

Syllabus
Extragalactic Astronomy and Cosmology
ASTR 323, Spring 2009
Prof. Eric Agol

Textbook: Carroll and Ostlie “An Introduction to Modern Astrophysics”
Supplemental Texts (on reserve in library):

- Sparke & Gallagher “Galaxies in the Universe”
- Ryden “Introduction to Cosmology”
- Mihalas & Binney “Galactic Astronomy
- Ryden & Peterson “Foundations of Astrophysics”

My contact information: Office location: PAB B370, Phone number: (206) 543-7106, Email address: agol@astro.washington.edu, Office hour: TBD
Grade evaluation: Homework 35%, Participation 5%, Midterm exams 30%, Final exam 30%

Grader: Rosalie McGurk

Grading system: I will use an absolute scale, not a curve. I will guarantee at least a (4.0,3.0,2.0) if you obtain (97%,82%,70%) for your total course grade. These percentages may be revised at my discretion depending on the difficulty of the exams and homework.

Course web page:

<http://www.astro.washington.edu/users/agol/astr323/>

Catalog course description: Galaxies, optical and radio morphology and properties. Clusters of galaxies, radio sources, and quasars. Observational cosmology.

Course goals: By the end of this course, you should have a good knowledge of:

1. Structure and kinematics of the Milky Way Galaxy
2. Properties of supermassive black holes and Sgr A*
3. The types of galaxies, Hubble sequence

4. Fundamental relations: Tully-Fisher, Faber-Jackson, Fundamental Plane, luminosity function
5. Formation and merger of galaxies
6. The extragalactic distance scale
7. Categories of active galaxies and models for emission properties
8. Galaxy cluster properties
9. The contents, history and origin of the Universe.
10. The structure of the Universe.
11. Relation between the contents of the Universe and its evolution.
12. Evidence for the Big Bang

You will be responsible for the material covered in reading assignments from Carroll and Ostlie, listed below (although subject to changes which I will announce in lecture), as well as the lecture material.

You will also be *expected* to ask questions during the lecture or outside lecture, at my office hours or by email. Five percent of your grade will be based upon your participation in the course, so if you don't understand something, please ask - this will help your grade!

Tentative schedule (any changes will be announced during lecture):

Wk	Dates	Topics	Tues	Thurs
1	3/31,4/2	Intro & Milky Way	Read: 24.1-2	24.3
2	4/7,9	The Galactic Center and Sgr A*	24.4	HW 1, 17
3	4/14,15	Spirals and Ellipticals	HW 2, 25.1-2	25.3-4
4	4/21,23	Galaxies & Galactic Evolution	HW 3	26.1-2
5	4/28,30	Midterm Review & Midterm	HW 4	Midterm
6	5/5,7	Structure of the Universe	27.1-27.2	27.3-27.4
7	5/12,14	Active Galactic Nuclei	HW 5, 28.1-28.2	28.3-28.4
8	5/19,21	Cosmology	HW 6, 29.1-29.2	29.3-29.4
9	5/26,28	Early Universe, Origin of Structure	HW 7, 30.1	30.2
10	6/2,4	Course Review, Final	HW 9	Final Exam