TIME FACTORS

The following explanations will give an idea of the time-measure distinctions and define why one sort of time, rather than another, is used in astrology, in order that calculations may be utilized which synchronize with Nature’s movements.

There are four kinds of time: astronomical, apparent, mean and sidereal. (Standard time is treated separately.) but there are only two measures of time and these are called the Mean Scale and the Sidereal Scale.

Astronomical Time is measured from midnight to midnight since January 1st, 1925. Prior to that the astronomical day began at noon. The astronomical day is reckoned as 24 hours continuously, therefore no A. M. or P. M. is mentioned. For instance when a civil clock shows 11 p. m. the astronomical time is 23 o’clock. This time is measured on the mean time scale. However, it is not employed in the erection of horoscopes.

Apparent Time or apparent Solar time: (The word apparent is here understood to mean clearly perceived or perceivable, evident, obvious, manifest.) At the middle of every day at every place on earth the Sun will reach its meridian. The moment of this culmination is known as apparent noon. The interval of time between two successive apparent noons is an apparent Solar day. The Sun moves daily at a rate varying between 57° 10’ to 1° 1’ 11”. Although the apparent Solar day is a natural day, its varying duration renders it unsuitable for civil purposes, hence it is not used for clock time. As it is always longer than a sidereal day it is not used for erecting horoscopes.

Mean Time, mean Solar time, civil time, true local time: Because, as seen by the foregoing paragraph, an apparent Solar day is not of uniform duration, the idea has been conceived of using an imaginary mean Sun which is assumed to move at the uniform rate of 59° 8’, this being the average motion of the apparent Sun. When this mean Sun reaches the meridian of any place it is
mean noon. The interval between any two successive mean noons is always the same and is known as a mean Solar day. In other words, it is simply an average apparent day, but because of its uniformity is suitable for civil time measurement. It is nothing but clock time, that is, Mean local clock time. It has become known by various names: A mean Solar day, mean time, civil time, mean local time. Its duration is uniformly 23 hrs. 59 mins. 60 sec. or 24 hours, and constitutes the civil day beginning at midnight. The 12 hours before noon are called A.M. (ante meridian), and the 12 hours after mean noon are P.M. or post meridian. (Note: Where Standard time is used, as in the U.S., it is necessary to reduce the Standard time to terms of the Mean local time for place of birth in horoscope work.) As the mean Solar day is always longer than a sidereal day by approximately 3 minutes 55.91 seconds, the Mean local time of birth is always changed to terms of Sidereal time for erecting horoscopes.

Sidereal Time

Sidereal Time: Expressed in hours, minutes and seconds at any moment is the angular distance of the first point of Aries from the meridian of any place. Right Ascension of the Meridian (R. A. M.) is practically the same thing but is expressed in degrees and minutes, instead of hours, minutes and seconds. Sidereal time is that shown by an astronomical clock which indicates twenty-four hours in 23 hours 56 minutes 4.090 seconds of Mean Solar time which is civil or ordinary clock time, regardless of Standard time. Sidereal time therefore increases over Mean time at the rate of approximately 3° 55.91" seconds per day and is counted straight through from 0 hr. 0 min. to 24 hrs. 0 min. without considering A.M. or P.M. as with civil clocks. The Sidereal time at noon for any place is shown daily in the ephemeris. From the fact that Sidereal time is the measurement of the angular distance of Aries 0° from the meridian of any place, it is readily seen that Sidereal time is in reality astrological time; hence the mean, mean Solar, civil or ordinary clock time of birth is always converted into terms of Sidereal time for horoscopical purposes.
Correction to Sidereal Time

Because, as before stated, Sidereal time advances or increases at the rate of approximately four minutes per day, (Refer to Sidereal time in an ephemeris and note how it advances from noon on one day after another until in 365 days it has gone through the 24 hours and begins at 0 hours again on or about March 21st each year.) a correction to it should be made at the rate of 10 seconds to be added for every hour that birth occurs after noon; subtracted from it if born before noon. If a "Midnight" type of Ephemeris is used the correction is for the amount of time birth occurred after midnight.

Correction to Sidereal Time for Longitude

Another factor necessary to consider in an effort towards accuracy is a correction to S. T. for the longitude of any place in question.

Change the longitude into time by multiplying it by 4 minutes, and divide the product by 60 minutes (to get hours and minutes) or 60 seconds if less than 15 degrees from Greenwich, and get minutes and seconds: the answer is the time distance from Greenwich. For every hour of this time allow 10 seconds, and for parts of an hour in proportion.

See "Table of Correction to Sidereal Time," page 64.

If the longitude of the place is east, (of Greenwich) subtract 10 seconds for every hour east, from the S. T. at noon.

If the place is west longitude, add 10 seconds for every hour west, to the S. T.

This correction applies in the same way to Sidereal Time in a "Midnight" ephemeris.

A special column is devoted to Sidereal time at noon daily in all ephemerides (pronounced ef' i mer' i doez) except the midnight ephemeris, in hours and minutes of
the Mean time scale. (In some of the very old ephemerides the Sidereal time was given in apparent time, consequently an "equation of time" was then necessary.)

The foregoing explanatory remarks are given for the benefit of those students who are desirous of knowing the different kinds of time in use, and which kinds are used in astrology. Mean time and Sidereal time are the principal factors. However, if at this moment the student feels he does not entirely comprehend these various times he need feel no concern about the matter as the remarks are explanatory only. The instructions for using Sidereal time and Mean time (local clock time) are simple and are appropriately applied in various previous chapters and examples.

Standard Time

However there is a factor which must be considered for all horoscope work and that is the difference between Standard time and Mean local time. In some cases the difference between these two amounts to half an hour. Unless Standard time is converted into Mean local time, (the time used astrologically) errors will occur in the signs and degrees occupying the twelve houses in a horoscope. As you have already learned that a degree of the zodiac crosses the midheaven every four minutes, in the half hour mentioned above the discrepancy would amount to seven and one-half degrees error which might cause the wrong sign to be placed on the ascendant and make the chart misleading. It would be well for the student to spend all the time necessary to understand the principles of the use of Standard time and how to convert it into Mean local time for astrological uses. Standard time is the common clock time in use in the U.S.A. Except in those places which are right on the center of a standard time zone, where clock time and Mean local time correspond, all other places will need a correction from their clock time to Mean local time. That is, when a birth is stated in clock time that clock time must be ignored and the equivalent Mean local time used in the calculations for erecting the horoscope.
Summary

For astrological purposes the entire matter concerning the kings and the measures of time may be summarized as follows:

Standard Time as used in the United States, Canada and Mexico, is the term employed to designate that all the clocks in each time zone register the same time, regardless of whether a place is east or west of the center of a zone. Standard time is therefore an artificial method of time and for horoscopical work the standard time should always be changed to Mean time, sometimes called local mean time, mean Solar time, civil time, or true local time; all of which titles are intended to designate the real time of a place as distinguished from its standard or artificial clock time. The birth time given for horoscope work should always be reduced to this mean time which is then changed into Sidereal Time to determine the S. T. at birth. See page 67 for rule converting Standard time into mean time; pages 63, 64 for making corrections to Sidereal time.
SIDEREAL TIME

and the

Midnight Ephemeris

A civil day is measured from midnight to next midnight by two revolutions on our common clocks of 12 hours.

An astronomical day was formerly measured from noon to noon by an astronomical clock having 24 hours marked on its dial, to register one complete revolution of the Earth on its axis.

