

# The Hidden World

We don't see A LOT of what's in the world around us. Don't believe me? Just wait and see....

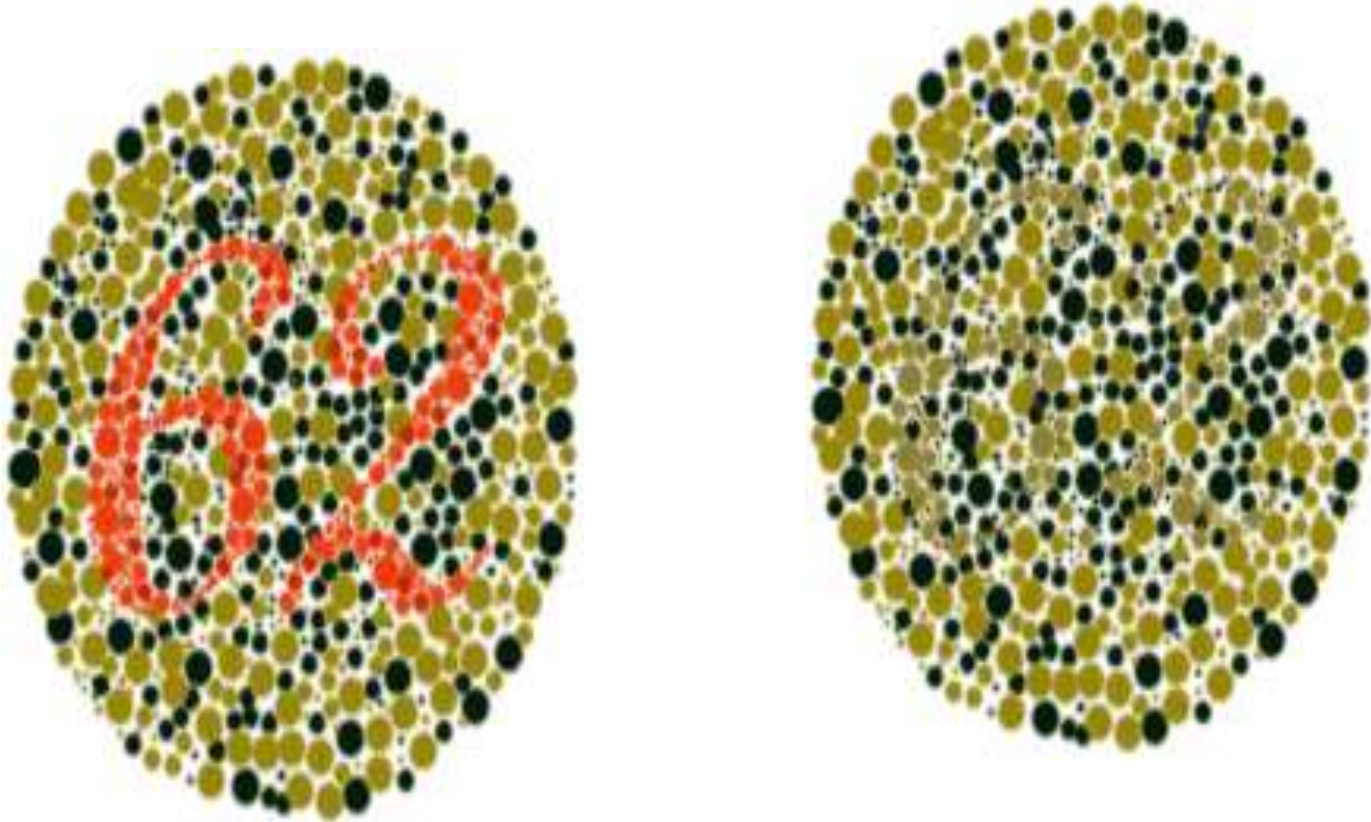
# A few 'Colour Blindness' Facts

- Red-Green colour blindness = 75% of the cases.
- Affects 6% of males and <1% of females
- It's genetic (get it from your biological parents)
- Most cases caused by differences in 'cone' cells in the eye
- Probably shouldn't be called 'Colour Blindness' – It's just a difference in vision.



