

What You Should Know: “Luminosity, Energy Density and Spectral Class”!

- 1.) Define *luminosity*.
- 2.) What are the units of luminosity?
- 3.) Over a *1 second period*, a certain amount of energy will be emitted by a star and will leave on “the surface” of an ever expanding sphere centered on the star. What is the name given to the amount of *energy per unit area on the sphere, per unit time*?
- 4.) What is the relationship between a stars *luminosity*, its *energy flux* as measured on the earth’s surface and the *distance from the star*?
- 5.) When attempting to determine the distance to a distance celestial object, what information can we extract from the star’s light that will help us determine that distance?

- 6.) Assuming we have determined a star's energy flux as measured on earth, what else do we need to determine to determine the distance to the star?
- 7.) What are the two main ways of determining a star's *luminosity*?
- 8.) What is another name given to a star's energy density as *measured on earth*?
- 9.) Two thousand years ago, the brightest stars in the sky were assigned what *apparent magnitude* value? What was the value assigned to the least bright stars?
- 10.) A span of *five magnitudes* on the apparent magnitude scale constitutes an energy flux range of what?

- 11.) How much less bright is an apparent magnitude 4 star than is an apparent magnitude 1 star?
- 12.) The Hubble telescope can resolve stars whose apparent magnitude is what?
- 13.) What is the apparent magnitude of the sun?
- 14.) How is *absolute magnitude* defined?
- 15.) What is the absolute magnitude of the sun?
- 16.) What do *spectral classifications* now measure?
- 17.) Name the nine levels of spectral classification?
- 18.) What is the sun's spectral classification?