This Sidereal Time clock was set at the moment of Vernal Equinox, that is, when the Sun reaches the zodiacal sign Aries, 0° 00′ 00″, the hands of the clock are set at 0 H 0 M 0 S noon. When the Sun arrives at midheaven next day, due to Earth's revolution, the hands of the clock have traversed over the entire 24 hours, but as the Sun has traveled one degree, apparently, in its orbit, the Earth must turn one degree more before Sun is actually on midheaven again. This turn requires approximately 4 minutes, consequently the clock shows 0 H 04 M, or 4 minutes more than 24 hours for the Sun's culmination. On the following day it registers 0 H, 8 M at Sun's culmination, and so on each day the clock registers approximately 4 minutes later until the next entry of Sun into Aries one year later.

Thus, at this rate each month during the year the clock's hands register 2 hours more past 0°.00′:00″ noon, when the Sun culminates at civil noon. Referring to an Ephemeris, which gives S. T. for every day in the year, we find, for instance, that on September 1st, 1910, at civil noon anywhere, S. T., as shown by the astronomical

* Beginning with January 1st, in the 1925 issue, the American Nautical Almanac, issued by the Government, began to quote S. T. for midnight, instead of noon as formerly. Since then an astronomical day is reckoned from midnight to midnight as is the civil day.

Some of the newer Ephemerides quote S. T. for midnight, but mainly it is quoted for noon and because of simplicity textbooks use it for noon.
clock, is 10 H, 39 M, 05 S at which time it is shown that the Sun is in Virgo 8° 09' 15". Reference to any T. of H. will show Virgo 8° on the Midheaven at that S. T.

**How To Use Midnight Sidereal Time**

To erect a chart by an Ephemeris which quotes S. T and planets' places at midnight:

Simply change the midnight S. T. to noon by adding 12 H, plus 2 M (or 120 S) correction for the 12 hours elapsed, and append the correction for distance from Greenwich and the correction for amount of time born before or after noon. When thus provided with the corrected S. T. at noon add or subtract the amount of time born after or before noon and you then have the S. T. at birth with which to enter a T. of H. for the appropriate latitude to insert the house cusps as usual.

**How to Correct Planets' Places In a Midnight Ephemeris**

Simply change the midnight recorded places of the planets to noon* and then correct the places to birth time in the usual way for the amount of time born before or after noon mark.

* Note the recorded places at midnight (0 H 00 M 00 S a.m.) of the date desired, and their places next midnight. One half their distance between is their place at noon. Most of this is easily done by mental equation. Some of the "midnight" Ephemerides also quote the Moon's position for noon.

Since the Nautical Almanac and Ephemeris, issued by the Government of several countries, changed their astronomical figures to read for midnight instead of noon, the makers of astrological Ephemerides find it easier to quote for midnight because nearly all their calculations are transpositions from the governmental observatory records quoted in such works as the "American Nautical Almanac"
Although the midnight astrological Ephemeris is easier for the compilers, it complicates matters for students of horoscopy. For instance, for births in places west of Greenwich the time equivalent to midnight is in the day previous, because Greenwich time is in advance of places in west longitude.

To illustrate: A birth in Los Angeles on January 1st, 1935, (or any year since the beginning of 1925) at 9:30 p. m.

Los Angeles being 118° west longitude, or 7 H 52 M earlier than Greenwich time, the time equivalent to Greenwich midnight (0 H 00 M 00 S on January 1st, 1935) is 4:08 p. m. on December 31st, 1934. The difference between 4:08 p. m. on one day and 9:30 p. m. on next day being 29 H 22 M makes it obvious that although birth occurred on January 1st it is necessary to use the Ephemeris for January 2nd.

Therefore, we discard the foregoing and proceed to use the planets' places as recorded in the ephemeris for Jan. 2nd. The time equivalent being 4:08 p. m. on January 1st and birth at 9:30 p. m., Jan. 1st, it is evident that birth occurred 5 H 22 M after the time for which the planets are recorded in Ephemeris on January 2nd, which it should be understood is midnight of January 1st or 00:00 a. m. of January 2nd. The planets are therefore corrected for their motions in 5 H 22 M beyond their places shown as of January 2nd.

When using a midnight ephemeris remember that time equivalent is really the midnight mark for any place other than Greenwich. The midnight mark for Los Angeles is approximately 4:08 p. m. It is the time equivalent to the next midnight for all births which occur after 4:08 p. m.; or for the previous midnight for births which occur before 4:08 p. m. in Los Angeles. On pages 78-79 is a table of NOON marks; by adding 12 hours to them you acquire the midnight mark.

However, students working with the "midnight" Ephemeris for west longitude charts can eliminate the complications by simply changing the S. T. and the planets' places to noon, as shown in the rule given on page 669.
COUNTRIES AND CITIES ARE INFLUENCED BY THE SIGNS

Suppose that an individual suffering severe afflictions were told to go away for his health. That person could be correctly advised to go to some place which was under the benign influence of Jupiter, whereas otherwise, he might unfortunately go to a place under the influence of Mars or Saturn, and become worse off than before. This, providing the Sign Rulership of places was definitely known. The entire subject of Sign Rulership calls for serious research and discussion.

In Alan Leo's manual devoted to the subject of Mundane Astrology we find the following list, but we question a few of the assignments and believe they are open to further investigation. For instance, Chicago is given under Leo, but we believe it should be further investigated, as some students believe that it comes under the dominion of the sign Cancer.

Again, the people of Wales do not look or act like Gemini; they much more resemble Taurus. Detroit, the home of that Great Aquarian, Henry Ford, probably comes under the influence of Aquarius; during the transit of Uranus in Aquarius Detroit became the recognized center of the automobile industry. (Between 1912 and 1919.)

Portland, Oregon, is divided in two by the Willamette river. The east side for many blocks back from the river was formerly swampy or boggy, (now nicely filled) the location of many machine shops and lumber mills ruled by Mars. (Mars rules Scorpio.) The influence of Scorpio is seen on the west bank of the river also, extending along Front Street particularly, where we see the junk dealers and the machinery houses ruled by Mars.

The remainder of the West Side is evidently governed by Sagittarius, judging by the topography, as it rises steadily into high hills, where the majority of the wealthiest people have located and built fine residences. (Jupiter, Ruler of Sagittarius.)

When Uranus transited through the sign Sagittarius, the old cable car on the "Heights" was discarded and the electric (Uranus) system installed over a new route. Also, the work was begun of leveling off the top of Willamette Heights for the purpose of locating Westover Terrace, the present site of the most magnificent homes (Jupiter). (Continued on next page.)

* Those who wish to make a study of this subject will find helpful suggestions in Raphael's "Mundane Astrology" or Leo's "Mundane or National Astrology," also "Geographic Astrology," by Paul Council; "The Stars, How and Where They Influence," "Ruling Degrees of Cities," by L. E. Johnndro, and "Mundane Astrology," by C. C. Zain.
Some years ago when Mars was transiting the sign Scorpio, a huge water main on the East Side burst and inundated a large portion of that district—a Martian manifestation. Thus, when we refer to Portland's sign we need to designate the East Side as Scorpio, and the West Side (west of Front Street) as Sagittarius.

Countries and Cities

According to Their Sign Rulerships

(Subject to revision.)

The following list is useful in connection with Ingresses, Eclipses and New Moons in relation to Mundane charts; helping to determine where the influences will be operative.

Aries

Countries: Burgundy, England, Denmark, Germany, Palestine, Syria.