Source: <http://www.color-blindness.com/deuteranopia-red-green-color-blindness/>

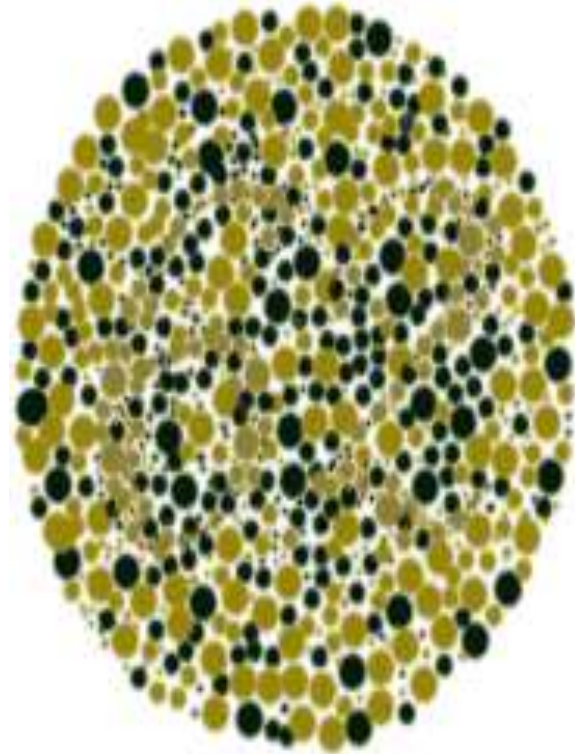
Do these look the same to you?



# Do these look the same to you?



“Normal” vision



protanopia (red-blindness),  
deuteranopia (green-blindness)



