



Creation

The Word of God  
is like a **LION.**

You don't have  
to defend a lion.

All you have to  
do is **LET THE  
LION LOOSE**

and the lion will  
defend itself.

 *Charles Spurgeon*

# Creation

## ► Why


- [Gen 1:28 KJV] And God blessed them, and God said unto them, Be fruitful, and multiply, and replenish the earth, and **subdue it**: and **have dominion** over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth.

## ► How

- “This is what the Bible Says and we believe it”
- [Rom 1:20 KJV] For the invisible things of him from the creation of the world are clearly seen, being understood by the things that are made, [even] his eternal power and Godhead; so that they are without excuse:



# Schedule

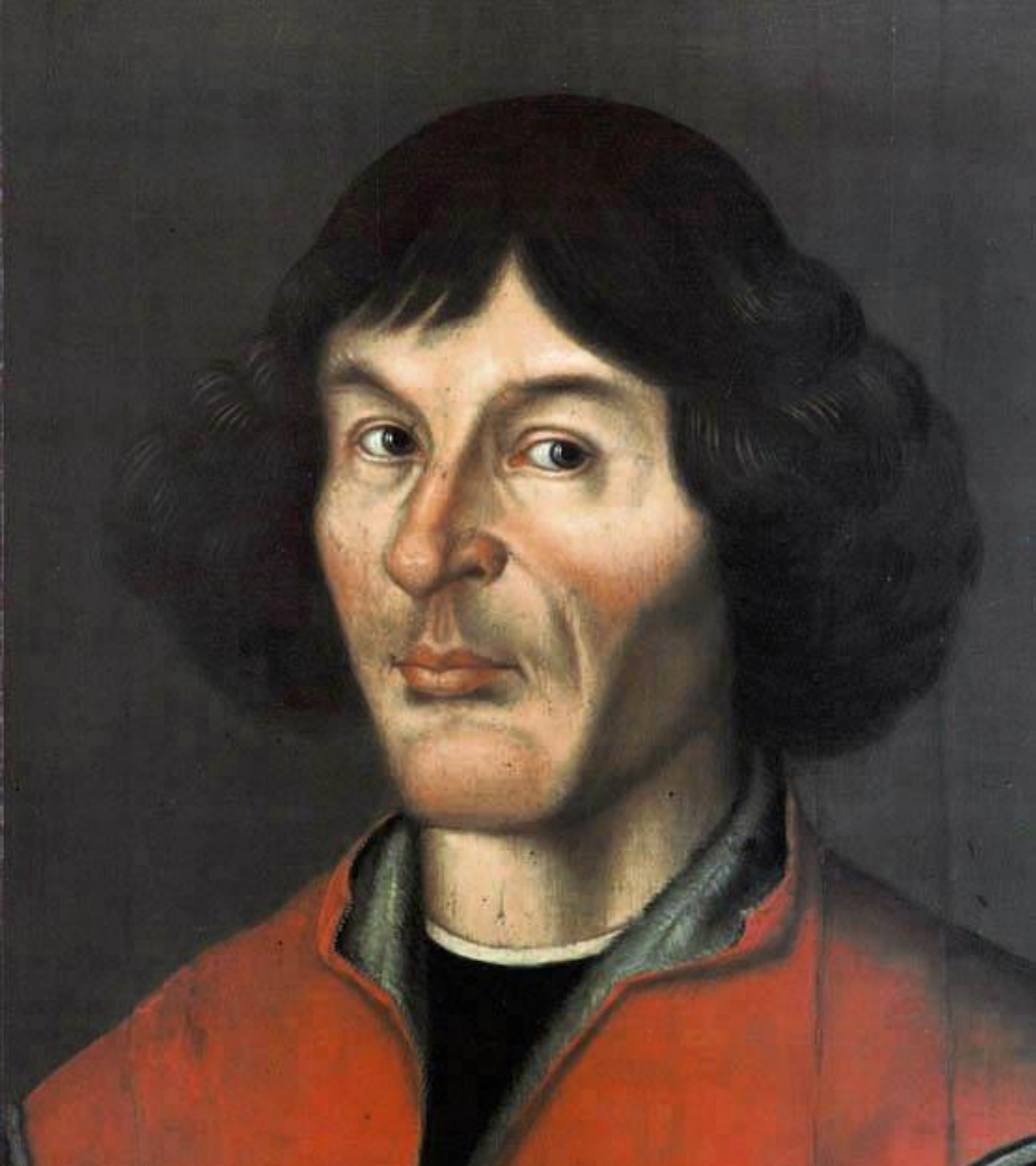
- Session 1: The Heavens and the Earth
  - Session 2: Space and Time
  - Session 3: Life
  - Session 4: **??**
- 



[*In the*] Beginning GOD created the  
Heaven and the Earth

- Copernican Principle
- Age of the Earth





# Nicolaus Copernicus

- 19 February 1473 – 24 May 1543
- Discovered that the solar system is Heliocentric and not Geocentric
- Aristarchus of Samos (ca. 310 BCE – ca. 230 BCE)
- *[It is my] loving duty to seek the truth in all things, in so far as God has granted that to human reason.*



# Copernican Principle

- ▶ Earth is one of many planets that orbit the Sun
- ▶ The Earth is one among millions of inhabitable planets (Principle of Mediocrity)
- ▶ Carl Sagan said “Our planet is a lonely speck in the great enveloping cosmic Dark”

# Principle of Mediocrity

- ▶ The Drake Equation

$$N = R_* \cdot f_p \cdot n_e \cdot f_l \cdot f_i \cdot f_c \cdot L$$

- ▶  $N$  = the number of civilizations in our galaxy with which communication might be possible (i.e. which are on our current past light cone);

and

- ▶  $R_*$  = the average rate of star formation in our galaxy
- ▶  $f_p$  = the fraction of those stars that have planets
- ▶  $n_e$  = the average number of planets that can potentially support life per star that has planets
- ▶  $f_l$  = the fraction of planets that could support life that actually develop life at some point
- ▶  $f_i$  = the fraction of planets with life that actually go on to develop intelligent life (civilizations)
- ▶  $f_c$  = the fraction of civilizations that develop a technology that releases detectable signs of their existence into space
- ▶  $L$  = the length of time for which such civilizations release detectable signals into space

