Grading Rubric : Research Assignment 7 FINAL REPORT

Name: [Harnist,Zach P](https://github.com/zharnist/Astro400B?tab=readme-ov-file#astro400b)

1. **Miscellany (5/5)** 
   1. The report must be written in LaTeX using the emulateApJ or MNRAS formatting. ( 1/1)
   2. Informative Title, Name (1/1)
   3. Proper Grammar ( 1/1)
   4. All references properly cited (1 /1)
   5. Acknowledgements with code citations (1/1)
2. **Abstract ( 2.5/5)**

(a) A sentence that defines the Broad Galaxy Evolution topic 1/1  
(b) A sentence that says why the Galaxy Evolution topic is important 0.5/1

(c) A sentence that introduces the simulations 0.5/0.5

(c) A sentence that says what specific simulation question you are exploring 0.5/0.5

(e) A sentence(s) that states what you found 0/1  
(f) A conclusion about importance of finding(s) for the Galaxy Evolution Topic 0/1

1. **Keywords (9/10)**
   1. 5 keywords listed and defined in the text (2 per word)

*Major merger definition needs to be more precise*

1. **Introduction ( 5.5/ 10)**
   1. Define the Proposed Topic in Galaxy Evolution (par 1) 1/1
   2. State why this topic matters to our understanding of galaxy evolution 1/1
   3. Define “Galaxy” according to (cite) Willman & Strader and “Galaxy Evolution” 1/1
   4. Overview our current understanding of the topic (par 3) 1/2
   5. What are the open questions in the field? With citations (par 4) 0/2
   6. Cite at least 3 journal papers (not including willman & strader). Use BibTex for formatting citations 0.5/1
   7. Include at least one figure from those papers to motivate your work – the figured must be discussed in the text. Caption must have citation, not plagiarized + punchline (what is the takeaway message) 1/2
2. **Section 2: This Project: (4 /5)**

(a) State what question(s) you are exploring (Paragraph 1) 1/1

(b) Which of the open questions does this project address? (Paragraph 2) 1/1

(b) Why is the open question interesting/important? How will your study address the question? (Paragraph 3) 2/3

1. **Section 3: Methods (10 /10)** 
   1. Paragraph 1: describes the simulation you are using and what code was used to create it (citations) 1/1
   2. Defined N-body 1 /1
   3. Paragraph 2 : Overview approach. 2/2
   4. Include a figure to describe methods with caption 2/2
   5. Paragraph 3: Describe calculations with terms defined 2/2
   6. Paragraph 4: Describe the plots you need 1/1
   7. Paragraph 5: Hypothesis   1/1
2. **CODE: (9/10)**
   1. Code header that explains the goal 2/2
   2. Code is documented 2/2
   3. Significant work done in extension of code from class work. 4/4
   4. Code Github Repository is well organized and Code for Final Project is well documented. 1/2
   5. Code check-ins attended **if 2/3 are not attended/rescheduled this entire section is graded as 0.**
3. **Section 4: Results (19 /20)**
4. Paragraph 1: Describes Plot 1 4/4
5. Plot 1 included with caption + punchline 4/4
6. Paragraph 2: Describes Plot 2 4/4
7. Plot 2 included with caption, independent code+ punchline and quantitative 7/8

*Radial velocity alone is not sufficient to infer dynamical equilibrium*

1. **Section 5: Discussion (15/15)**
2. Par 1: Result 1.
   1. Does the result agree or disagree with hypothesis? /3
3. Par 2:
   1. How does this result relate to existing work ? /5
   2. What is the importance/meaning of this result for our understanding of galaxy evolution? /4
   3. What are the uncertainties /3
4. Repeat for subsequent results
5. **Section 6: Conclusion ( 10/10)**
   1. Paragraph 1, Summarize 1-4 in abstract /2
   2. Paragraph 2: highlight one key finding, what it means and whether it agrees/disagrees with hypothesis /2
   3. Last Paragraph: Future directions, how could you improve the analysis/code? /6

11. Total 89 /100