Towns: Birmingham, Blackburn, Oldham, Leicester, Brunswick, Capua, Cracow, Florence, Marseilles, Naples, Saragossa, Verona.

Taurus

Countries: Asia Minor, Caucasus, Cyprus, Georgia, Grecian Archipelago, Ireland, Persia, Poland, White Russia.


Gemini

Countries: Northeast Coast of Africa, Armenia, Belgium, Brabant, Lower Egypt, Flanders, Lombardy, Sardinia, Tripoli, Wales, Western part of England.


Cancer

Countries: Africa North and West, Holland, Isle of Mauritius, Paraguay, Scotland, New Zealand.
PART V. ADDITIONAL STUDIES


Leo

Countries: Alps, Apulia, Bohemia, Chaldea, France, Italy, Ancient Phoenicia near Tyre and Sidon, Northern Roumania, Sicily.

Towns: Bath, Blackpool, Bristol, Portsmouth, Taunton, Philadelphia, Bombay, Damascus, Prague, Ravenna, Rome. (Chicago and Los Angeles are believed by many to have Leo ascending.)

Virgo

Countries: Assyria, Babylonia, Brazil, Crete, Turkey, Thessaly, Crotia, Greece, The Morea, Mesopotamia from the Tigris to the Euphrates, Silesia, Switzerland, Virginia, West Indies.


Libra

Countries: Austria, Argentina, Burma, the borders of the Caspian, China, especially the northern provinces, parts of India near China, Upper Egypt, Japan, Livonia, Thibet, Savoy.

Towns: Leeds, Middleton, Nottingham, Antwerp, Charleston, Copenhagen, Frankfort, Fribourg, Gaeta, Johannesburg, Lisbon, Placehza, Spires, Vienna.

Scorpio

Countries: Algeria, Barbary, Bavaria, Cappadocia, Catalonia, Judea, Jutland, Morocco, Norway, Queensland, Syria, Transvaal.

Towns: Dover, East Grinstead, Glossop, Halifax, Hull, Liverpool, Newcastle, Stockport, Worthing, Balti-
more, Cincinnati, Fez, Frankfort on Oder, Milwaukee, Messina, New Orleans, St. John's, Newfoundland, Valen-
tia, Washington, Portland, Oregon, (East Side.)

Sagittarius

Countries: Arabia Felix, Australia; Dalmatia, France between the Seine and the Garonne to Cape Finisterre, Hungary, Istria, Madagascar, Moravia, Provence, Sla-
vonia, Spain, Tuscany.

Towns: Bradford, West Bromwich, Nottingham, Sheffield, Sunderland, Avignon, Buda, Cologne, Nar-
bonne, Rotenburg, Stuttgart, Toronto, Toleda, Portland, Oregon, (West Side).

Capricorn

Countries: Albania, Bosnia, Bulgaria, Macedonia, Illyria, Styria, Thrace, the Morea, parts of Persia about Cir-
can and Marcan, Khorassan, India the Punjab, Afghanistan, Hesse, Mecklenburg, Southwestern Saxony, Romandiola in Italy, Mexico, The Orkney Islands.

Towns: Oxford, Salisbury, Keighley, Brandenburg, Bruges, Port Said, Prato in Tuscany, Constance, Faye-
ence in Provence, Tortona.

Aquarius

Countries: Abyssinia, Arabia Petraea, Circassia, Lithu-
ania, Piedmont, part of Poland, Prussia, Russia, Sweden, Tartary, Wallachia, Westphalia.

Towns: Brighton, Salisbury, Bremen, Hamburg, In-
golstadt, Salzburg, Trent.

Pisces

Countries: Calabria, Galicia in Spain, Normandy, 
Nubia, Portugal.

Towns: Bournemouth, Christchurch, Cowes, Farn-
ham, Grimsby, Lancaster, King's Lynn, Preston, South-
port, Alexandria, Compostella, Ratisbon, Regensburg, 
Seville, Worms, Chicago,—have Sun in Pisces.
DATE AND TIME OF PARTILING ASPECTS
IN HOROSCOPIES

In connection with the aspects that may be formed among planets in a Progressed Chart, or aspects of progressed planets to radix planets, it may be of interest to students to have a simple rule illustrating the method of calculating the date and time when the influence reaches its maximum or peak, or in other words, the date and time an aspect becomes partile.

TIME KEY or MEASURE OF TIME

24 hours = 1 day, or 1 year by progression
2 hours motion = 1 month (30 days)
1 hour motion = ½ month (15 days)
4 minutes motion = one day (24 hours)
1 minute motion = 6 hours (¼ day)
10 seconds motion = 1 hour of time
1 second motion = 6 minutes of time.

Use the above table to determine date and time for such calculations as are shown in following examples.

Note: The resultant time of day derived through use of the following methods must be approximate, and not exact, due to various technical factors involving slight irregularity in motion of the planets, etc., which for the sake of simplicity are omitted. However, the variation is slight and so will rarely cause your answer to vary more than a few minutes in time and therefore for practical purposes may be considered correct.

To Calculate the Time Required for a Progressed Aspect to Become Partile with a Natal Planet

Example

Birth on Oct. 11, 1937; 4 a. m., Los Angeles, Calif.

Suppose: a Datum for chart is Nov. 10, 1937, representing the 30th progressed birthday, at 4 a. m., Los Angeles.
b. Progressed Moon 7°27'16" = at birth time
   (4 a.m.)

c. Natal Sun 17°45'09" = at birth time (4 a.m.)

d. Progressed Moon motion is 12°24'40" per
day (year)

Question

When will ♄ reach the Δ ☉ radix?

☉ 17°45'09" = in radix

- P. ♄ 7 27 16 ⇒ on prog. birth date

10 17 53 = distance from Δ, = \log .3674

Prog. ♄ motion 12°24'40" (12°25') = \log .2862:

\[ \frac{0.0812}{.2862} \]

(Note: These two logs. **always** to be **subtracted**.)

Logarithm .0812 = 19h 53m.

19h 53m after birth time is required for ♄ to Δ ☉ radix.

1 month = 2h ) 19h

\[
9\frac{1}{2} \text{ months} = 9 \text{ mos. 15 days + Oct. 11th} = \text{July 26th, 1938.}
\]

1 day = 4m ) 53m

\[
13\frac{1}{4} = 13 \text{ days 6 hours + July 26th} = \text{August 8th + 6h }
\]

Born at 4 a.m. + 6h = 10 a.m. August 8, 1938.
b. Progressed Moon 16°55'16" = at birth time
   ♀ (4 a.m.) on November 28th, 1937.
c. Progressed Mercury 22°09' ♂ at birth time
   ♀ (4 a.m.) on November 28th, 1937.
d. Progressed Motion of Moon is 12°11'15"
e. Progressed Motion of Mercury is 1°28'00"

Question

When will progressed Moon reach the ♀ ♀ progressed?

♀ 22°09'00" ♂
- ♂ 16°55'16" =

\[ 5°13'44" = \text{distance} \div (\text{days of Sun} \times \text{log.} \ 6.614) \]

♀ motion 12°11'15"
♂ motion -1 28'00"

\[ \text{acceleration } 10°43'15" = \log \ 3801 \]
\[ \frac{3113}{-3501} \]

.3113 = 11h 43m past birth time when ♀ ♀ ♀ ♀ ♀ ♀ ♀.

