LUNAR NOTES AND ARTICLES

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Eclipses

Eclipses are simply New or Full Moons with extraordinary alignment or focus. They have been considered for centuries to be astrological events of the first magnitude. If we consider New and Full Moons to be important, then eclipses represent the keys to the lunar cycle for any year.

Astrologers East and West have written for centuries about the New Moon containing an impulse or insight that grows to fruition at the Full Moon. Eclipses, then, provide moments when extraordinary insight or vision are available to us. It is possible for some of us, at least at certain times in our lives, to experience what has been called the "vision of the eclipse," and to remember or keep that vision in mind. There appears to be a theme or principal insight connected with major eclipses (and Full and New Moons for that matter). Let me make clear just what we mean here by the word vision.

"Vision" does not mean the fairytale dream picture we might conjure up as appearing in the sky above us -- but it is related. A vision is a moment of extreme clarity or understanding, when 'in a flash' we know or experience something in its entirety. A vision is an imprint into our deep consciousness We take it in. There are times in each of our lives when we have

vision or see some intrinsic truth about our lives -- about life itself.

The Vision of the Eclipse

As mentioned above, there appears to be a common or communal vision that occurs around the time of major eclipses. While each of us interprets the insight or vision in a personal way, the theme or essence of the vision is a common experience. And it is possible to share that vision. Although we all experience it at once, only some of us are capable of remembering the experience in a conscious fashion. It seems that we are privileged to be consciously aware of the vision of an eclipse at special or crucial moments in our lifetimes -- times when we are particularly aware.

The message or vision or any given eclipse will tend to dominate our deeper or subconscious minds for months surrounding that eclipse. It is a peculiarity of these eclipse moments that they can happen days or even weeks before or after the actual moment of an eclipse. That is: the eclipse theme pervades the time prior to and after the actual physical event like a process up to the event an one away from it. Sometimes eclipses happen in pairs, two weeks apart. These are particularly powerful, and the whole time between these events can be a kind of waking dream - a vision.

Learning to recognize a moment of vision and taking advantage of these enhanced moments of vision surrounding and eclipse can be important. Astrologers feel that the point in the zodiac where an eclipse

occurs is in high focus in your natal chart may have special importance for you.

In general, eclipses of the Sun (New Moons) represent vision into the nature of our life (ideas about life), while eclipses of the Moon (Full Moons) represent a waking experience or sensational event -- living in our own dream.

The Lunation Cycle: East and West

The lunar cycle and its gaps are available to everyone, all the time. If we don't observe these special times, it is because we have set no time aside to observe, to check it out for ourselves. In the East, most people are introduced to basic observation techniques or mind practice from an early age. It is unfortunate that mind practice is not much known of here in the West. I mean how many people do you know who practice observing or using their mind anyway? Most of us assume that the mind is perfectly usable just as we find it, and doesn't require any practice.

In the Tibet mind practice is not only acceptable, it is pretty much obligatory. This is true for countries like Tibet, Nepal, much of India, and even parts of China and Japan. Over there, the mind is considered by nature to be unruly and hard to manage. No one would think of trying to do much with it without considerable practice. Mind practice or mind preparation or training, as it is sometimes called, is standard fare in the orient.

East and West

We might wonder why this style of mind practice has never caught on in North America. In part, this is due to our whole take on meditation and what we think that is. Meditation in the West has come to mean something almost like relaxation therapy, a way to relax and get away from it all -- to escape the worries of the world in the contemplation of some inner landscape. Somewhere, perhaps early in this century, the word meditation lost any semblance to its Eastern counterpart and became what most understand as meditation today -- a way to relax and get rid of tension.

Of course this is nothing like the Tibetan concept of mind practice or mind preparation, which involves the intense use of the mind. It is unfortunate that this very active mind practice has also come under the general label of meditation here in the West.

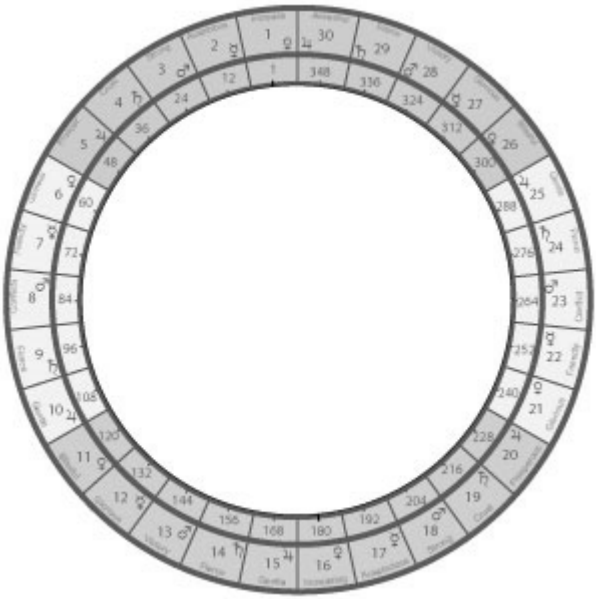
Gaps in the Clouds

Having pointed this out, it may be helpful to clarify and describe what it is that the Tibetan Buddhists (and other groups too) do when they sit down on their cushions. In general, if you ask them what they are doing on their cushions, the answer is likely as not that they are "practicing", or they are "sitting". Indeed, that is what takes place. They sit and observe.

There are many Tibetan words for the different kinds of mind practice that are possible, while in the West

we have just the one word: meditation. What then is mind practice?

The most important difference between sitting practice (mind practice) and meditation as it is understood in this country is that mind practice is seldom anything but relaxing or passive, at least for beginners. It is very active.



The Thirty Lunar Days

The actual technique is quite simple, taking only a few minutes to learn. And it is worth getting this instruction from someone authorized to give it. Most Buddhist and some Hindu groups offer this type of mind practice. When looking for training in mind practice, be sure to ask for a technique that emphasizes

concentration on the present moment -- being present, and not some of the more dreamy relaxation techniques. What you need in order to use lunar gaps is to become very alert and observant. The technique is called Shamata training in Tibetan Buddhism and Zazen in Zen Buddhism. I would be happy to send a list of well-respected centers to anyone who writes me at Michael@erlewine.net. It can be important that you receive instruction from someone trained and empowered in the technique, and thus get an authentic connection with a tradition.

Even the non-practitioner cannot help but notice the time of the Full Moon each month -- when the full disk of the Moon passes overhead around midnight. It is a fact that many have trouble sleeping when the Full Moon makes this overhead transit in the middle of the night. Often sleep will not come until the Moon finishes rising, transits overhead, and begins to set. This has been used by some as a way to determine whether a late-night party or a bout of TV watching will be a satisfying experience. In general, you can plan on building tension (and attention) while the Full Moon is rising and an easing of that state just after the Moon crests overhead. After the Moon crests and begins to set is a good time to bring activities to a close. Sleep often will come with ease at this point.