# What do I produce?

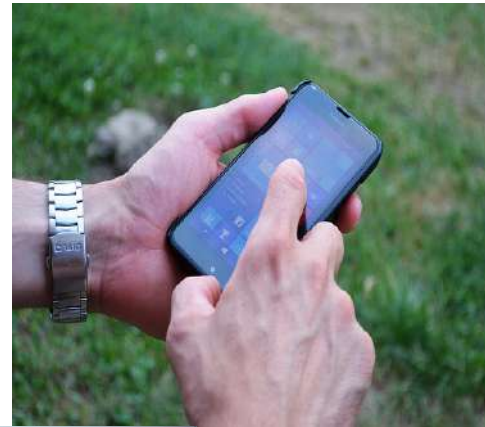


# What do I produce?

- Radio Waves!
- Super low energy
- Very safe
- Very LONG waves

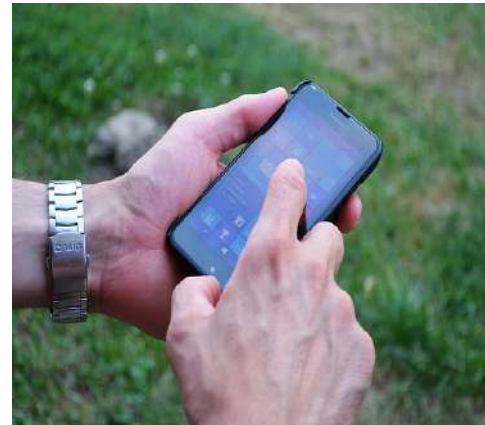


# What do I produce?



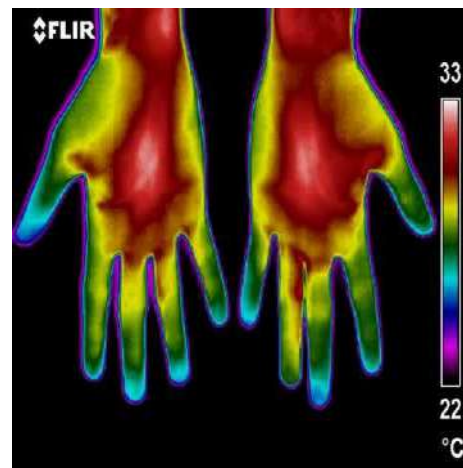
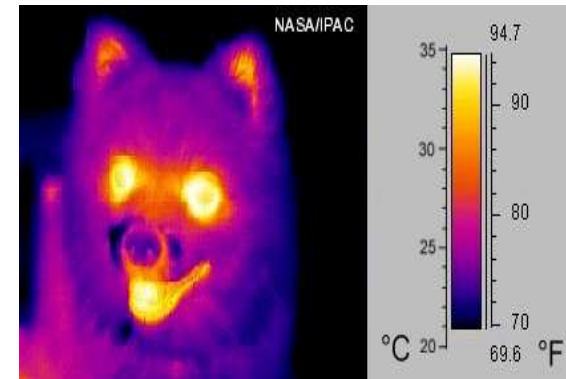
# What do I produce?

- Microwaves!
- Very low energy
- Safe but can heat things up if there are enough of them
- Long waves



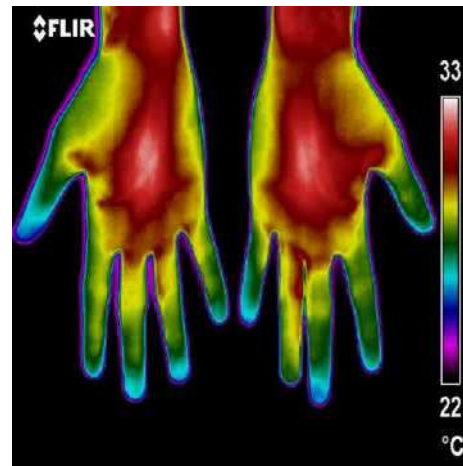
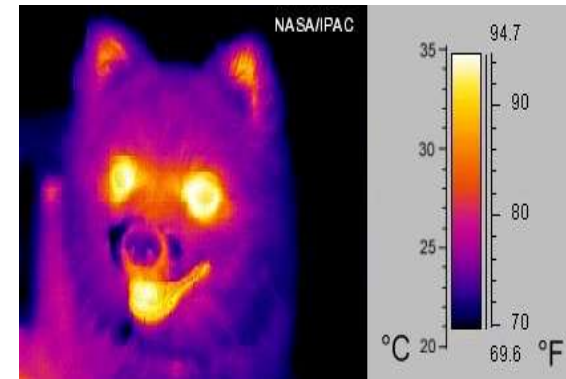


# What am I?



# What am I?

- Infrared Waves!
- Produced by hot things (heat vision)
- Low energy
- Very safe
- Medium length waves



