

Space-Related Terminology

Λ CDM (or Lambda-CDM model): A parameterization of the Big Bang cosmological model in which the universe contains three major components: first, a cosmological constant denoted by Lambda associated with dark energy; second, the postulated cold dark matter; and third, ordinary matter.

AirDrop- An airdrop, in the cryptocurrency business, involves sending coins or tokens to wallet addresses in order to promote awareness of a new virtual currency.

Alpha Centauri: A gravitationally bound system of the closest stars and exoplanets to Earth's Solar System at 4.37 light-years from the Sun.

Andromeda Galaxy: Also known as Messier 31, M31, or NGC 224 and originally the Andromeda Nebula, the Andromeda Galaxy is a barred spiral galaxy approximately 2.5 million light-years from Earth and the nearest large galaxy to the Milky Way.

Antimatter: Molecules formed by atoms consisting of antiprotons, antineutrons, and positrons. Stable antimatter does not appear to exist in our universe.

Aphelion: The point in the orbit of a planet, asteroid, or comet at which it is furthest from the sun.

Asteroid Belt: A torus-shaped region in the Solar System, located roughly between the orbits of the planets Jupiter and Mars. It contains a great many solid, irregularly shaped bodies, of many sizes but much smaller than planets, called asteroids or minor planets.

Astro: Relating to the stars, celestial objects, or outer space.

Astronaut: A person who is trained to travel in a spacecraft.

Astronomy: The branch of science which deals with celestial objects, space, and the physical universe as a whole.

Astrophysics: A science that employs the methods and principles of physics in the study of astronomical objects and phenomena.

Blackbody Spectrum (or Black-body radiation): The thermal electromagnetic radiation within or surrounding a body in thermodynamic equilibrium with its environment, emitted by a black body.

Black Dwarf: A theoretical stellar remnant, specifically a white dwarf that has cooled sufficiently that it no longer emits significant heat or light.

Black Hole: A region of space having a gravitational field so intense that no matter or radiation can escape.

Brown Dwarf: A celestial object intermediate in size between a giant planet and a small star, believed to emit mainly infrared radiation.

Celestial Body (or Astronomical object): A naturally occurring physical entity, association, or structure that exists in the observable universe. In astronomy, the terms object and body are often used interchangeably.

Cepheid Variable: A type of star that pulsates radially, varying in both diameter and temperature and producing changes in brightness with a well-defined stable period and amplitude.

Charon: Known as Pluto I, is the largest of the five known natural satellites of the dwarf planet Pluto. It has a mean radius of 606 km. Charon is the sixth-largest known trans-Neptunian object after Pluto, Eris, Haumea, Makemake and Gonggong.

Circumstellar Habitable Zone (or the habitable zone): The range of orbits around a star within which a planetary surface can support liquid water given sufficient atmospheric pressure.

Comet: A celestial object consisting of a nucleus of ice and dust and, when near the sun, a "tail" of gas and dust particles pointing away from the sun.

Comoving distance: The distance between two points measured along a path defined at the present cosmological time. For objects moving with the Hubble flow, it is deemed to remain constant in time.

Constellation: An area on the celestial sphere in which a group of visible stars forms a perceived outline or pattern, typically representing an animal, mythological person or creature, or an inanimate object.

Cosmic: Relating to the universe or cosmos, especially as distinct from the earth.

Cosmic Microwave Background: Electromagnetic radiation which is a remnant from an early stage of the universe, also known as "relic radiation". The CMB is faint cosmic background radiation filling all space.

Cosmic Ray: A highly energetic atomic nucleus or other particle traveling through space at a speed approaching that of light.

Cosmic Voids: Vast spaces between filaments, which contain very few or no galaxies.

Cosmonaut: A Russian astronaut.

Cosmos: The universe seen as a well-ordered whole.

Creation: The action or process of bringing something into existence.

Cryptocurrency- a digital currency in which transactions are verified and records maintained by a decentralized system using cryptography, rather than by a centralized authority.

Crypto Exchange- A cryptocurrency exchange, or a digital currency exchange, is a business that allows customers to trade cryptocurrencies or digital currencies for other assets, such as conventional fiat money or other digital currencies. (e.g. Coinbase, Binance, Robin Hood, etc.)

Dark Matter: In some cosmological theories, nonluminous material that is postulated to exist in space and that could take any of several forms including weakly interacting particles (cold dark matter) or high-energy randomly moving particles created soon after the Big Bang (hot dark matter).

