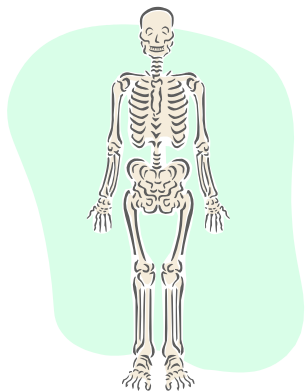


The Electromagnetic Spectrum Game

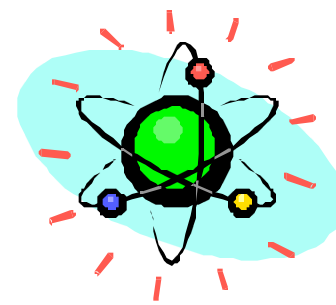
Gamma Rays

Frequency: 10^{18} Hz to 10^{19} Hz
Wavelength: 0.1 nm to 0.01 nm
Temperature: 10,000,000,000 K

A wave consists of successive troughs and crests, and the distance between two adjacent crests or troughs is called the wavelength.



Gamma Rays

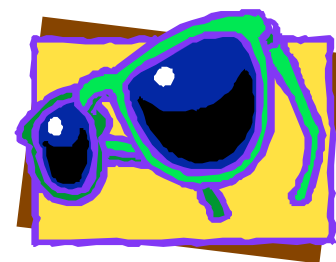


X-Rays

Frequency: 10^{17} Hz to 10^{18} Hz
Wavelength: 1 nm to 0.1 nm
Temperature: 100,000,000 K

The frequency of a wave is its rate of oscillation.

X-Rays

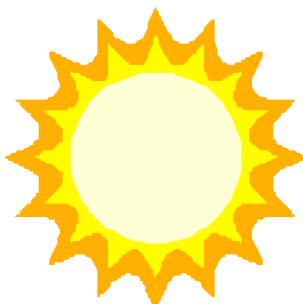


Ultraviolet

Frequency: 10^{16} Hz to 10^{17} Hz
Wavelength: 100 nm to 1 nm
Temperature: 1,000,000 K

Electromagnetic waves were first postulated by James Clerk Maxwell.

Ultraviolet



Visible Light

Visible

Frequency: 10^{15} Hz
Wavelength: 1,000 nm to 100 nm
Temperature: 10,000 K

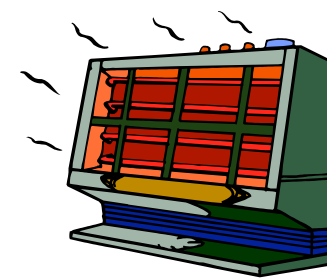
As the temperature of a star's surface increases, the frequency of its most intense electromagnetic emissions also increases.

Infrared

Frequency: 10^{11} Hz to 10^{14} Hz
Wavelength: 1 mm to 1000 nm
Temperature: 100 K

Frequency increases logarithmically.

Infrared

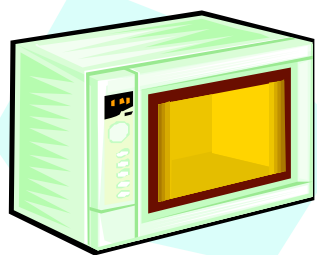


Microwaves

Microwaves

Frequency: 10^9 Hz to 10^{11} Hz
Wavelength: 1 m to 1 mm
Temperature: 1 K

Wavelength is inversely proportional to frequency.

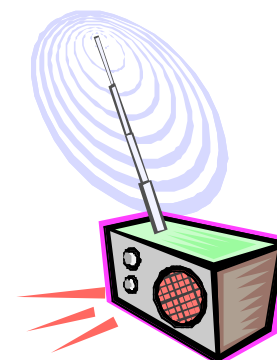


Radio

Radio Waves

Frequency: 10^6 Hz to 10^9 Hz
Wavelength: 1 km to 1 m
Temperature: 0 K

Frequency is measured in Hertz (Hz) in honor of Heinrich Hertz who first demonstrated electromagnetic waves.



The Electromagnetic Spectrum Game