Learning to get in step with and to make use of the Moon cycle is part of astrological basic training. There has been general agreement among astrologers for thousands of years as to how the lunar cycle functions and the uses to which it can be put.

The Four Quarters

It seems that, although East and West agree on the importance of new and full moons, there is less congruence when it comes to the quarter moons. Here in the West, the lunar quarters are next in importance after the new and full moon times. However, in the East there are other days that are considered of greater importance, such as the 10th and 25th lunar days.

In both traditions, there is agreement that the 2 or 3 days preceding the moment of the new moon are difficult ones, which require special observation. In the West these days have been called the dark of the Moon, or devil's days, days when the darker forces

have power. Both traditions affirm that we sort of survive these final days each month. Check it out for yourself. The three days before new moon can be a hard time. The East is in total agreement on this point, and the days prior to new moon are set aside for invoking the fierce dharma protectors, those energies that ward off harm and protect us during the worst of times.

Protector Days

In particular, the 29th day (the day before new moon) is called “dharma protector” day. It is a time given over to purification and preparation for the moment of new moon. Ritual fasting, confession of errors, and the like are common practices. In a similar vein, the days just prior to the full moon (the 13th and 14th) are also days of purification, days in which the various guardian and protector deities are again invoked, but in a somewhat more restrained way. For example, the 14th day is often given over to fire puja -- a ritual purification. In summary, during days prior to full and new moon, there is some attempt at purification, both physical and mental, in preparation for those auspicious events.

It is clear from the literature that the times of the new and full moon are considered of great importance. These days are set aside for special rituals and worship. As pointed out, full and new moon (full more than new) are times of collective worship and public confession. In many traditions, the monks and priests assemble for a day of special observance. In the East, the full moon celebration and the entire waxing lunar fortnight are oriented to the masculine element in

consciousness, what are called the father-line deities. The new moon and the waning fortnight are given over to the mother-line deities and the feminine element. The full moon completes the masculine, or active, waxing phase of the cycle, and the new moon completes the feminine, waning phase of the month. To my knowledge, this kind of analysis does not exist in the West.

Days of Observation

Aside from the new and full moon, the two most auspicious lunar days in the East are the 10th and the 25th. The 10th day (108º to 120º), called Daka Day, is considered auspicious for invoking the father-line deities -- the masculine. The 25th day (288º to 300º), called Dakini Day, is given over to the feminine principle and the mother line deities, in general. These two days, the 10th and the 25th, are formal feast days, days of observation when extra offerings are made and increased attention given to what is happening. There is some sense of celebration at these points in the month. In many respects, these two days even rival the new and full moon days in importance. The fact is that these four days (new, full, 10th, 25th) are the primary auspicious days as practiced in many Eastern rituals.

Health and Healing

There are many other days of lesser importance, which might also interest Western astrologers. Health and healing are important in Eastern ritual, and the

8th and 23rd days of the lunar month are auspicious for this purpose. It is these days that straddle the first and last lunar quarters. The 8th day (84º to 96º) is often called Medicine Buddha Day. Again this occurs in the male, or father-line, half of the month. The 23rd day (264º to 276º), occurring in the feminine half of the month, is dedicated to Tara practice. Tara is the female deity connected to health, long life, and healing in general.

Purification Days

Earlier we mentioned the days given over to purification, most prominently the 13th and the 29th. In addition, on a lesser scale, the 9th and the 19th days are also noted as days when the protector deities should be invoked and kept in mind. These, too, are days of purification. And there are more, still finer subdivisions that are made. In this brief article, these major observance days are enough to give us the idea of how Eastern astrologers approach the lunar cycle. It should be kept in mind that, in the East, astrology is practiced by the general public. So it is not just astrologers who are using the lunar days; everyone observes these days.

Next, we might ask ourselves how this Eastern approach to the lunation cycle might be of value in the West? As mentioned earlier, a major fact is that the lunar cycle is perceived as having a variety of gaps, joints, or points of articulation that can be used. They can be seen as chinks in the armor of our particular obscurations. Many Western mystery traditions also observe the times of the full (and sometimes the new) moon. full moon meditations are common. The

quarter moons are given less attention, and few Western rituals exist (to my knowledge) for these events.

Insight Moments

It is an intuitive fact that moments of clarity and insight (gaps) do come in the course of living. We all benefit from this kind of insight. What Eastern astrology seems to suggest to us is that many of these gaps are not just random events that occur in our life, haphazardly. They are regular opportunities, joints in the nick of time, when insights are somehow more possible than at other times. Therefore, it is common practice to set aside some portion of these special days for observance, for meditation.

It is unfortunate that the concept of meditation entertained by the public here in the West amounts to some kind of relaxation therapy -- a quiet time. This is very far from the truth of what is considered meditation in India, Japan, Tibet, and other Eastern countries. In fact, meditation is a form of observation. It is observation of what is, and of what is happening in one's mind and environment. When the Eastern mind meditates on special lunar days, it sets aside a time to observe with great care the nature of that particular day. Meditation as taught in Tibet and Japan is a technique that increases our abilities to observe. The meditator is not lost in deep inner space; that is our Western take on the concept of meditation. In the East, the meditator is right here, now, observing the mind and life. This is why it is said that these special days are days set aside for observation.

Open Channels

Here in the West, we are beginning to learn these techniques of observation. By setting aside a time on these special lunar days for observation, we can be open and aware to the possibilities of insight. This kind of awareness appears to be what is required to pick up on these natural events. If we have an insight at one of these time, we might be more willing to give it credence, knowing that it is happening on such-and-such a lunar day. And so on.

It is quite clear from the Eastern teachings that the moments of full and new moon are times when the various channels in the psychophysical body are somehow aligned. This is not to say the new or full moon days are days of peace and quiet. It is taught in the East that, although a new or full moon day may tend to be wild or hectic. Any patience or forbearance we can muster at that time will be much rewarded. In other words, there can be deep insights available to us at these times. According to these same teachings, an eclipse at the full or new moon is even more auspicious. In the teachings it is said that, during these very special events, both male and female energies (channels) are in simultaneous alignment -- the ultimate opportunity. The lunar cycle and its effects and opportunities have been analyzed in great detail in the Eastern teaching.