# What am I?

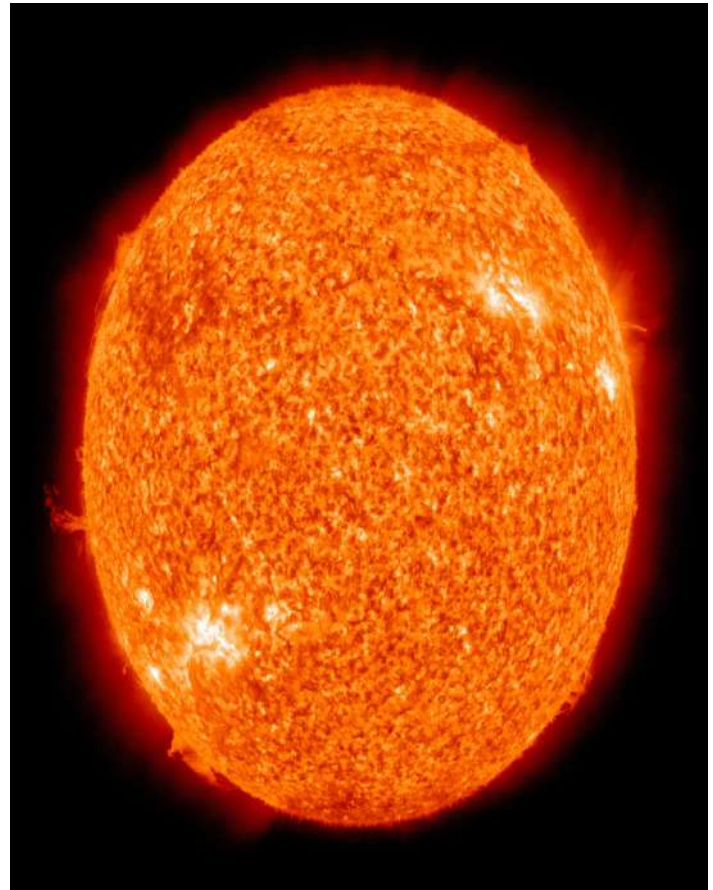


# What am I?

- X-Rays!
- High energy (ionizing radiation!)
- Useful but dangerous with too much exposure
- Short waves



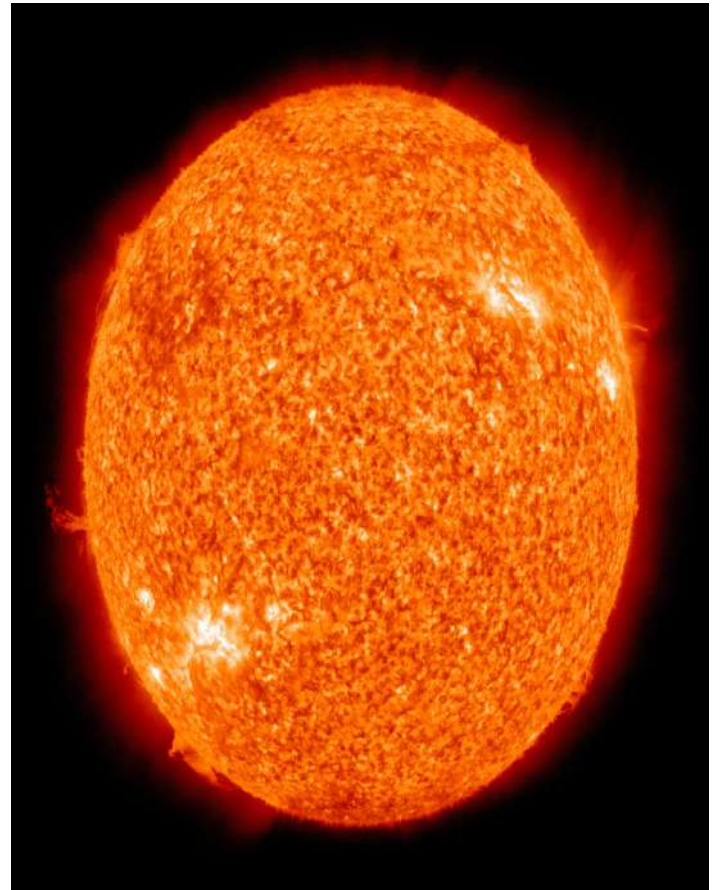
# What do I produce?



