

SCIENTIFIC ASTROLOGY

A Harmonic Planetary Model

Keith Bound PhD



Foreword

Nicola Scafetta, Professor of Physics

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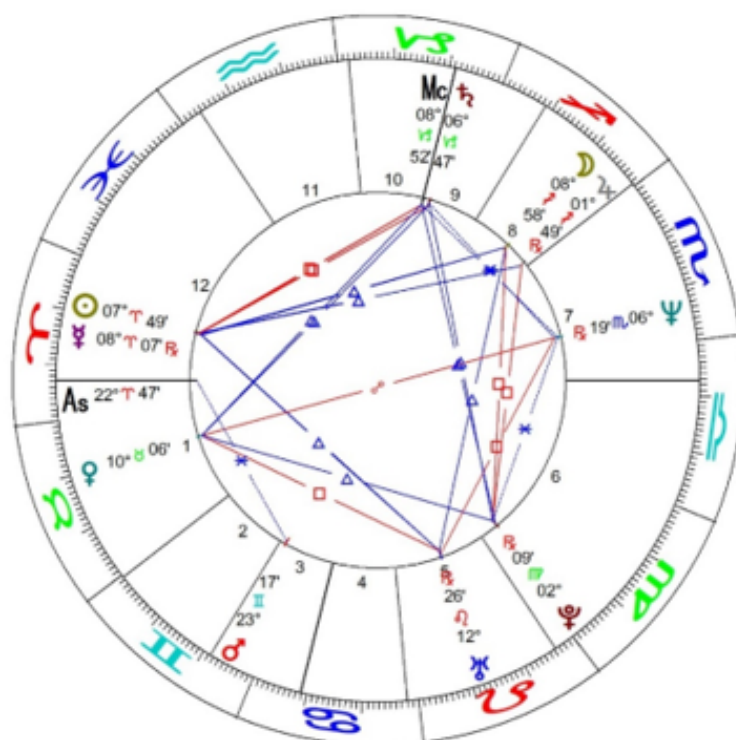
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Author's Bio and Astrological chart

Keith Bound
Natal Chart
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08:20 GMT +0:00
Oxford, United Kingdom
51°N46' 001°W15'
Geocentric
Tropical
Placidus
Mean Node



Astrological chart calculated by Solar Fire version 9.0.29

Keith Bound is a visionary and an international, award-winning designer and innovator with an impressive academic research background and forty years of experience as a professional astrologer. His practice combines an intuitive approach to astrology, channelling the planets and combining astrology with NLP and life coaching, producing an empowering form of astrology (www.catalystastrology.com). In 2020, he began an extensive research project, taking a completely different approach to astrology by integrating science with astrology and producing the book *Scientific Astrology A Harmonic Planetary Model* in 2023. In 2022, Keith presented a qualitative traditional astrological research study in the article *Multiple Celebrity Weddings & Divorces: A Qualitative Study Using Secondary Directions*, published in the prestigious astrological Journal *Syzygy* (winter 2022, p65-73) by the National Council for Geocosmic Research. Keith's academic research background began in 2013, taking on a challenging interdisciplinary PhD (film studies, media psychology, psychophysiology and computer science) at the U.K. campus's highly acclaimed University of Nottingham. Thesis title: *Terror & Tension Psychophysiological Suspense: Defining a Framework to Measure Cinematic Suspense in 21st-Century Horror Films*. He presented his research findings at seven international conferences between 2012 and 2020 and on various radio programmes, including *Naked Scientist* (Broadcast on ABC Australia, BBC 5 Live, and BBC Cambridge) and *Radio New Zealand*. He also has a BA (Hons) in Industrial Design and an MA in Design & Digital Media.

Foreword

Astrological treatises appear meaningless to modern scientists. However, we must not forget how Astrology was born, and we need to evaluate such doctrines in their own context.

The root of the word "Astrology" comes from the Greek Astron, "star," and the suffix -ology, "study of". Thus, Astrology technically means "Science of the Stars"; in this regard, the word itself has the same construction of what we call many other scientific disciplines: Biology, Sociology, Technology, and so on. Thus, a reader should not be surprised to find the word "Astrology" associated with the word "Science", as argued in the new book by Keith Bound, "SCIENTIFIC ASTROLOGY, A Harmonic Planetary Model".

For Greek philosophers and astronomers, the universe has a well-defined structure of directly related objects. In principle, the concept of predictable influences between celestial bodies was and still is today in principle no different from modern mechanical theory. In ancient times, this starkly contrasted with the idea of gods that arbitrarily controlled and determined all events through some kind of magical activity. In the context of religion, magic, and the occult, the basic tenets of astrology were theoretically pure science. However, the line between rational science and loose speculation is quickly blurred, and, indeed, astrological tradition did not prevent this corruption, but on the contrary, encouraged superstition and magic, as if the position of the celestial bodies could describe aspects of a person's personality and foretell major events in their life.

In this regard, I think correctly of St. Augustine's (354-430 AD) famous rebuttal of astrology, when he observed the failure of astrology to explain twins who behave differently although conceived at the exact moment and born at approximately the same time. A specific superstitious belief in astrological determinisms in human lives and affairs also poorly agrees with our perception of man's free will and personal responsibility. It is too convenient for somebody to absolve themselves of wrongdoing by blaming the stars!

However, the astrological boundary between rational science and arbitrary speculation was strongly advocated and defended by prominent ancient scientists such as Claudius Ptolemy in the 2nd century AD, Abu Ma'shar al-Balkhi in the 9th century AD, and Johannes Kepler in the 17th century AD.

In the introduction to his famous work on astrology, the "Tetrabiblos", Ptolemy made a clear distinction between the two branches: on the one hand, astronomy is concerned with observing, recording, and predicting the positions of stars and planets with high mathematical precision; astrology, on the other hand, was more concerned with applying knowledge of astronomical aspects to the less precise and mundane tasks than predicting events on Earth. However, both disciplines shared interests in the sky and had their own basis. Astrology was more concerned with the events below the lunar sphere, while astronomy was concerned with the events of the universe beyond the lunar sphere. For Ptolemy, astronomy and astrology were separate and distinct entities, but they also had a clear connection. Ptolemy advocated such relationships

because of the evident influence of the Sun (ask the farmers regarding the synchronisation of the seasons with the Sun's elevation) and the Moon (ask the sailors regarding the synchronisation of the tides with the lunar phases). In addition, the stars also appeared to predict important weather phenomena (every year, when Sirius the Dog rises with the Sun, the Nile overflows). And then there was the more complicated but equally important question of aspects or juxtaposition of the planets. However, unlike astronomy, with its ability to make accurate predictions about celestial events, astrology's ability to make accurate predictions about events on Earth was not precise, but regarding certain natural phenomena, it was sufficiently accurate to be considered real.

Abu Ma'shar al-Balkhi, who is thought to be the greatest astrologer of the Abbasid court in Baghdad, developed some astronomical models for predictions concerning kings, prophets, dynasties, religions, wars, epidemics, etc. He used conjunctions of planets, recurrences of comets, and other astronomical factors as explained in his works, such as those in "Historical Astrology: The Book of Religions and Dynasties (On the Great Conjunctions)". The observed correlation claims could today be explained, for example, if astronomical factors influenced Earth's global and local climates.

Like Ptolemy and Abu Ma'shar, Kepler took astrology for granted because he believed that the positions of the Sun, the Moon and the planets influence terrestrial phenomena, such as weather and climate changes at all time scales from months to millennia. Kepler strongly defended astrology in his "More Certain Fundamentals of Astrology", published in Prague in 1601, which also contains a monthly weather almanac for 1602. He later wrote about his astrological theories in other books such as: "Antwort auf Rösline Diskurs" (1609), "Tertius interveniens" (1610) and "Harmonice Mundi" (The Harmony of the World) 1619, Book 4, Chapter 7.

Climatic, meteorological and, in general, geophysical phenomena clearly have the potential to affect human lives too. Thus, a physical link of such phenomena with astronomical, geometrical configurations would constitute a realistic basis for "scientific" astrology. Of course, Kepler was also well aware of the superstitious aspects of ancient astrology but still warned to keep an open mind on this topic and not to "throw the baby out with the bathwater". The discovery by Isaac Newton (1642 – 1726) of the Law of Gravity gave the ultimate and definitive explanation of all the subtleties of observable celestial motion. However, in his Principia, he also observed that the theory of gravity appeared to contradict the astrological claims of an influence of the astronomical bodies on the Earth. In fact, the gravitational force of planets on terrestrial objects was estimated to be too weak and too complex because of the great distances among them. This was probably the main reason why, since the 18th century, the possibility of "scientific" astrology rapidly decreased.

Yet, neither Ptolemy nor Kepler mentioned what might be called the "physical cause" of the possible links between astronomical phenomena and terrestrial events. They only observed that the nature of a celestial body, like a planet, is to move in a circle within a given period, which implies that the physical links were understood as established only in the frequency domain.

Then, if one physical mechanism appeared not to work, perhaps some other mechanisms could do it.

An example of the appropriateness of this logic regards the connection between aurorae, the geomagnetic field, and sunspots. In 1863, Lord Kelvin (1824 – 1907) argued that no connection was possible because the Sun was too far away from Earth to influence the magnetic activity of the latter. However, the problem was solved when the existence of the solar wind transporting the magnetic activity throughout the solar system was established. Thus, in the presence of evident empirical correlations, the fact that a hypothesised physical mechanism could not explain the phenomena's work does not exclude the possibility that another and more complex physical mechanism could be at work to solve the scientific puzzle.

In the middle of the 19th century, another significant discovery was made: the Sun's activity varied cyclically for an almost 11-year period. The astronomer Rudolf Wolf (1816 – 1893) conjectured that the variations of spot frequency could depend on the influences of Venus, Earth, Jupiter, and Saturn.

