



# Doppler Effect

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# Doppler Effect

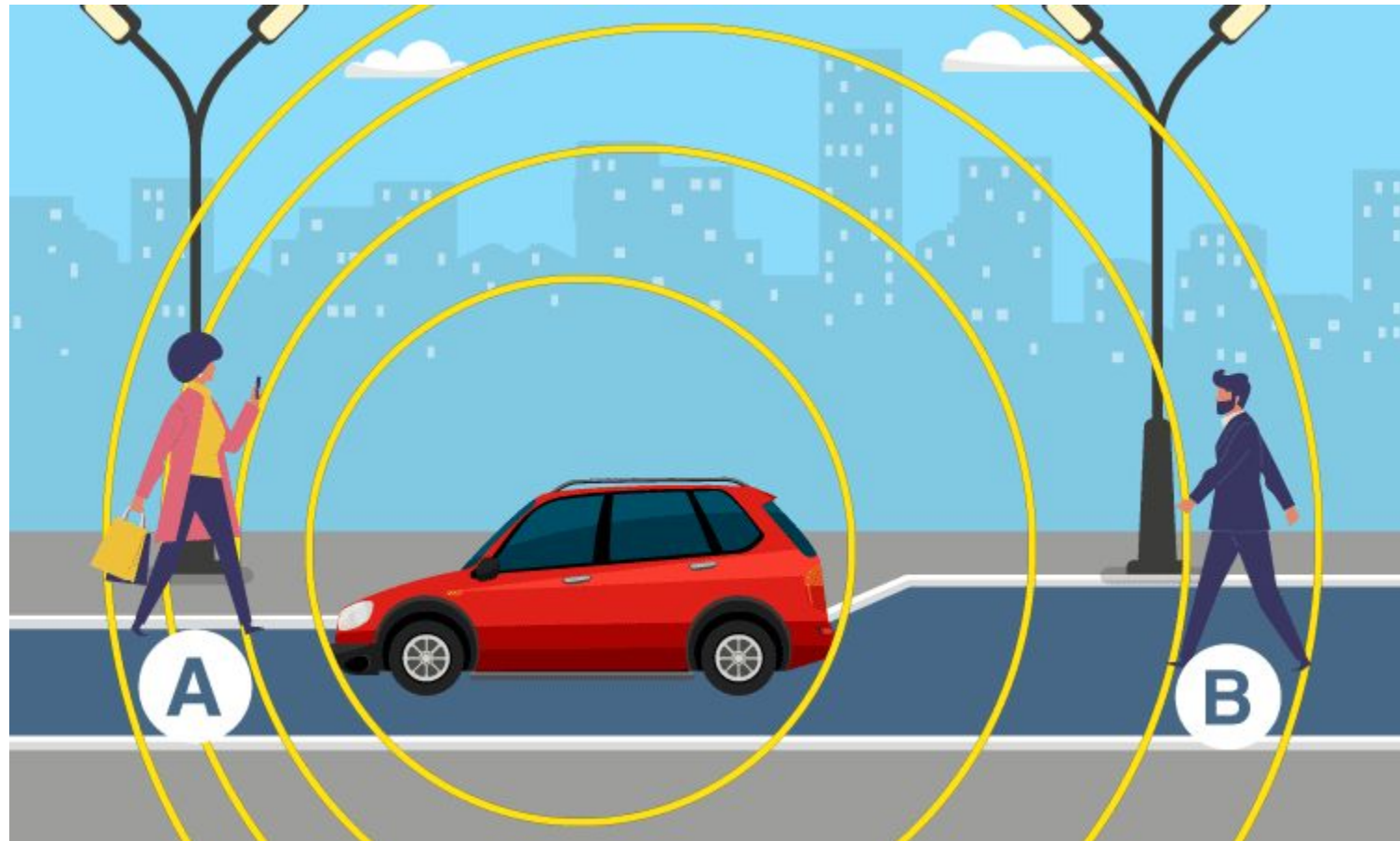
- Doppler effect is an important phenomenon that is useful in a variety of different scientific disciplines, including planetary science. The Doppler effect or the Doppler shift describes the change in frequency of any kind of sound or light wave produced by a moving source with respect to an observer.

# Conti..

- Doppler Effect is an increase (or decrease) in the frequency of sound, light, or other waves as the source and observer move towards (or away from) each other.



