

# **Test Two Preview**

## **AST 102 Stars, Galaxies, Universe — Lecture Classes**

This test starts with Unit IV, “Doing Modern Astronomy.” Be sure to be able to list several of the reasons given for why the ancient science of astronomy has blossomed into a fully modern science, rich with constant discovery and advances. The other three sections are straightforward, needing no expansion here. You might wish to look at the [online information sheets](#), “Why the Oldest Science is so Modern” and “Three Classroom descriptions of Astronomical Techniques.”

Understand the terms pertaining to the great problem of determining distance: parallax, Astronomical Unit, parsec, absolute magnitude, and distance modulus. Be able to calculate distance in parsecs and light years from parallax. For absolute magnitude, use the table given and covered in class. Check your understanding of the relationship amongst distance, apparent magnitude, and absolute magnitude by seeing if you can predict, given distance and apparent magnitude, whether the absolute magnitude value will be  $<$ ,  $>$ , or  $=$  the apparent magnitude and, given apparent and absolute magnitude values, whether distance will be  $<$ ,  $>$ , or  $= 10$  pc.

“Spectroscopy applied to the stars” This section may look small in the course outline, but this is misleading. Here is the physical understanding of light that, along with what you learned in the previous section on Planck Radiation, enables you to view the upcoming content of the course from a less magical, more knowledgeable perspective.

Quantum Mechanics was introduced lightly, presenting only what we need here to have some understanding of atomic structure. With this knowledge, you should understand how we get emission and absorption lines from shining objects as well as how lines from a collection of atoms of the same element are “just so” and why they are seen in absorption (or emission).

Understand how chemical composition and temperature affect the spectral line appearance and how we can work backward from observation of the spectrum to deduce temperature and chemical composition.

Memorize the spectral classification sequence (“Oh, Be a Fine Girl/guy, Kiss Me.”) and know the major features of the spectral classes. I hope you were taking notes when I covered this, but if not, it is in the book as well.

Be able to label the axes and major regions of the H-R Diagram. Understand spectroscopic parallax is used to find distance.

Have some recognition of the numerical range of values for stellar masses, temperatures, and sizes.