Thus, could the planets modulate solar activity changes via some unknown physical mechanism while the Sun influences Earth's climate and other geophysical phenomena, resulting in a complex synchronisation between planetary orbital motion, planetary angular alignments (aspects in astrology), solar activity changes, and climate change on Earth? If so, some elements of traditional astrology, such as planetary aspects, could have a fundamental scientific basis. An increasing number of professional scientists, like myself, are investigating these topics today because there is a growing amount of scientific evidence supporting a planetary hypothesis of solar activity change and climate change.

Thus, I was pleased with Keith Bound's new book. It covers a variety of recent scientific findings and modern scientific hypotheses suggesting some form of complicated coordination between planetary orbital motion and alignments, Parker Spiral interconnections with planetary alignments, variations in solar activity, climate change, and other geophysical phenomena on Earth. Readers interested in natural wonders and the frontiers of science will enjoy and be amazed by reading it.

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Hipparchus Epicycle-Deferent System

A breakthrough came from Greek astronomer and mathematician Hipparchus (190–120 B.C.E.), who had significantly contributed to the advancement of astronomy, trigonometry, and mathematical sciences. His most important work was defining the orbit of the Sun and Moon, their physical size and distance from Earth, and studying weather patterns and eclipses. He came up with the idea of orbits being eccentric circles and that Earth is eccentric at some point to the geometric centre of the universe. He applied this theory to explain the Sun and Moon's motion irregularities and inequalities and provided evidence of his idea of an eccentric circle mathematically equivalent to a geometric pattern he called an epicycle-deferent system that worked in the following way [16]. Offsetting Earth from the centre of the deferent and adding another mechanism, the eccentric circle accounted for the planet's brightness, erratic orbital paths, and retrograde motion, creating the illusion of an elliptical orbit while maintaining a circular orbit (Figure 2).

Hipparchus Epicycle Deferent System

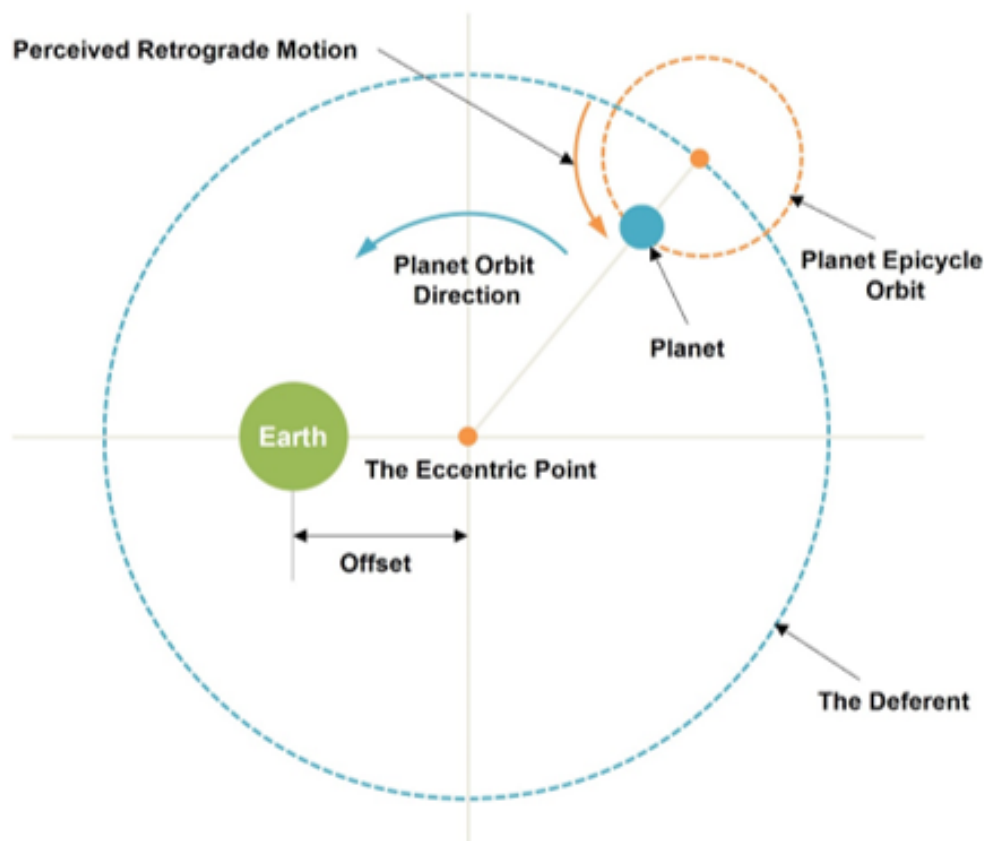


Figure 2. The Hipparchus epicycle-deferent system.

Ptolemy Epicycle-Deferent System

Although Hipparchus had improved the epicycle-deferent system, it still had technical problems, such as a planet's speed and retrograde motion. It was not until 2 C.E. that Claudius

Moon is considered a benefic planet because of the heat from the Sun and moisture due to its tidal forces, whereas the Sun and Mercury could be either benefic or malefic [20].

We must appreciate that Ptolemy's knowledge and perception of astrology were influenced by his cultural background living in Hellenistic Alexandria in Egypt [20]. Hellenism is a polytheistic religion (multi-gods) based on Greco-Roman mythologies of the gods worshipped by citizens and represented good or evil [21]. Interestingly, in *Tetrabiblos*, translated by Ashmand, Ptolemy does not discuss individual planetary meanings in detail or refer to the myth of gods to describe their implications, perhaps because he intended to maintain a scientific framework of astrology. Due to Ptolemy's limited understanding of the natural physical forces of the universe, he could only provide an astrological theory based on a philosophical form of science and observations of the planets, four seasons, and mathematical calculations that determine the positions of planets in the twelve zodiac signs and the twelve houses, and planetary angular relationships, known as aspects in the astrological chart.

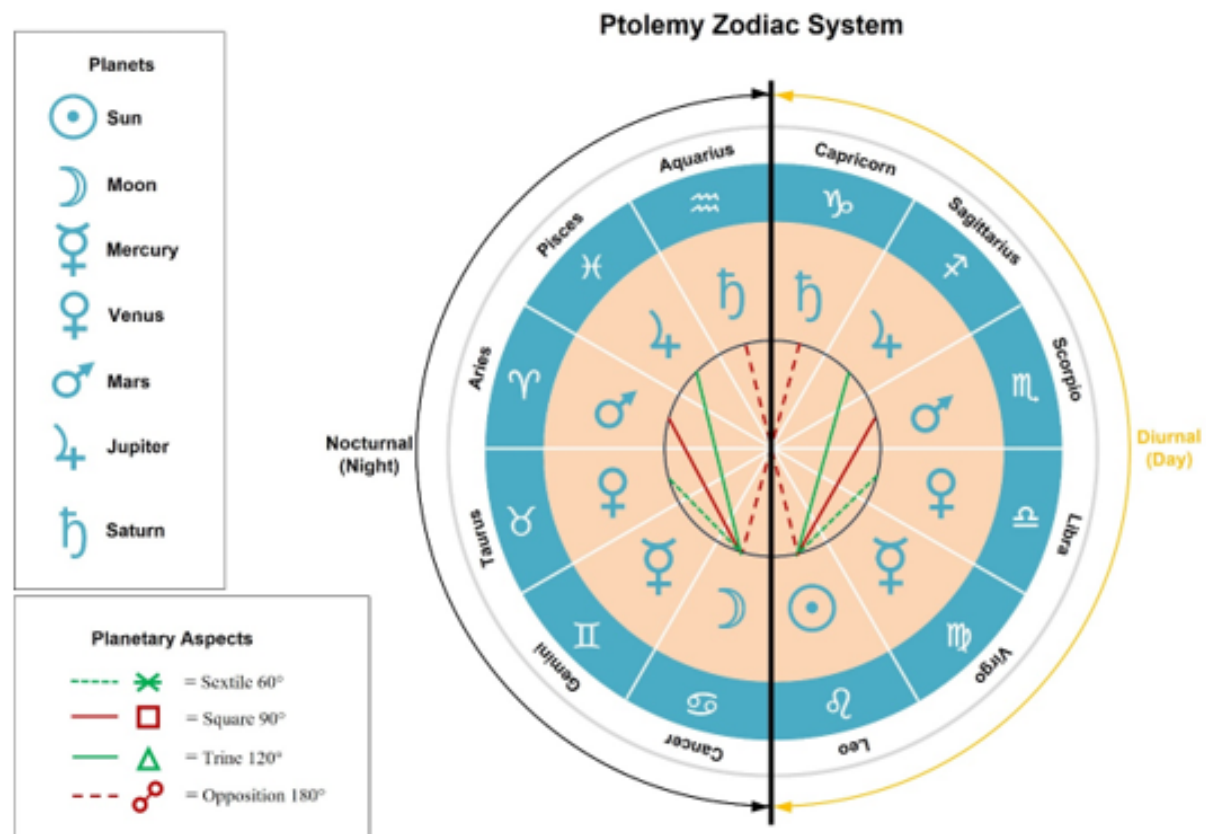


Figure 4. Ptolemy's natural order of the signs/planets in their nocturnal and diurnal sections and planetary aspects.

