

Ge/Ay 132
FINAL PROJECT

Prepare a 10 minute presentation (we can provide you with overhead transparencies if you need them, just give us some notice) on a subject of current research interest involving atomic and/or molecular processes in astronomy and/or planetary sciences. These will be delivered during final's week (Monday-Wednesday March 15th-17th). Please, if possible, discuss your intended subject with me beforehand briefly fairly soon.

The fourth problem set will be short so you can begin preparing your talk. Along with this, please write a short (4-5) page summary of the subject you will talk about. It should contain the following points:

- What recent research articles have you read that are relevant to your talk?
- What is the object or system being studied? What is already considered to be well-established about it? (Perhaps, how does it differ from related objects or systems?)
- What quantity is being measured, what are the actual observations being made, and what do the measurements enable one to determine?
- Why is it important to determine these properties?
- What are the actual transitions of the atoms and/or molecules that are involved? Draw explicit energy level diagrams and/or schemes of the processes involved.
- What are the uncertainties in the observations, and what are the assumptions in the analysis?
- What are the conclusions? Do they support or conflict with other relevant studies? What future work could be done?

You are allowed to use the class notes and any books or articles you like. Don't hesitate to contact me if you have any questions.

The written papers will be due by Friday March 19th. If you're leaving earlier than this for spring break, by all means turn them in as you have them ready. You can also submit them to me electronically if that is more convenient (gab@gps.caltech.edu). For the talks, if you prepare them in PowerPoint and send them to me, I will load them onto my laptop so we don't need to switch computers during the presentations.