# Principle Of Mediocrity

$$N = R_* \cdot f_p \cdot n_e \cdot f_l \cdot f_i \cdot f_c \cdot L$$

- ▶ Current Estimate for N:
  - ▶ 15,600,000 intelligent civilizations
- ▶ How many stars are there?
  - ▶ 100,000,000,000,000,000,000,000,000,000 (1 followed by 29 zeros)
  - ▶ 100 Octillion
- ▶ 1 chance in 50,000,000,000,000,000,000,000,000, (5 followed by 23 zeros)



# Principle Of Mediocrity

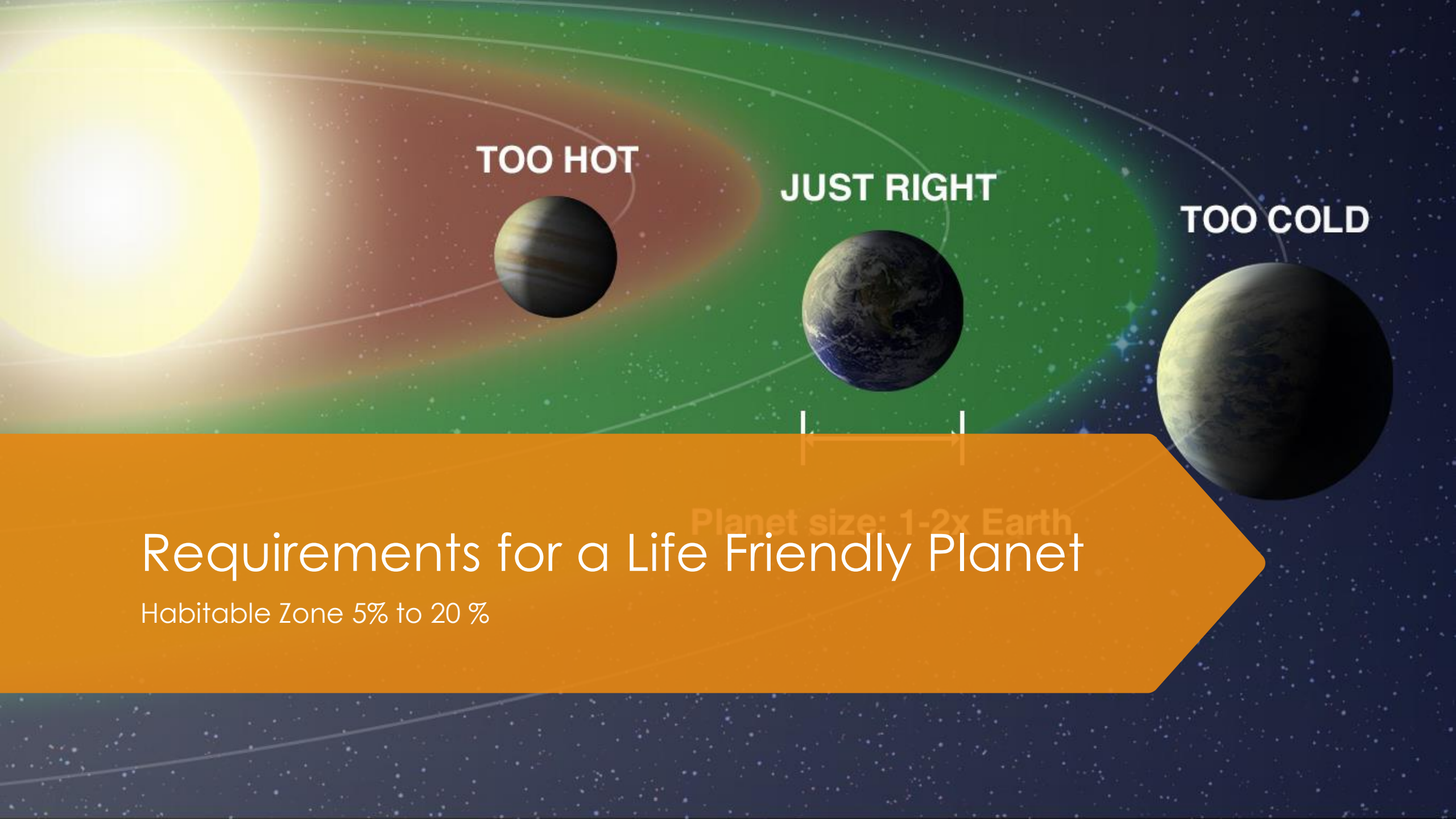




# Principle Of Mediocrity

$$N = R_* \cdot f_p \cdot n_e \cdot f_l \cdot f_i \cdot f_c \cdot L$$

- ▶ Ne: Number of “Life Friendly” Planets
  - ▶ Currently estimated to be 1 to 5 / system



