Glossary: Only some selected terms here; for a full glossary consult an astronomical dictionary or google the word you need defined**.**

Aphelion/Perihelion: Earth's orbit is elliptical so the planet is farthest from the Sun at aphelion (July 3) and closest at perihelion (Jan 4) in 2017.

Apogee/Perigee: Since orbits around the Sun or Earth are usually ellipses, the farthest and nearest distances use "apo" (far) and "peri" (near) to describe the maximum and minimum values. For Earth and its satellites, apogee is the farthest point and perigee is the nearest. The same prefixes are applied to orbits around the Moon -"luna" (apolune and perilune) Sun -"helios" (aphelion/perihelion), etc.

Appulse: A close approach of two astronomical objects. i.e. minimum separation expressed in minutes and seconds of arc.

Conjunction: The point in time when two stellar objects have the same Right Ascension. This is usually close to the minimum separation of the two objects but see also appulse above. When a planet is at **Inferior Conjunction (not visible)** with the Sun it is between Earth and Sun and in **Superior Conjunction (not visible)** it is on the opposite side of the sun. At neither time are they easy to see since they are near the Sun.

Dichotomy: The point when a planet or moon is exactly 50% illuminated by sunlight. For Earth's Moon, synonymous with FQ and LQ phase.

Ecliptic: The path the Sun takes across the celestial sphere as seen from Earth. It follows the constellations of the zodiac generally except for a brief stint in a non-zodiac constellation in late November when it passes through Ophiuchus. The Sun spends about a month "in" each constellation during the year (assuming each zodiac constellation covers 30° of sky, which they don't and herein lies the conflict between astrology and astronomy).

Elongation (E or W): The time of farthest apparent separation in the sky between two celestial objects, one usually the Sun. For ex. a Greatest Elongation East for Mercury means it is best seen in the evening sky, east of the Sun after sunset.

Graze (or grazing occultation): When the Moon moving in its orbit passes a star so that it appears to skim along the top or bottom edge of the Moon. The Moon's profile may cause the star to blink on and off a number of times as it passes behind mountains on the Moon's edge. See also occultation.

Meteor Shower: An occasion when a larger than average number (more than 7 or 8 per hour) appear to radiant from a specific point in a constellation. The constellation determines the name of the shower, for ex. the Perseids radiate from Perseus. **Meteor**s are commonly called **shooting stars**, but they are usually tiny bits of space debris that

are entering our atmosphere and not stellar in any way. Larger fragments that survive the journey to land on Earth are called **meteorites**.

Occultation (or total occultation): When the Moon passes in front of a bright star or planet so that it occults the object. A star will wink out virtually instantly while planets may take several minutes. Total occultations on the leading edge of the Moon are followed some time later by a reappearance on the opposite limb of the Moon.

Opposition: A planet in opposition is located opposite the Sun from Earth (imagine looking down from above the solar system -the alignment is Sun-Earth-planet. The planet is on the same side of the solar system as Earth and so appears in our "midnight" sky. From Earth, the planet appears to rise in thne east when the Sun sets in the west. Consequently, it is highest in our sky at midnight and then sets on the western horizon when the Sun is rising in the east. A month either side of opposition is the best time to view planets as they are in dark sky for the longest period.

Perigee: The closest distance between the Moon (or other Earth satellite) and the Earth since the Moon's orbit around Earth is an ellipse. See also apogee.

Radiant: The point in space from which meteors appear to radiate. This is purely a perspective effect like snowflakes appearing to come from a point ahead as you drive into falling snow or the appearance of road appearing to narrow in the distance.

Sporadic: A meteor that is not part of a shower, i.e., a random shooting star. Usually 7 or 8 per hour.

Transit: The passage of an object like a planet across the disk of another celestial object. Most common are transits of Mercury and Venus across the Sun. The ISS can be seen to transit the Moon or Sun and more rarely other planets like Jupiter or Saturn. Transits of planets across planets can happen but are extremely rare.
can be seen as the Earth is constantly colliding with space debris.