

A night view of Earth from space, showing the dark blue oceans and the glowing yellow and white lights of cities and continents. A bright light source, likely the sun, is visible on the left side, creating a lens flare effect. The text "Unit 2 - Review" is overlaid in the center of the image.

# Unit 2 - Review



# Units covered in... EARTH IN SPACE

- The Universe (Big Bang)
- The Solar System
- The Sun and the Earth
- Earth's Age and Uniqueness
- The Earth in Motion (Seasons)

# Major Theories




- Big Bang Theory
  - Explain. Significance
- Nebular Theory
  - Explain. Significance



# Why is it important that we study Space?


- The reasons are endless but most important is understanding more about our own planet by observing the known Universe





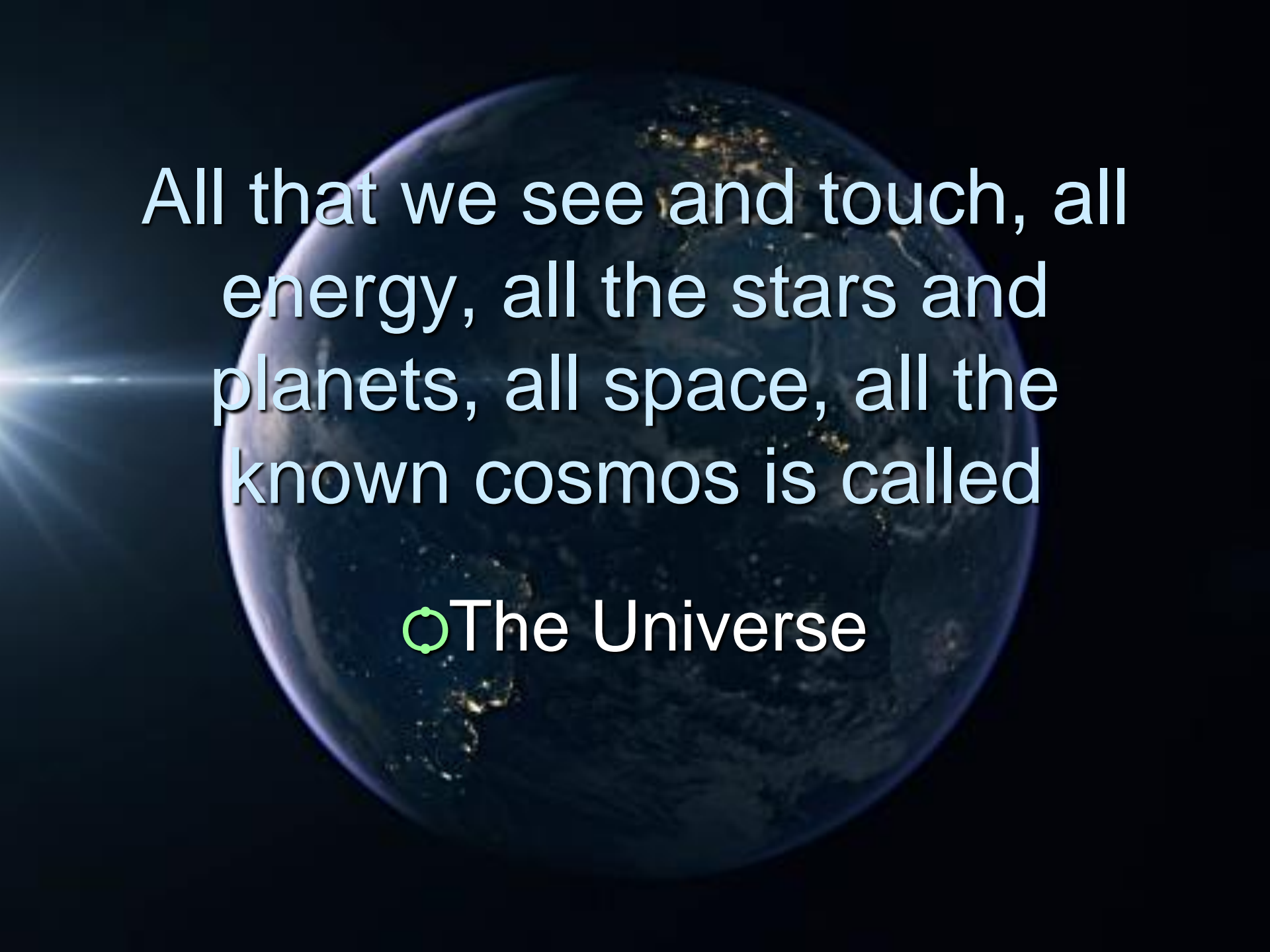
How long ago is the Big Bang  
said to have happened?

○ 15-20 Billion years ago

A view of Earth from space, showing the curvature of the planet and city lights. A bright light source is visible on the left, creating a lens flare effect.

