JOURNEYS INTO THE UNIVERSE-I AND -II

Physics 1.11

Instructor: Earl F. Skelton, Visiting Professor of Physics

Natural Sciences GCR

In COR 101, MW 11:00 to 11:50, and lab

CRN: 32937

When I behold the heavens, the work of thy fingers, what is man that thou art mindful of him?

This question, recorded in the *Old Testament,* was asked by the ancient Hebrews as they contemplated the awesome heavens. From that time to the present, all peoples, and all religions, continue to ask: *Why are we here? What is the cosmos? Where does the universe begin and end?*

In modern times, we add some newer questions: *Are we alone? Can we travel backward or forward in time? What was there before there was time and space? When and how will the universe cease to exist?* All of these profound riddles about the cosmos will be addressed, as we journey together and learn what science presently knows and can answer.

In this Hewlett Project course, we will address the breadth and scope of the known universe, and our place within it. In the first semester, our solar system will be studied: *How did it come into existence? How does the Sun generate the energy that is necessary for all life on Earth?* We will discuss the planets and how they differ from comets, and asteroids. In the second semester, attention will focus on the stars, our Milky Way Galaxy, other galaxies, and some of the most interesting and newly discovered objects in the cosmos: *quasars, pulsars, and black holes.* We will explore the realms of science fiction. *Are there other life forms out there? Is it possible to travel through time?*

All of this fascinating subject matter will be presented in an easy to understand, fun, and engaging manner. There will be viewings of the popular Carl Sagan's *Cosmos* series and similar videos, student visits to astronomy shows, exhibits at the National Air and Space Museum, among other interesting web-based ways of gaining insights into the universe around us.

The most up-to-date pedagogical tools will be used. These tools have been enthusiastically received by former students and insure that coming to class is engaging, rewarding, and fun. Credit will be offered for many course related out-of-class activities, such as observing sessions with the University's two telescopes, activities at the National Air and Space Museum, and viewing selected videos.

Earl Skelton is an Adjunct Professor in the Department of Physics. In 1999, he retired from research in order to pursue his true passion full time: *teaching.* He has more than 35 years experience teaching at the college level. Dr. Skelton is the "Patch Adams" of academia. His

teaching philosophy is that he will do anything, within the law, to make learning fun and pleasurable. By insuring that his classes are enjoyable, he reaches his goal of students looking forward to attending his class. He achieves this by using such unorthodox teaching tools as music, popular TV shows, contests, rewards and any other legitimate device that will insure the end result — *a rich and rewarding experience for his students*. Prior to teaching full time, for more than 32 years, Dr. Skelton was a research physicist at the U.S. Naval Research Laboratory, where he published over 300 research papers and won many awards for his work. He has been nominated twice for teaching awards: the *George B. Pegram Excellence in Teaching Award* and the 2002 *Bender Award for Teaching with Technology*.