1 monti. = 2½ 11h

\[ 2\frac{1}{2} = 5 \text{ mos. and } 15 \text{ days } + \text{ Oct. 11, 1937 } = \text{ March 26th, 1938.} \]

1 day = 4m) 43m

\[ 10\frac{3}{4} = 10 \text{ days } 18 \text{ hours } + \text{ March 26 } = \text{ April 5th, 1938.} \]

Born 4 a.m. + 18h = 22h or 10 p.m., April 5, 1938.

Answer

♀ ♀ ♀ April 5th, 1938, at 10 p.m., therefore:

Native born October 11, 1937, at 4 a.m. in Los Angeles.

November 28, 1937 will represent native's 48th to 49th year, or + 48
Exaltation Degrees

As shown by reference to Dignities and Debilities on pages 46 to 50, planets are exalted when in certain signs. The following list shows the degree wherein the dignity is strongest. The points of greatest detriment are the opposite degrees.

⊙ is exalted in the 19th degree of ♀
♃ is exalted in the 3rd degree of ♉
♄ is exalted in the 15th degree of ♈
♅ is exalted in the 27th degree of ♈
♆ is exalted in the 28th degree of ♉
⛃ is exalted in the 15th degree of ♉
♇ is exalted in the 21st degree of ♈
♉ is exalted in the 3rd degree of ♈
♊ is exalted in the 3rd degree of ♈
♋ is exalted in the 3rd degree of ♈

Critical Degrees

<table>
<thead>
<tr>
<th>Signs</th>
<th>Degrees</th>
</tr>
</thead>
<tbody>
<tr>
<td>♀ ☉ ♈</td>
<td>0° 13° 26°</td>
</tr>
<tr>
<td>♉ ☉ ♈</td>
<td>9° 21°</td>
</tr>
<tr>
<td>♈ ☉ ♈</td>
<td>4° 17°</td>
</tr>
</tbody>
</table>

These sensitive or critical degrees were given considerable importance by the ancients. A planet’s strength or power in the horoscope is believed to be increased when in any of these degrees, or within an orb of 3° of the critical degree. A planet dignified by sign or house, or strongly aspected, receives still greater power and one weakly placed or poorly aspected receives help from such location. Students may wish to observe these critical-degree influences in horoscopes, as well as in horary charts and planets by transit over them. For instance Mars in ♀ 13° or 26°

Arabic Parts

A chapter, listing the Arabic Parts, will be found on page 702.
PART V. ADDITIONAL STUDIES

THE PRE-NATAL EPOCH

A Review of Its Development

The law pertaining to the Pre-Natal Epoch is based upon the observed relationship between the Moon and the ascendant of a horoscope.

Since Ptolemy in the "Tetrabiblos" propounded the ancient doctrine which has become known as "The Ani-modar of the Tetrabiblos," the subject has been dealt with by such eminent authors as Coley, Gadbury, Wilson and L. H. Weston. Heyden treated the doctrine under the title, "The Truitine of Hermes." Sepharial and E. H. Bailey have modernized the rules for present-day application. Originally, its purpose was its use as a means of correcting given birth times; modern exponents apply it for that purpose and also for study of the pre-natal chart, even going so far as to "progress" it. The entire subject is rich in interest and possibilities for research and for that reason let us start back with Ptolemy and review the subject to its present day development, as regards its value as a birth time corrector. It is especially valuable in that respect for correcting the horoscope of infants who are as yet too young to have had any striking events by which to rectify the time as shown by the chapter on "Rectification By Arcs of Events," in Part IV.

In the following excerpts from "Ptolemy's Tetrabiblos" it will be noticed that he makes it a point to stress the importance of the value of the natal chart in these words particularly, "And although the birth should in strictness be called the secondary beginning, while the conception might be insisted on as the primary beginning, it is still found to be equal to the conception in its efficacy, and much more complete."

Ptolemy says:

"The actual moment in which human generation commences is, in fact, by nature the moment of the conception itself; but, in efficacy with regard to subsequent events, it is the parturition or birth."
"But, if the time of conception cannot be precisely made out, that of the birth must be received at the original date of generation; for it is virtually the most important and is in no respect deficient in comparison with the primary origin by conception, except in one view only; viz., that the origin by conception affords the inference of occurrences which take effect previously to the birth, whereas the origin by birth can of course, be available only for such as arise subsequently. And, although the birth should in strictness be called the secondary beginning, while the conception might be insisted on as the primary beginning, it is still found to be equal to the conception in its efficacy, and much more complete, although later in time. For the conception may, in fact, be said to be the generation of mere human seed, but the birth that of man himself; since the infant at its birth acquires numerous qualities which it would not possess while in the womb, and which are proper to human nature alone; such, for instance, as the particular action of the senses and the movement of the body and limbs. Besides, even if the position of the Ambient, actually existing at the birth, cannot be considered to assist in forming and engendering the particular shape and qualities of the infant, it is nevertheless still auxiliary to the infant's entrance into the world: because nature, after completing the formation in the womb, always effects the birth in immediate obedience to some certain position of the Ambient, corresponding and sympathising with the primary position which operated the incipient formation. It is therefore perfectly admissible, and consistent with reason, that the configuration of the stars, as it exists at the time of birth, although it cannot be said to possess any share of the creative cause, should still be considered as act in signification, as fully as the configuration at the time of conception, because it has, of necessity, a power corresponding to that configuration which actually possessed the creative cause."

"To proceed methodically and in due order, it is proper to commence by investigating such general events as are open to consideration, and liable to have happened, or to happen, at the actual origin by birth; since, from that origin, all things necessary to be investigated may be
gathering, as before stated. Yet, if a previous inquiry, by means of the primary origin by conception, should nevertheless be desired and undertaken, such an inquiry may still in some degree assist progno stication; although only in regard to properties and qualities dispensed and imbibed at the time of conception.

In a book published in Portland, Oregon, in 1908, (long since out of print) entitled, "The Astrolite," the author, L. H. Weston, quotes the "Animodar" as follows, with some clarifying interpolations:

The Animodar of the Tetrabiblos

"In Ashmand's translation of the Tetrabiblos we have what is known as Ptolemy's Animodar, given in Book III, Chapter 3, of that work. It begins with the title, The Degree Ascending, and is verbatim as follows, Ashmand's footnotes being here run in between brackets:

"There frequently arises some uncertainty as to the precise time of birth and some apprehension lest it should not be accurately noted. In most cases the actual minute of the hour at which the birth happens can only be ascertained by making a scientific observation at the time with a horosco palical astrolabe, (It is, perhaps, needless to remark that modern improvements in science have superceded the use of this, and other ancient instruments here mentioned,) for all other instruments employed in ascertaining the hour are almost always fallacious, although used by many persons with much care and attention. The clepsydra (Although the clepsydra or water-clock was commonly used among the ancients for various purposes, it appears from Martian, a Latin writer who lived about A. D. 490, that there was also a clepsydra in special use as an astrological engine.) for instance, is subject to error because the flow of water will, from various causes, proceed irregularly; and the sundial is often incorrectly placed, and its gnomon often distorted from the true meridian line. To obviate the difficulty arising from the inaccuracy of these instruments, it seems highly necessary to present some method
by which the actually ascending degree of the zodiac may be easily ascertained, in a natural and consistent manner.

