

AST 301 (Scalo): Homework assignment

Turn in a “journal” or “log,” twice during the semester, that contains a few sentences, *in your own words*, about a relevant image found by a search at the “Astronomy Picture of the Day” (“APOD”) web site, *and only that site*. You should have one entry for each chapter that we cover in the course, with an exception explained below. We will grade each entry on a 0-10 scale, but I expect to give grades mostly between 5 and 10 for each entry, and will gladly give high scores. Low grades will reflect entries done in a perfunctory or last-minute way, or whose sentences are either trivial or were obviously lifted or paraphrased from another source. I recommend selecting search words having to do with a topic that interests you, and for which you think you can write a couple of sentences illustrating that you know what you’re writing about. A detailed example is given below.

I strongly recommend that you compose these entries as you finish each chapter—the searches turn out to be a useful way to become more familiar with the material, and the writing forces you to recognize your current level of understanding. *The purpose of the assignment is to force you to keep up with the material, experience the topics in a context different from textbook reading or lecture, and to enhance your grades on exams.*

Format: The log should be created in a text file, not handwritten. Microsoft Word is a convenient way to do this work, because you can easily drag and drop the image you select into the file. If you have any problems using a suitable format or software, just ask me about it. I suggest you go for 3-4 entries per page using some common and easily readable font (11 or 12 pt). Separate each entry clearly (I use a series of dots below), giving the chapter number, the sentences in your own words that describe or comment on the image, the path in terms of the urls to the links (beginning or ending with APOD), and the image. *The image itself should be copied into the document* (you can just drag and drop from the web page to a Word document, for example). You should size the image to cover about 1/3-1/2 the width of the page. (In Word, one way to do this is to double click on the image and choose “Square” from the “Wrap Text” option in the ribbon.) An example is given below.

You will eventually print out the log and submit it in hardcopy form, so that we can mark grades and comments on them. No binding is required, only a careful stapling. In addition, you will send us the Word document by email, so we can link through the urls you give there. There will be a special email address to which these should be submitted.

Due dates: There are 19 chapters covered in our class. (1) Your first log will cover the 10 chapters up to Ch.18, and can be turned in **any time between W 10/19 (day of Exam 4) and the following Monday (10/24)**. (2) The second log will only cover the eight chapters from 19 to Ch. 26 (not 27), and should be **turned in by Monday, 11/28** (class meeting after Thanksgiving break). For the second log, you should make two entries for any two of those chapters, so that the total is again 10 entries.

This homework will contribute 10 percent toward your final grade. No late logs will be accepted. I will make an exception if you are missing only a final entry (Ch. 18, or Ch. 26), and can submit a draft of the log up to that point by the due date (talk to me if you have such an emergency).

More detail on searching Astronomy Picture of the Day

You may *only* search for images at “Astronomy Picture of the Day” site:

<http://apod.nasa.gov/apod/astropix.html>

Click on the “search” feature, or go to it directly:

http://apod.nasa.gov/cgi-bin/apod/apod_search

You may use links within APOD, but should not go more than three links from it, and must state your path in your log. This will be clear from the example below.

The search in APOD gives results for occurrence of the word(s) in both the title *and* the description, so you will get a lot of unwanted pictures without some care. This is especially true for the first few chapters. Note: *Only* cover topics covered in our class, *not* skipped sections of the textbook. For example, in Ch.1 you would not search for “eclipses,” or write an entry for any such topic that was not part of the assigned reading. This is only an issue for Chapters 1 and 2.

- You are expected to use informed judgement concerning what you search for and select.
- The entry in your log must be in your own words, not copied or even paraphrased from another source.

Besides this document and the examples I give you, *students must do this homework independently, without consultation with other students, and without asking the instructor or TA for advice about search strategies.* (You can ask about technical problems, of course.)

Examples of substandard choices would be to search for something that's in a picture within your textbook (too easy, shows you don't understand enough to think of your own search word), or a word that is so general that your search does not teach you anything. For example, a later chapter will have a lot of material on "supernovae," massive stars that undergo amazingly powerful explosions when they die. A search on "supernova" will bring up lots of images, about which you could write "Supernovae represent the explosions that occur when a massive star dies." This is nearly trivial for someone who has studied the chapter, so I would give you little credit compared to someone who showed they had given more thought to the search. Think about it, do your best, and you'll be fine.

An example

Here is an example for Chapter 2. I wanted to log something about Copernicus and the importance of his heliocentric model for human conceptions of Earth, and of humans, in relation to the universe. As an alternative, I thought I might show an elliptical orbit, and point out that a major break of Kepler from Copernicus was his lack of addiction to perfect circles.

I tried: "Kepler's laws" (error: illegal character); "Kepler" (28 items, most about the current "Kepler" planet-finding mission); "orbit," got mostly useless stuff.

Then I tried "Copernicus," and found, at top of page, a 2009 discovery of an AD1490 "class notes" of a monk taking a "course" in Ptolemy's model for the solar system. Fascinating, but not relevant here; however I see links to names. The Copernicus link is to many external sites, while the Kepler link is to a picture of Kepler. I linked to Kepler. The description under Kepler's picture has a link to Kepler's third law (still within APOD), But instead I clicked on the "Copernican system" link, which sent me to someone's course web site that had a nice little picture of some of the planets orbiting the Sun. Good enough to illustrate that I understand the following:

Entry for Ch.2:

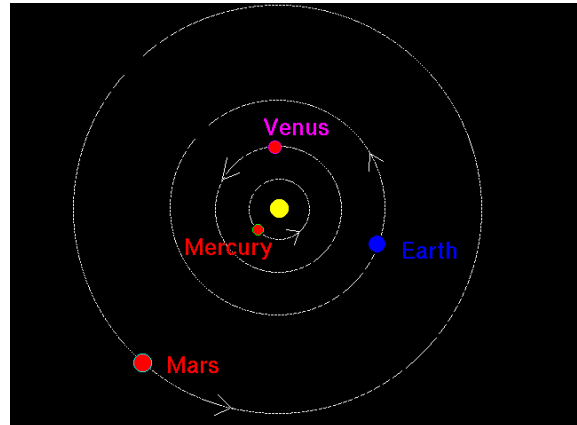
Copernicus revolutionized our understanding of the universe by introducing a model in which the planets orbited the Sun, rather than the Earth. The success of this heliocentric model showed that the Earth is not at the center of the universe, and set the stage for Kepler's heliocentric model, which finally abandoned Copernicus' attachment to perfect circles.

Picture was a link from web site:

<http://zebu.uoregon.edu/~soper/Orbits/copernicus.html>

which was a link from the APOD page on Kepler:

<http://apod.nasa.gov/apod/ap970913.html>



Searches that do not show you began with an APOD url will be given a score of zero! I could have found a similar (and certainly more appealing!) diagram of the solar system by typing "solar system" at Google image, Bing image, etc. However the constraint of having to use only the APOD site as starting point led to some interesting material that made me much more familiar and comfortable with the Galileo/Copernicus/Kepler timeline and their implications for astronomy, and only took about 15 minutes. (For example, I did not realize that Kepler was already convinced of the heliocentric model from his knowledge of Copernicus' model and Galileo's telescopic discoveries.)