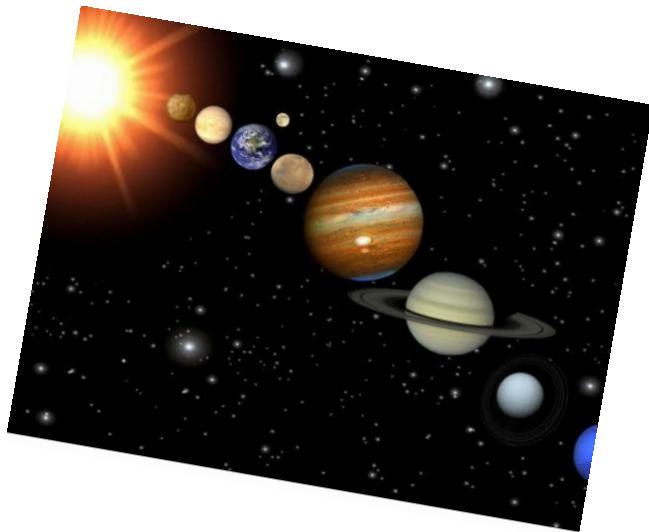
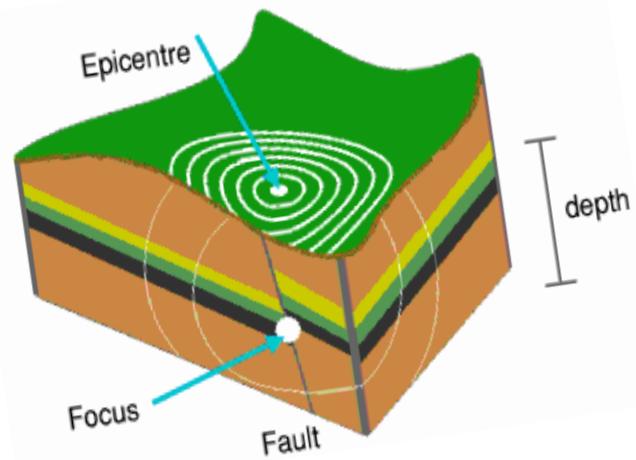


# THE EARTH & ITS ORIGIN



BY  
**OKELLO FRED**



# **THE ORIGIN OF THE EARTH**

- The Origin is not yet Known.
- Different Scholars have come up with different ideas to try and explain the possible origin.
- These ideas are called Theories.
- A theory is a reasoned argument trying explain something or a particular event.

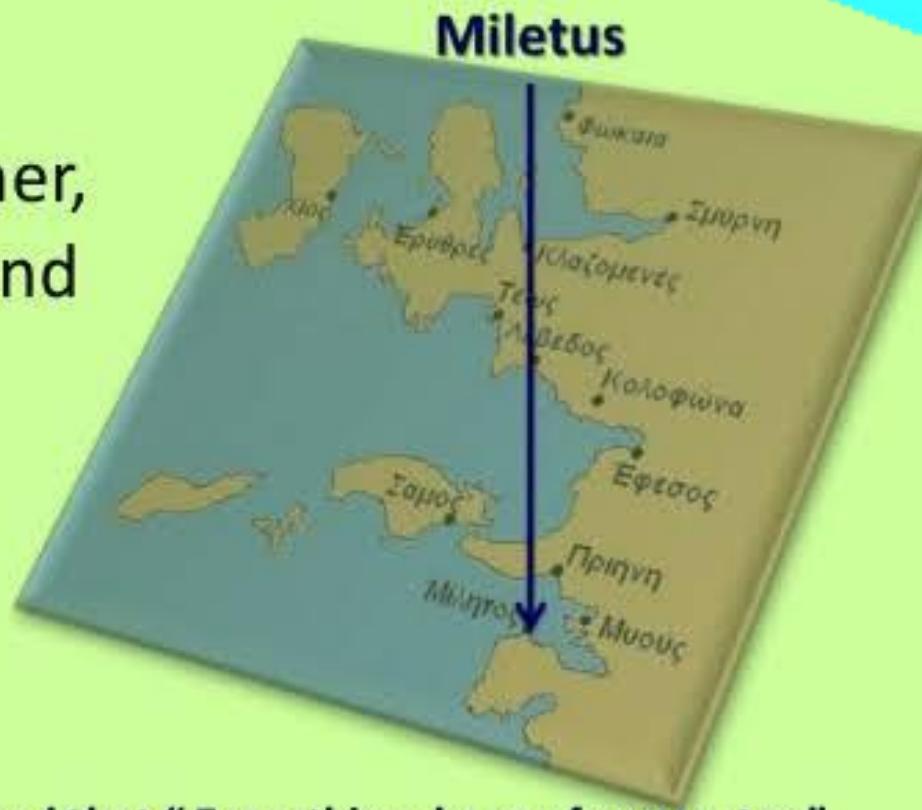
# BIRTH of EARTH





# Thales of Miletus

Thales (640-546) was a mathematician, astronomer, engineer, meteorologist and philosopher.



He believed that "Everything began from water". Apparently he was affected by Egyptians who believed the same thing. Also Thales supported that earthquakes came from the water because the earth was flat and floated over a big ocean. In the end he believed gods were everywhere

# **THALE'S THEORY**

**Observed deposition of Silt along the  
Nile Delta in Egypt**

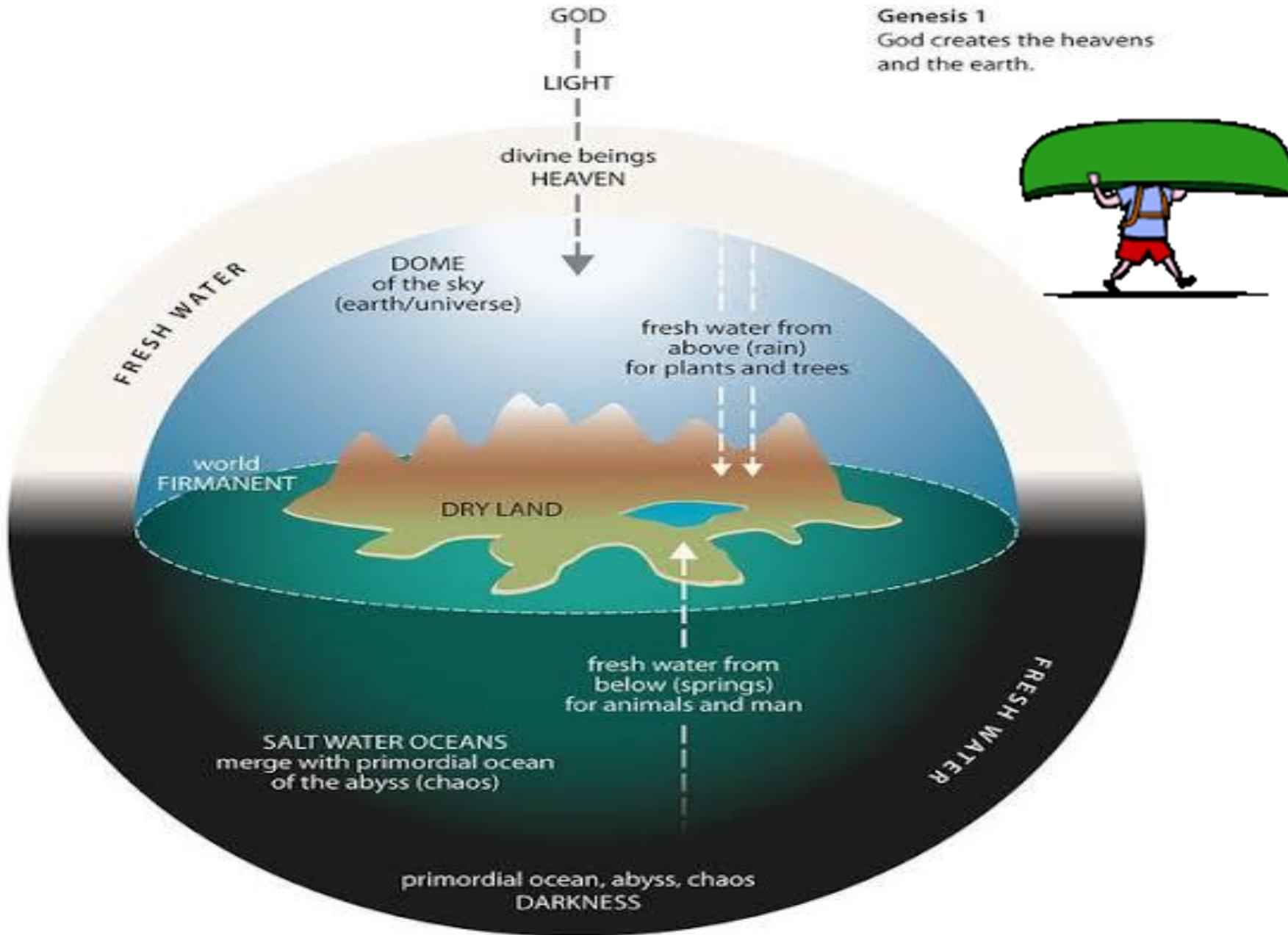




“The principle behind all things is water. For all is water and all goes back to being water.”

— Thales (c.570BC)





