

The Doppler Effect

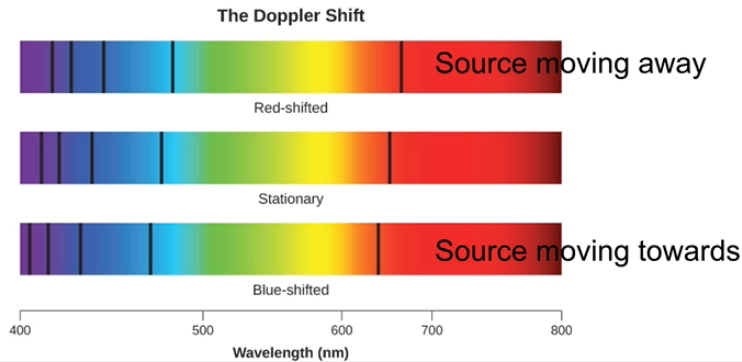
1

The Doppler effect: as a source of waves moves, the frequency & wavelength of the waves changes



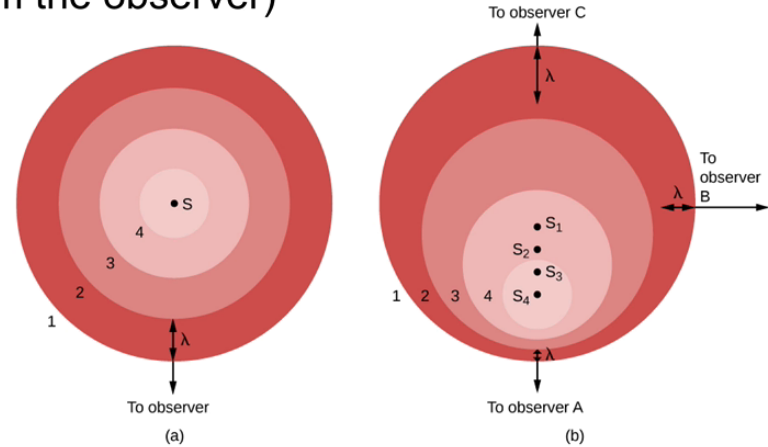
3

The Doppler effect causes changes in the wavelengths of spectral lines



2

The change in wavelength depends on the radial velocity of the source (velocity towards or away from the observer)



4

The Doppler formula

change in wavelength of line

$$\frac{\Delta \lambda}{\lambda} = \frac{v}{c}$$

wavelength of line when stationary

radial velocity of source

speed of light