

draft of guidelines for project

two options

1) An observing proposal

2) a research paper (theoretically/experimentally oriented)

The idea is to serve the main thrusts of the PhD

Observing proposal

Write a proposal to obtain time on a major observatory (Hubble, Chandra, XMM, NRAO (ALMA, eVLA), NRAO (Gemini)). The directions can be obtained at the various observatories web sites (see for example- http://cxc.harvard.edu/proposer/CfP/html/CfP_chapter5.html

or

<http://www.stsci.edu/hst/proposing/docs/proposingOverview>

or

<https://science.nrao.edu/facilities/vla/proposing>)

All of these sites are pretty bureaucratic- I do not expect you to follow the exact forms and other details, but keep to the limits of the number of pages. It would be good if you had a target list and exposure times (but these are not required).

Usually they are 3-6 pages long . As I described in the class there is a major difference between a research paper, which describes new results, software or hardware and a proposal. A proposal attempts to convince the reviewer that this idea is worth giving very precious observatory time out . This time is very competitive- e.g. HST and Chandra are more than 6 times over subscribed.

Research paper

Take one of the many topics in the class that I either went through very superficially and is 'interesting and important'. Find several (2-5) papers which discuss this topic and what they present that enhances what I had shown in the class. Discuss the future of this research (what sort of theoretical or observational or experimental enhancements are needed to make important progress). This should be well referenced, have a few (1-5) figures and be ~10 double spaced pages long.

Higher credit will be given to more research oriented papers (e.g. something like: while XX and YY have claimed that A is related to the sqrt(B), I have analyzed archival data for Z which shows that A is uncorrelated with B. I discuss why I find a different result (e.g. better analysis, more data, or the authors XX and YY have made a mistake)). I do NOT expect you to obtain your own data, find stuff in the archives or use published data to search for something new. It is not NECESSARY to do original analysis, just that it will get more credit (It is entirely possible that a pure review of the literature in the field which is well organized clear and to the point can get an A).

For those who are interested in instrumentation one might review 'recent progress in X; (e.g. adaptive optics, bolometers, IFUs etc etc) and how a better widget will change the field and what a better widget would look like.