TOO HOT

JUST RIGHT

TOO COLD

Planet size: 1-2x Earth

# Requirements for a Life Friendly Planet

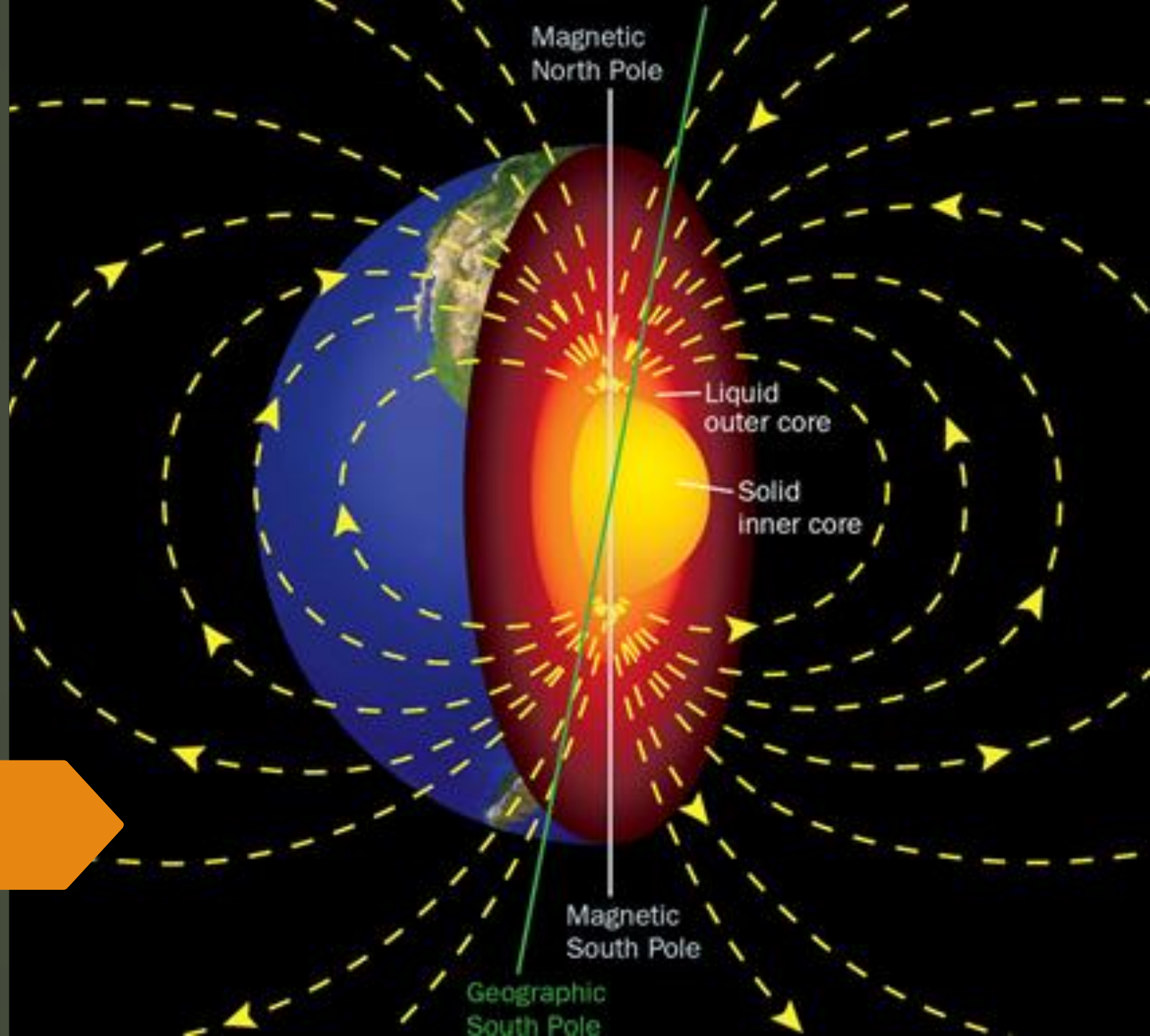
Habitable Zone 5% to 20 %



# Earth's Magnetic Field

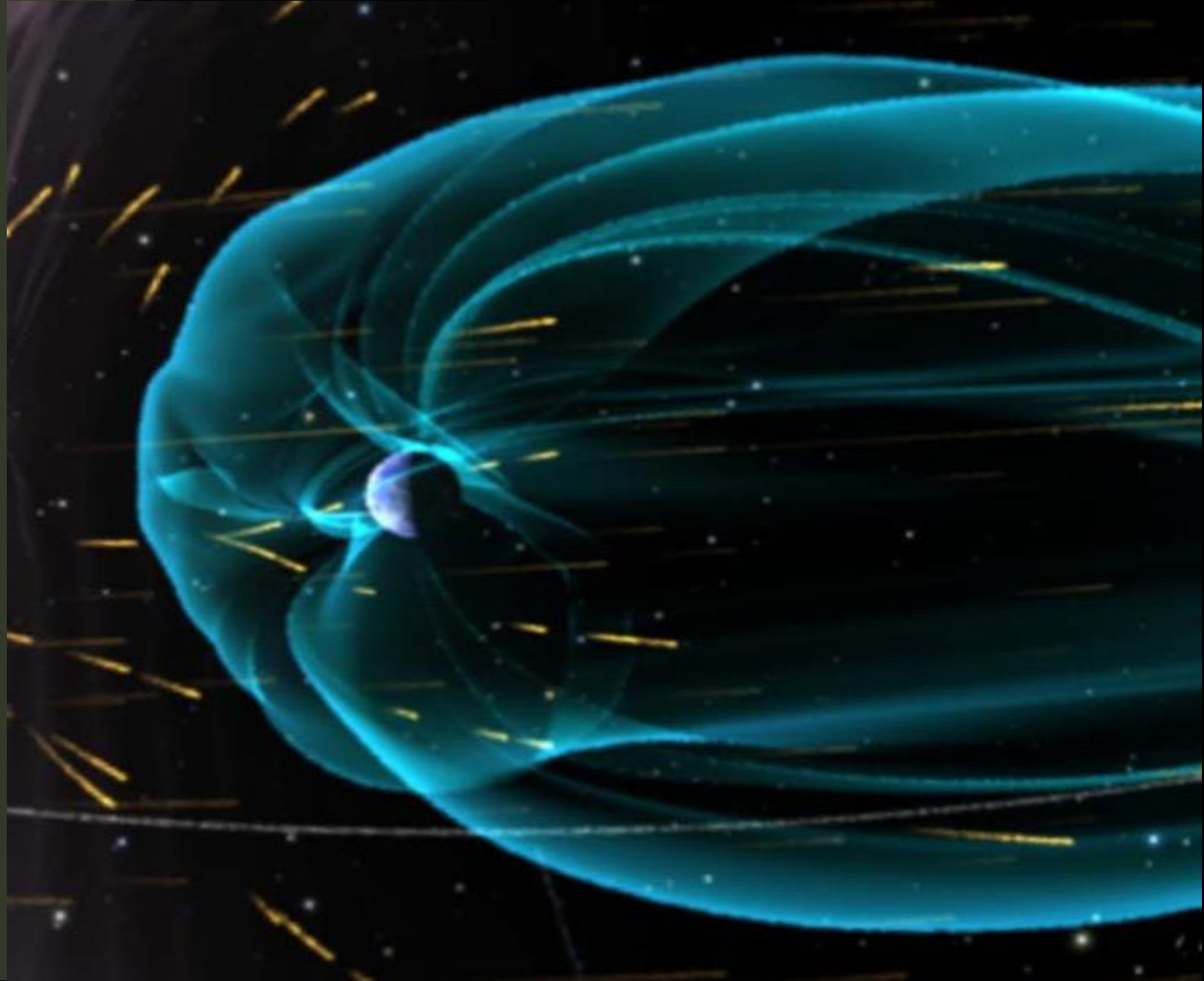
