

**ASTRONOMY 5 – FALL 2009**  
**GENERAL SCHEDULE OF ACTIVITIES**

<i>WEEK #</i>	<i>WEEK BEGINNING</i>	<i>LECTURE TOPICS AND ACTIVITIES</i>	<i>TEXTBOOK READING*</i>	<i>HOMEWORK**</i>	<i>3RD HR EXERCISE</i>	<i>CPS QUIZ</i>
1	8/31	Enrollment Check, Introduction and Objectives Overview of Astronomy and the Universe Distance and Time Scales, Our Place in the Cosmos	Chapter 1	Assignment 0 No Due Date	PT	—
2	9/7 Monday Holiday	Planetarium Sky Demonstrations – Terminology and Motions Seasons, Precession, Moon Phases, Eclipses Ancient Mysteries – Retrograde Motion and Stellar Parallax	Chapter 2	Assignment 1 Due 09/11	A***	—
3	9/14	Early History and the Geocentric Models, Ptolemy Origins of Modern Astronomy – Copernicus, Brahe, and Kepler Galileo – Nature of Science, Observations, and Inertia and Motion	Chapter 3	Assignment 2 Due 09/18	B	AA
4	9/21	Newton’s Three Laws of Motion, Force and Acceleration Conservation Laws, Momentum and Energy Law of Universal Gravitation, Orbits and Tides	Chapter 4	Assignment 3 Due 09/25	C	BB
5	9/28	Properties of Light, Waves & Photons, Electromagnetic Spectrum Properties of Matter, Atomic Structure, Phase Changes Atoms and Spectra, The Stefan-Boltzmann and Wien Laws Doppler Shift, Radial Velocity and Rotation	Chapter 5	Assignment 4 Due 10/2	D	CC
6	10/5	Telescopes – Refractors & Reflectors, Interferometers Light Gathering, Angular Resolution, Magnification Observations at Nonvisible Wavelengths, Instrumentation Atmospheric Effects – Light Pollution, Twinkling, Windows	Chapter 6	Assignment 5 Due 10/9	E	DD
7	10/12	Physical Characteristics and Processes of the Sun Sunspots, Solar Activity Cycle, and the Sun-Earth Connection	Chapter 14	Assignment 6 Due 10/16	F	EE
8	10/19	Properties of Stars – Luminosity, Temperature, Mass, Radius Magnitude System, Parallax, and Binary Star Systems Stellar Classifications and the HR Diagram Globular and Open Star Clusters, Stellar Birth and Aging <b>Take-Home Midterm Available</b> (Part 1)	Chapter 15	Assignment 7 Due 10/23	G	FF

\* Supplementary Chapter S1, although not required reading, may be helpful in understanding Week 2 lectures and third-hour activities.

\*\* Assignments are found on the “Mastering Astronomy” web site for “The Cosmic Perspective: Stars, Galaxies, and Cosmology”.

\*\*\* Since Monday is a holiday this week, Monday Third-Hour students need to attend a Third-Hour class at a later time during the week.

**ASTRONOMY 5 - SPRING 2009**  
**GENERAL SCHEDULE OF ACTIVITIES**  
(continued)

<i>WEEK #</i>	<i>WEEK BEGINNING</i>	<i>LECTURE TOPICS AND ACTIVITIES</i>	<i>TEXTBOOK READING</i> <sup>†</sup>	<i>HOMEWORK</i> <sup>††</sup>	<i>3RD HR EXERCISE</i>	<i>CPS QUIZ</i>
9	10/26	The Interstellar Medium and Star-Forming Clouds Stellar Formation Processes, Protostars, Disks, Jets and Winds Life Tracks and the Masses of Newborn Stars Evolution and Death of Low-Mass Stars <b><u>In-Class Midterm</u></b> (Part 2) <b><u>in Third Hour</u></b> (Bring Scantron 882) <b>Extra Credit (first 10 pts) – Due 10/30 by 12:00 Noon</b>	Chapter 16 Chapter 17	<b><u>Take-Home Midterm</u></b> (Part 1-50 pts) Due 10/30	<b><u>In-Class Midterm</u></b> (Part 2 – 50 pts)	GG
10	11/2	Evolution and Death of High-Mass Stars White Dwarfs, Neutron Stars, and Black Holes Accretion Disks, Novae, Supernovae, Creation of the Elements Pulsars, X-Ray Binaries and Bursters, Gamma-Ray Bursts	Chapter 17 Chapter 18	Assignment 8 Due 11/6	H	HH
11	11/9 Friday Holiday	The Milky Way Galaxy – Characteristics, Dynamics, Populations Galactic Recycling, Star-Forming Regions, The Spiral Arms History of the Milky Way, The Galactic Center	Chapter 19	Assignment 9 Due 11/13	I	II
12	11/16	Galaxy Types – Spirals, Ellipticals, and Irregulars Galaxy Distances and Standard Candles, Cepheid Variables Hubble Law, Universal Expansion, and the Lookback Time	Chapter 20	Assignment 10 Due 11/20	J	JJ
13	11/23 Thursday, Friday Holiday	Galactic Evolution, Collisions, and Starbursts Quasars and Other Active Galaxies, Supermassive Black Holes Quasars as Probes of the Intergalactic Medium	Chapter 21	Assignment 11 Due 11/27	K <sup>†††</sup>	KK
14	11/30	Dark Matter and Dark Energy – Evidence and “Composition” The Large Scale Structure of the Universe Fate of the Universe – Expand Forever or Big Crunch?	Chapter 22	Assignment 12 Due 12/4	L	LL
15	12/7	The Big Bang and the Universe’s Early Evolution Observational Evidence & the Need for Inflation, Olbers’ Paradox	Chapter 23	Assignment 13 Due 12/11	M	MM
16	12/14	<b><u>Final Exam</u></b> (110 pts, 3 parts – see <i>Final Exam Outline</i> ) and <b><u>Sky Quiz</u></b> (30 pts) <b>Balance of Extra Credit Due 12/18 by 12:00 Noon</b>	—	—	<b><u>Final</u></b>	—

<sup>†</sup> Supplementary Chapters S2 and S3, although not required reading, may be helpful in understanding the lectures for Weeks 9-15. Supplementary Chapter S1, also not required reading, may be helpful in understanding activities in Third-Hour.

<sup>††</sup> Assignments are found on the “Mastering Astronomy” web site for “The Cosmic Perspective: Stars, Galaxies, and Cosmology”.

<sup>†††</sup> Since Thursday classes are cancelled this week, the instructor will explain how to complete Third-Hour K.