Our Solar System

Have you ever looked up into the sky and wondered what was there? Higher than the birds, past the clouds, and farther than the moon, a whole host of fascinating objects spin in outer space.

Let's imagine for a moment that we can leave the earth behind, and explore the solar system that surrounds it. We call it the solar system because everything in it is centered around the Sun and solar means something to do with the sun.

The sun is a star, just like many of the stars that you can see in the night sky - just many times closer to us. Still, the sun is very, very far away from the earth; almost 93 million miles away: that's why it looks so small, even though it's the biggest object in the solar system. In fact, the sun makes up more than 99 percent of the mass in the solar system. If you put all of the planets, moons, asteroids, comets, and everything else in the solar system together, they would make up less than one quarter of a percent of it. The sun is so big that it's more than 100 times wider than the earth, and if it were a giant jar you could fit more than one million earths into it.

More than that, the sun is what holds the solar system together. Its massive gravity is what keeps the earth and all the other planets circling around it instead of drifting

off into space. The sun is also what allows us to live on Earth. Without the sun, there would be no heat. There would be no light. Plants could not grow, water would freeze, and nothing could survive. The sun gives us heat and light because it is always burning: it is a giant ball of gas, mostly hydrogen and helium, and it burns at millions of degrees in its center. Let's leave the sun now to explore the planets.

As we move away from the sun, the first planet we will encounter is mercury. Mercury is the smallest planet in the solar system, much smaller than earth, and one of only five planets you can see from earth using nothing but your eyes. Of course, it won't look much like a planet. It looks more like a bright star, and many nights you can see it close to the horizon near sunrise and sunset. Mercury is a lot like our moon. It's small and has a rocky surface with craters on it. It has no moon of its own, and no air to breathe. You probably wouldn't enjoy a visit to mercury, since temperatures are boiling hot in the sun and freezing cold in the shade. Something interesting about mercury is that it is the fastest planet to go around the sun - it only takes 88 days.

Next is Venus, the second planet. Some people call venus earth's sister, because the two planets are very close in size and gravity, but they are very different on the surface. First of all, it is very hot. Venus is the hottest planet in the solar system. It's not as close to the sun as mercury, but its thick atmosphere of carbon dioxide helps it to trap the heat and stay warmer than its neighbor. It has a thick atmosphere, but it is not one you could breathe. It is mostly made of carbon dioxide and there are clouds of sulfuric acid! Venus might not be fun to visit, but it is beautiful to look at. It is the second-brightest object in the night sky - the only thing brighter is the moon. If you are looking at a sunrise or a sunset and suddenly notice what looks like a very bright star, you are probably looking at Venus.

After Venus comes Earth, the third planet from the sun. Of course, you know all about Earth, because that's the planet where we live! Earth is what's called a goldilocks planet,' because it's not too hot, and not too cold - it's just right. As far as we know, Earth is the only planet to have living things.

Let's leave earth again for a moment, though, and visit Mars, the fourth planet from the sun. Mars is known as the 'red planet,' because iron oxide (a material like rust) in the soil gives it a reddish color. Mars is smaller than Venus and the earth, but larger than mercury. It is cold and rocky, with a thin atmosphere made of carbon dioxide and oxygen. There is water ice on mars. Scientists are very interested in mars because they think that people could live there with the help of some special equipment. Rockets and probes have already been sent there to

gain more information about the planet. Right now, there are two special robots exploring the surface of mars, sending information back to earth. Mars is the first planet we've visited today besides Earth to have its own moons. It has two, although they are not big and round like our moon. Mars's moons are small and irregular. Scientists think they may be captured asteroids. Maybe they came from the big asteroid belt that is between mars and Jupiter. An asteroid belt is a big ring of asteroids, or rocky

objects, orbiting the sun.

Jupiter comes next, the fifth planet in the solar system. Jupiter is the largest planet and is something called a 'gas giant.' It is called this because it is really big and made mostly of gasses. Jupiter is so big that you would have to place 11 earths end to end just to stretch across its middle. Jupiter is also the third brightest object in the night sky; only Venus and the moon are brighter. You can usually find Jupiter higher in the sky than Venus, since Jupiter is away from the sun and not towards it.

Jupiter has at least 67 moons that circle around it, but 55 of them are very small, only about as big as a mountain, or smaller. Some of its moons are very large, and at least

two of them are about the same size as the planet Mercury. One of its moons is the largest moon in the solar system. Some of these large moons can be seen from earth in your backyard with a telescope.

People cannot land on Jupiter because it is made of gas - there is no ground to land on! Even if there was somewhere to land, Jupiter is covered by terrible storms, much stronger

than even the strongest storms on earth. One storm that we know about can be seen from Earth. We call it the great red spot because that's what it looks like - and it has been going on for at least 200 years!

After Jupiter comes Saturn, another gas giant. Saturn is famous for its beautiful rings. Although they look solid from a distance, the rings are actually made from many, many small ice particle, as well as rocks and dust.

Saturn also has more than sixty moons orbiting around it, some as large as the planet mercury, and many smaller.

Something interesting about Saturn is that even though it is very large, it is not very dense. That means that if you could find a bathtub large enough to put Saturn in, it would float instead of sink! Saturn is the farthest planet that can be seen from earth without the help of a telescope.

After Saturn comes Uranus, the seventh planet from the sun. Uranus is another gas giant, but it is much smaller than Saturn and Jupiter. Unlike any other planet in the solar system, it is tilted so much that it actually spins sideways! Uranus has rings around it, although they are much smaller than Saturn's, and 27 known moons. Uranus is covered in blue clouds made of methane, which give it its lovely color.

Very similar to Uranus is Neptune, the eighth planet from the sun. Neptune is another gas giant, and like Uranus it has methane in its atmosphere so it also looks blue. Neptune is a darker blue than Uranus and scientists aren't sure why. Neptune has a few thin rings and 14 moons that we know about. Because Neptune is so far out in space, it takes it a very, very long time to go around

the Sun. Remember Mercury, that only takes 88 days to go once around the sun? Poor Neptune takes over 164 YEARS to finish an orbit around the sun. The last time that Neptune was in the same place it is now was before the American Civil War, before computers, phones, airplanes,

or cars had been invented! Neptune has the longest orbit of any planet in the solar system.

Now, you may think that I've forgotten someone - Pluto. Pluto was discovered in 1930 and was listed as the ninth planet in the solar system. As it was studied longer, scientists realised how small it is. It is much smaller than any other planet in the solar system, and even smaller than many other moons. Plus, people started to discover other small, rocky planet-like objects in space near pluto. Some of them were even bigger than pluto! In 2006, after 76 years being listed as a planet, Pluto was declared a 'dwarf planet' to show that it was something that was like a planet, but much smaller. There are at least 6 dwarf planets in the solar system, and possibly many, many more.

That leaves us with 8 official planets in our solar system: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune.

I hope you enjoyed exploring the solar system with me today. Goodbye till next time!