East and West

In summary, the major difference between Eastern and Western astrology as related to the lunation cycle

is that in the East any lunar theory is put to the test. It exists as a guide to practice. In other words, they practice what they preach. Here in the West, it would appear that we are somewhat more theoretical. We read about and discuss ideas on the lunar cycle, but very few astrologers that I have met make use of the lunar-phase cycle as a guide to day-to-day practice. As a society, we don't even observe the full or new moon, much less the quarters or any of the other possible lunar days. It is true that most astrologers are aware of the zodiac sign the Moon is in, but here we are not examining that part of the tradition; we are looking at the cycle of the lunar phases. Or, here in the West we may know that it is new or full moon, but we do nothing out of the ordinary in response to that information. And, of course, the general public seldom even takes note of lunar events.

The Eastern approach to the lunar cycle is quite ancient and very detailed. East or West, I assume that both astrological traditions have been engaged in recording something rather than nothing all of these centuries. In other words, I assume that the existing lunar tradition, East and West, is a reflection of reality rather than something we have made up. After all, that is what astrology is all about and why we practice it.

Here we have concentrated on the synodic cycle of the sun, moon, and earth -- the lunation cycle. We have ignored the use by astrologers of the Moon in the signs and houses, something practiced both here and in the East.

Summary

On a personal note, my study of the lunation cycle has led me from Western to Eastern texts in an attempt to obtain more practical information for day-to-day living. When I ran out of new texts to study, I sought out some of the living Eastern meditators who observe the lunar cycle on a regular basis. For example, we have had a wide variety of Eastern astrologers living and working at our center in recent years. In addition, one individual skilled in Sanskrit and Tibetan astrology spent almost two years here, translating various Buddhist texts on the subject.

From my experience with these sources, the primary piece of information that stays with me is that reading about or listening to someone with experience in this area is, by definition, preliminary. Both text and teachers (however fine they may be) can but point beyond themselves to the lunar cycle itself. Through any differences that exist, all sources seem united in this one maxim: go and see for yourself. Check it out. The purpose of the teachings is the experience itself that waits to be known. They are telling us: Observe these days. Call it meditation or observation (whatever), but observe with care and attention if these insight gaps are there. Stop reading and talking about it and start actually looking at the nature of each moment.

The Lunation Cycle

In other sections, we have presented thoughts from both sides of the world, the East and the west, on lunar astrology. Is there any scientific evidence to back this up?

Scientific research into the lunation cycle over the last 15-20 years is fascinating from an astrologer's perspective. It was not very many years ago that science gave little or no credence to the possibility of a lunar effect on life here on earth. Today it is no longer a question of "is there an effect?" but rather one of "let me count the ways." In fact, the research at this point is so extensive that in this brief article we can only mention some of the high points in the existing literature.

It should go without saying, but I will repeat it here, that science still has little or nothing to say about psychological or personal events connected with lunar activity. Instead, it has discussed how the moon relates to such things as rainfall, weather, and atmosphere. More important to astrologers, and a step closer to the psychological, is the growing evidence for a hard connection between lunar activity and geomagnetic activity. It is this connection that we will detail here.

Earth's Aura

Geomagnetic activity coming from beyond the earth's aura or atmosphere has been linked to all kinds of mundane activities ranging from radio reception to the aurora borealis type displays and so on. The picture that emerges from modern research is one where each body (the earth, the, sun, and perhaps even each of us) is surrounded by some sort of magnetic field. We radiate, and this radiation surrounds us and even keeps some things out -- our aura or mandala.

The earth's aura (or magnetosphere as it is called) keeps at bay enormous amounts of radiation coming from the sun and from the galaxy in which our solar system is a part. Very energetic particles can penetrate our magnetosphere and find their way through the atmosphere to the surface of the earth itself. For the most part, these particles funnel in from the north and south polar caps via field lines of high geomagnetic declination. During times of increased solar activity such as solar flares, or during the peak of the sunspot cycle (like this year), very much more solar radiation reaches the earth than at other times. The weaker cosmic radiation must wait for the years of sunspot minimum to reach their maximum penetration. Please examine the diagrams of the magnetosphere shown below as we examine some of the scientific evidence that relates to the lunation cycle -- lunar power.

Auroras

Although we have long studied oceanic tides, we know now that there are atmospheric tides as well that move in response to the position of the Moon. For example, auroras are caused by the excitation of atmospheric molecules by energetic charged particles penetrating the atmosphere along geomagnetic field lines. Although the mechanism of this phenomenon is still being examined, it is generally understood that auroras are associated with the arrival of solar corpuscular radiation in the magnetosphere, 1 to 3 days after a solar flare. These particles (depending on their intrinsic energy and the current density of the atmosphere) penetrate the atmosphere.

It has now been shown that these auroral peaks and valleys are modulated by the position of the Moon. This lunar auroral tidal effect in the upper atmosphere can be correlated with flood and ebb tides on earth, thus linking its rise and fall to the position of the Moon in its monthly cycle.

Rainfall

It has been well documented that rainfall is correlated with the Moon's position in its monthly cycle. According to many studies, rainfall maximizes midway through the 1st and Third Quarters of the lunar synodic month. In other words, about a half week after new and full moon rainfall reaches a peak.

Correspondingly, a low point in rainfall occurs during the 2nd and Fourth Quarters with the lowest point of all occurring some three days before new or full moon.

In addition, it was found that increased rainfall at these two peak times in the month was greater at solar minimum than at solar maximum. The lunar cycle accounts for 65 pecent of the variance during years of solar minimum, but only 14 percent during the year surrounding solar maximum. It has been suggested that cosmic radiation may be a factor, since this form of radiation penetrates more deeply into the solar system during years of low solar activity. During the years of high solar activity, a more powerful solar wind helps to keep out cosmic radiation.

Thunderstorms and Cosmic Radiation

Thunderstorms and Cosmic Radiation. It has been shown that the maximum in thunderstorms coincides with the maximum in galactic cosmic radiation and vice versa, that minimum thunderstorm activity coincides with the minimum in galactic cosmic ray radiation. There have been many studies on the relationship of cosmic radiation to lunar activity. Cosmic radiation consists of energetic particles entering our solar system from beyond its aura, or magnetosphere. As mentioned, there is an inverse relationship between cosmic radiation and solar activity. In other words, the increased solar wind at sunspot maximum keeps cosmic radiation out of the solar system and away from the earth. During the years of sunspot minimum, cosmic radiation is strong enough to penetrate the solar aura and reach the earth's atmosphere.

Thunderstorms and the Moon -- It has been shown that the maximum in thunderstorms coincides with maximum geomagnetic activity. In addition, it has been shown that thunderstorm activity is modulated by lunar position. The greatest number of thunderstorms occur after either new or full moon. Thunderstorm frequency reaches a maximum two days after full moon and remains high for most of the third quarter.

