

ASTR 422 – Term paper

The term paper is an important part of this class, including the oral presentation. This is an opportunity to learn how to read, think, write and talk about science. You will write a paper on a subject you are interested in. The topic has to be related to material covered in class, but you should discuss it at a greater level of detail than what is presented in the course book. Include both background as well as currently published research on the selected topic.

Some suggested topics:

- The Galactic Center
- Extragalactic distance scale
- Merging galaxies (importance of galaxy collisions for shaping galactic structure)
- Supermassive black holes (how to weigh them, evidence and tests for confirming the presence of supermassive black holes in galaxies)
- Stellar orbits in galaxies
- Cold Dark Matter in galaxies, and Modified Newtonian Gravity – compare the two approaches to understanding galactic rotation
- Jets in active galaxies
- Cluster magnetic fields, synchrotron halos and relics
- The star formation history of the Universe
- The Great Attractor, and evidence for large scale motions of galaxies
- The Lyman Alpha forest, what information it gives about the early Universe
- Cosmic Dawn (first stars and galaxies) and how we might go about detecting it.

Deadlines:

Feb 2: Present to me a ranked list of three possible topics (in case several people want to write about the same subject).

March 8: A detailed outline of the paper should be handed in – this is to give you early feedback and to make sure you will not start thinking about the project too late during the semester. Be sure to look at the example on the class web page.

April 28 - May 5: Term paper presentations. Each presentation will be 25-30 minutes, including a few minutes for questions. Attending these presentations is mandatory.

Friday May 6: The full paper is due.

Paper format: The paper should be between 10-15 pages in length, font size 12 (single-spaced). It must include an abstract, figures and citations, and a reference list. Some good info on format of a report can be found at <http://www.studygs.net/labreports.htm> and the class web page.

Outlines: Read this useful info: <http://www.ccc.commnet.edu/library/mla/outlines.shtml> and refer to the example on the class web page.

Plagiarism: If plagiarism is found, the paper will automatically receive a grade F. For a brief discussion on how to properly use other people's work, see: <http://www.ccc.commnet.edu/mla/plagiarism.shtml>