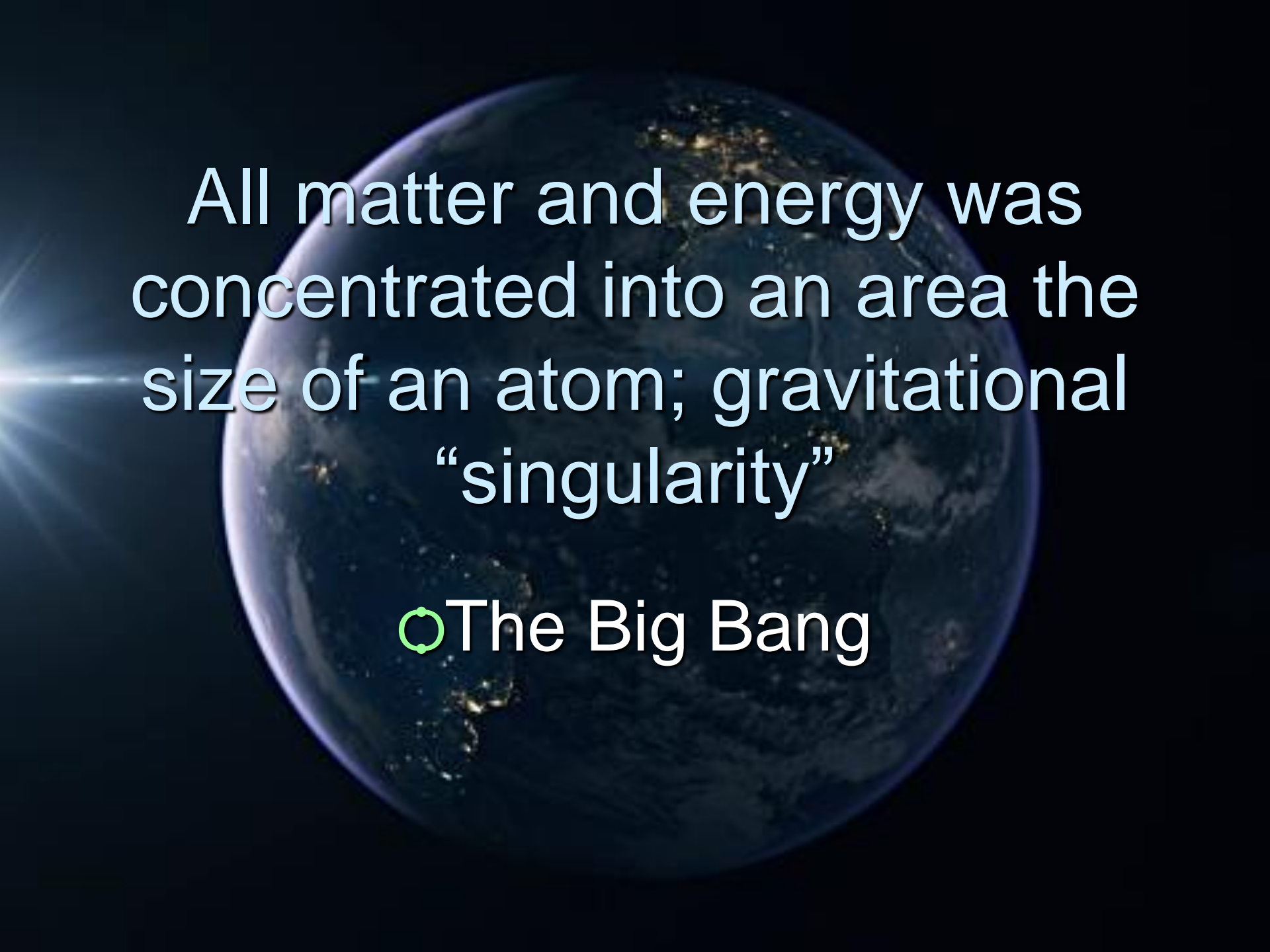
The scientific study of the  
origins and nature of the  
universe

Cosmology

A view of Earth from space, showing the curvature of the planet and city lights at night. A bright light source is visible on the left side, creating a lens flare effect.

All that we see and touch, all  
energy, all the stars and  
planets, all space, all the  
known cosmos is called


🌐 The Universe



All matter and energy was concentrated into an area the size of an atom; gravitational “singularity”

○ The Big Bang





# The Diameter of the Universe

 Infinite



What does HST stand for?