The Moon and Geomagnetic Activity

The Kp-geomagnetic index varies with the lunar phases. When the Moon is less than 3 1/2 degrees from the plane of the ecliptic, geomagnetic activity reaches a minimum during the 2nd lunar quarter and a maximum during 3rd lunar quarter. Lunar modulation while near the ecliptic suggests that the Moon is influencing the solar corpuscular flux which, guided by the solar magnetic field, approaches the earth generally from close to the plane of the ecliptic. Some of these particles become trapped in the magnetosphere.

There is a thin, neutral-sheet region close to the ecliptic plane in the tail of the earth's magnetosphere that the Moon might be modulating when it is traveling near the plane of the ecliptic. The high density of field lines near the ecliptic would make this region particularly sensitive to a magnetic perturbation, which could modulate the flux of particles reaching our atmosphere. In short, there is evidence that the moon has a magnetohydrodynamic wake with an enhanced magnetic field, which, when in the

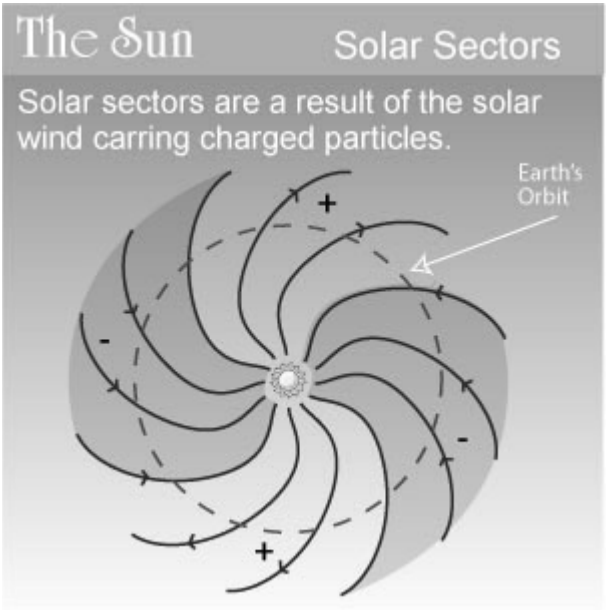
magnetospheric tail, causes magnetic disturbances on the earth.

Polar Cap Absorption (PCA)

PCA happens when solar protons from solar flares enter the earth's upper atmosphere in high geomagnetic latitudes, often causing radio blackouts and increased auroral activity. These periods of severe ionospheric disturbance are often marked by Forbush decreases, when the counting rate of background galactic cosmic radiation has a sudden anomalous decrease which might take hours to days to recover to normal levels.

In effect, it is as if there were a magnetic screening of galactic cosmic radiation by the enhanced solar plasma. It has been noted, but unexplained, that PCA events and Forbush decreases seem to be ordered with the lunar synodic period (29.5 days). When this

research was begun, it was expected that a 27.3-day period would be found, indicating a link with solar rotation. It was a surprise to scientists when, instead, results fingered the lunar synodic period (29.5 days). Therefore, it is possible that the moon somehow controls solar corpuscular radiation streaming toward the earth. The mechanism is still undetermined at this time.



Solar Sectors

Solar sectors and the geometry of the solar magnetic field represent important areas for research. The solar wind is a plasma of charged particles endlessly being ejected from the surface of the sun. These particles tend to concentrate in the plane of the ecliptic. All of the planets are within the aura or atmosphere of the

sun, the solar wind. Each charged particle moves away from the sun in a straight line; however, since the sun itself is rotating, these particle streams get bent into a spiral of the type made famous by Archimedes. In addition, this plasma contains a frozen-in magnetic region constituting the sun's magnetic field that conforms to this spiral. This is the interplanetary magnetic field.

Because of this spiral effect, at the distance of the earth the magnetic field is oriented about 45 degrees west of the earth-sun line, on the morning side of the earth. Both the slow (4 days) and fast (10 minutes to several hours), charged, solar particles approach the earth guided by the solar magnetic field. They come in from the western side of the sun (morning side of earth) at about a 45-degree angle to the earth, although this angle fluctuates from moment to moment, based on the changes in the solar plasma. The fact is that each of us are exposed to this general direction around 9 AM each morning. We are most shielded from this direction around 9 P.M. each night.

Solar Magnetic Field

The great rotating disk of the solar magnetic field itself is divided into four primary sectors, each with an alternating polarity. The magnetic field direction is either positive (away from the sun) or negative (toward the sun). These sectors are tied into definite regions on the surface of the sun, which are of corresponding magnetic signs. It has been suggested that this may be thought of as a rigid disk in the plane of the ecliptic with four quadrants connected to the sun and rotating with it in its 27-day rotation cycle -- the co-rotating sector structure.

It has been found that geomagnetic and cosmic ray activity, as well as the velocity and number density of the solar wind flux, vary as a function of position within the solar sectors; thus there is a weekly fluctuation in the Kp-geomagnetic index. Studies show a maximum in thunderstorm activity when the earth passes from a positive sector into a negative sector. These four great sectors like a great pinwheel rotate past the earth exposing our planet to alternating positive and negative solar phases.

Forbush decreases occur within a few days after a CME, the decrease taking place over the course of a few hours. Then over a few days the galactic cosmic ray intensity returns to normal.

Lunar Variations

A study of the lunar position in relation to the Kp-geomagnetic index, PCA (Principal Component Analysis), and Forbush decreases shows that PCA and Forbush decreases (prevents cosmic rays from entering Earth) reach a minimum during the middle of the 4th lunar quarter when the moon is near the 45º axis and thus between the earth and the spot where the charged particles arrive from the sun. A maximum for these values is reached when the moon is in the Second Quarter, unable to block the particle advance. It has been shown that the moon has an electrical charge of at least 100 V/m, which means that the moon has a positive electrical charge that can deflect solar protons.

There is also a minimum in the Kp-geomagnetic index during Second Quarters when PCA and Forbush decreases are at a maximum. It has been suggested that at Second Quarter the moon may least disturb the geomagnetic field, which is, at that time, most active.

There is a sharp rise in the Kp index just prior to full moon and continuing into third quarter. It has been suggested that this might be due to the magnetohydrodynamic wake of the moon interacting with the tail of the magnetosphere or modulating the flow of solar particles to the tail.

Father-line Deities

It is interesting to note that around that the Second Quarter, 10th/11th day are the maximum for PCP activity. This is when the father-line deities are observed in Eastern astrology. The 25th/26th days are when the Moon somehow block or inhibits the solar magnetic field. This is when the mother-line deities are celebrated in that tradition. Thus the time of greatest activity (male) has some scientific backup, and the same for least activity and greatest calm (female).

The western portion of the sun is strongly magnetically linked to the earth, while the eastern portion of the sun is not. This is due to the fact that solar corpuscular radiation approaches the earth from the west, guided by the solar magnetic field. As pointed out, these particles come in from the Western side of the sun at about a 45º angle to the morning side of earth. Statistical studies show that solar flares occurring on the eastern portion of the sun are much less frequently associated with geomagnetic storms than those occurring near the central or western portion.

