergs” of these three major philosophical viewpoints. While it is not required, you are strongly encouraged to learn more about them to broaden your understanding. To this end, I have placed the book Theories of the Universe: From Babylonian Myth to Modern Science on reserve at the Library book reserve desk (the same desk where you can get the course reserve binder). This collection of writings includes particularly relevant selections from Lucretius’ The Nature of the Universe and Plato’s Timaeus (pages 41 – 60, and 67 – 88, respectively). Reading these more complete excerpts will help to round out your knowledge base, and allow you to write your essay from a real position of strength. For Hesiod, I have put the entire Theogony on reserve; both Lucretius’ and Plato’s works are also available in their entirety as well if you wish to look at them. My recommendation? Read the introduction to Hesiod’s Theogony (pages 3 – 11), and then the selections contained in Theories of the Universe for Lucretius and Plato. That will provide a thorough background from which to form your essay of opinion.