Doppler Shift

Is an apparent change in the frequency of a wave due to the motion of the source of the wave or the motion of the receiver of a wave (sound or light).

Example: a car driving past a person

Honk!

Higher Freq. Lower Freq.

\*\*The pitch of the car gets higher as the car approaches and lower as the car passes. The sound that the person in the car doesn’t change because they are traveling along at the same speed as the source (car) of the sound.

The Doppler effect can also apply to light.

Example: Stars that are moving towards us or away from us.

Stars that move towards us experience an increase frequency color of the light that we see (called a “blue shift” because the color blue has a high frequency).

Stars that move away from us experience a decrease in the frequency of the light that we see (called a “red shift” because the color red has a low frequency).