

cd

ASTR421: Galaxies - Fall 2014

Prof. Richard Mushotzky

Tue, Thu; 3:30-4:45 PM

Midterm in class Thursday October 16

[High Energy Astrophysics Picture of the Week](#) | [Astronomy Picture of the Day](#)

- **Term dates:** Sept 2 - Dec 12, 2014
- **Room:** CSS 2428
- **Office:** PSC 1111
- **Off. Hrs** Tue, Thu; 10:00 - 11:00 or by appointment

Course materials

Syllabus

Lecture 1 Introduction: Some Galaxy Properties

Lecture 2 Introduction: Some Galaxy Properties

Lecture 3 Introduction: Some Galaxy Properties

Lecture 4 Stellar Populations

Some interesting articles and resources

[History of Science](#) (Science article, 2009)

[The great Shapley-Curtis debate on the size of the Universe](#)

[Some history of Cold Dark Matter](#)

[Popular version of Origin of Universe](#)

[The Friedmann equations and consequences](#) (some deeper math)

[Star Formation](#) (Kennicutt, Annual Review)

[Star Formation](#) (Kennicutt and Evans 2012, review article)

[Inferring History of Star Formation](#) (Dunlop, review article)

[Co-Evolution of Galaxies and Black Holes](#) (Heckman and Kauffmann, review article)

[Signatures of Formation of the Milky Way](#) (Freeman and Bland-Hawthorn, review article)

[Thermal Processes in Astrophysics](#) (Kaastra et al., review article)

[Physical Properties and Environments of Nearby Galaxies](#) (Blanton and Moustakas, review article)

[Derivation of Galactic Dynamics Equations](#) (P. van der Kruit)

[Chris Mihos's web site for Java apps illustrating galaxy dynamics](#)>

[Esther Zirbel's web site links to interesting articles from Scientific American](#)>

[review article on AGN Physics](#) (H. Netzer)

[when where and how are SMBHs Born](#) (J. Greene)

Movies shown in class

[Gravitational Lensing](#)

Syllabus

- Lecture 1 Introduction: Overview
- Lecture 2 Introduction (continued): Overview
- Lecture 3 Introduction (continued): Overview
- Lecture 4 Basic Galaxy Properties
- Lecture 5-6 Properties of Stars
- Lecture 7-8 Gas in Galaxies
- Lecture 9 Dust in Galaxies
- Lecture 10-11 Milky Way Ch 2 in S+G
- Lecture 12 Galactic Rotation
- Lecture 13-15 Dynamics I-III Chap 3 of S&G
- Lectures 16,17 Local group Ch 4 of S&G
- Lecture 18 Chemical Evolution
- Lecture 19 Star Formation
- Lecture 20-22 Spiral Galaxies Ch 5 of S&G
- Lecture 23-25 Elliptical galaxies Ch 6 of S&G
- Lecture 26-28 AGN I-III Ch9 of S&G