Solar Flares

Flares occur during periods of solar activity, which typically last a few days. These regions of activity (near sunspots) travel from east to west across the face of the sun, with a sunspot taking about seven days to travel from the central meridian to the western limb. Thus active solar regions (generating particles

capable of reaching the earth) move into and through the western section of the sun, which is magnetically linked to the earth. During this period, recurrent particle streams from an active sunspot region can reach the earth. Some periods when solar protons have bombarded the upper atmosphere have lasted over ten days.

Summary

This has been a very brief description of some of the geophysical research that has been performed in the last 20 years and that might be of interest to astrologers. It seems that all bodies have a field or aura around them. The earth and the sun radiate, and that radiation is swept along behind whatever trajectory the object travels. It is fascinating to see scientific evidence emerging that seems to conform with the astrological tradition.

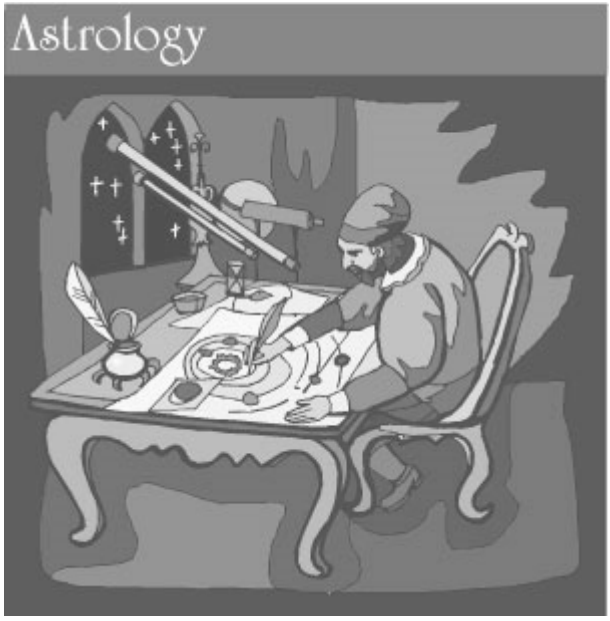
As pointed out in the another article on the lunation cycle, the 10th and 25th lunar days have been found (for ages) to be significant periods within the month, where some kind of change or transition takes place. It is interesting to note that, these points are more or less in line with the 45º vector along which solar corpuscular radiation reaches the earth.

The Moon in its monthly cycle appears to (somehow) modulate this stream of radiation when it reaches the area surrounding a solunar phase angle of some 315º. At this point the moon (perhaps due to its magnetic field) effectively blocks and cuts off some of the radiation stemming from the sun. At the opposite point in its orbit (around 135º), the Moon reaches a point of

least blockage, where the most solar radiation can penetrate and reach the earth.

It is this point in the lunar Second Quarter, during which the greatest amount of radiation is available to the earth, that the Eastern astrologers have set aside as a time for the masculine (active) element. The fourth quarter, where the Moon effectively blocks the solar radiation, is the point when the feminine energies are most observed.

It is interesting that, on the surface at any rate, ancient tradition and modern science appear to have some general agreement.



Exoteric References

B. Bell and R.J. Defouw, Dependence of the lunar modulation of geomagnetic activity on the celestial latitude of the moon, J. Geophys. Res. 71 (1966), 1951-957.

D. A. Bradley, M.A. Woodbury and G. W. Brier, Lunar synodical period and widespread precipitation, Science 137 (1962), 748-749.

G.W. Brier and D.A. Bradley, Lunar synodical period and precipitation in the United States, J. Atmos. Sci. 21 (1964), 386-395.

H.W. Dodson and E.R. Hedeman, 1964: An unexpected effect in solar cosmic ray data related to 29.5 days, J. Geophys. Res. 69, 3965-3972.

L. Harang, The Aurorae (John Wiley and Sons, New York 1951),44 B. Haurwitz, Atmospheric Tides, Science 144 (1964), 1415-1422.

J.R. Herman and R.A. Goldberg, Sun, weather and climate, National Aeronautics and Space Administration (1978)

M. Lethbridge, Solar-Lunar variables, thunderstorms and tornadoes, Dept. of Meteor. Report, College of Earth and Mineral Sciences, Penn. State Univ., University Park (1969), 58 pp.

W.I. Linlor, Electric fields in space and on the lunar surface, in S. Coroniti and J. Hughes (eds), Planetary

Electrodynamics, Vol. 2 (Gordone and Breach New York 1969), 369

R. Markson, Considerations regarding solar and lunar modulation of geophysical parameters, atmospheric electricity and thunderstorms, Pure and Applied Physics 84 (1971), 161-200.

F.F. Ness, The magnetohydrodynamic wake of the moon, J. Geophys. Res. 70 (1965), 517-534.

H.L Stolov, Further investigations of a variation of geomagnetic activity with lunar phase, J. Geophys. Res. 70 (1965), 77-82.

J.M. Wilcox and N.F. Ness, The interplanetary magnetic field, solar origin and terrestrial effects, Space Sci. Rev. 8 (1968), 258-328

Esoteric References

Michael Erlewine, “Astrology of the Heart: Astro-Shamanism,” 2006

N.P. Subramania Iyer, Kalaprakasika, Ranjan Publications, 1982

Ven. Khenpo Karthar, Rinpoche. From a teaching on Buddhist Festivals, given Big Rapids, MI in 198?

D. Bahadur L.D. Swamikannuu Pillai, Panchang and Horoscope, Asian Educational Services

1985. D. Bahadur L.D. Swamikannuu Pillai, Indian Chronology, Asian Educational Services, 1982.

Swami Prakashananda, personal communication

Shyam Sundar Das, personal communication

Sange Wangchug, personal communication and translation of Tibetan texts.

Conversations on astrology and/or dharma with high lamas in the Karma Kagyu lineage including: H.H. the 17th Karmapa, H.E. Jomgon Kongtrul Rinpoche, H.E. Tai Situ Rinpoche, H.E. Gyaltsap Rinpoche, H.E. Shamar Rinpoche, Ven. Bokar, Rinpoche, Ven. Thrangu, Rinpoche, Ven. Khenpo Karthar, Rinpoche, Ven. Bardor Tulku, Rinpoche, and others.

