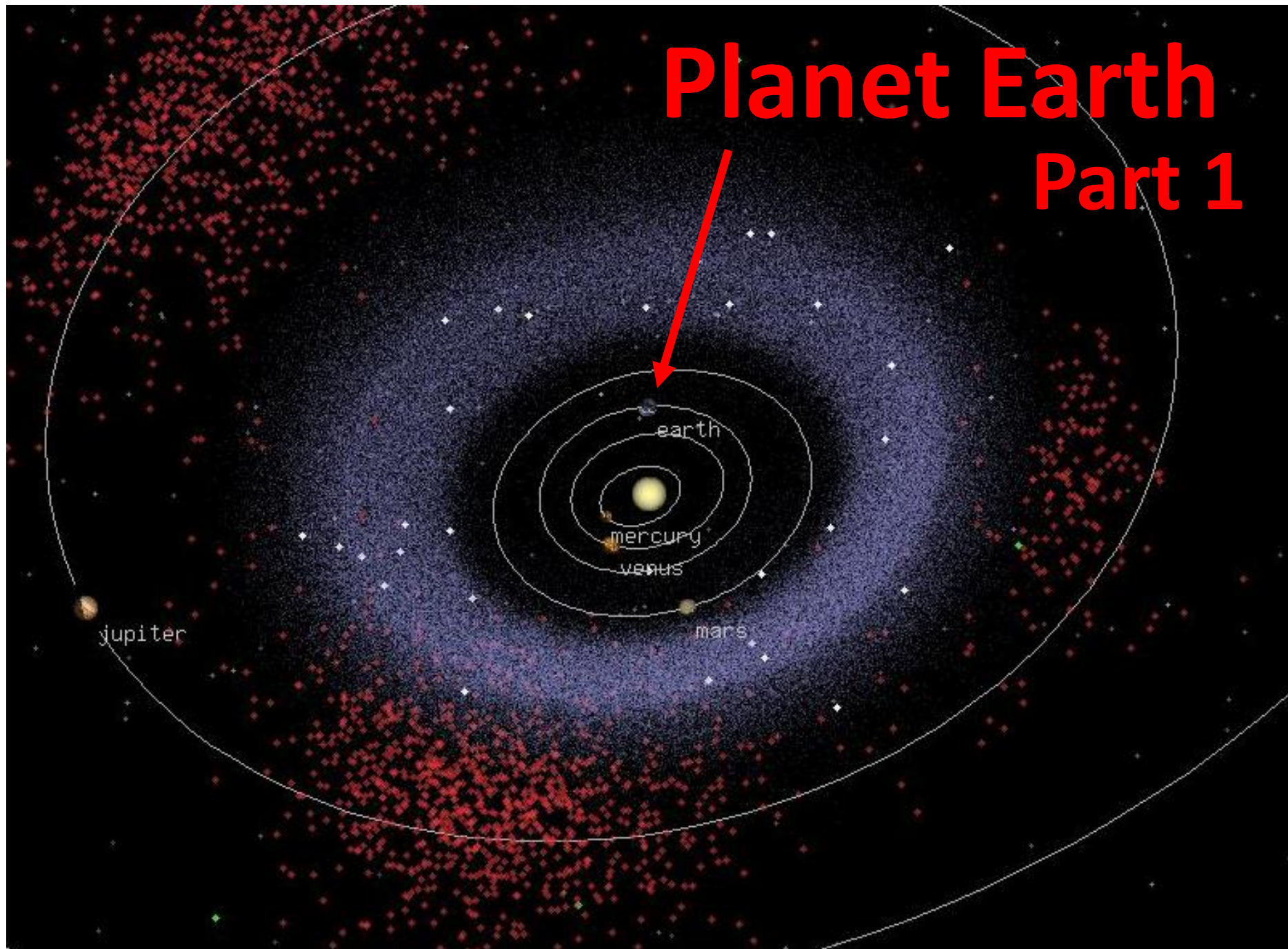


Planet Earth

Part 1



Earth Facts



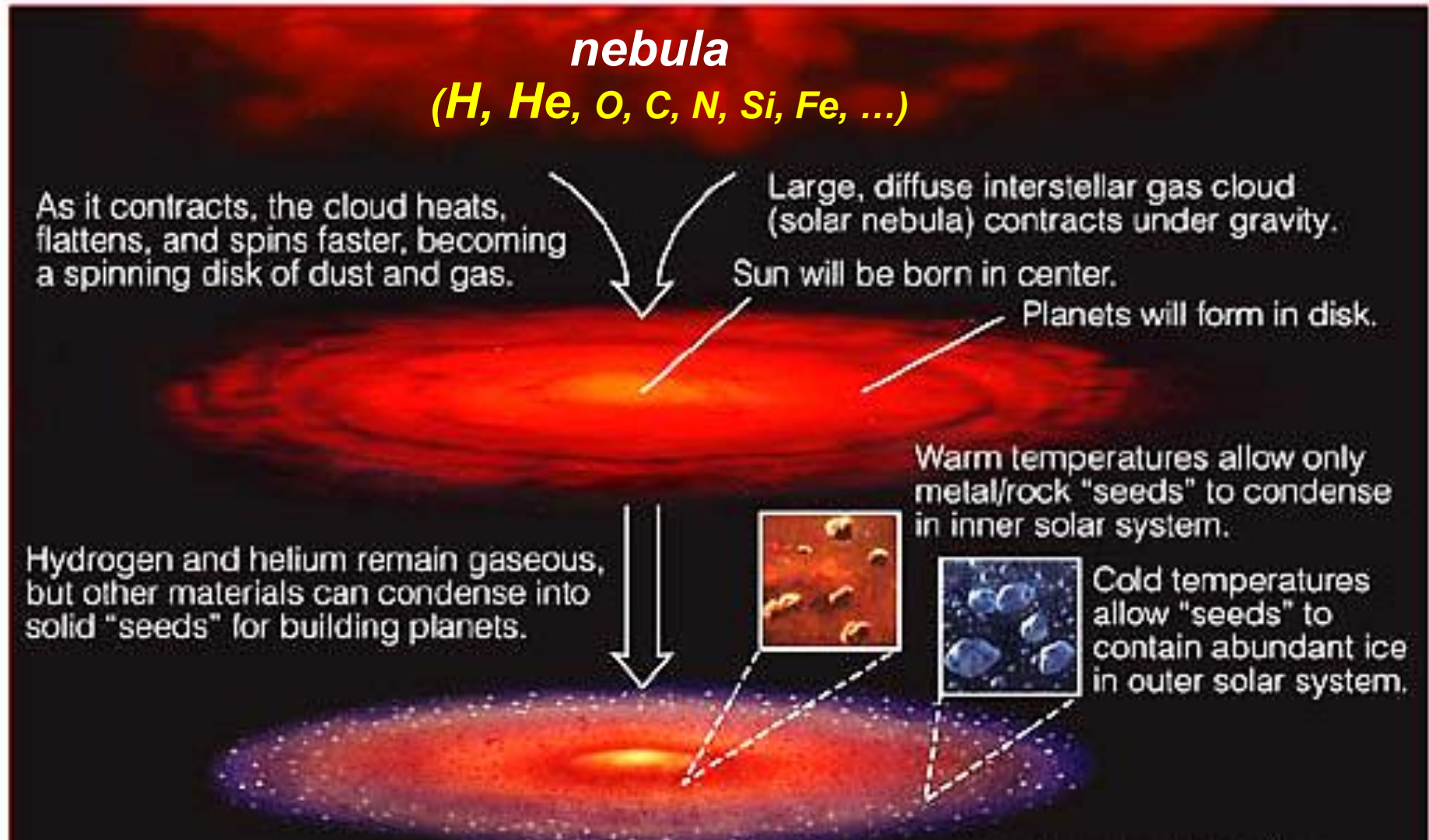
- Earth is a **terrestrial (rocky) planet**, third from the Sun.
- Earth has a *single natural satellite*, the **Moon**.
- Earth has **LIFE**!
- Of the four terrestrial planets in the Solar System:
 - Earth is the largest both in size and mass.
 - Earth has the highest density, the strongest magnetic field, and the fastest rotation.
 - Earth has the highest surface gravity equal to 9.8 m/s^2 .

Fun Fact: from the Earth's surface, the apparent sizes of the Sun and the Moon are approximately the same!

