THE SOLAR SYSTEM

BEGIN

AS YOU GO READ, WRITE DEFINITIONS FOR THE FOLLOWING TERMS ON LOOSE LEAF PAPER

(THERE WILL BE A PENCIL NEXT TO EVERYTHING YOU HAVE TO WRITE DOWN)

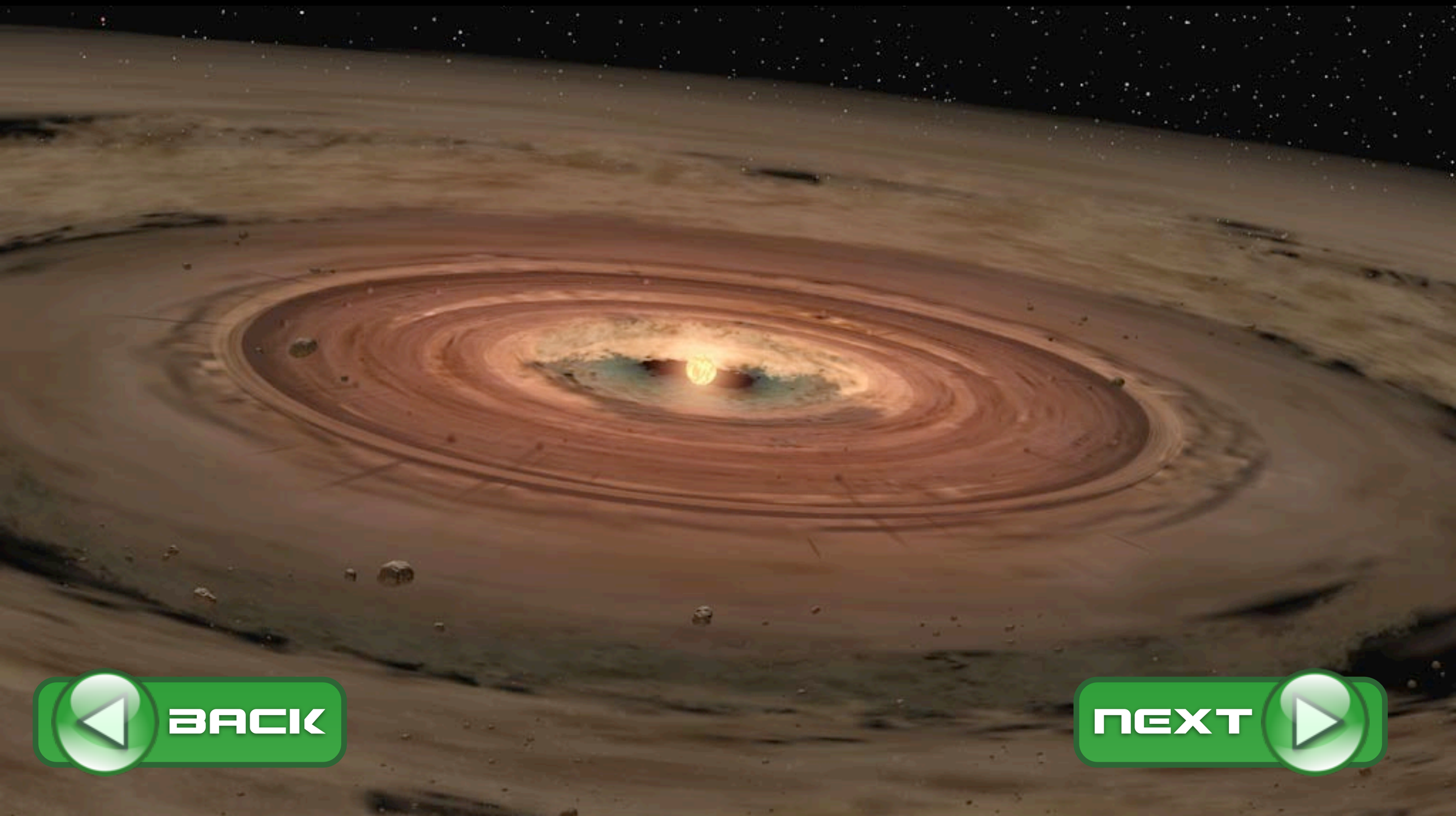
STAR
PLANETS
TERRESTRIAL PLANETS
JOVIAN PLANETS
ASTEROIDS
COMET
DWARF PLANETS
MOON

WHEN YOU ARE DONE, ANSWER THE PRACTICE REGENTS QUESTIONS AT THE END

BACK

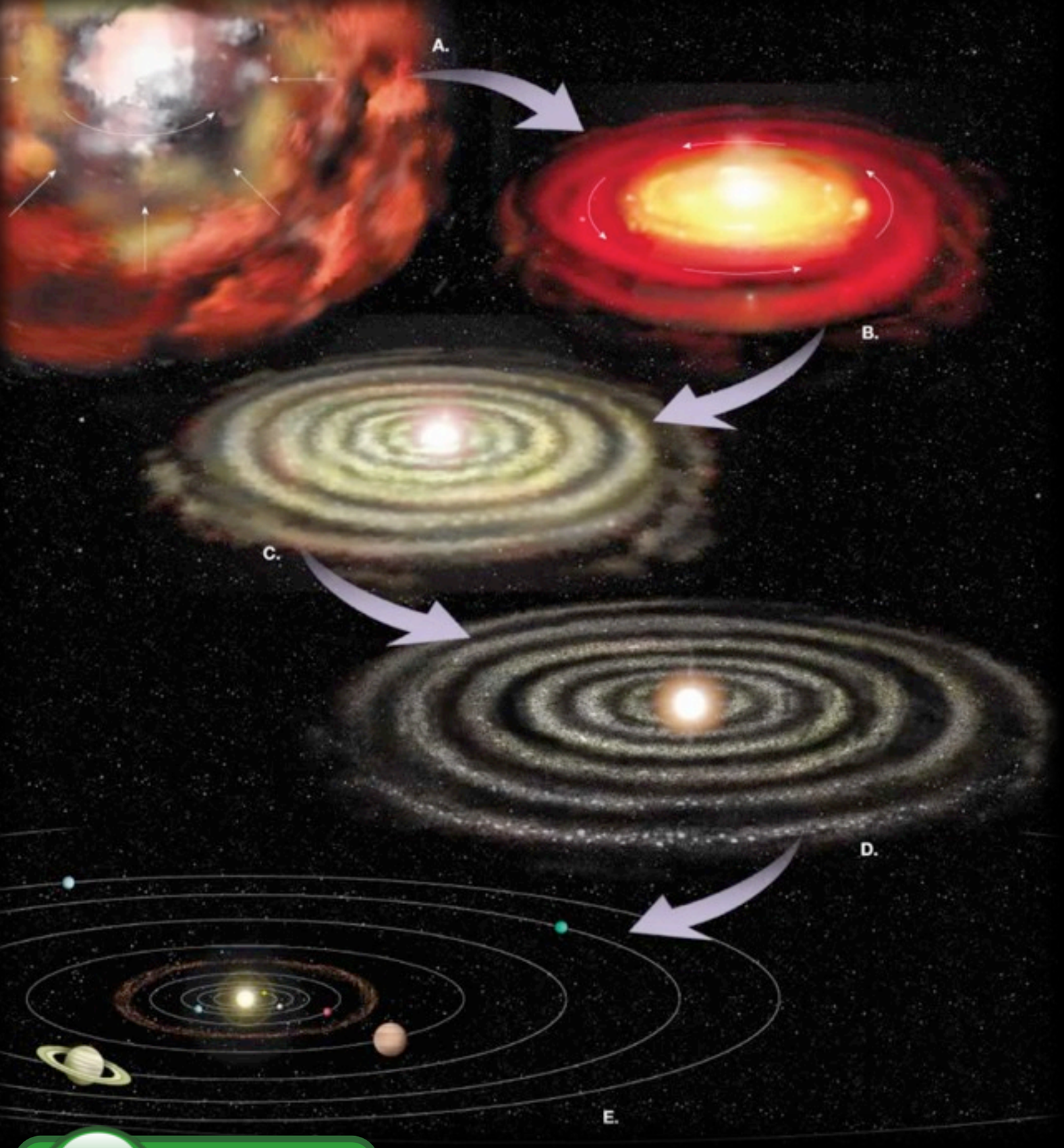
NEXT

THE SOLAR SYSTEM BEGAN AS A CLOUD OF SWIRLING GAS AND DUST BETWEEN 4.3 AND 4.8 BILLION YEARS AGO



BACK

NEXT



GAS AND DUST LEFTOVER AFTER THE SUN FORMED STICKS TOGETHER TO FORM THE PLANETS

BACK

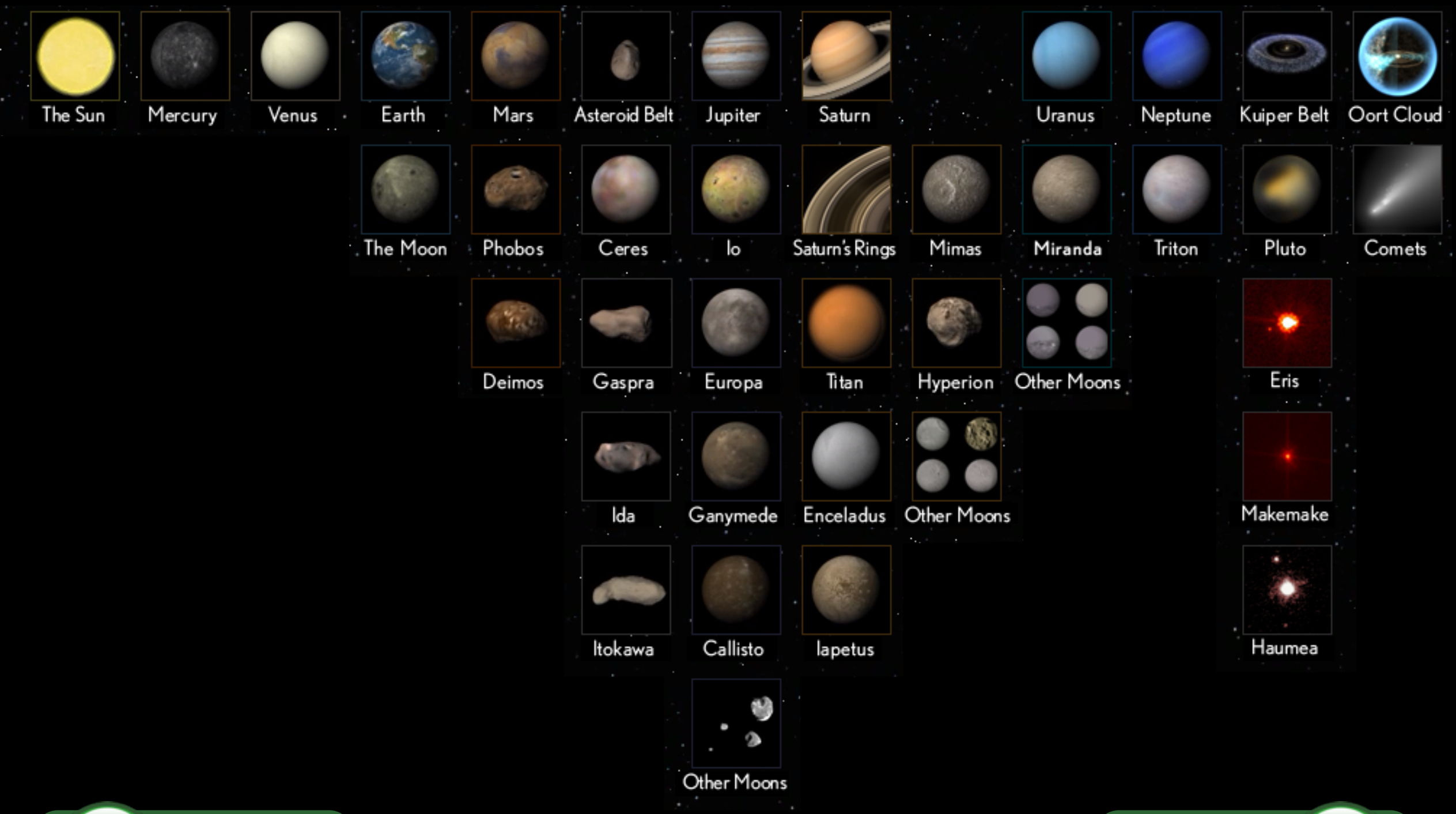
NEXT

WATCH VIDEO #1
EXPLORING THE SOLAR SYSTEM

BACK

NEXT

WHAT IS THE SOLAR SYSTEM MADE OF?