"And in order to attain this essential point it is necessary first to set down the ordinary degree which, by the doctrine of ascensions ('The doctrine of ascensions,' is allusion to the method of calculating the actual position of the ecliptic.) is found near the ascendant at the presumed hour. After this has been done, the new or full Moon, whichever it may be, that may take place next before the time of parturition, must be observed; and if a New Moon it will be necessary to mark exactly the degree of conjunction of the two luminaries; but if a Full Moon the degree of that luminary only which may be above the earth during the parturition. (Note by Weston —This means that whichever luminary was above the earth at the Full Moon in the longitude of birthplace is to be taken. This passage is unintelligible under any other construction, for about one-half the people are born with both the Sun and Moon either above or below the horizon.)

"After this it must be observed which planets have dominion over the said degree; and their dominion depends always on the five following prerogatives, namely, on triplicity, house, exaltation, terms, and phase or configuration ('Phase, or configuration,' or 'holding an authorized aspect to the degree in question.') that is to say, a planet, eligible to dominion, must be connected with the 'degree in question either by one, or more, or all of these prerogatives.

"If, therefore, there may be found any one planet properly qualified in all or most of these prerogatives, the exact degree which it occupies in that sign in which it may be posited during the parturition is to be remarked, and it is then to be inferred that a degree of the same numerical denomination was, actually ascending at the precise time of birth, in that sign which appears by the doctrine of ascensions to be nearest to the ascendant (or on the ascendant)."
"But when two planets or more may be equally qualified in the manner prescribed, it must be seen which of them may transit, during the parturition, a degree nearest in number to the ordinary degree shown by the doctrine of ascensions to be then ascending; and that said degree, nearest in number, is to be considered as pointing out the numerical denomination of the degree actually ascending. And when the degrees of two planets, or more, may closely and equally approximate in numerical denomination to the ordinary degree found by the doctrine of ascensions, the degree of that planet which possesses further claims, by connection with the angles and by its own condition, is to regulate the number of the actually ascending degree.

"It must, however, be observed that if the actual distance of the degree, in which the ruling planet may be posited, from the ordinary degree ascending, be found to exceed its distance from the ordinary degree of the midheaven, the numerical denomination, found in the way above mentioned, is then to be considered as applicable to the actual degree in culmination, and the other angles are to be arranged in conformity therewith. (The precepts delivered in this chapter have obtained the name of Ptolemy's Animodar. The term is probably Arabic, if it is not a corruption of the Latin words animum, or animam, dare, 'giving animation or life;' yet this meaning seems scarcely close enough.)"

In the same book (The Astrolite) Mr. Weston gives what is believed to be the most succinct description of the ancient "Truitine of Hermes" as follows:

The Truitine of Hermes

"The English astrologer Heydon, who flourished in London during the 18th century, is known to have taught a system of rectifying the estimated time of a birth by a prenatal epoch plan which he called The Truitine of Hermes. Whether or not Heydon's plan is the real Truitine of Hermes Trismagestis, the mythical Greek philosopher, cannot at this time be determined,
but it is quite certain, nevertheless, that most of the modern prenatal methods for correction of the birth are based on Heydon's rules, and so far as we can gather that teacher really did secure them from ancient sources.

"A full history of this prenatal rectification system of Heydon has never been written and its real origin is lost in the night of ancient times. Comparatively recently, however, a writer under the pseudonym of Sepharial brought forward this very ancient plan under a slightly changed form.

"In 1891 an English magazine printed some of the rules of this system, and previous to that time they had been printed more or less completely in other publications. Again in 1907 The Astrologer's Magazine printed these same old rules, and thus they have been reprinted in various publications from time to time.

"The Truitine, as we thus have it, is based upon the proposition that the true hour of birth is already certainly known to very nearly the exact minute, for in any case where the hour cannot at all be estimated to almost exactly the truth this Truitine plan is manifestly useless. Indeed, the very first article of the rule is that an estimate figure must be erected and used as a basis of the calculation, hence whenever this estimate is impossible the whole plan is also impossible. If in the estimated figure you change the values a few degrees it will produce a change in your results, hence we see that it is the estimate which actually decides the result, and the rectification is thus manifestly a mere result of the estimate and not of anything else whatsoever.

"But since the Truitine really preserves a concealed truth, and also because it has long been the prenatal correction method, I here give the ancient rules:

The Eight Rules of the Truitine

1. Erect an estimate map of the nativity.

2. Compute the oblique ascension of ascendant and oblique descension of 7th; also Moon's oblique ascension or descension, under latitude of birth place.
3. If the Moon is under the earth take ob. asc. of ascendant from per ob. asc. or ob. dec., the remainder being Moon's distance from the ascendant. If Moon is above the earth then subtract the ob. dec. of the 7th for Moon's distance from 7th.

4. With value of distance so obtained enter the following table and take out the number of days answering thereto, taking from the column above or below earth, according as the Moon is above or below.

<table>
<thead>
<tr>
<th>Distant</th>
<th>Under</th>
<th>Above</th>
<th>Distant</th>
<th>Under</th>
<th>Above</th>
</tr>
</thead>
<tbody>
<tr>
<td>0°</td>
<td>273 d</td>
<td>258 d</td>
<td>96°</td>
<td>281 d</td>
<td>286 d</td>
</tr>
<tr>
<td>12</td>
<td>274</td>
<td>259</td>
<td>108</td>
<td>282</td>
<td>287</td>
</tr>
<tr>
<td>24</td>
<td>275</td>
<td>260</td>
<td>120</td>
<td>283</td>
<td>288</td>
</tr>
<tr>
<td>36</td>
<td>276</td>
<td>261</td>
<td>132</td>
<td>284</td>
<td>290</td>
</tr>
<tr>
<td>48</td>
<td>277</td>
<td>262</td>
<td>144</td>
<td>285</td>
<td>270</td>
</tr>
<tr>
<td>60</td>
<td>278</td>
<td>263</td>
<td>156</td>
<td>286</td>
<td>271</td>
</tr>
<tr>
<td>72</td>
<td>279</td>
<td>264</td>
<td>168</td>
<td>287</td>
<td>272</td>
</tr>
<tr>
<td>84</td>
<td>280</td>
<td>265</td>
<td>180</td>
<td>288</td>
<td>273</td>
</tr>
</tbody>
</table>

5. Count backwards from the date of birth the number of days thus found and it will bring you to the approximate day of conception, on which day if you find that the Moon is in the same or opposite sign to that which was ascending at the estimate time of birth, choose it as the date of conception, or choose the nearest date to it upon which the Moon really is in either the ascending or descending sign of the estimate chart. The time of the rising, on this day of conception, of that degree of the ecliptic occupied by the Moon in the estimate figure is also the time of day of the conception, computed as follows:

6. Subtract 90° from the oblique ascension of the Moon as in the estimate figure and from the remainder subtract the Sun's right ascension of the day of conception. This, converted into time, is the hour and minute of conception.

7. For the date and time of conception thus found calculate the Moon's longitude, and it is the longitude of the ascendant or the 7th cusp at birth.

8. By the tables of houses find the cusps of all the other houses by this ascendant, and also the hour of birth.
Mr. Weston sums it up thus:

**Review of These Ancient Methods.**

"Here, then, we have the famous Animodar of Ptolemy and the celebrated Truitine of Hermes both depending entirely upon an estimated map of the horoscope and an estimated degree that is presumed to have possibly been on the ascendant at a birth-time which is in question, using what is almost certainly, an erroneous map and a false ascendant. They both propose to rectify an estimated ascendant to the true degree by shifting its position from an inexact aspect to one that is exact, for if the estimate had accidentally fallen at the exact aspect no shift and no correction would be necessary. They make an estimate ascendant to shift to an exact aspect with some Promittor which they elect by a set of rules presumed to be competent to give such election.

