Grading Rubric : ASTR400B Research Assignment 2

Name: [Shea,Peter Grumbles](https://github.com/PeterS1603/ASTR400B)

**A Introduction 10/ 10**

Each of the below points should be a separate paragraph in your introduction.

1. Define the Proposed Topic. 1/1
2. State why this topic matters to our understanding of galaxy evolution. 2/2
3. Overview our current understanding of the topic. 2/2
4. What are the open questions in the field? 2/2
5. Cite at least 3 journal papers. Use BibTex for formatting citations 1/1
6. Include at least one figure with caption from those papers to motivate your work. 2/2

**B. The Proposal 8/ 10**

They must answer each of the below questions as separate subsections.

1. What specific question(s) will you be addressing? 1/1
2. How will you approach the problem using the simulation data? Here you should outline the codes you’d need to write. It can be in general terms. 3/5
3. Include at least one figure that illustrates your methodology. 2/2
4. What is your hypothesis of what you will find? Why do you think this will occur? 2/2

**C. Misc. 5 /5**

1. Proper Grammar 1/1
2. Included a bibliography 1/1
3. In Latex and ApJ/MNRAS formatting 2/2
4. On Time/On Github 1/1

**TOTAL** 23**/25**

**Late Penalty:**

* if submitted on due date, but after 5 PM  **(-5 points).**
* Proposals will **not be accepted** after the due date.

**Comments: -2: Need some more details in the methods, like centering (what codes), which snapshots you will use and why - don’t use all the snapshots, maybe pick key points in the orbit, like closest (pericenter) and furthest (apocenter) approaches.**

**You can also consider particles beyond the Jacobi radius to identify the streams - See Lecture 9. But the phase diagram method works also.**

**For your topic, avoid dealing with dark matter and bulge particles and just focus on disk stars.**

**Note that once you’ve identified star particles in the tidal tails (e.g. by identifying their indices using np.where as outliers in the phase diagram (Fig 3) ) the nice thing is that the indices are always the same in every subsequent snapshot so you can track the evolution of those exact particles by selecting the same indices each time. Come talk to Himansh or Dr Besla in office hours or after class if this isn’t clear (or set up a zoom meeting).**