**Genesis 1**  
God creates the heavens  
and the earth.



# **THE BIG BANG THEORY**

# BIG BANG THEORY

Solar System



Inflation  
Quarks Form

First Particles  
Neutrons, Protons, Dark Matter form

First Nuclei  
Helium, Hydrogen form

First Light  
First Atoms Form

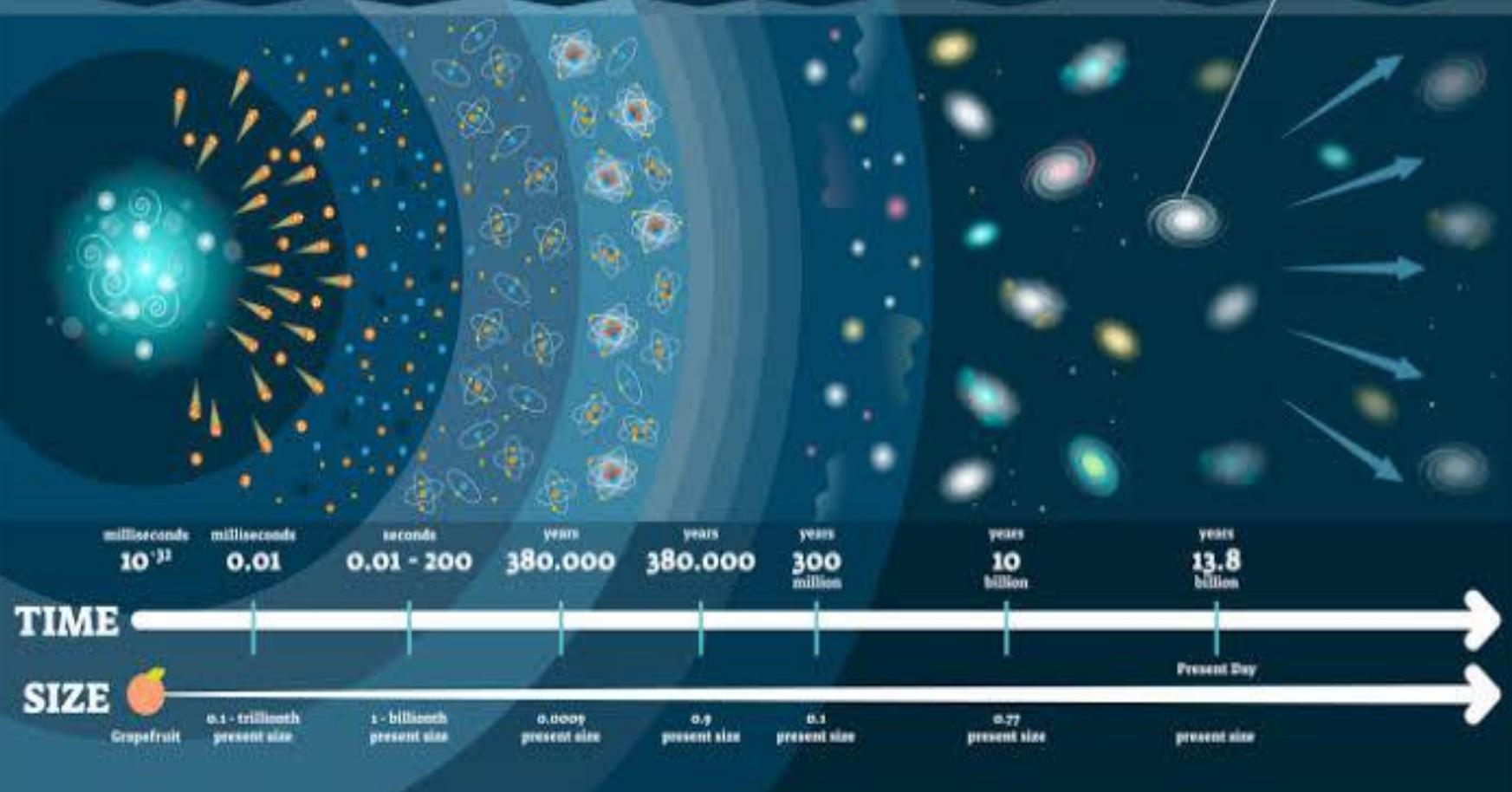
Dark Ages  
Clusters of Matter Form

Gravity  
Stars and Galaxies Form

Antigravity  
Universe Expansion Accelerates

Today  
Universe Continues to Expand

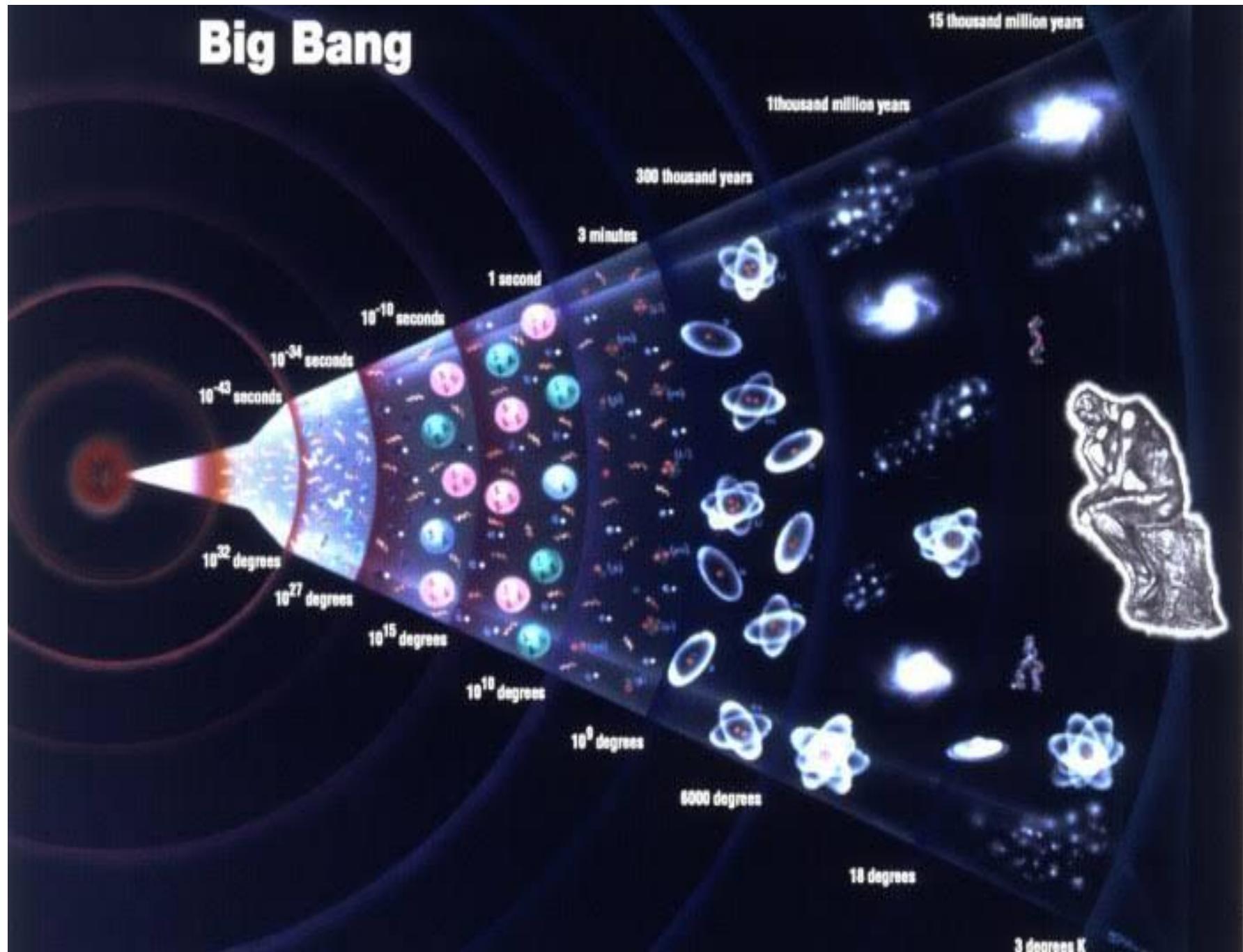
Galaxies Break Apart



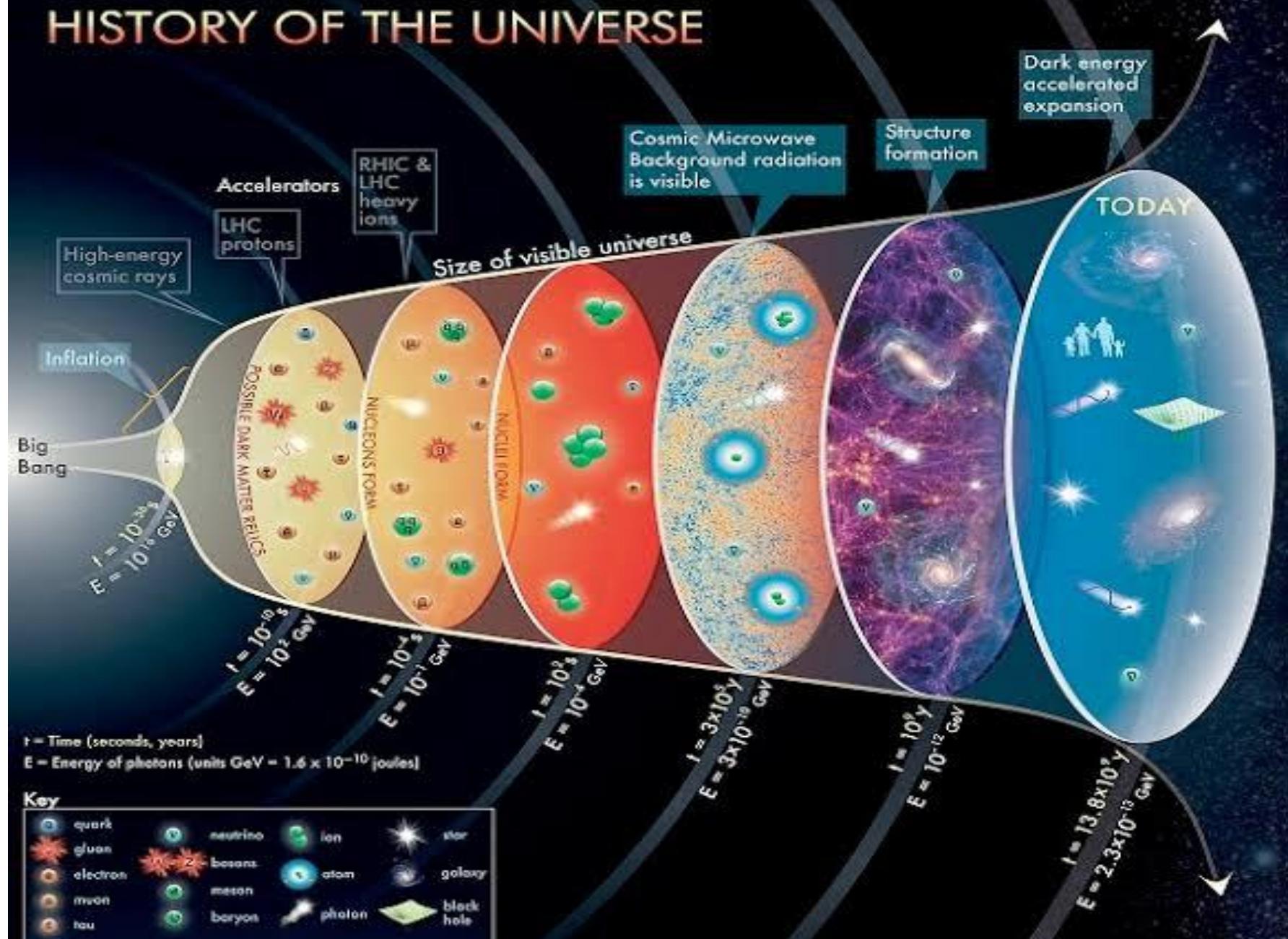




# Big Bang



# HISTORY OF THE UNIVERSE



# **KANT'S THEORY**





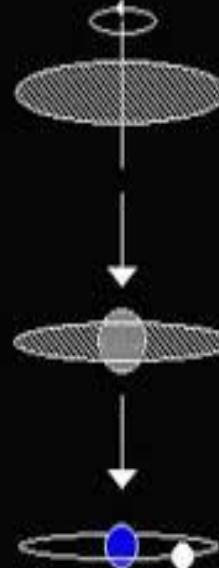
Nebular Hypothesis

- Kant - Laplace



Cloud →  
Molecular Gas  
Dust  
self-gravity contracts a gas cloud →  
 $H_2 + He \rightarrow$  Fusion  
Sun

conservation of angular momentum  
pulls cloud into a disk

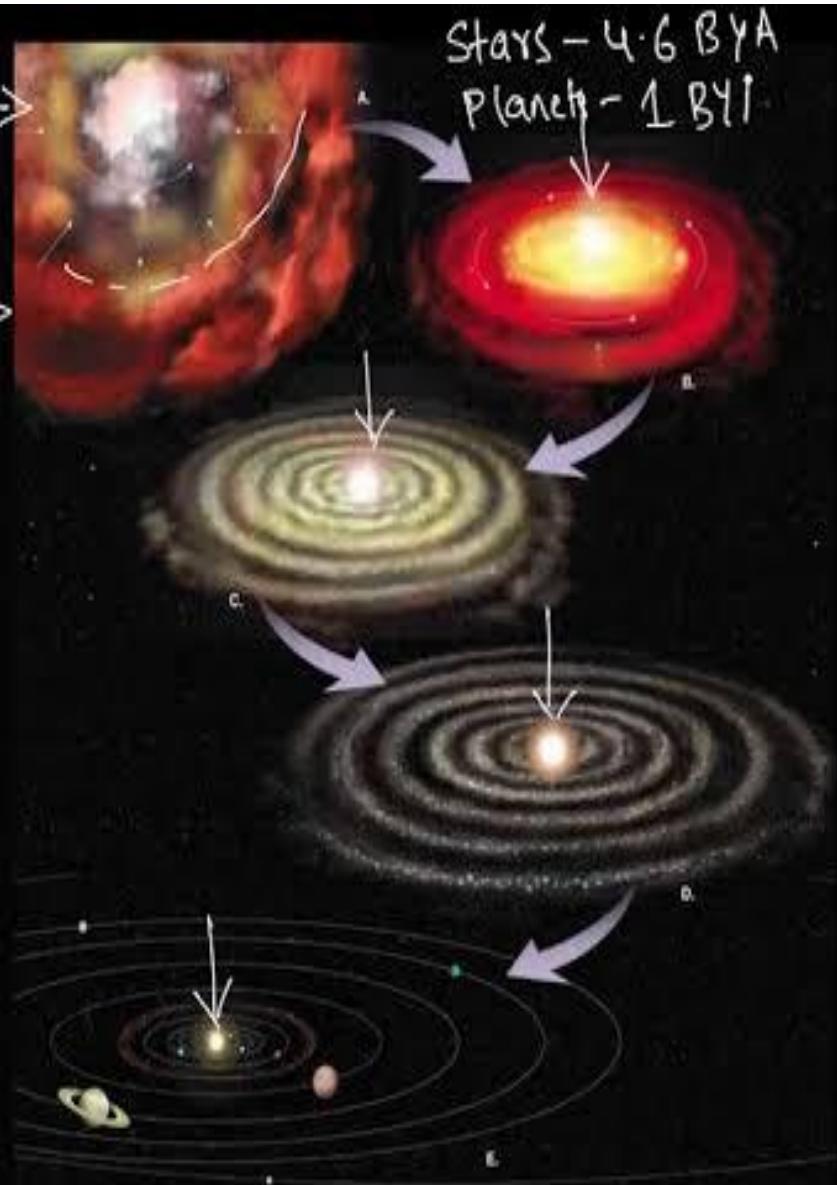


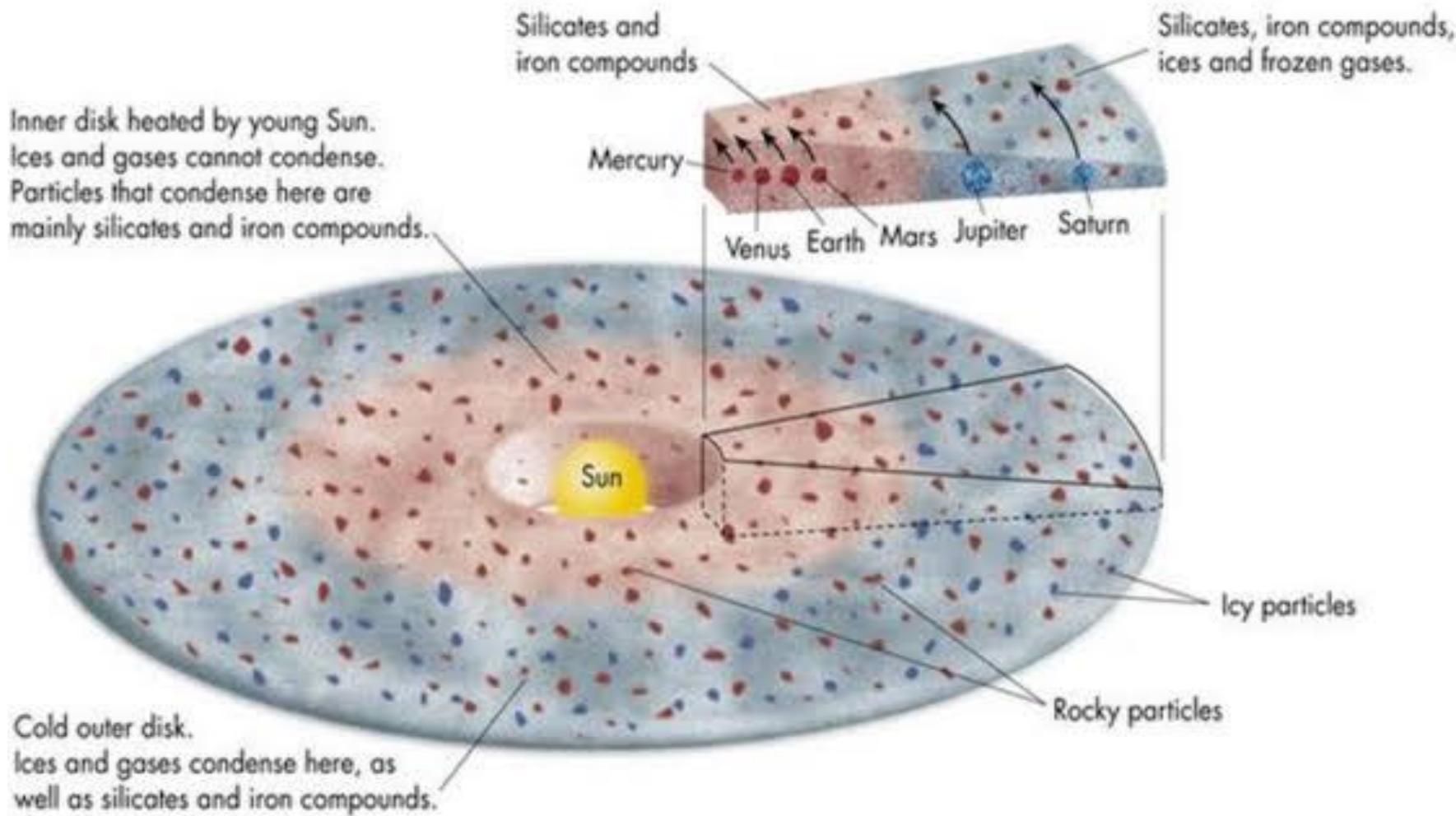
disk begins to rotate

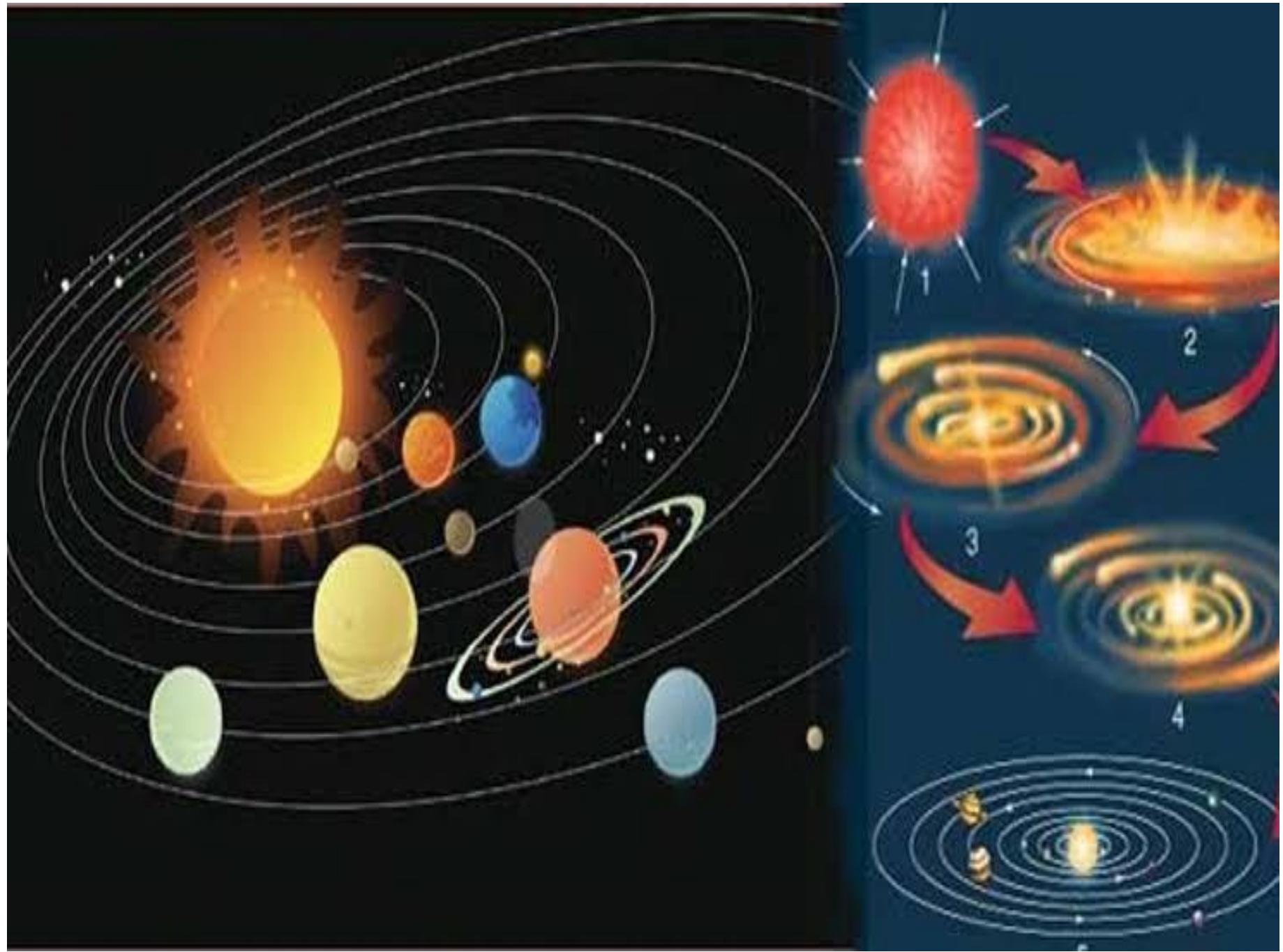
central mass forms (proto-Sun)

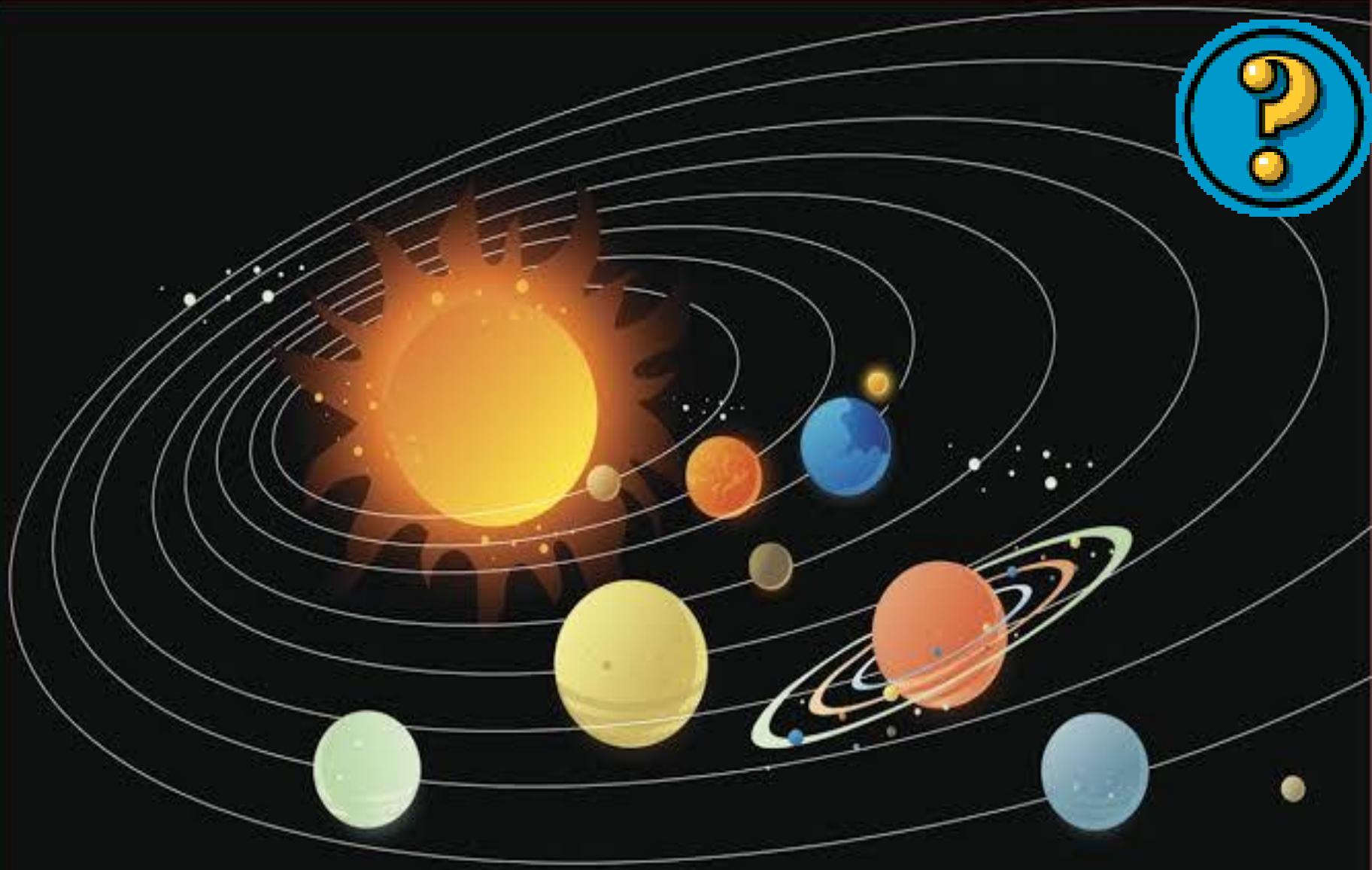
centrifugal force balances gravitational  
forces and a ring forms

