

HON 210 Cosmic Origins Paper

The purpose of this paper is for you to explore in some depth a topic that was not covered in the class and that is intimately connected to our knowledge of the universe and its origins. You can pick a topic from the below list of topics. If you think of another topic, then you will need approval of your topic by the topic approval deadline.

To keep you on track there will be three phases to the project.

1. First you will submit a proposal. This will be a short description of the topic and what you plan to research. A cursory search of books in the library, papers in physics journals, and/or reliable internet sites will be required. Your proposal should reference these materials. Also, you should indicate why this topic appeals to you. **This is due Nov 2nd.**
2. Upon approval, you will do more extensive research on the topic and will write a draft of your paper on the topic. This will be a serious look into the topic, explaining the topic, what you have learned, how it is connected to the class, etc. You should include appropriate equations typed using an equation editor, numbered and offset like you see in your textbooks. Appropriate figures with captions would be a plus. Also, a worked example, or two, would help to assess what you have learned. This is due **Nov 16th.**
3. For the last phase, you will be given an opportunity to make corrections to your paper and answer the instructor's questions, fix any formatting problems, incorporate answers to any questions you might have had on the first draft. The final draft will be due the **last day of class, Dec 5th.**
4. **Group Presentations** will be in class after Thanksgiving. More on that later.

You are to follow the

1. All work is to be typed in 10 or 12 pt format and double spaced.
2. **A research paper is at least 10 pages. For 12 pt font, double spaced, this is at least 2500 words.** – added 11/14.
3. Your name should be on all pages and the work should be titled in an appropriate way.
4. All pages should be stapled and NOT folded and on standard sized paper.
5. You are expected to write using good grammar and spelling. Your thoughts should be presented in full sentences and you are to group your thoughts into paragraphs.
6. Your facts should be correct and you should reference all work that is not your own. **You should use more than one source and at least one text or journal source from the library.** Do not simply cut and paste from the Internet!
7. Any equations should be properly formatted (numbered, referenced as Equation (), offset from text, and punctuated), variables are italic.
8. Figures should not be too big and should be labeled (Fig. 1, etc), have captions, and referred to.
9. You should reference work that is not your own, use standard bibliographic style and citation.

Possible Topics

1. GPS and General Relativity.
2. Gravitational Waves and the LIGO Project, recent detections.
3. Pulsars, Neutron Stars, Black Holes or Other Exotic Objects.
4. Dark Energy and/or Dark Matter.
5. Recent discoveries from JWST as pertains to new information about the origins.
6. Radio astronomy.
7. History of the discovery of components of the universe.
8. Space Travel.
9. Time Travel.

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Presentations

Groups will present in a random order as indicated below. Groups of two should aim for 20 minute talks plus five minutes for questions. Groups of three should aim for 30 minute talks. This will count 15% of your grade. Evaluation of the oral presentation will be based on the following set of expectations:

- **Organization.**
 - Begin with an introduction, capture audience interest, and to make objectives clear.
 - Have an identifiable body of the talk, focusing on the main points and making logical transitions between them.
 - End with a conclusion, accentuating the talk layout and identifying key takeaway points.
 - Adhere to the time allocation.
 - Well prepared slides, readable, consistent font size and type.
- **Consideration of the audience.**
 - Maintain eye contact during the presentation and include everyone in the audience.
 - Aim for audience understanding. What will they take away from your talk?
 - Respond appropriately to questions during the question and answer period.
 - Treat all questions and questioners with respect.
 - Do not read to the audience.
- **Understanding of the content.**
 - Communicate key ideas accurately.
 - Use media appropriately to enhance presentation.
- **Deliver a clear and professional talk.**
 - It is crucial that the audience understand the main points of the presentation. This is far, far more important than coverage of a large amount of material from the paper.
 - Use good judgment in narrowing the scope of the paper for the presentation to achieve this.
 - Prepare presentations that
 - are easily read from any place in the classroom;
 - are simple, uncluttered and designed to help communicate, review and relate main points.
 - use good grammar, word usage, standard notation, layout, and style.
 - Reference/Cite all content appropriately

Randomly Ordered Presentation Dates – updated 11/14

Nov 28

Olivia Abounder	Nitya Budamagunta	Mikayla Ebel
Braeden Shreves	Meghan Worsham	
Riley Alden	CJ Froese	

Nov 30

Lilly Horton	Molly McMorrow	
Kira Durbin	Kira Stokoe	
Hattie Cope	Siobhan Duffy	Dylan White

Dec 5

Sonya Dutt	Madison Schmitt
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