

How big is our Solar System?

Our solar system is so big it is almost impossible to imagine its size if you use ordinary units like feet or miles. The distance from Earth to the Sun is 93 million miles (149 million kilometers), but the distance to the farthest planet Neptune is nearly 3 billion miles (4.5 billion kilometers).

How far does our Solar System extend?

Our Solar System extends much, much farther than where the planets are. The furthest dwarf planet, Eris, orbits within just a fraction of the larger Solar System. The Kuiper Belt, where we find a Pluto, Eris, Makemake and Haumea, extends from 30 astronomical units all the way out to 50 AU, or 7.5 billion kilometers. And we're just getting started.

What is the astronomical unit (AU)?

Scientists figured out a while ago that writing out those huge numbers wasn't the best use of their time, so they invented the Astronomical Unit (AU). One AU, about 93 million miles (150 million kilometers), represents the average distance from the Sun to the Earth.

What is the largest planet in the Solar System?

Our solar system's largest planet is an average distance of 484 million miles (778 million kilometers) from the Sun. That's 5.2 AU. Jupiter is the largest of the planets, spanning nearly 1.75 millimeters in diameter on our football field scale. Jupiter's diameter is about equal to the thickness of a U.S. quarter in our shrunken solar system.

How do astronomers measure the size of our Solar System?

The best way to appreciate the size of our solar system is by creating a scaled model of it that shows how far from the sun the eight planets are located. Astronomers use the distance between Earth and sun, which is 93 million miles, as a new unit of measure called the Astronomical Unit.

What are astronomical units based on?

Scientists had to come up with a new unit of measurement just to get a grasp on the immense distances within the solar system. The astronomical unit (AU) is based upon the average distance from Earth to the Sun, or approximately 93 million miles. For example, Mercury, the closest planet to the Sun, is 0.39 astronomical units from the Sun.

# DIAMETER OF SOLAR SYSTEM IN AU



Solar Panel System Size: Number of Solar Panels Required: Approximate Roof Space Required: 2kW: 6: 12 m<sup>2</sup>: 3kW: 9: 17 m<sup>2</sup>: 4kW: 12: 23 m<sup>2</sup>: 5kW: 15: 28 m<sup>2</sup>: 6.6kW: 20: 38 m<sup>2</sup>: 8kW: 24: battery and EV charging customers across every state in Australia. He holds an MBA from the Australian Graduate School of Management and is an expert in



Our solar system includes the Sun, eight planets, five dwarf planets, and hundreds of moons, asteroids, and comets. Size and Distance. One astronomical unit (or AU) is the distance from the Sun to Earth, or about 93 million miles (150 million kilometers).

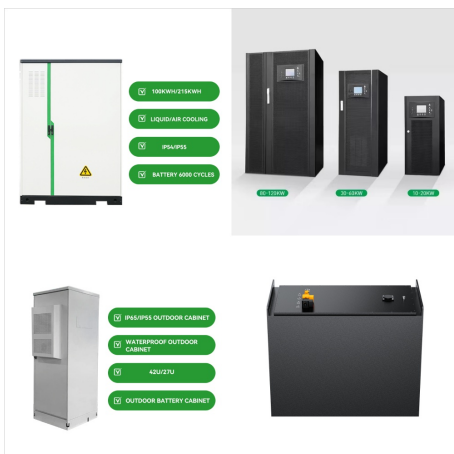


Our solar system consists of our star, the Sun, and everything bound to it by gravity ??? the planets Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune; dwarf planets such as ???

# DIAMETER OF SOLAR SYSTEM IN AU



One AU is equal to 149,597,871 kilometers or 92,955,807 miles. Measurements of the solar system's size vary depending on how it is defined. Scale by Distance to Neptune. the radius of the solar system could be 937 AU in any direction from the Sun, so 1,874 AU in total diameter. Regardless of which scale you use, the solar system is



The sun is by far the largest object in our solar system, containing 99.8% of the solar system's mass. It sheds most of the heat and light that makes life possible on Earth and possibly elsewhere.