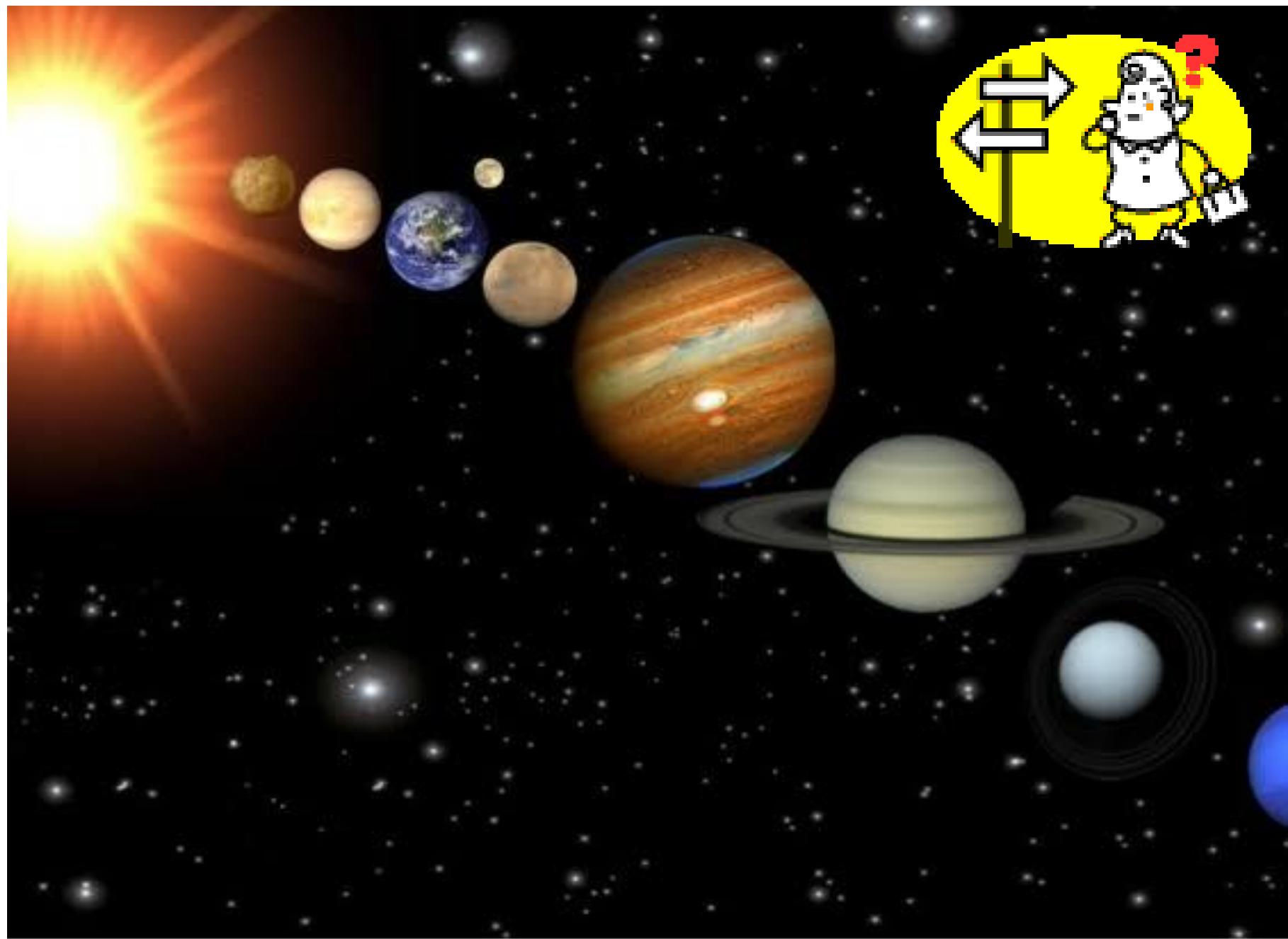
ring forms into a planet

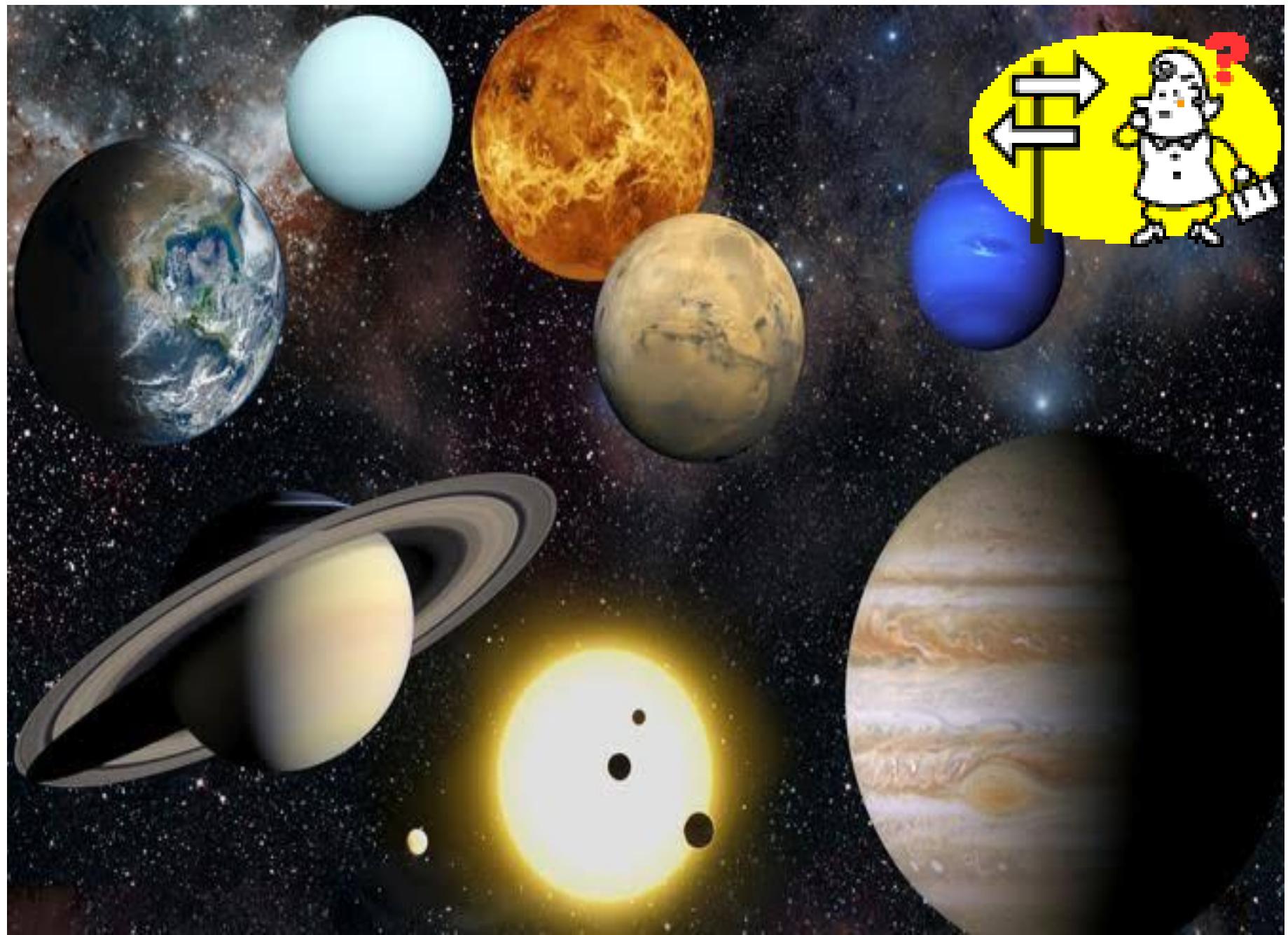




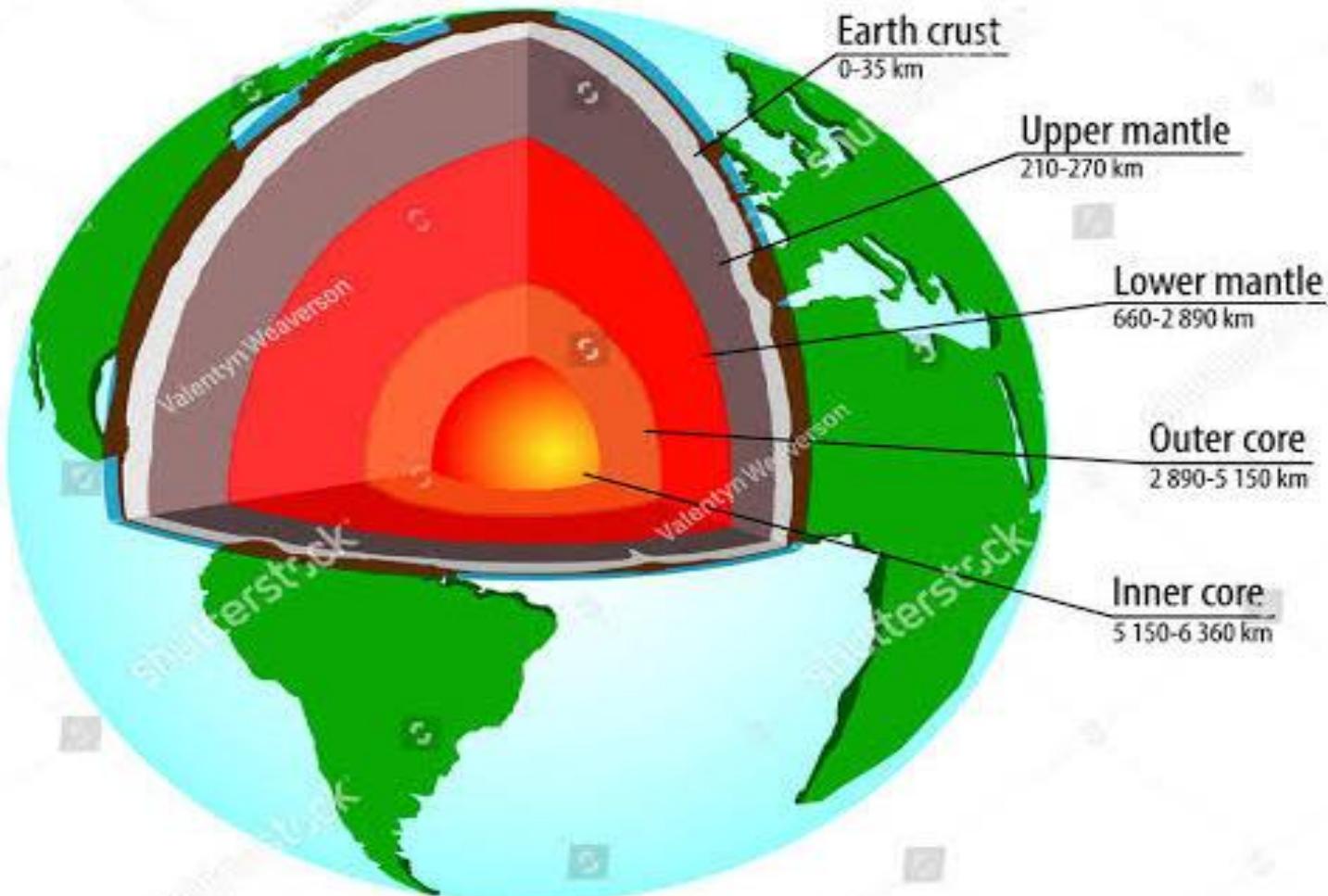


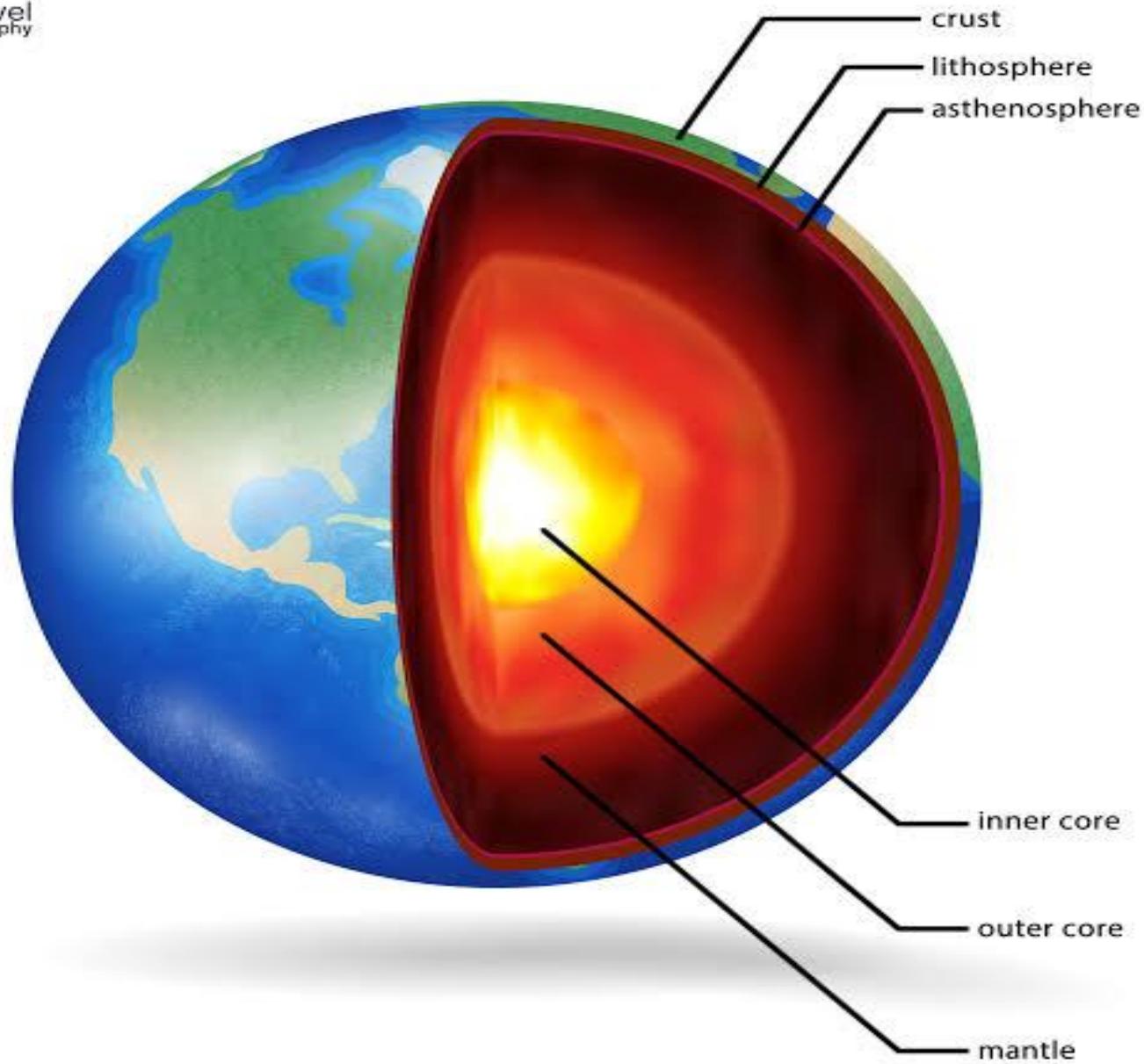




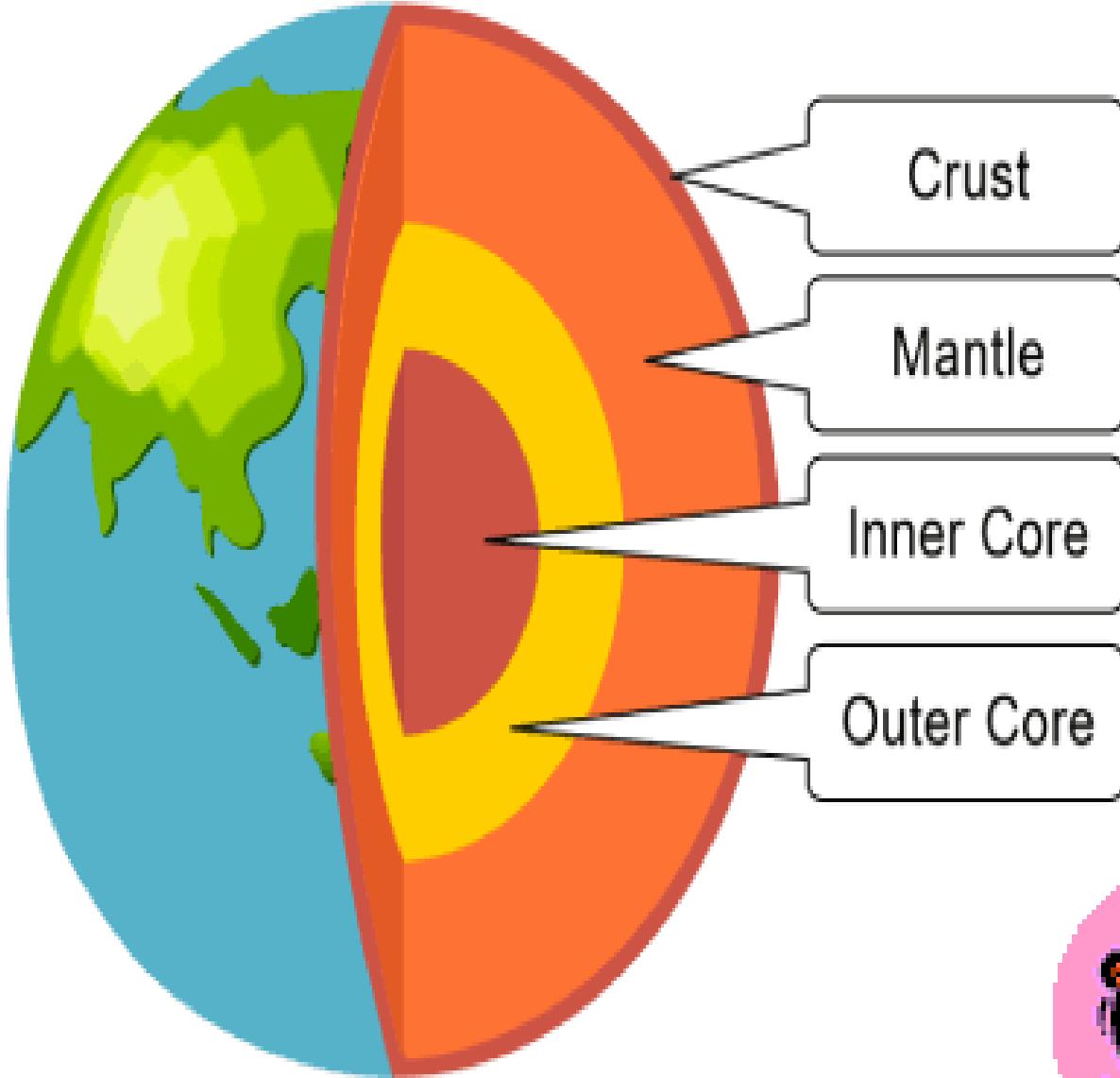


