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