The astrological chart comprised twelve zodiac signs into equal 30° segments providing geometric divisions of the ecliptic, representing the natural order of the zodiac signs (Figure 4). The ruling planets of the signs were divided into two sections, one representing day (diurnal)

Astrological House Systems Part 1

For readers unfamiliar with the twelve houses in astrology, astrologers devised them as a frame of reference for celestial bodies (similar to the zodiac signs) that represent different experiences in life depicted in the astrological chart. An astronomical calculation defines four prominent angles forming two axes and divides the chart into four quadrants [23]. Most house systems use these two axes to define the borders (cusps) of four houses: the first, fourth, seventh and tenth. The horizon axis represents the first cusp (ascendant) and seventh cusp (descendant). The Meridian axis defines the fourth cusp, the Imum Coeli/I.C. and the tenth cusp (Midheaven/M.C.). However, during antiquity, a commonly used house system was the Equal House System, which defines house sizes based on the ascending degree and minute, hence the term equal house. This meant that the Meridian axis was only used as the fourth and tenth house cusps if they were 90° from the ascending degree (Figure 5). For example, Maternus only referred to the Imum Coeli/I.C. as the fourth cusp and Midheaven as the tenth cusp when it is 90° from the ascendant degree [23], which does not always happen due to short and long ascensions. Short ascension means that the M.C. appears in the eleventh house and long ascension in the ninth house, not 90° from the ascendant. The opposite point to the midheaven (M.C.) being the I.C. would fall in the third house (long ascension) and fifth house (short ascension) [26]. We demonstrate Maternus's views concerning the tenth house and Midheaven using the Equal House System in Figures 5 and 6.

Equal House System

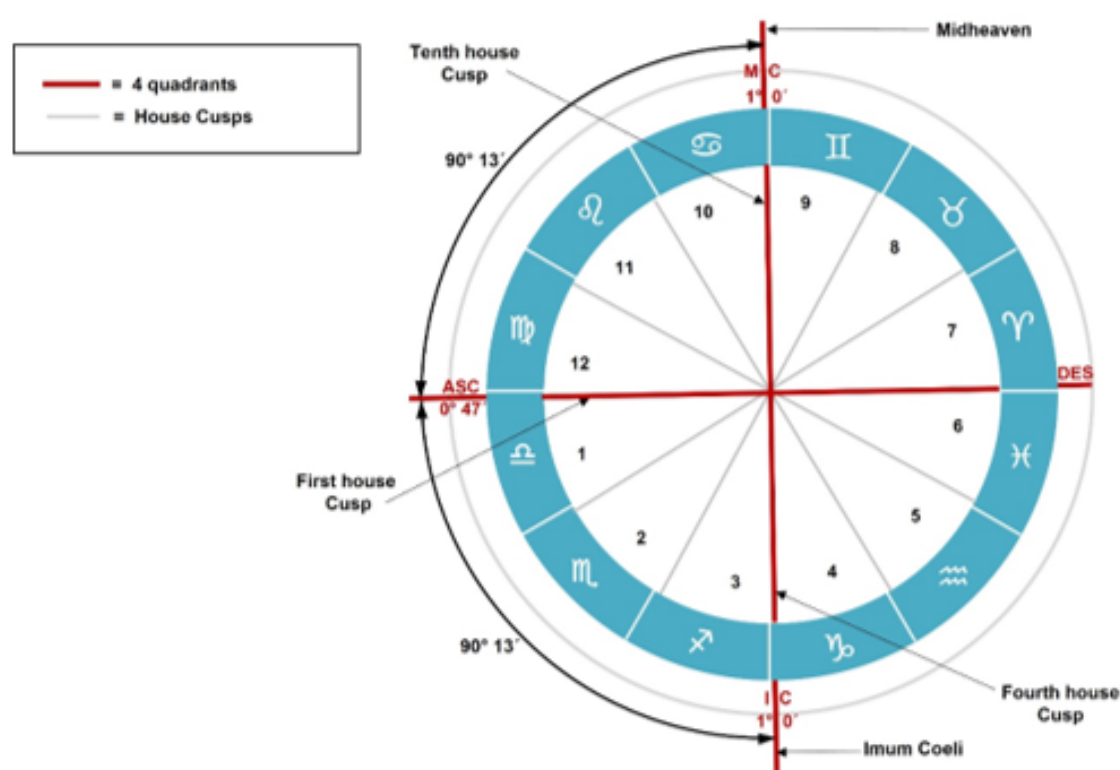


Figure 5 Maternus only used the Imum Coeli (fourth house cusp) and Midheaven (tenth house cusp) when they were 90° apart from the ascendant. The four cardinal points/quadrants are shown in red.

Ecliptic House Systems

According to Howard Sasportas, the oldest house system is the Equal house system, dating from around 3000 B.C.E. [6]. It divides the ecliptic into twelve equal segments based on the ascendant degree and minute. So, if the ascending degree were 10° Taurus $11'$, the second house would begin at 10° Gemini $11'$, followed by the remaining ten zodiac signs. Although astrologers who use the equal house system do not use the I.C. as the fourth cusp and the M.C. as the tenth house cusp, they still perceive these as important astrological axes [5]. With the Equal House system's simplified way of dividing all twelve houses, an astrological chart can be calculated at any latitude degree. We demonstrate the relationship between the Equal House system relative to the ecliptic and equator in Figure 8 and the astrological chart in Figure 9.

The Equal House System

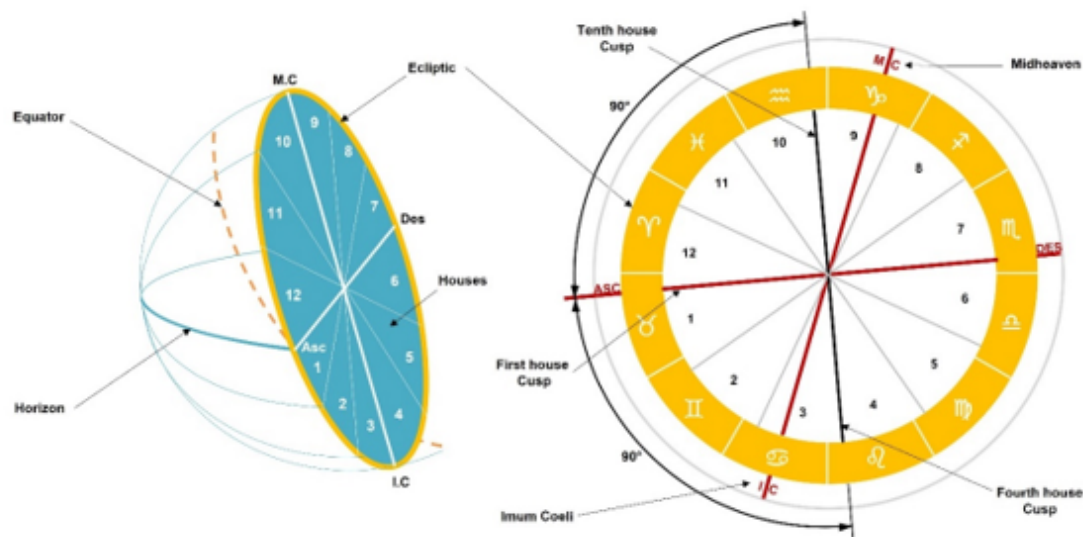


Figure 8 The Equal House Method, where each house size is the same as the ascendant degree (first house cusp) [8].

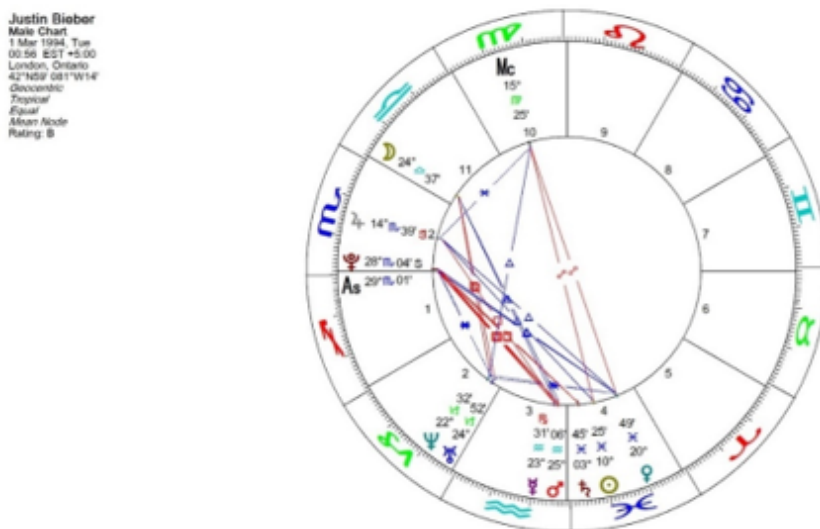


Figure 9 The Equal House System (Source: Solar Fire version 9.0.29)

Meridional Cells

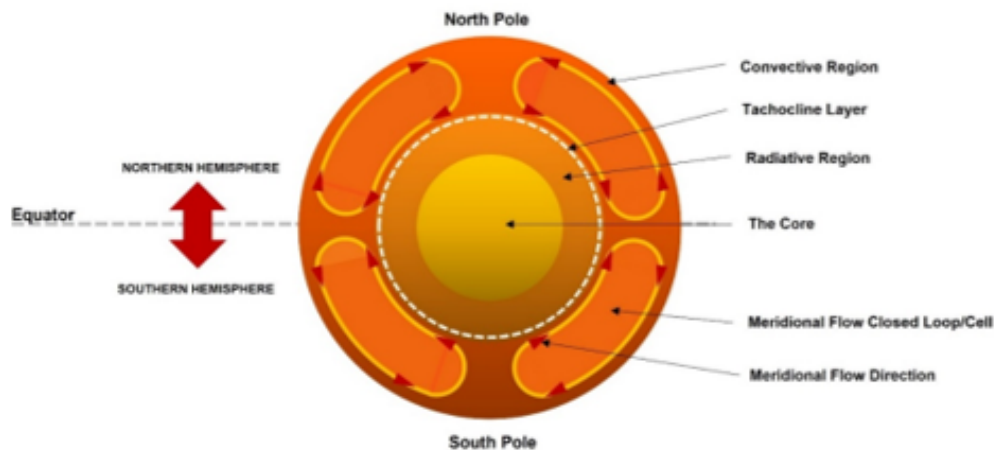


Figure 20. The Meridional closed cells and plasma flow that assists sunspot creation.