BACK

NEXT

A STAR

A SELF-LUMINOUS BALL OF GAS HELD TOGETHER BY GRAVITY

BACK

NEXT

THE SUN IS A MAIN SEQUENCE STAR OF AVERAGE MASS AND MIDDLE AGE

BACK

NEXT

PLANETS

THE LARGEST CELESTIAL BODIES IN ELLIPTICAL ORBITS AROUND THE SUN

BACK

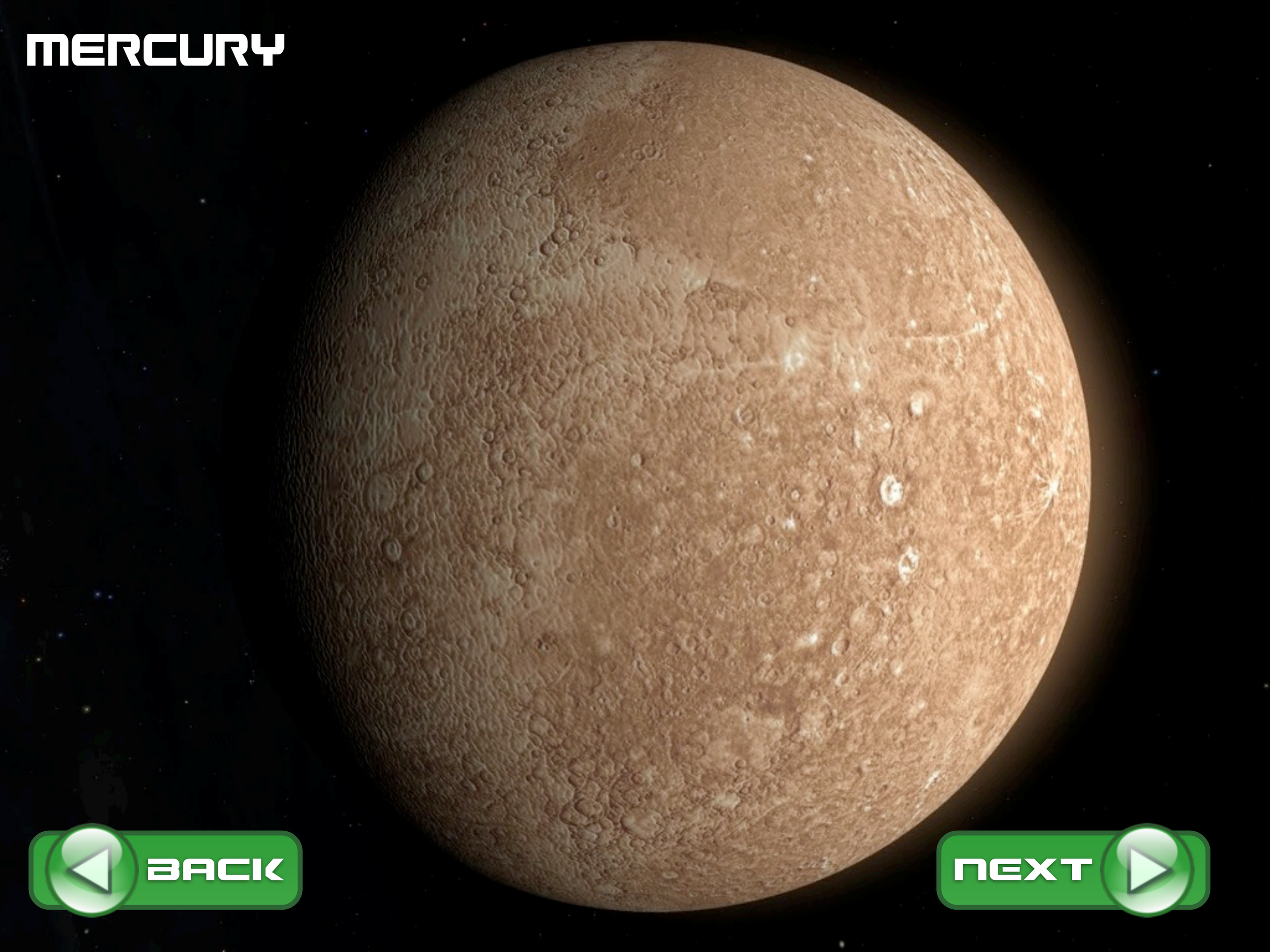
NEXT

THE PLANETS ARE...

BACK

NEXT

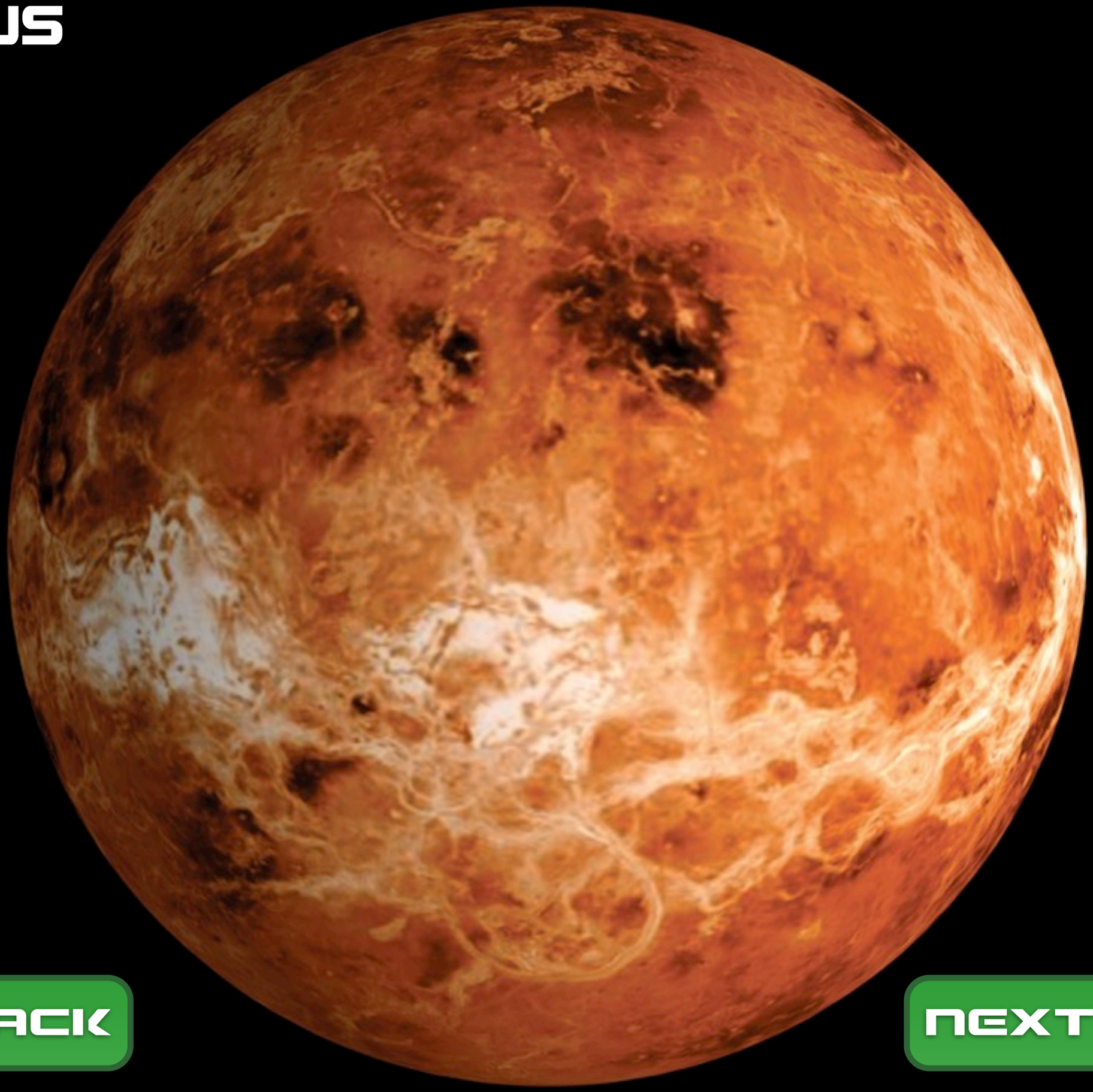
MERCURY



BACK

NEXT

VENUS



BACK

NEXT

EARTH

BACK

NEXT

MARS

BACK

NEXT

TOGETHER, THESE FOUR INNER PLANETS ARE CALLED THE TERRESTRIAL PLANETS

TERRESTRIAL PLANETS ARE ROCKY PLANETS WITH A HIGH DENSITY BUT SMALL SIZE. THEY ARE FOUND IN THE INTERIOR PART OF THE SOLAR SYSTEM