Field Generator

Crust thickness Between 4 to 30 miles

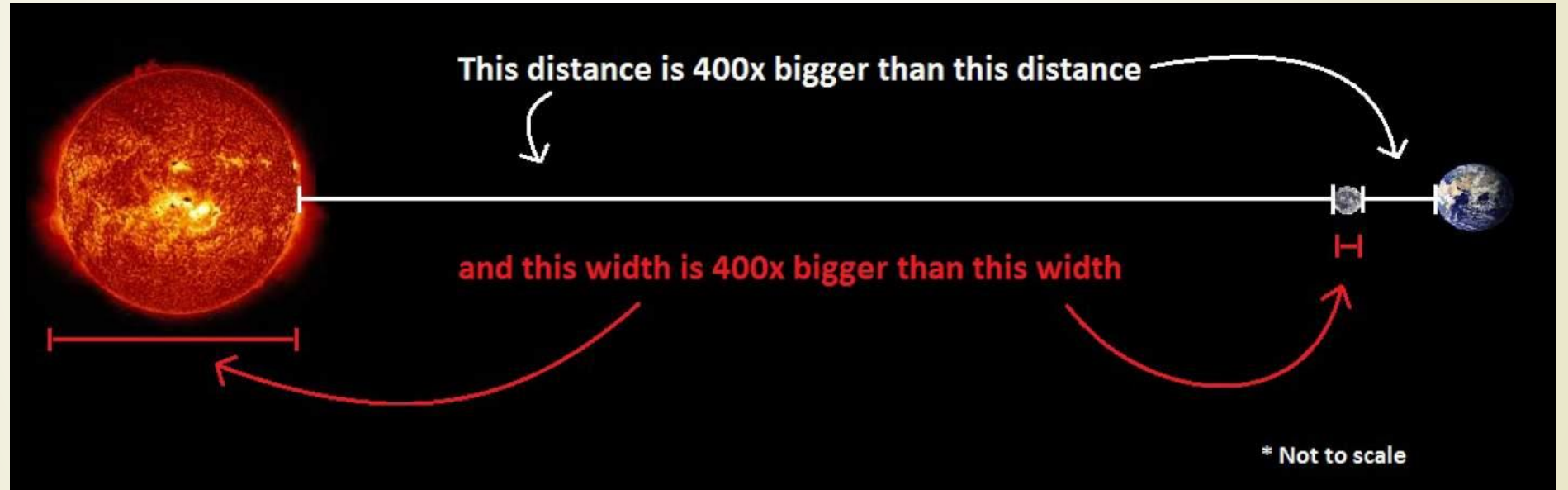




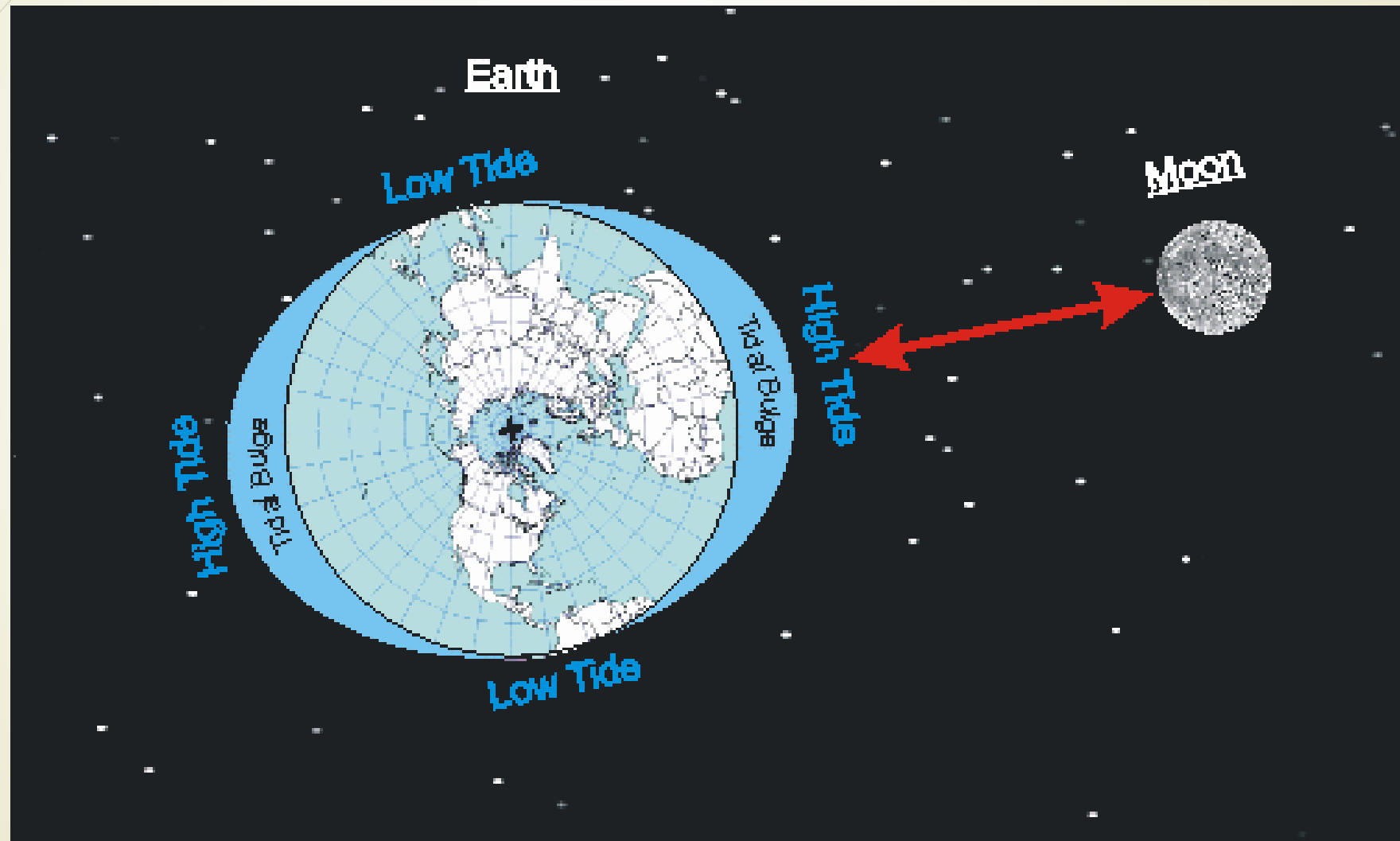
# Earth's Magnetic Field and Solar Wind



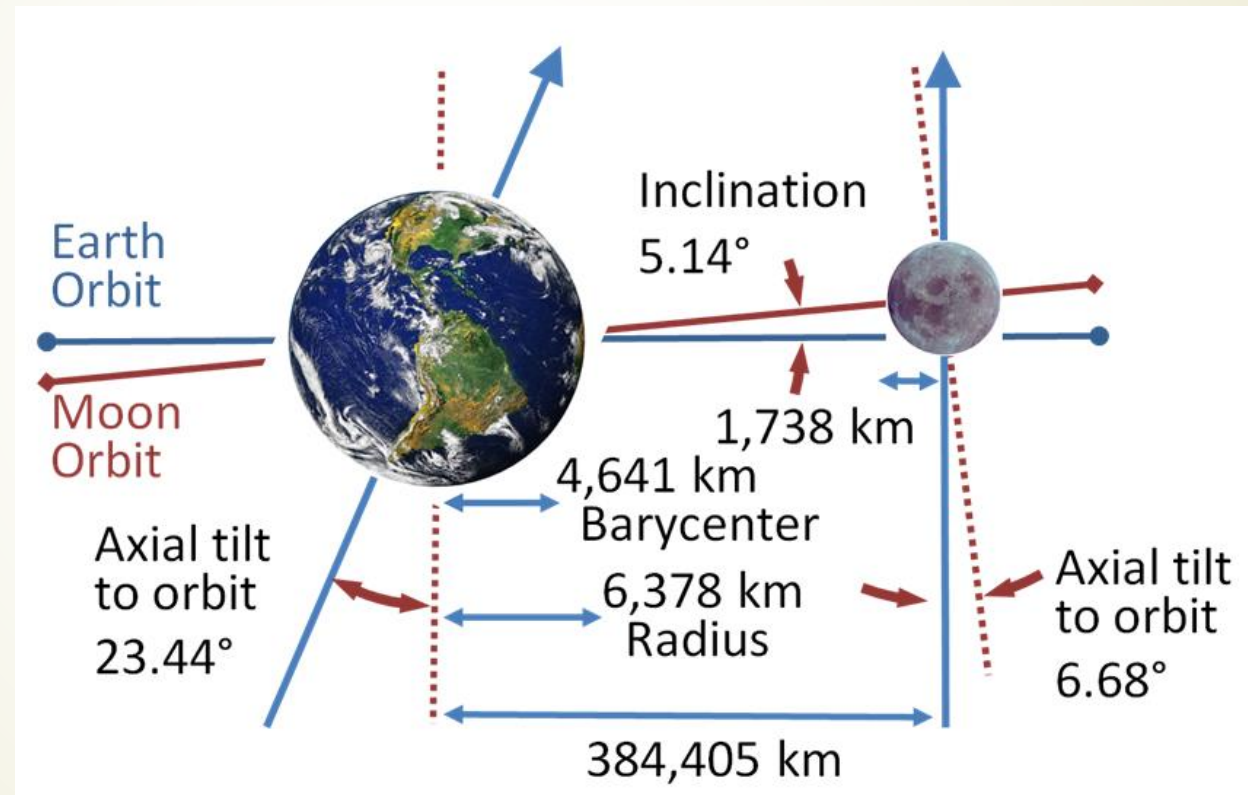
