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Solar system research project 3rd grade

Welcome to the solar system! Here you will find the sun, the planets, and the only home of humanity in the Milky Way galaxy. It contains planets, moons, comets, asteroids, one star, and worlds with ring systems. Although astronomers and sky-watchers have observed other solar system objects in the sky since the dawn of human history, it wasn't until the last half-century that they were able to explore them more directly with the spacecraft. Long before astronomers could use telescopes to look at objects in the sky, people thought the planets were simply migratory stars. They had no idea of an organized system of worlds orbiting the sun. All they knew was that some of the objects had gone down regular paths against the backdrop of the stars. At first, they thought these things were gods or other supernatural people. Then, they decided that these movements had some effect on human life. With the emergence of scientific observations of the sky, these ideas disappeared. The first astronomer to look at another planet with a telescope was Galileo Galilei. His observations changed humanity's view of our place in space. Soon, many other men and women explored the planets, their moons, asteroids and comets with scientific interest. Nowadays this continues, and there are currently spacecraft doing many studies in the solar system. So, what else did astronomers and planetary scientists learn about the solar system? A journey through the solar system introduces us to the sun, which is our nearest star. It contains 99.8 percent of the mass of the solar system. Jupiter is the next most massive object and consists of two and a half times the mass of all the other planets combined. The four inner planets - tiny Mercury, a crater, a cloud-shrouded Venus (sometimes called the Earth's twin), the temperate earth and the mama (our home) and reddish Mars - are called the earthly or rocky planets. Jupiter, Saturn's ring, mysterious blue Uranus, and distant Neptune are called gas giants. Uranus and Neptune are so cold and lighten a lot of frozen material, and have often been called the ice giants. The solar system has five known dwarf planets. They're called Pluto, Ceres, Haumea, Makemake, and Aris. The New Horizons mission investigated Pluto on July 14, 2015, and is on its way out to visit a small object called MU69 2014. At least one dwarf planet and perhaps two others exist in the outer arrivals of the solar system, although we do not have detailed images of them. There are probably at least 200 more dwarf planets in an area of the solar system called the Kuiper Belt (pronounced KYE-per-belt.) The Kuiper Belt extends from Neptune's orbit and is the kingdom of the most distant worlds known to exist in the solar system. He's very distant and his objects are likely frozen and frozen. The outermost area of the solar system is called the Oort Cloud. It probably doesn't have big worlds, but it does contain chunks of ice that become comets as they orbit. Close to the sun. The asteroid belt is an area of space located between Mars and Jupiter. It populated chunks of rock ranging from small rocks to the size of a large city. These asteroids remain the formation of planets. There are moons all over the solar system. The only planets that don't have moons are Mercury and Venus. Earth has one, Mars has two, Jupiter has dozens, as does Saturn, Uranus and Neptune. Some of the moons of the outer solar system are icy worlds with marine oceans beneath the ice on their surface. The only planets with rings we know of are Jupiter, Saturn, Uranus and Neptune. However, at least one asteroid called Chariklo also has a ring and planetary scientists recently discovered a faint ring around the dwarf planet Haumea. Everything astronauts learn about solar system bodies helps them understand the origin and evolution of the sun and planets. We know they were created about 4.5 billion years ago. Their birthplace was a cloud of gas and dust that slowly contracted to form the sun, followed by the planets. Comets and asteroids are often considered the residue of the birth of planets. What astronomers know about the sun tells us it won't last forever. About five billion years from now, it will expand and swallow some of the planets. Eventually, it will shrink, leaving behind a very different solar system than the one we know today. Our solar system is large. A very big lot. In fact, if the Earth were the size of marble, the solar system would cover an area the size of San Francisco. Within this space lies a variety of heavenly wonders: the sun with the surface of plasma, the Earth with its abundance of life and massive oceans, Jupiter's mesmerizing clouds, if you aromatize a few. For this particular list, we decided to highlight some known heavenly wonders as well as some that you might not know about. With new discoveries happening all the time, and so much to explore, the universe is never short on beauty and astonishment. Below are just a few of the scattered jewels of our