The Formation of the Solar System

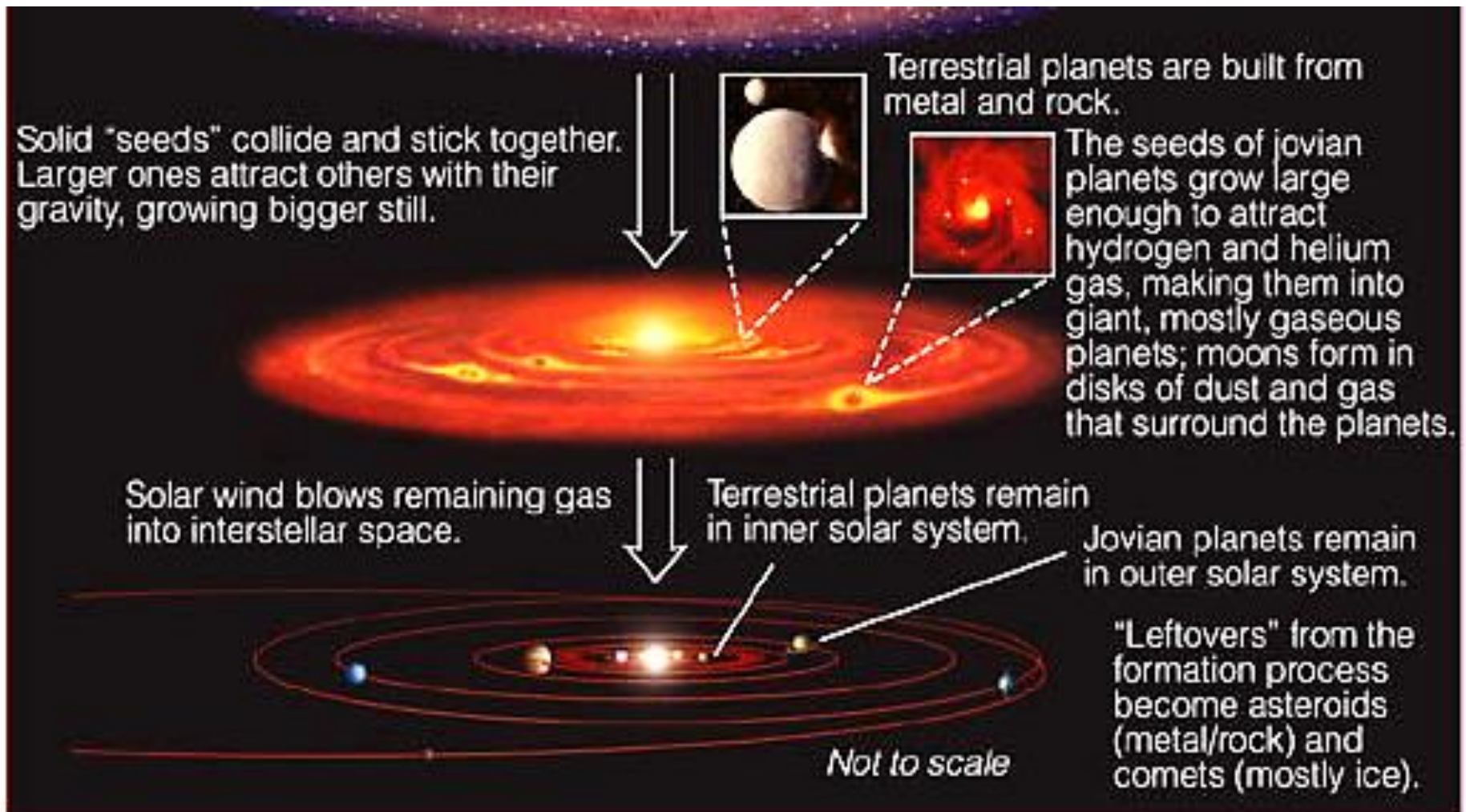
(~4.6 billion years ago)