○ Hubble Space Telescope



Comes back every 76 years

☉ Halleys Comet



# What is Geocentric theory?

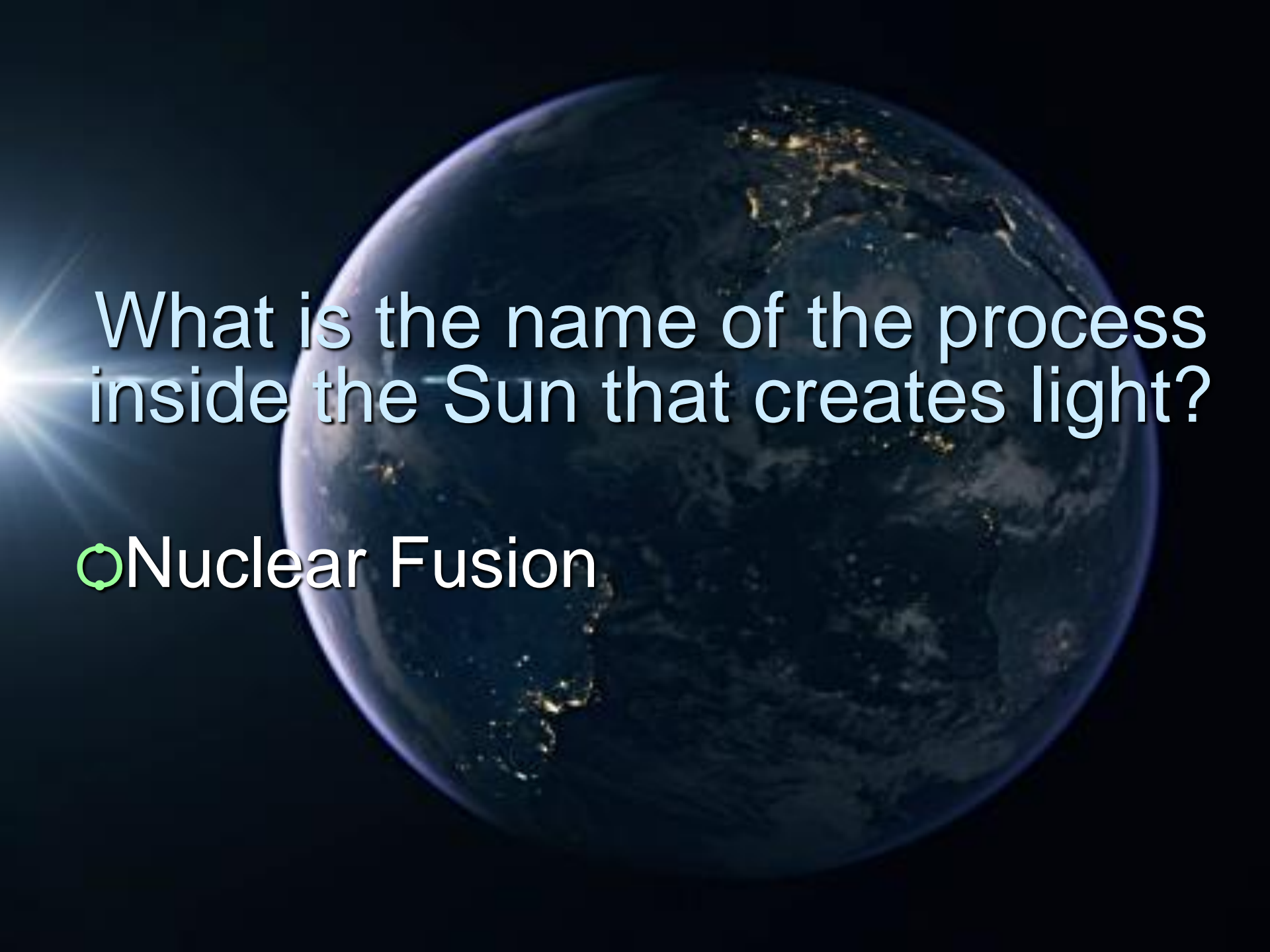
- Geo or planet at the center. That means it is a theory which has the planet at the center






How large is the Sun compared to Earth?

- 1000 times
- 100 times
- 10 times
- equal



What is the name of the process inside the Sun that creates light?

Nuclear Fusion



What is the name of our  
Galaxy?

○ Milky Way



What type of galaxy are we in?

○ Barred Spiral Galaxy





What is one way that we can compare a galaxy to a city?

- A busy, bright downtown
- Quiet, more remote rural areas
- Fast moving center

A view of Earth from space, showing the curvature of the planet and some city lights. A bright light source on the left creates a lens flare effect across the image.

# What is a Nebula?

an immense cloud of  
gas and dust particles

In our solar system this cloud of dust  
and gas began to spin, keeping gas  
at the center and dust and rock to the  
outer edges of the nebula



What is a Protosun?

○ the predecessor of the Sun



Give your best definition of  
accretion

is the process of growth by accumulation





What is a planetesimal?

are small rocky objects that rotate around a star

# Give one fact you know about the Nebular Hypothesis

- It is the theory of our Universe' beginning
- It originated with a nebula of gas and dust
- This gas and dust accumulated at the center creating a first protosun
- The nuclear explosion of this protosun created a T Tauri wind that blew away the gas atmospheres of the inner planets

The inner planets continued to grow through accretion

This was a very destructive time in the early solar system



# Why are the planets round?

- The primary reason the planets are round is due to the heat that was generated during accretion and differentiation.

