

Near Pod Quiz Questions and Answers:

For Exam 1

- * Stars close together on the celestial sphere are close together in space: False
- * To measure the celestial sphere, we use: Arcseconds, Arcminutes, Degrees
- * Which of these is the smallest? Arcseconds < Arcminutes < Degrees < Radians
- * Which is longer? Solar Day > Sidereal Day
- * Why is it warmer in the summer? The earth is tilted towards the sun in the summer.
- * The plane of earth's orbit around the sun is called the: ecliptic
- * Why will the north star no longer be the north star in the future? The Earth's rotation axis precesses
- * How much of the moon is lit by the sun? Half of it.
- * Which of these is a Lunar Eclipse: When the earth blocks sunlight from hitting the moon.
- * Measuring an object's distance by comparing its angular position from two ends of a baseline is called: Parallax
- * Who invented algebra? Al Khwarizmi
- * Who first championed the scientific method? Al Hazen
- * Where did scholars during the Islamic golden age translate and preserve the intellectual findings of antiquity? Baghdad
- * The word for "planet" is derived from this the greek word for: Wanderers
- * Who first articulated an accurate geocentric model of the solar system in his tome, the Almagest: Ptolemy
- * What was a major finding in Galileo's telescope which suggested the heliocentric model was correct: The phases of Venus
- * What was Kepler's Second Law? Equal times sweep out equal areas.
- * In Newton's Law of gravity, the force of gravity falls off like: $1/r^2$
- * How long it take for a wave to repeat itself is called the: Period
- * For gravity, "charge" is just mass, and it's always positive. How does this differ from electromagnetism: Charge can be positive or negative in electromagnetism
- * The black body spectrum tells you: How much of each wavelength is emitted by a body in equilibrium at some temperature
- * Wien's Law says peak wavelength is: inversesly proportional to temperature
- * Stefan's Law says the energy emitted by a hot body is: proportional to temperature to the fourth
- * An approaching ambulance sounds higher pitched because of: the Doppler Effect
- * Which one of these is not electromagnetic radiation? Sound Waves
- * When you shine a hot bulb through a prism, what should you see? A continuous spectrum
- * When you shine broad spectrum light through a pure rarefied gas and then a prism you should see: a continuous spectrum with dark lines, or an absorption spectrum
- * If you heat up the pure rarefied gas so it emits it's own light, and then send that light through a prism you should see: discrete locations of color, or an emission spectrum
- * Why do emission lines come at specific discrete places in the spectrum? Electron Orbitals are Quantized
- * Who suggested that these orbitals were quantized? Niels Bohr
- * If an electron transitions from a very excited state to the ground state it should emit light with a relatively: Higher frequency than if the electron had transitioned from the first excited state instead

- * If the nucleus has more positive charge, the ground state orbital is: Closer to the nucleus
- * Why are molecular spectra more complicated than atomic spectra? Molecules can rotate and vibrate
- * What's the Photoelectric Effect? Light striking metal can ionize electrons, ejecting them from the metal
- * The width of the emission lines can tell you information about: The temperature of the emitter, whether the emitter is rotating, the magnetic field at the emitter
- * The fact that when looking into a stream, the fish look displaced from their true location is a result of: refraction
- * Reflection telescopes are superior to refracting telescopes because of: chromatic aberration, supporting the weight of the lens is difficult, you have half the surfaces to make, light gets absorbed by the lens
- * Light gathering area of the telescope goes like the radius of the telescope: squared
- * The chips that responds to light hitting it in both your cell phone and telescopes are called: CCDs (charge coupled devices)
- * Your angular resolution _____ with the wavelength of observed light: increases
- * Radio Telescopes can be enormous because: you don't have to make them so smooth
- * Infrared Telescopes operate best in space because: it's cold up there
- * The best angular resolution comes from long baseline interferometry
- * The name of NASA's new update to the Hubble Space Telescope is: James Webb Space Station