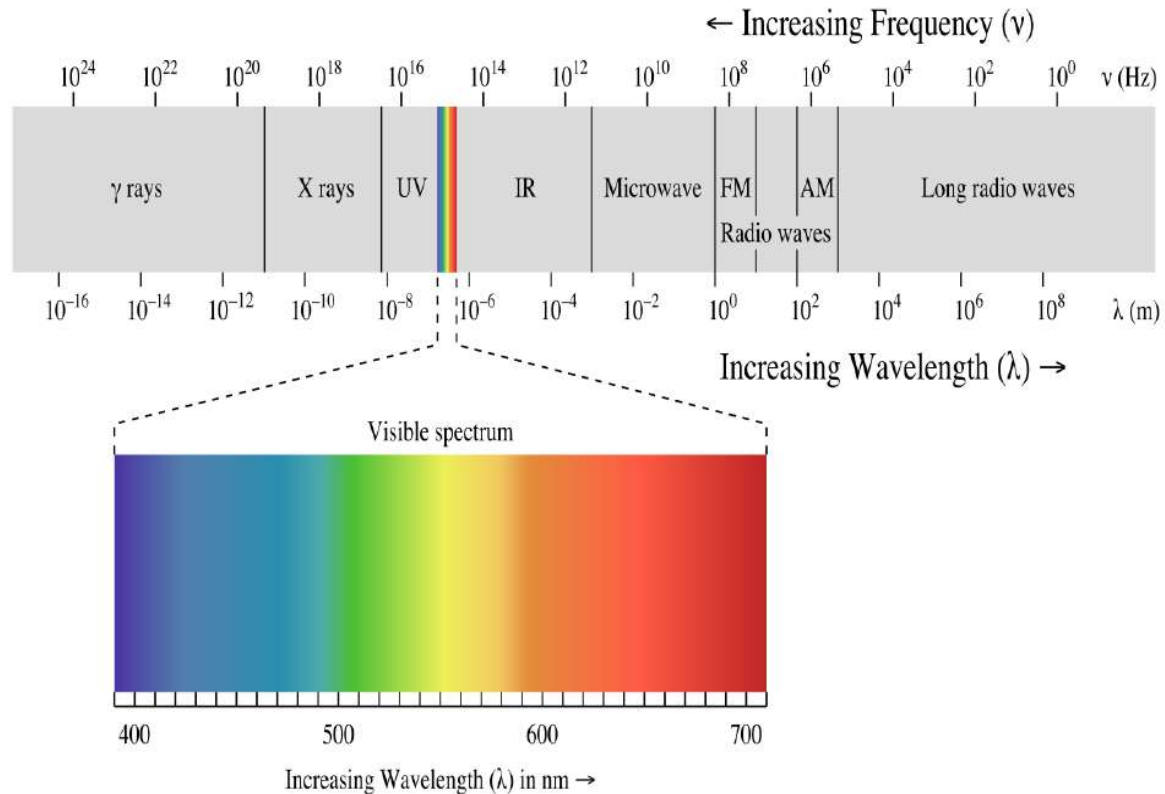


# What do I produce?

- Radio waves...
- Microwaves...
- Infrared waves...
- Visible light...
- Ultraviolet rays...
- X-rays...
- Gamma rays  
(fortunately they don't actually get past the surface!)



# The Electromagnetic Spectrum



# Dangerous?

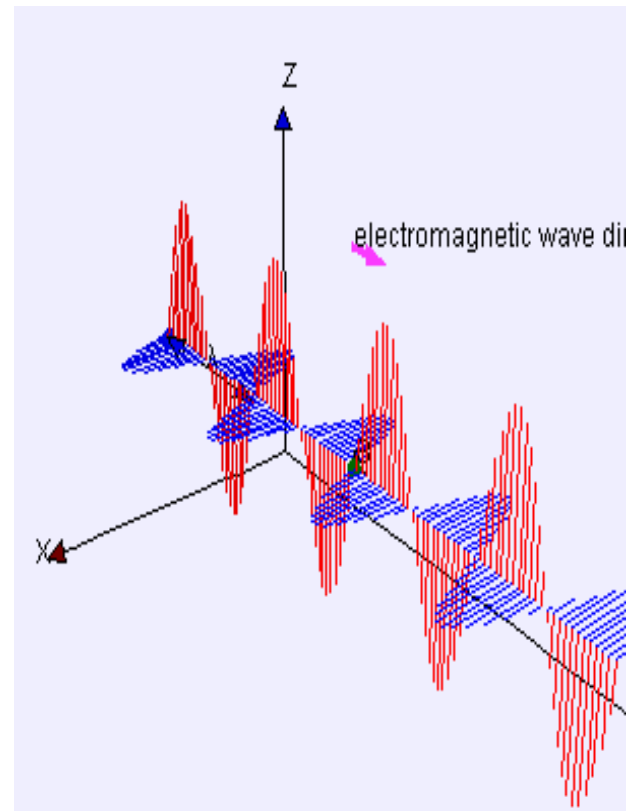
- Radio waves...
  - Microwaves...
  - Infrared waves...
  - Visible light...
  - Ultraviolet rays...
  - X-rays...
  - Gamma rays
- Non-Ionizing Radiation
- Sometimes Ionizing Radiation
- Ionizing Radiation

# Ionizing Radiation? Sounds Scary!!!!

- Strong enough to knock electrons off of atoms.
- Can damage cells and their DNA.
- Can increase cancer risk.

