

ASTR 8200: Galactic Structure

Spring 2024 ★ Tue/Thu 12:45 PM – 2:00 PM ★ Room 628, 25 Park Place

Instructor: Professor Todd Henry
Room 618, 25 Park Place
email: thenry88@gsu.edu
research: nearby stars, stellar masses, exoplanets, astrobiology

Office Hours: by appointment

Prerequisite: ASTR 6000 or equivalent

Textbook: current readings in the astronomical literature

Course Objectives: An overview of the structure, kinematics, and dynamics of the Milky Way Galaxy and its various components.

Grades (approximate):

Research Proposal	50%
Presentation	20%
Quizzes	20%
In-Class Participation	10%

How to Do Well in This Class:

The following are highly recommended: (1) showing up to class on time, (2) being an active participant during class, (3) being prepared for quizzes based on readings, and (4) getting an early start on the primary component of the course, the Research Proposal. Each student is expected to do her/his/their own work. Certainly, discussions of more difficult problems with other students is acceptable (and encouraged), but work that is turned in must be your own. Under no circumstances will duplication on assignments or plagiarism in the Research Proposal be tolerated. No AI of any kind may be used for the written Research Proposal, although AI may be used for computational work for which results are incorporated into the proposal.

Dates to Remember:

- FEB 27 — Semester Midpoint
- APR 08 — TOTAL SOLAR ECLIPSE (Monday)
- APR 18 — Student Presentations I (Thursday)
- APR 23 — Student Presentations II (Tuesday)
- APR 25 — Research Proposal due at 5PM (Thursday)

Lecture Topics: The following is an approximate list of topics for the course. Changes will likely occur, but this is the map for our quest through the Milky Way ...

Date	Topic
JAN 09	AAS Meeting
JAN 11	AAS Meeting
JAN 16	Milky Way History I
JAN 18	Milky Way History II
JAN 23	Writing Proposals
JAN 25	Gaia
JAN 30	Proposal Brainstorm
FEB 01	Milky Way Overview
FEB 06	Variable Stars
FEB 08	Stellar Populations I
FEB 13	Stellar Populations II
FEB 15	Clusters I
FEB 20	Clusters II
FEB 22	Milky Way Neighborhood
FEB 27	Disk Overview
FEB 29	Disk Structure and Formation
MAR 05	Disk Stellar Kinematics
MAR 07	Disk Potpourri
MAR 12	!!!! SPRING BREAK !!!!
MAR 14	!!!! SPRING BREAK !!!!
MAR 19	Galactic Center
MAR 21	Bulge + Bar
MAR 26	Halo — Globular Clusters I
MAR 28	Halo — Globular Clusters II
APR 02	Halo — Stellar Streams
APR 04	Milky Way Structure Wrapup
APR 09	Milky Way Among Galaxies
APR 11	<i>proposal work</i>
APR 16	<i>proposal work</i>
APR 18	Presentations Marathon I
APR 23	Presentations Marathon II
APR 25	PROPOSALS DUE (Thursday)