Decentralized Finance- Blockchain-based form of finance that does not rely on central financial intermediaries such as brokerages, exchanges, or banks to offer traditional financial instruments, and instead utilizes smart contracts on blockchains, the most common being Ethereum.

Deimos: The smaller and outermost of the two natural satellites of Mars, the other being Phobos. Deimos has a mean radius of 6.2 km and takes 30.3 hours to orbit Mars. Deimos is 23,460 km from Mars, much farther than Mars's other moon, Phobos.

Dwarf Galaxy: A dwarf galaxy is a small galaxy composed of about 1000 up to several billion stars, as compared to the Milky Way's 200–400 billion stars.

Dwarf Spheroidal Galaxy: A term in astronomy applied to small, low-luminosity galaxies with very little dust and an older stellar population. They are found in the Local Group as companions to the Milky Way and to systems that are companions to the Andromeda Galaxy.

Eclipsing Binary: A binary star whose brightness varies periodically as the two components pass one in front of the other.

Electromagnetic Spectrum: The range of frequencies of electromagnetic radiation and their respective wavelengths and photon energies.

Elementary Particle (or fundamental particle): A subatomic particle that is not composed of other particles.

Enceladus: The sixth-largest moon of Saturn. It is about 500 kilometers in diameter, about a tenth of that of Saturn's largest moon, Titan.

Epsilon Aurigae: A multiple star system in the northern constellation of Auriga, the charioteer. It is an unusual eclipsing binary system comprising an F0 supergiant and a companion which is generally accepted to be a huge dark disk orbiting an unknown object, possibly a binary system of two small B-type stars.

Eris: The most massive and second-largest known dwarf planet in the Solar System. Eris is a trans-Neptunian object, has a high-eccentricity orbit, and is a member of the scattered disk.

Event Horizon: A boundary beyond which events cannot affect an observer. The term was coined by Wolfgang Rindler in the 1950s. In 1784, John Michell proposed that in the vicinity of compact massive objects, gravity can be strong enough that even light cannot escape.

Exocomet: An exocomet, or extrasolar comet, is a comet outside the Solar System, which includes rogue comets and comets that orbit stars other than the Sun.

Exoplanet: A planet that orbits a star outside the solar system.

Extrasolar: Found in or taking place outside the solar system.

Extraterrestrial: Of or from outside the earth or its atmosphere.

Galactic: Relating to a galaxy or galaxies, especially the Milky Way galaxy.

Galaxy Filament: the largest known structures in the universe, consisting of walls of gravitationally bound galaxy superclusters. These massive, thread-like formations can reach 80 megaparsecs h^{-1} and form the boundaries between large voids.

Gamma Ray (or gamma radiation): A penetrating form of electromagnetic radiation arising from the radioactive decay of atomic nuclei. It consists of the shortest wavelength electromagnetic waves and so imparts the highest photon energy.

Ganymede: A satellite of Jupiter, is the largest and most massive of the Solar System's moons. The ninth-largest object of the Solar System, it is the largest without a substantial atmosphere.

Geospace: The region of the outer space near Earth.

Geostationary orbit: Satellites in geostationary orbit (GEO) circle Earth above the equator from west to east following Earth's rotation – taking 23 hours 56 minutes and 4 seconds – by travelling at exactly the same rate as Earth.

Globular Cluster: A large compact spherical star cluster, typically of old stars in the outer regions of a galaxy.

Gonggong: A dwarf planet, a member of the scattered disc beyond Neptune.

Gravitational Singularity (spacetime singularity or simply singularity): A point in which gravity is so intense that spacetime itself breaks down catastrophically. As such, a singularity is by definition no longer part of the regular spacetime and can not be determined by “where” or “when”.

GTO (or Transfer Orbits and Geostationary Transfer Orbit): Transfer orbits are a special kind of orbit used to get from one orbit to another. When satellites are launched from Earth and carried to space with launch vehicles such as Ariane 5, the satellites are not always placed directly on their final orbit. Often, the satellites are instead placed on a transfer orbit: an orbit where, by using relatively little energy from built-in motors, the satellite or spacecraft can move from one orbit to another.

Gravity: In physics, it's the force that attracts a body toward the center of the earth, or toward any other physical body having mass.

Halo: A circle of white or colored light around the sun, moon, or other luminous body caused by refraction through ice crystals in the atmosphere.

Heavenly Body: A planet, star, or other celestial body.

Heliocentric: Having or representing the sun as the center, as in the accepted astronomical model of the solar system.

Heliosphere: The region of space, encompassing the solar system, in which the solar wind has a significant influence.