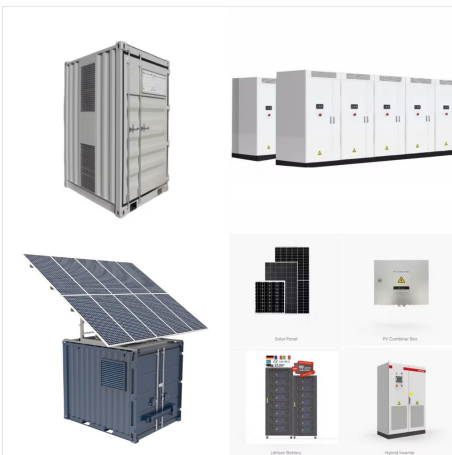


When the solar system settled into its current layout about 4.5 billion years ago, Mars formed when gravity pulled swirling gas and dust in to become the fourth planet from the Sun. Mars is about half the size of Earth, and like its fellow terrestrial planets, it has a central core, a rocky mantle, and a solid crust.

# DIAMETER OF SOLAR SYSTEM IN AU



Our solar system is usually gone over in elementary school, so you might just need a refresher course about Planets In Order Of Size: Planet: Diameter (km) Size relative to Earth: Mercury: 4879.4 38% the size of Earth: Mars: 6779 (AU/KM) Mercury: 0.39 (57.9 million) Venus: 0.723 (108.2 million) Earth: 1 (149.6 million) Mars:



Pluto's 248-year-long, oval-shaped orbit can take it as far as 49.3 astronomical units (AU) from the Sun, and as close as 30 AU. (One AU is the mean distance between Earth and the Sun: about 93 million miles or 150 million kilometers.) But on average, Pluto is 3.7 billion miles (5.9 billion kilometers) away from the Sun, or 39 AU.



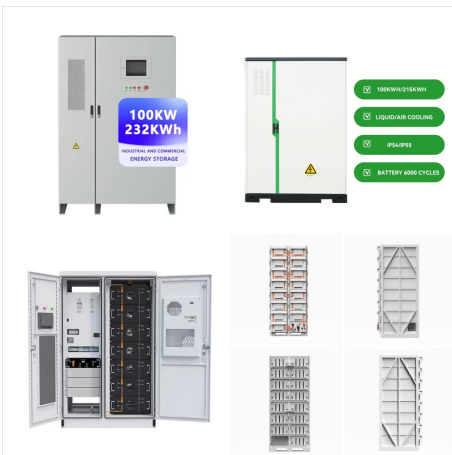
The Sun is the star at the center of the Solar System is a massive, nearly perfect sphere of hot plasma, heated to incandescence by nuclear fusion reactions in its core, radiating the energy from its surface mainly as visible light and infrared radiation with 10% at ultraviolet energies. It is by far the most important source of energy for life on Earth.



# DIAMETER OF SOLAR SYSTEM IN AU



The size of the solar system may seem like it has a simple answer, yet there is no universally agreed upon definition for where our solar system ends. There are three possible definitions for where our solar system ends: the heliopause, the edge of the Oort Cloud, and the gravitational influence of the sun .



Mercury, the innermost planet of the solar system and the eighth in size and mass. Its closeness to the Sun and its smallness make it the most elusive of the planets visible to the unaided eye. 57,909,227 km (0.39 AU) eccentricity of orbit 0.2056 inclination of orbit to ecliptic 7.0? Mercurian year (sidereal period of revolution) 87.97



One way to help visualize the relative distances in the solar system is to imagine a model in which the solar system is reduced in size by a factor of a billion (10<sup>9</sup>). The Earth is then about 1.3 cm in diameter (the size of a grape). (AU). An AU is simply the average distance between the Earth and the Sun. Because the Earth's orbit around

# DIAMETER OF SOLAR SYSTEM IN AU



? The solar system's several billion comets are found mainly in two distinct reservoirs. The more-distant one, called the Oort cloud, is a spherical shell surrounding the solar system at a distance of approximately 50,000 astronomical units (AU)???more than 1,000 times the distance of Pluto's orbit. The other reservoir, the Kuiper belt, is a thick disk-shaped zone whose main ???



