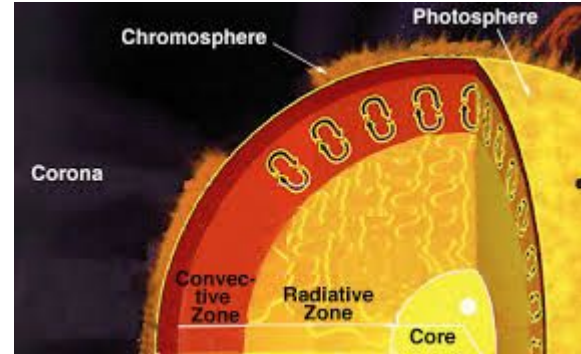


The Sun

Structure of the Sun

- **Core** - where hydrogen fusion happens
- **Sun's Atmosphere:**
 - **Photosphere** - lowest layer, the layer we see
 - **Chromosphere** - middle layer, this layer is transparent
 - **Corona** - upper layer which is also transparent - seen in eclipses.



The Sun

Sunspots-

- created by the Sun's magnetic fields
- appear dark because they are cooler than surrounding areas



The Sun

Solar Flares -

twisted magnetic field lines which release huge amounts of X-rays and UV Radiation

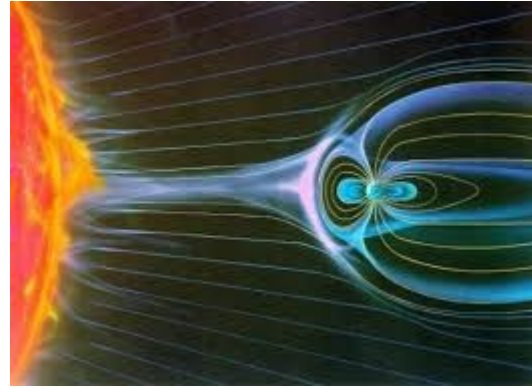


The Sun

Solar Wind -

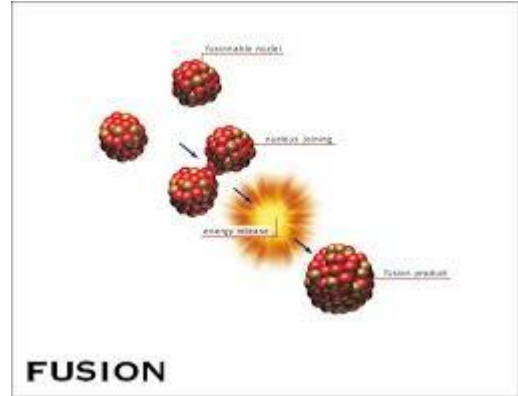
the continuous flow of charged particles (electrons, ions, protons) that comes from the Sun in every direction.

-This comes from the corona and causes Auroras.



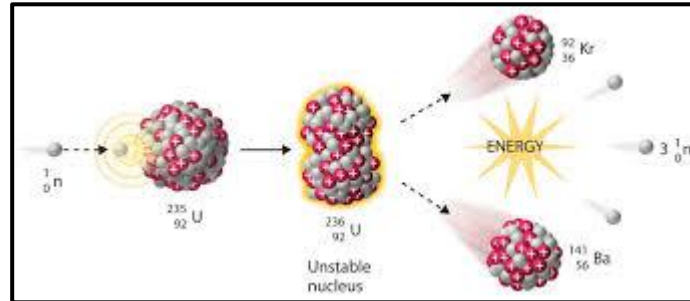
Nuclear Fusion vs. Fission

- Nuclear fusion: how the sun produces energy
(*cómo el sol produce energía*)
 - Four atoms are fused into one atom
Cuatro átomos se funden en un átomo



Nuclear Fusion vs. Fission

- Nuclear fission= atoms are split into multiple atoms (*átomos se dividen en múltiples átomos*)
 - This is used to create energy in nuclear power plants (*Esto se utiliza para crear energía en las centrales nucleares*)



