2.8: In-Text References

1. This may (or may not) be helpful: http://www.cv.nrao.edu/course/astr53.../LarmorRad.pdf ↵
2. http://phet.colorado.edu/en/simulati...e-interference ↵
3. Link to “Dr. Quantum” double slit experiment: http://www.youtube.com/watch?v=DfPeprQ7oGc ↵
4. In fact, there is lots of light within your eyeball, even in the dark, due to black body radiation. You do not see it because it is not energetic enough to activate your photosensing cells. See: http://blogs.discovermagazine.com/co...ose-your-eyes/ ↵
5. http://www.physorg.com/news76249412.html ↵
6. $h = 6.626068 \times 10^{-34}\ \mathrm{m^2 kg/s}$ (or joule-seconds, where a joule is the kinetic energy of a $2\ \mathrm{kg}$ mass moving at a velocity of $1\ \mathrm{m/s}$) ↵
7. This is known as the Rayleigh-Jeans law. ↵
8. http://phet.colorado.edu/simulations...lectric_Effect ↵
9. One type of semi-exception is illustrated by what are known as two- and multi-photon microscopes, in which two lower energy photons hit a molecule at almost the same moment, allowing their energies to be combined; see http://en.Wikipedia.org/wiki/Two-pho...ion_microscopy. ↵
10. For a more complex explanation, see: http://www.coffeeshopphysics.com/art...y_of_rainbows/ ↵
11. Bohr model applet particle and wave views: http://www.walter-fendt.de/ph11e/bohrh.htm ↵
12. Although the resting mass of a photon is zero, a moving photon does has an effective mass because it has energy. ↵
13. Good reference: http://ww2010.atmos.uiuc.edu/(Gl)/gu...asics/wvl.rxml ↵
14. see https://www.youtube.com/watch?v=6SxzfZ8bRO4 and https://www.youtube.com/watch?v=1920gi3swe4 ↵
15. These experiments are carried out using atoms in the gas phase in order to simplify the measurement. ↵
16. There are a number different ways of defining the size of an atom, and in fact the size depends on the atom’s chemical environment (for example, whether it is bonded to another atom or not). In fact, we can only measure the positions of atomic nuclei, and it is impossible to see where the electron cloud actually ends; remember that orbitals are defined as the surface within which there is a 90% probability of finding an electron. Therefore, we often use the van der Waals radius, which is half the distance between the nuclei of two adjacent unbonded atoms. ↵
17. For more information see: http://winter.group.shef.ac.uk/orbit.../1s/index.html http://www.uark.edu/misc/julio/orbitals/index.html ↵
18. This is called the Pauli exclusion principle, which states that no two electrons may occupy the same quantum state; that is, no two electrons can have the same value for all four quantum numbers. ↵
19. We should note that this model for calculating the effective nuclear charge is just that – a model. It provides us with an easy way to predict the relative attractions between the nuclei and electrons, but there are of course more accurate ways of calculating the attraction which take into account the fact that the nuclei is only partial shielded by the core electrons. ↵
20. This is often called Hund’s rule. Just as passengers on a bus do not sit together until they have to, neither do electrons. ↵