## ASTRONOMY 104 Spring 2006 Monday and Wednesday from 8:00 - 8:50

Instructors: Dr. Henry Bass and Dr. Luca Bombelli

Office: Room 2005 – National Center for Physical Acoustics - Bass

Room 105 - Lewis Hall - Bombelli

Office Hours: M 9-9:50 (no appointment needed) or by appointment at any time

Phone: 915-5840 – Bass

915-5319 - Bombelli

Text: J. Bennett et al, The Cosmic Perspective, Addison Wesley 1999

(with CD-ROM)

Lab: Kennon Observatory

Lab Instructor:

The Sun: Structure, surface features, and energy production Stars: Main properties Ch. 15, Sec.1-4 Ch. 15, Sec.5-6 Ch. 15, Sec.5-6 Ch. 15, Sec.5-6 Ch. 15, Sec.5-6 Ch. 16, Sec.1-3 Ch. 17, Sec.1-3 Ch. 18, Sec.1-3 Ch. 18, Sec.1-3 Ch. 18, Sec.1-3 Ch. 18, Sec.1-3 Ch. 19, Sec.1-3 Ch. 19, Sec.1-2 Ch. 19, Sec.1-3 Ch. 20, Sec.1-3 Ch. 21, Sec.1-3 Ch. 21, Sec.1-3 Ch. 22, Sec.1-3	23 25 30 1 6 8	Jan Jan Jan Jan Feb Feb	Introduction to the course and syllabus; Quick overview Introduction to the sky: The celestial sphere, objects, motions Overview of the Solar System and scales in astronomy Constitution of matter and forms of energy Motion: Kepler's laws and Newton's laws Properties of light and radiation; Spectra Telescopes: Properties, types Test 1	Ch. 1, Sec. 1-4 Ch. 1, Sec. 5 Ch. 2 Ch. 5 Ch. 6 Ch. 7 Ch. S2
Stars: Main properties Stars: The HR diagram; Star clusters Ch. 15, Sec.1-4 Ch. 15, Sec.5-6 Ch. 16, Sec.1-3 Ch. 17, Sec.1-3 Ch. 18, Sec.1-3 Ch. 19, Sec.1-3 Ch. 19, Sec.1-3 Ch. 19, Sec.1-2 Ch. 19, Sec.1-3 Ch. 20, Sec.1-3 Ch. 20, Sec.1-3 Ch. 20, Sec.1-3 Ch. 21, Sec.1-3 Ch. 22, Sec.1-3 Ch. 22, Sec.1-3 Cosmology: The Big Bang and main stages of universe evolution Ch. 22, Sec.1-3 Ch. 22, Sec.1-6 Ch. 24 Ch. 24 Ch. 24				Ch 14
22 Feb Stars: The HR diagram; Star clusters Ch. 15, Sec.5-6 27 Feb Stars: Star formation, Evolution of low-mass stars Ch. 16, Sec.1-3 1 Mar Stars: Evolution of massive stars; close binary star systems Ch. 16, Sec.4-5 6 Mar White dwarfs and neutron stars Ch. 17, Sec.1-3 8 Mar Test 2 Spring Break March 13-17 20 Mar Black holes and Einstein's view of gravity; Gamma ray bursts Ch. 17, Sec.4-5 22 Mar The Milky Way: Structure, nebulae Ch. 18, Sec.1-3 27 Mar Galaxies: Types, properties, distances Ch. 18, Sec.4-5 29 Mar Galaxies: Types, properties, distances Ch. 19, Sec.1-2 3 Apr Galaxies: The age of the universe and cosmological expansion Galaxies: Evolution 5 Apr Galaxies: Active galaxies and quasars Ch. 20, Sec.1-3 10 Apr Galaxies: Active galaxies and quasars Ch. 20, Sec.4-6 12 Apr Dark matter: Distribution in galaxies and clusters Ch. 21, Sec.4-6 14 Apr Test 3 26 Apr Cosmology: The Big Bang and main stages of universe evolution Ch. 22, Sec.1-3 1 May Cosmology: Problems and possibilities Ch. 22, Sec.4-6 Notes				
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			Final Exam Week	110100

**Grading Scheme:** Lab 35% You must do at least 70% of the labs to pass

Pop Quizzes 15% 1st Exam 10% 2nd Exam 10% 3rd Exam 10% Final Exam 20%

Laboratory: Please come on the night you have signed up for. Labs are a required part of the

course.