

Test 3:

Be able to explain Heisenberg's Uncertainty Principle.

Be familiar with all the information contained in the HR diagram, such as: the regions on the diagram, where the sun is, the main sequence, various groups of stars, relationships between luminosity and temperature, and classifications (OBAFGKM).

Know the life cycles of small/medium as well as large stars.

Know the primary elements that make up most stars.

Know how Einstein's formula $E=mc^2$ relates to the process that powers the sun and other stars.

Know Wein's Law: the relationship between temperature and "lambda max" of a star.

Know what the Solar wind is.

Understand the Goldilocks zone: roughly 1-1.3 AU from a star, where a planet can have a water cycle.

Understand the Galactic Habitable Zone: the area of galaxy that can support life.

Know the three different types of galaxies, and the relative abundance of each type.

Know the physiological and psychological symptoms that occur during and after spaceflight, and countermeasures that help prevent them.

Be able to explain the purpose and flight profile of the KC-135 "Vomit comet".

Understand the evidence indicating that the universe is expanding.

Describe the evidence observed for dark energy and dark matter.

Be able to explain the Cosmological Principle (assumes: Homogeneity, Isotropy, and Universality).

Be able to explain the Multiverse Hypothesis.

Review your notes from the Christmas Star movie.