# Understanding Doppler Effect in real life





# Doppler Effect In Light

- The Doppler effect also affects the light which is emitted by other bodies in space. If the body is “redshifted” the light waves are spread apart, and it is travelling away from us while if it is “blue-shifted,” its light waves are compacted and it is coming towards us. The detailed explanation of the Doppler effect in light is given below.

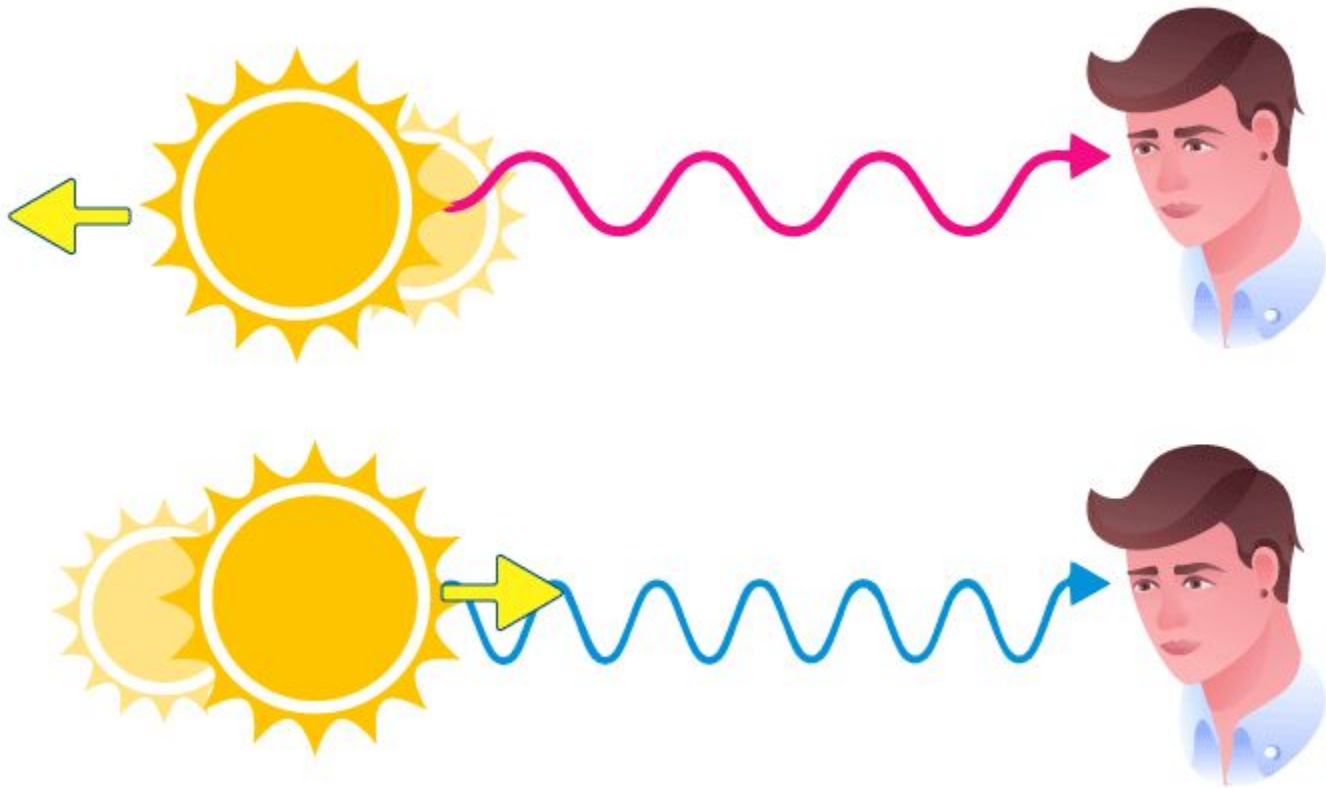


# Red Shift and Blue Shift:

- When the light source moves away from the observer, the frequency received by the observer will be less than the frequency transmitted by the source. This causes a shift towards the red end of the visible light spectrum. Astronomers call it as the *redshift*.
- When the light source moves towards the observer, the frequency received by the observer will be greater than the frequency transmitted by the source. This causes a shift towards the high-frequency end of the visible light spectrum. Astronomers call it as the *blue shift*.



# Red Shift and Blue Shift:





# Applications of Doppler Effect

Some Doppler effect applications are provided in the points mentioned below:

Sirens

Radar

Astronomy

Medical Imaging

Blood Flow Measurement

Satellite Communication

Vibration Measurement

Developmental Biology

Audio

Velocity Profile Measurement



Thank you