# The Moon



# The Moon and Tides



# The Moon and Axial Tilt







# Age of the Earth

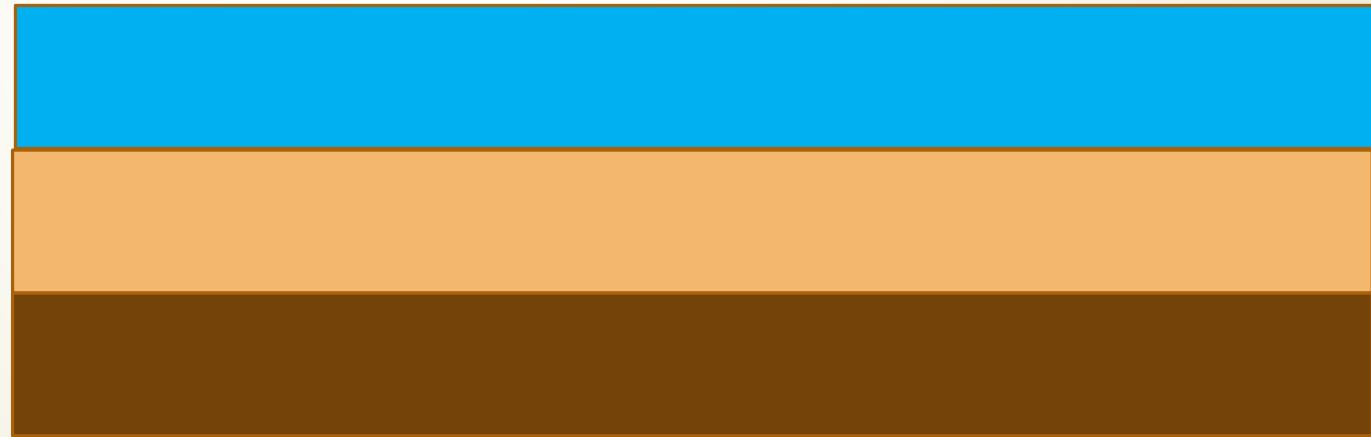




# Formation Of the Grand Canyon

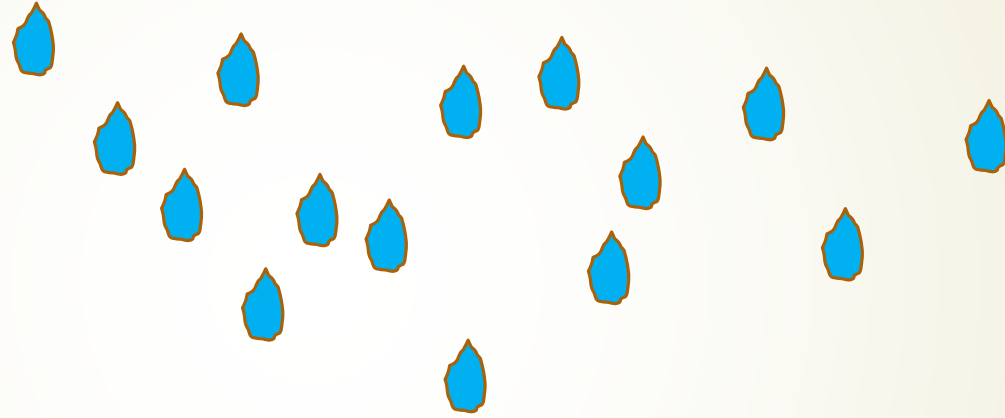