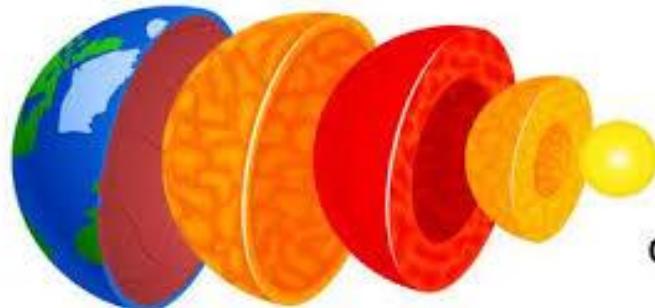
# STRUCTURE OF THE EARTH











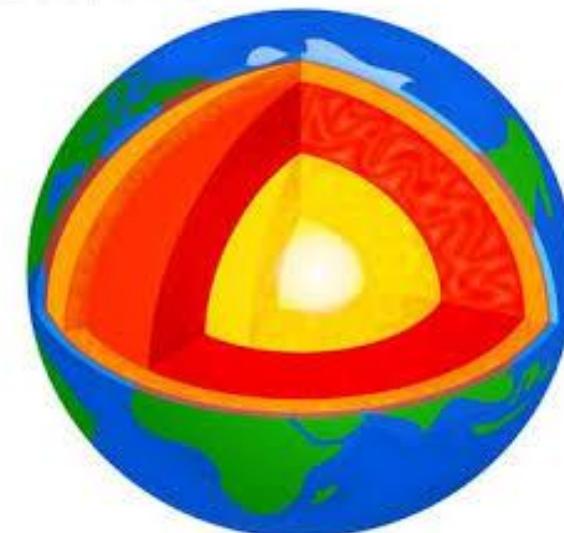
CRUST

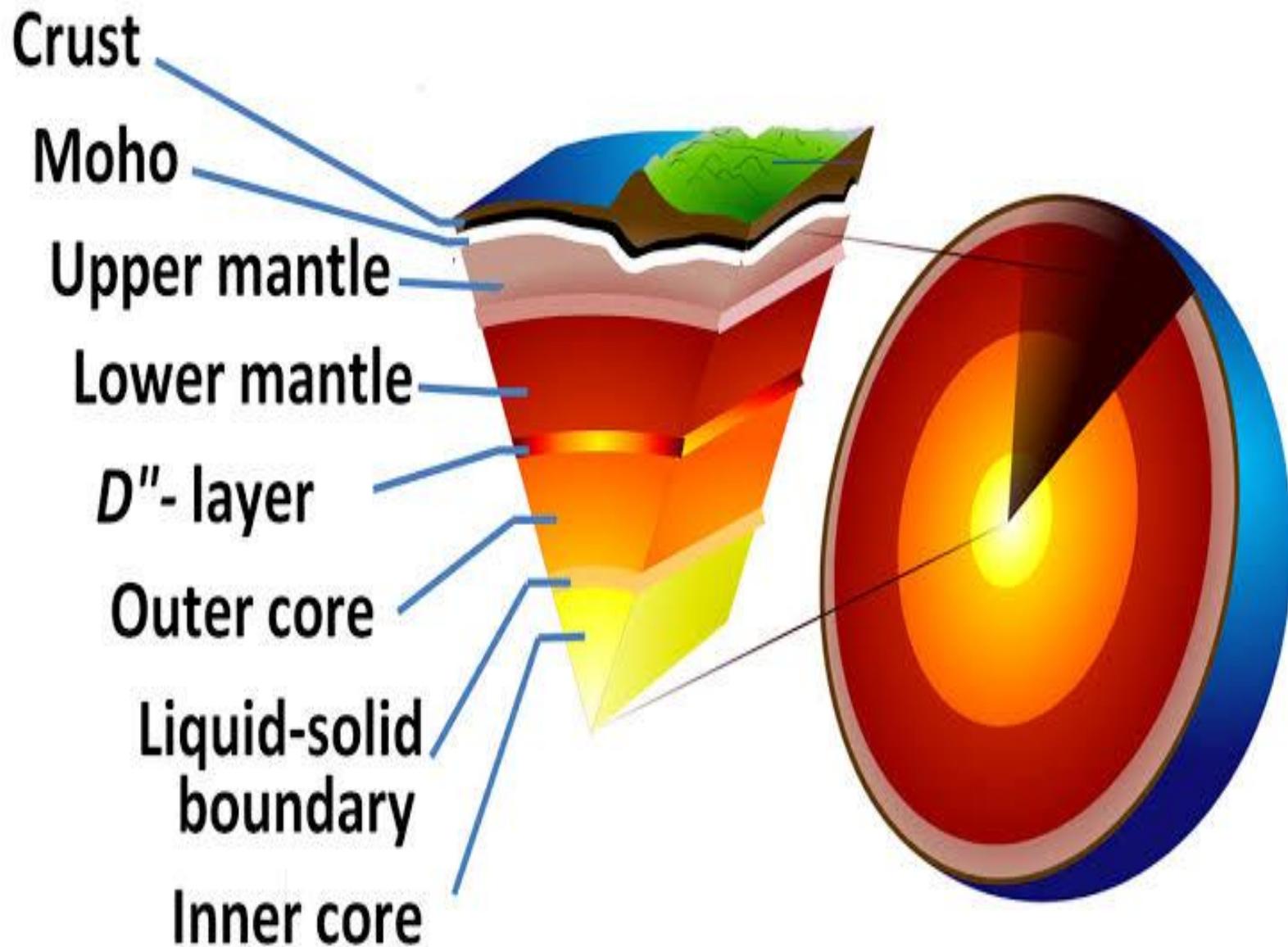
UPPER MANTLE

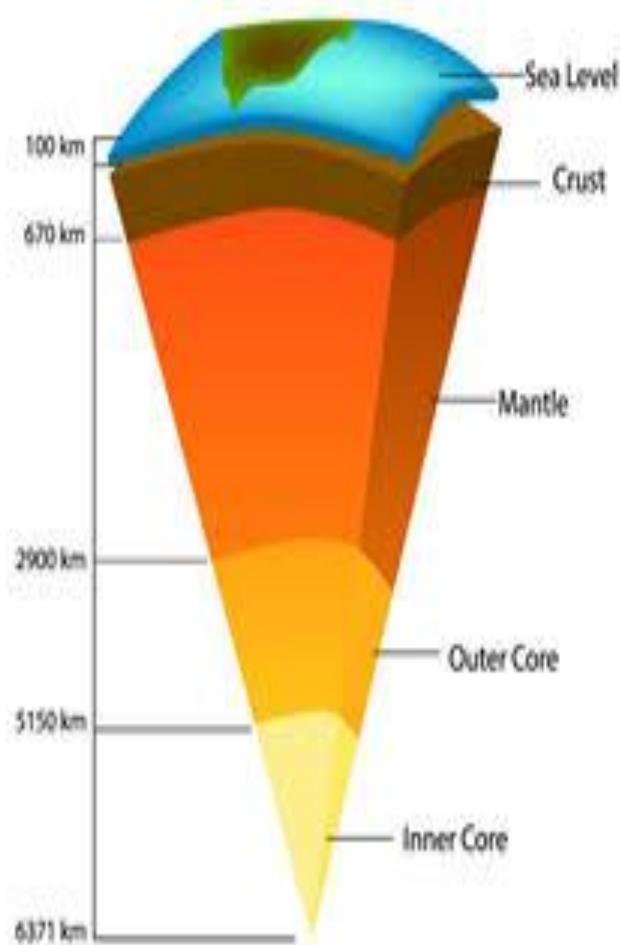
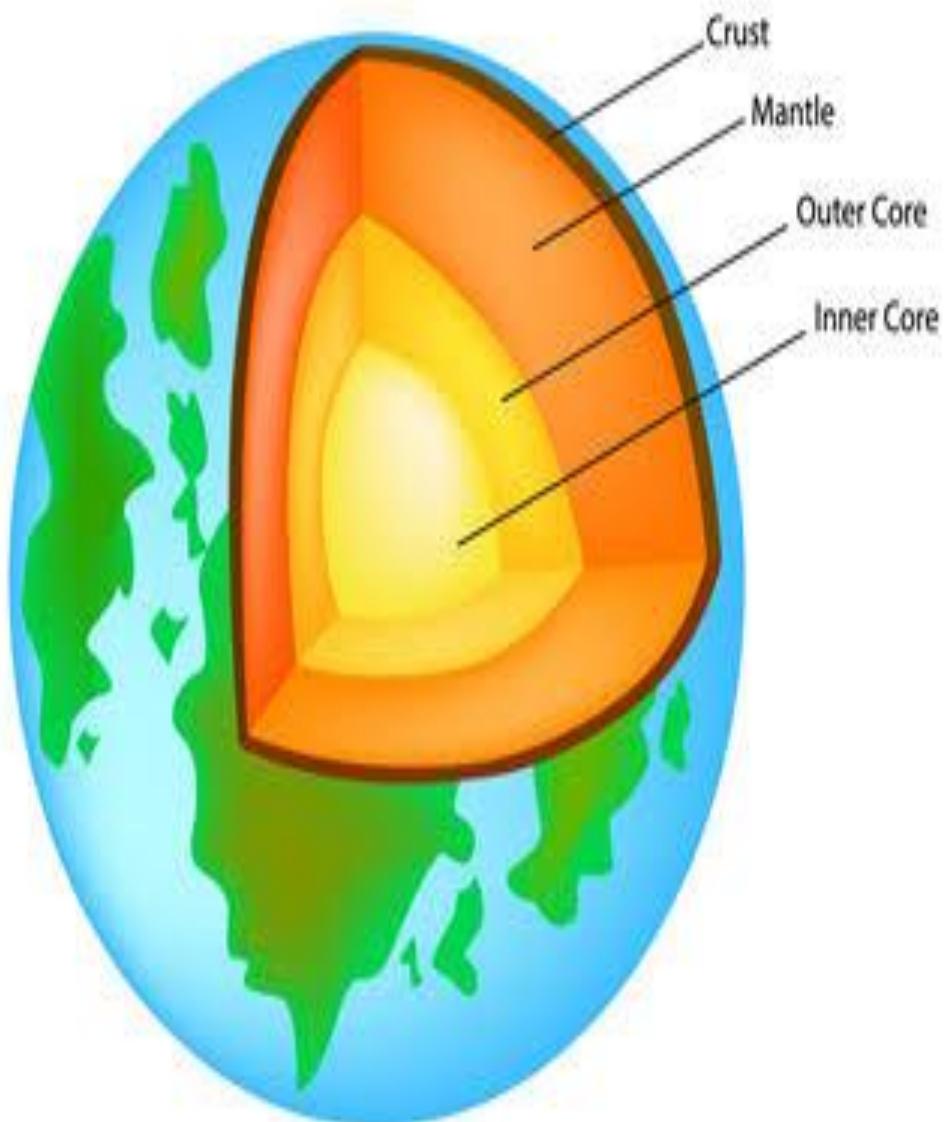
LOWER MANTLE

