

# The Wizard from Space

## Glossary from “The Wizard from Space”

**Asterism** – An asterism is a star pattern made up of stars borrowed from a constellation. The most famous of these is the Big Dipper, which is made of stars borrowed from the Big Bear.

**Asteroid** – An asteroid is a small piece of metal, or stone, that is believed to be all that is left of a planet that did not completely form. There are thousands of asteroids between Mars and Jupiter. The largest of these minor worlds, Ceres, is 957km in diameter. Asteroids were not discovered until 1801.

**Astronaut** – An astronaut is a specially trained person from the United States, or Europe, who flies in space on board a spaceship, such as the Space Shuttle. Twelve American astronauts walked on the surface of the moon during six missions between 1969 and 1972. Sweden has an astronaut, Christer Fugelsang, who works for the European Space Agency and trains with NASA in the United States. He is scheduled to make a future flight to the International Space Station.

**Astronomer** – An astronomer is a person who studies astronomical objects, such as stars, moons, planets, nebulae and galaxies. Professional astronomers do this for their job, while amateur astronomers do it as a hobby.

**Big Bear** – The Big Bear is one of the best known of the constellations in the northern hemisphere. Since the bear is so close to Polaris it never rises, or sets, and is visible every clear night of the year. In ancient Greek mythology she is known as Callisto, the mother of Arcus (the Little Bear).

**Big Dipper** – The Big Dipper is an asterism made up of the seven brightest stars of the Big Bear. It is the best-known asterism in the northern hemisphere.

**Cassiopeia** – Cassiopeia, the Queen, is one of the best known of the constellations in the northern hemisphere. Since the queen is so close to Polaris it never rises, or sets, and is visible every clear night of the year. This W-shaped group is supposed to be an ancient queen from Africa sitting on her throne.

**Comet** – A large frozen chunk of gas and dust (the nucleus) that is left over from the formation of the solar system. They can orbit the sun and as they get warmed by its heat they begin to evaporate, producing a beautiful tail that streams away from the comet. Some comets are so bright that they can be seen with the naked eye from clear dark skies.

**Constellation** – A constellation is a man-made picture formed from stars in the night sky. The first constellations were made up thousands of years ago. Cassiopeia is an example of a well-known constellation.

**Cosmonaut** -- A cosmonaut is a specially trained person from Russia (formerly the Soviet Union) who flies in space on board a spaceship, such as the Soyuz.

**Cosmonova** – Cosmonova is both Sweden's only Imax Dome® theater and most modern planetarium under the same 23-meter wide dome. You can visit on-line at [www.nrm.se/cosmonova](http://www.nrm.se/cosmonova).

**Day** – Day occurs when the sun is above the horizon and it is light outside. When it is day on one side of the earth it is night on the opposite side pointed away from the sun.

**Earth** -- Earth (12 756km in diameter) is the third planet from the sun in the solar system. It has one moon.

**Great Star-Magician** – One of the main characters in “The Wizard from Space,” she is a little woman about 35 years of age who is the most powerful magician of them all.

**Jupiter** -- Jupiter (142 980km in diameter) is the fifth planet from the sun in the solar system. It is currently known to have at least 62 moons. Jupiter is one of the naked eye planets that were known to the ancients.

**Little Bear** – The Little Bear is one of the best known of the constellations in the northern hemisphere. Since the little bear is so close to Polaris it never rises, or sets, and is visible every clear night of the year. In ancient Greek mythology he is known as Arcus, the son of Callisto (the Big Bear).

**Little Dipper** – The Little Dipper is an asterism made up of seven of the brightest stars of the Little Bear.

**Mars** -- Mars (6792 km in diameter) is the fourth planet from the sun in the solar system. It has two moons, Phobos and Deimos. Mars is one of the naked eye planets that were known to the ancients.

**Mercury** – Mercury (4879km in diameter) is the first planet from the sun in the solar system. It has no moons. Mercury is one of the naked eye planets that were known to the ancients.

**Moon** – The moon (3475km in diameter) is Earth's only natural satellite. On the moon's surface can be found thousands of craters, tall mountains, deep valleys and large dark areas of solidified lava called “maria.” It has been visited by a total of twelve astronauts between 1969 and 1972. “Moon” can also refer to the bodies that are orbiting other planets, like Mars' two moons, Phobos and Deimos.

**Nebula** – A nebula is a giant cloud of dust and hydrogen gas lying between the stars of a galaxy. Some glow like giant colorful neon signs while others are dark and black. Stars and their planets form inside such clouds. The most famous

example, the Orion Nebula, can be seen in the constellation Orion, the Hunter, with the naked eye during winter months.

**Neptune** -- Neptune (49 530km in diameter) is the eighth planet from the sun in the solar system. It is currently known to have at least 13 moons. Neptune is one of the so-called modern planets; it was not discovered by telescope until 1846.

**Night** -- Night occurs when the sun is below the horizon and it is dark outside and we can see the stars overhead. When it is night on one side of the earth it is day on the opposite side pointed toward the sun.

**Observatory** – An observatory is where an astronomer uses a telescope to study objects, such as stars, planets, nebulae and galaxies, in space.

**Optical Telescope** – An optical telescope is used by an astronomer to either look at an object in space, or to take a photograph of an object in space. The first telescope to be used for astronomy was built and used by Galileo Galilei in 1609. Some amateur astronomers have built their own telescopes. There may be an astronomy club near you that may have public observing nights where they let the public look through their telescope(s) at the moon, planets and other objects of general interest.

