

Astronomy 16 Midterm Questions

1. Why do we experience seasonal variations in temperature? Why does the Southern Hemisphere have the opposite seasons as the Northern Hemisphere?
2. Why do stars in the night sky have different brightnesses and colors?
3. What is an AU? How is it possible to use a 100W incandescent light bulb to estimate the temperature of the Sun (assuming we know the distance to the Sun)?
4. What is luminosity? How can we use a 100W incandescent light bulb to estimate the luminosity of the Sun (assuming we know the distance to the Sun)?
5. How do we measure the distances to various stars in the Galaxy? What is a parsec?
6. Algol is a binary star system containing a blue star and a yellow star. If the yellow star is much brighter than the blue star, what can we conclude about the properties of the stars in Algol?
7. What is an astronomical color, such as B-V? If one star has $B-V = 1$ and another has $B-V = -1$, how do the stars differ?
8. How do astronomers find a particular object in the sky? What is right ascension, declination and local sidereal time? What is the meridian and the zenith?
9. Can we observe the brightest star in the night sky tonight? (Sirius is at $RA = 6^h 45^m$, $dec = -16^\circ 42'$)