Sunspots occur as the magnetic field intensifies. Dark patches appear on the surface of the Sun due to the expending of less energy and cooler temperatures than the surrounding areas [15]. These dark patches are sunspots and appear on the Sun's surface. The dark patches are polar opposites like north and south. They often occur in pairs with a looped magnetised rope that produces a magnetic field. Sunspots producing a series of local magnetic fields can vary in strength during the solar cycle and are mainly concentrated in latitudes 20° - 45° north and south of the equator (Figure 21). When the number of sunspots is at its highest during the peak of the sunspot cycle, sunspots tend to be around 15° latitudes north or south of the equator [20], but their lifetime is short, lasting a few days or weeks. Towards the end of the solar cycle, sunspots decline when they are around 7° north and south of the equator [20]. Sunspot data graphically displays the shape of two wings, known as the butterfly diagram [15].

Sunspot Areas

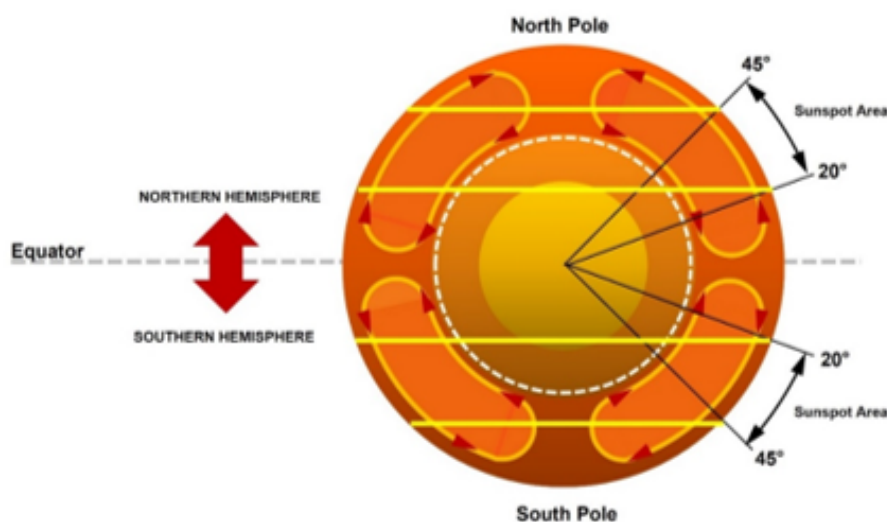


Figure 21. Sunspot areas are located between 20-45 degrees North and South.

ions, enter the Earth's atmosphere along the Earth's magnetic field lines, the solar wind ions are swept around the planet's magnetosphere and mix with particles in the Earth's atmosphere, demonstrating a causal link between the Sun and planets through electromagnetic waves of energy and ionisation [25]. Scientists measure the total strength of the *Parker Spiral* using a Bt value, which combines its various features, including the *Parker Spiral* magnetic field strength in the following directions: north-south, east-west, towards and away from the Sun [25]. The Bt value is in nano-Tesla (nT) units, named after Nikola Tesla, the famous physicist and inventor. A moderate force of the *Parker Spiral* would be over 10nT, a strong force would start at 20nT, and an extreme force would exceed 30nT. This indicates that the *Parker Spiral* could have a causal link to all celestial bodies in the solar system, which could interest astrologers in the future in determining the strength of solar aspects in the birth chart.

The Heliosphere

The Sun creates a gigantic spherical protective magnetic field called the Heliosphere that protects celestial bodies in the solar system from interstellar winds, its interplanetary magnetic field, and harmful radioactive cosmic rays. The volume of space covered by the solar wind and *Parker Spiral* extends twenty-three billion miles to the interstellar space boundary, making it the largest structure in the solar system (Figure 23).

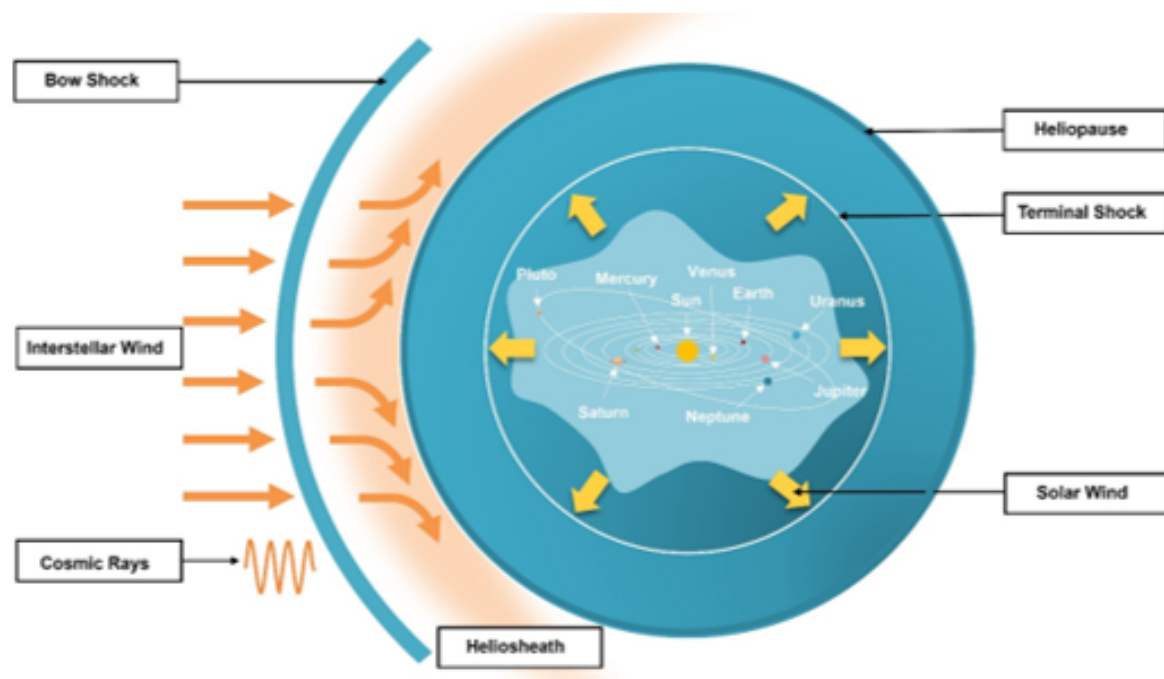


Figure 23. The solar wind and *Parker Spiral* interaction with the interstellar wind and cosmic rays create the Heliosphere [26].

When the solar wind pushes outwards against the competing force of the interstellar wind, it creates a massive shock wave called the bow shock. The solar wind begins to compress and

Earth's Magnetic Field

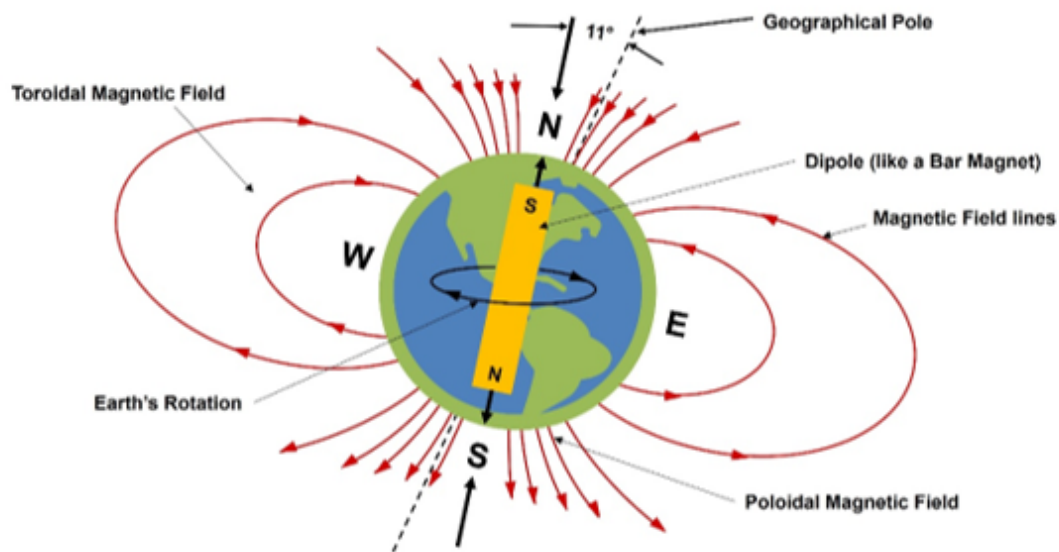


Figure 25. The Earth's dipole magnet is an electrical conductor and an essential part of the magnetic field [2,3,4].

A Corliss Effect twists the helices of the vertical magnetic field lines, forming many little loops that create magnetic flux tubes around the axis, generating a toroidal electrical current and magnetic field [2,3,4].