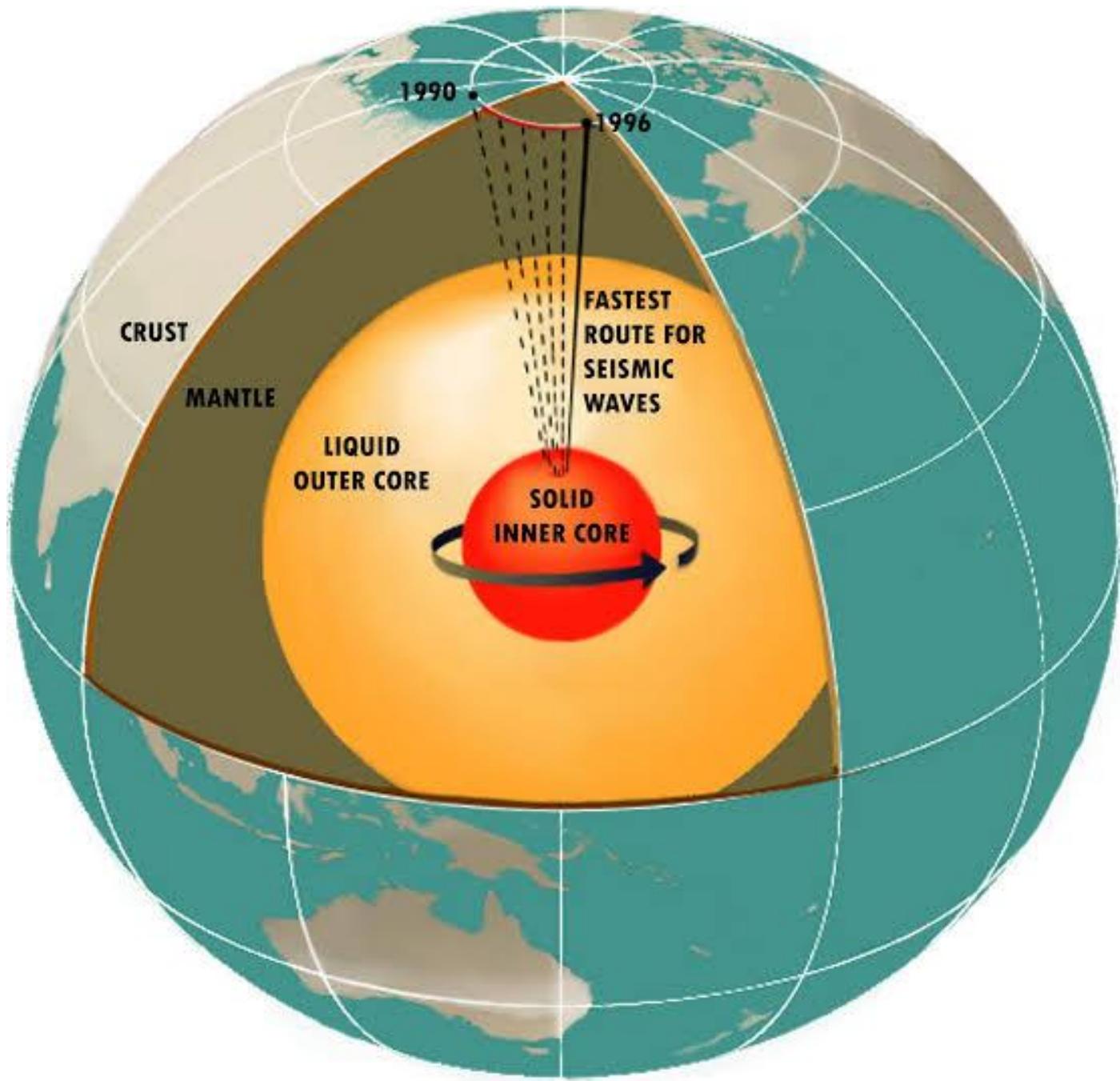
OUTER CORE

INNER CORE

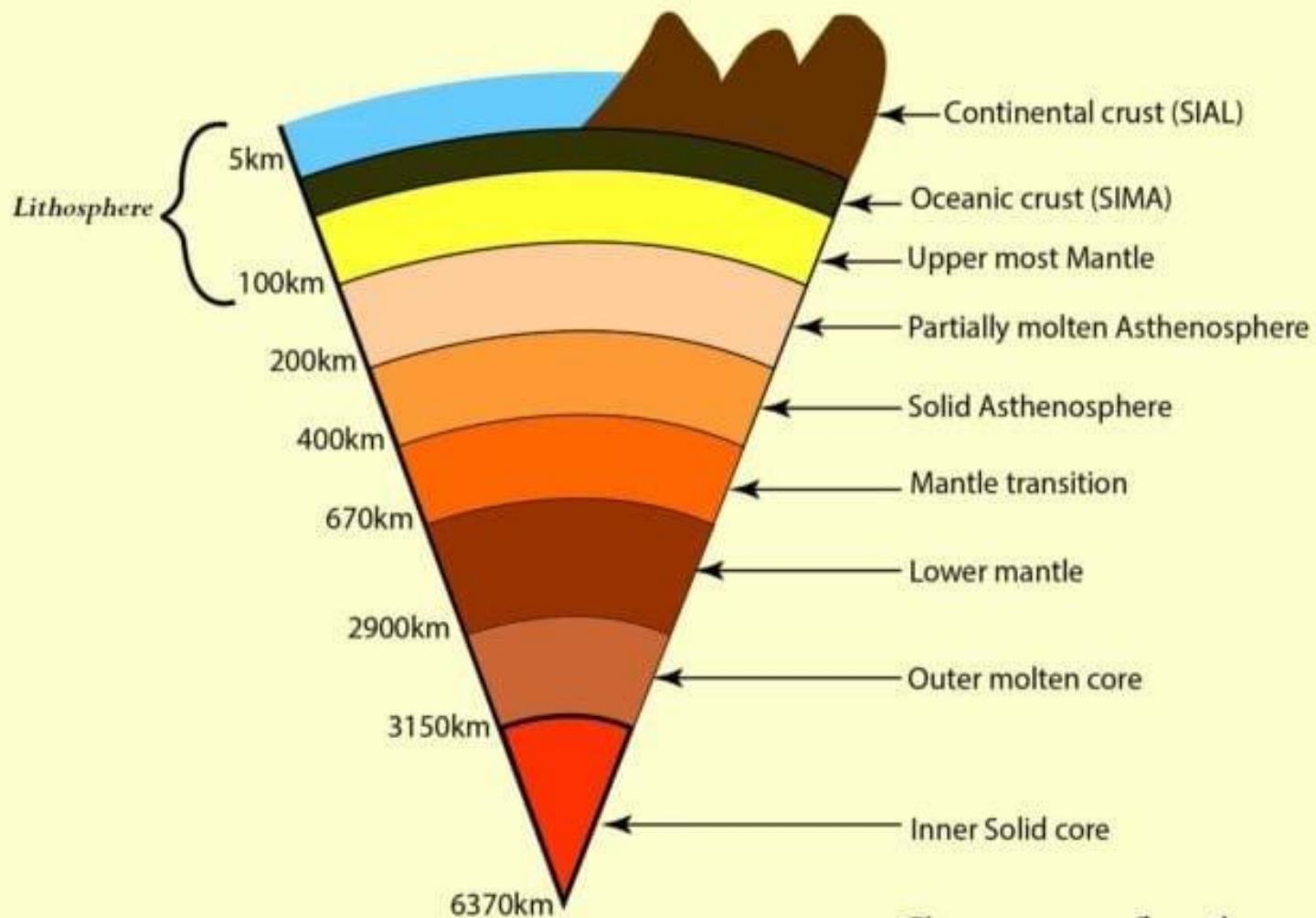


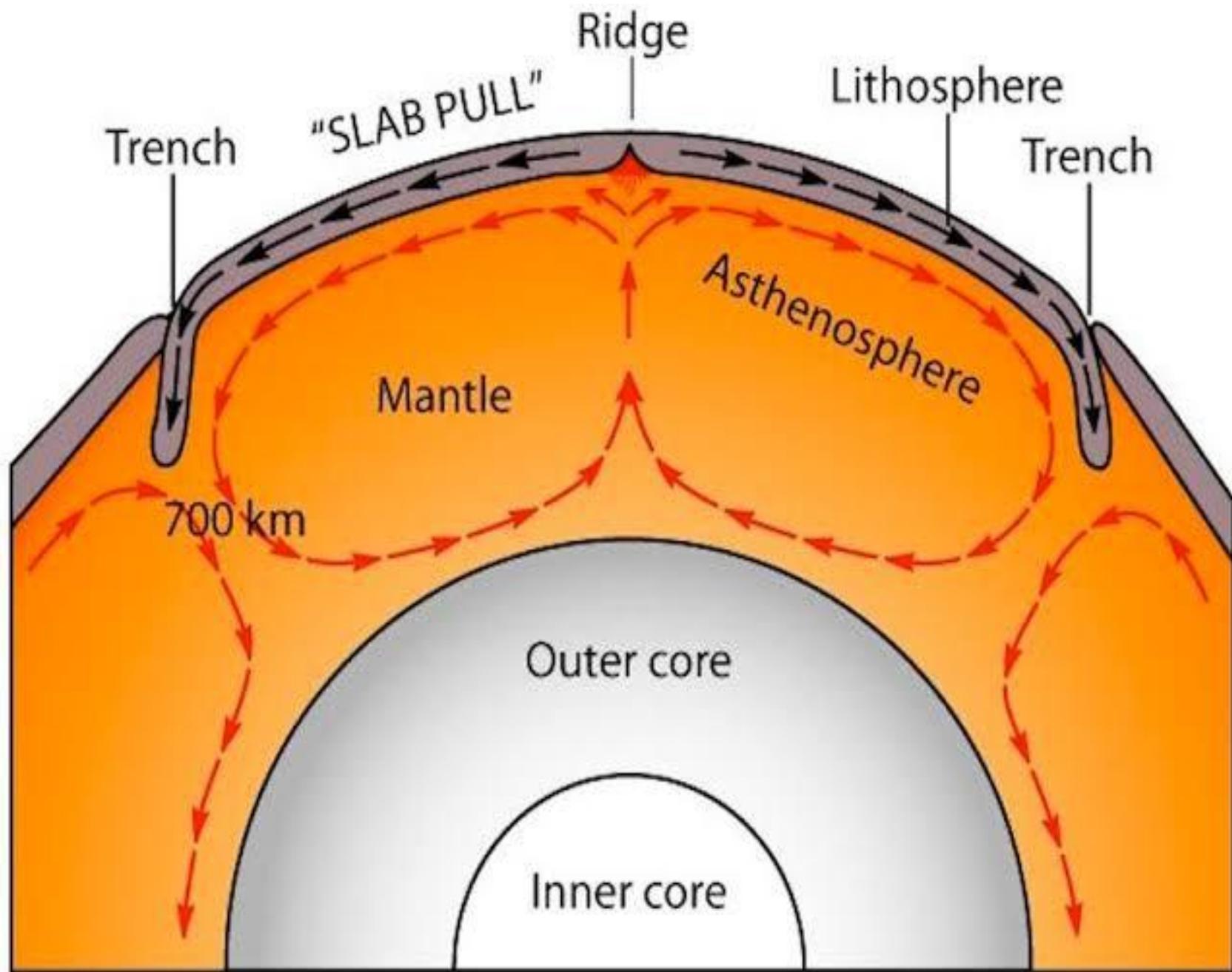


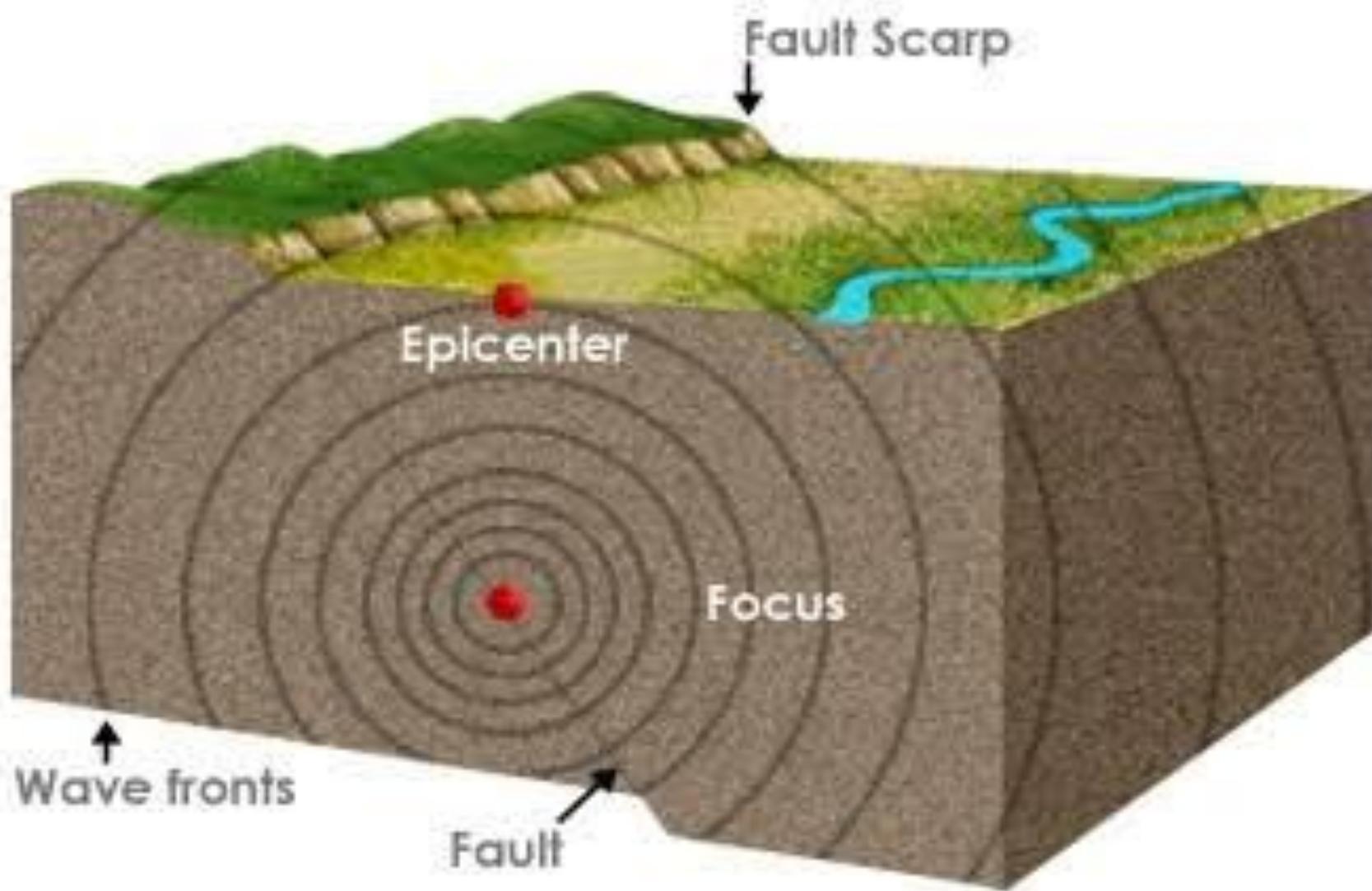


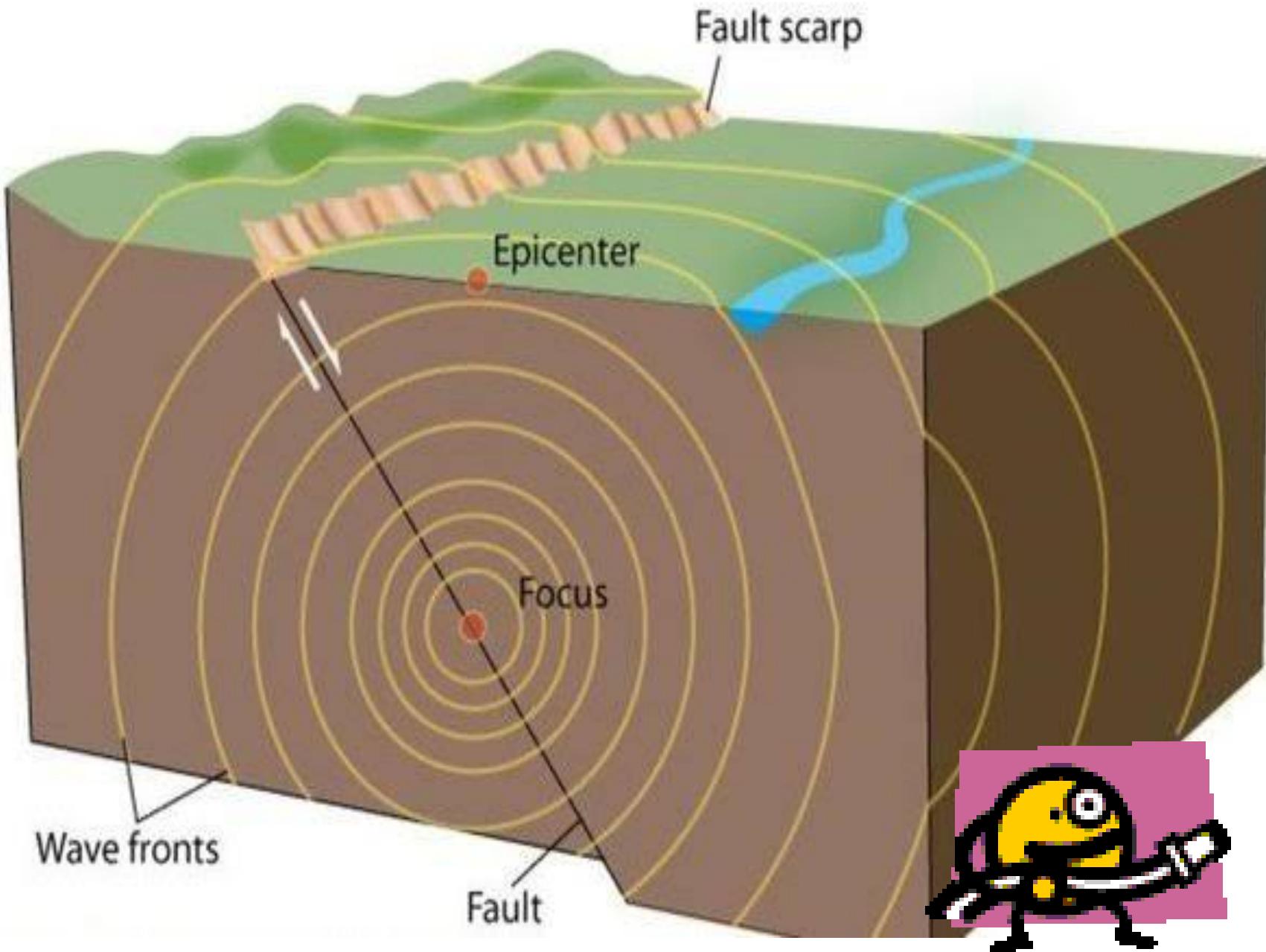


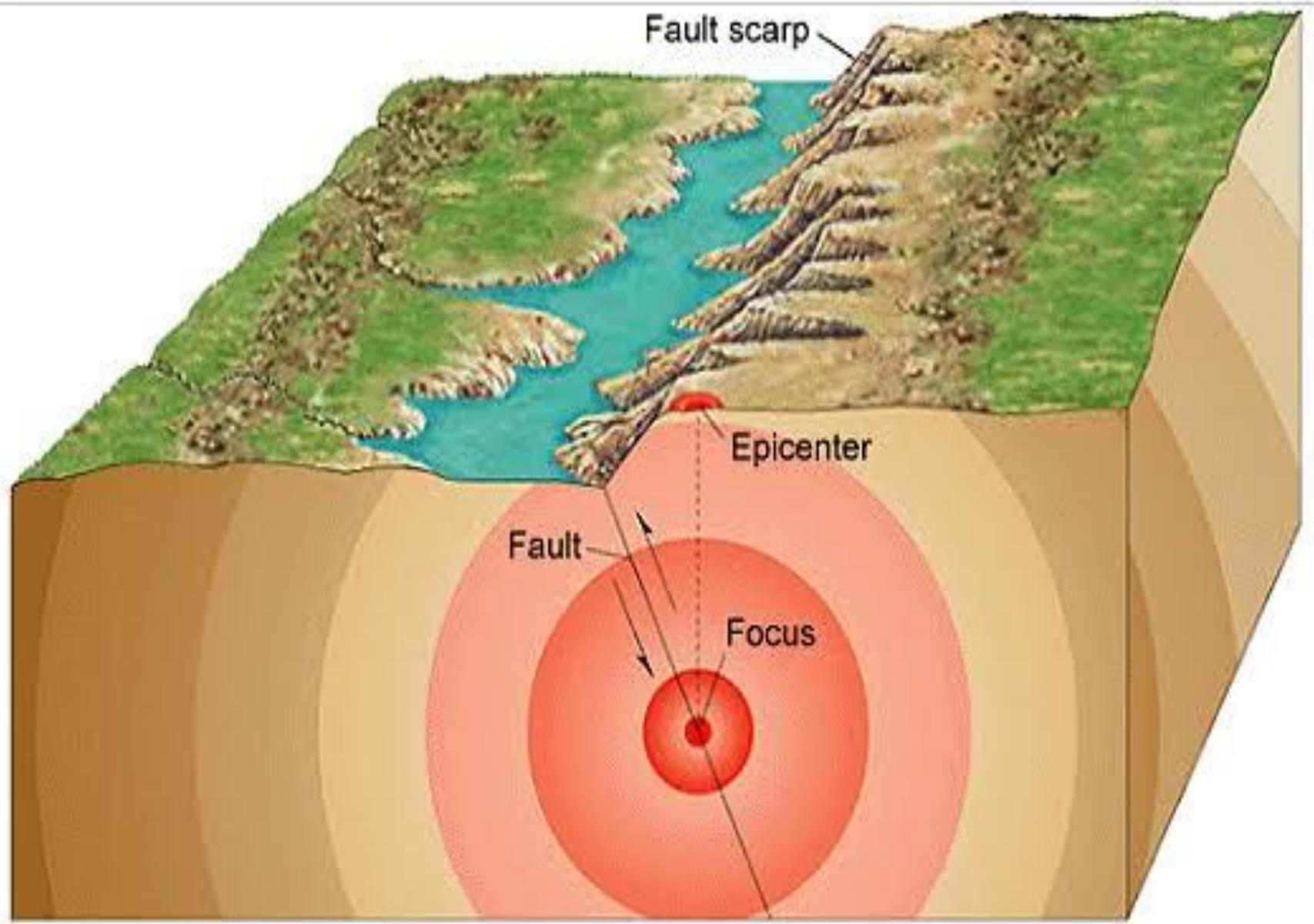
# *Interior of the earth*



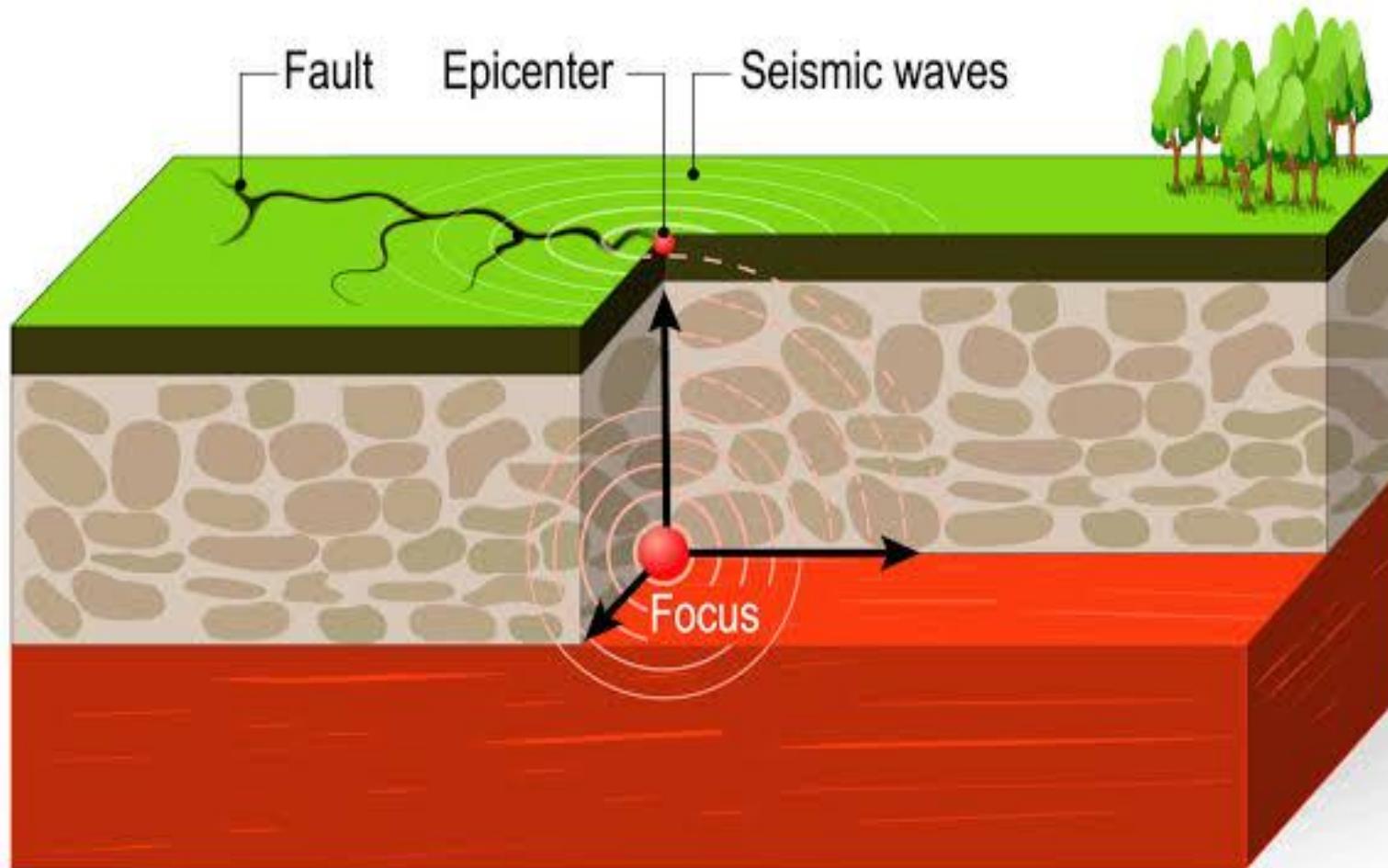




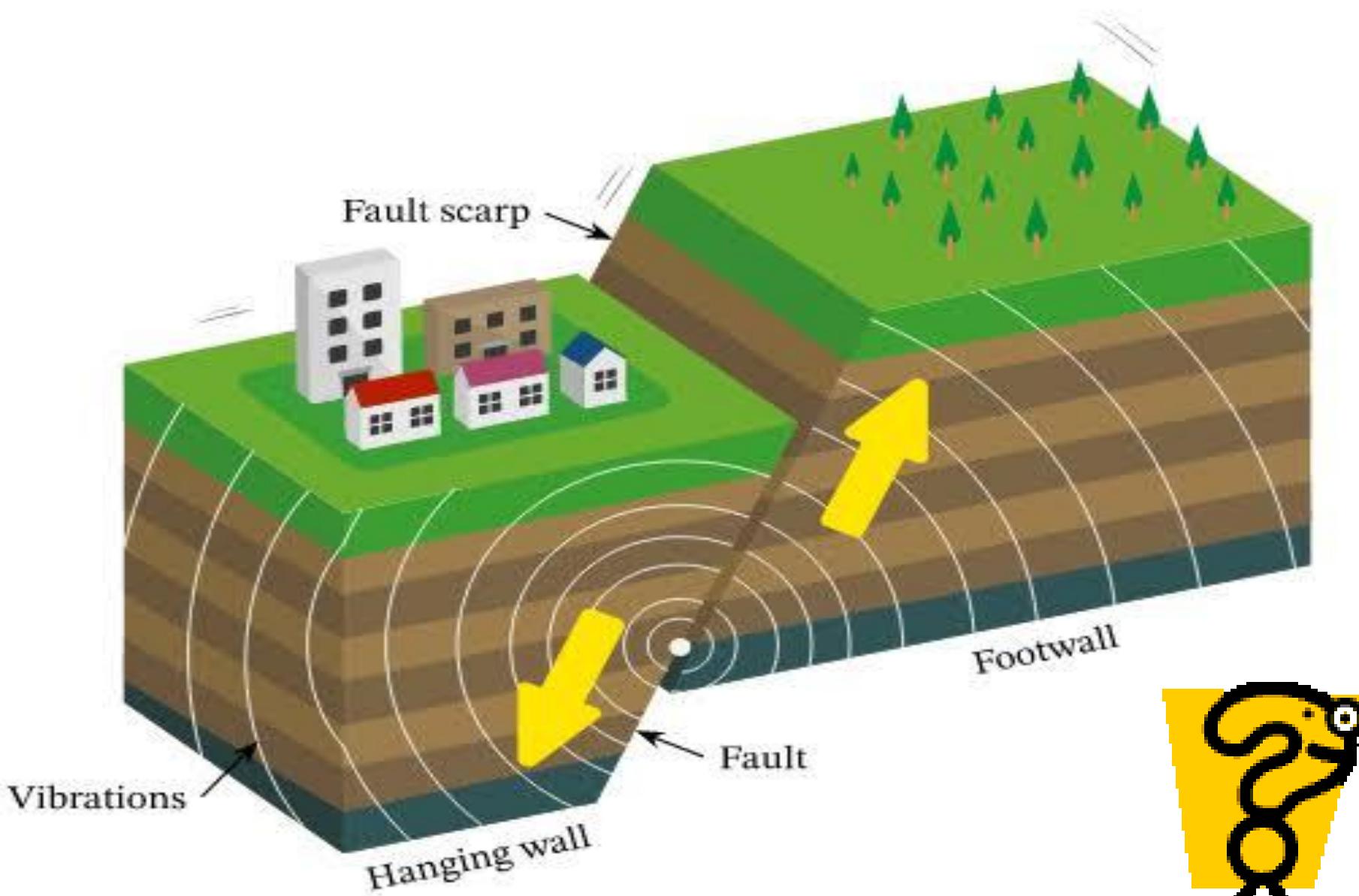




# EARTHQUAKE



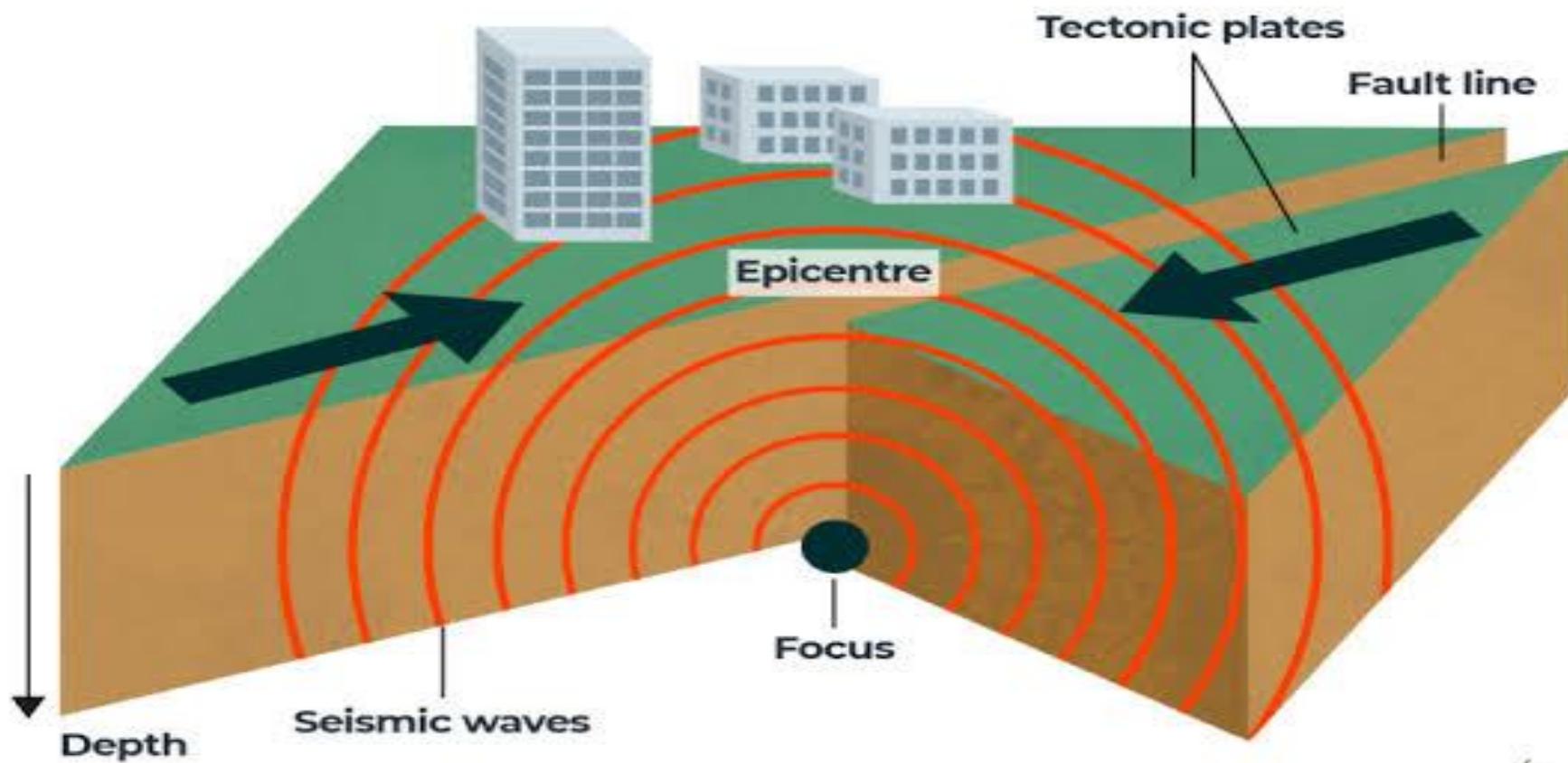