BACK

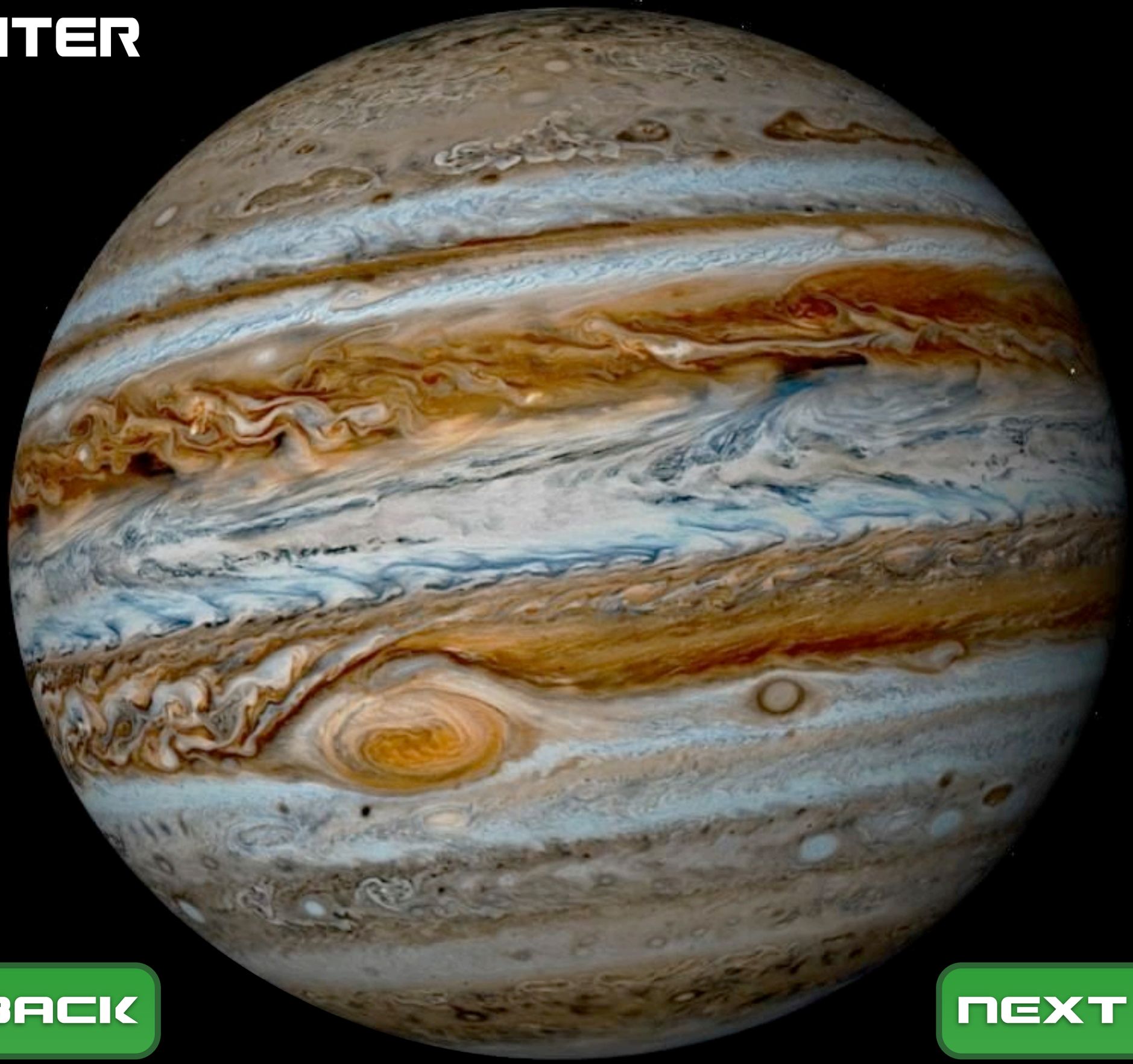
NEXT

WATCH VIDEO #2
CURIOSITY MISSION TO MARS

BACK

NEXT

JUPITER



BACK

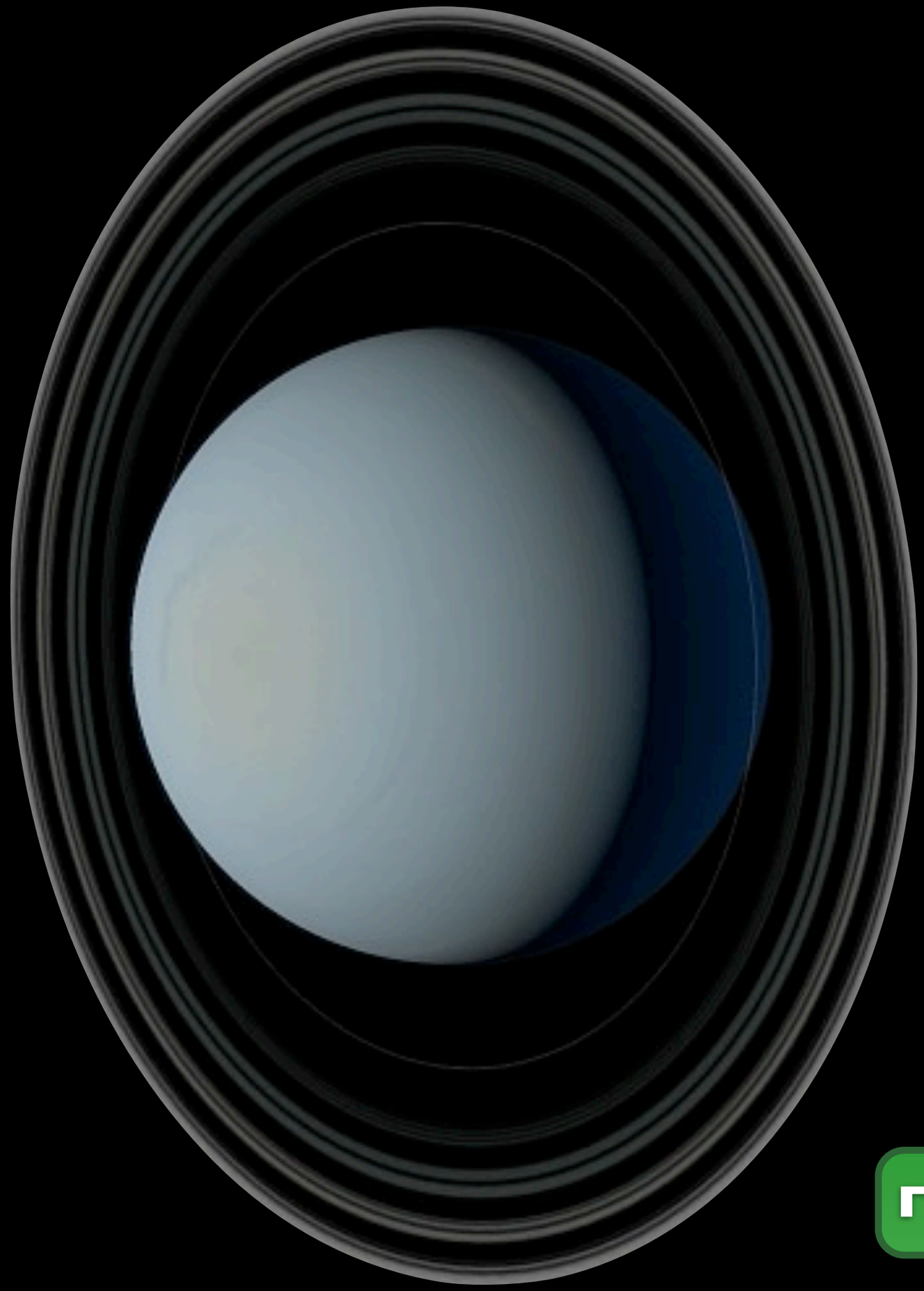
NEXT

SATURN

BACK

NEXT

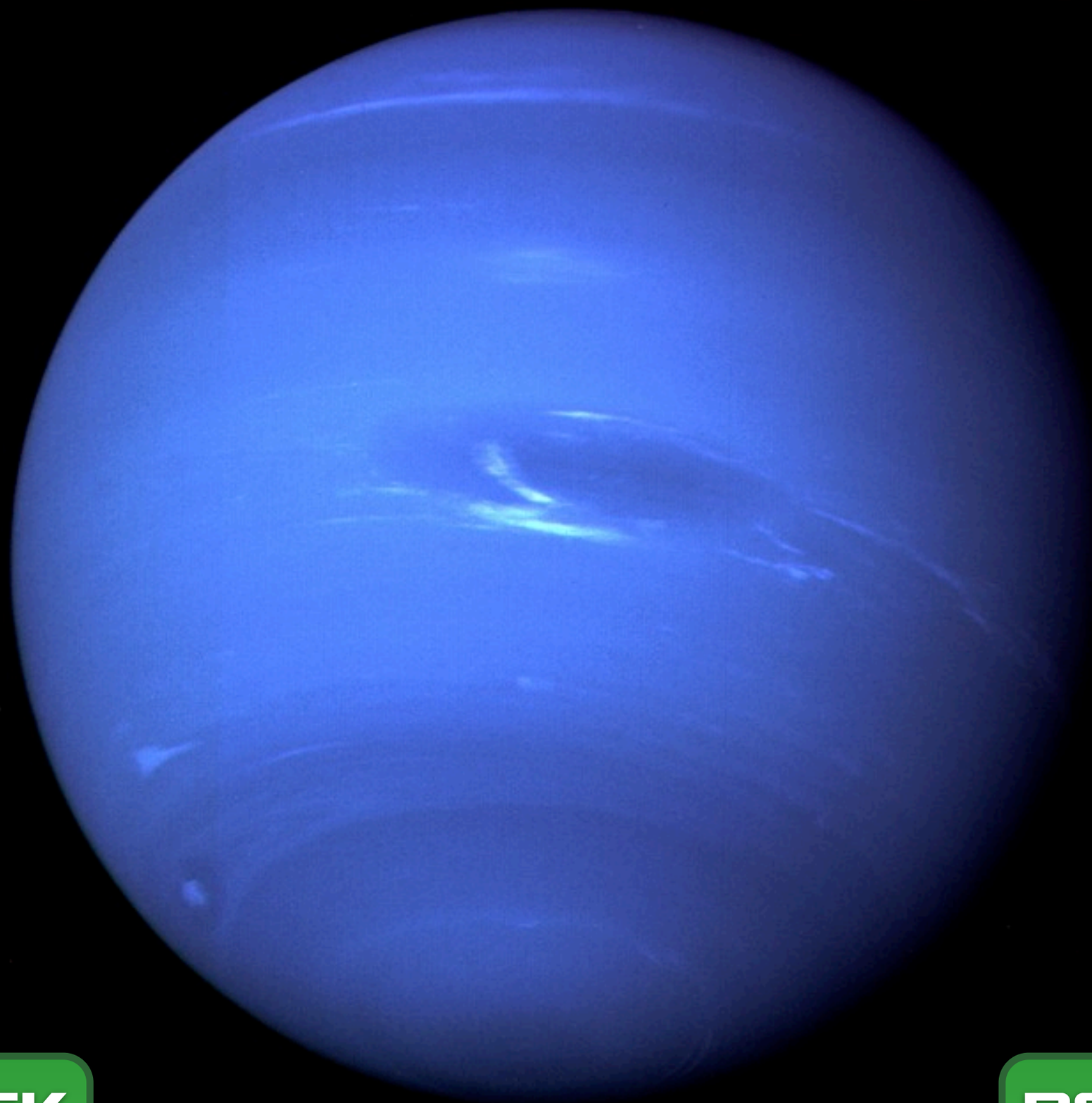
URANUS



BACK

NEXT

NEPTUNE

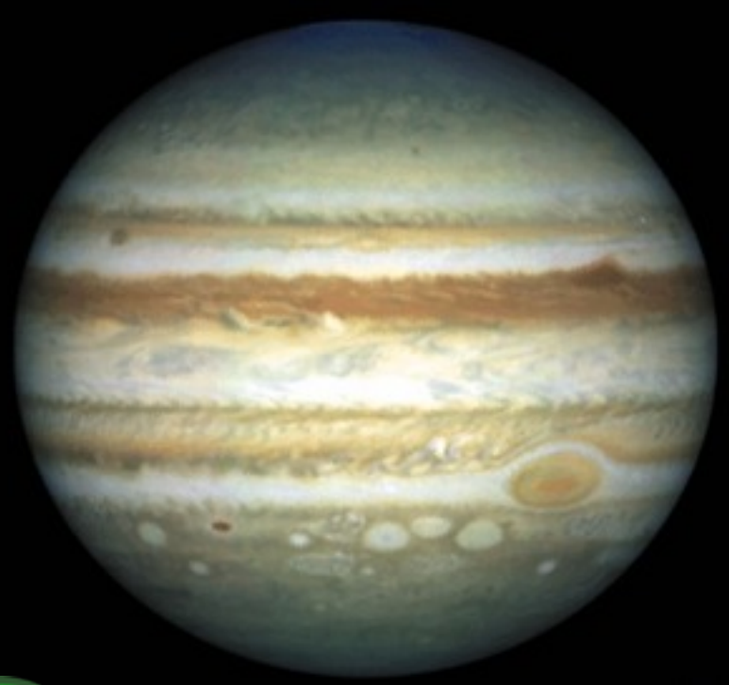


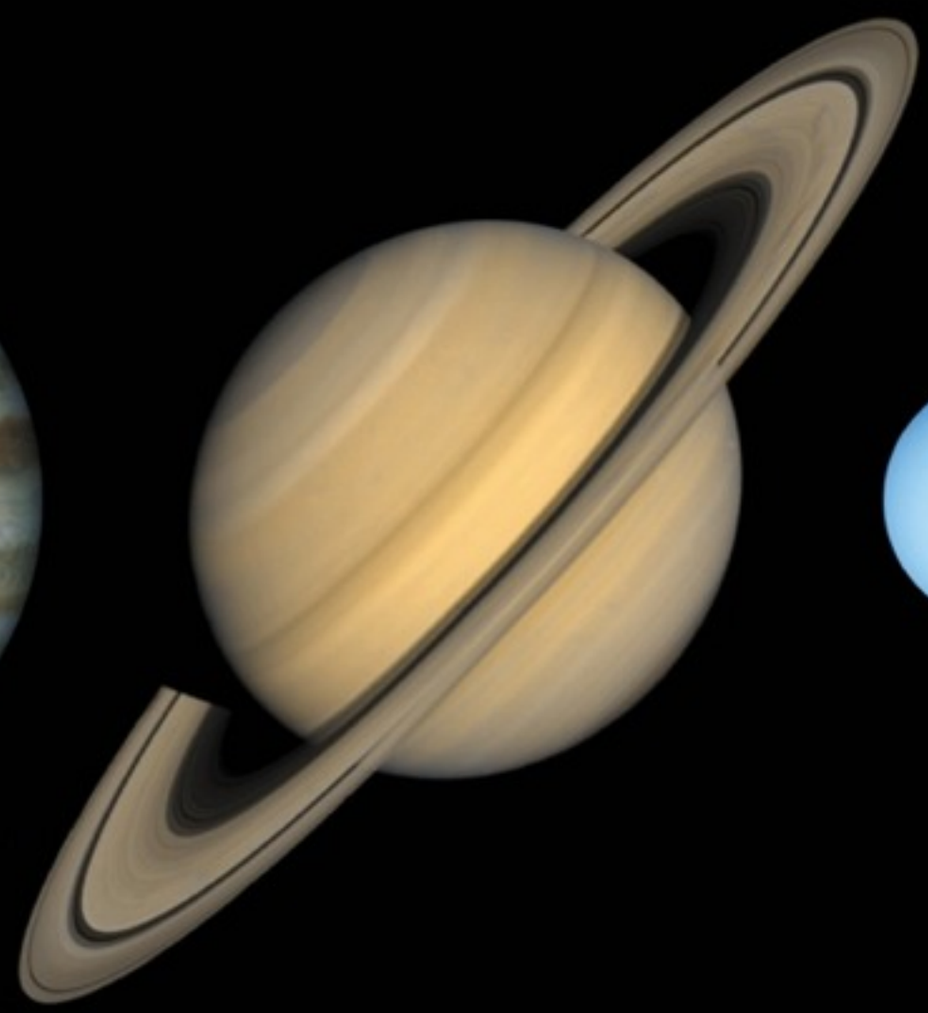
BACK

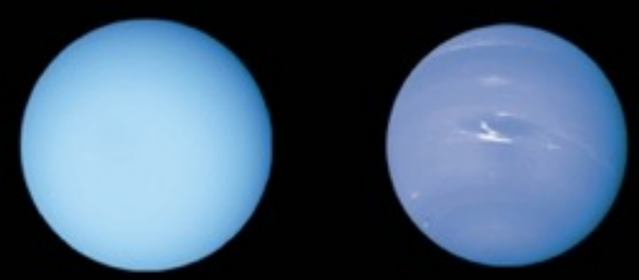
NEXT

THESE FOUR OUTER PLANETS ARE KNOWN AS JOVIAN PLANETS

JOVIAN PLANETS ARE LOWER DENSITY GAS GIANTS MADE MOSTLY OF COMPRESSED GAS SURROUNDING A TINY LIQUID OR SOLID CORE. THEY ARE CONSIDERED OUTER PLANETS.