Earth's Magnetic Field Generator

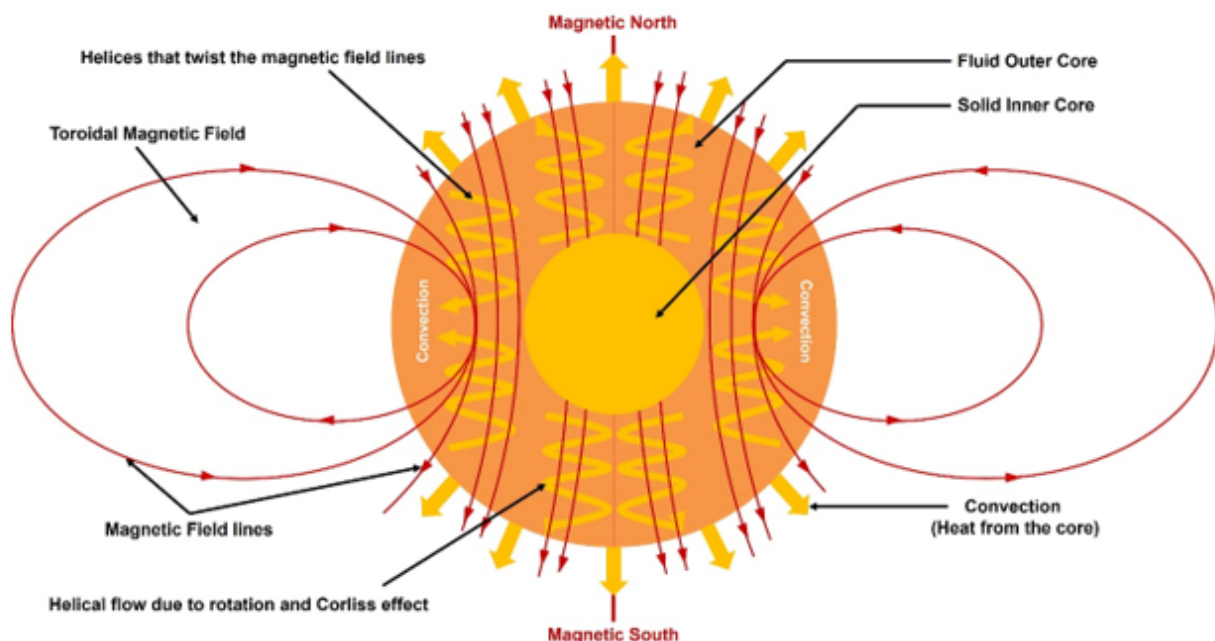


Figure 26. The inner/outer cores, rotation and Corliss effect generate a geodynamic thermal engine [2,4].

1) compresses and cools the solar wind, deflecting solar wind plasma and creating a hot magnetosheath (zone 2). The third zone is the magnetopause, an outer boundary of the magnetosphere with two plasma layers, one at low latitudes and the other at high latitudes. The solar wind interaction with the magnetopause enables magnetic field line reconnection on the dayside (Sun side), transferring solar wind plasma, magnetic fields, momentum and energy inside the Earth's magnetosphere. The fourth zone is the magnetotail located in the nightside of the Earth that consists of a long cylindrical shape containing magnetic field lines connected to Earth. The fifth zone is the plasma sheet inside the magnetotail, forming a magnetic energy reservoir that transports hot plasma along the magnetotail into the dipolar magnetosphere from the night side. However, due to electromagnetic instabilities, the magnetotail creates volatile substorms (surges of convection) that travel Earthbound frequently during the day [8].

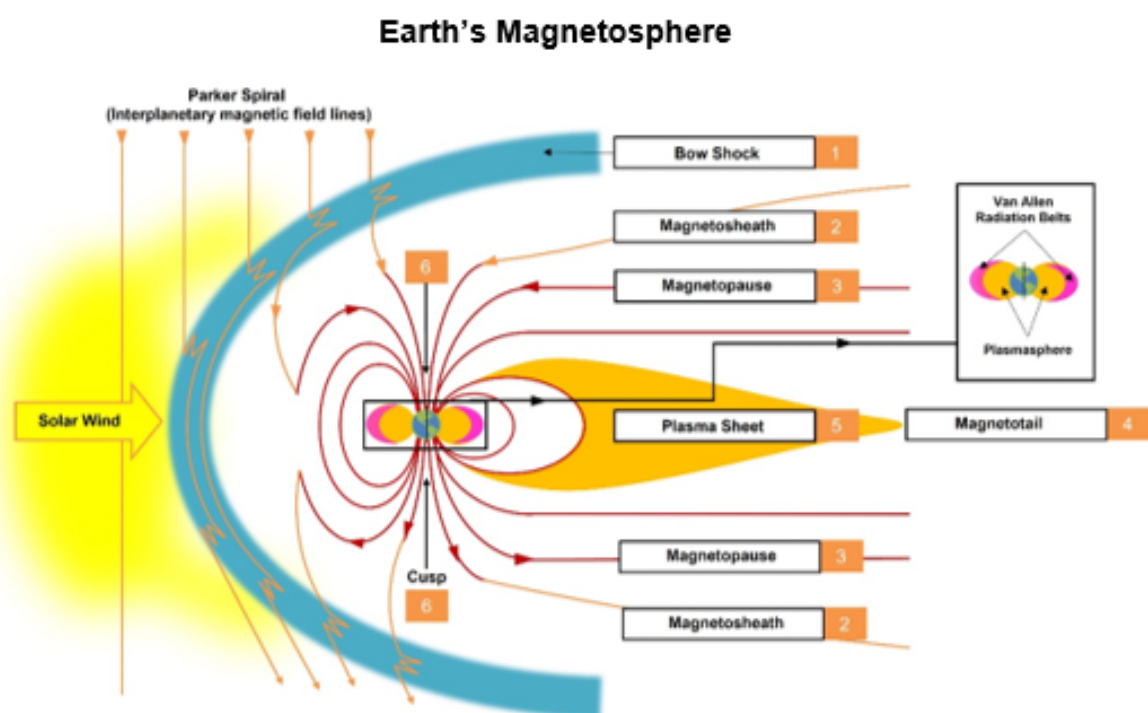


Figure 27. A meridian view of the magnetosphere's main zones and processes [7, 8].

The sixth zone is the cusps, which are areas close to the north and south poles of Earth's dipole regions, where the solar wind can penetrate deep into the magnetosphere along the Earth's magnetic field lines. This process creates volatile geomagnetic storms in the magnetosphere's upper atmosphere, mainly when the solar wind *Parker Spiral* flows southwards into the north cusp and north dipole area, creating auroras at both poles. Inside the sixth zone, the auroral regions are rings around the north and south poles where ions and electrons affect the upper atmosphere, producing visible coloured lighting in the sky during geomagnetic storms. However, the strongest auroras are formed by electron impact from the electron plasma sheet in the magnetotail and weaker auroras by the proton impact from the ion plasma sheet in the magnetotail. The auroras display much power from the magnetosphere scattered into Earth's atmosphere and the Ionosphere [7]. The solar wind's interaction with Earth is essential to life on Earth and how the solar system operates as a macro plasma organic system. The Earth feeds

magnetic qualities and mini-magnetospheres above the lunar surface can be up to 350km long but are microscopic compared to Earth's magnetosphere. Even so, they form an essential part of the electromagnetic defence system for the Moon [27]. When mini-magnetospheres combine with lunar swirls, they are more likely to deflect a significant quality (up to 50%) of solar ions into the Moon's plasma environment and space, thereby protecting parts of the lunar surface from solar wind absorption (Figure 34) [27].

Lunar Mini-Magnetosphere and Swirl Patterns

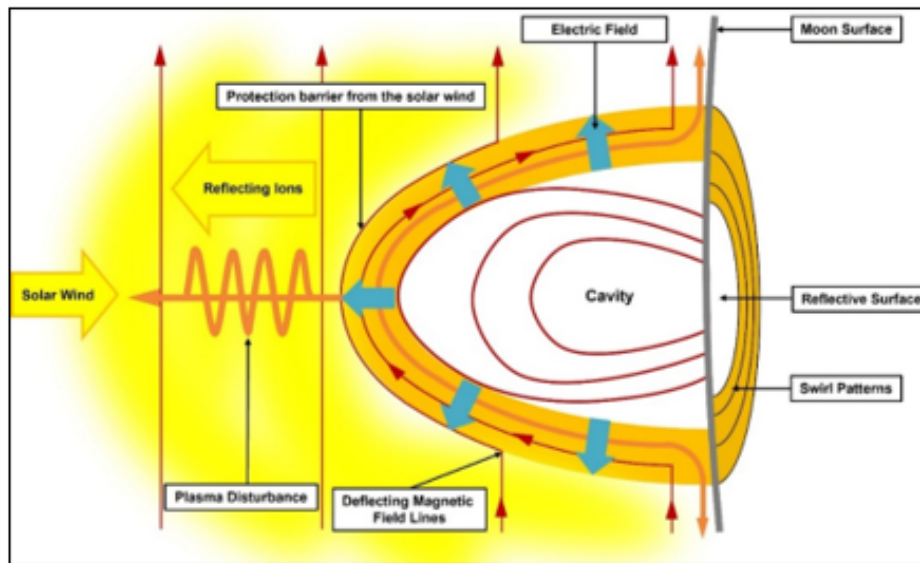


Figure 34. A mini-magnetosphere and swirl patterns reflecting solar ions protect a small area of the moon's surface from the solar wind and Parker Spiral magnetic field lines.

We shall now discuss the Full and New Moon phases, starting with the Full Moon due to its significant electromagnetic connection with Earth.

