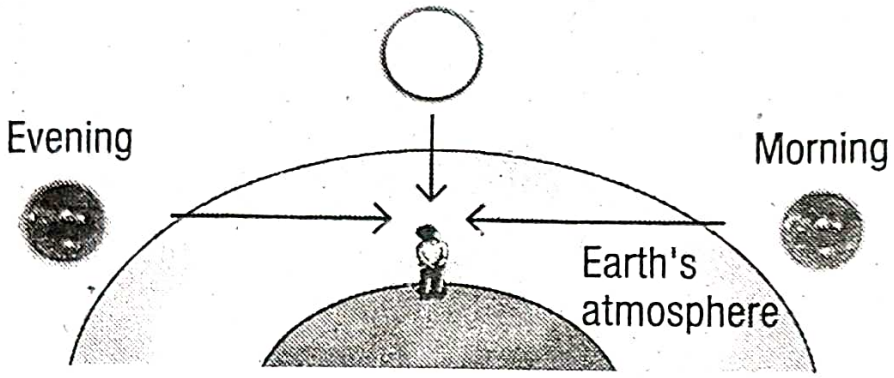
## Scattering and wavelength

- Scattering decreases as the wavelength increases.
- Red is least scattered and violet is most scattered.
- If the size of the particles is greater than the wavelength of light, all colours are scattered uniformly.

## Colours of the rising and the setting sun




**Observe the picture.**

❖ **What are the occasions when sunlight has to travel greater distance through the atmosphere before reaching the eyes of an observer on the earth?**
Morning and evening.

❖ **When light reaches the observer after travelling long distances through the atmosphere, which colour reaches the eye? What is the reason?**
Red rays reaches the eye. During long distance travel of sun rays, blue and the nearby colours are scattered away.

❖ **Even after sunset, the western horizon continues to have red colour for some more time. Why?**
Due to refraction of light, the sun and its light appear to be above the horizon. In this time red rays undergo least scattering and reach the observer. So the western horizon appears to be red at this time.

❖ **Why does red colour has been given to the tail lamps of vehicles and signal lights?**
Since the red light has large wavelength, it suffers least scattering. So red can travel long distance.