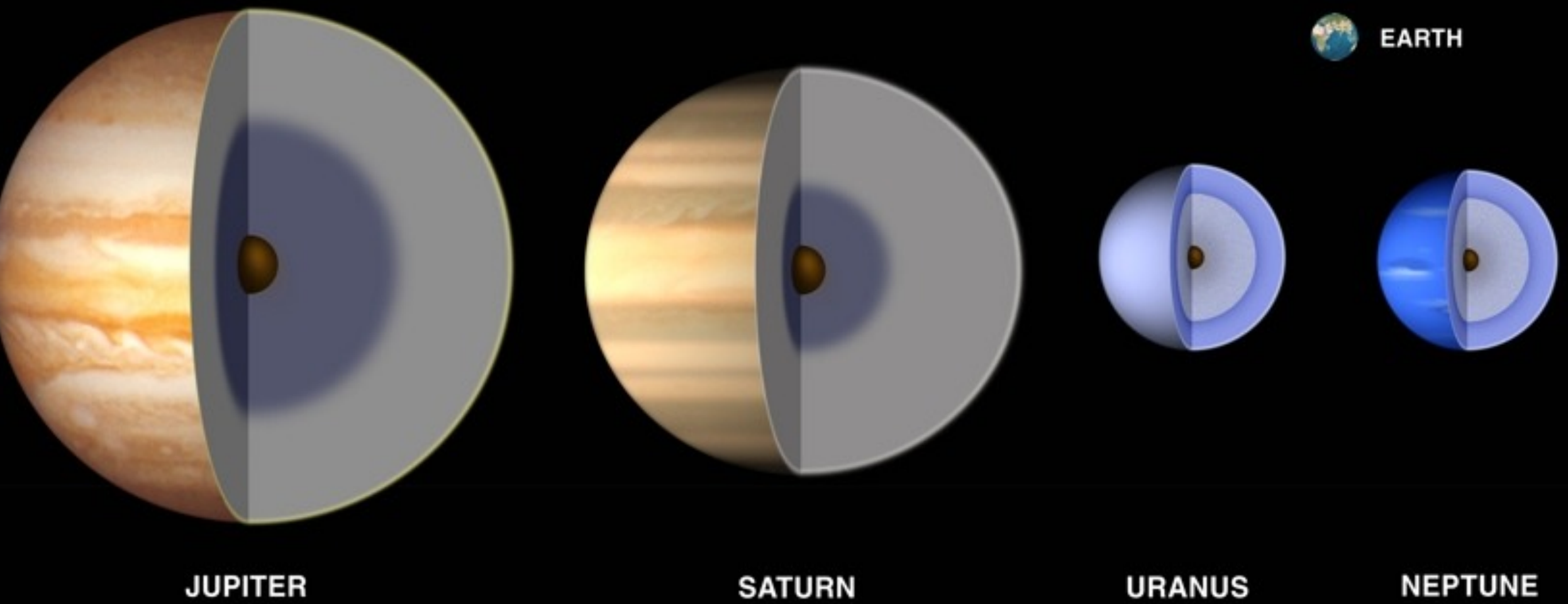


BACK

NEXT

SIZE COMPARISON

CORE OF THE GAS GIANTS AND THE EARTH



Molecular hydrogen

Metallic hydrogen

Hydrogen, helium, methane gas

Mantle (water, ammonia, methane ices)

Core (rock, ice)

BACK

NEXT

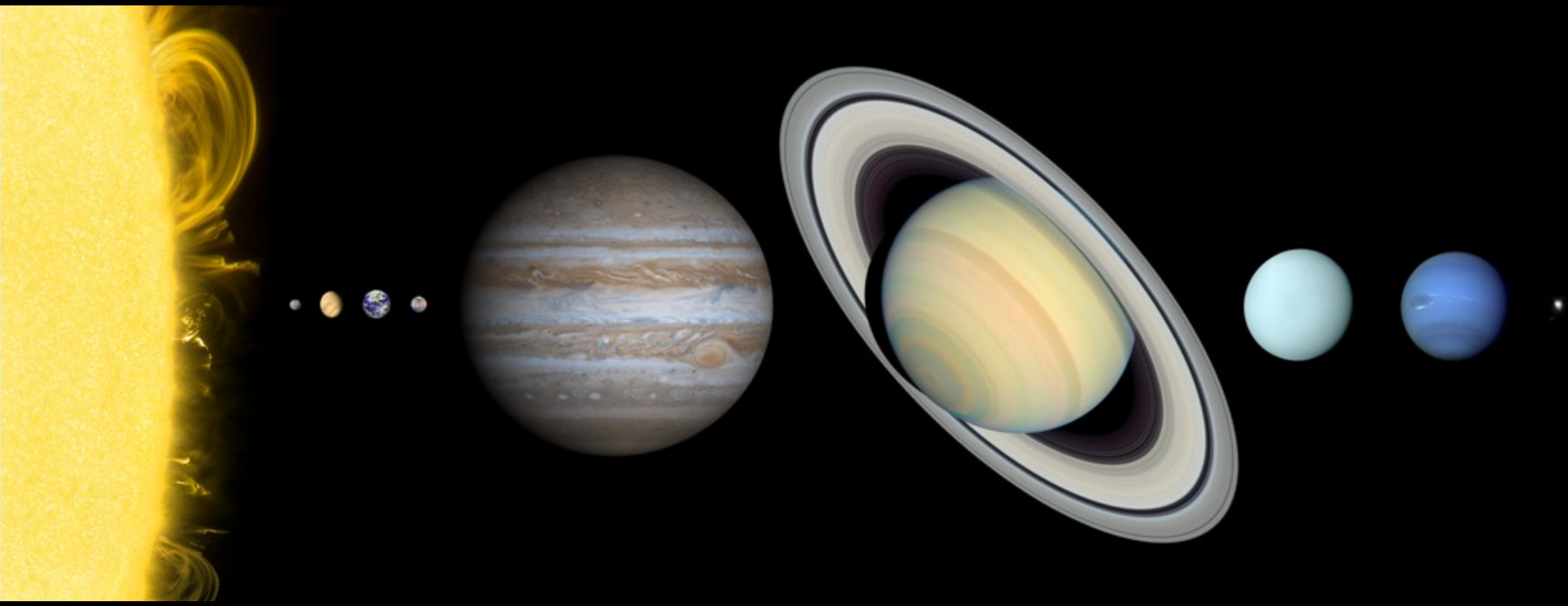
WATCH VIDEO #3
EXPLORING THE GAS GIANTS

THEN WATCH VIDEO #4
RINGS

BACK

NEXT

SIZE COMPARISON OF PLANETS AND SUN



BACK

NEXT

THERE ARE TWO MAJOR PLANETARY MOTIONS

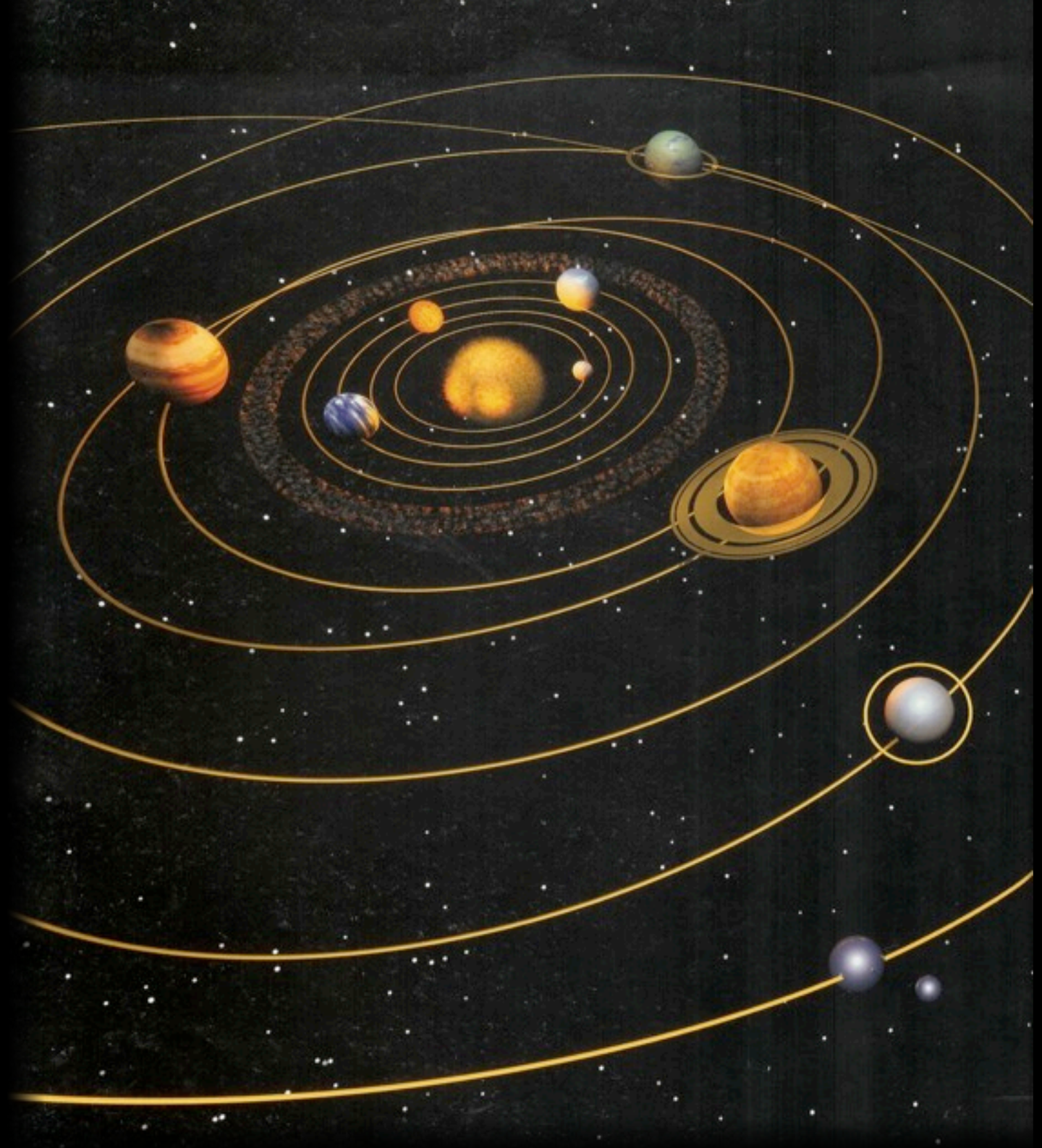
BACK

NEXT

REVOLUTION OF THE PLANETS

(THE ORBITAL MOTION)

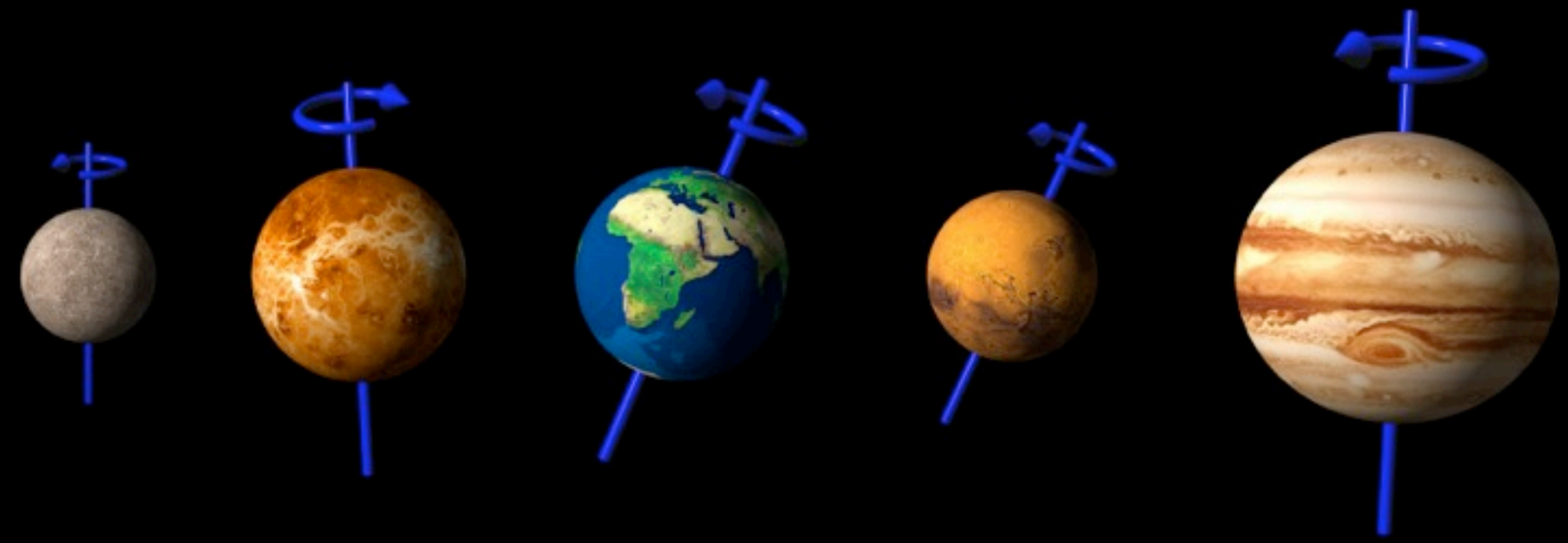
AND...