"The Truitine takes the Moon's longitude at the moment it is on the rising horizon first previous to a prenatal epoch, and elects that degree of longitude as the Promittor to which the ascendant must be shifted.

"The Animodar, by means of certain rules, elects the longitude of some planet as a Promittor to which the ascendant must be aspected in terms of duodecimal segments.

"The supreme principle which renders the Animodar at all possible is the shift to an authorized aspect (the authorized aspects are the duodecimal divisions of a circle, being 30, 60, 90, 120, 150 and 180 degrees) and if there is any truth at all in this famous plan it surely must be the truth that the duodecimal divisions of a circle of Life Rays are eternal points of specific energy or efficacy.

"If any truth at all is in the Truitine it is that a prenatal epoch is useful for finding the rising degree at any birth and that it is the Moon which brings on the effect. Upon these ancient authorities and with these broad hints, let us take one step forward toward the light."
PART V. ADDITIONAL STUDIES

MODERN VERSION
OF THE PRE-NATAL EPOCH

Elements For Rectifying
A Given Birth Time By The Pre-natal Epoch

Make a horoscope for the given birth time and note which of the following elements apply:

Element No. 1:

A. When the Moon at birth is increasing in light and above the horizon the period is less than ten lunar months.

B. When the Moon at birth is decreasing in light and below the horizon the period is less than ten lunar months.

C. When the moon at birth is increasing in light and below the horizon the period is more than ten lunar months.

D. When the Moon at birth is decreasing in light and above the horizon the period is more than ten lunar months.

Element No. 2:

A. When the Moon is increasing at birth, it will be found on the epoch day in the sign which is rising at birth, i.e., the eastern horizon or cusp of the first house.

B. When the Moon is decreasing at birth, it will be found on the epoch day in the sign which is setting at birth.

Element No. 3:

That day approximately ten lunar months previous to birthday on which the Moon transits the exact degree of the ascendant at birth (or its opposite), is the day of the Pre-Natal Epoch.
A. If the Moon is increasing at birth, its place at birth will be rising at the time of the epoch on epoch day.

B. If the Moon is decreasing at birth, its place at birth will be setting at the time of epoch on epoch day.

**To Find The Day Of Epoch**

Count ten lunar months or 273 days backward from the date of birth and note the date on which the Moon is in the sign it held at birth, or the sign opposite, as may be required by the foregoing elements. (If the birth took place earlier than September, it will be necessary to procure an ephemeris for the year preceding that of birth.) Having found the lunar place, count forward or backward, as the case may require, until you come to the day when the Moon is in the sign ascending at birth, or descending at birth, according to the rules. Take that day on which it transits the exact degree on the horizon at birth. Call this the Epoch Day.

**To Find The Time Of Epoch**

1. Ascertain where the mother of the native was residing on the day of epoch, and refer to the Tables of Houses for the latitude of that place.

2. In that Table of Houses bring the Moon’s longitude at birth to the ascendant or descendant, as the case requires, and note the Sidereal Time in hours, minutes and seconds. This will be the Sidereal Time at Epoch.

3. From the ephemeris take the Sidereal Time at noon on the day of epoch. The difference between the Sidereal Time at noon, and the S. T. at the epoch will give the correct time before or after noon at which the epoch occurred; therefore subtract the S. T. at noon from the S. T. of the epoch. If the answer is less than 12 hours it is in P. M.; if the answer is more than 12 hours subtract 12 from it and the answer is A. M. time of epoch. (Note: A chart made for the time thus found is the Pre-Natal horoscope.)

4. Find the Moon’s longitude for this derived time on the day of epoch, and it will represent the degree to be
on the ascendant or descendant at birth, as the case may require.

To Find The True Time Of Birth

When the ascending degree has been found, find that degree ascending in a Table of Houses for the latitude of the place of birth. Note the S. T. given for that degree; from it subtract the S. T. at noon on the birthday. The result will be the time of birth. Should these figures be less than 12.00:00 it is P. M. time of birth; if more than 12.00:00, subtract 12 hours from it and the remainder is the time of birth in A. M.

The foregoing is a brief review of the main rules for finding the Epoch Day, and the corrected time of birth, as given by Sepharial in "The Manual of Astrology." The text goes on giving sex degrees, etc. E. H. Bailey has published an excellent volume treating the entire subject entitled, "The Pre-Natal Epoch." It presents the philosophy, theory and practice, the complete modern doctrine in interesting form, including examples of various variations from normal to "irregular" epochs.

My own application of the preceding rules in many years of practice has been quite satisfactory. In addition to using them for the correction of birth time for infants, I often used them to check the time derived by the "Arc of Events" method, and, when they differed slightly, I preferred the time derived by the A. of E. method. The following examples from my note-book should aid in illustrating the method of using the pre-natal epoch rules.

An Example Illustrating the Manner of Birth Time

Rectification by the Pre-Natal Epoch Method

The object of this method is not to find unknown birth times, but to rectify birth times that have been recorded with some degree of certainty so as to be able to erect a reliable chart, instead of otherwise using one which is only approximately correct.

This is a method of rectification resorted to especially in the case of children, when as yet no events have occurred in their lives by which their true birth time could
be derived by the other process measuring from arc of events.

'Data For The Rectification

Male, born February 16, 1921, at a given time of approximately 5:56 p.m., 42° N. Latitude; 86° W. Longitude; Noon Mark 6:16 a.m. An estimate chart made for this data shows ῥ 2° 26' ascending (approximately). ☿ 27° 48' = in 6th house. Moon 13° 12' Π in 10th house.

Element No. 1, A: Moon increasing and above the earth = less than 10 Lunar months.

Element No. 2, A: Moon increasing at birth = Moon to be on Epoch Day in the sign that was rising at birth = ῥ 2° 26'.

Element No. 3, A: Moon increasing at birth (in Π 13° 12') to be rising at time of Epoch on Epoch Day.

NOTE

If the S.T. at noon 4:07:07 (page 694) were corrected for 86° W. Long. = 57° plus; and also corrected for 5:12:48 a.m., which is 6:47:12 before noon = 68° minus, these corrections would change the derived epoch time from 5:12:48 a.m. to 5:12:59 a.m.

If the S.T. at noon 21:43:44 (page 696) were to be corrected for 86° W. Longitude = 57° plus; and also corrected for 5:30 p.m. = 55° plus, these corrections would change the derived time of birth from 5:30:11 p.m. to 5:28:19 p.m.

If the S.T. at noon on epoch day (page 698) were to be corrected for 86° W. Long. = 57° plus; and also corrected for 8:07 p.m. = 81° plus, these corrections would change the derived time of epoch from 8:07:14 p.m. to 8:04:56 p.m.

If the S.T. at noon 21:43:44 (page 700) were to be corrected for 86° W. Longitude = 57° plus; and also corrected for 6:12:54 p.m. = 62° plus, these corrections would change the derived time of birth from 6:12:54 p.m. to 6:10:55 p.m.
PROCESS FOR "REGULAR" EPOCH.

How To Find The Epoch Day

To facilitate the work of counting back to find the Epoch Day, a table of the number of days between two dates is given on following pages, by which we can see that:

February 16th, 1921, is 412 days in table of dates.
Subtract 273 days = 10 Lunar months.