internet geography



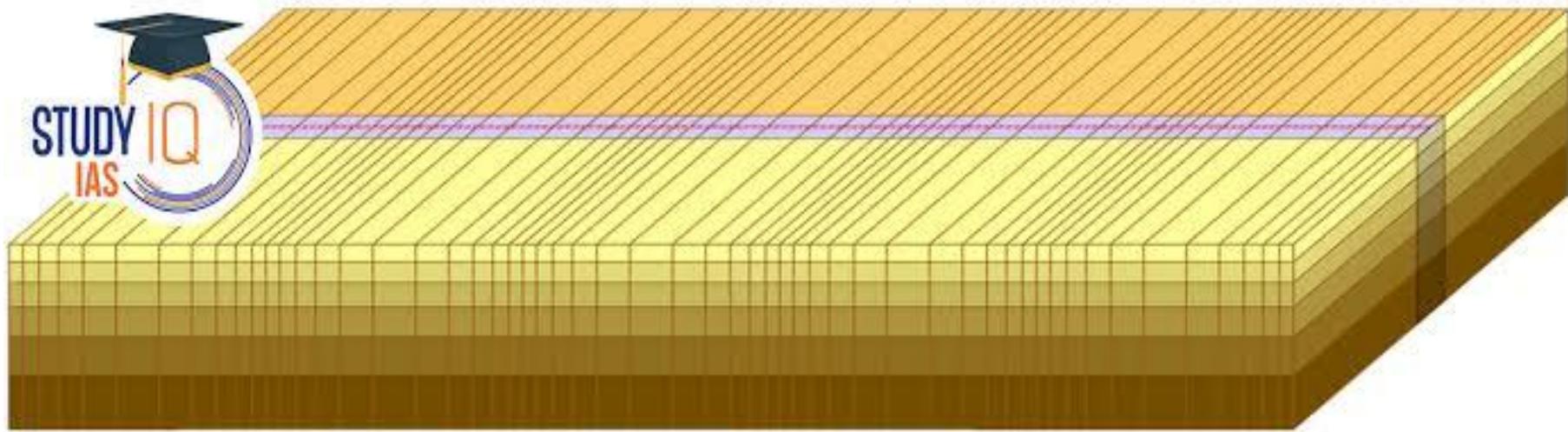
## EARTHQUAKE

# How do earthquakes happen?

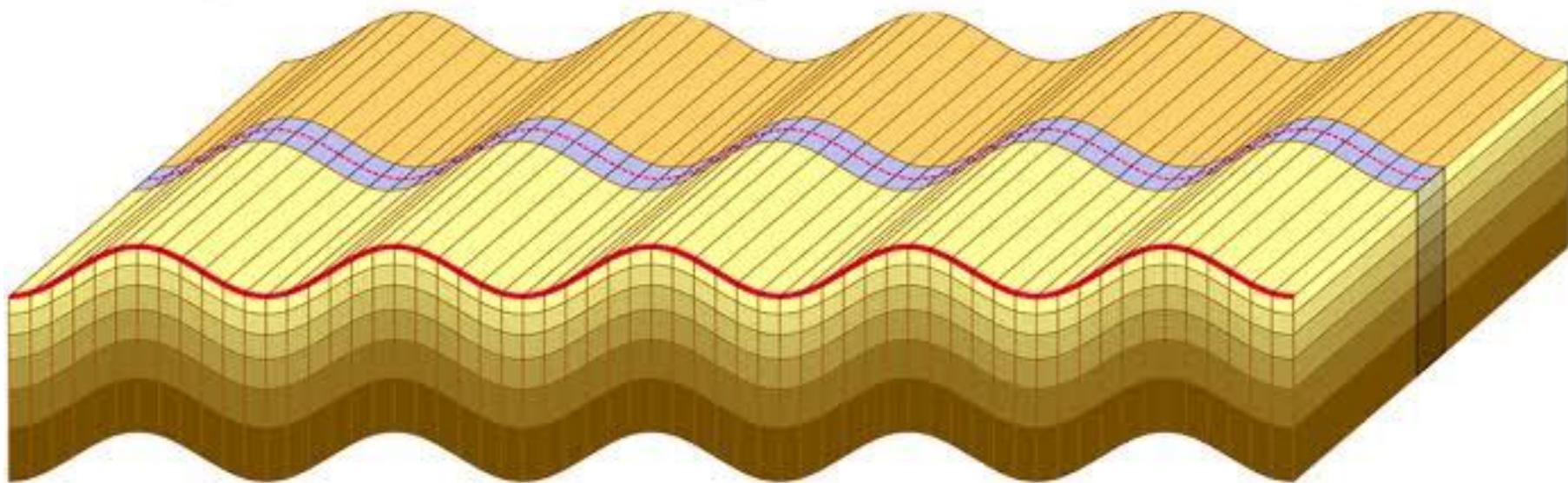
Earthquakes happen when the Earth's tectonic plates move against each other, along a fault line. Energy – seismic waves – radiates outwards from the point of this movement below the Earth's surface, called the 'focus'. The 'epicentre' is the point above the focus on the surface of the Earth.