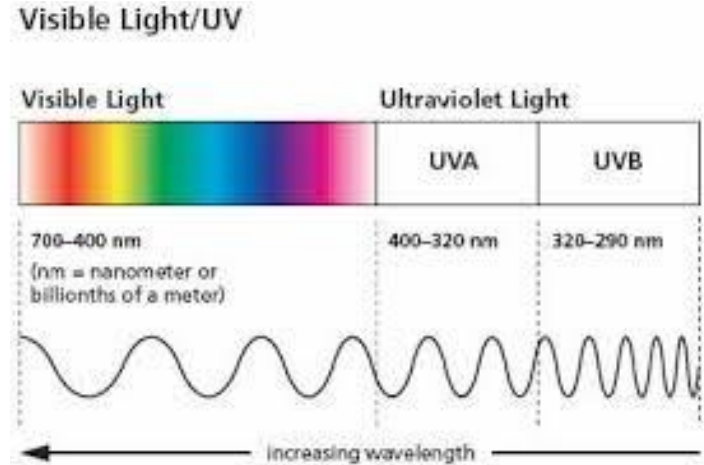
Nuclear Fission & Fusion

<https://www.youtube.com/watch?v=m8sj5OEz1js>

The Sun's Energy

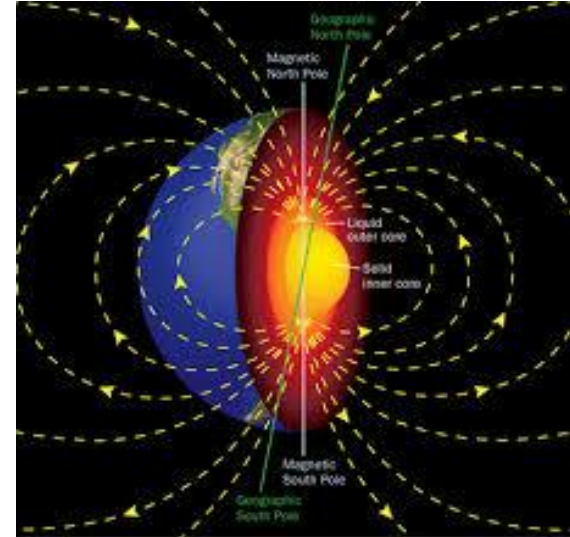
How does the Sun's energy reach the Earth?

- By **Ultraviolet Radiation**: A form of electromagnetic radiation from the sun (*Una forma de radiación electromagnética del sol*)



The Earth's Magnetic Field

- The core of the Earth is **liquid iron**.
- The movement of this metal creates a **magnetic field** between the North and South Poles.
- This invisible force is what **protects us** from space radiation, mainly from the **solar wind**.

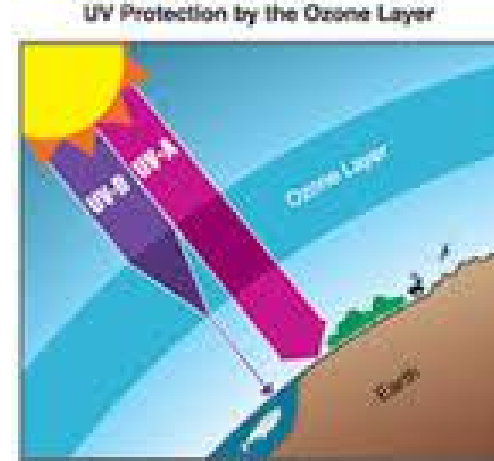


Earth's Magnetic Field

<https://www.youtube.com/watch?v=XXFVpwecixY>

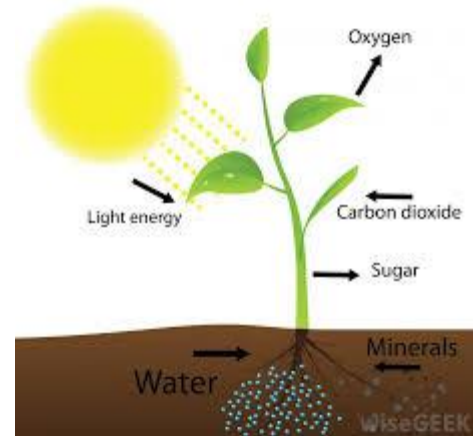
The Sun's Energy

- The Sun's energy is dangerous to humans because it can cause skin cancers. *(Esta energía es peligrosa para los seres humanos ya que puede causar cánceres de piel.)*
- The **ozone layer** in the atmosphere absorbs some of the Sun's energy. *(La capa de ozono en la atmósfera absorbe parte de esta energía.)*



The Sun's Energy

- Photosynthesis= plants use energy in the form of light from the sun to produce sugar (food) *(las plantas utilizan la energía en forma de luz del sol para producir azúcar (alimentos))*
 - Uses solar energy to produce chemical energy.
 - Without the sun, there would be no life on Earth! *(Sin el sol, no habría vida en la Tierra!)*



The Sun's Energy

Creation of Wind on Earth

- 1) Temperatures on Earth depend on amount of sunlight
- 2) The Earth's surface heats unevenly (*de forma desigual*)
- 3) Balance between warm and cool air changes constantly, creating wind



The Sun's Energy

Differential Heating and Cooling of Land and Water

Water absorbs and releases heat more slowly than land



This results water having a **COOLING EFFECT** in summer and **WARMING EFFECT** in winter