Helium: The chemical element of atomic number 2, an inert gas which is the lightest member of the noble gas series.

Huamea: A dwarf planet located beyond Neptune's orbit.

Hydrogen: A colorless, odorless, highly flammable gas, the chemical element of atomic number 1.

Ice Giant: A giant planet composed mainly of elements heavier than hydrogen and helium, such as oxygen, carbon, nitrogen, and sulfur. There are two ice giants in the Solar System: Uranus and Neptune.

Inner Solar System: The region comprising the terrestrial planets and the asteroid belt.

Interstellar Medium (or Interstellar Space): In astronomy, the interstellar medium is the matter and radiation that exist in the space between the star systems in a galaxy. This matter includes

gas in ionic, atomic, and molecular form, as well as dust and cosmic rays. It fills interstellar space and blends smoothly into the surrounding intergalactic space.

Isotropy: Uniformity in all orientations; it is derived from the Greek isos and tropos.

JAXA: Japanese national aerospace and space agency.

Jovian: Relating to the planet Jupiter or the class of giant planets to which Jupiter belongs.

Judicial Astrology: The art of forecasting events by calculation of the planetary and stellar bodies and their relationship to the Earth.

Juliet: Juliet is an inner satellite of Uranus. It was discovered from the images taken by Voyager 2 on 3 January 1986, and was given the temporary designation S/1986 U 2.

Lagrange Points: Lagrange points, or L-points, allow for orbits that are much, much farther away (over a million kilometres) and do not orbit Earth directly. These are specific points far out in space where the gravitational fields of Earth and the Sun combine in such a way that spacecraft that orbit them remain stable and can thus be 'anchored' relative to Earth.

LEO (or Low Earth Orbit): A low Earth orbit (LEO) is, as the name suggests, an orbit that is relatively close to Earth's surface. It is normally at an altitude of less than 1000 km but could be as low as 160 km above Earth – which is low compared to other orbits, but still very far above Earth's surface.

Lepton: An elementary particle of half-integer spin that does not undergo strong interactions. Two main classes of leptons exist: charged leptons, and neutral leptons.

Light Year: A unit of astronomical distance equivalent to the distance that light travels in one year, which is 9.4607×10^{12} km (nearly 6 trillion miles).

Local Group: The Local Group is the galaxy group that includes the Milky Way. It has a total diameter of roughly 3 megaparsecs, and a total mass of the order of 2×10^{12} solar masses.

Karman Line- A boundary between Earth's atmosphere and outer space. The Kármán line (or von Karman line) is an attempt to define a boundary between Earth's atmosphere and outer space, and offers a specific definition set by the Fédération aéronautique internationale (FAI), an international record-keeping body for aeronautics. The FAI defines the Kármán line as space beginning 100 kilometres (54 nautical miles; 62 miles; 330,000 feet) above Earth's sea level.

Macrocosm: The whole of a complex structure, especially the world or the universe, contrasted with a small or representative part of it.

Makemake: a dwarf planet and perhaps the second-largest Kuiper belt object in the classical population, with a diameter approximately two-thirds that of Pluto.

Megaparsec: A megaparsec is a measurement of distance equal to one million parsecs or 3.26 million light years. Megaparsec is usually abbreviated as Mpc.

MEO (or Medium Earth Orbit): Medium Earth orbit comprises a wide range of orbits anywhere between LEO and GEO. It is similar to LEO in that it also does not need to take specific paths around Earth, and it is used by a variety of satellites with many different applications.

Mesoplanet: Planetary-mass objects with sizes smaller than Mercury but larger than Ceres.

Metallicity: The proportion of the material of a star or other celestial object that is in elements other than hydrogen or helium.

Microwave: A form of electromagnetic radiation with wavelengths ranging from about one meter to one millimeter corresponding to frequencies between 300 MHz and 300 GHz respectively.

Milky Way: The Milky Way is the galaxy that includes the Solar System, with the name describing the galaxy's appearance from Earth: a hazy band of light seen in the night sky formed from stars that cannot be individually distinguished by the naked eye.

Mission Control: A facility that manages space flights, usually from the point of launch until landing or the end of the mission. It is part of the ground segment of spacecraft operations.

Moon: The Moon is Earth's only natural satellite. At about one-quarter the diameter of Earth, it is the largest natural satellite in the Solar System relative to the size of its planet, the fifth largest satellite in the Solar System overall, and is larger than any known dwarf planet.

Morning Star: A bright planet, especially Venus, when visible in the east before sunrise.