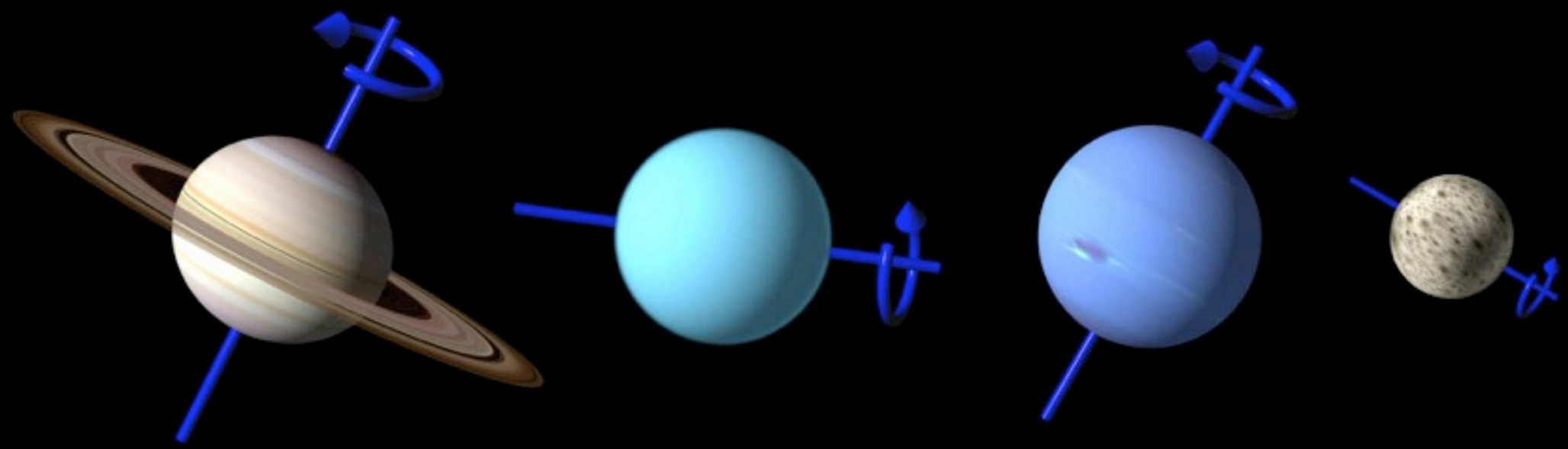
BACK

NEXT

ROTATION OF THE PLANETS



Mercury 0.1º | Venus 177º | Earth 23º | Mars 25º | Jupiter 3º



Saturn 27º | Uranus 98º | Neptune 30º | Pluto 120º

BACK

NEXT

TERRESTRIAL PLANETS AND JOVIAN PLANETS ARE SEPARATED BY THE ASTEROID BELT

BACK

NEXT

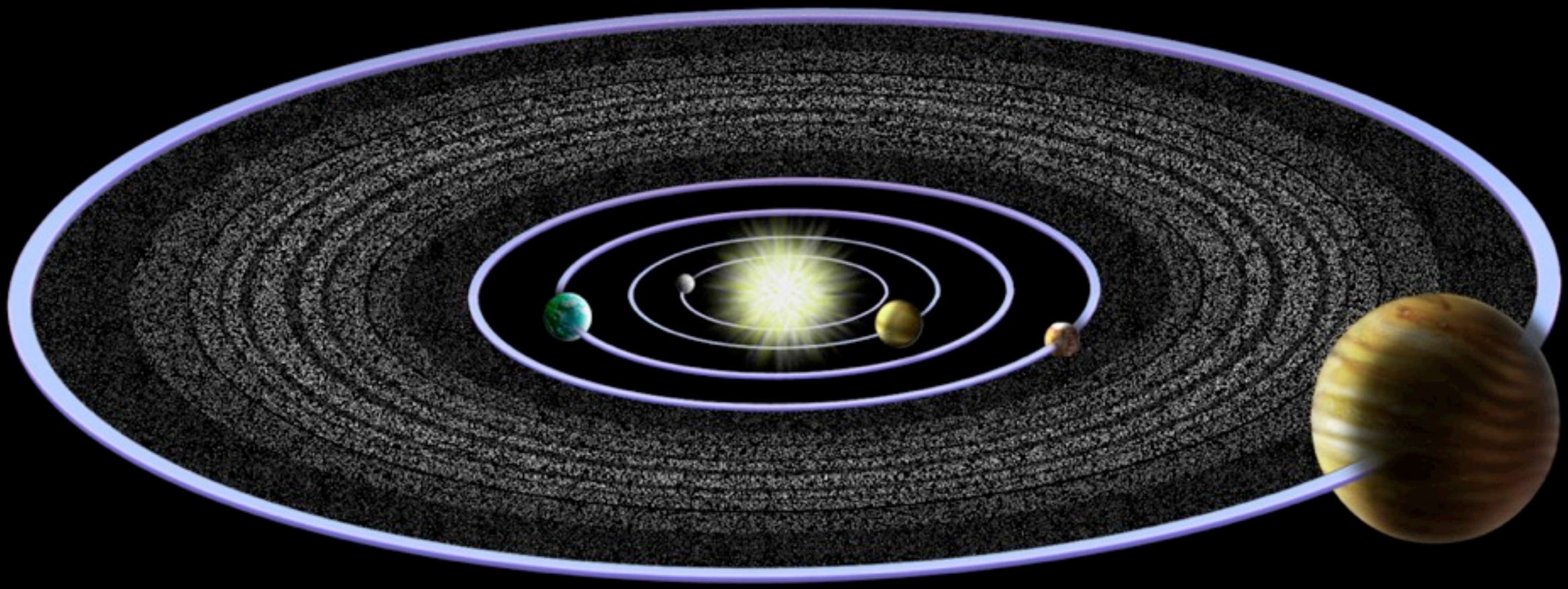
ASTEROIDS

SMALL ROCKY CELESTIAL BODIES ORBITING THE SUN

BACK

NEXT

THE ASTEROID BELT IS LOCATED BETWEEN MARS AND JUPITER



BACK

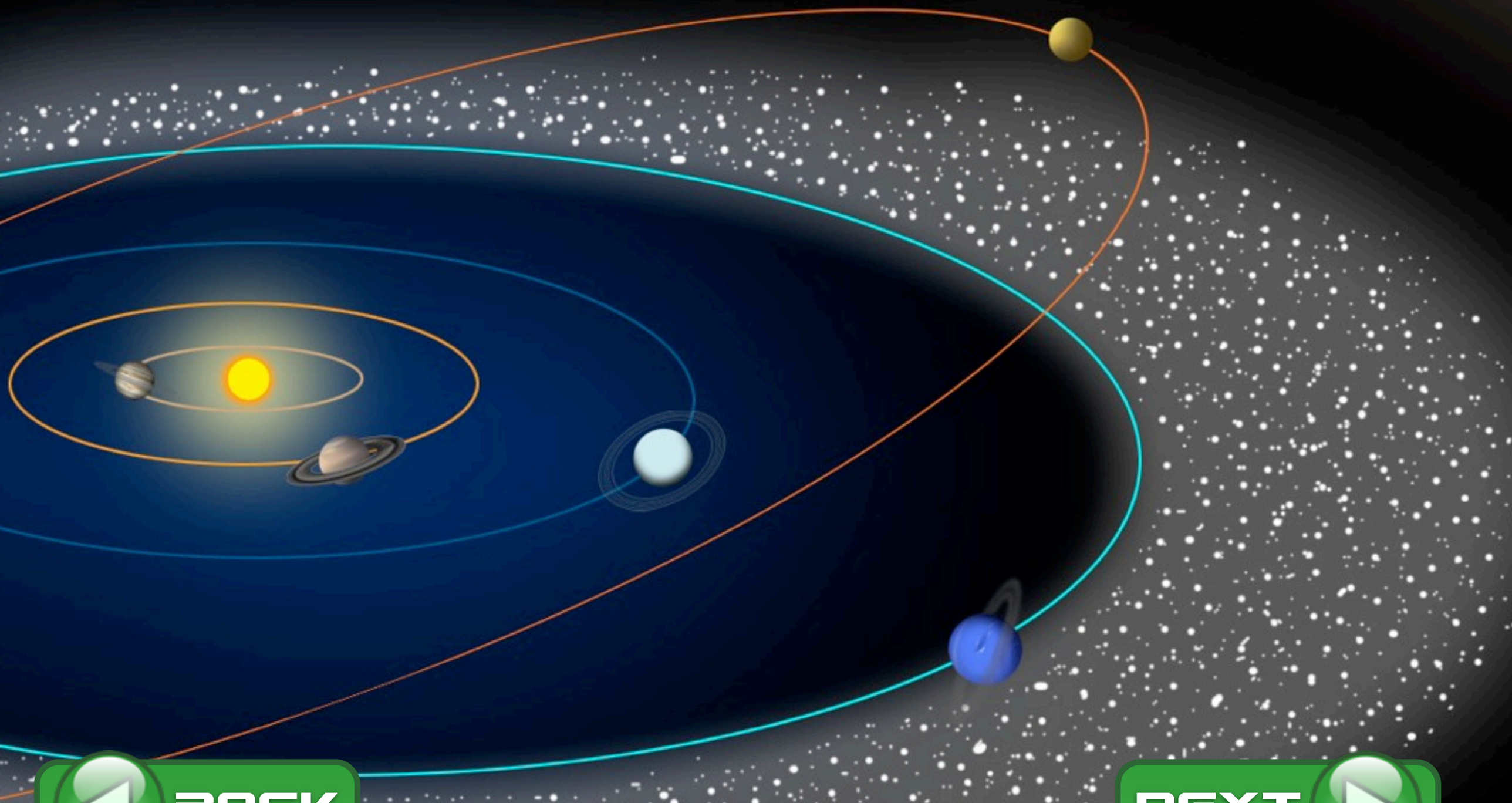
NEXT

ASTEROID VESTA IS THE LARGEST ASTEROID IN THE ASTEROID BELT

BACK

NEXT

THE KUIPER BELT IS ANOTHER LARGE FIELD OF ASTEROIDS LOCATED JUST OUTSIDE OF NEPTUNE'S ORBIT



BACK

NEXT

INSIDE THESE ASTEROID AREAS THERE ARE OBJECTS TOO BIG TO BE ASTEROIDS BUT TOO SMALL TO BE PLANETS

BACK

NEXT

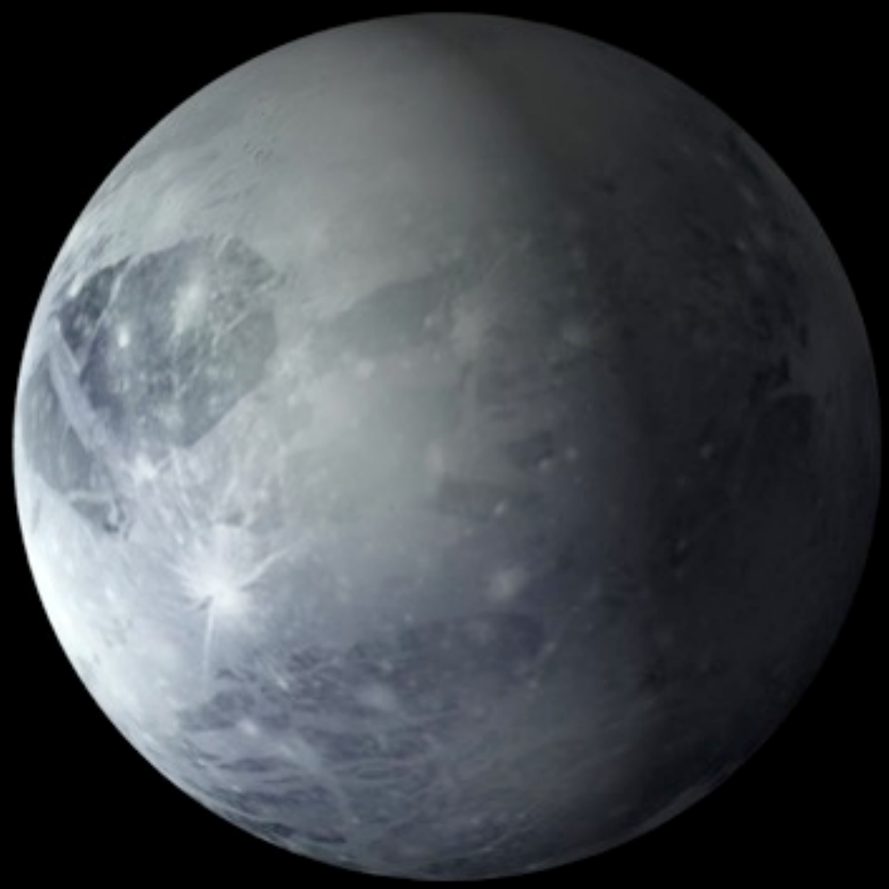
DWARF PLANETS

CELESTIAL BODIES ORBITING THE SUN, SMALLER THAN MERCURY BUT WITH A ROUND SHAPE

BACK

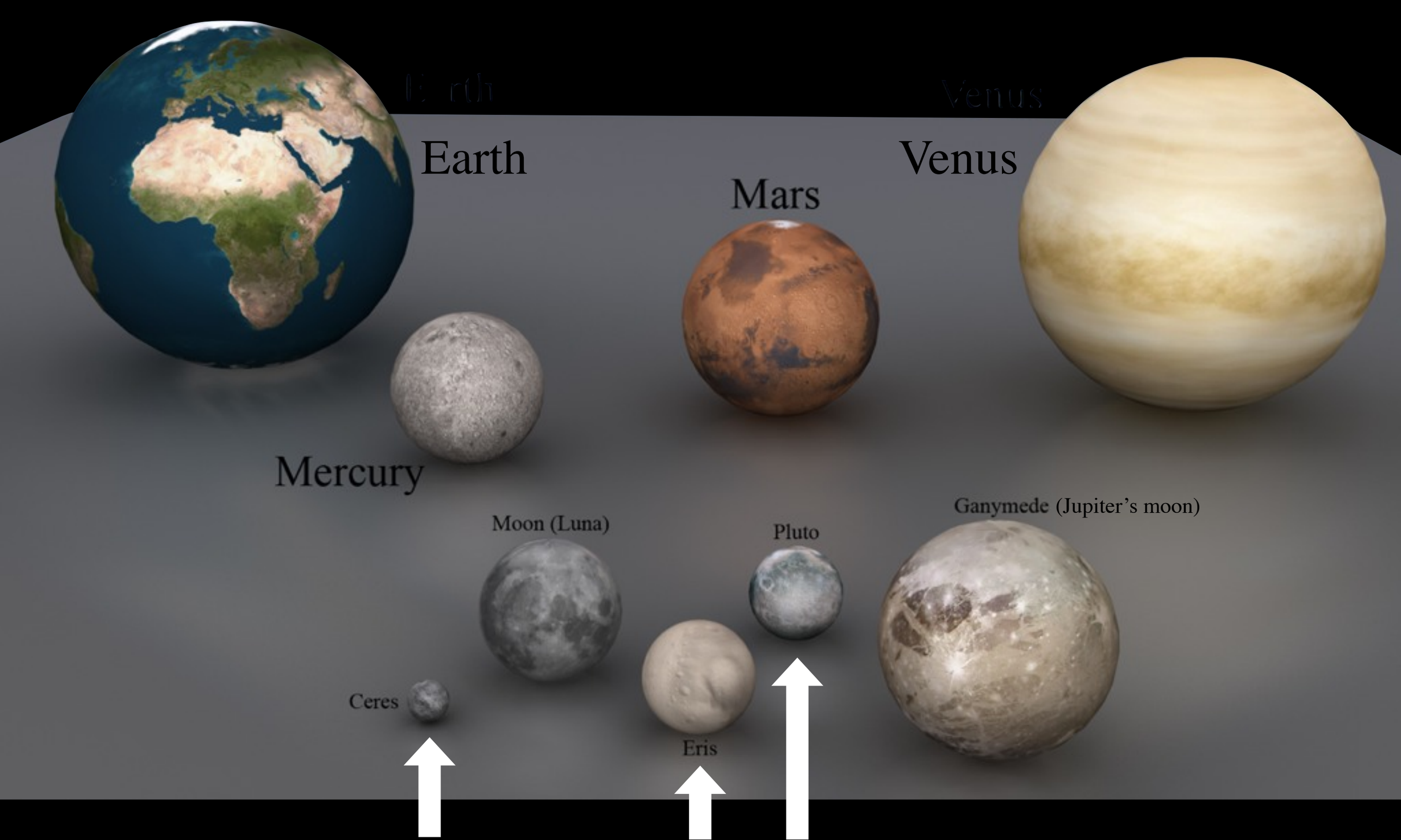
NEXT

PLUTO IS A DWARF PLANET



BACK

NEXT



DWARF PLANETS

BACK

NEXT

WATCH VIDEO #5
WHY PLUTO IS NOT A PLANET

BACK

NEXT

OUTSIDE THE KUIPER BELT IS THE OORT CLOUD WHERE COMETS ORIGINATE

BACK

NEXT

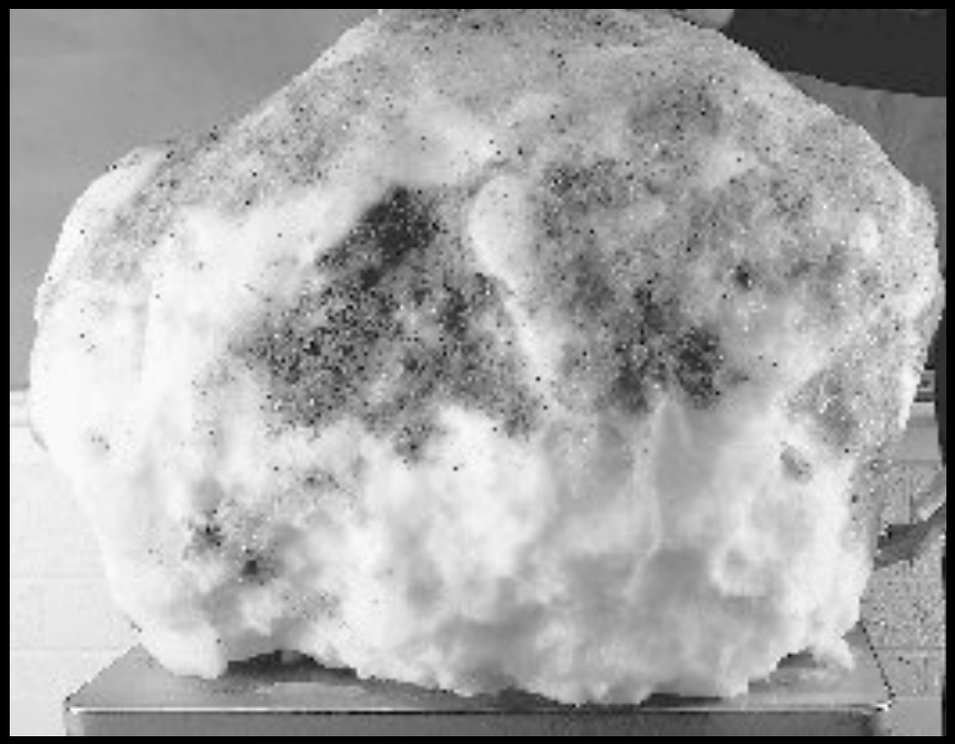
COMETS

A CELESTIAL BODY MADE OF ICE AND DUST WITH A TAIL OF GAS POINTING AWAY FROM THE SUN

BACK

NEXT

A COMET IS LIKE A DIRTY SNOWBALL