# Electromagnetic Waves

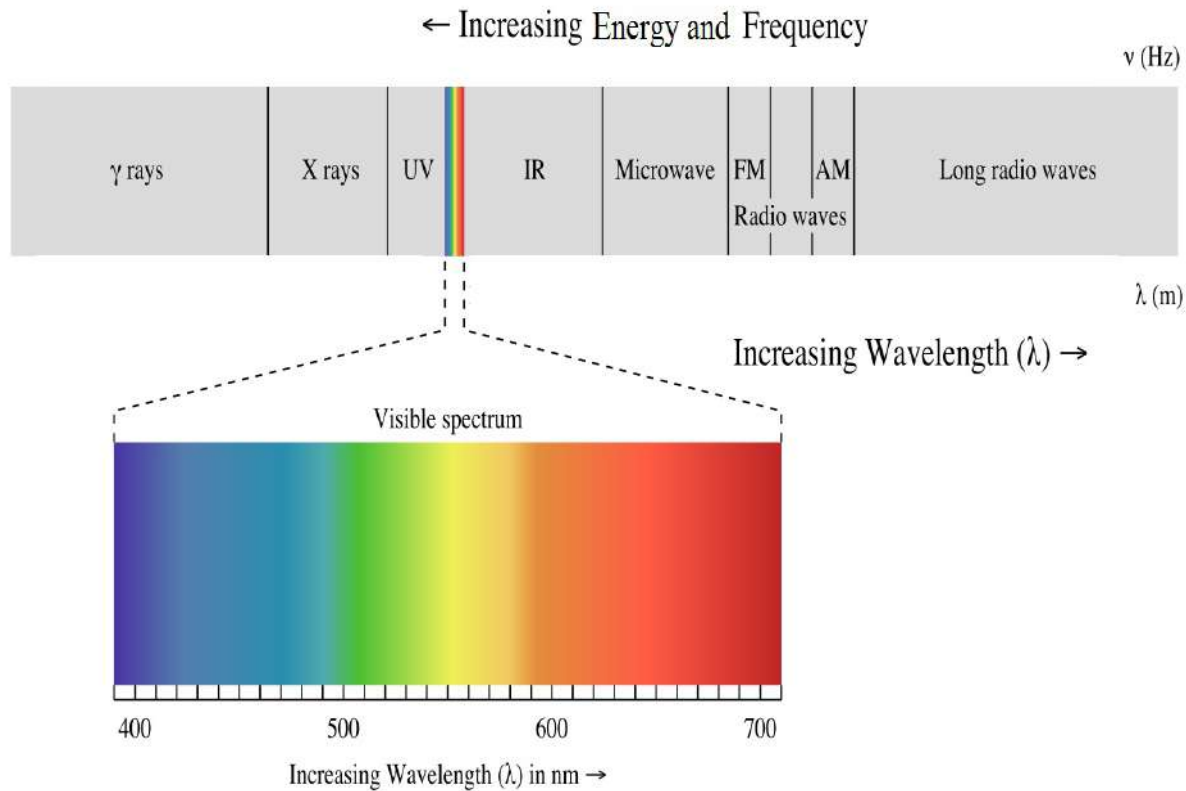
- Travel in straight lines
- Travel at the speed of light! (299,792 km/s)
- Created by vibrations in electric or magnetic fields



<https://upload.wikimedia.org/wikipedia/commons/4/4c/Electromagneticwave3D.gif>



# The Electromagnetic Spectrum – SNC 2P



# The Electromagnetic Spectrum – SNC 2D

