

THE BIG BANG THEORY

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- Originally proposed by a Belgian Catholic Priest (*sacerdote*), Goerges Lemaitre, in 1927
- Most accepted theory of how universe was created.

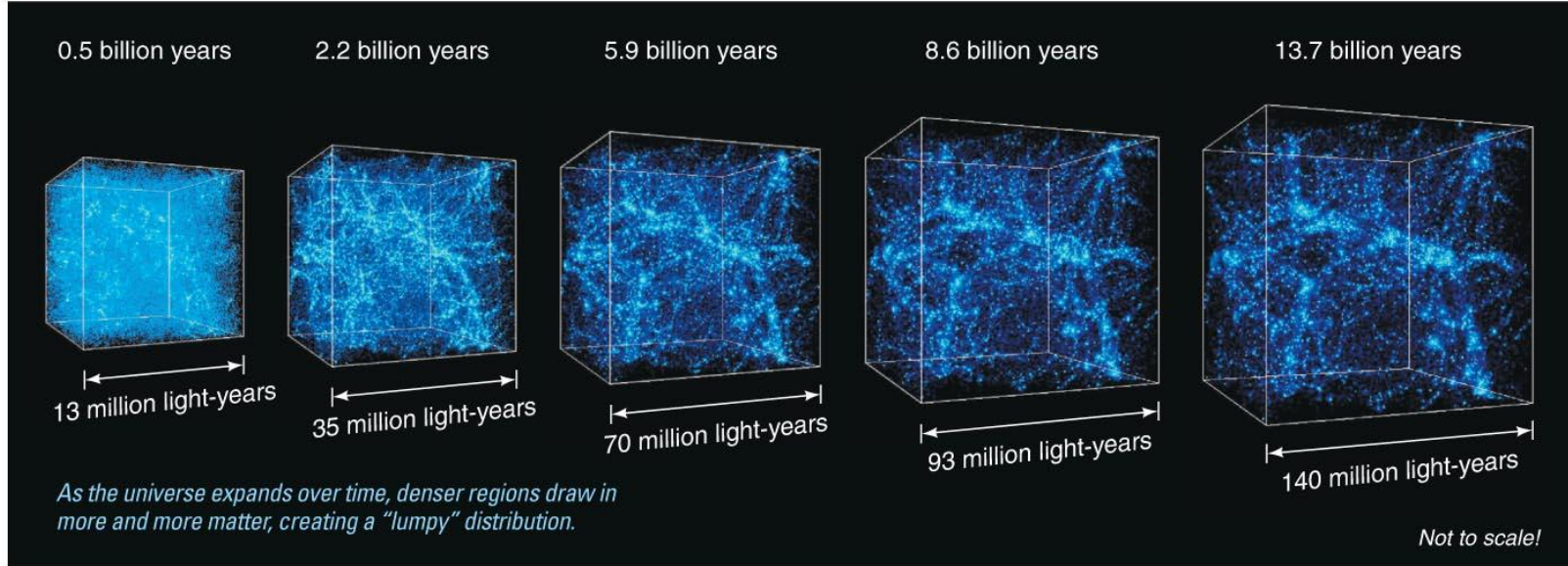


THE BIG BANG THEORY

- The Universe is 13.7 billion years old (*tiene 13,7 mil millones de años*)
- Universe was created from an infinitely small point of energy, which is expanding. (*Universo fue creado a partir de un punto infinitamente pequeño de la energía, que se está expandiendo.*)



THE EXPANDING UNIVERSE

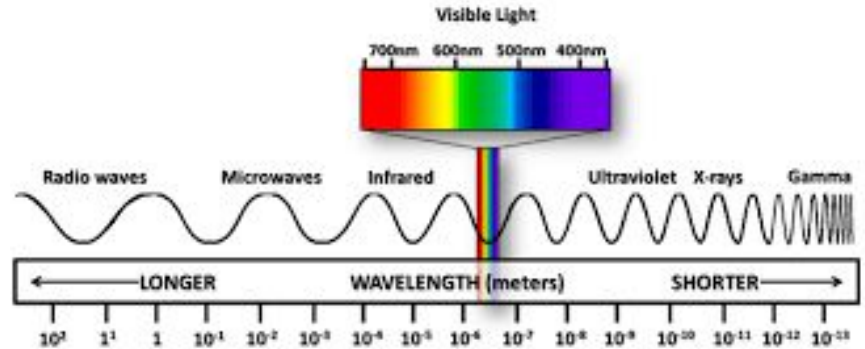


ELECTROMAGNETIC SPECTRUM

Electromagnetic Spectrum = all possible frequencies of radiation emitted by an object