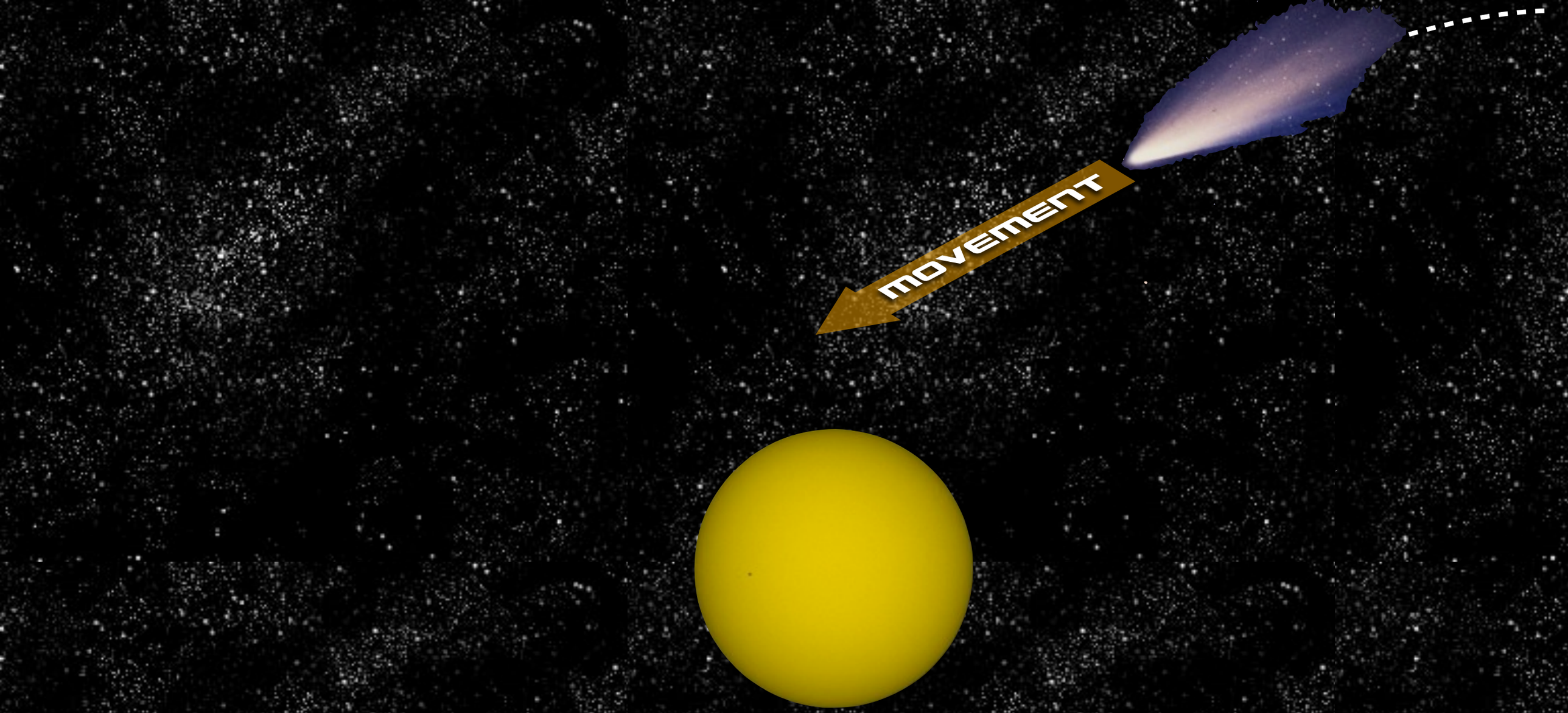
BACK

NEXT

BACK

NEXT

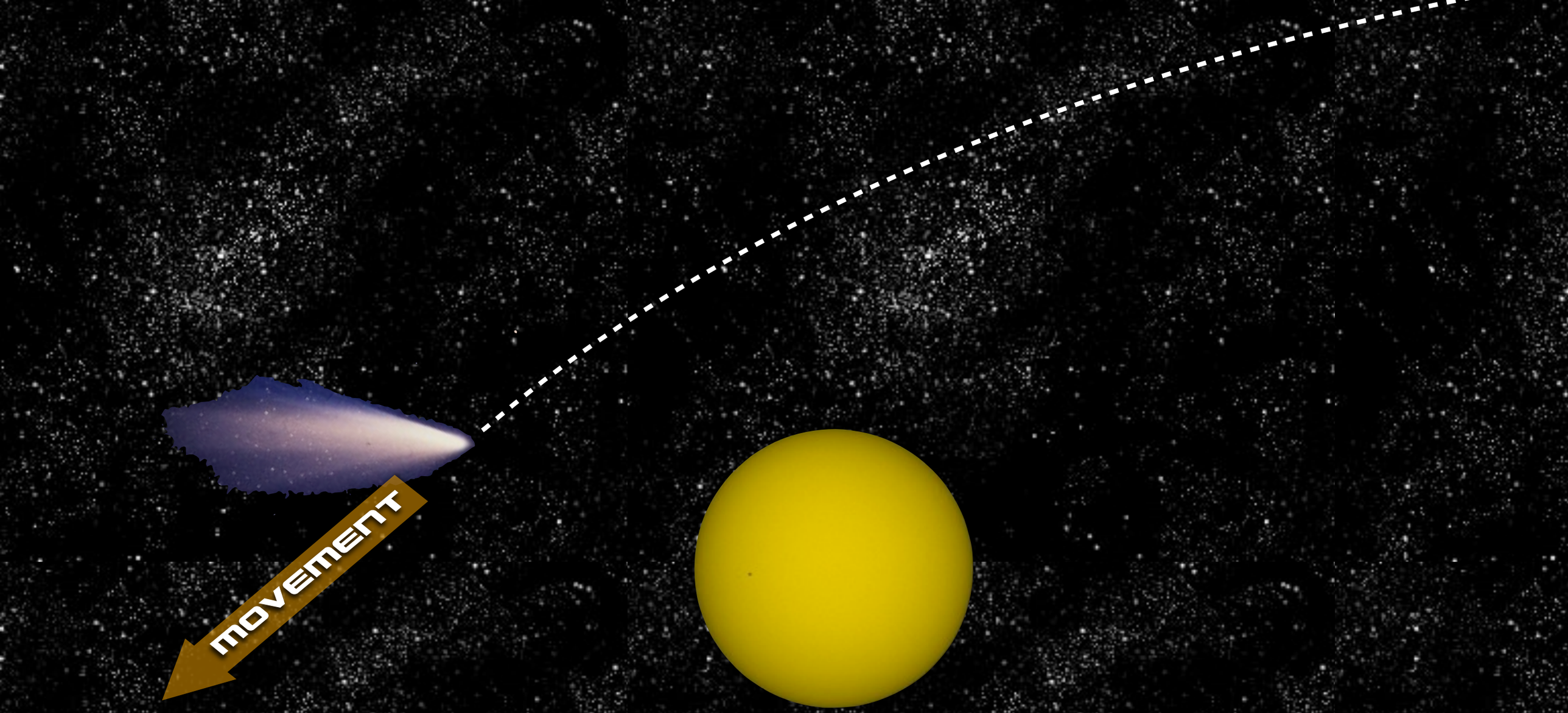
BACK
NEXT



IN THIS EXAMPLE, AS THE COMET APPROACHES THE SUN, THE TAIL IS BEHIND THE COMET, AWAY FROM THE SUN

BACK

NEXT



AS THE COMET PASSES THE SUN, THE TAIL IS NO LONGER BEHIND THE COMET BUT STILL AWAY FROM THE SUN

BACK

NEXT

WATCH VIDEO #6
ASTEROIDS, COMETS AND METEORS

BACK

NEXT

THERE ARE OVER 150 MOONS ORBITING THE PLANETS IN OUR SOLAR SYSTEM

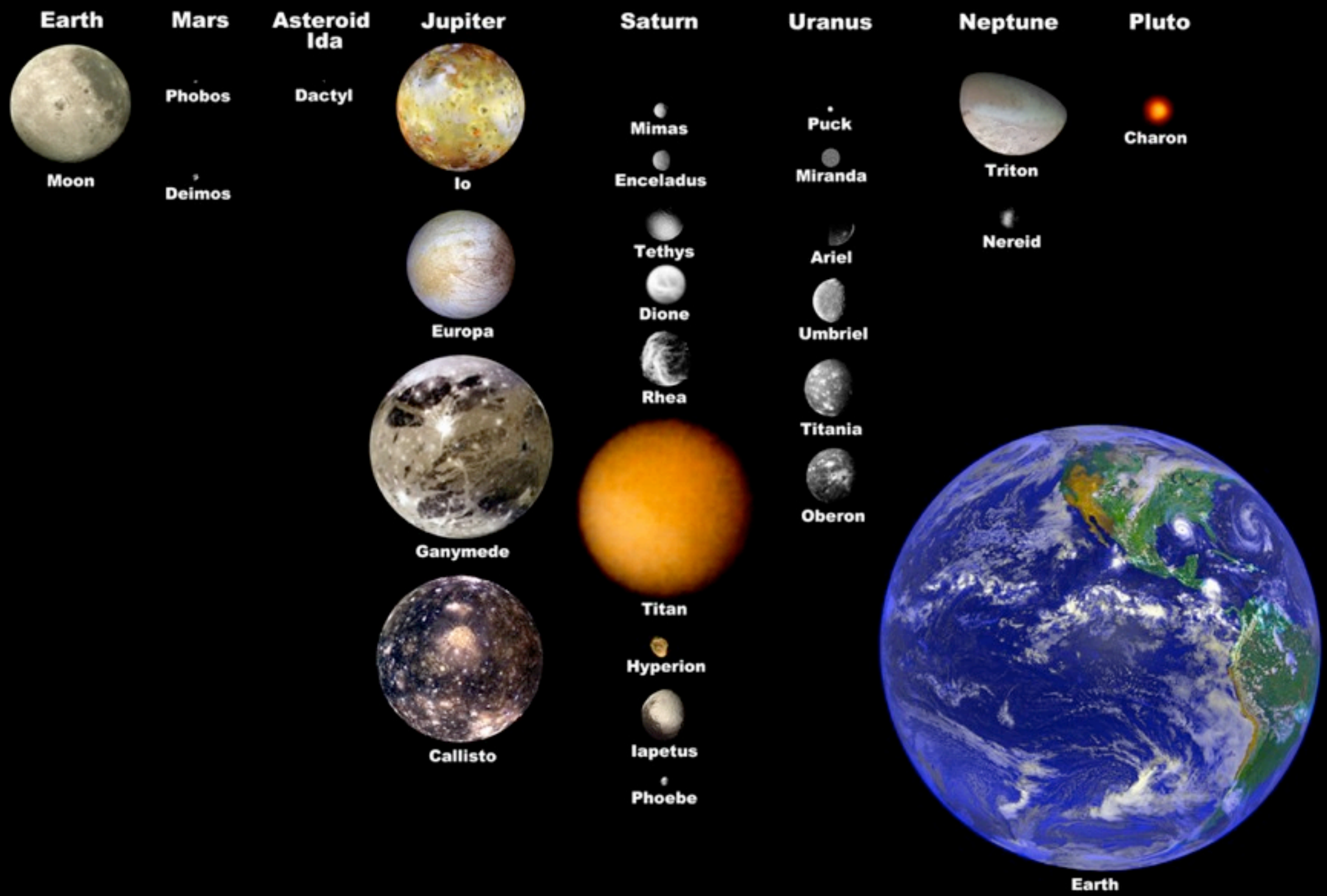
MOONS

NATURAL SATELLITES ORBITING THE PLANETS

BACK

NEXT

Moons of the Solar System Scaled to Earth's Moon



BACK

NEXT

WATCH VIDEO #7
MOONS

BACK

NEXT

MUCH SOLAR SYSTEM INFORMATION CAN BE FOUND ON PG. 15 OF THE ESRTS

Solar System Data

Celestial Object	Mean Distance from Sun (million km)	Period of Revolution (d=days) (y=years)	Period of Rotation at Equator	Eccentricity of Orbit	Equatorial Diameter (km)	Mass (Earth = 1)	Density (g/cm^3)
SUN	—	—	27 d	—	1,392,000	333,000.00	1.4
MERCURY	57.9	88 d	59 d	0.206	4,879	0.06	5.4
VENUS	108.2	224.7 d	243 d	0.007	12,104	0.82	5.2
EARTH	149.6	365.26 d	23 h 56 min 4 s	0.017	12,756	1.00	5.5
MARS	227.9	687 d	24 h 37 min 23 s	0.093	6,794	0.11	3.9
JUPITER	778.4	11.9 y	9 h 50 min 30 s	0.048	142,984	317.83	1.3
SATURN	1,426.7	29.5 y	10 h 14 min	0.054	120,536	95.16	0.7
URANUS	2,871.0	84.0 y	17 h 14 min	0.047	51,118	14.54	1.3
NEPTUNE	4,498.3	164.8 y	16 h	0.009	49,528	17.15	1.8
