

# **Electromagnetic radiation**

A faint, stylized graphic of electromagnetic waves is visible in the lower right quadrant of the slide. It consists of several overlapping, curved lines that represent the oscillating electric and magnetic fields of a wave propagating towards the right.

Electromagnetic radiation:

$$\lambda = c / f$$

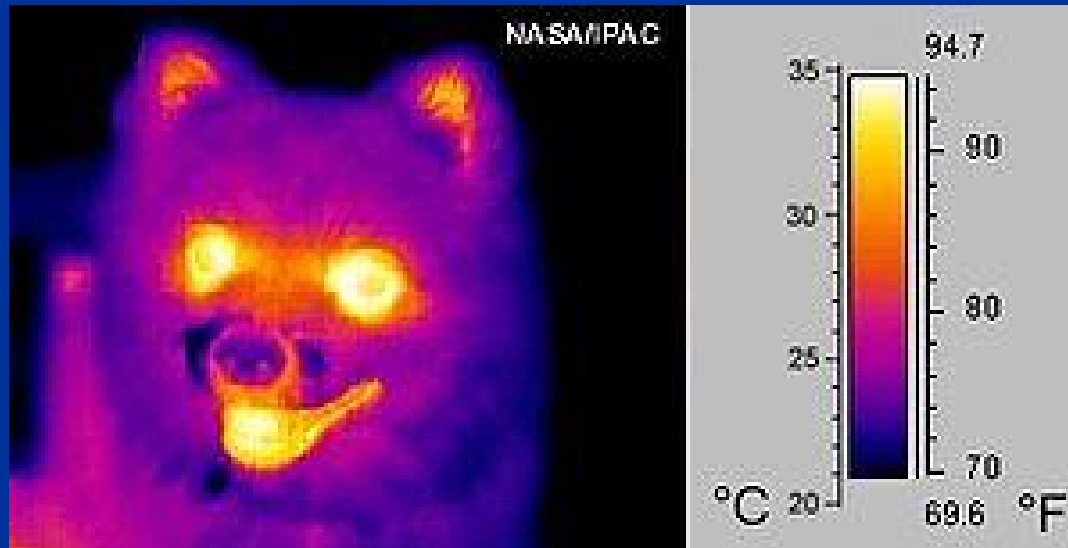
$\lambda$  – wavelength (m)

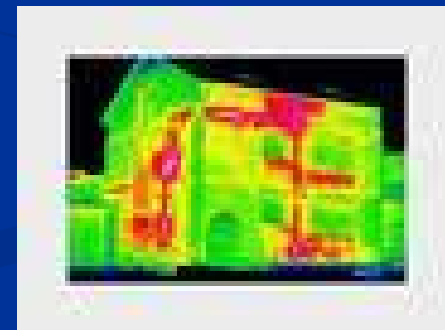
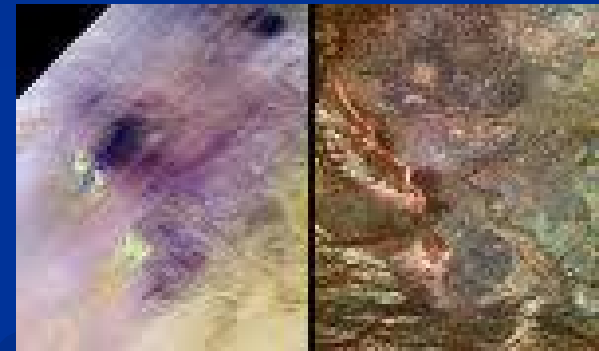
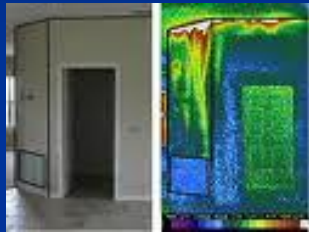
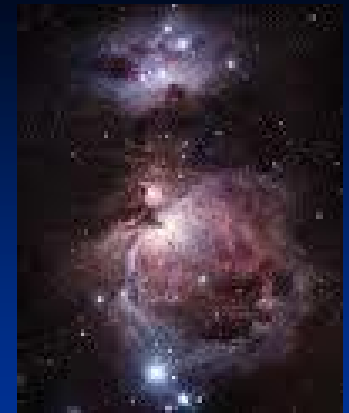
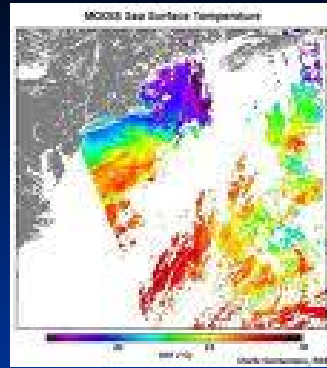
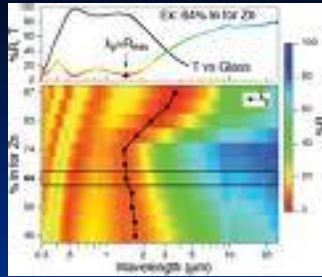
$c$  – speed of light in vacuum ( $\text{m}\cdot\text{s}^{-1}$ )

$f$  – frequency (Hz)

## Infrared radiation

- penetrates also cloudy medium
- wavelength: 760 nm - 1 mm
- thermal radiation
- discovered by William Herschel
- use: telecommunication, spectroscopy, night vision, temperature measurement, thermography, meteorology, archeology (IR reflectography)





## Ultraviolet radiation

- wavelength: 350 nm – 14 nm
- source: Sun
- absorbed by atmosphere: UV-filters
- kills bacteria and other microorganisms
- sterilization of drinking water

