
SPACE EXPLORATION

DETAILS OF SUN

- The Sun is a massive star at the center of our solar system, composed mainly of hydrogen and helium.
- It accounts for 99.8% of the solar system's mass and is about 109 times the Earth's diameter.
- The Sun generates energy through nuclear fusion, producing heat and light essential for life on Earth.
- It drives the climate system and influences weather patterns. - The Sun emits solar wind, a stream of charged particles that can affect space weather and technology on Earth.
- Its surface temperature is approximately 5,500 degrees Celsius (9,932 degrees Fahrenheit), while the core reaches around 15 million degrees Celsius (27 million degrees Fahrenheit).
- The Sun has an estimated lifespan of about 10 billion years, currently being around 4.6 billion years old.
- It undergoes an 11-year solar cycle, affecting sunspot activity and solar radiation levels.

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DETAILS OF JUPITER

- ***Jupiter is the largest planet in our solar system, with a diameter of about 139,820 kilometers (86,881 miles).***
- ***It is a gas giant, primarily composed of hydrogen and helium, with no solid surface.***
- ***Jupiter has a strong magnetic field and is known for its Great Red Spot, a massive storm larger than Earth.***
- ***It has at least 79 known moons, including the four largest: Io, Europa, Ganymede, and Callisto (the Galilean moons).***
- ***Jupiter has a rapid rotation period, completing a day in about 10 hours.***
- ***It has a faint ring system made of dust and small particles.***
- ***The planet's immense gravity influences the orbits of other celestial bodies in the solar system.***
- ***Jupiter is approximately 4.5 billion years old, similar to the age of the solar system.***

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DETAILS OF MOON

- The Moon is Earth's only natural satellite and the fifth largest moon in the solar system.
- It is about 1/4 the size of Earth, with a diameter of approximately 3,474 kilometers (2,159 miles).
- The Moon's gravitational pull causes ocean tides on Earth.
- It has a surface covered with craters, mountains, and flat plains called maria.
- The Moon is in synchronous rotation with Earth, always showing the same face to us.
- It has no atmosphere, leading to extreme temperature variations.
- The Moon plays a significant role in cultural and scientific contexts, influencing calendars and exploration.
- It is about 4.5 billion years old, formed shortly after Earth.

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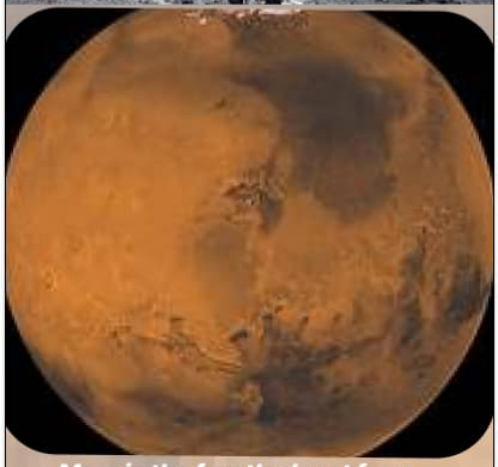
DETAILS OF MARS



- ***Mars is the fourth planet from the Sun and is often called the "Red Planet" due to its iron oxide-rich surface.***
- ***It has a diameter of about 6,779 kilometers (4,212 miles), making it roughly half the size of Earth.***
- ***Mars has a thin atmosphere, composed mainly of carbon dioxide, with surface pressure less than 1% of Earth's.***
- ***The planet features the largest volcano in the solar system, Olympus Mons, and a vast canyon system, Valles Marineris.***
- ***Mars experiences seasons similar to Earth due to its axial tilt of about 25 degrees.***
- ***It has two small moons, Phobos and Deimos, which are thought to be captured asteroids.***
- ***Mars has evidence of past water flow, including dried-up riverbeds and polar ice caps.***
- ***The planet's surface temperature can vary widely, ranging from -125°C (-195°F) in winter to 20°C (68°F) in summer.***
- ***Mars has been a primary target for exploration, with numerous missions, including rovers like Curiosity and Perseverance, searching for signs of past life.***
- ***The planet's potential for human colonization is a topic of ongoing research and interest.***

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DETAILS OF SATURN

- ***Saturn is the sixth planet from the Sun and is known for its stunning ring system, composed of ice and rock particles.***
- ***It is the second-largest planet in the solar system, with a diameter of about 116,460 kilometers (72,366 miles).***
- ***Saturn is a gas giant, primarily made up of hydrogen and helium, with no solid surface.***
- ***The planet has a low density; it is the only planet in the solar system that would float in water.***
- ***Saturn has at least 83 known moons, with Titan being the largest, featuring a thick atmosphere and liquid methane lakes.***
- ***The planet's rotation is rapid, completing a day in about 10.7 hours.***
- ***Saturn's rings are divided into several main sections, with the A, B, and C rings being the most prominent.***
- ***The planet has a strong magnetic field and numerous storms, including the hexagonal storm at its north pole.***
- ***Saturn has been studied by several spacecraft, including Pioneer, Voyager, and the Cassini-Huygens mission, which provided extensive data on its rings and moons.***
- ***The planet's unique features and beauty make it a key focus of astronomical research and exploration.***

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DETAILS OF VENUS

- *Venus is the second planet from the Sun and is similar in size and composition to Earth, with a diameter of about 12,104 kilometers (7,521 miles).*
- *It is often called Earth's "sister planet" due to its similar mass and proximity.*
- *Venus has a thick atmosphere composed mainly of carbon dioxide, with clouds of sulfuric acid, creating a strong greenhouse effect.*
- *Surface temperatures average around 467°C (872°F), making it the hottest planet in the solar system.*
- *The planet rotates very slowly on its axis, taking about 243 Earth days to complete one rotation, while its orbit around the Sun takes about 225 Earth days.*
- *Venus has a retrograde rotation, meaning it spins in the opposite direction to most planets, causing the Sun to rise in the west and set in the east.*
- *The surface of Venus is characterized by volcanic plains, mountains, and large volcanic structures, with evidence suggesting past volcanic activity.*
- *It has no moons or rings.*
- *Venus is often visible from Earth as the "Evening Star" or "Morning Star" due to its brightness.*
- *The planet has been explored by numerous missions, including NASA's Magellan and the Soviet Venera program, which provided valuable data about its atmosphere and surface.*

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DETAILS OF MERCURY

- ***Mercury is the closest planet to the Sun and the smallest planet in the solar system, with a diameter of about 4,880 kilometers (3,032 miles).***
- ***It has a very thin atmosphere, composed mainly of oxygen, sodium, hydrogen, helium, and potassium.***
- ***Mercury experiences extreme temperature fluctuations, ranging from about -173°C (-280°F) at night to 427°C (800°F) during the day.***
- ***The planet has a heavily cratered surface, similar to the Moon, due to a lack of geological activity.***
- ***Mercury has a 3:2 spin-orbit resonance, meaning it rotates three times on its axis for every two orbits around the Sun.***
- ***t has a large iron core, making up about 75% of its volume, which contributes to its high density.***
- ***Mercury has no moons or rings.***
- ***The planet's surface features include scarps, which are cliffs formed by tectonic activity.***
- ***Mercury was visited by NASA's Mariner 10 in the 1970s and more recently by the MESSENGER spacecraft, which provided detailed data about its geology and composition.***
- ***Due to its proximity to the Sun, Mercury is difficult to observe from Earth, often appearing as a faint point of light.***

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