solar system. Adaptation of a Flavian utopian in the solar system, Utopia Planitia features a crater spanning more than 2,000 miles across the northern plains of Mars. Because the impact occurred early in Martian history, there was likely once housing a ancient ocean. In 2016, a device on NASA's Mars Reconnaissance Orbiter added weight to this theory after detecting large deposits of underground water ice beneath the impact hoodoo. It is estimated that the amount of water of Lake Superior may be in precipitation located 1 to 10 feet (1 to 10 meters) below the surface. Such an accessible deposit could be very beneficial for future human-based missions to the Red Planet. The deposit is probably quite deep, as it is in the center of the older areas of buried ice, said Jack Holt of the University of Texas at Austin in a 2018 statement. The summit in the center of the Resilia Bucto crater rises about 12 to 26 miles (19 to 26 km) from its base. (Photo by NASA/JPL-Caltech/MSSS/PSL/RIDA) Despite its diameter of about 530 miles (530 km), the Asteroid Vesta is home to the highest mountain in our solar system. At its peak is an impact crater called Rheasilvia. This 23-mile-high (33 km) crater rim can easily match two stacked Mount Everest. This mountain formed a billion years ago after impacting an object at least 50 miles (40 km) across. The resulting force caused the huge pile of matter about 1 percent of Vesta, that ejected into space and scattered throughout the solar system. In fact, it's estimated that about 5% of all space rocks in Earth's orbit originate from Vesta, which only joins a handful of solar system objects beyond Earth (including Mars and the moon) where scientists have a sample. Mars' Valles Marineris is a system of canyons spanning more than 2,500 miles on Earth. (Photo by Kevin Gill [CC by 2.0]/Flickr) To put the scale of the vast Mars Valles Marineris in perspective, only to imagine the Grand Canyon four times deeper and stretching from New York to Los Angeles. As you might expect, this vast canyon is the largest in the solar system, spanning more than 4,000 miles (4,000 km) and diving up to 23,000 feet (7,000 meters) to the surface of the Red Planet. According to NASA, Valles Marineris is believed to be a tectonic crack in the Martian membrane formed as a cooled planet. Another theory suggests that it was a channel formed by lava flowing from a nearby protective volcano. Regardless, its diverse geography and likely role in water channeling during the wet years of Mars will make it an attractive target for human-based missions to the Red Planet. We imagine the view from the sidelines of one of the canyon cliffs will be quite spectacular as well. Enceladus' frozen geysers, shown here in the illustration, emit water and steam ice along a 85-mile stretch of the moon's south pole. (Photo by NASA/JPL/Space Science Institute) Anasidus, Saturn's second-largest moon, is a geologically active world covered in thick ice and is home to a large underground ocean of liquid water, about six miles deep. However, some of its most striking features are its spectacular geysers - more than 100 discovered so far - that erupt from cedars on its surface and send dramatic plumes into space. In 2015, NASA sent its Cassini spacecraft sailing through one of these plumes, exposing saltwater rich in organic molecules. In particular, Cassini has detected the presence of molecular hydrogen, a chemical characteristic of hydrothermal activity. To a microbiologist On energy for bacteria, hydrogen is like the gold currency of an energy currency. Peter Girguis, a deep-sea biologist at Harvard University, told The Washington Post in 2017. If you had to have one thing, one chemical compound, coming out of a vent that would lead you to think there's energy to support microbial life, hydrogen is at the top of the list. As such, the beautiful version of Ansaldos may indicate the way to the most habitable place for life in our solar system beyond Earth. Earth rises above the moon's horizon as captured by the Apollo 11 spacecraft. (Photo by NASA) While the peaks of eternal light on Earth's moon are the wrong name, they are nonetheless impressive. The term, first by a pair of astronomers in the late 1800s, applies to specific points on a heavenly body that is almost always swept away by sunlight. While detailed lunar topography collected by NASA's Lunar Orbiter spacecraft revealed no spots on the moon where light shines unabated, it found four peaks where it occurs more than 80 to 90 percent of the time. If humans one day colonize the moon, the first bases will likely be founded on one of these peaks to take advantage of abundant solar energy. Because this phenomenon occurs only on bodies in the solar system with a slight sissi tilt and high-altitude regions, it is thought that only the planet Mercury shares this characteristic with our moon. Jupiter's Great Red Spot is an anti-cyclonic storm (spinning counterclockwise) about 1.3 times the earth. While there is no definitive answer as to what caused the great red dew, we do know one thing: it's