Announcements

• Welcome to Astronomy 101: Principles of Astronomy! This handout is much like the ones that you will receive every Tuesday throughout the course. On them, you will always find current class Announcements and the weekly Reading Guide and Homework Assignment.

• Buy the textbook. Please purchase a copy of the course text: Voyages To the Stars and Galaxies (Third Edition), by Andrew Fraknoi, David Morrison, & Sidney C. Wolff. It is available at the Campus Bookstore for $68.49 (new). It is strongly recommended that you purchase a new copy of the text (the bookstore is not selling used copies), since only new copies come with a valid “access code” that allows you to access the on-line “tutorial” material that is available at the textbook website. While access to the “tutorial” material is not formally required for this class, most students find it to be very helpful. More details on the “on-line” components of the course will be given in Thursday’s (September 4) class.

Note: There is one copy of the text available at the Reserve Book Room in the library. With over 300 students taking this class, though, you may find it difficult to access this reserve text, and so I strongly recommend acquiring your own copy.

• Buy the Course Reader. Please purchase a copy of the Course Reader that is required for this class. (Note that prior semesters’ Readers are no good, as significant changes have occurred!)

It is available only at the Campus Bookstore for $22.49. It contains Powerpoint slides, handouts, and additional reading material that are required for the course. Note that there is one copy of the Reader available at the Reserve Book Room in the library.

• Check out the Course Web Site:

http://sciences.sdsu.edu/~leonard/astro101

On it you will always find the latest information about the class, including all handouts as well as all Powerpoint lecture slides shown in class.

• Adding this class. This class (both sections that I am teaching) is currently full. If you wish to be added to the “wait-list”, please see the handout: “Astronomy 101: How to Crash this Class” (available in class and at the course web-site), and carefully follow all of the instructions given there!

• Office hour change. Note that the office hours listed for me on page 1 (and on p. 7 and p. 21 as well) of the Course Reader are not correct. My office hours for the semester will take place on Fridays from 2:30 – 4:30 PM, in room 238 of the physics building (i.e., P238). So, stop by sometime!

Reading Guide and Homework Assignment

For this first week, only a reading assignment is given; future weekly handouts will also include homework to be completed at the on-line textbook website. I recommend that you complete these assignments in the order suggested on these handouts.

1. Read the Course Syllabus. It contains all of the material relevant to the content and grading of this course. This Syllabus was handed out in class on the first day, is available at the course web-site, and is reprinted in your Course Reader on pages 1 – 18.

2. Read Voyages to the Stars and Galaxies, Prologue: Sections 1 – 4 (pages 1 – 5).

These are good sections to read right after the first class lecture on Tuesday, as they cover much of what we went over. In this reading, you will again encounter the great “supernova” of 1054, along with discussions about the nature of science and the “laws” of nature and how scientists go about deriving them. Section 4 introduces you to scientific notation, the mathematical format in which very large, and very small, numbers will be written during this course (next week, you will be assigned to read the “Mathematical Toolkit” that is included on pages 159 – 167 of the Reader; it reviews all of the additional necessary mathematics for this class).

4. Read *Voyages to the Stars and Galaxies*, Appendix 5: Units Used in Science (page 540). Again, towards the end of your book, this appendix provides a useful review of the metric system that will be used during the course.

5. Read *Voyages to the Stars and Galaxies*, Prologue: Sections 5 – 10 (pages 5 – 17). This completes the introductory material and goes into somewhat greater detail than we did in class in some areas. Sections 5 and 6 are particularly important, as they introduce the concept of the *light year* (LY), and the profound fact that as one looks out into space, one also *looks back in time*. Be sure to get your head around this one!

Sections 7 and 8 present a very broad overview of the “big picture” of astronomy, introducing you to the definitions of planet, galaxy, as well as the large-scale structure of the universe. You will also run across a description of one of the great mysteries of astronomy, the apparent existence of *dark matter*: a mysterious form of matter that evidently pervades the universe and yet we do not know what it’s made up of! This may sound unbelievable to you but, rest assured, all of these topics will be discussed in much greater detail later in the course; the main purpose of these sections is just to orient you to “our place in the universe” for now.

Section 9 presents a discussion of the very small: atoms and molecules. Finally, section 10 humbles humanity by placing all of our recorded history in the last 9 seconds of the “cosmic calendar”. The Universe is very old, and we are relative newcomers on the scene.

6. *Voyages to the Stars and Galaxies*, Chapter 1: Sections 1.1.1 – 1.1.2 (pages 19 – 22). This covers what we did in class on Thursday, but is worth spending some time on, as it may be quite difficult, at first, to visualize the nature of the *celestial sphere*. Remember, the idea of a “celestial sphere” surrounding the Earth is just a conceptual scheme by which we try to make sense of the celestial motions that we observe in the sky: we now know that the sky is not made up of a transparent crystalline sphere of material out there with stars embedded in it like tiny jewels. But, such a conceptual scheme does help us to organize our thoughts about the apparent celestial motions. If any of this gives you trouble, feel free to come in for office hours for a one-on-one tutorial until you get it!

(Anasazi supernova pictograph, c. 1054 AD)