ASTRONOMY 1405B, EXPLORING THE COSMOS W/O LAB

LECTURE: Section B John Perry: Innovation 203
Office hours: 2 hours after each class
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(Section A James Cooney)

3 credits. Course materials will be posted on UVM Brightspace (Br) throughout the semester.

Brief Course Outline: Math is limited to basic arithmetic, appropriate for most non-science majors. But scientific logic is important, and some students may find the material challenging. We move quickly through many topics. Help sessions and office hours are available, and everyone is urged to use them. Class slides are posted on Brightspace the day after each class to assist with notetaking. But attendance in classes is important, to understand the concepts.

# classes	Subjects
1	Course Introduction
1	Definitions of basic terms in physics
2	Optical and radio telescopes
1	Gravity and orbits
2	Earth motions, time, calendar, seasons and celestial Coordinates
2	Moon motions, eclipses, tides, surface and formation
1	Light and atomic structure, basic spectroscopy
3	Planets and their moons
1	Comets, meteors, solar wind, northern lights, solar system formation
1	Relativity and space-time
2	Stellar measurements, distance, magnitudes, H-R diagram
1	Stellar models and evolution: birth and prime of life
2	Death of low mass stars: white dwarfs and pulsars
2	Death of the high mass stars: stellar, galactic and cosmic black holes
1	Galaxies, spiral structure and Hubble's law; quasars
3	Cosmology: the Big Bang, dark matter, dark energy; exobiology

Recommended text (not required): Neil F. Comins, Discovering the Essential Universe. Sections will be noted on an extended outline on Br. There are no assigned readings or problems drawn from the text. It is **only recommended** for those who feel they need more backup material.

Grade Structure: 10 weekly assignments worth 5% each, plus **three 40-minute exams**, worth 16.7% each. Approximate **letter grades** for each assignment and exam will be **derived from curves** and posted on Br the day after each due date. All numerical scores will be added together and a curve applied to the totals for the whole class to determine final course letter grades. There will be **no makeup** assignments or exams. But everyone's lowest assignment score will be dropped (not including the exams) to account for absences.

You can work with others on assignments if you want. But if you simply copy the answers, you will be poorly prepared for the exams, which are not 'open book'. Anyone seen copying their neighbor's papers or using a cell phone on exams will be reported, which usually results in automatic failure of the course.