The Full Moon Phase

The Moon becomes electrically charged during the Full Moon phase, entering the Earth's magnetosphere in the magnetotail section (facing the anti-sun side). With Earth being 238,855 miles (384,400km) from the Moon and the magnetotail exceeding 3,900,000 miles (6,300,000 km), the Moon fits easily inside the magnetotail during the Full Moon phase [28]. In 2008, NASA scientist Tim Stubbs from the Goddard Space Flight Center discovered how the lunar surface reacts to Earth's magnetotail (Figures 35-36). It takes three days until the Moon reaches the Full Moon phase and another six days until it exits the magnetotail's other side. The Moon is always inside the magnetotail during the Full Moon phase and becomes magnetised when inside the Earth's magnetosheath, electron and ion plasma sheets in the magnetotail [28-30]. The mobile electrons bombard the Moon's surface, providing a negative charge. At the same time, the daytime lunar surface is exposed to sunlight, and its ultraviolet photons repel the electrons from the lunar surface to maintain a low-level electrical charge [28-30]. Meanwhile, electrons continue to increase on the Moon's nightside, creating high voltages sustained for a

few minutes, hours or days [30-31]. An electrically charged lunar surface differs considerably from the Moon inside the magnetotail because the Moon and Earth form a direct electromagnetic connection.

The Moon's Electromagnetic Connection with Earth's Magnetotail

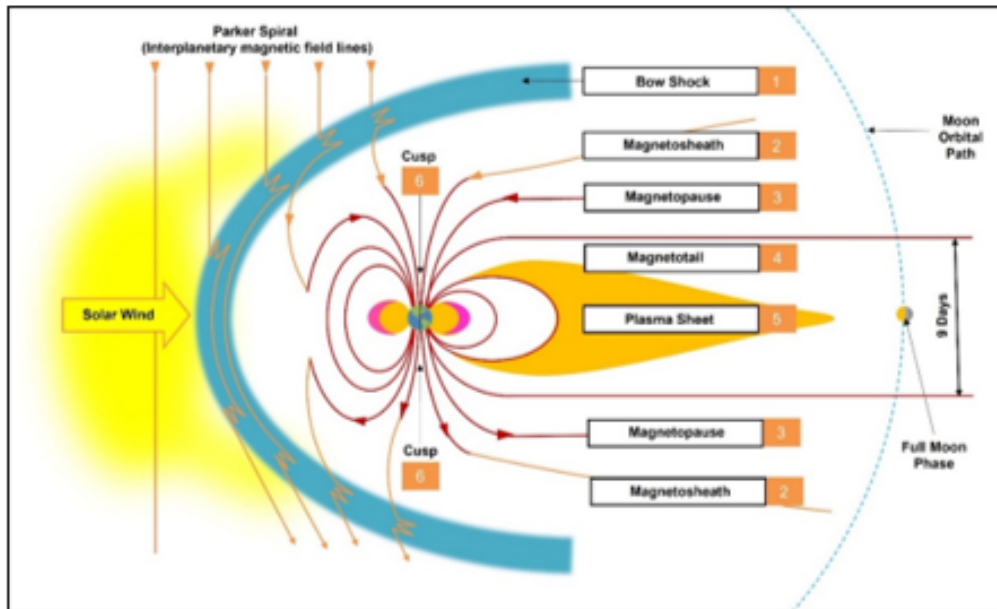


Figure 35. A Meridian view of the Full Moon phase traverses through Earth's magnetotail, creating an electromagnetic connection between Earth and the Moon.

Lunar Surface Charging and Electric Fields

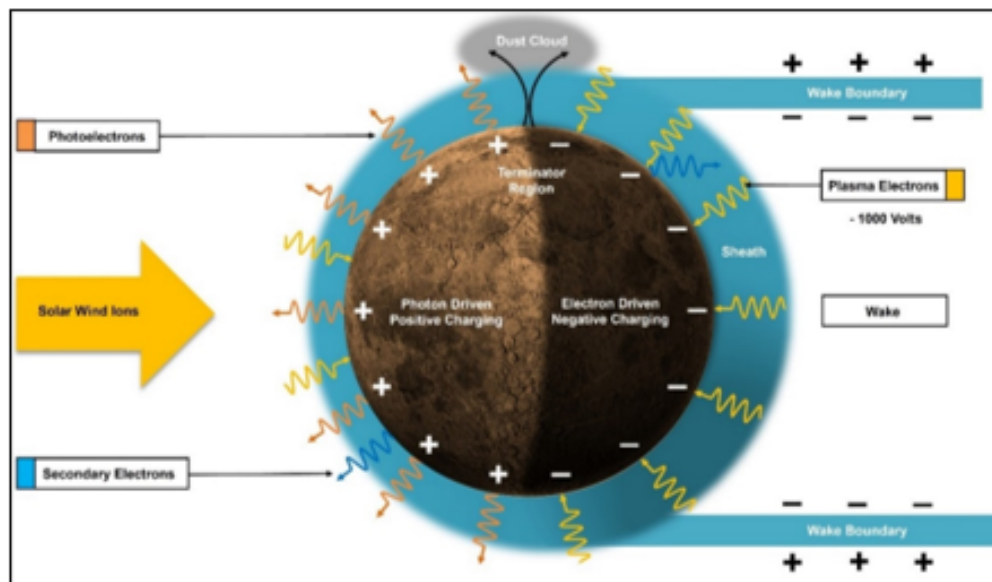


Figure 36. The solar wind ions and the Earth's magnetotail help generate surface charging and electric fields. During the Full Moon Phase, Earth's magnetotail generates a negative charge of 1000 volts on the dark side of the Moon [31].

the Fibonacci series to planetary orbital cycles and synodic conjunctions (e.g., Venus-Earth), the average deviation from the Fibonacci sequence is just 2.51% [16].

Resonance Ratio by Type	Planetary Pairs	Fibonacci Sequence Ratio
Semi-Major Axis	Mercury-Venus	2:1
“	Venus-Earth	3:2
“	Earth-Mars	3:2
“	Mars-Jupiter	5:2
“	Jupiter-Saturn	2:1
“	Saturn-Uranus	2:1
“	Uranus-Neptune	8:5
Synodic Cycles	Mercury-Venus	8:3
“	Venus-Earth	3:2
“	Earth-Jupiter	12:1
“	Mars-Jupiter	6:1
“	Jupiter-Saturn	3:2
“	Uranus-Neptune	2:1
Inner Planets Synodic cycles with Jupiter Sidereal Period	Mercury-Venus	6:1
“	Venus-Earth	3:2
“	Earth-Mars	5:1

Table 3. Fibonacci resonance ratios are based on semi-major axis, sidereal/synodic cycles and inner planetary pairs synodic cycles with Jupiter's sidereal period [16].

Mercury and Venus also form differential rotation relationships with the Sun, including rotational spin, orbital periods, and the precession rates of synodic conjunction cycles. These observations demonstrate that these planetary patterns strongly suggest that the solar system's stability is maintained by gravitation forces acting on planets through a feedback system to maintain planetary resonance ratio patterns, which create a self-organised solar system [12,13,14,16].

Venus-Earth Orbit Mean Motion Resonances

We shall explain why the Venus-Earth conjunction synodic cycle is associated with three orbital mean motion ratios, 5:3, 13:8 and 8:5, based on Fibonacci numbers 5, 8 and 13. Despite the considerable distance between Venus and Earth, they form three orbital resonances (13:8, 8:5, 5:3) that synchronise the rotation spin direction of Venus [11, 13, 15]. The three mean

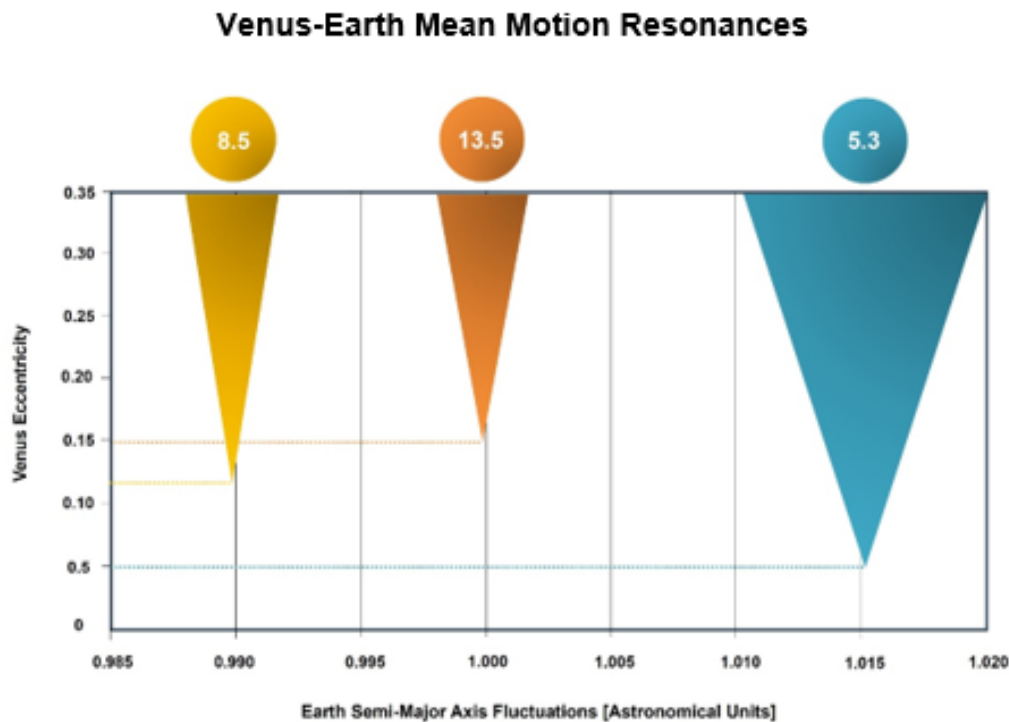


Figure 55. The three Venus-Earth mean motion resonances' simple visualisation clarifies the strongest (5.3 ratio) and weakest resonance (13.5 ratio).

