Astronomy 10B:
Introduction to Astronomy:
Stars, Galaxies, and the Universe

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This is a non-technical, non-mathematical introduction to the basic ideas of astronomy, focusing on stars, how they are organized into galaxies and even larger structures, and what we know about the origin of the cosmos. We will examine the connections between the universe and our presence here on planet Earth – that is, we will discover "how the universe turned into you". Students should also come away with an understanding of the scientific method and how scientists can learn about places so distant we cannot hope to visit them. No math or science background is required or assumed.

Topics Covered (not all at the same length):

1. A Grand Tour of the Universe
2. The Nature of Science (briefly)
3. How Do We Get Information About the Universe (Radiation and Telescopes)
4. The Sun and Other Stars: Why do They Shine?
5. The Stars: Their Life Stories (from the pre-natal stage to their death)
6. The Gruesome Corpses of Stars: White Dwarfs, Neutron Stars, Black Holes
7. Our Milky Way Galaxy and "Dark Matter"
8. Other Galaxies, Galaxy Cannibalism, and the Expansion of the Universe
9. The Beginning and End of the Universe
10. Search for Planets around Other Stars and for Intelligent Life on Them (briefly)

Textbook: Fraknoi, Morrison, & Wolff: *Voyages to the Stars and Galaxies*, 3rd media edition. (2004, Brooks-Cole, a division of Cengage)

Course Rules and Requirements ← **IMPORTANT STUFF !!!**

1. During the course, we will sometimes divide the class into groups of four and do collaborative group activities. Write ups for these activities count for your grade.

2. Attendance counts for your grade. You can lose an entire grade point (go from A to B) for poor attendance (or often coming late). Please bring a Scantron sheet and #2 pencil *each day!*

3. If you need to drop the course, you must inform the instructor (at least by phone).

4. There will be one midterm and one final exam, for which you will be able to bring one 3x5" card of notes. Also there will be quizzes, announced and unannounced, plus the group activities. Your grade will roughly be computed as follows: Midterm = 25%, Final = 45%, Quizzes = 20%, Group Activities = 5%, Attendance = 5% or more!

5. The accompanying lab, Astronomy 10L, is optional, but recommended for those who need a lab science. You can take the lab this quarter or sometime in the future, but register early because they tend to fill up fast.

6. Disturbing the class in any way will not be tolerated. The instructor can drop any student who does not behave in a way appropriate to a college class. This includes coming late or leaving early, talking to your neighbor, reading the newspaper, or acting out in other ways.

7. You are responsible for all exams, assignments, and other work, whether you are here or not. Please find a classmate who can fill you in on missed work. I STRONGLY recommend forming an astronomy study group to go over class material. You should spend 5-10 hours *per week* at home studying for this class (including the reading).

8. If you are having trouble with the class (or if you are enjoying it so much you want to talk further about astronomy), please come to my office hours. I am generally rushed, and therefore have little time, just before the class. *I'm much nicer in office hours!!!* (Also, please note that I prefer NOT to get e-mail from students, but to talk with them in person.)

9. There is an observatory on campus and it will be open this quarter for students to look through the telescope. Details will be announced in class.

About the Instructor: Andrew Fraknoi is the Chair of the Astronomy Department at Foothill College. In 2007, he was named California Professor of the Year by the Carnegie Endowment for Higher Education, in recognition of his ability to present scientific ideas in everyday language. He was named winner of the Hayward Award, given to the outstanding community college instructor in California, in 2008 and won the Emmons Award of the Astronomical Society of the Pacific for a lifetime of contributions to the teaching of introductory astronomy. He enjoys astronomical science fiction and astronomical music and often uses really bad puns in class.