EARTH'S MOON	149.6 (0.386 from Earth)	27.3 d	27.3 d	0.055	3,476	0.01	3.3

BACK

NEXT

REGENTS PRACTICE QUESTIONS

1. Compared to Jovian planets, terrestrial planets have

   A) larger masses
   B) larger equatorial diameters
   C) shorter periods of revolution
   D) shorter periods of rotation

2. Compared to the other planets in our solar system, Jupiter, Saturn, and Neptune have

   A) shorter periods of rotation
   B) shorter periods of revolution
   C) greater eccentricities
   D) greater densities

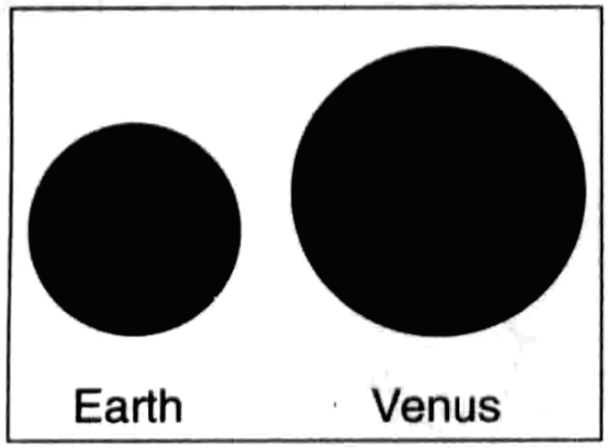
BACK

NEXT

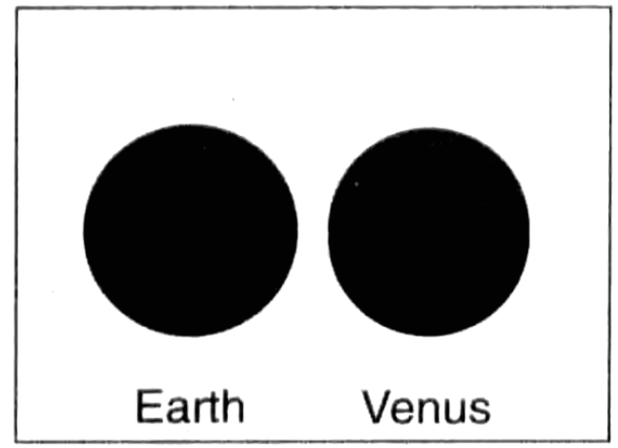
REGENTS PRACTICE QUESTIONS

3. Which pair of shaded circles best represents the relative sizes of Earth and Venus when drawn to scale?

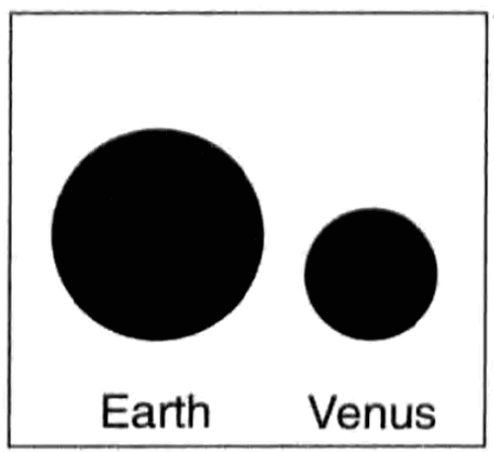
A)



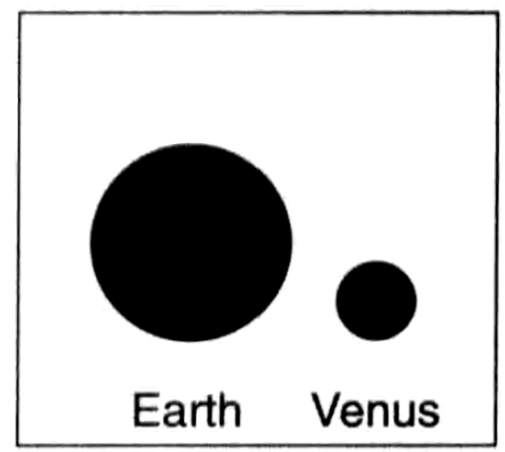
B)



C)



D)

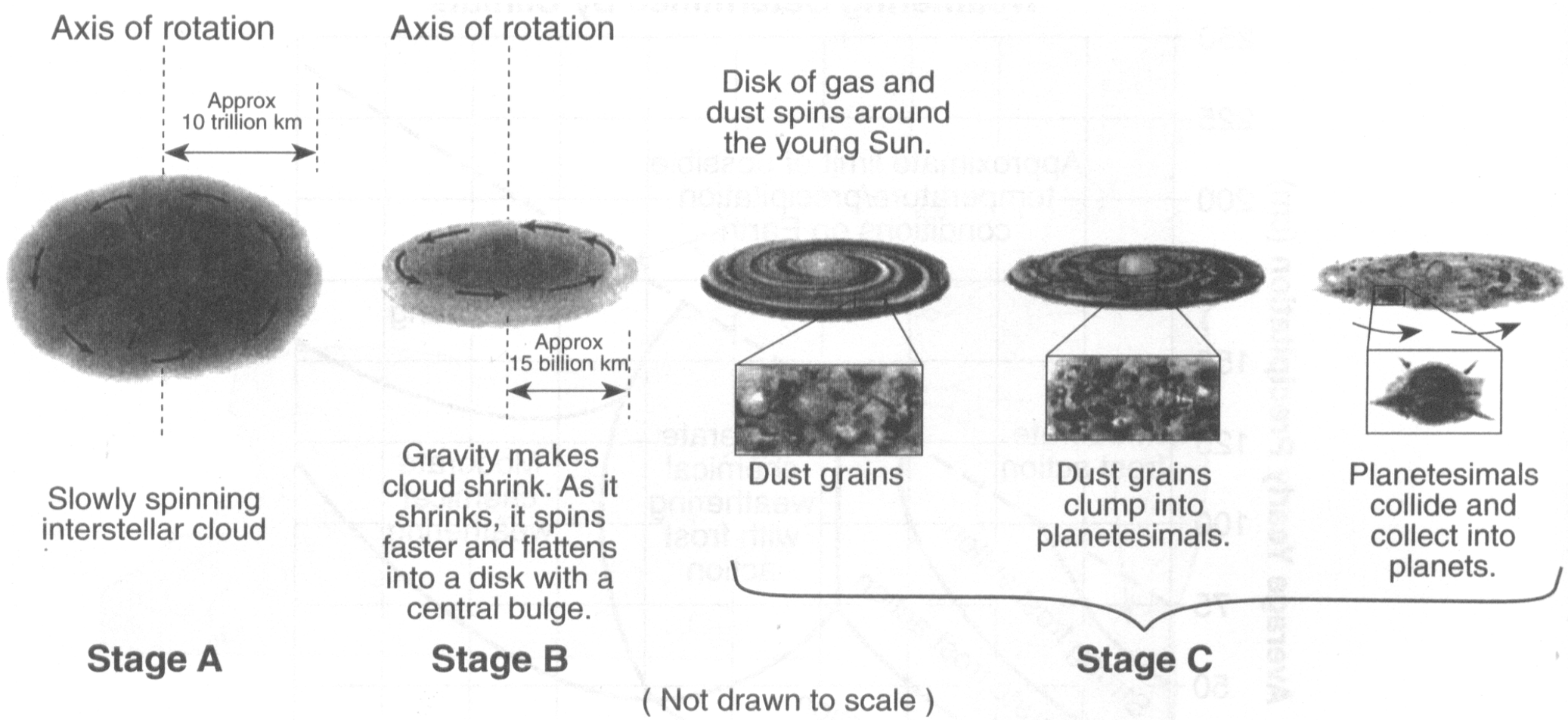


4. Which planet is located approximately ten times farther from the Sun than Earth is from the Sun?

A) Mars B) Jupiter C) Saturn D) Uranus

BACK NEXT

5. Base your answer to the following question on the diagram below, which shows an inferred sequence in which our solar system formed from a giant interstellar cloud of gas and debris. Stage *A* shows the collapse of the gas cloud, stage *B* shows its flattening, and stage *C* shows the sequence that led to the formation of planets.