NASA (or National Aeronautics and Space Administration): An independent agency of the U.S. federal government responsible for the civilian space program, as well as aeronautics and space research. NASA was established in 1958, succeeding the National Advisory Committee for Aeronautics.

Natural Satellite: A natural satellite is in the most common usage, an astronomical body that orbits a planet, dwarf planet, or small solar system body.

Nebula: A nebula is a distinct body of interstellar clouds. Originally, the term was used to describe any diffused astronomical object, including galaxies beyond the Milky Way.

Neutrino: A neutral subatomic particle with a mass close to zero and half-integral spin, rarely reacting with normal matter. Three kinds of neutrinos are known, associated with the electron, muon, and tau particle.

Neutron: A subatomic particle of about the same mass as a proton but without an electric charge, present in all atomic nuclei except those of ordinary hydrogen.

Neutron Star: A celestial object of very small radius (typically 18 miles/30 km) and very high density, composed predominantly of closely packed neutrons. Neutron stars are thought to form by the gravitational collapse of the remnant of a massive star after a supernova explosion, provided that the star is insufficiently massive to produce a black hole.

Nova: A star showing a sudden large increase in brightness and then slowly returning to its original state over a few months.

Observable Universe: The observable universe is a ball-shaped region of the universe comprising all matter that can be observed from Earth or its space-based telescopes and exploratory probes at the present time, because the electromagnetic radiation from these objects has had time to reach the Solar System and Earth since the beginning of the cosmological expansion.

Olympus Mons: An enormous shield volcano on the planet Mars. The volcano has a height of over 21.9 km as measured by the Mars Orbiter Laser Altimeter.

Omega Centauri: A globular cluster in the constellation of Centaurus that was first identified as a non-stellar object by Edmond Halley in 1677. Located at a distance of 17,090 light-years, it is the largest known globular cluster in the Milky Way at a diameter of roughly 150 light-years.

Orbit: An orbit is the curved path that an object in space (such as a star, planet, moon, asteroid or spacecraft) takes around another object due to gravity.

Parsec: A unit of distance used in astronomy, equal to about 3.26 light years (3.086×10^{13} kilometers). One parsec corresponds to the distance at which the mean radius of the earth's orbit subtends an angle of one second of arc.

Payload: The part of a vehicle's load, especially an aircraft's, from which revenue is derived; passengers and cargo.

Phobos: The innermost and larger of the two natural satellites of Mars, the other being Deimos.

Photon: A particle representing a quantum of light or other electromagnetic radiation. A photon carries energy proportional to the radiation frequency but has zero rest mass.

Photosphere: A star's outer shell from which light is radiated.

Planemo: A celestial object of planetary mass - one that is larger than an irregularly shaped asteroid, yet smaller than a nuclear reactive star. The term covers all bodies within this size range, although a planemo that orbits a star is more regularly referred to with the more specific term, planet.

Planetary: Relating to or belonging to a planet or planets.

Planetary System: A planetary system is a set of gravitationally bound non-stellar objects in or out of orbit around a star or star system.

Planetesimal: A minute planet; a body that could or did come together with many others under gravitation to form a planet; solid objects thought to exist in protoplanetary disks and debris disks.

Planetoid: A small body resembling a planet especially.

Plasma: A gas that is so hot that some or all its constituent atoms are split up into electrons and ions, which can move independently of each other.

Pole Star: A star, preferably bright, nearly aligned with the axis of a rotating astronomical body.

Pro-rata- Proportional.

Proton: A stable subatomic particle occurring in all atomic nuclei, with a positive electric charge equal in magnitude to that of an electron, but of opposite sign.

Protoplanet: a large planetary embryo that originated within a protoplanetary disc and has undergone internal melting to produce a differentiated interior.

Protoplanetary Disc: A rotating circumstellar disc of dense gas and dust surrounding a young newly formed star, a T Tauri star, or Herbig Ae/Be star.

Proxima Centauri: A small, low-mass star located 4.2465 light-years away from the Sun in the southern constellation of Centaurus. Its Latin name means the 'nearest [star] of Centaurus'. It was discovered in 1915 by Robert Innes and is the nearest-known star to the Sun.

Quantam Mechanics: The branch of mechanics that deals with the mathematical description of the motion and interaction of subatomic particles, incorporating the concepts of quantization of energy, wave-particle duality, the uncertainty principle, and the correspondence principle.

Quasar: A massive and extremely remote celestial object, emitting exceptionally large amounts of energy, and typically having a starlike image in a telescope. It has been suggested that

quasars contain massive black holes and may represent a stage in the evolution of some galaxies.

