EM WAVES notes Week 20

Waves Intro: Electromagnetic

C-notes

Electromagnetic waves can move through “empty” space.
A place with little or no molecules is called a vacuum

Electromagnetic Waves Intro: facts

- Are waves, they have the three properties; amplitude, frequency and wavelength
- Are transverse waves
- Are waves BUT are disturbances in a field (electric and magnetic field that is)
- Transfer energy- some high energy EM waves can be harmful to life
- Can travel in a vacuum- they DON'T need a medium to transfer energy
- Travel at the "speed of light" (300,000 km a second or 186,000 miles a second)
- The wavelengths go from mountain size to atom sizes

Electromagnetic Waves
Intro: Sources

- Stars
- The SUN is our main source of EM waves
- Technology (radio/TV stations, medical equipment)
- Radioactive elements (uranium)

Electromagnetic Waves C-notes

Intro: How they form

- Come from atomic particles that are electrically charged.
- The waves move in two fields: an electric and magnetic field

Electromagnetic Waves

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Intro: EM Spectrum

Organizes all EM waves according to wavelength & frequency

Electromagnetic Waves

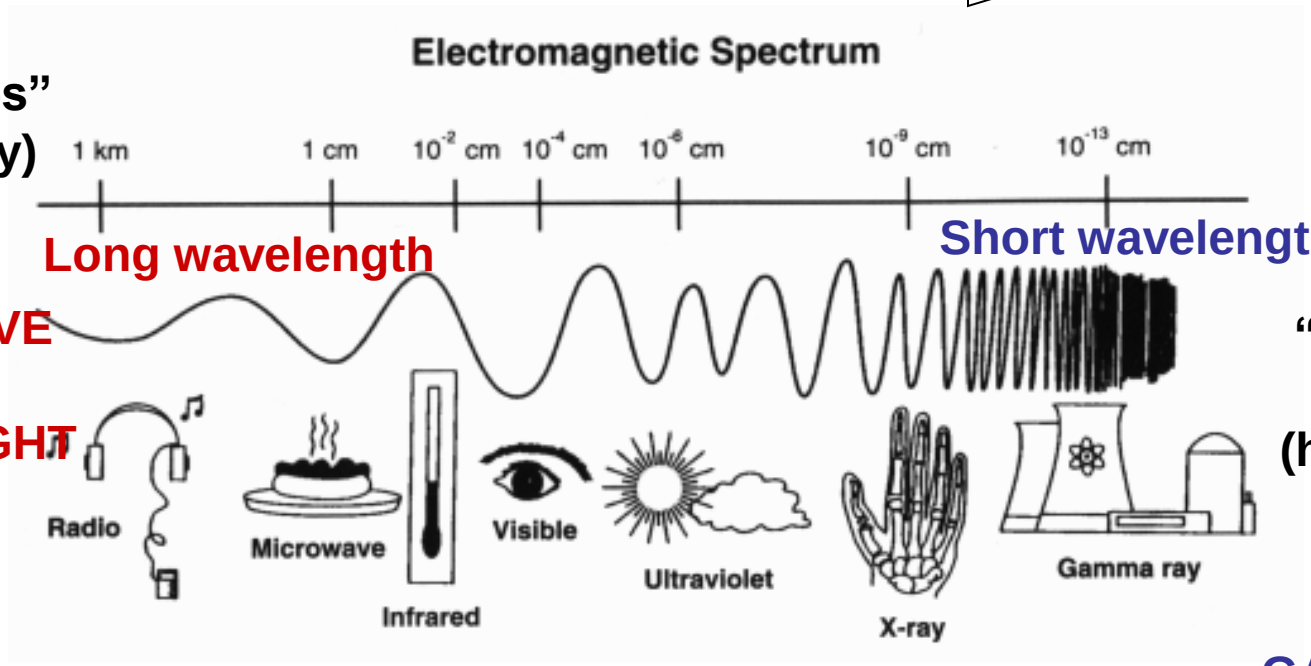
C-notes

Intro: Names of EM waves

Radio waves
Microwaves
Infrared rays
Visible light
Ultraviolet light
X-rays
Gamma rays

Wavelength gets shorter

More energy



"Safe Waves" (low energy)

- RADIO
- MICROWAVE
- IR
- VISIBLE LIGHT

"Dangerous Waves" (high energy)

- UV
- X-RAY
- GAMMA RAY

Less energy

Wavelength gets long