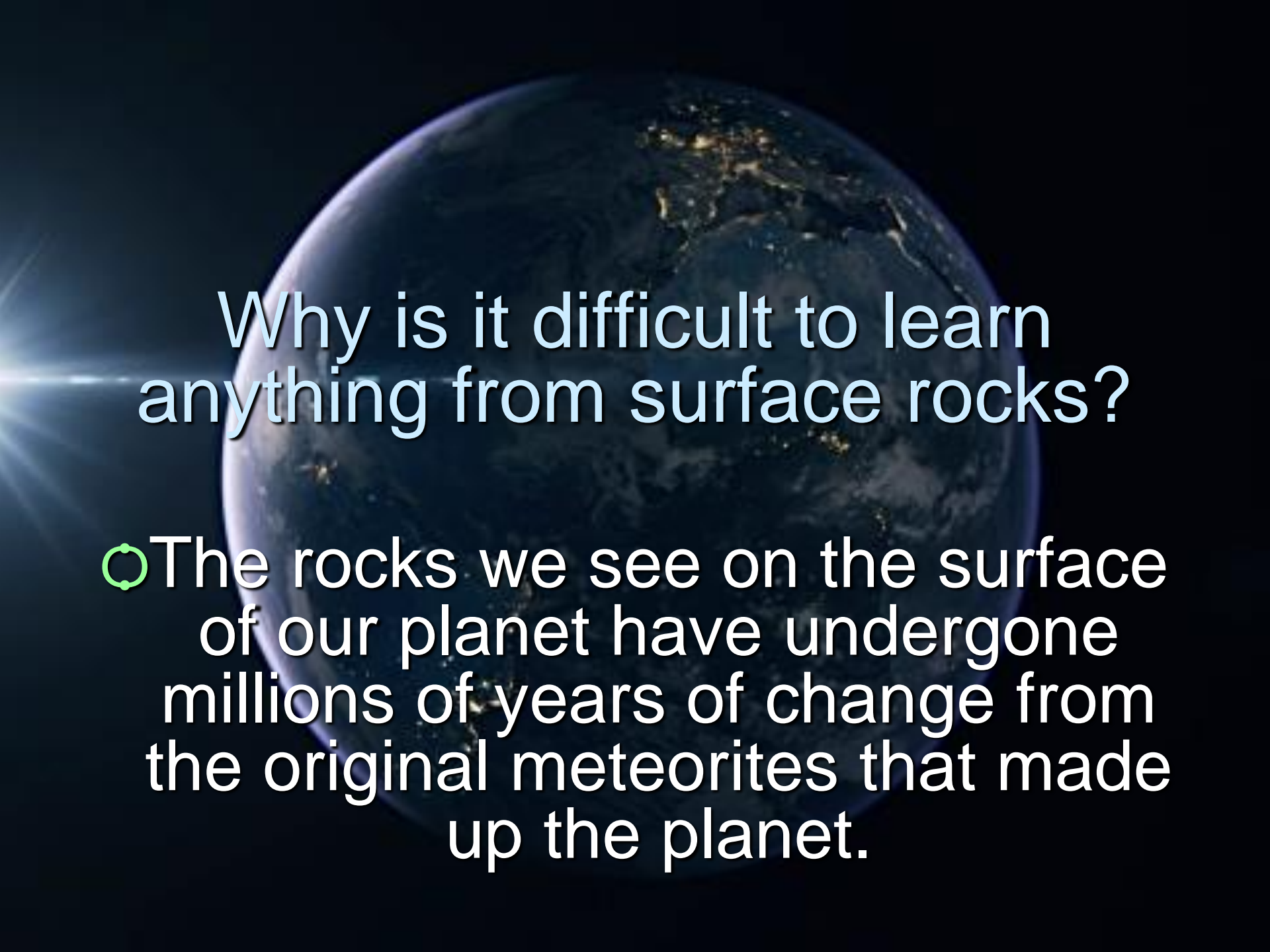


# The KEY to Earth's formation

☉ Meteorites


- Also probably carried most of our water





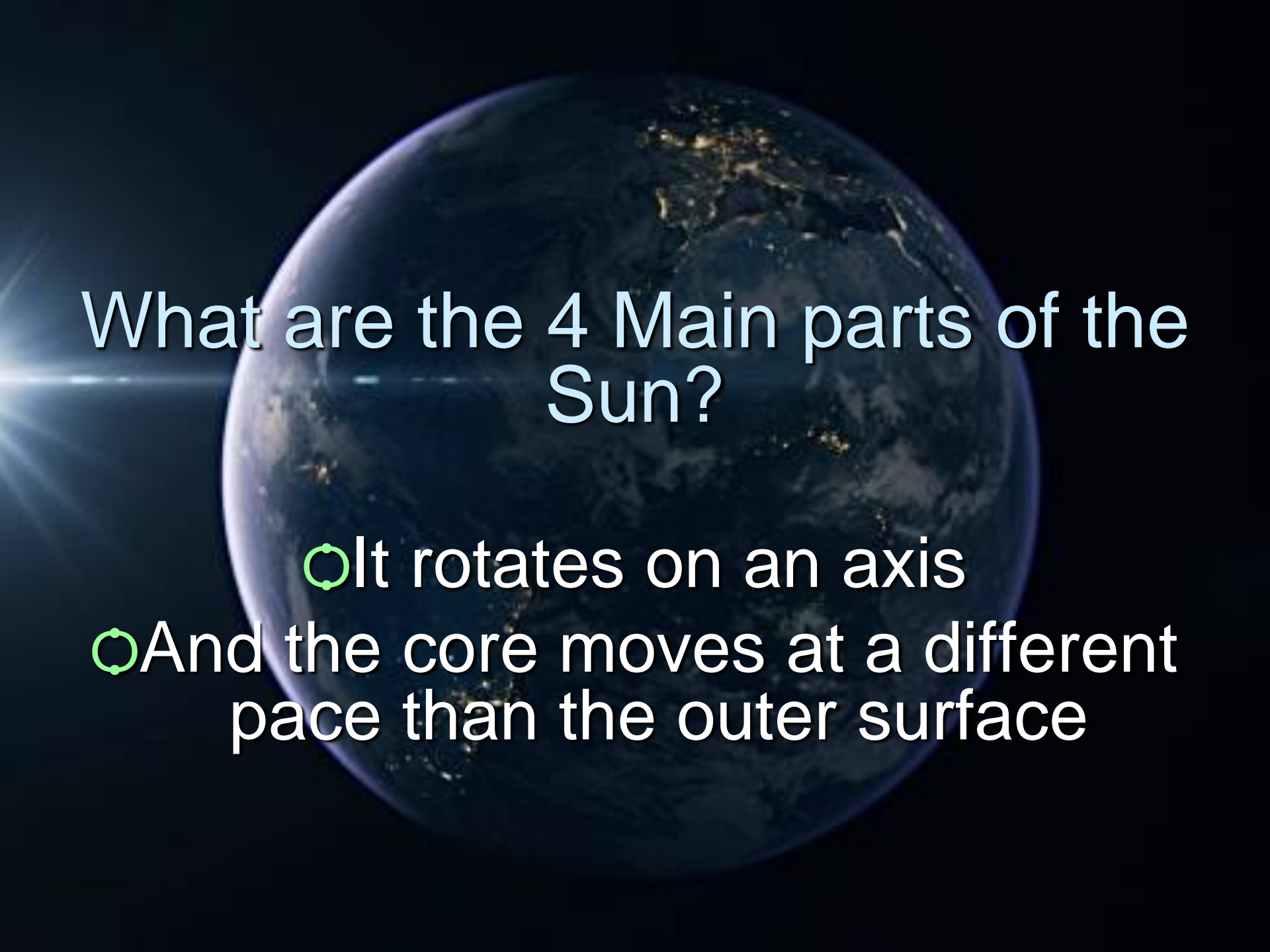
Why is it difficult to learn anything from surface rocks?

- The rocks we see on the surface of our planet have undergone millions of years of change from the original meteorites that made up the planet.



Separates the terrestrial planets  
from the gas planets

○ Asteroid belt



What are the 4 Main parts of the Sun?


- It rotates on an axis
- And the core moves at a different pace than the outer surface



# Interesting facts...the Sun


- It rotates on an axis
- And the core moves at a different pace than the outer surface





What colors do stars burn?  
What is the hottest color?

Red – Yellow - Blue



Red ----- Yellow (Sun) ----- > Blue

2 000°C ----- 5 000°C (Sun) ----- > 50 000°C



How long does it take for a ray  
of light to escape the Sun?

○ Up to 1 million years



Where do Sun Spots occur?

○ In the center of the sun along its equator



Sun Spots appear in cycles of  
about how many years?

11 years






What is the size of an average  
sun spot compared to Earth?

About the same size




What gas is the Sun primarily  
made of?

hydrogen



How far is the Sun  
from Earth?


8 Light Minutes



The distance light travels  
in a year

Light Year





Elongated closed curve that  
describes Earth's year long orbit  
around the Sun

🕒 Ellipse




Everything REVOLVES. What important topics can you think of that revolve around something

🕒 Our Planet – revolves


🕒 Our Moon revolves

🕒 Our Solar System – revolves



The first day of Summer is June  
21<sup>st</sup> which is also called  
Summer \_\_\_\_\_

