

Astronomy Glossary

aperture - the diameter of a telescope's main lens. In other words, the width of the opening on a telescope where the light enters the main tube. Generally speaking, the maximum useful magnification of a telescope is 50X its aperture in inches. For example, an 8 inch telescope can theoretically be used up to 400X magnification (8 times 50 equals 400).

asterism - a group of stars that people have associated with each other and that normally form a shape or pattern. The summer triangle and the big dipper are examples of asterisms. The stars in an asterism do not necessarily have to be in the same constellation.

astronomy - the branch of science that studies objects in the heavens; namely, the sun, moon, planets, and stars. Since the heavens declare the glory of God (Psalm 19:1), we can conclude that astronomy is one branch of science that endeavors to study God's glory.

astronomical unit - the average distance from the Sun to the Earth which is approximately 93 million miles. Astronomers generally use this unit of measurement when describing distances within our own solar system.

astrophysics - the branch of astronomy that deals with the physical nature of all celestial objects. It seeks to apply and determine the laws of physics as they relate to the explanation and interpretation of astronomical observations.

averted vision - a viewing technique used by astronomers to see faint objects in the night sky. Essentially, averted vision means that you do not look directly at an object, but slightly to its side. Averted vision can be used with the naked eye and through telescopes/binoculars.

big bang - a ridiculous theory invented by evolutionists to explain the origin of the universe. It proposes that all matter, energy, and space were contained in a single, infinitely small point which then exploded and over billions of years became the universe that we know today. It is another desperate attempt by man to try and eliminate God.

conjunction - when the moon or one of the planets appears to be particularly close to another planet or bright star. Conjunctions are very beautiful to observe.

constellation - the sky has been divided into 88 pieces or divisions by international agreement of the International Astronomical Union (IAU). Each one of these divisions of the sky is known as a constellation. Usually, there are familiar star patterns within each of these portions of the sky, but the entire division of the sky is known officially as the constellation.

dark adaptation - the ability to see fainter objects due to your eyes adjusting to the darkness. In the dark, the pupils in your eyes will slowly open up more and more to allow more light into your eye. When this takes place, you can see more than you could see previously.

because your eyes are in “night vision mode.” Dark adaptation takes place in about 5 to 10 minutes in the darkness, but it takes a full 30 minutes or so to reach full dark adaptation. Of course, it can be ruined by even just a momentary glance at a bright light.

earthshine - sunlight that reflects off of the Earth and on to the moon which sometimes makes the dark part of the moon glow faintly. Earthshine is most evident during the waxing crescent period of the moon when the moon still appears as a thin crescent.

ecliptic - the imaginary line in the sky through which the Sun travels throughout the year.

eyepiece - the small and removable part of the telescope that you look into. You are able to adjust the magnification of the telescope by changing eyepieces. Most eyepieces have focal lengths expressed in millimeters (mm). To determine the magnification of your telescope, simply divide the focal length of your telescope by the focal length of the eyepiece. For example a 1000 mm telescope with a 25 mm eyepiece would yield 40X magnification.

galaxy - a huge group of stars, gas, and dust all held together by gravity that usually contains billions of stars. Our home star (the sun) and solar system are in the galaxy called the Milky Way. The word galaxy comes from a greek word (galaxias kuklos) which means “circle of milk.” Apparently, somebody in the past looked at the view of our Milky Way in the sky and stated that it looked like a “circle of milk” that somebody spilled in the heavens. This is why our galaxy is still called the Milky Way.

globular cluster - a giant spherical cluster of stars with thousands or millions of stars contained in it. It is believed that these stars all travel together through space. M13 is an example of a globular cluster.

light pollution - this refers to the brightening of the evening sky due to city lights or other artificial light sources. Light pollution is greatest in highly populated areas making it difficult, and in some cases impossible, to see faint or distant astronomical objects.

light year - the distance that light would travel in one year given its currently known speed of about 186,000 miles per second. This equates to approximately 6 trillion (6,000,000,000,000) miles. At this speed you can travel around the earth 7 times in less than a second. It is important to note that a light year is a measure of distance and not time.

magnitude - the brightness of a star or other celestial object. The magnitude scale works in reverse, so a brighter object has a smaller number. For example, a 1st magnitude star is 100 times brighter than a 6th magnitude star. The brightest objects in the night sky will actually have negative magnitude numbers.

messier object - one of over 100 celestial objects cataloged by French astronomer Charles Messier. Messier was a comet hunter and he compiled this list of objects so as not to confuse them with possible comet finds. Today, many astronomers refer to his catalog quite frequently by simply calling out objects by their “M number” (e.g. M13, M52, etc.)

nebula - a latin word meaning “cloud.” Bright nebulas are big clouds of glowing gas that are illuminated by nearby stars. Dark nebulas are not illuminated and do not glow because they apparently block the light of the stars behind them.

night vision - the ability to see in the darkness. This is caused by the pupils in your eyes opening up more, which allows more light into your eye, enabling you to see better in the darkness.

occultation - when one object passes behind another object in your line of sight, it is called an occultation. For example, if Saturn were to pass behind the moon, we would say that the Moon occulted Saturn.

open cluster - a cluster of stars that are close together, but not necessarily “globbed” together like a globular cluster. The Pleiades, Hyades, and the Beehive cluster are all examples.

star diagonal - a mirror or prism that attaches to the end of a refractor or compound telescope. It is the elbow-shaped piece that allows you to look through the telescope even when the scope is pointed upwards.

terminator - the imaginary line that separates the light and dark part of a planetary body. The terminator is usually the most exciting place to look at on the moon because of the long shadows cast by the craters along the terminator.

transit - when one celestial body passes in front of another larger body. We often see the moons of Jupiter transiting Jupiter, and on occasion, Mercury and Venus transit the sun.

twilight - the time after sunset or before sunrise when the sky is not completely dark yet.

universal time - a standard reference point for time so that all astronomers around the world can identify the time when things occur. Universal Time, expressed as UT, is also called Greenwich Mean Time or GMT.

zenith - the point in the sky directly above your head. If you are standing outside and you look out in front of you as far as you can see, the point where the sky meets the earth is called the horizon. If you tilt your head 90 degrees up so that you are looking straight up, the imaginary point in the sky that is right above you is called the zenith.

zodiac - the zodiac represents the 12 constellations that the sun passes through on its annual travel through our sky. While the zodiac has been used and corrupted in heathen astrology, it is apparent that the original concept of the zodiac was not pagan.