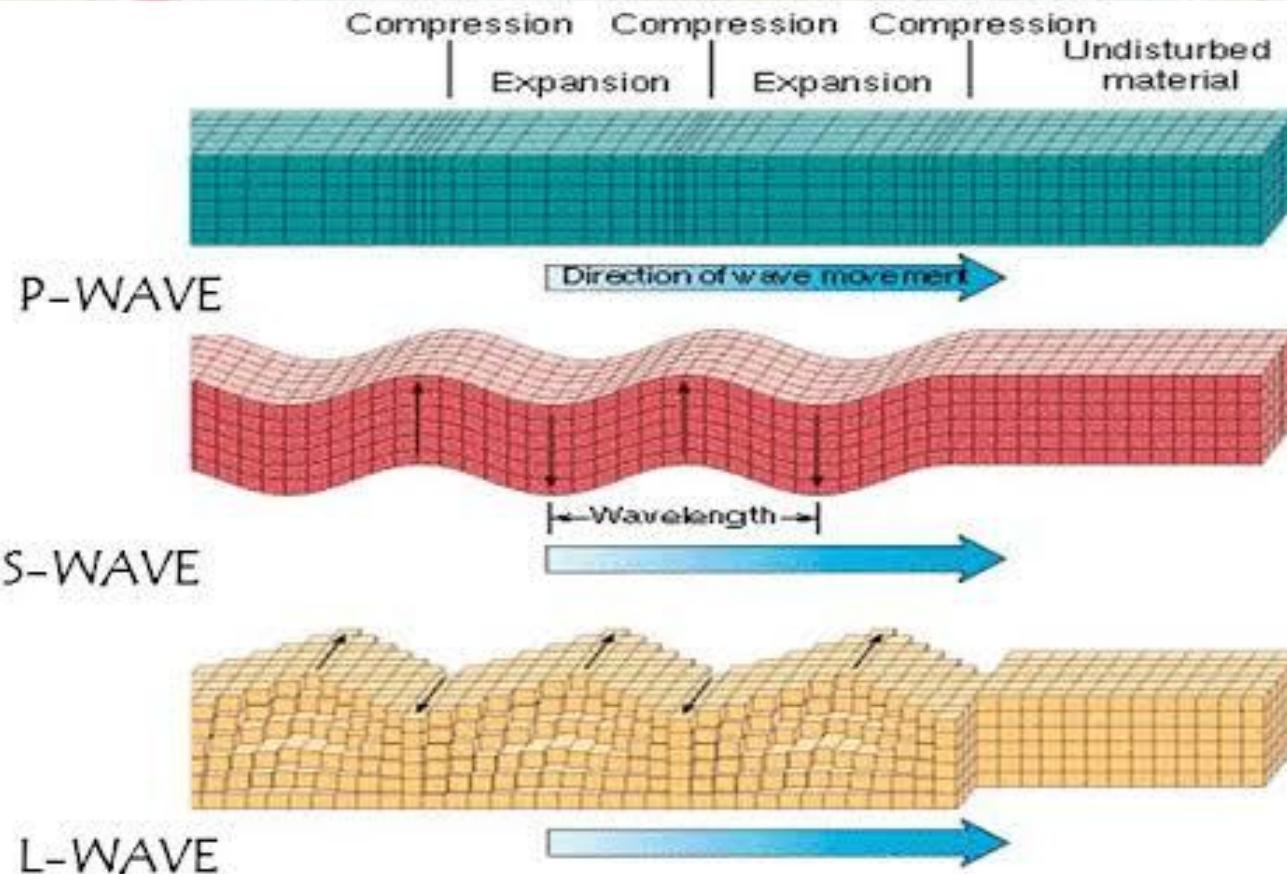
Source: United States Geological Survey



# SEISMIC WAVES



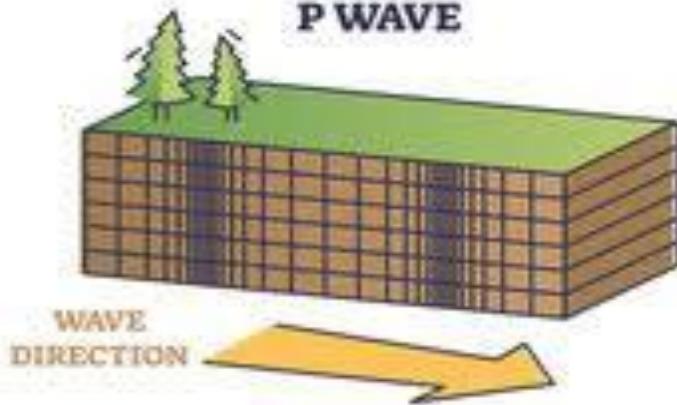
# 3 Types of Waves



# **TYPES OF SEISMIC WAVES**

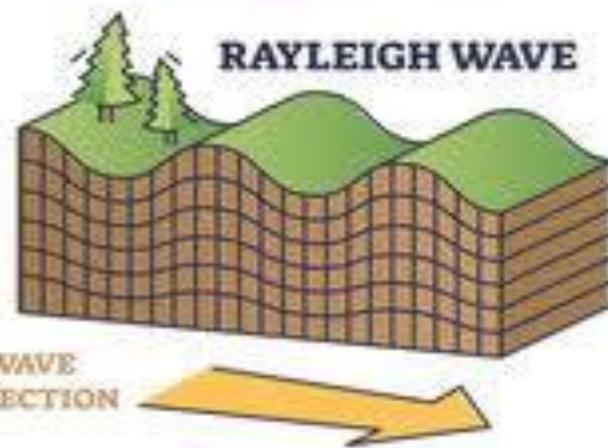
## **BODY WAVES**

**P WAVE**

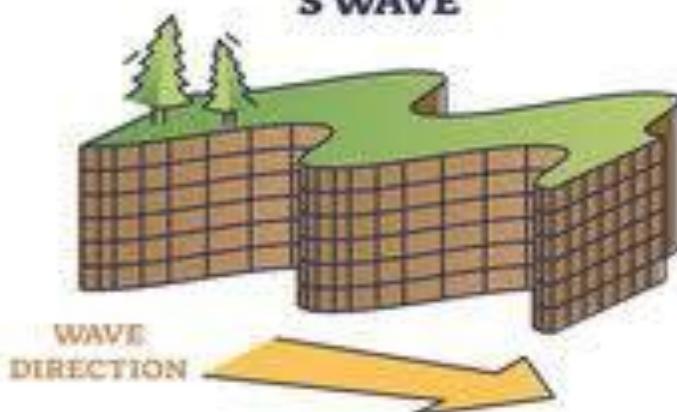


## **SURFACE WAVES**

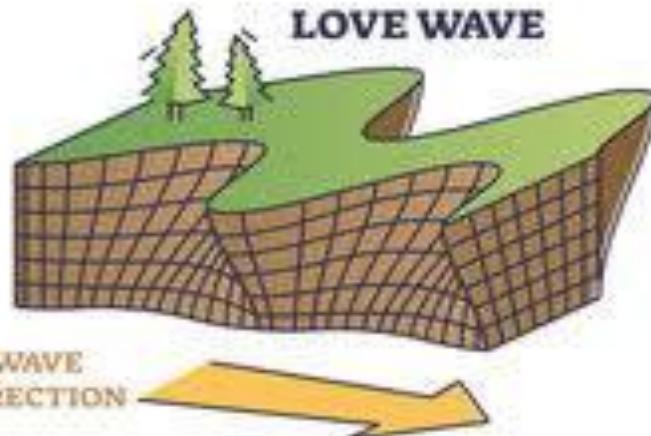
**RAYLEIGH WAVE**

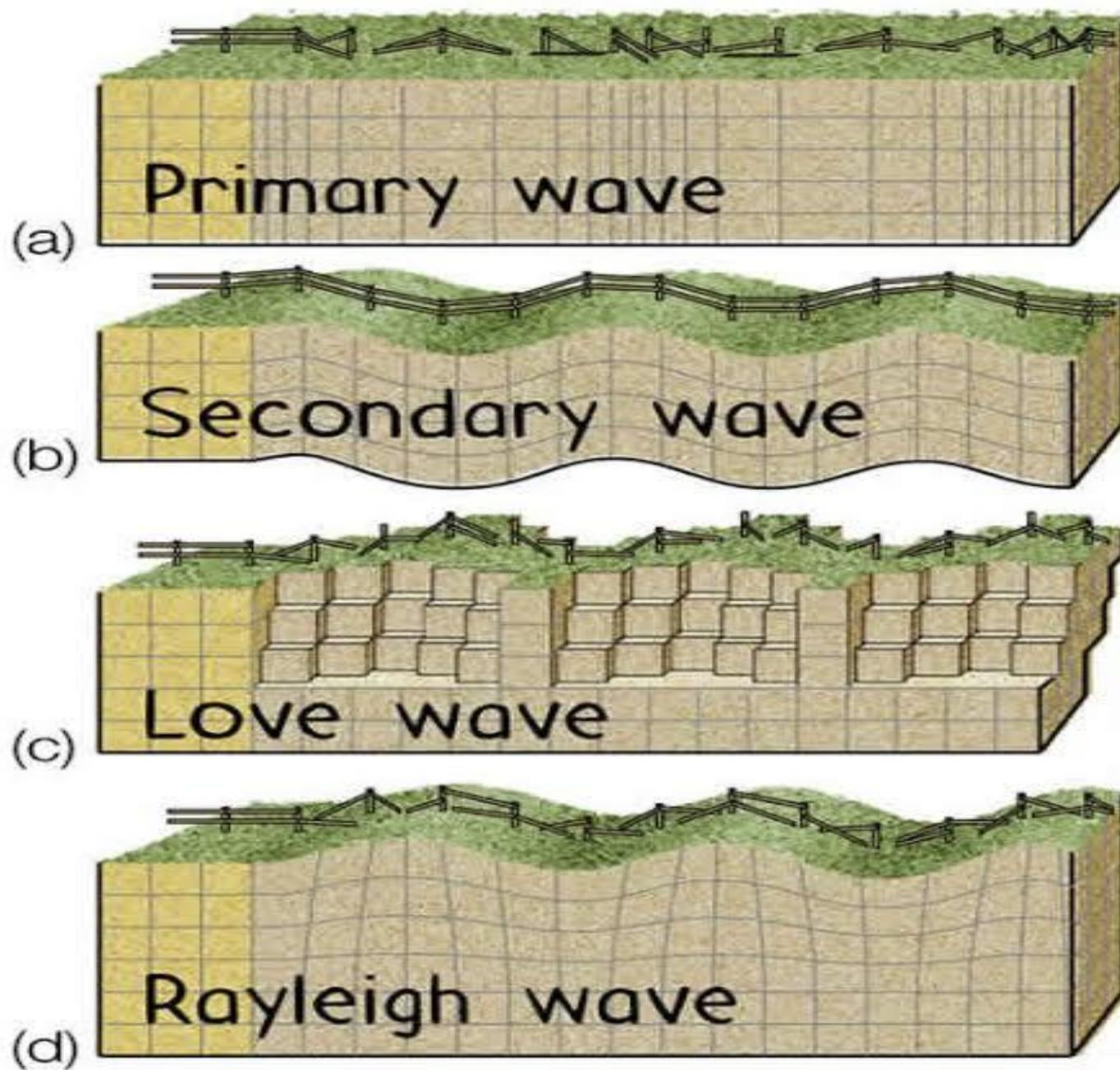


**S WAVE**



**LOVE WAVE**





# Comparing Seismic Waves

## Primary (P) Wave

- travels through liquids and solids
- pushes and pulls materials as they move through Earth
- travel about 8 km per second
- cause the first movement you feel in an earthquake

## Both

- originate from same focus
- begin at same time
- can be felt at Earth's surface

## Secondary (S) Wave

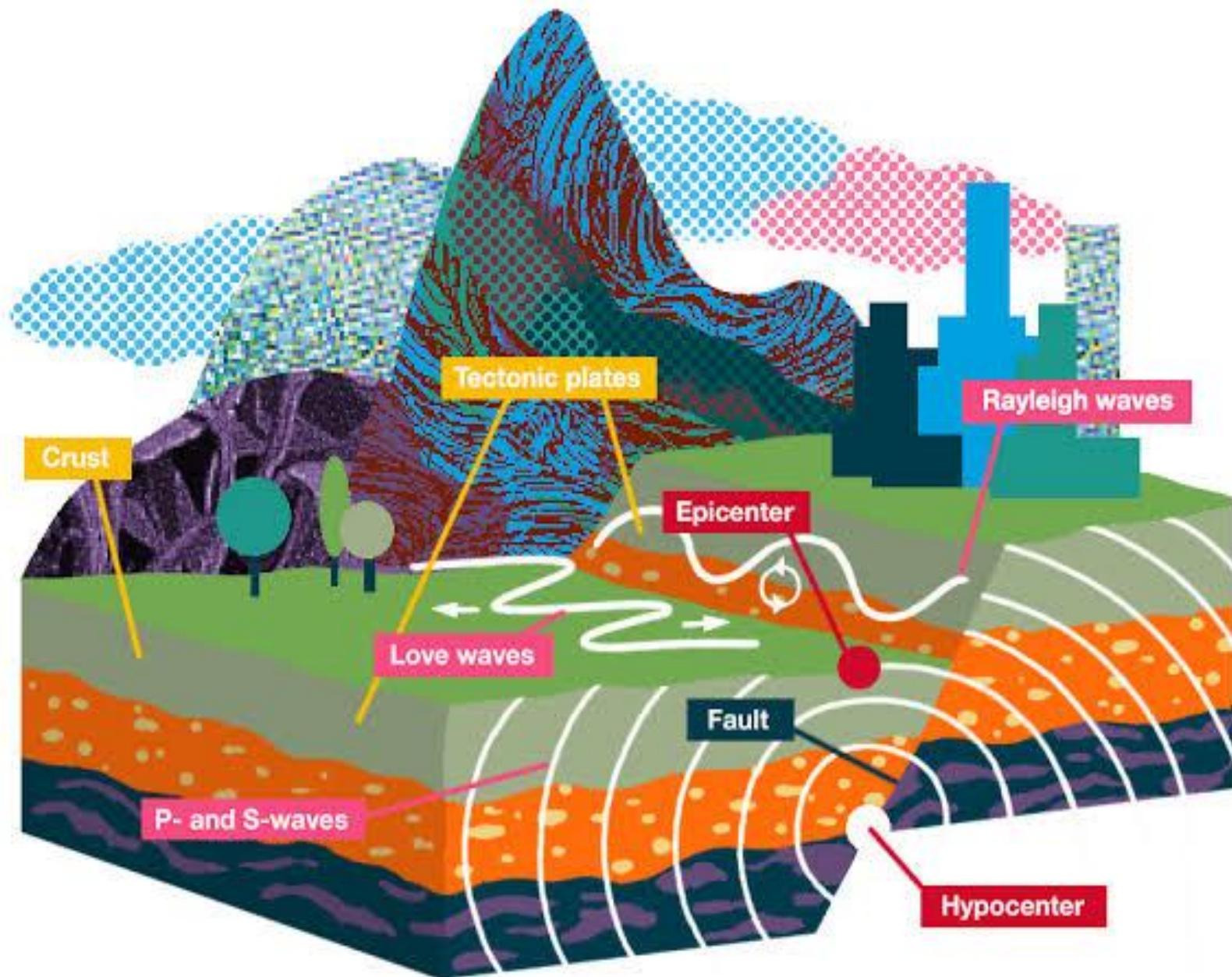
- travels through solids only
- makes the rocks vibrate up, down, or sideways
- travel at about 4.5 km per second
- usually cause more building damage

**Figure 6**

The two types of seismic waves that are produced by an earthquake cause different effects.

# Comparing Seismic Waves

Primary Waves (P)	Secondary Waves (S)	Long or Surface Waves (L)
<ul style="list-style-type: none"><li>•Arrives first</li><li>•Moves faster through more rigid material</li><li>•Moves the ground together and apart along the direction of waves.</li></ul>	<ul style="list-style-type: none"><li>•Arrive seconds</li><li>•About 1.7 times slower than the Primary waves</li><li>•Moves faster through more rigid material</li><li>•Moves the ground at right angles to the direction in which the waves are traveling</li></ul>	<ul style="list-style-type: none"><li>•Arrives last</li><li>•Slowest of the three</li><li>•Travels over the earths surface</li><li>•Moves the ground like the ocean waves</li><li>•Can cause great damages when traveling through loose earth</li></ul>



# Eurasian Plate

*Alps Orogeny*

*Persia-  
Tibet-  
Burma  
Orogeny*

Aegean  
Plate

37

21

15

**African Plate**

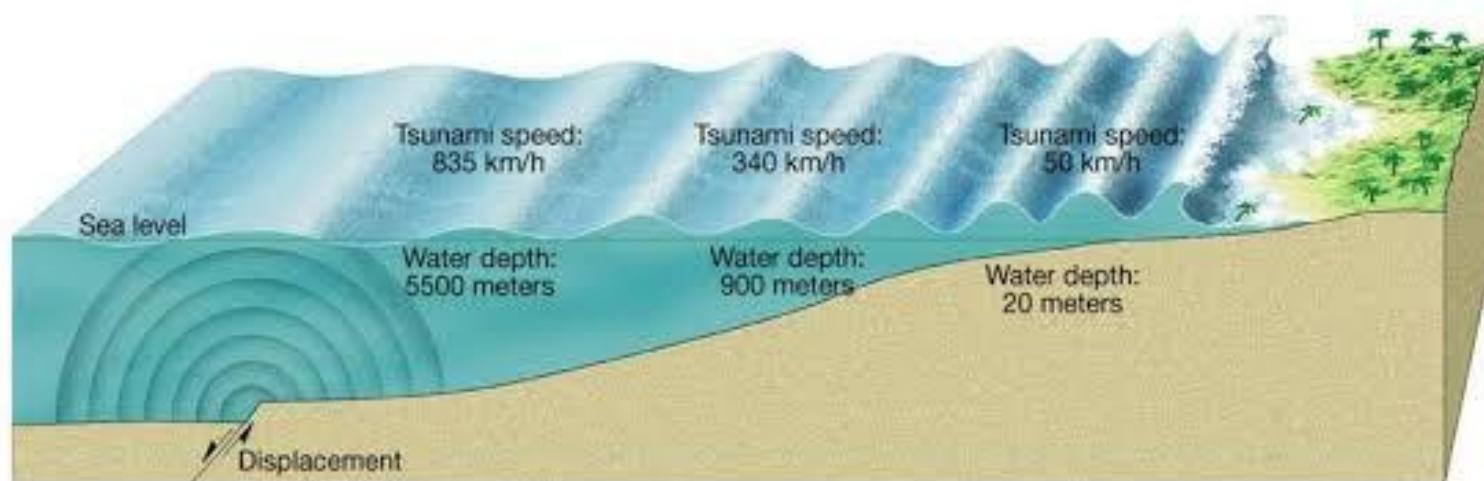
**Arabian  
Plate**

## 8.3 Destruction from Earthquakes

### Tsunamis

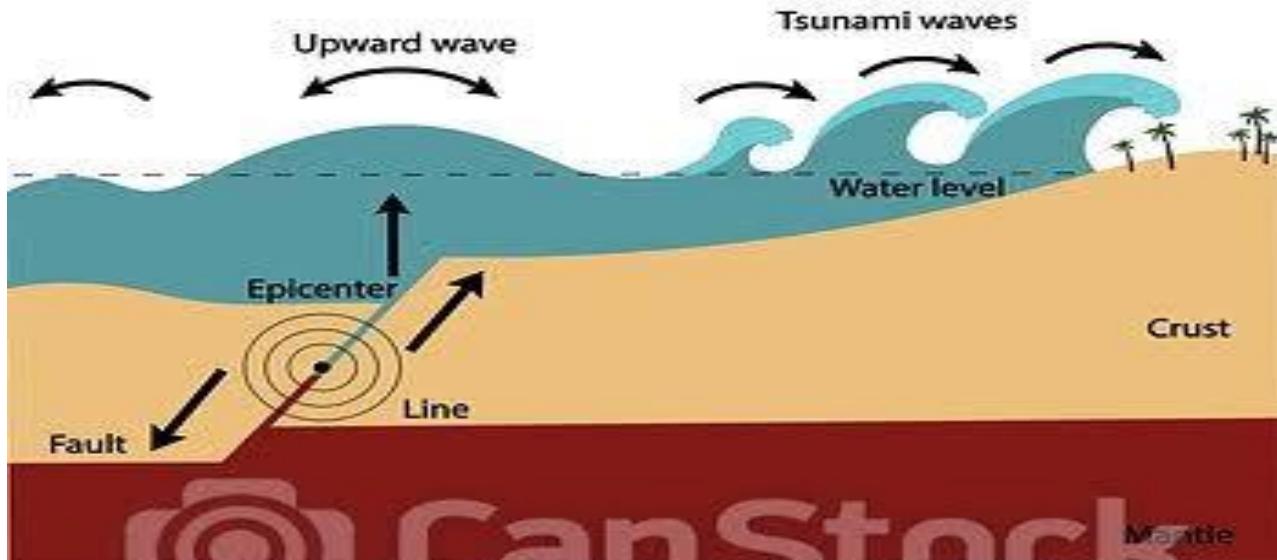
#### ◆ Cause of Tsunamis

- Vibration of a quake sets an underwater landslide into motion
- *Tsunami* is the Japanese word for “seismic sea wave.”