shrinking. Recorded observations taken in the 1800s measured the storm at 56,000 miles (56,000 km), or about four times the earth's line. When Voyager 2 flew by Jupiter in 1979, it was reduced to just over twice the size of our planet. In fact, perhaps over the next 20 to 30 years, the Great Red Spot (or GRS) may disappear completely. GRS will in a decade or two become the GRC (Great Red Circle). Glenn Orton, planetary scientist at NASA JPL, recently told Business Insider. Maybe something after GRM — the great red memory. A look at the total solar eclipse of August 2017 from Charleston, South Carolina. (Photo by Andrew Crewe/Flickr) Nowhere in our solar system do total eclipses so perfectly experienced as from our planet. As witnessed across North America in August 2017, this phenomenon occurs when the moon passes between the Earth and the sun. During a totality, the lunar disk seems to perfectly protect the entire surface of the sun, leaving only its fiery atmosphere exposed. The fact that these two different celestial objects seem to be in a perfect line at all amounts to both mathematics and a bit of luck. While the diameter of the moon is about 400 times smaller than the sun's, it is also about 400 times closer. This creates in the sky of both objects being the same size. The moon, however, is not static in its orbit around the Earth. A billion years ago, when it was 10 percent closer, it would have blocked all the sun. But in 600 million years, at a rate of 1.6 inches (4 cm) a year, the moon will drift far enough so it no longer covers the sun's shell. In other words, we're lucky to have evolved when we bought this temporary wonder of the solar system. In April 2024 you can catch the next one from North America. Callisto's massive ice tides reach heights up to 100 metres from the surface. Callisto, Jupiter's second largest moon, includes the oldest surface and craters in the solar system. For a long time, astronomers also assumed the planet was geologically dead. In 2001, however, that all changed after NASA's Galileo spacecraft passed just 137 miles (137 km) above Callisto's surface and captured something strange: ice-covered tauri, some as high as 330 feet (100 meters), protruding from the surface. The researchers believe the tauri were likely formed by material emitted by meteors, with their unique jagged shapes as a result of avocation from sublimation. Like Jupiter's Great Red Spot or Earth's total solar eclipses, it is one wonder that is temporary in nature. They continue to erode and eventually disappear. Said James A. Klemeshevsky of NASA's Galileo Expedition in a 2001 statement. We'll get our next chance to explore these strange ice squeaks when the European Space Agency's JUICE (Jupiter ICY moons Explorer) spacecraft visits three of Ganymede, Callisto and Europa in 2023. Saturn's rings are about 4 billion years old. (Photo by NASA) Saturn's rings, covering some 386,000 km, consist of 99.9 percent water ice, dust and rock. Despite their size, they are very thin, with a thickness ranging from only 30 to 300 feet (9 to 90 meters). The rings are believed to be very old, dating back to the formation of the 4.5 billion years ago. While some believe they are material residuals from Saturn's birth, still others are baring that they may be remnants of an ancient moon torn apart by the tidal forces of the vast planet. While Saturn's rings are stunning, they are also something of a mystery. For instance, before NASA's Cassini spacecraft burned in September 2017, it collected data showing Earth's closest D ring raining 10 tons of material into its upper atmosphere every second. Even stranger, the material was made of organic molecules, not the expected combination of ice, dust and rock. What was a surprise was the mass spectrometer saw methane - one unexpected it. Thomas Cravens, a member of Cassini's Ion team and a neutral mass spectrometer, said in a 2018 press release from the University of Kansas. Also, he saw some carbon. Which was unexpected. The rings were considered completely watery. But the innermost rings are quite contaminated, as it turns out, with organic matter caught in the ice. The cliff face, called Verona Herpes (right) as captured by Voyager in 1986. Located on the moon Miranda, the smallest of Uranus' satellites, there is the largest known cliff in the solar system. The cliff face, called Verona Herpes, was captured during Voyager Flight 2 in 1986 and is thought to have a vertical descent of 20 km (19 km), or 63,360 feet. By comparison, the highest cliff surface on Earth, located on Mount Thor in Canada, has a relatively serer than a relatively serendipit descent of about 4,100 feet (1,250 meters). For those wondering, io9 crunched the numbers and discovered that, due to Miranda's low gravity, an astronaut jumping from verona's Rupes top would actually free fall for about 12 minutes... yes, I feel better. - Maybe you'll live to tell the story. You don't even have to worry about a parachute - even something as basic as an airbag will be enough to cushion the fall and let you live, io9 adds. Adds.