Nebular Hypothesis



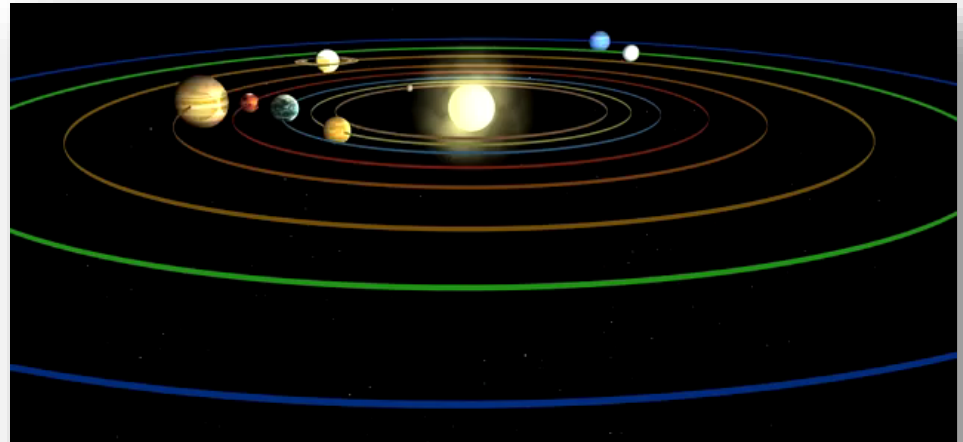
The Formation of the Solar System

The Sun, planets, moons, comets, asteroids are believed to form within 50-100 million years.

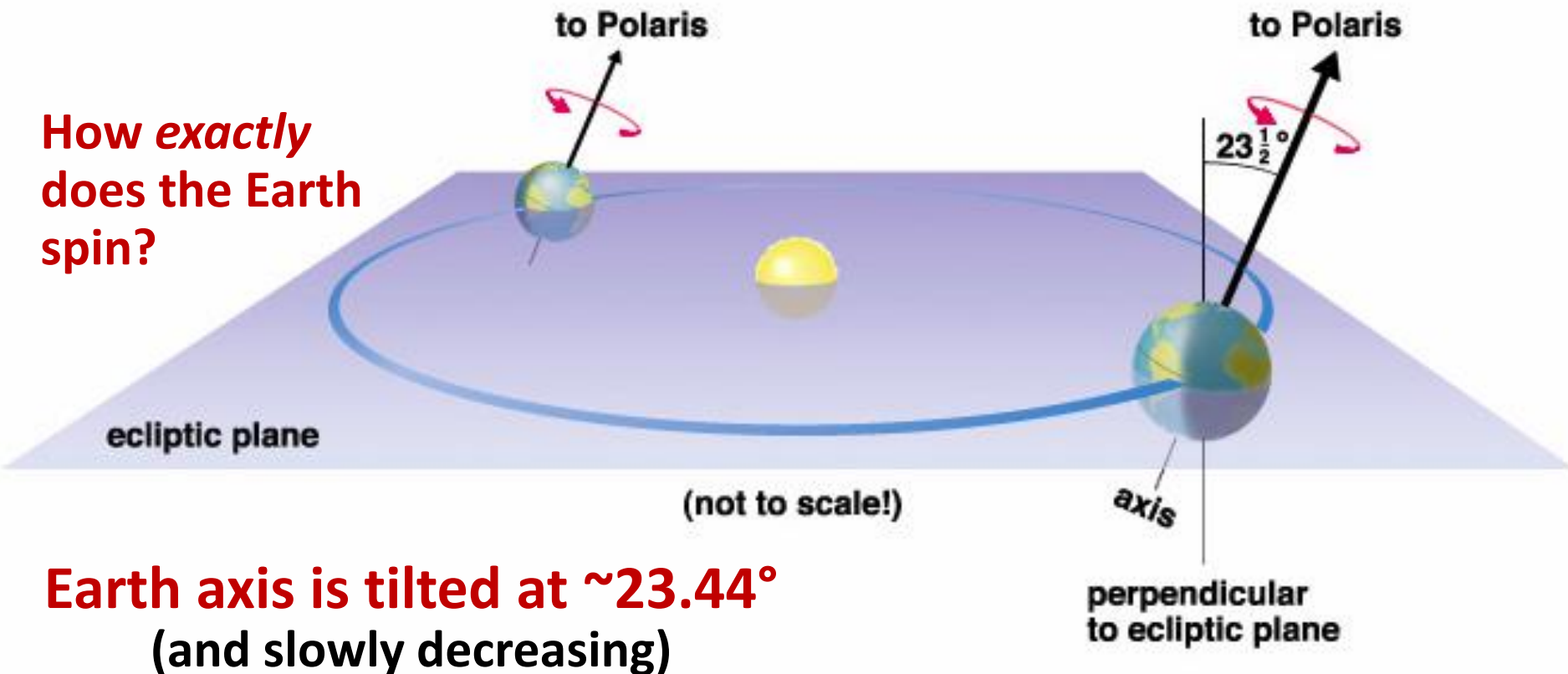


Ecliptic Plane

Imaginary plane
containing the Earth's
orbit around the Sun.