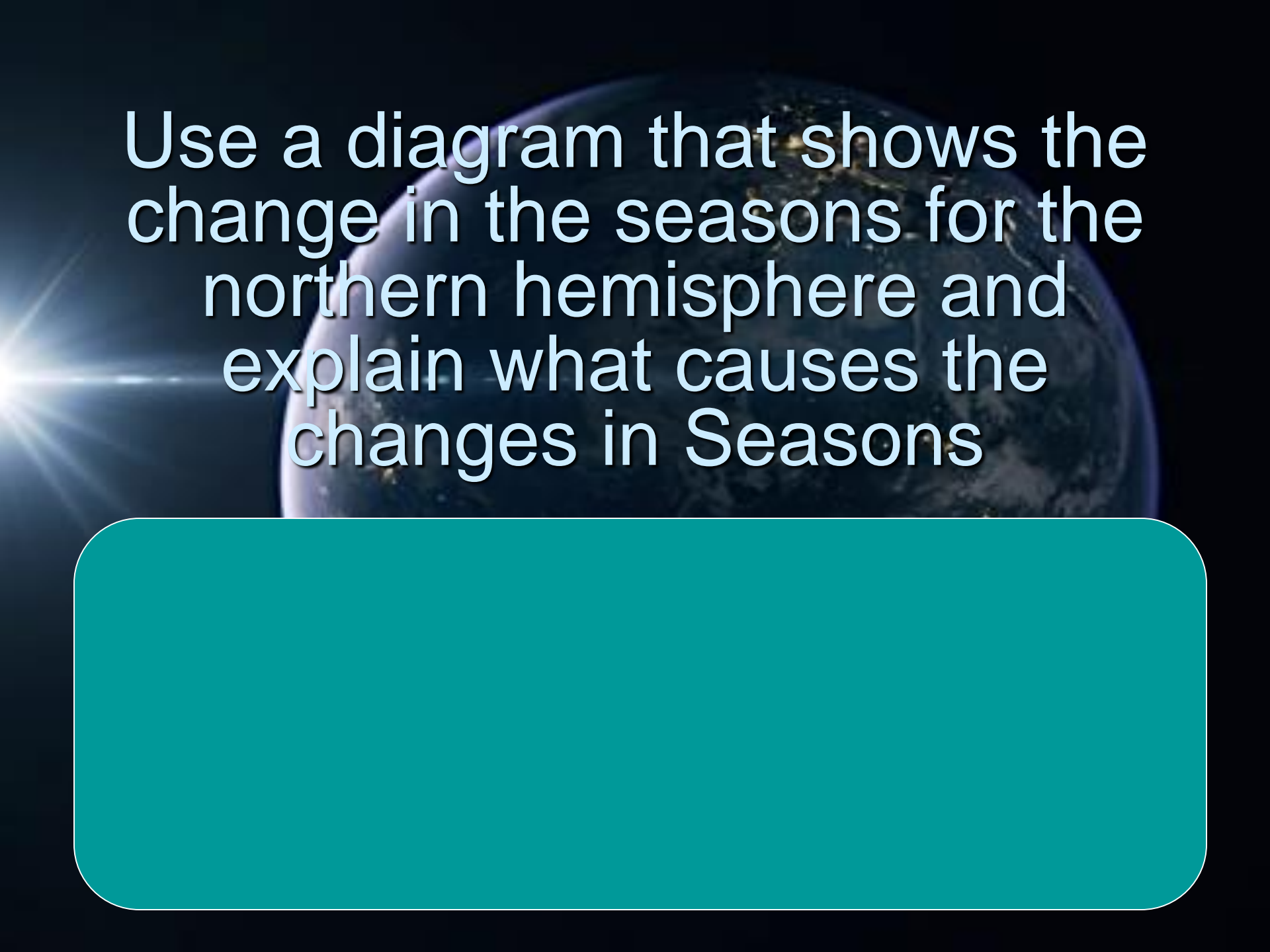
☉ Solstice



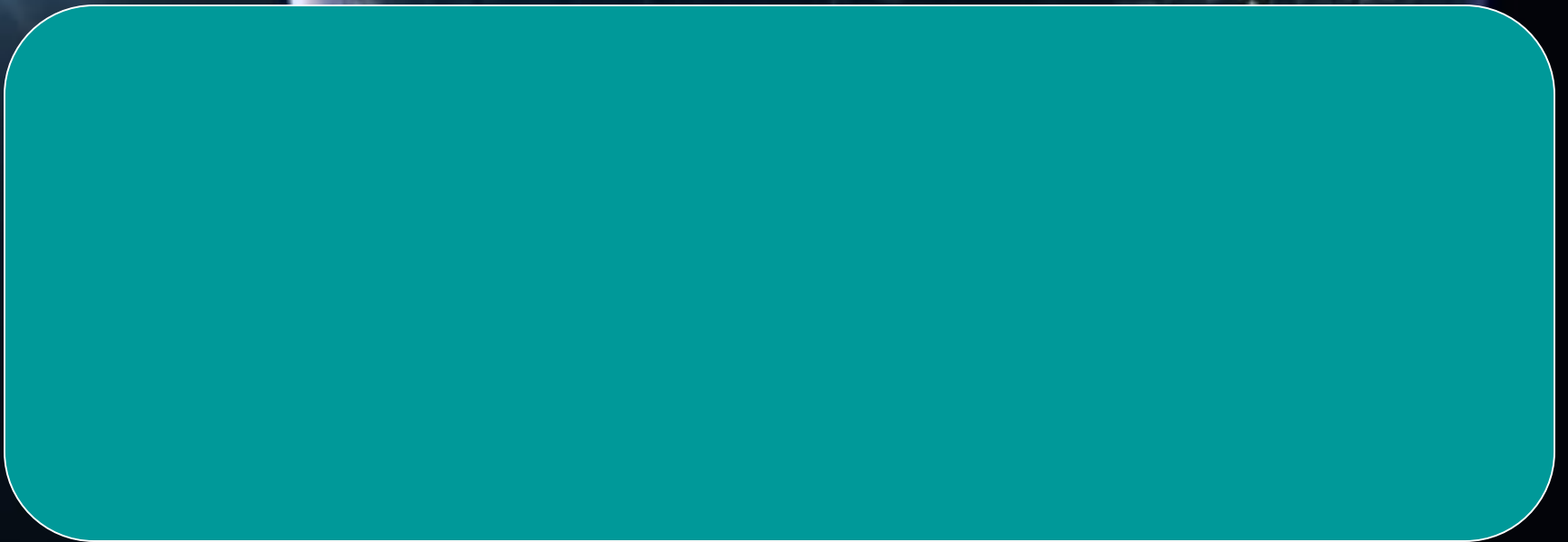
The first day of Winter is \_\_\_\_\_ which is also called Winter \_\_\_\_\_

