ASTR 1000 Descriptive Astronomy
Part III Project

Purpose
Demonstrate your knowledge of the Solar System, its planets, Moons, and other small bodies.

What it is
Your project is a formal way to demonstrate that you understand the content covered in Part III of the course. It should thoroughly fulfill **two** of the unit objectives.

Part III learning objectives
18. Recount and justify the Solar nebula hypothesis of the formation of the Solar system. Identify and explain evidence for the hypothesis. Identify events that can trigger a collapse.
19. Identify and describe the principal categories of objects in the Solar System.
20. Describe at least five ways in which Earth differs from other rocky planets.
21. Describe and explain the interaction of Earth with the Moon's orbit.
22 Describe major features of the Moon's surface.
23. Identify and explain evidence for the Giant Impact hypothesis of the Moon's formation.
24 Identify the unique aspects of Mercury's composition and surface.
25. Describe the composition and characteristics of Venus's surface and atmosphere.
26. Identify evidence that Mars once contained abundant surface water.
27. Describe Jupiter's and Saturn's composition and internal structure, atmosphere, and weather. Includes their magnetic fields and unique characteristics.
28. Describe the major moons of the gas planets, including notable orbital properties, composition, and geologic activity. Includes the Galilean satellites of Jupiter; Enceladus and Titan, and Triton.
29. Identify and describe the primary locations to search for life in the Solar system.
30. Describe, compare, and contrast the composition, structure, orbital features, and dynamic processes of Uranus and Neptune.
31. Describe, compare, and contrast the composition, properties, orbits, and behaviors of dwarf planets, comets, and asteroids.
32. Categorize meteorites, describe their features, and explain what they teach us about the Earth and Solar system.
33. Describe how we have detected planets orbiting other stars. Describe the characteristics of the planets that have been found.

Possible projects

These are some ideas for a project. You are free to suggest others. I will approve of projects that demonstrate your mastery of the required unit objectives.

- A travel brochure promoting visits to some Solar system location.
- A short story describing the life of a colonist somewhere in the Solar system.
- A poster comparing and contrasting similar objects (e.g. the rocky planets; the gas giants, the ice giants, the Galilean satellites, Kuiper Belt objects, meteorites) with each other.
- A concept map describing the Solar system and the characteristics of its objects.
- Quiz questions are okay this time around, BUT
    - You must officially sign up on the sheet, and
    - No two students may write questions about the same objective.

Components

Sign up: Select a project. Describe succinctly what form your project will take, and which of the unit objectives it will cover.

Rough Draft: Your project itself. The more complete it is, the more useful feedback your classmates and instructor can provide.

Rough draft feedback: Feedback to your classmates on how you see the project addressing the objectives.

Final Project: The completed project.

Final project feedback: Summarize what the project teaches about its objectives.

Dates and Deadlines

Mar 6	Claim ideas (sign-up)
Mar 13	Rough drafts due
Mar 25	Rough draft feedback due
Mar 30	Project due
Apr 1	Final project feedback

Scoring

Rough Draft (10 points)

This is the full project, but not polished.

10	Contains all parts of the project, addressing all of the specified objective.
6	Submission lacks substantial portions of the project.

Rough Draft feedback (10 points)

For each draft that you review, explain how the project addresses its learning objectives.

10	Summarizes what each draft does to cover its learning objectives.
proportional	Misses assigned drafts or associated objectives.

Final Report (30 points)

This is graded by the student, with the instructor having veto power.

Is it easy to understand? Does it communicate the objective clearly, correctly, and completely? Is it creative and appealing?

Final report feedback (10 points)

Summarize what each project that you review teaches about its learning objectives.

10	Summarizes what each project teaches about its learning objective.
proportional	Misses assigned projects or associated objectives.