Jupiter is the fifth planet from the Sun and the largest in the Solar System is a gas giant with a mass more than 2.5 times that of all the other planets in the Solar System combined and slightly less than one-thousandth the mass of the Sun. Its diameter is eleven times that of Earth, and a tenth that of the Sun. Jupiter orbits the Sun at a distance of 5.20 AU (778.5 Gm), with an orbital



In our imaginations, let us build a scale model of the solar system, adopting a scale factor of 1 billion (10<sup>9</sup>)???that is, reducing the actual solar system by dividing every dimension by a factor of 10<sup>9</sup>. Earth, then, has a diameter of 1.3 centimeters, about the size of a grape.

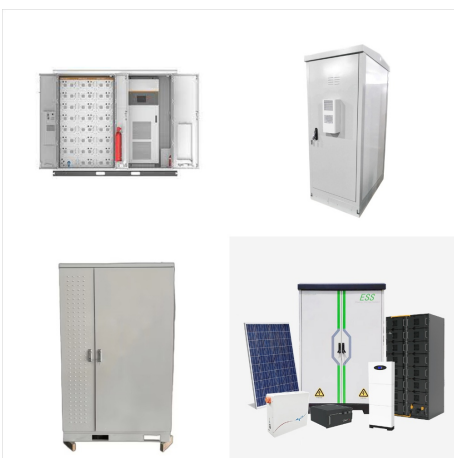
# DIAMETER OF SOLAR SYSTEM IN AU



The best way to appreciate the size of our solar system is by creating a scaled model of it that shows how far from the sun the eight planets are located. Astronomers use the distance between Earth ----- = ----- then  $X = 1 \text{ AU} \times (57/149) = 0.38 \text{ AU}$ . Planet Distance to the Sun in millions of kilometers . Distance to the Sun in Astronomical



Solar System to Scale Sun is scaled one meter (39") in diameter Actual Size of Sun: 1,391,000 km (864,000 mi) 150 million km (93 million mi) A little more than 100 Sun diameters will span the distance of one AU Neptune Actual Size: 49,500 km (30,800 mi) diameter Scaled Size: 33 mm (1.3") Average distance from Sun: 30 AU



The far edge of the Oort Cloud is considered the edge of our Solar System, making our cosmic neighborhood quite big indeed. So, to find how big the solar system is across, we could double that distance, giving us a rough estimate for a diameter of 200,000 AU, or 30 trillion km (18.6 trillion miles). That's over 3 light years across!

# DIAMETER OF SOLAR SYSTEM IN AU



How astronomers work out the size of the Solar System Published: July 11, 2024 12:57pm EDT  
These drift through the frigid outermost reaches of the Solar System at distances of up to 200,000 AU



The Earth is located in a planetary system we call the solar system located in one of the four spiral arms of the Milky Way galaxy. Our solar system. ( AU ) is the distance from the Earth to the Sun ( about 93 million miles ) To put this into context the diameter of the Earth is only 7926 miles!!! Grab the activity sheet below!



Jupiter is the largest planet in our solar system. Jupiter's iconic Great Red Spot is a giant storm bigger than Earth. With a radius of 43,440.7 miles (69,911 kilometers), Jupiter is 11 times wider than Earth. If Earth were the size of a grape, Jupiter would be about as big as a basketball. (778 million kilometers), Jupiter is 5.2



# DIAMETER OF SOLAR SYSTEM IN AU



Solar System Scale Model. Deborah Scherrer, Stanford Solar Center . Target Audiences: Public science events Youth groups Science museums, planetaria Astronomy clubs Actual Diameter Distance in AU Actual Distance from Sun . Sun 2.5 m -- 1,392,000 km -- --



Ask the Chatbot a Question Ask the Chatbot a Question astronomical unit (AU, or au), a unit of length effectively equal to the average, or mean, distance between Earth and the Sun, defined as 149,597,870.7 km (92,955,807.3 miles). Alternately, it can be considered the length of the semimajor axis???i.e., the length of half of the maximum diameter???of Earth's ???



One AU is the distance from the sun to the Earth, which is about 93 million miles or 150 million kilometers. This artist's concept puts solar system distances in perspective. The scale bar is in astronomical units, with each set distance beyond 1 AU representing 10 times the previous distance. One AU is the distance from the sun to the Earth

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