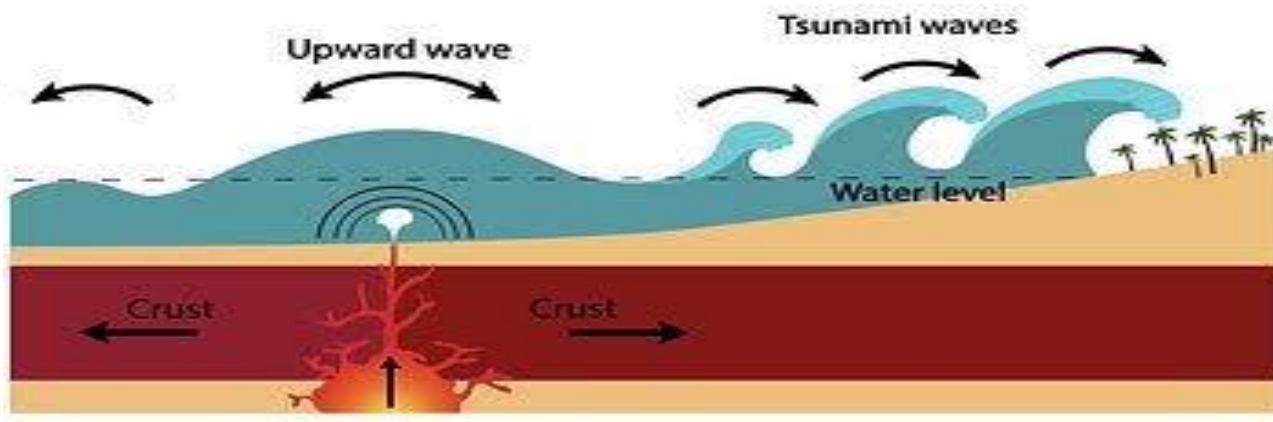




## Earthquake Tsunami



## Volcano Tsunami







# Causes of Earthquake Damage

- **Landslides and Mudflows:**

- Earthquakes can trigger different types of **mass movements**. These mass movements can often do more destruction and loss of life than the initial quake.
- Earthquakes often cause loose rock and soil on slopes to move. These movements are called **landslides**.



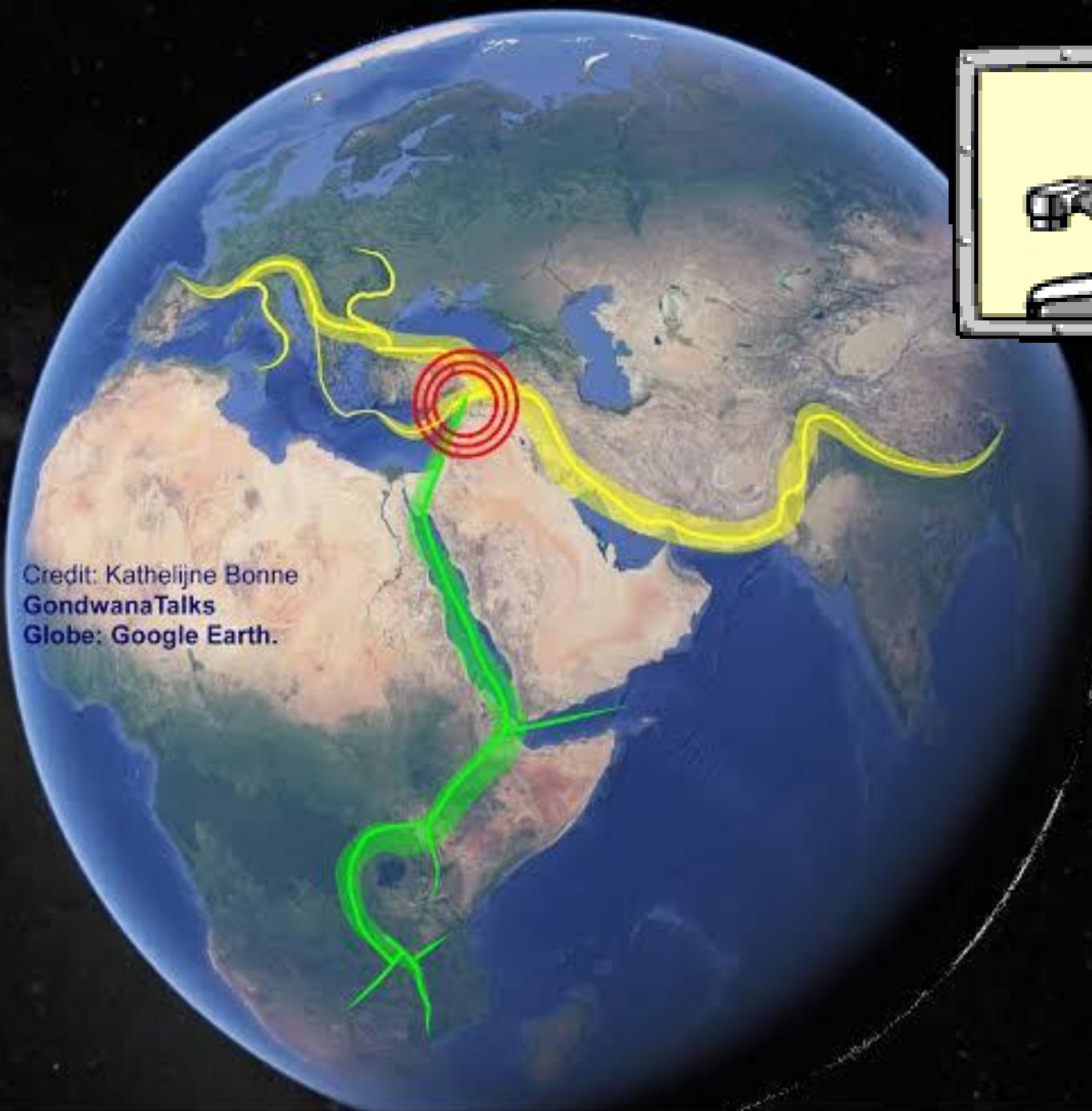
# Causes of Earthquake Damage

- An earthquake as powerful as the 1964 earthquake in Alaska can cause catastrophic damage.
- But even less powerful earthquakes still pose a severe danger.
- Earthquake related hazards include seismic shaking, liquefaction, landslides, mudflows and tsunamis.

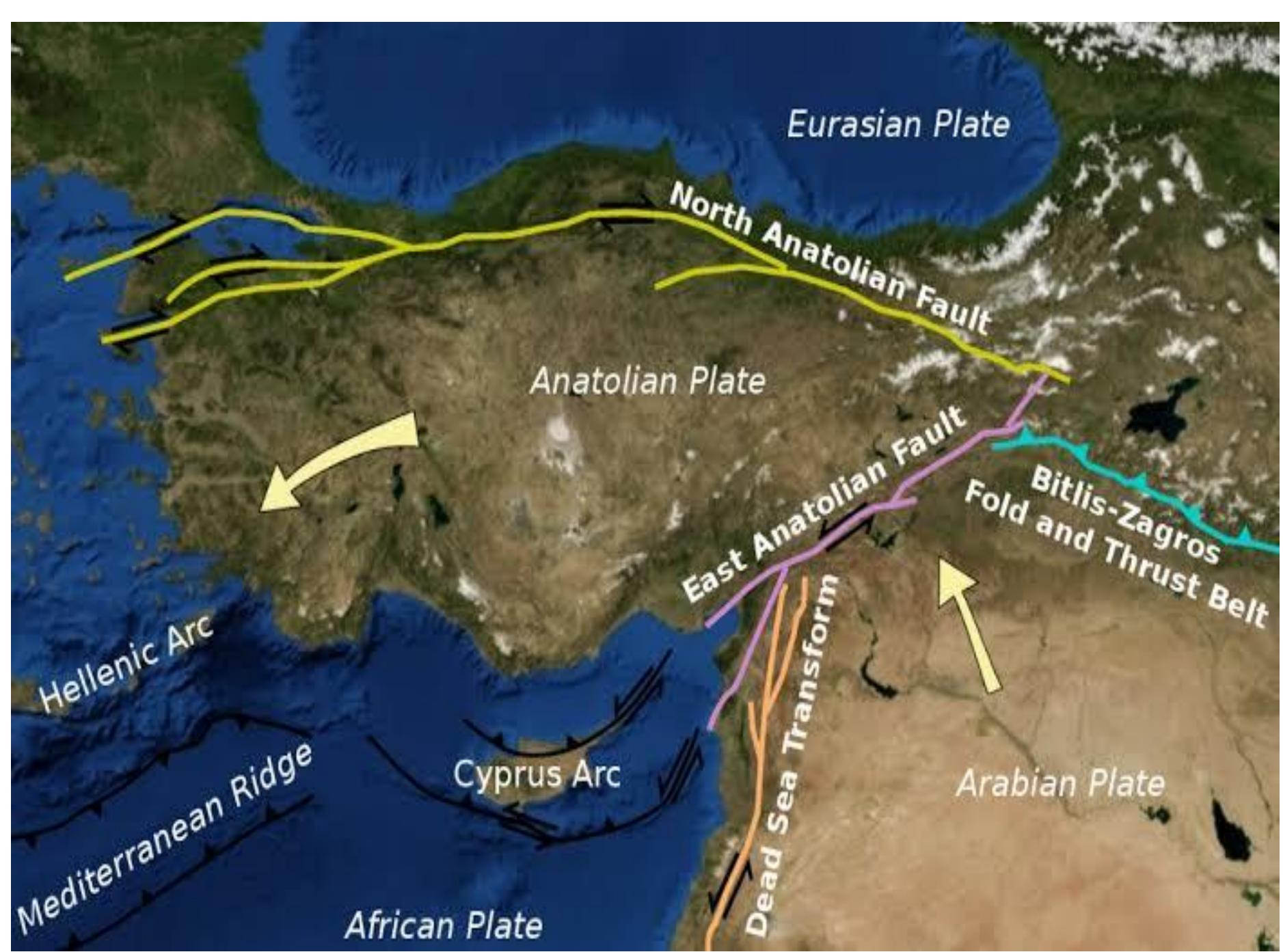




Credit: Kathelijne Bonne  
**GondwanaTalks**  
Globe: Google Earth.



# **EARTHQUAKE IN TURKEY & SYRIA 2023**



Latitude [N]

44°

40°

36°

32°

24°

Longitude [E]

Eurasian Plate

Black Sea

Greater Caucasus

Marmara Sea

North Anatolian F.

Anatolian Plate

NE Anatolian F.

Lesser Caucasus

KTJ

East Anatolian F.

Zagros

Bitlis

Fold-Thrust Belt

African Plate

Mediterranean Sea

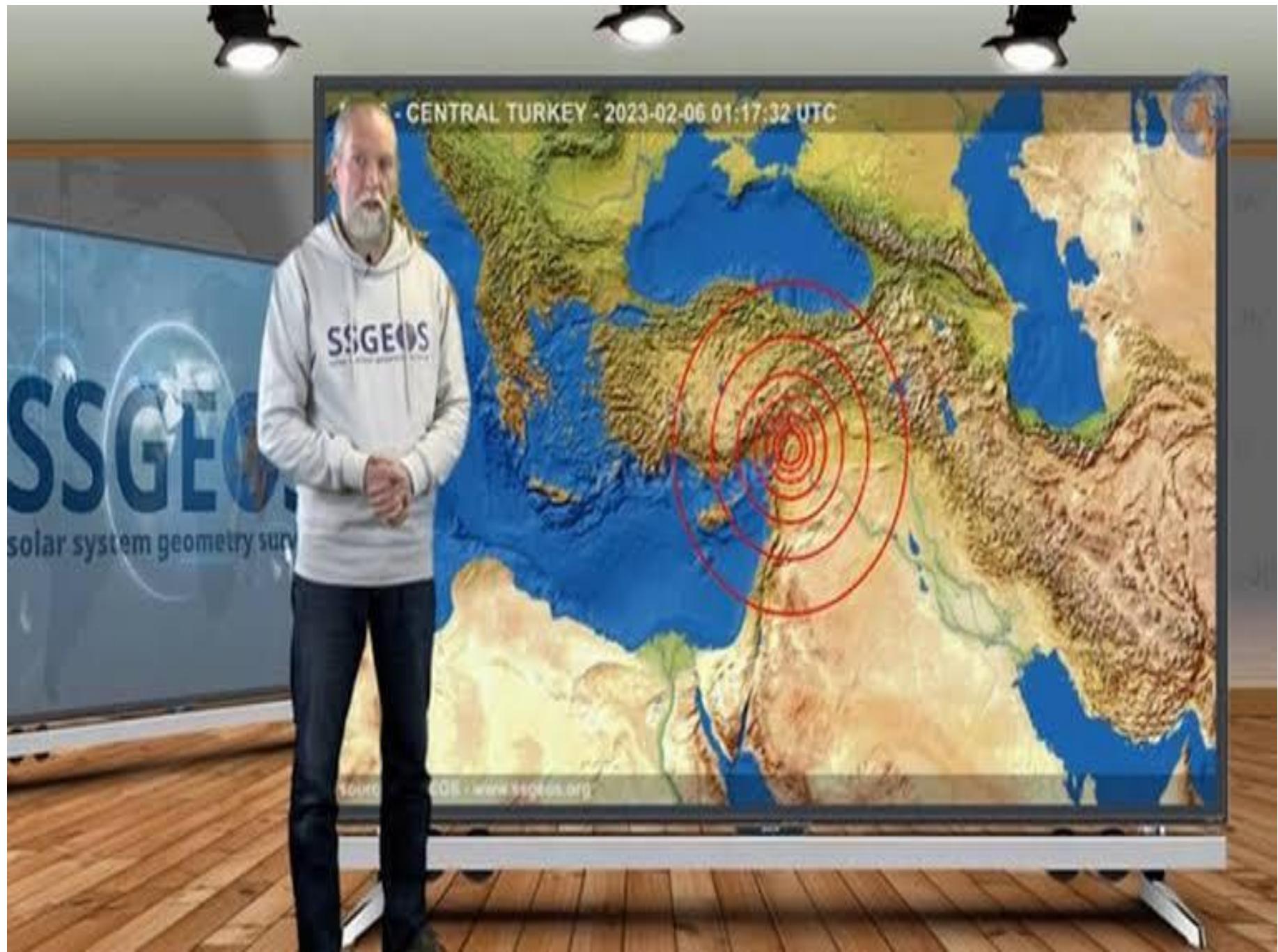
Arabian Plate

Hellenic Arc

Cyprian Arc

Florence Rise

Dead Sea F.



2023-02-06 - CENTRAL TURKEY - 2023-02-06 01:17:32 UTC

SSGEOS  
solar system geometry sun

































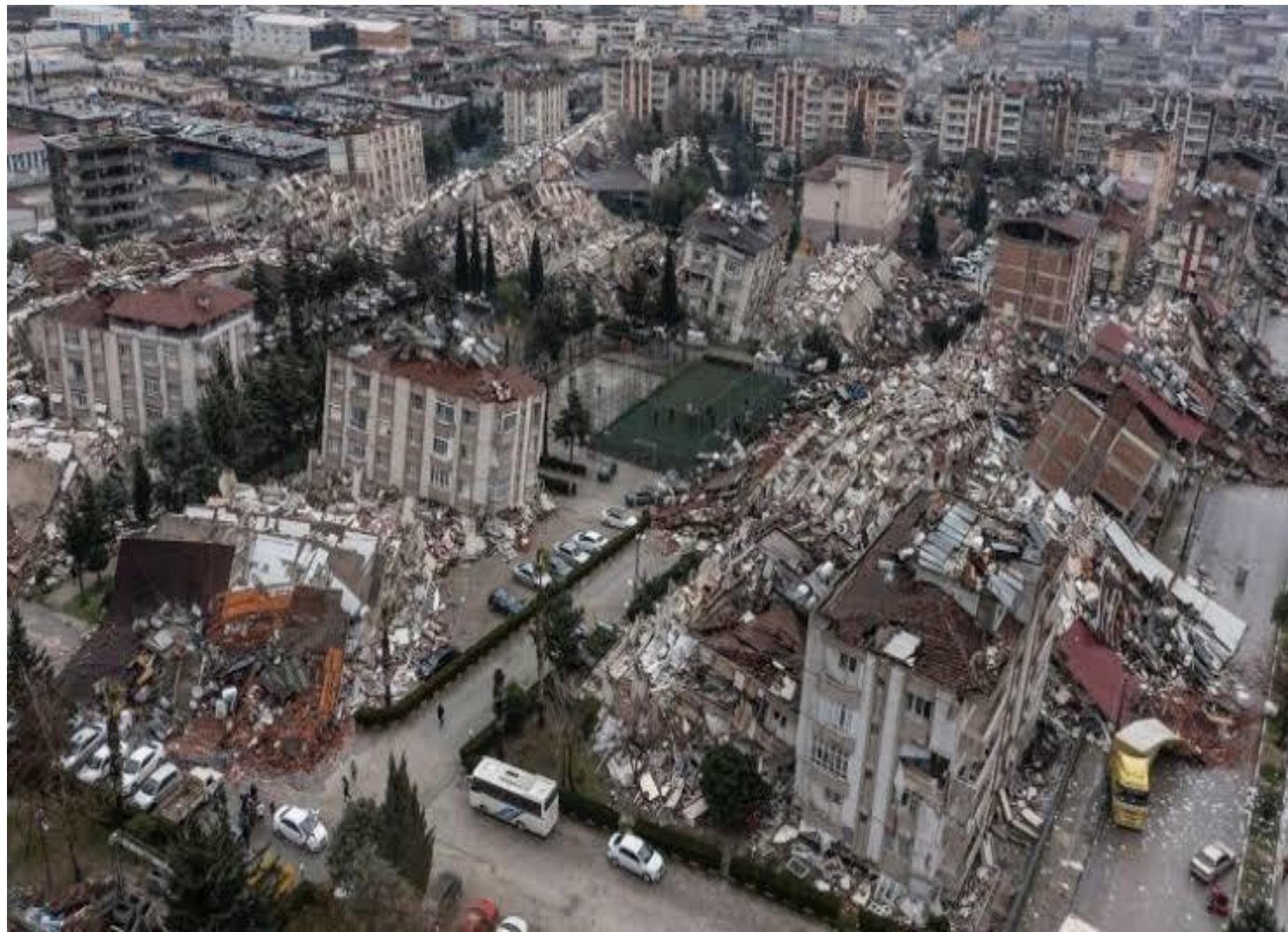


























# TURKEY & SYRIA EARTHQUAKE HUNDREDS DEAD, MANY FEARED TRAPPED











4 News

# Over 20,000 dead after Syria-Turkey earthquake