This study supports Aschwanden's theory that Venus-Earth has a self-regulating harmonic mean motion resonance ratio of 5:3. [13] Á. Bazzó et al. also discovered that Venus-Earth resonance ratios were only affected if Venus had a large declination. Venus-Earth also affected Mercury's orbit, mainly when it was observed that Venus had an increasing inclination or eccentricity [15]. The gravitational theory of relativity space-time also supports the self-regulation of the solar system by the planets because the mass of a celestial body spinning on its axis traversing along its elliptical orbit distorts space (curvature of space) within its present location, and the celestial body mass, which also affects the dimension of time by modifying the trajectory of other passing celestial bodies slightly, especially when they are synchronised in an orbital harmonic mean motion resonance or in the case of Jupiter-Saturn (5:2 ratio) that stabilises Mercury's orbit [15].

Four Gas Giants Frequency Clusters

In the study *Solar Oscillations and the Orbital Invariant Inequalities of the Solar System* (2020), Scafetta investigated planetary orbit mean motion resonances to discover how they are synchronised with sunspot cycles and solar activity [21]. He found the four gas giants Jupiter, Saturn, Uranus and Neptune are almost locked into a mean-motion resonance. These findings indicate dynamically stable orbital periods over millions of years without additional disturbances. The study provides evidence that the four gas giants form frequency clusters synchronised with specific periodicities associated with sunspot cycles and solar activity that include spectral groups (40-50 years and 55-65 years) and other solar cycles, such as the Glessberg (80-100 years), Jose (155-185 years), Suess-de Vries (220-250 years), Eddy (800-

Scafetta created a harmonic planetary model comprising the dates of the two Jupiter-Saturn tidal frequencies of 9.5 and 10.5 years combined with a theoretical 10.87 cycle that aligns with the Schwabe sunspot cycle (Figure 56). He then investigates whether significant statistical correlations exist between planetary cycles (Mercury, Venus, Earth, Jupiter and Saturn) and sunspot periodicities [6].

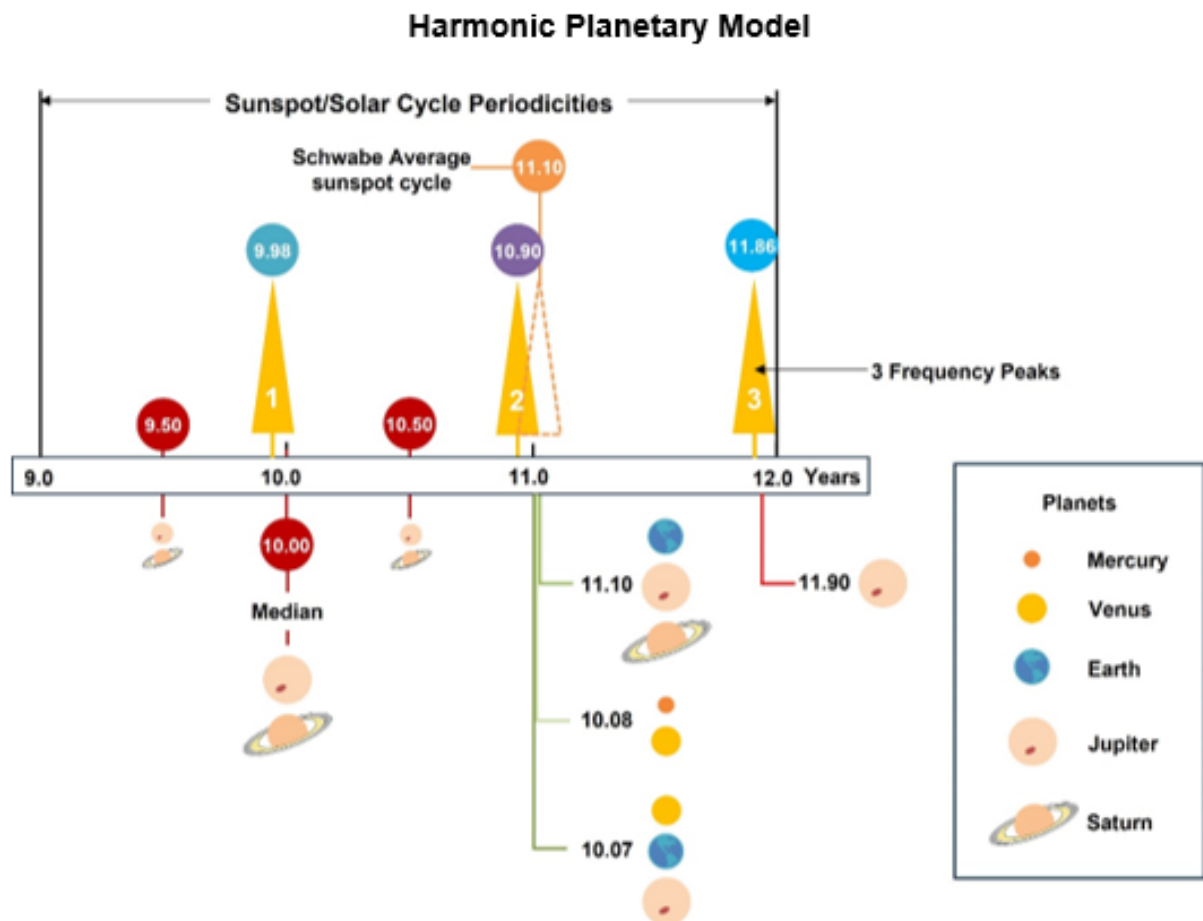


Figure 56. Statistical correlations between sunspot/solar cycles and Jupiter-Saturn tidal frequencies, including Jupiter-Saturn interference patterns with other planetary combinations (Mercury-Venus, Venus-Earth-Jupiter, Earth-Jupiter-Saturn, and Jupiter sidereal period). [6].

The study's outcomes revealed excellent correlation patterns for observed decadal, multi-decadal, secular and millennial sunspot/solar cycles that can emerge as interference patterns between Jupiter and Saturn's two largest tidal forcing planets [6]. Their combined orbital angular momentum is 87% [7], with the Sun having less than 1%, providing evidence that sunspot/solar cycles are synchronised to the tidal period of the Jupiter-Saturn synodic cycle. In addition, the solar/harmonic planetary model identified all major harmonic events observed across numerous solar and climate records throughout the last 12,000 years (Holocene) at multiple temporal scales [6]. In particular, they matched millennial and centennial natural harmonics at 115 and 983-year cycles that were warming phases for most of the 20th Century and other cycles of much shorter periods [6]. The detection of these warming phases could

activity. This provides further evidence that addresses objection one by Smythe and Eddy because they dismissed the idea that planetary effects could increase and decrease sunspot numbers and solar activity. According to Sharpe, sunspot activity is rare when the Sun's trefoil pattern created by the Jupiter-Saturn synodic cycle becomes disoriented due to the Uranus-Neptune synodic cycle modulating the solar system's barycentre and solar angular momentum. The Uranus-Neptune synodic cycle has a combined orbital angular momentum of 12%. When combined with Jupiter-Saturn (87%), the total orbital angular momentum is 99% of the solar system, producing a robust turbulent effect on the Sun [8]. Sharpe presents data showing the angular momentum (AM) from the Uranus-Neptune conjunction and its timing with the Jupiter-Saturn opposition that forms two different turbulent wave slope patterns, based on Saturn offset by 0° - 30° (+) or 0° - 35° (-) from the exact centre point of the Jupiter-Saturn opposition. Saturn's orbital speed defines Saturn's positive and negative angles. Sharpe names these wave patterns Type A and Type B (Figure 57). Type A is a positive Saturn angle and forms a downward slope. Type B is a negative Saturn angle and forms an upward slope pattern. Type A and B events are classified as angular momentum perturbation (AMP) events [8]. Due to the slow speed of Uranus and Neptune and their long periods of retrograde motion, Jupiter and Saturn form many oppositions to the Uranus-Neptune conjunction. This often leads to 3-4 AMP events that create an AMP group, each coinciding with the Uranus-Neptune conjunction. When considering the midpoint of these AMP groups, they equate to an average of 172 years, which is very close to the Uranus-Neptune synodic cycle of 171.44 years [8].

Jupiter-Saturn-Uranus-Neptune Alignments

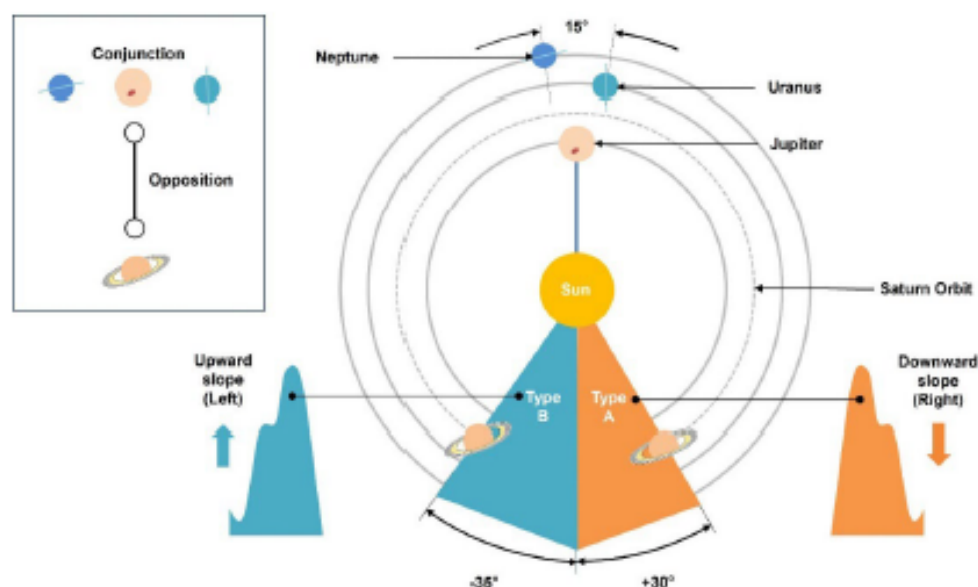


Figure 57. Jupiter-Uranus-Neptune conjunction opposes Saturn's configuration that correlates with decreased sunspots and solar activity. From an astrological perspective, the planetary alignment of Uranus-Neptune conjunctions is a crucial generational aspect in astrology, as they link up to several Jupiter-Saturn oppositions during their conjunction phases.

