

Astronomy & You Bonus Project

This optional bonus project is worth 70 points, almost as much as a homework assignment, and so offers you a significant opportunity to improve your performance in this course. Given the significance of this project, I will grade it with high expectations. This means that I expect you to put real time and effort into the project if you want to be able to raise your grade. You have over three weeks to complete the project, but don't wait till the last week to get started! I encourage you to talk to me for direction or guidance as you work on the project. This is an individual project, but in exceptional cases with particularly ambitious goals, I will allow you to pair up with another classmate. You will however have to get my approval first before working with another student.

Project Description

Over the course of the semester, we have talked about the fascinating science of astronomy. I hope that you have found this process interesting and educational. Now, I want you to find a way to relate what you have learned in this course to your interests, whether it is your educational major or a hobby. Upon completion, you will turn in a multi-page report and an accompanying original creation of yours. A few examples are listed below.

Art – Describe how various pieces of artwork or sculpture have been influenced by astronomical bodies or events. If possible, create your own painting, sculpture etc. based on something we have discussed in class.

Psychology – Research and describe the effects of long term space travel on the human mind. What type of people would you select and what sort of a team would you build for a manned mission to Mars that possibly would last many years? You might also choose to look further into the future and consider multi-generational interstellar travel instead!

Political Science – If we were to get concrete evidence of the presence of intelligent alien life, either through a visit or a signal, what would the ramifications on Earth be? Will it serve as a way of uniting the Earth, or will it divide us further? What role will the major countries and international organizations play in defining the course for humans? If possible, conduct a survey among a diverse group and include the results in your report.

Sociology / Religion – Discuss the role astronomy has played in the struggle between science and religion through the ages and at present. Discuss aspects where the two fields have collaborated and where they have struggled against each other. If possible, conduct a survey of students/faculty on the topic and try to explain your results.

English – Describe the influence of astronomy on poetry and other works throughout human history. Describe how the science fiction genre influences human culture.

Computers/IT – Discuss how the growing requirements of astronomical observation and space exploration have advanced and tested technology and the use of computers. How do the electronics work on most space probes, the space shuttle, the space station, etc?

Film – Discuss the effects of science based films on society (you might want to check <http://www.badastronomy.com>). If possible, create your own film about something we talked about in class (like demonstrations of Newton's laws or a slow motion video of impact cratering).

Accounting/Finances – Explore the costs of individual missions or space programs as a whole. Compare the space budgets of different countries. Is the price paid worth the outcome?

Photography – Describe the advances in imaging made by astronomy from photographic plates to CCD's and what effect it had on commercial photographic equipment. If possible, try your hand at astrophotography and discuss all the extra requirements needed compared to other types of photography.

Music – Discuss the many musical pieces that have been devoted to the heavens. If possible, create your own piece of astronomy related music.

Project Deliverable:

You will turn in a minimum 4 page, maximum 6 page report covering the motivation and reasoning behind the project, as well as the results of your work. You will also turn in your original creation (if applicable) such as a painting, sculpture, music, film etc. The written report will put your creation in context. For example, if someone chose to make a painting of something we discussed in class, the report must give details about that object or event and why that particular subject was chosen. Some projects may only be a paper report with no other deliverable, but these must show good effort commensurate with another student also creating a second deliverable.

The report must be typed, double-spaced, 12-pt font with reasonable margins. The paper must also have a reference list including any sources used for the project/paper. The reference list DOES NOT count toward the page limits.

What You Need To Do:

- 1) Decide on a topic for your project
- 2) Research and work on project/paper - Email me if you need any help or advice
- 3) Turn in project report and your creation by Friday, December 7th

Grading:

Your project grade will be based on the following:

60% Content – This is the main point of your project. Are you successful in relating your interest to some aspect of astronomy and do you support that link with lots of information?

25% Creativity – In addition to helping your grade, I want this project to be fun and interesting for both you and me. The more creative and thoughtful the topic and presentation, the better your grade.

15% Grammar/Spelling – This should be a college level paper and should be formatted appropriately with good grammar and no spelling errors.