🕒 December 21, Solstice

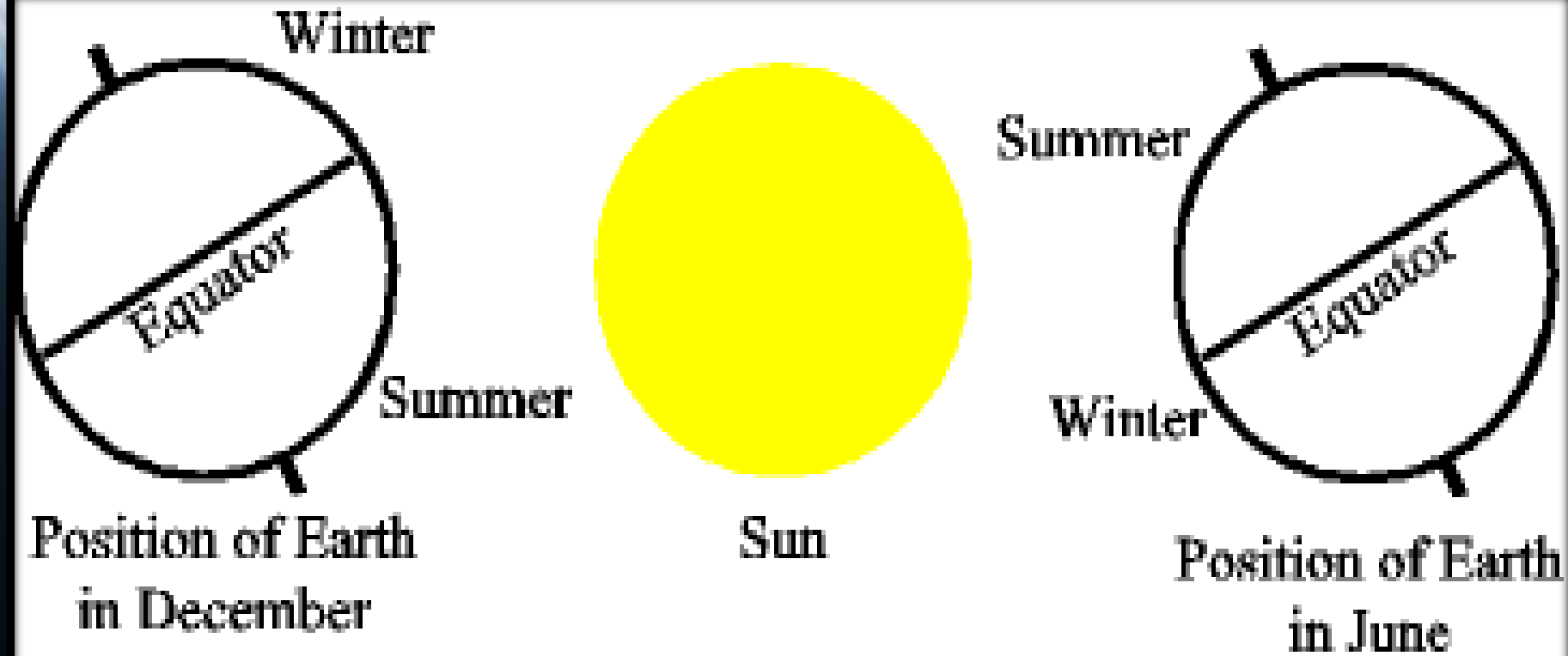


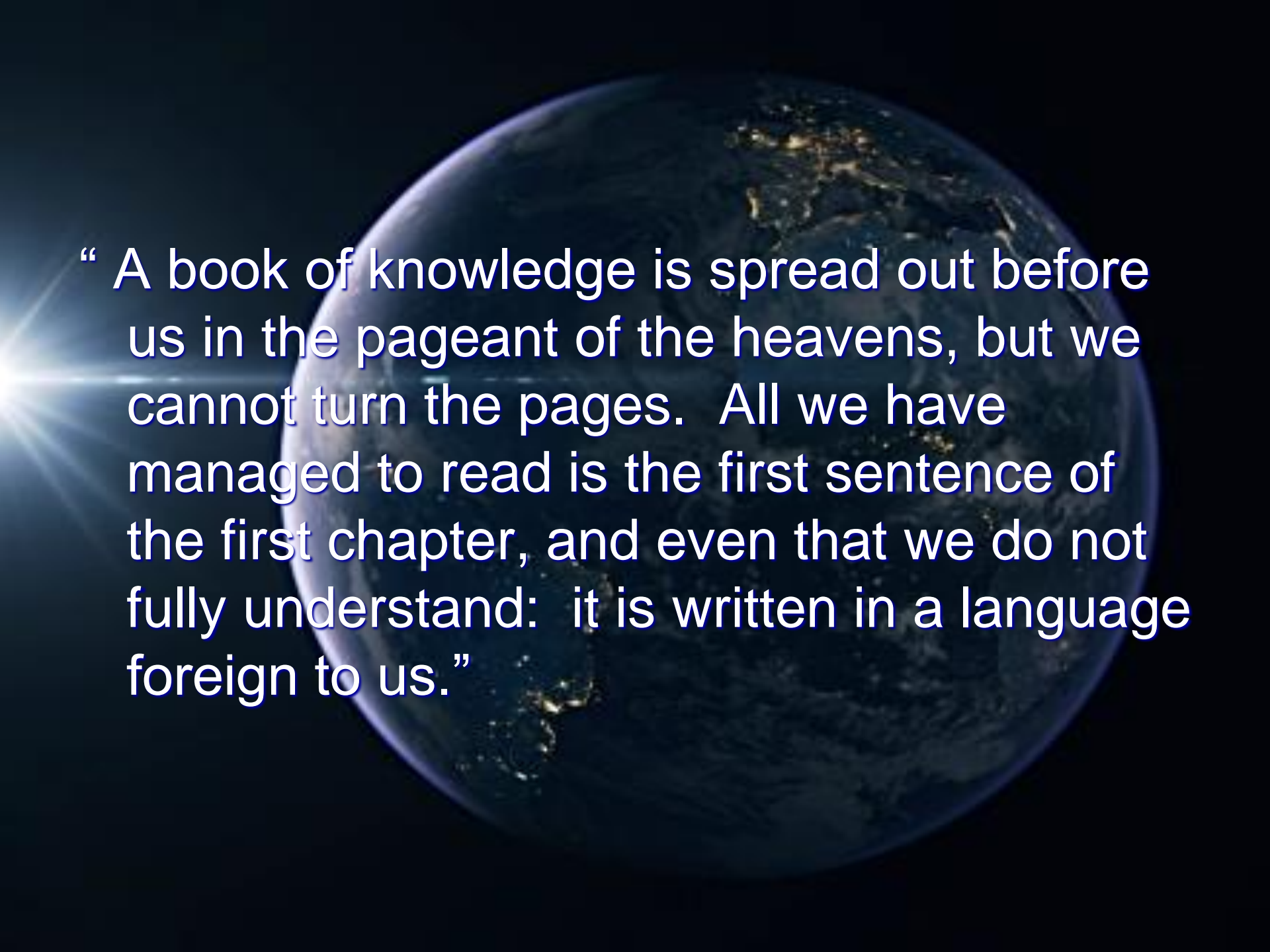


Use a diagram that shows the change in the seasons for the northern hemisphere and explain what causes the changes in Seasons



# Use a diagram that shows the change in the seasons for the northern hemisphere and explain what causes the changes in Seasons



A view of Earth from space, showing the planet's curvature and city lights at night. The Earth is the central focus, with a dark blue and black background representing the void of space. The planet's surface is visible, with some landmasses and a dense network of yellow and white lights representing cities and urban areas. The lighting is dramatic, with a bright light source on the left creating a lens flare effect.

“ A book of knowledge is spread out before us in the pageant of the heavens, but we cannot turn the pages. All we have managed to read is the first sentence of the first chapter, and even that we do not fully understand: it is written in a language foreign to us.”

# What to Study



- The Universe
- The Galaxy
  - Types, Formation
- The Solar System
  - Zones – Inner (Terrestrial); Outer (Gaseous)
  - What's in the Solar System? Location / Characteristics
  - Comets – What and where?
  - Asteroids – What and where?
  - Meteorites – What and significance?