

The fueled by nuclear
fusion reactions. the



**ASSIGN
BUSTER**

The Sun is the closest star to Earth and is the center of our solar system. A giant, spinning ball of very hot gas, the Sun is fueled by nuclear fusion reactions. The light from the Sun heats our planet and makes life possible. The Sun is also an active star that displays sunspots, solar flares, erupting prominences, and coronal mass ejections.

These phenomena, which are all related to the Sun's magnetic field, impact our near-Earth space environment and determine our "space weather". In about five billion years, the Sun will evolve into a Red Giant, and eventually, a White Dwarf star. Many cultures have had interesting myths about the Sun, in recognition of its importance to life on Earth. The average Earth surface temperature is 68 degrees Fahrenheit while the average temperature on the photosphere is a mind-boggling 10, 292 degrees.

The surface is the coolest part of the Sun, anywhere else is hotter and in some parts, the temperature reaches millions of degrees. The Sun is hottest at the core where temperatures can go as high as 27 million degrees Fahrenheit. The atmosphere of the sun consists of several layers called the photosphere, chromosphere, transition region and corona. The photosphere is the lowest layer and the visible surface of the sun we see. The corona is the outer layer of the sun's atmosphere and is much hotter than it's surface. Eclipse happens on August 21, when the moon will pass between the sun and Earth, and, depending on where you are in the United States and a few other countries, the moon can be seen completely, or partially, blocking the sun.

Diameter: 1.4 million km
Age: 4.5 billion years
Mass: 330,000 x Earth
Distance from Earth: 149.6 million km
Density: 1.41 (water = 1)
Distance to Nearest Star: 4.

3 light years
Solar Wind Speed: 3 million km/hr.
Luminosity: 390 billion megawatts
Solar Cycle: 8 - 11 years
Temperature at surface: 5,500 Centigrade
Temperature at Core: 14 million Centigrade
Temperature of Sunspots: 4,000 Centigrade
Rotation Period at Equator: 25 Earth days
Rotation Period at Poles: 35 Earth days
Sun is at the center of our Solar System, and 8 planets revolve around the Sun in a circular or elliptical orbit. Our Earth is the third planet from the Sun, and the only planet in the Solar System with plants, animals, and people! Jupiter Mercury Earth Saturn Uranus Neptune Venus Mars
The Sun is 860,000 miles wide, so about 109 Earths could fit inside the Sun!
• The Sun is about 93 Million Miles away from Earth.
• The Sun does not have any air or water, and is too hot for anything to live there.
• The Sun's light takes 8 minutes to travel to Earth, at the speed of light which is 182,200 miles per second! (fortunately, its light is sent out constantly so we don't notice any delay)
• The Sun's surface is rough, with flares, spikes, waves and storms happening all the time, and cooler areas known as sunspots appearing periodically. With a total width of around 865,000 miles (1,392,000 kilometres), the Sun's diameter is about 110 times wider than the Earth's!
It takes around 8 minutes for the Sun's light to reach Earth
Due to the speed at which the sun moves, it's impossible for a solar eclipse to last any longer than 7 minutes and 58 seconds
Approximately 109 planet Earths would fit on the surface of the sun and more than one million planet Earths would fit inside it
Because the Sun has a huge influence on

Earth, many early cultures saw the Sun as a deity or god. For example, in Aztec mythology there is a sun god which is named Tonatiuh.

Whilst with the Ancient Egyptians, they had a sun god called Ra. A person weighing 150 pounds on Earth would weigh 4200 pounds on the sun due to the sun's gravity. All planets orbit the sun in the same direction, counterclockwise, and on roughly the same plane, known as the ecliptic. In the sixteenth century, Nicholas Copernicus argued that it was the Earth that traveled around the sun - not the sun traveling around the Earth, as thought for centuries. However, it wasn't until Newton formulated the laws of motion, that Copernicus's view of the solar system was accepted. If you happened to live on the Sun and decided to build a spacecraft, it would need to somehow go over 384 miles / 618.2 kilometres per second to escape the Sun's gravitational pull. That's about 40 times faster than the average passenger plane. Sunlight sustains all life on earth, allowing the plants to produce food through photosynthesis. No sun? Eventually, no life. The Sun is made of many gases! Majorly the Sun is 73% Hydrogen, 25% Helium, 1.5% Nitrogen, Oxygen and Carbon and 0.5% other gases.

If 109 Earths would sit next to each other then they would be able to form one Sun. In weight, the Sun equals 33,300 Earths.

Thus, in the solar system, the Sun is the largest object. The Sun has a very strong magnetic field. Solar flares occur when magnetic energy is released by the Sun during magnetic storms, which we see as sunspots. In sunspots, the magnetic lines are twisted and they spin, much like a tornado would on Earth. The Sun was formed, like every other star, from a huge swirling cloud

of gas called a nebula. The cloud contained all the matter which went together to form the Sun and its family of planets, moons and hundreds of thousands of asteroids, meteors and comets.

If you could take a journey in a normal airliner flying at its normal speed (about 644 km an hour) travelling from Earth to the Sun, it would take 20 years to reach your destination, and that's without stopping. The American flags placed on the moon are now white due to radiation from the sun. All of the world's energy needs can be met with 1/10, 000th of the light from the Sun that falls on Earth each day, according to the inventor Ray Kurzweil. Every day, plants convert sunlight into energy equivalent to six times the entire power consumption of human civilization. A person weighing 150 pounds on Earth would weigh 4, 200 pounds on the sun because the sun's gravity is 28 times that of Earth. During a 75-year period beginning in 1645, astronomers detected almost no sunspot activity on the sun. Called the "Maunder Minimum," this event coincided with the coldest part of the Little Ice Age, a 350-year cold spell that gripped much of Europe and North America. The Sun contains 99.

86% of the mass in the Solar System. One of the most obvious signs that the Sun is not just sitting there is its rotation. The Sun rotates on its axis about once every 26 days. Because the Sun is made of gas the rotation is quite different from that of, say, a basketball spinning on your finger.

Our earth is commonly claimed to be about 150 million km away (93 million miles) from the sun, but that number is only its average distance. Earth circles the sun in an elliptical orbit, meaning its distance from the sun varies,

and by much more than ten feet. In the winter (for those of us in the Northern Hemisphere), Earth is actually at its closest point to the sun at around 147 million km (91 million miles), and in July its at its furthest point at around 152 million km (94 million miles). Yes, you read that right, we are actually closer to the sun in January, and farther away in June. That's a variance of 5 million km (3 million miles), or 16 billion feet, give or take a few million. To go that distance here on Earth you would have to circle the globe about 394 times.

An average pair of running shoes last about 800km (500 miles) so you are going to need over 6, 200 pair for the trip. If you had a shield or something to hide from the light, you could actually go inside the atmosphere of the Sun without being fried. The density of the atoms up there is ridiculously low. But if you are not lucky and you catch one of those wanderer super hot atoms you'll be instantly disintegrated. Each second, 10 billion solar neutrinos pass through your eyes.

Regardless if they are closed or not. Actually they don't really care about mass so they pass through the entire Earth in a blink. The Sun has Sunquakes that propagate through its entire surface in seconds.

Astrophysicists will say the that Sun is an almost a perfect black body.