Lunar Phenomena

Here are some very interesting facts about the moon and its relationship to the earth. A lot of this was programmed and released in a program called *Time Cycles* (written by myself) some years ago. No longer available, it is important that these concepts be made available again in terms of a computer program. Technically oriented astrologers may want to consider the following and what it could mean. Here are the ideas:

The Pull of the Moon

The Moon's pull is strongest when it is nearest, and that happens when it is straight up or overhead (Moon up). This point is called the zenith. A second strong point occurs when the Moon is at the opposite point or beneath us at a point called the nadir (Moon down). The Moon is weakest in radial upward force when it is on either horizon, rising or setting. At these times the radial force is directed downwards toward the center of the Earth.

Moon Up / Moon Down

When the Moon is at the zenith, or overhead, gravitational force is at its strongest and it pulls us up, ever so slightly. When the Moon is at the nadir (on the other side of the Earth from us), a special form of

centrifugal force, stronger than gravity, and pushes us out or away from the surface of the Earth. In other words, the effect of the Moon at zenith or nadir is to lift us up or away from the surface of the Earth, but for different reasons.

The two points during the day when the Moon is up or down are when the radial lunar force is at a maximum. However, sometimes the pull of Moon up is greater than that for Moon down, and vice versa. This variation depends upon what is called the diurnal inequality, which varies during the course of a month. This diurnal inequality is responsible for the difference in the height of successive high tides and depends upon which part of the ecliptic the Moon is located.

The Moon in the Signs

When the Moon is in the equinoctial signs, Aries and Libra, the pull of Moon up is the same as that of Moon down for a given day. However, when the Moon is in the solsticial signs, Cancer and Capricorn, the pull is unequal. When the Moon is above the equator and in the sign Cancer, the pull at Moon up is always stronger than the pull at Moon down. When the Moon is below the equator and in the sign Capricorn, the pull at Moon down is always stronger than the pull at Moon up.

Geographic Latitude

You geographic latitude will affect how unequal the Moon Up and down can be. If I am here in Big Rapids at almost 44 degrees of latitude North and the Moon has a declination of minus 28 degrees (which it can reach), then at Moon up, the angle between my zenith (Moon up) and the Moon is some 72 degrees. However, some 12 hours later, when the Moon is at my nadir (Moon down), the angle between my nadir's latitude (40 degrees South) and the declination of the Moon at - 28 degrees is only some 16 degrees. At this time, the Moon down pull will be much stronger than the Moon up pull.

Moon on the Horizon

The Moon is weakest, as mentioned, when it is on the horizon, either rising or setting, each day. However, this too varies during the month depending on the declination of the Moon. The closer the Moon comes to your own geographic latitude, the stronger the effect. Therefore, if you are residing in a northern latitude, the Moon will be closer to you in the ecliptic sign Cancer and this will cause the Moon to be somewhat stronger at Moonrise and set.

Gravitational Force

Both the Sun and Moon exert a gravitational pull on the Earth. Although the Sun is much more massive, its greater distance results in the gravitational pull of the Moon being almost twice that of the Sun. In any case, we experience their combined effect rather than each singly. This effect varies with the monthly lunar cycle.

New and Full Moons

At New and Full Moons, the combined pull of the Sun and the Moon is greatest. This pull is weakest at the lunar quarters. Therefore, this pull waxes and wanes with the month. It is strongest at new moon, grows weaker at First Quarter, is strong again at the Full Moon and then weak at Fourth Quarter, and on around. At New and Full Moon, the Moon's tidal effect is, in effect, added to the solar effect and the resultant tractive force is increased in the ration 3:2 , the tide-generating force of the Sun being one half that of the Moon. During the First and Last Quarters, when the Moon and Sun are some 90 degrees apart, the resultant tractive force is roughly one half of the lunar force alone.

This combined solar/lunar force is subject to some variation (other than that already pointed out) due to the fact that the Moon can have latitude above or below the ecliptic. The Moon's orbit can reach some 5 degrees above or below the plane of the Earth's orbit, the ecliptic. Where the Moon crosses the ecliptic are what are called the ascending and descending nodes of the Moon. At these points (twice a month), the combined force of the Sun and Moon is greatest.

The Tidal Vector

So far we have discussed something of the effects of the Moon as it transits overhead, beneath our feet. Or on the horizon each day. Yet it is the combined vector force of the Sun and Moon that produces the

strongest pull that we feel during any 24 hour period. Keeping track of this vector force is a little complicated, and that is where a computer really helps. It does it for us. In fact the program will keep track of the Sun, Moon singly or their combined vector. In any case, here are the various components that the program will calculate and graph:

Radial component

This is the tidal component that lifts us away from the face of the Earth at zenith and nadir passage. You will note that there are two periods each day (zenith & nadir) when this component reaches a maximum value and that, depending on your geographic latitude, these are often unequal in magnitude. At the rising and setting points in the daily cycle, the effect is to push us down towards the center of the Earth. At all other points, aside from the above mentioned four, the effect is transverse or horizontal:

Horizontal component

In addition to the vertical or radial tidal components, there are horizontal or transverse forces that push and pull us across the surface of the Earth in various directions. The earths rotation produces semidiurnal changes in the tide-generating forces both in direction and magnitude.

East/West horizontal component

These forces reach zero values at zenith, nadir, rising and setting times and become strongest at the intermediate times (45 degree points) between the above four events. These horizontal components vary depending upon the geographic latitude. In a 24 hour period, the effect of the horizontal component is as follows:

Starting from Moon up, the transverse pull grows stronger to the West, reaches maximum magnitude some 45 degrees (3 hours) after Moon up, and fades until we reach the point at which the Moon is setting at which time the horizontal force has again dropped to zero. After this we are pulled to the East, dropping off again at Moon down. At this point, a Westerly pull is again felt, diminishing to zero at Moonrise. After Moonrise, we experience an Easterly pull, reaching a peak some three hours before the Moon is at our zenith, and dropping to zero at the zenith point.

North/South horizontal component

These force also have a North South component that varies on a 24 hour basis. It is much like the East/West component, and functions as follows. There is no North/South component for places located along the equator. In other latitudes, the force vector describes an ellipse. At Moon up and Moon down, it is directed toward the South, while at Moonrise and Moonset it is directed toward the North. The North/South component is of the same order of magnitude as the East/West component.

The Declination Cycle

The monthly cycle (tropical month of 27.32 days) of lunar declination contributes to the overall tidal effects. The closer the Moon comes to being overhead, the more powerful are its effects. If we live in the northern hemisphere, then when the Moon rides high above the celestial equator, when it is in the sign Cancer, it will comes closest to our own geographic latitude, and to being overhead. This effect can further be enhanced when the latitude of the Moon reaches its maximum value of some 5 degrees. Thus the total declination of the Moon can reach some 28 1/2 degrees above and below the ecliptic. This happens (North or South) once in about 18.6 years.