139th day. In the table dates this is May 19th, 1920, but Element No. 1, A says the period is to be less than 273 days; however, refer to this date in 1920 ephemeris. There we find the Moon in Gemini, but according to Element No. 2, A we want it in the sign that was ascending at birth, Virgo, approximately 2° 26' and, in looking down the column, every day making the period less, we see that the Moon will cross over 2° 26' Virgo on May 24th. This date is therefore the Epoch Day and it makes the period less than 273 days as required by Element No. 1, A.

Call the birth day the 412th day.
Call the Epoch Day — 144th day (See Date Tables)

268 days period of gestation.

Element No. 3, A: Refer to Tables of Houses for the Latitude of Mother's residence on Epoch Day, which in this case is Latitude 42° N.; find Π 13° 12' on the ascendant, as that was the Moon's sign and degree at birth. (See No. 2 Simplified Tables of Houses, page 37).

T. H. show Π 13° 40' ascending as nearest our desired
Π 13 12

0° 28' too much long. Therefore, the Sidereal Time in T. H. shown for 13° 40' will also be excessive an amount corresponding to 28' of longitude. In the "Table of Relation of Longitude to Sidereal Time" appended to this chapter, it is seen that 28' of longitude is equivalent to 1m 62s of Sidereal Time, which amount must be deducted from the excessive Sidereal Time given in the Table of Houses.
TABLE OF DAYS BETWEEN TWO DATES

(See examples on pages 767-169 for using these tables.)

A Table of the Number of Days Between Any Two Dates Within One Year

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>32</td>
<td>60</td>
<td>91</td>
<td>121</td>
<td>152</td>
<td>182</td>
<td>213</td>
<td>244</td>
<td>274</td>
<td>305</td>
<td>335</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>33</td>
<td>61</td>
<td>92</td>
<td>122</td>
<td>153</td>
<td>183</td>
<td>214</td>
<td>245</td>
<td>275</td>
<td>306</td>
<td>336</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>34</td>
<td>62</td>
<td>93</td>
<td>123</td>
<td>154</td>
<td>184</td>
<td>215</td>
<td>246</td>
<td>276</td>
<td>307</td>
<td>337</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>35</td>
<td>63</td>
<td>94</td>
<td>124</td>
<td>155</td>
<td>185</td>
<td>216</td>
<td>247</td>
<td>277</td>
<td>308</td>
<td>338</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>36</td>
<td>64</td>
<td>95</td>
<td>125</td>
<td>156</td>
<td>186</td>
<td>217</td>
<td>248</td>
<td>278</td>
<td>309</td>
<td>339</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>37</td>
<td>65</td>
<td>96</td>
<td>126</td>
<td>157</td>
<td>187</td>
<td>218</td>
<td>249</td>
<td>279</td>
<td>310</td>
<td>340</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>38</td>
<td>66</td>
<td>97</td>
<td>127</td>
<td>158</td>
<td>188</td>
<td>219</td>
<td>250</td>
<td>280</td>
<td>311</td>
<td>341</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>39</td>
<td>67</td>
<td>98</td>
<td>128</td>
<td>159</td>
<td>189</td>
<td>220</td>
<td>251</td>
<td>281</td>
<td>312</td>
<td>342</td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td>40</td>
<td>68</td>
<td>99</td>
<td>129</td>
<td>160</td>
<td>190</td>
<td>221</td>
<td>252</td>
<td>282</td>
<td>313</td>
<td>343</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>41</td>
<td>69</td>
<td>100</td>
<td>130</td>
<td>161</td>
<td>191</td>
<td>222</td>
<td>253</td>
<td>283</td>
<td>314</td>
<td>344</td>
</tr>
<tr>
<td>11</td>
<td>11</td>
<td>42</td>
<td>70</td>
<td>101</td>
<td>131</td>
<td>162</td>
<td>192</td>
<td>223</td>
<td>254</td>
<td>284</td>
<td>315</td>
<td>345</td>
</tr>
<tr>
<td>12</td>
<td>12</td>
<td>43</td>
<td>71</td>
<td>102</td>
<td>132</td>
<td>163</td>
<td>193</td>
<td>224</td>
<td>255</td>
<td>285</td>
<td>316</td>
<td>346</td>
</tr>
<tr>
<td>13</td>
<td>13</td>
<td>44</td>
<td>72</td>
<td>103</td>
<td>133</td>
<td>164</td>
<td>194</td>
<td>225</td>
<td>256</td>
<td>286</td>
<td>317</td>
<td>347</td>
</tr>
<tr>
<td>14</td>
<td>14</td>
<td>45</td>
<td>73</td>
<td>104</td>
<td>134</td>
<td>165</td>
<td>195</td>
<td>226</td>
<td>257</td>
<td>287</td>
<td>318</td>
<td>348</td>
</tr>
<tr>
<td>15</td>
<td>15</td>
<td>46</td>
<td>74</td>
<td>105</td>
<td>135</td>
<td>166</td>
<td>196</td>
<td>227</td>
<td>258</td>
<td>288</td>
<td>319</td>
<td>349</td>
</tr>
<tr>
<td>16</td>
<td>16</td>
<td>47</td>
<td>75</td>
<td>106</td>
<td>136</td>
<td>167</td>
<td>197</td>
<td>228</td>
<td>259</td>
<td>289</td>
<td>320</td>
<td>350</td>
</tr>
<tr>
<td>17</td>
<td>17</td>
<td>48</td>
<td>76</td>
<td>107</td>
<td>137</td>
<td>168</td>
<td>198</td>
<td>229</td>
<td>260</td>
<td>290</td>
<td>321</td>
<td>351</td>
</tr>
<tr>
<td>18</td>
<td>18</td>
<td>49</td>
<td>77</td>
<td>108</td>
<td>138</td>
<td>169</td>
<td>199</td>
<td>230</td>
<td>261</td>
<td>291</td>
<td>322</td>
<td>352</td>
</tr>
<tr>
<td>19</td>
<td>19</td>
<td>50</td>
<td>78</td>
<td>109</td>
<td>139</td>
<td>170</td>
<td>200</td>
<td>231</td>
<td>262</td>
<td>292</td>
<td>323</td>
<td>353</td>
</tr>
<tr>
<td>20</td>
<td>20</td>
<td>51</td>
<td>79</td>
<td>110</td>
<td>140</td>
<td>171</td>
<td>201</td>
<td>232</td>
<td>263</td>
<td>293</td>
<td>324</td>
<td>354</td>
</tr>
<tr>
<td>21</td>
<td>21</td>
<td>52</td>
<td>80</td>
<td>111</td>
<td>141</td>
<td>172</td>
<td>202</td>
<td>233</td>
<td>264</td>
<td>294</td>
<td>325</td>
<td>355</td>
</tr>
<tr>
<td>22</td>
<td>22</td>
<td>53</td>
<td>81</td>
<td>112</td>
<td>142</td>
<td>173</td>
<td>203</td>
<td>234</td>
<td>265</td>
<td>295</td>
<td>326</td>
<td>356</td>
</tr>
<tr>
<td>23</td>
<td>23</td>
<td>54</td>
<td>82</td>
<td>113</td>
<td>143</td>
<td>174</td>
<td>204</td>
<td>235</td>
<td>266</td>
<td>296</td>
<td>327</td>
<td>357</td>
</tr>
<tr>
<td>24</td>
<td>24</td>
<td>55</td>
<td>83</td>
<td>114</td>
<td>144</td>
<td>175</td>
<td>205</td>
<td>236</td>
<td>267</td>
<td>297</td>
<td>328</td>
<td>358</td>
</tr>
<tr>
<td>25</td>
<td>25</td>
<td>56</td>
<td>84</td>
<td>115</td>
<td>145</td>
<td>176</td>
<td>206</td>
<td>237</td>
<td>268</td>
<td>298</td>
<td>329</td>
<td>359</td>
</tr>
<tr>
<td>26</td>
<td>26</td>
<td>57</td>
<td>85</td>
<td>116</td>
<td>146</td>
<td>177</td>
<td>207</td>
<td>238</td>
<td>269</td>
<td>299</td>
<td>330</td>
<td>360</td>
</tr>
<tr>
<td>27</td>
<td>27</td>
<td>58</td>
<td>86</td>
<td>117</td>
<td>147</td>
<td>178</td>
<td>208</td>
<td>239</td>
<td>270</td>
<td>300</td>
<td>331</td>
<td>361</td>
</tr>
<tr>
<td>28</td>
<td>28</td>
<td>59</td>
<td>87</td>
<td>118</td>
<td>148</td>
<td>179</td>
<td>209</td>
<td>240</td>
<td>271</td>
<td>301</td>
<td>332</td>
<td>362</td>
</tr>
<tr>
<td>29</td>
<td>29</td>
<td>60</td>
<td>88</td>
<td>119</td>
<td>149</td>
<td>180</td>
<td>210</td>
<td>241</td>
<td>272</td>
<td>302</td>
<td>333</td>
<td>363</td>
</tr>
<tr>
<td>30</td>
<td>30</td>
<td>61</td>
<td>89</td>
<td>120</td>
<td>150</td>
<td>181</td>
<td>211</td>
<td>242</td>
<td>273</td>
<td>303</td>
<td>334</td>
<td>364</td>
</tr>
<tr>
<td>31</td>
<td>31</td>
<td>62</td>
<td>90</td>
<td>121</td>
<td>151</td>
<td>212</td>
<td>243</td>
<td>304</td>
<td>365</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# TABLE OF DAYS BETWEEN TWO DATES