After the young Sun formed, the disk of gas and dust

A) became spherical in shape
B) formed a central bulge
C) became larger in diameter
D) eventually formed into planets

BACK

NEXT

6. Which object in our solar system has the greatest density?

A) Jupiter B) Earth C) the Moon D) the Sun

7. Which list of three planets and Earth's Moon is arranged in order of increasing equatorial diameter?

A) Earth's Moon, Pluto, Mars, Mercury
B) Pluto, Earth's Moon, Mercury, Mars
C) Mercury, Mars, Earth's Moon, Pluto
D) Mars, Mercury, Pluto, Earth's Moon

8. Which planet would float if it could be placed in water?

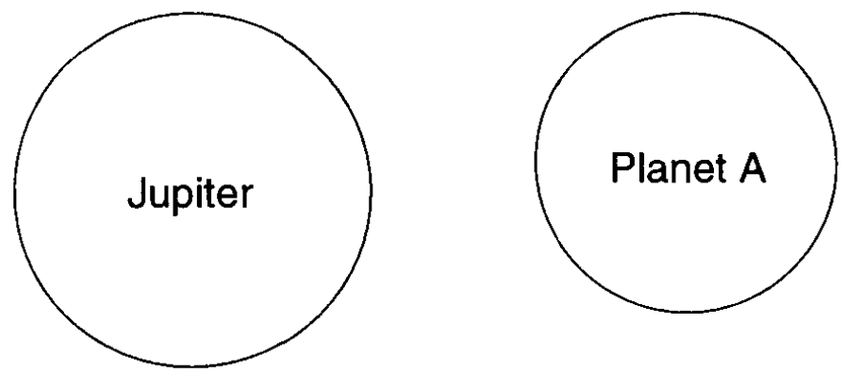
A) Mercury B) Earth C) Saturn D) Pluto

BACK NEXT

9. How do Jupiter's density and period of rotation compare to Earth's?

A) Jupiter is less dense and has a longer period of rotation.
B) Jupiter is less dense and has a shorter period of rotation.
C) Jupiter is more dense and has a longer period of rotation.
D) Jupiter is more dense and has a shorter period of rotation.

10. The diagram below represents two planets in our solar system drawn to scale, Jupiter and planet *A*.



Planet *A* most likely represents

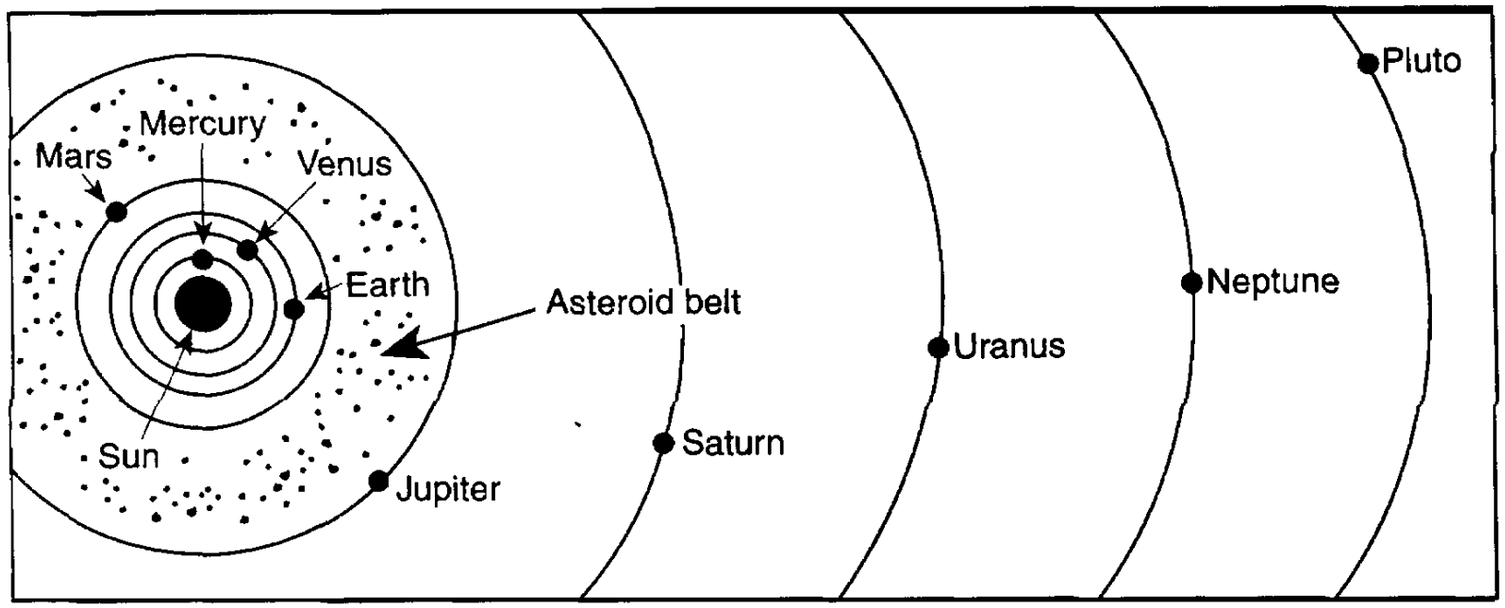
A) Earth B) Venus C) Saturn D) Uranus

11. Compared to Pluto, Mercury moves more rapidly in its orbit because Mercury

A) is larger
B) is more dense
C) is closer to the Sun
D) has a more elliptical orbit

BACK NEXT

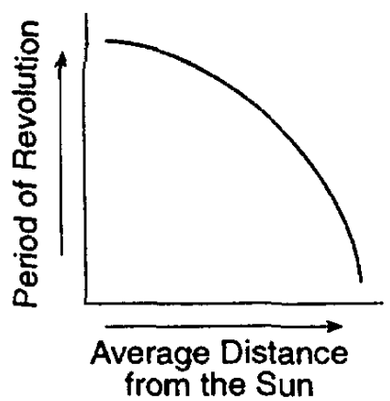
12. Base your answer to the following question on the diagram below, which shows a portion of the solar system.



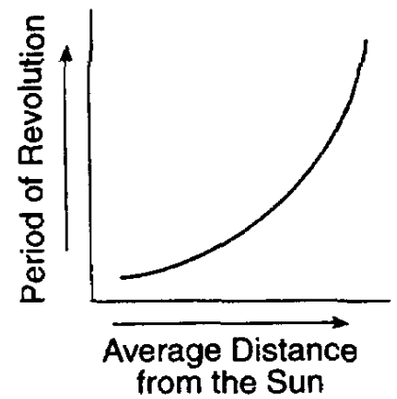
(Not drawn to scale)

Which graph best represents the relationship between a planet's average distance from the Sun and the time the planet takes to revolve around the Sun?

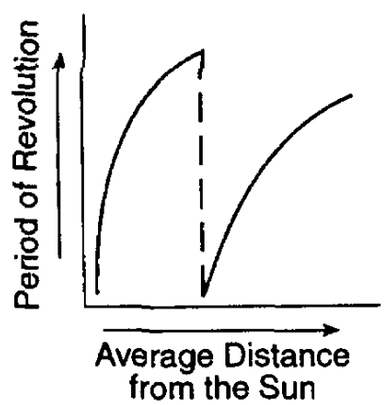
A)



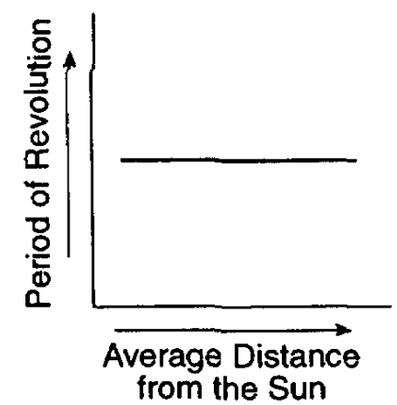
B)



C)



D)



BACK

NEXT

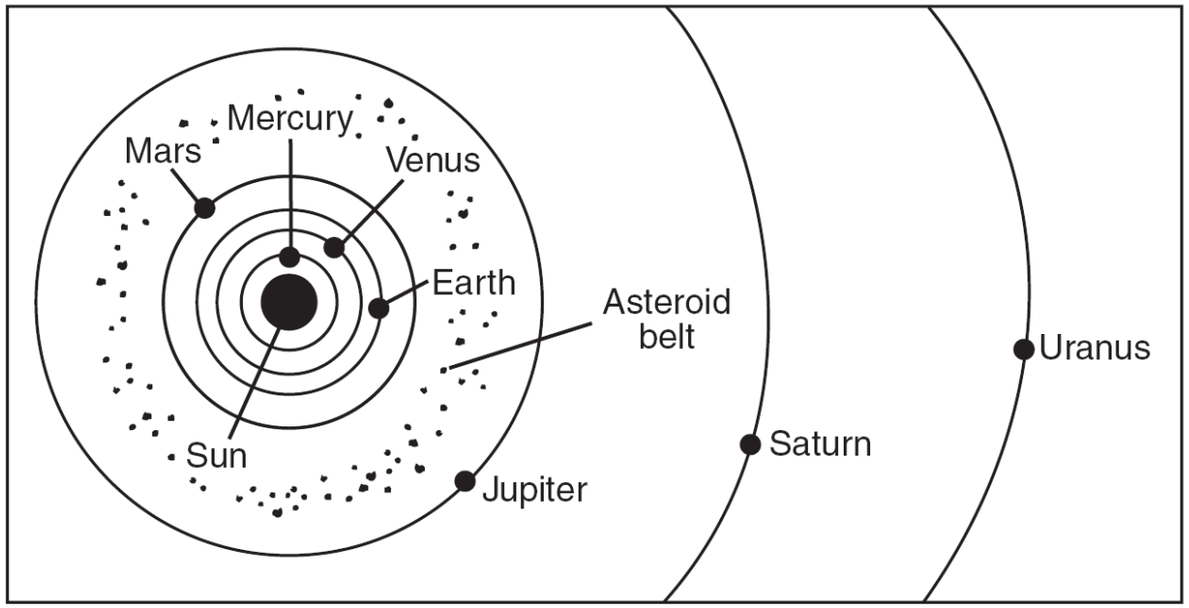
13. Compared to Jupiter and Saturn, Venus and Mars have greater

A) periods of revolution
B) orbital velocities
C) mean distances from the Sun
D) equatorial diameters

14. What is the approximate average density of the Earth?

A) 2.80 g/cm^3 B) 5.52 g/cm^3 C) 9.55 g/cm^3 D) 12.0 g/cm^3

15. Base your answer to the following question on the diagram below. This diagram shows a portion of the solar system.



(Not drawn to scale)

What is the average distance, in millions of kilometers, from the Sun to the asteriod belt?

A) 129 B) 189 C) 503 D) 85

BACK NEXT

16. If viewed from the Earth over a period of several years, the apparent diameter of Mars will

A) decrease constantly
B) increase constantly
C) remain unchanged
D) vary in a cyclic manner

THE END

BACK TO START OF QUESTIONS

BACK TO START OF LINKVIEWER

I SAID THE END!!!
What more do you want?
A puppy?

BACK