Perigee/Apogee

These are the points when the Moon, due to its non-circular orbit, is closest and furthest (respectively) to the Earth. The Moon moves at its greatest speed when it is at perigee and at its slowest when furthest from the Earth at apogee. The gravitational pull of the Moon is much stronger at perigee than at apogee.

The apogee/perigee points (the line of asides that connects them) are not fixed along the ecliptic, but move slowly forward along the ecliptic over a nine year period.

Lunar Speed

In addition, this line of apsides also fluctuates backwards and forwards in the ecliptic slightly with a period of 31.81 days. This is due to the eccentricity of the Moon's orbit, and this fluctuation is called evection. The resulting effect is the Moon speeds up and slows down at different rates in the four weeks from one perigee to the next.

The Moon's speed is also affected by the lunar phases, since the Sun's pull on the Moon is different in the various lunar quadrants. The Moon moves faster from the Last Quarter to the New Moon, and slower from the New Moon to the First Quarter. It also speeds up from the First Quarter to the Full Moon, and slows down from the Full Moon to the Last Quarter.

The Nodal Cycle.

The greatest possible astronomical tide-generating force occurs when, at the same time, the Sun is a perigee, the Sun and Moon are at Full or New Moon and both the Sun and Moon have zero declination. This happens about once in 1600 years, 250 B.C., 1400 A.D, and it will happen around 3300 A.D.

Major Tide-related Phenomena

Semi-Diurnal (12 hr., 25 min.) Time between Moon up and Moon down caused by the rotation of the Earth.

Diurnal (24 hr., 50 min.), time between succeeding upper and lower transits of the Moon caused by rotation of the Earth and declination of Sun and Moon.

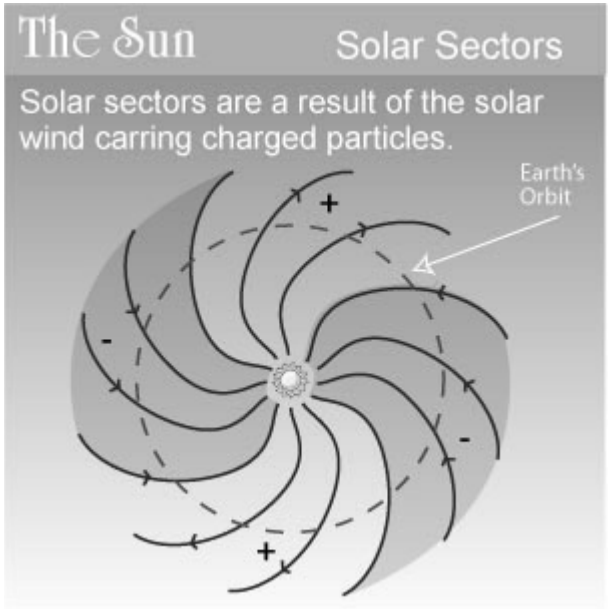
Interval between spring tides (14.76 days average), time from New Moon to Full Moon or vice versa caused by the phase relation between the Sun and Moon.

Lunar fortnightly (13.66 days), time for moon to change declination from zero to maximum and back to zero caused by the varying declination of the Moon.

Anomalistic month (17.55 days), time for moon to go from perigee to perigee caused by the ellipticity of the Moon's orbit.

Solar semi-annual (182.6 days), time for Sun to change declination from zero to maximum and back to zero caused by the varying declination of the Sun.

Anomalistic year (365.26 days), time for the Earth to go from perigee to perigee caused by the ellipticity of the Earth's orbit.



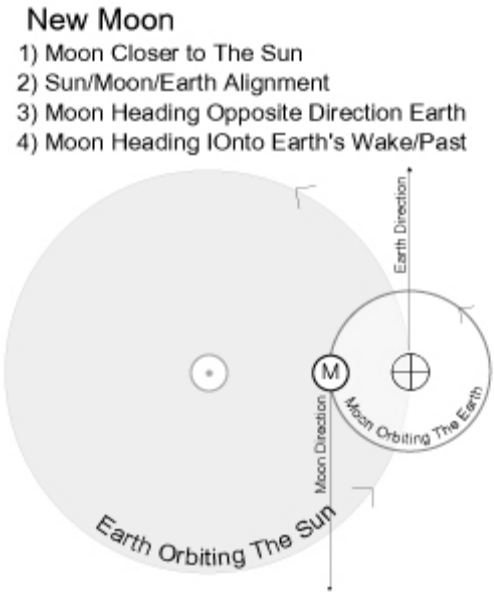
Solar Wind

In recent year, the phenomenon of the solar wind has become of more interest to researchers. In brief, the Sun spews forth an endless stream of charged particles in all directions -- the solar wind. This solar wind blows far out into the solar system and beyond. The Earth's magnetic fields serve to shield us from direct contact with the solar wind's charged particles. The Earth's magnetic field is rounded toward the Suns, and stretches out in a long tail away from the Sun, just like a comet. The solar wind rushes around and past the Earth and on out into space. The Moon passes thru the different sections of the Earths magnetic sphere in its monthly orbit. At New Moon it

is always in the upstream portion of the magnetosphere, facing the Sun and downstream in the Earth's tail at Full Moon. At First Quarter, the Moon is to the dusk side of Earth and at Fourth Quarter, the Moon is in the dawn side of the magnetosphere.

The interrelationship of the solar wind and the Earth's magnetosphere is receiving considerable attention in recent years. It has been suggested that the passage of the Moon thru the Earths magnetic shield may serve to trigger various weather and magnetic activity. The interrelationship of indicators like the geomagnetic index, solar flux and other measures of solar activity with the Moon is just now in the process of being researched and understood.

From First to Last Quarter, the Moon is traveling faster than the Earth, and from Last Quarter to First Quarter, slower.