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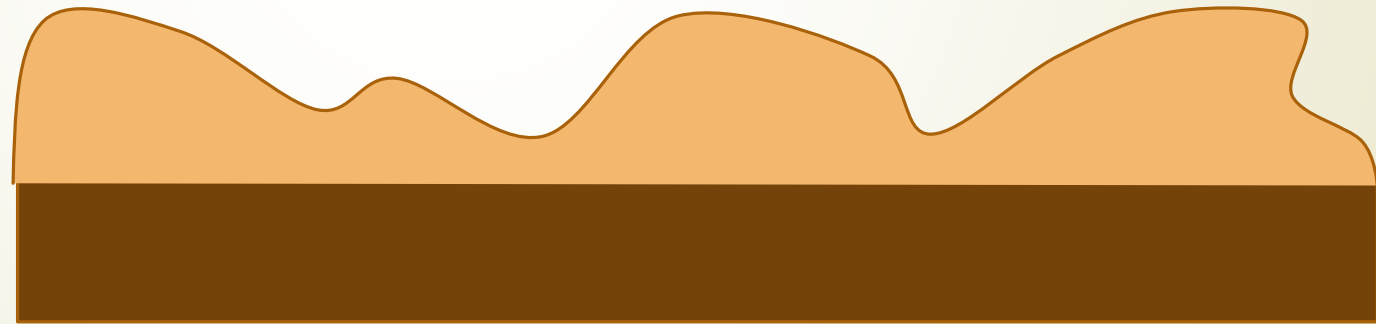




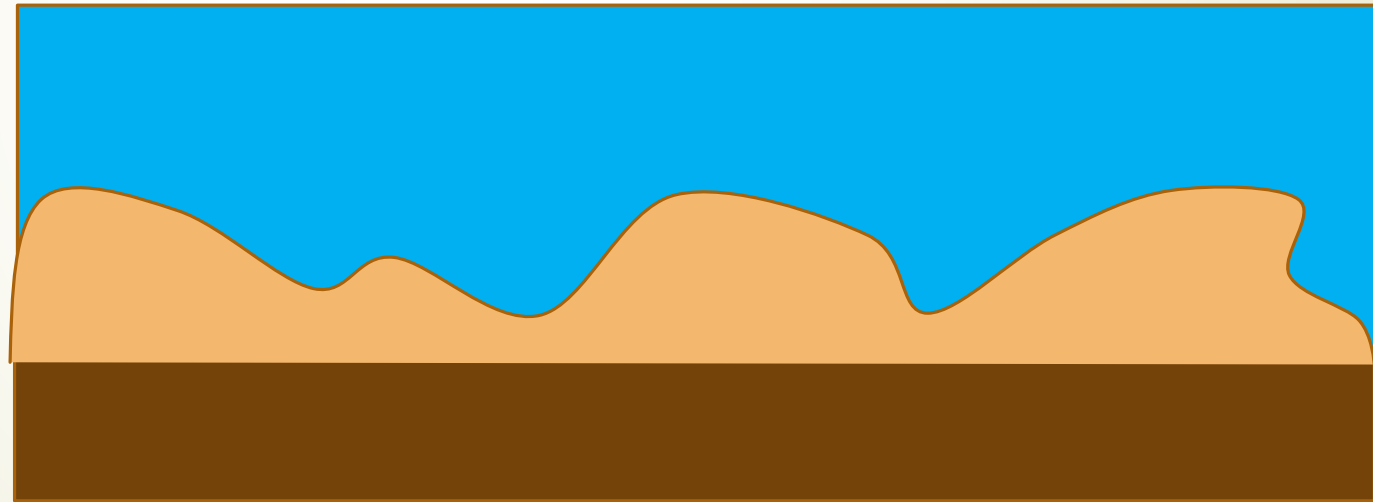
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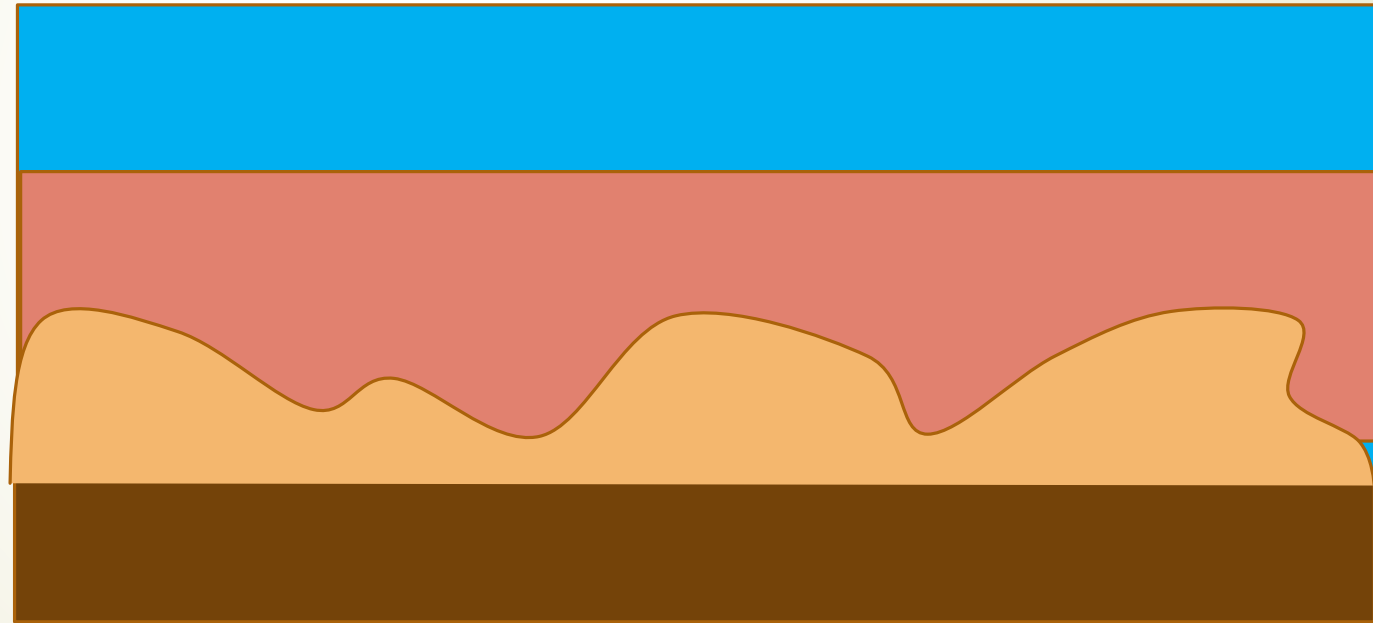
# Formation Of the Grand Canyon



