

## **Astronomy (1)74**

### **Review Paper**

**Topic review due: Sunday, October 29**

**Paper outline due: Friday, November 10**

**Final paper due: Wednesday, November 22**

You will write a review paper on some topic in radiative astrophysics. The paper should be  $\sim 6$  pages single spaced, double column, and size 12 font, including figures as appropriate. This review must be based upon your reading of the professional astronomical literature, like the papers we have been reading in class. You should restrict your review to articles which have appeared in refereed journals, such as the *The Astrophysical Journal*, *The Astronomical Journal*, *Monthly Notices of the Royal Astronomical Society* and *Astronomy and Astrophysics*. The format of the paper should be similar to the refereed journals in astronomy, with an abstract, introduction, list of references, etc. and follow the conventions used for astronomy for citing references (author, year), figure captions, etc. I recommend using latex ([https://researchguides.dartmouth.edu/LaTeX\\_BibTeX](https://researchguides.dartmouth.edu/LaTeX_BibTeX)) and the AASTeX package, which you can use for free and without downloading anything in Overleaf (<https://www.overleaf.com/latex/templates/aastex-template-for-submissions-to-the-astrophysical-journal/bpkjwktvsqwp>). Just change the font size to 12.

All of the refereed astronomical literature is available on-line, in the searchable ADS database [http://adsabs.harvard.edu/abstract\\_service.html](http://adsabs.harvard.edu/abstract_service.html). You should use this resource to find articles relevant to your chosen topic. There is an option in ADS to select Refereed journals only, and I would recommend that you use this option.

You have considerable flexibility on the choice of topic, with the primary restriction being that it must connect back to the course material, though we need not have covered the specific topic in class. Your topic must have something to do with radiative astrophysics, and must make use of the theoretical knowledge you have learned in this course. This is not to discourage you from picking an observationally driven topic—indeed, I often find observational papers significantly more approachable—you just must address the underpinning theory in your review. Pick a topic which you find interesting. Your topic should not be so broad that you need to review tens of papers, nor so narrow that you are just discussing a single paper. If you want help selecting a topic, I am happy to discuss things with you.

You must choose provide me with a one paragraph description of your topic on Sunday, Oct. 29. A rough draft of your paper is due Friday, November 10. Additional info on each of these milestone assignments is on Canvas. If you send me a final draft during the week of November 13 - 17, I will be happy to provide additional feedback. The final paper is due the last day of the exam period, November 22.

## **Possible Review Topics (broad and non-exhaustive!)**

- Stellar magnetic fields
- (Exo)planetary atmospheres
- Compact objects, magnetars, pulsars
- Supernova remnants
- Novae, massive stars
- Interstellar medium
- Stellar high-energy emission
- Aurorae (brown dwarfs or planets)
- X-ray binaries
- Supernova lightcurves
- Active galactic nuclei
- Intergalactic medium