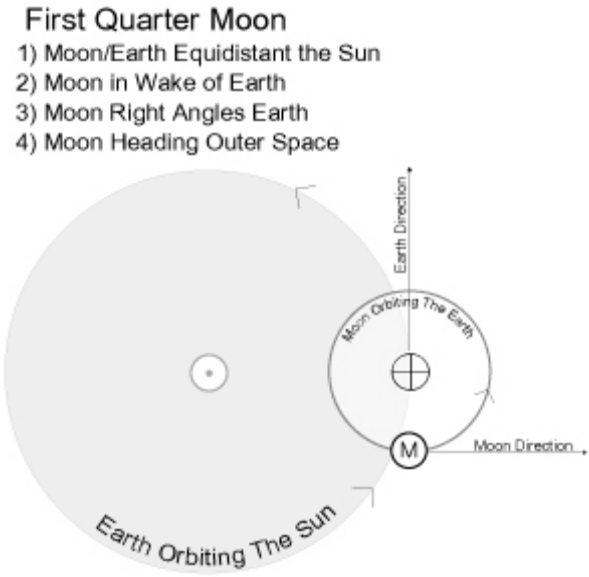


Moon In and Moon Out

The New Moon

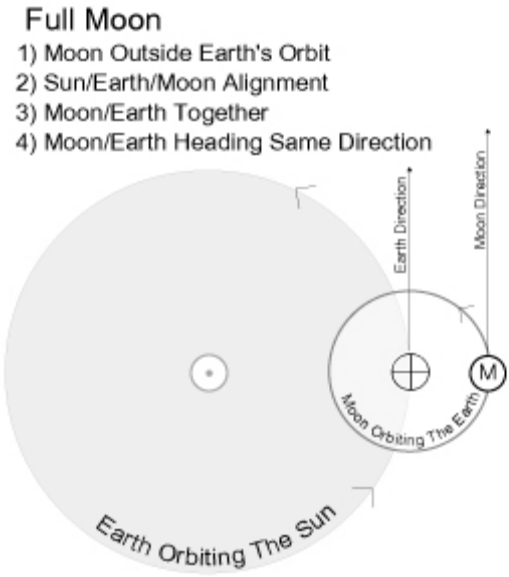
We know the Moon orbits the earth each month, shuttling between the earth and the Sun and between the Earth the outer planets, the nearest one which is Mars. It is useful to visualize how the Moon moves in relationship to being inside and outside the position of the earth in its own orbit. Think on these diagrams.

Above is a diagram of the moment of New Moon, when the Sun and Moon are aligned inside the earth's orbit. Note that at the New Moon the Moon is heading in the exact opposite direction to that of the earth, after plunging toward the Sun in the 4th Quarter. The Earth and Moon are in the same degree of the zodiac.



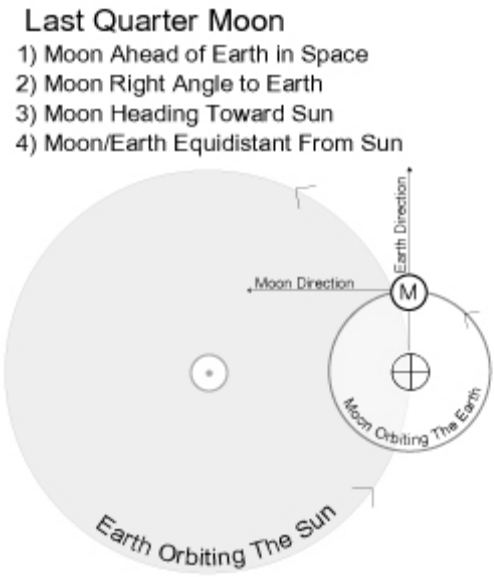
First Quarter

Here the Moon is balanced between the inside and the outer side of the earth's orbit and moving toward the outward side at right angles to the motion of the earth itself. The Moon is behind in the zodiac to the position of the earth.



Full Moon

Here the Moon is on the outermost side of its orbit, aligned with the earth and the Sun. Notice that the direction and momentum of the Moon is the same as that of the earth. The earth is in the same degree of the zodiac as the Moon.



Last Quarter

Here the Moon is balanced between the inside and the outer side of the earth's orbit and moving toward the inward side of the earth's orbit, at 90 degrees to the orbit of the earth. Also note that the Moon is ahead of the earth in the zodiac at this point.

Mind Practice

The lunar cycle and its gaps are available to everyone, all the time. If we don't observe these special times, it is because we have set no time aside to observe, to check it out for ourselves. In the East, most people are introduced to basic observation techniques or mind practice from an early age. It is unfortunate that mind practice is not much known of here in the West. I mean how many people do you know who practice observing or using their mind anyway? Most of us assume that the mind is perfectly usable just as we find it, and doesn't require any practice.

In the Tibet mind practice is not only acceptable, it is pretty much obligatory. This is true for countries like Tibet, Nepal, much of India, and even parts of China and Japan. Over there, the mind is considered by nature to be unruly and hard to manage. No one would think of trying to do much with it without considerable practice. Mind practice or mind preparation or training, as it is sometimes called, is standard fare in the orient.

Mind Practice

We might wonder why this style of mind practice has never caught on in North America. In part, this is due to our whole take on meditation and what we think that is. Meditation in the West has come to mean something almost like relaxation therapy, a way to

relax and get away from it all -- to escape the worries of the world in the contemplation of some inner landscape. Somewhere, perhaps early in this century, the word meditation lost any semblance to its Eastern counterpart and became what most understand as meditation today -- a way to relax and get rid of tension.

Of course this is nothing like the Tibetan concept of mind practice or mind preparation, which involves the intense use of the mind. It is unfortunate that this very active mind practice has also come under the general label of meditation here in the West.

Sitting and Looking

Having pointed this out, it may be helpful to clarify and describe what it is that the Tibetan Buddhists (and other groups too) do when they sit down on their cushions. In general, if you ask them what they are doing on their cushions, the answer will not that they are "practicing", or they are "sitting". Indeed, that is what takes place. They sit and observe.

There are many Tibetan words for the different kinds of mind practice that are possible, while in the West we have just the one word: meditation. What then is mind practice?

The most important difference between sitting practice (mind practice) and meditation as it is understood in this country, is that mind practice is anything but relaxing or passive. It is very active.

The Techniques

The actual technique is quite simple, taking only a few minutes to learn. And it is worth getting this instruction from someone authorized to give it. Most Buddhist and some Hindu groups offer this type of mind practice. When looking for training in mind practice, be sure to ask for a technique that emphasizes concentration on the present moment -- being present, and not some of the more dreamy relaxation techniques. What you need in order to use lunar gaps is to become very alert and observant. The technique is called Shamata training in Tibetan Buddhism and Zazen in Zen Buddhism. I would be happy to send a list of well-respected centers to anyone who writes me at 315 Marion Avenue, Big Rapids, MI 49307. It is important that you receive instruction from someone trained in the technique, and get an authentic connection with a tradition.

Even the non-astrologer cannot help but notice the time of the Full Moon each month -- when the full disk of the Moon passes overhead around midnight. It is a fact that many have trouble sleeping when the Full Moon makes this overhead transit in the middle of the night. Often sleep will not come until the Moon finishes rising, transits overhead, and begins to set. This has been used by some as a way to determine whether a late-night party or a bout of TV watching will be a satisfying experience. In general, you can plan on building tension (and attention) while the Full Moon is rising and an easing of that state just after the Moon crests overhead. After the Moon crests and begins to set is a good time to bring activities to a close. Sleep often will come with ease at this point.

Learning to get in step with and to make use of the Moon cycle is part of astrological basic training. There has been general agreement among astrologers for thousands of years as to how the lunar cycle functions and the uses to which it can be put.