**Orion** – Also known as the Hunter, Orion is a winter constellation made up of many bright stars. His “belt” -- made up of three stars in a line -- makes him very obvious and easy to find.

**Planet** – A planet is a solid (or partially liquid) body that orbits a star. A planet does not make its own light, but reflects the light from the star that it orbits. The earth is an example of a planet that goes around the sun. There are nine known planets in our solar system.

**Planetarium** – A planetarium is a special type of multimedia theater where you can see the nighttime sky indoors with the help of a special star projector. Other projectors can be used as part of a planetarium show to take you a variety of places in the universe; from the surface of the moon to the edge of the known universe and everywhere else in between. “The Wizard from Space” is a show specially produced to be shown in a planetarium.

**Pluto** – Pluto (2390km in diameter) is the ninth planet from the sun in the solar system. It is currently known to have one moon, Charon. Pluto is one of the so-called modern planets; it was not discovered photographically until 1930. Charon was discovered as recently as 1978.

**Polaris** – The formal name of the star in the Little Bear that lies almost directly over the earth’s North Pole (or axis) of rotation. It also is referred to as the Pole Star.

**Pole Star** – Another name for Polaris, the star in the Little Bear that lies almost directly over the earth’s North Pole (or axis) of rotation.

**Radio telescope** – Many objects in space, such as stars, planets and galaxies, give off natural radio signals. A radio telescope is used to detect and study their signals. The largest radio telescope in Sweden is located at the Onsala Rymdobservatorium located near Göteborg.

**Revolution** – The orbiting of one object around another, such as the moon revolving around the earth.

**Rings** – Several of the planets in the outer solar system – Jupiter, Saturn, Uranus and Neptune – are surrounded by a system of rings. The most famous and beautiful of these are the rings of Saturn, which are made up of millions of small pieces of icy material that are from as small as dust to as large as a small house in size.

**Rotation** – The spinning of an object on an axis, such as a toy top, or the earth.

**Satellite** – A satellite is a small man made object that circles the earth. A communications satellite, a weather satellite and a space telescope are all examples of such satellites. The word “satellite” can also refer to a natural moon orbiting a planet, such as the four giant Galilean Satellites (Io, Europa, Ganymede and Callisto) of Jupiter.

**Saturn** -- Saturn (120 540km in diameter) is the sixth planet from the sun in the solar system. It is currently known to have at least 31 moons. Saturn is one of the naked eye planets that were known to the ancients.

**Seasons** – As the earth revolves around the sun the amount of sunlight falling on our planet changes. This is because the earth’s axis of rotation is tipped over in space  $23\frac{1}{2}^{\circ}$  from vertical and always points in the same direction in space. When Earth’s axis is pointed away from the sun it is winter. When it is pointed toward the sun it is summer. Spring and autumn occur when the earth’s axis is pointing neither away from, nor toward, the sun. The shortest days of the year are in winter, the longest in summer and those with nearly equal days and night are in spring and autumn.

**Solar System** – A solar system is made up of a star, its planets and the other small bodies -- like comets and asteroids -- that orbit it. The sun, its family of nine planets, their many moons and the thousands of comets and asteroids that are also influenced by the sun is the most familiar example.

**Space telescope** – A space telescope is a special satellite that studies astronomical objects in space. The most famous example is the Hubble Space Telescope, which was placed in Earth orbit in 1990. One advantage of having such a telescope in space is that it is above the earth’s thick turbulent atmosphere so that the pictures it takes are much sharper than those from earth’s surface.

**Spectra** – One of the main characters in “The Wizard from Space,” Spectra is Space Wizard’s assistant, who is not seen (but often heard) for most of the show because she is very shy. She often helps out Space Wizard by drawing pictures of what he’s talking about.

**Star** – Stars are large balls of hot glowing gas. The sun is the closest example of a star to Earth. The other stars are so far away from us that they appear to be points of light in the night sky. Some stars are smaller than the sun while others are much larger. Cooler stars have a surface temperature of a few thousand degrees, the sun has a surface temperature of 6000 degrees, while the hottest stars have surface temperatures of 100 000 degrees, or more.

**Stellar Nursery** – A nebula could be called a “stellar nursery” as this is where stars and their planets form. Our sun and its family of nine planets formed in such a place some 4• billion years ago.

**Sun** – The sun (1 392 530km in diameter) is the star found at the center of the solar system. All of the planets, including the earth, orbit around it. A giant ball of hot gases, the sun provides the heat and light that makes life on Earth possible.

**Taikonaut** – A taikonaut is a specially trained person from China who flies on board a spaceship, such as the Shenzhou. The word comes from the Chinese character “taikong,” which means “space, or cosmos.”

**Space Wizard** – The main character in “The Wizard from Space,” he is a magician that looks like a regular human about 65 years of age. While he knows a lot of things about astronomy and space, he can also be very forgetful at times.

**Uranus** -- Uranus (51 120km in diameter) is the seventh planet from the sun in the solar system. It is currently known to have at least 27 moons. Uranus is one of the so-called modern planets; it was not discovered telescopically until 1781.

**Venus** -- Venus (12 104km in diameter) is the second planet from the sun in the solar system. It has no moons. Venus is one of the naked eye planets that were known to the ancients.

**Voice** – Voice, one of the characters in “The Wizard from Space,” is a planetarium lecturer who is first heard at the start of the program. He joins in later on when we celebrate Space Wizard's birthday at his home.