How *exactly*
does the Earth
spin?



Earth axis is tilted at $\sim 23.44^\circ$
(and slowly decreasing)

Formation of the Moon

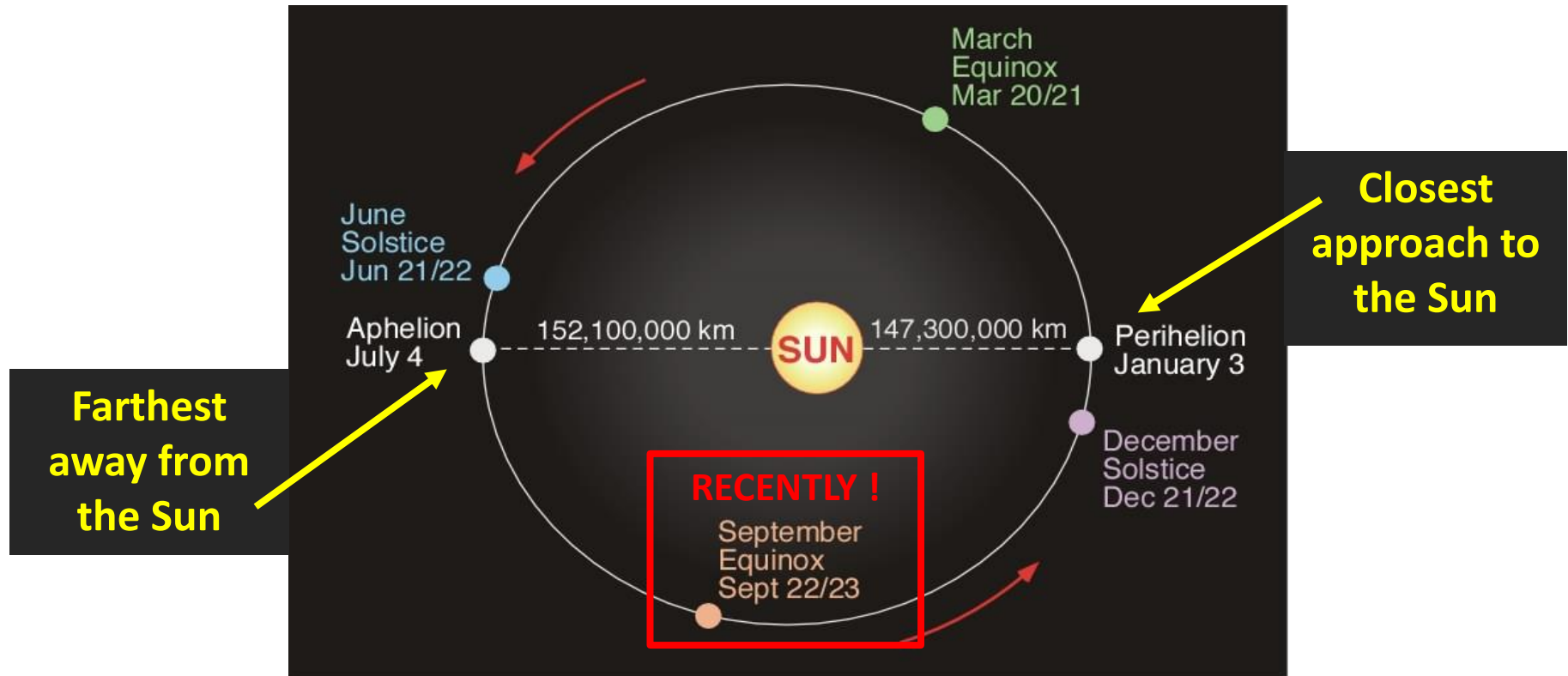
The Giant Impact Hypothesis



- Suggests that the Moon formed out of the debris left over from a **collision between Earth and an astronomical body the size of Mars**, approximately 4.5 billion years ago, about 20 to 100 million years after the Solar System coalesced.
- The colliding body is sometimes called **Theia**.
- **Fun Fact:** Earth and Moon have almost **identical composition!**

Earth Orbit

- The **orbit** of the Earth is *almost* a perfect circle: our mean distance to the Sun is about **150 million km** (~93 million mi).



- The **orbital speed** of the Earth (how fast it travels along its orbit around the Sun) is about **30 km/s** (~67,000 mph).