Astronomy 4100 / 6100

Final Project Guidelines

Due Date: Monday April 27 at 5:00pm --> Turn in on iCollege

There is no final exam in this class, but there is a final project. Each of you will use the knowledge you have acquired in this class to write an observing proposal. You will propose to use one of the telescopes at Kitt Peak Observatory in Arizona and you will follow the official format for NOAO proposals. Complete instructions and more information than you could ever want to know can all be found here: <u>http://ast.noao.edu/observing/proposal-info</u>

You may write your proposal to use any of the available instruments on the 3.5m WIYN Telescope (instrument choices can be found near the bottom of this page: <u>http://ast.noao.edu/observing/current-telescopes-instruments</u>)

Templates will be made available on the class website in both LaTeX and PDF formats. 6100 students must use LaTeX, and 4100 students can choose whichever format they prefer.

Things to keep in mind while writing your proposal:

- 1. Make sure you read and follow the directions. Even professional astronomers must submit proposals in the correct format or they risk having their proposal immediately rejected. You should expect the same.
- 2. Justify everything: target choices and number of targets, choice of instrument and detailed setup, total time request (usually awarded in full nights or half nights), acceptable months for the observations, acceptable moon phase, expected exposure lengths and resultant signal-to-noise (use the instrument handbook, any exposure time calculator, and/or example observations to plan this, not the full equation! you don't have all the necessary info to properly use the equation here), etc.
- 3. Remember your audience. Just because you may be quite knowledgeable about something doesn't mean the people reading your proposal will be. They'll be much more favorable in their assessment of your proposal if you explain it so they can understand it.
- 4. Make it clear why anyone should care about your proposal. Don't take for granted that the reviewers will immediately understand the importance of your project.
- 5. Use proper language, spelling, grammar, and punctuation. Don't give the reviewers any reason to doubt your intelligence, assume that you are sloppy, or otherwise be put off by your proposal. (In real life, reviewers often have 50-100 proposals to read, and sloppy ones are likely to get very little attention).
- 6. Finally, do not leave any section blank. Be sure to put something there (at the very least "N/A" or "Not applicable") to show that you saw the section and considered it.

Grading: 50% of your grade will be based on the proposal itself, and 50% on your reviews of the other students proposals.

Meaningful reviews of all proposals will be due **Friday April 1 at 5pm**, and will also be uploaded in iCollege.

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Grading for the final project will be further broken down as follows:

- 35% technical justification <--- spend your time here!!
- 15% science case and other proposal sections
- 50% meaningful reviews of all other proposals

More details on the proposal reviews will be given near the end of the semester, but note that your proposal will be read and evaluated by the other students in this class, so be sure to write it for your audience.

Final thoughts and guidance:

- The science is de-emphasized in this project because we are focusing on the details of making the measurements. Pick something you find interesting, but don't worry about whether your question would be competitive for a real proposal. You may pick something that we already know the answer to, or you may pick something new that is related to your research (if you are working on research). It's up to you, but the goal is to make a decision early so you can work on the rest of the proposal. If you need a little help with this, talk to Dr. Bentz (but do it early so you can settle on something).
- Once you have chosen something for your science question, spend most of your time on the instrument setup and the observational planning. Read the instrument manual(s). Go through the homework problems and solutions --- many were designed specifically to help you with this project. Look at publications in the literature to see examples of what people have done in the past with this instrument or with similar instruments. Use whatever information you can find to help you make *reasonable* and *logical* choices for this part. And explain how you decided (make sure we, the readers, also think it is reasonable and logical).
- An example proposal that I wrote (that was successful) for the Gemini North telescope can be found here: www.astro.gsu.edu/~bentz/gem.prop.pdf Note that this is much more detailed than I expect for your proposals and written for a professional audience (including jargon), but you may use it as a guide for what the sections should look like, what information goes where, and what kinds of details should be included. Also note that some of the formatting looks a little different (this is because it is a shared-time proposal with USA +Australia), but the main sections are the same as what you will be working with.
- Start early and be thorough. It's a good idea to ask another student to read your proposal and give you some comments before you turn it in. All of the astronomy graduate students have done this project before, including the proposal reviews, and they can give you helpful feedback and point out any potential problems ahead of time so you can fix them.
- The first time you do anything, it will be challenging. This project is designed to make you face the challenge of proposal writing <u>now</u> so that you are more prepared to tackle proposal writing in your own research down the road. Take this challenge seriously and you have the potential to really give your future self a boost.