Shorter **WAVELENGTH** = higher **FREQUENCY** = higher **ENERGY**

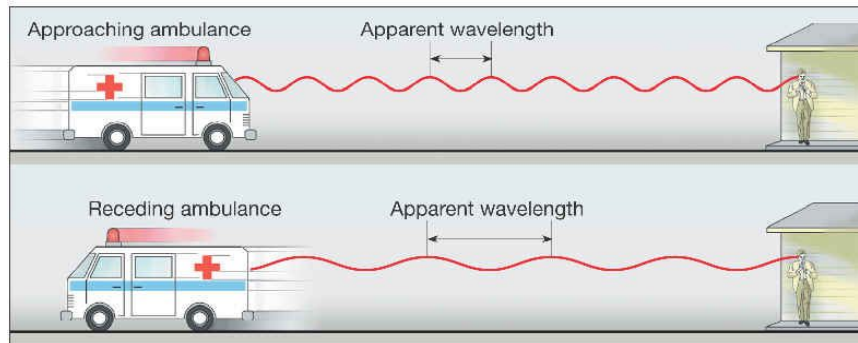
Longer **WAVELENGTH** = lower **FREQUENCY** = lower **ENERGY**



DOPPLER EFFECT

The Doppler Effect: a change in frequency of wavelengths of a moving object.

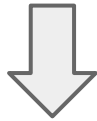
- As something is moving CLOSER, it's wavelengths appear to be closer together
- As something moves FARTHER AWAY, it's wavelengths appear to be further apart



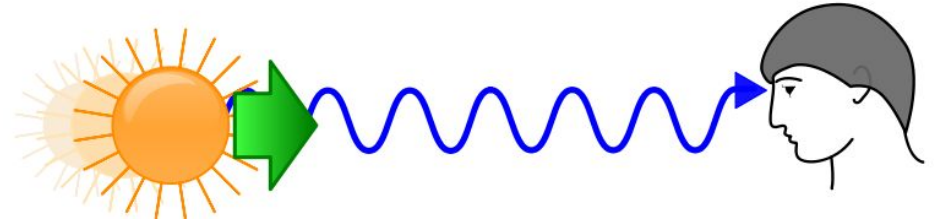
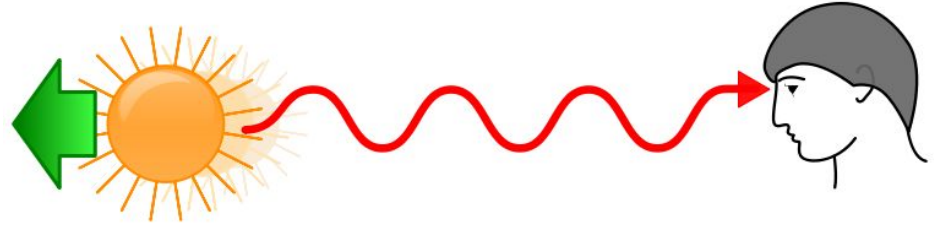
EVIDENCE FOR THE BIG BANG THEORY

1) When scientists look at the universe, they see red shifts in light (think **ELECTROMAGNETIC SPECTRUM**)

- Demonstrates the Doppler Effect
- This means stars are moving AWAY



- *Proof that the universe is expanding*



EVIDENCE FOR THE BIG BANG THEORY

2) Hubble's Law-

- The **SPEED** at which a galaxy moves AWAY from the Earth **depends on** its **DISTANCE** from the Earth.