Sharpe found that type A AMP events (Saturn positive angle) with a downwards wave slope pattern combined with an angular separation of 0° - 15° between Uranus and Neptune created

The nature of the planet and element relative to geometric relationships between the signs on the day and night side defines the aspect's meaning [3]. For example, when a planet is in the sign of Leo, it forms a sextile (two signs apart) to another planet in Libra (ruler Venus) and a trine (four signs apart) to another planet in Sagittarius (ruler Jupiter). Venus (sextile) and Jupiter (trine) were considered beneficial. In contrast, a planet in Leo forming a square to Scorpio (ruler Mars) or in opposition to Aquarius (ruler Saturn) was considered negative because of Mars's extreme heat and Saturn's extreme cold. The same pattern emerges when applying these aspects on the night side. A planet in Cancer forms a sextile to a planet in Taurus (ruler Venus), a trine in Pisces (ruler Jupiter), a square to Aries (ruler Mars) and an opposition to Capricorn (ruler Saturn).

Antiquity Aspect Model 2

Ptolemy described another planetary aspect model based on specific geometric angles relative to the natural order of the twelve zodiac signs (see Figure 68). The model divides the zodiac into the day (diurnal) and night (nocturnal), based on the apparent motion of the planets from the observer's viewpoint of the horizon, 0° Aries and 180° Libra. In this case, aspects are defined by their angular relationship with 0° Aries, known as the ascendant position in the astrological chart.

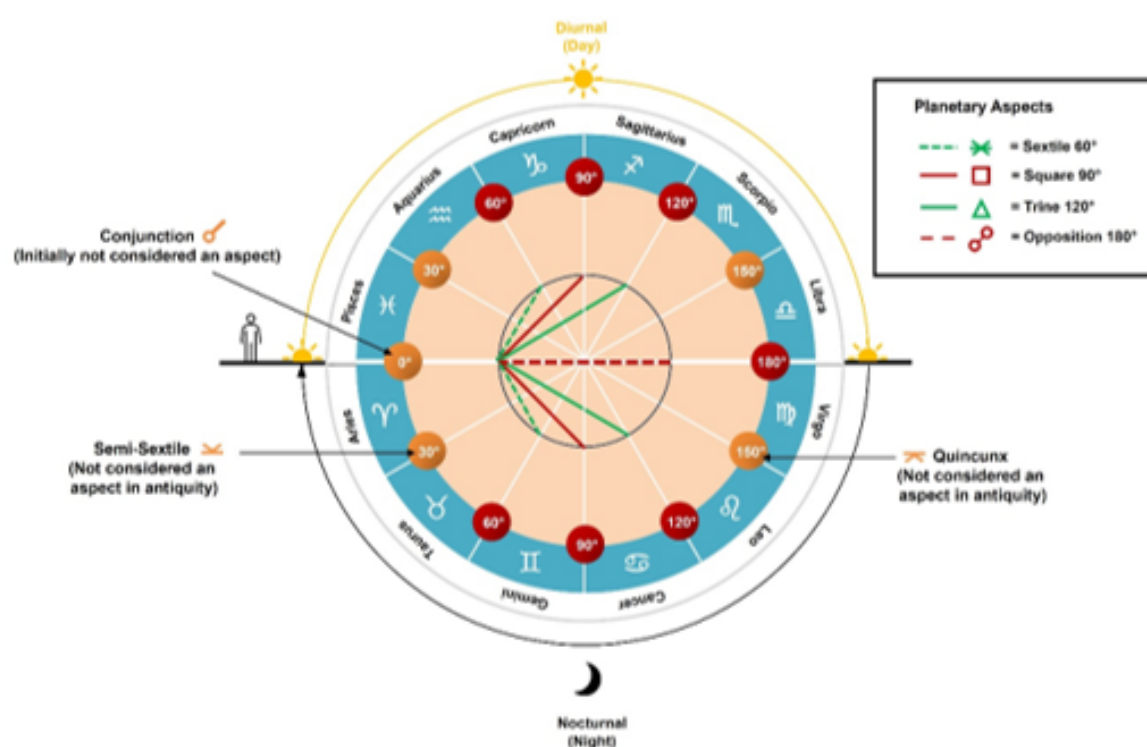


Figure 68. The diagram presents the sextile, square, trine and opposition aspects based on the horizon Aries-Libra axis.

Before the conjunction aspect was accepted in antiquity, there were four aspects: the sextile 60° (two signs apart), the square 90° (three signs), the trine 120° (four signs) and opposition 180° (six signs). Initially, the conjunction 0° (one sign) was not considered an aspect because

they are based on the Sun being active in the sky from east to west. When considering the double-sided aspects in the nocturnal sector, Gemini (sextile), Cancer (square) and Leo (trine) were called sinister 'of the left' and considered weak and negative because they are active during darkness from dusk until dawn [5]. Dexter aspects operate in a clockwise direction (look forwards), and sinister aspects in an anticlockwise (look backwards). Interestingly, dexter and sinister aspects change the traditional meaning of square (negative), sextile and trine (positive). We present an example of this in Figure 69.

Dexter and Sinister Aspects

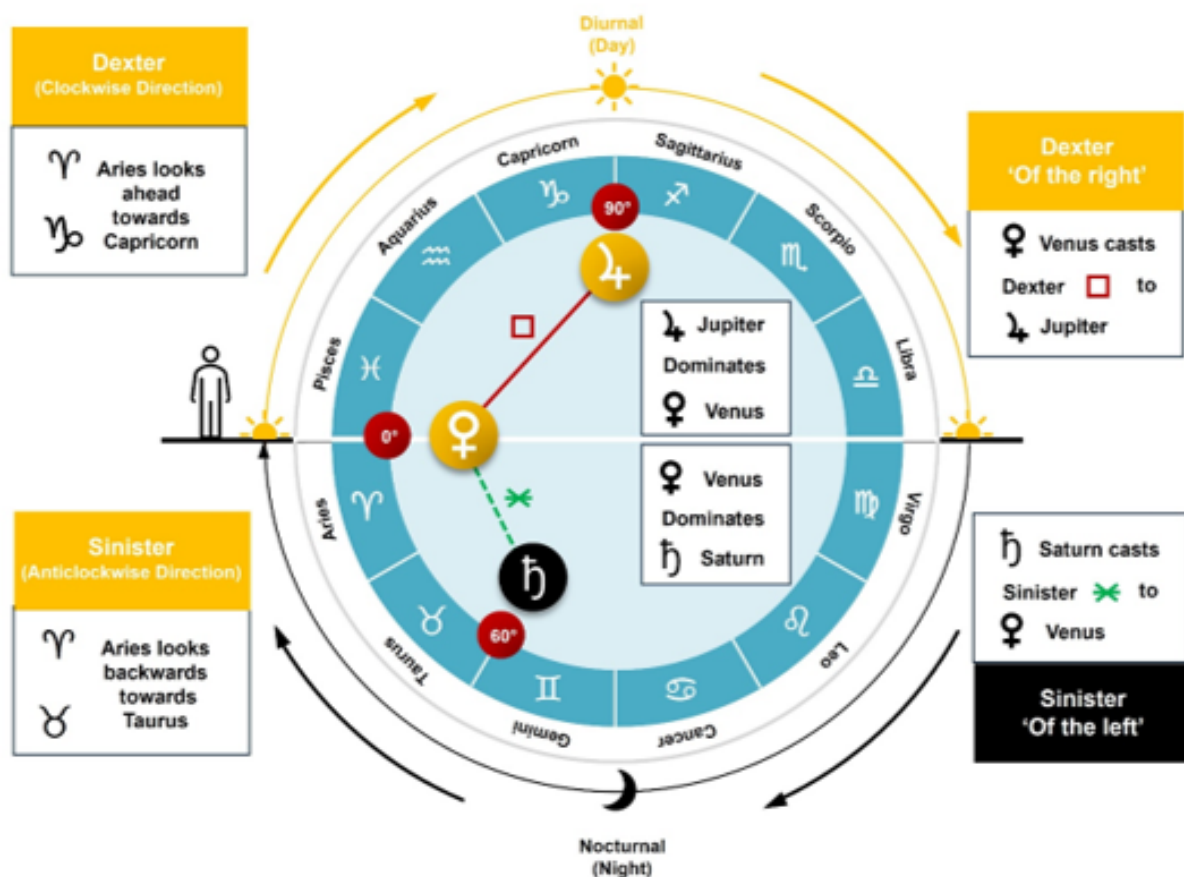


Figure 69. The planetary aspects shown in the chart are a dexter Venus square Jupiter and a sinister Venus sextile Saturn.

Planetary Orbs

We can describe a planet orb as a circular aura surrounding a planet. The word orb originated in the 13th Century Old French *orbe* [6] even though Arabic astrologer Al-Biruni introduced planetary orbs in astrology in 11 A.D., which enabled astrologers to determine three aspect phases: applying, exactitude (highest levels of intensity) and separation [5]. Faster-moving planets (often Sun, Moon, Mercury, Venus, and Mars) will move through these three phases more quickly than the slower-moving planets Jupiter, Saturn, Uranus, Neptune and Pluto, except for Mercury, Venus and Mars when they are stationary or retrograde. The applying phase begins when a faster-moving planet or angle (e.g., ascendant or midheaven) influences

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