

Doppler Shift

- 8) Which of the four spectra would be from the star that is moving the fastest? Would this star be moving toward or away from the observer?
- 9) Of the stars that are moving, which spectra would be from the star that is moving the slowest? Describe the motion of this star.
- 10) An important line in the absorption spectrum of stars occurs at a wavelength of 656 nm for stars at rest. Imagine that you observe five stars (H-L) from Earth and discover that this important absorption line is measured at the wavelength shown in the table below for each of the five stars.

Star	Wavelength of Absorption Line
H	649 nm
I	660 nm
J	656 nm
K	658 nm
L	647 nm

- a) Which of the stars are giving off light that appears blueshifted? Explain your reasoning.
- b) Which of the stars are giving off light that appears redshifted? Explain your reasoning.
- c) Which star is giving off light that appears shifted by the greatest amount? Is this light shifted to longer or shorter wavelengths? Explain your reasoning.
- d) Which star is moving the fastest? Is it moving toward or away from the observer? Explain your reasoning.