# Formation Of the Grand Canyon

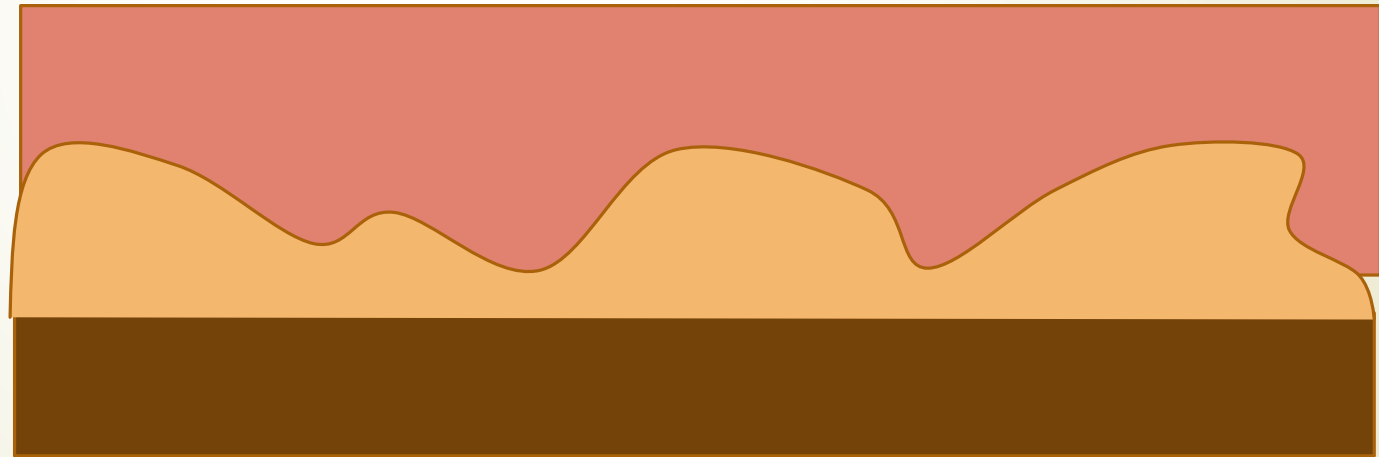


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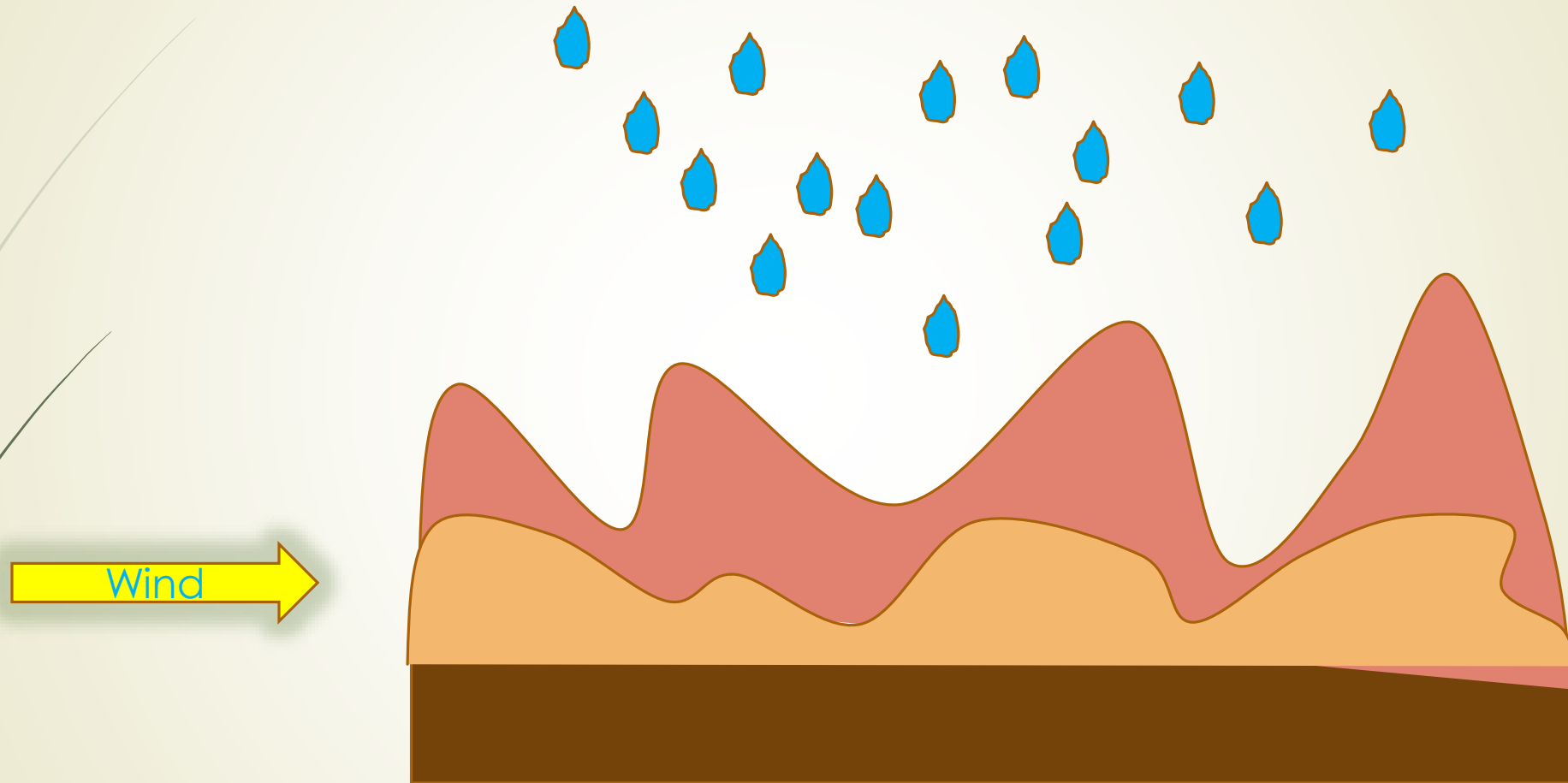