Red Shift: The displacement of spectral lines toward longer wavelengths (the red end of the spectrum) in radiation from distant galaxies and celestial objects. This is interpreted as a Doppler shift that is proportional to the velocity of recession and thus to distance.

Scattered Disk: A distant circumstellar disc in the Solar System that is sparsely populated by icy small solar system bodies, which are a subset of the broader family of trans-Neptunian objects.

Silicate Planet: A terrestrial planet that is composed primarily of silicate rocks. All four inner planets in the Solar System are silicon-based.

sktl- The crypto token of outer space and Mars.

Solar Mass: A standard unit of mass in astronomy, equal to approximately 2×10^{30} kg. It is often used to indicate the masses of other stars, as well as stellar clusters, nebulae, galaxies and black holes. It is approximately equal to the mass of the Sun.

Solar System: The collection of eight planets and their moons in orbit around the sun, together with smaller bodies in the form of asteroids, meteoroids, and comets. The planets of the solar system are (in order of distance from the sun) Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune.

Space Action- A calendar dated event involving the development, exploration and pioneering of outer space and beyond.

Space debris: Defunct artificial objects in space—principally in Earth orbit—which no longer serve a useful function.

Space Reconnaissance: The reconnaissance of any celestial bodies in space by use of spacecraft and satellite photography.

Space Station: A large artificial satellite used as a long-term base for manned operations in space.

Spacetime: The concepts of time and three-dimensional space regarded as fused in a four-dimensional continuum.

Spectral Line: A dark or bright line in an otherwise uniform and continuous spectrum, resulting from emission or absorption of light in a narrow frequency range, compared with the nearby frequencies.

Speed Of Light: A fundamental universal constant (the c in $E = mc^2$), the speed at which light and all forms of electromagnetic radiation travel in a vacuum, standardized as 186,282.4 miles per second (299,792,458 meters per second).

Spiral Galaxy: A galaxy in which the stars and gas clouds are concentrated mainly in one or more spiral arms.

SSO (or Polar Orbit and Sun-Synchronous Orbit): Satellites in polar orbits usually travel past Earth from north to south rather than from west to east, passing roughly over Earth's poles. Satellites in a polar orbit do not have to pass the North and South Pole precisely; even a deviation within 20 to 30 degrees is still classed as a polar orbit. Polar orbits are a type of low Earth orbit, as they are at low altitudes between 200 to 1000 km.

Star Cluster: Large groups of stars.

Stardust: Cosmic dust, also called extraterrestrial dust or space dust, is dust which exists in outer space, or has fallen on Earth.

Starship: Starship, starcraft, or interstellar spacecraft is a spacecraft designed for traveling through outer space and between planetary systems.

Subatomic Particle: A particle smaller than an atom (e.g., a neutron) or a cluster of such particles (e.g., an alpha particle).

Sun: The Sun is the star at the center of the Solar System. It is a nearly perfect sphere of hot plasma, heated to incandescence by nuclear fusion reactions in its core, radiating the energy mainly as visible light, ultraviolet light, and infrared radiation.

Superior Planet: Any of the planets Mars, Jupiter, Saturn, Uranus, and Neptune, whose orbits are further from the sun than the earth's.

Supernova: A star that suddenly increases greatly in brightness because of a catastrophic explosion that ejects most of its mass.

Tholin: A wide variety of organic compounds formed by solar ultraviolet or cosmic ray irradiation of simple carbon-containing compounds such as carbon dioxide, methane or ethane, often in combination with nitrogen or water.

Titan: The largest moon of Saturn and the second-largest natural satellite in the Solar System. It is the only moon known to have a dense atmosphere, and the only known moon or planet other than Earth on which clear evidence of stable bodies of surface liquid has been found.

Token Staking- Pledging your crypto-assets to a cryptocurrency protocol to earn rewards in exchange. Staking allows users to participate in securing the network by locking up tokens. Consequently, users are rewarded for securing the network in the form of native tokens.

Translunar: Relating to or denoting the trajectory of a spacecraft traveling between the earth and the moon.

Triangulum: A small constellation in the northern sky. Its name is Latin for "triangle", derived from its three brightest stars, which form a long and narrow triangle.

Vacuum: A space devoid of matter.

White Dwarf: A small very dense star that is typically the size of a planet. A white dwarf is formed when a low-mass star has exhausted all its central nuclear fuel and lost its outer layers as a planetary nebula.