

Jan 19th, 2008

P340: Homework Assignment No. 1

DUE DATE: Monday, Feb. 4th. 2008

Please note that late assignments will not be marked

(1) **The World of 'Forms'**: Write an essay, of roughly 900 words, which expresses your views on the existence of a 'supra-sensible' world, populated by timeless and indestructible entities or "Forms", and distinct from the world of "appearances" of which we are directly aware. The idea of this supersensible world of Forms is due to Plato, and you should spend perhaps a quarter to a third of the essay explaining his views, and the arguments that led him to them. You may also want to discuss the opinions of at least some of the ancient Greeks, but by far the most important part of the essay should give your own analysis of the question. Feel free to be as creative in your use of examples and situations, and also to develop your own ideas and arguments as well as those of the Greeks - the quality of your arguments is much more important than the opinions or beliefs you express.

(2) **The pre-Telescopic Cosmos**: Various pictures of the cosmos that could be seen with the naked eye were proposed by the Greeks and by Copernicus. It is interesting to compare them, and understand not only their strengths and deficiencies, but also to understand why they came to these ideas - and what prevented them from doing better. In what follows you will find it helpful to use diagrams.

(a) Describe the main characteristics of the observed motion of the heavenly bodies that pre-telescopic observers could see, and wanted to explain (consider both the motion of the moon and sun, and that of the planets, as well as the stars).

(b) Describe the structure of the Cosmos that was advocated by Aristotle (using ideas from previous writers like Eudoxus), and explain how the motions of the various heavenly bodies was to be explained in this theory.

(c) Now give a comprehensive description of the Ptolemaic system, and explain how it too tried to explain the features you have mentioned in (a).

(d) Now briefly explain the Copernican system - emphasize in what crucial respects it differed from the Ptolemaic system.

(e) Finally, say why you think that all of these writers got some parts of the story wrong. To do this you need to say very briefly what the correct structure of the heavens is. It may help here to outline rather briefly the work and discoveries of Aristarchus and Eratosthenes, both of whom went beyond any of the writers mentioned above, in certain respects.