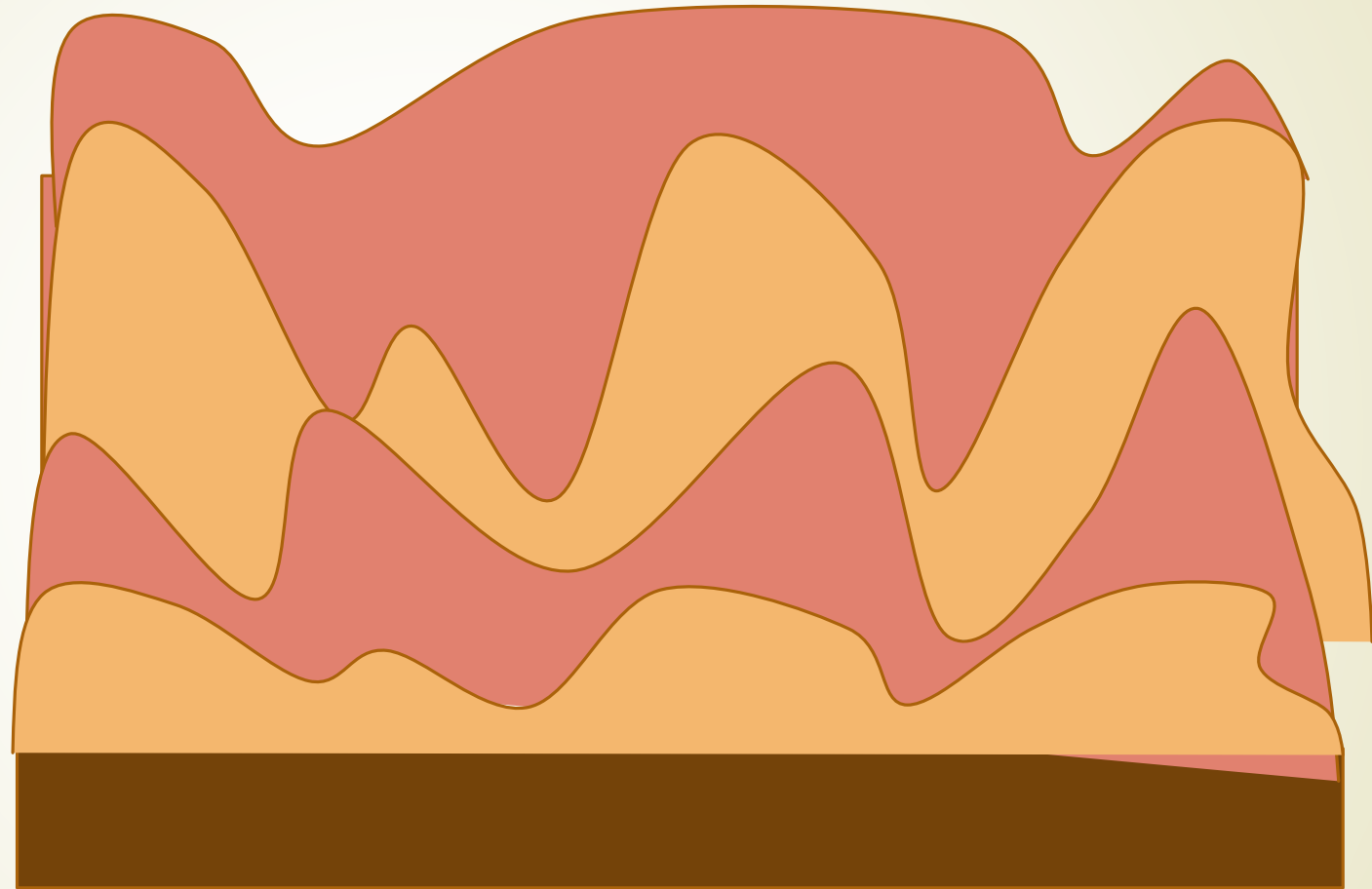
# Formation Of the Grand Canyon



# Formation Of the Grand Canyon



# Formation Of the Grand Canyon



Wut?







# Formation Of the Grand Canyon





# Formation Of the Grand Canyon





# Formation Of the Grand Canyon





# Formation Of the Grand Canyon





[Gen 7:12 KJV] And the rain was upon the earth forty days and forty nights.

[Gen 7:19 KJV] And the waters prevailed exceedingly upon the earth; and all the high hills, that [were] under the whole heaven, were covered.

[Gen 7:20 KJV] Fifteen cubits upward did the waters prevail; and the mountains were covered.

[Gen 7:21 KJV] And all flesh died that moved upon the earth, both of fowl, and of cattle, and of beast, and of every creeping thing that creepeth upon the earth, and every man:

[Gen 7:22 KJV] All in whose nostrils [was] the breath of life, of all that [was] in the dry [land], died.

[Gen 7:23 KJV] And every living substance was destroyed which was upon the face of the ground, both man, and cattle, and the creeping things, and the fowl of the heaven; and they were destroyed from the earth: and Noah only remained [alive], and they that [were] with him in the ark.

[Gen 7:24 KJV] And the waters prevailed upon the earth an hundred and fifty days.



# Review


- ▶  $15,600,000 \times 1/8 \times 1/8 \times 3/8 \times 1/8 \times 1/8$   
 $\times 1/8 \times 1/8 \times 1/8 \times 1/8$ 
  - ▶ 1,428 Civilizations
- ▶ How many stars are there?
  - ▶ 100,000,000,000,000,000,000,000,000,000 (1 followed by 29 zeros)
  - ▶ 100 Octillion
- ▶ [*In the*] Beginning GOD created the Heaven and the Earth




# Review

- ▶ [Gen 7:12 KJV] And the rain was upon the earth forty days and forty nights.  
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# What does the Bible say about the Earth and the universe?

- ▶ [Job 26:7 NKJV] He stretches out the north over empty space; [He] hangs the earth on nothing.
  - ▶ [Job 38:31 KJV] Canst thou bind the sweet influences of Pleiades, or loose the bands of Orion?
  - ▶ [Job 26:10 NKJV] He drew a circular horizon on the face of the waters, At the boundary of light and darkness.
  - ▶ [Psa 147:4 KJV] He telleth the number of the stars; he calleth them all by [their] names.
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# What does the Bible say about the Earth and the universe?

- [Ecc 1:7 KJV] All the rivers run into the sea; yet the sea [is] not full; unto the place from whence the rivers come, thither they return again.
  - [Psa 8:8 KJV] The fowl of the air, and the fish of the sea, [and whatsoever] passeth through the paths of the seas.
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# What is man?

- ▶ [Psa 8:3 KJV] When I consider thy heavens, the work of thy fingers, the moon and the stars, which thou hast ordained;
  - ▶ [Psa 8:4 KJV] What is man, that thou art mindful of him? and the son of man, that thou visitest him?
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