(See examples on pages 167-169 for using these tables.)

A Table of the Number of Days Between Any Two Dates Within Two Years

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>366</td>
<td>397</td>
<td>425</td>
<td>456</td>
<td>486</td>
<td>517</td>
<td>547</td>
<td>578</td>
<td>609</td>
<td>630</td>
<td>660</td>
<td>690</td>
</tr>
<tr>
<td>2</td>
<td>367</td>
<td>398</td>
<td>426</td>
<td>457</td>
<td>487</td>
<td>518</td>
<td>548</td>
<td>579</td>
<td>609</td>
<td>630</td>
<td>660</td>
<td>691</td>
</tr>
<tr>
<td>3</td>
<td>368</td>
<td>399</td>
<td>427</td>
<td>458</td>
<td>488</td>
<td>519</td>
<td>549</td>
<td>580</td>
<td>611</td>
<td>641</td>
<td>672</td>
<td>702</td>
</tr>
<tr>
<td>4</td>
<td>369</td>
<td>400</td>
<td>428</td>
<td>459</td>
<td>489</td>
<td>520</td>
<td>550</td>
<td>581</td>
<td>612</td>
<td>642</td>
<td>673</td>
<td>703</td>
</tr>
<tr>
<td>5</td>
<td>370</td>
<td>401</td>
<td>429</td>
<td>460</td>
<td>490</td>
<td>521</td>
<td>551</td>
<td>582</td>
<td>613</td>
<td>643</td>
<td>674</td>
<td>704</td>
</tr>
<tr>
<td>6</td>
<td>371</td>
<td>402</td>
<td>430</td>
<td>461</td>
<td>491</td>
<td>522</td>
<td>552</td>
<td>583</td>
<td>614</td>
<td>644</td>
<td>675</td>
<td>705</td>
</tr>
<tr>
<td>7</td>
<td>372</td>
<td>403</td>
<td>431</td>
<td>462</td>
<td>492</td>
<td>523</td>
<td>553</td>
<td>584</td>
<td>615</td>
<td>645</td>
<td>676</td>
<td>706</td>
</tr>
<tr>
<td>8</td>
<td>373</td>
<td>404</td>
<td>432</td>
<td>463</td>
<td>493</td>
<td>524</td>
<td>554</td>
<td>585</td>
<td>616</td>
<td>646</td>
<td>677</td>
<td>707</td>
</tr>
<tr>
<td>9</td>
<td>374</td>
<td>405</td>
<td>433</td>
<td>464</td>
<td>494</td>
<td>525</td>
<td>555</td>
<td>586</td>
<td>617</td>
<td>647</td>
<td>678</td>
<td>708</td>
</tr>
<tr>
<td>10</td>
<td>375</td>
<td>406</td>
<td>434</td>
<td>465</td>
<td>495</td>
<td>526</td>
<td>556</td>
<td>587</td>
<td>618</td>
<td>648</td>
<td>679</td>
<td>709</td>
</tr>
<tr>
<td>11</td>
<td>376</td>
<td>407</td>
<td>435</td>
<td>466</td>
<td>496</td>
<td>527</td>
<td>557</td>
<td>588</td>
<td>619</td>
<td>649</td>
<td>680</td>
<td>710</td>
</tr>
<tr>
<td>12</td>
<td>377</td>
<td>408</td>
<td>436</td>
<td>467</td>
<td>497</td>
<td>528</td>
<td>558</td>
<td>589</td>
<td>620</td>
<td>650</td>
<td>681</td>
<td>711</td>
</tr>
<tr>
<td>13</td>
<td>378</td>
<td>409</td>
<td>437</td>
<td>468</td>
<td>498</td>
<td>529</td>
<td>559</td>
<td>590</td>
<td>621</td>
<td>651</td>
<td>682</td>
<td>712</td>
</tr>
<tr>
<td>14</td>
<td>379</td>
<td>410</td>
<td>438</td>
<td>469</td>
<td>499</td>
<td>530</td>
<td>560</td>
<td>591</td>
<td>622</td>
<td>652</td>
<td>683</td>
<td>713</td>
</tr>
<tr>
<td>15</td>
<td>380</td>
<td>411</td>
<td>439</td>
<td>470</td>
<td>500</td>
<td>531</td>
<td>561</td>
<td>592</td>
<td>623</td>
<td>653</td>
<td>684</td>
<td>714</td>
</tr>
<tr>
<td>16</td>
<td>381</td>
<td>412</td>
<td>440</td>
<td>471</td>
<td>501</td>
<td>532</td>
<td>562</td>
<td>593</td>
<td>624</td>
<td>654</td>
<td>685</td>
<td>715</td>
</tr>
<tr>
<td>17</td>
<td>382</td>
<td>413</td>
<td>441</td>
<td>472</td>
<td>502</td>
<td>533</td>
<td>563</td>
<td>594</td>
<td>625</td>
<td>655</td>
<td>686</td>
<td>716</td>
</tr>
<tr>
<td>18</td>
<td>383</td>
<td>414</td>
<td>442</td>
<td>473</td>
<td>503</td>
<td>534</td>
<td>564</td>
<td>595</td>
<td>626</td>
<td>656</td>
<td>687</td>
<td>717</td>
</tr>
<tr>
<td>19</td>
<td>384</td>
<td>415</td>
<td>443</td>
<td>474</td>
<td>504</td>
<td>535</td>
<td>565</td>
<td>596</td>
<td>627</td>
<td>657</td>
<td>688</td>
<td>718</td>
</tr>
<tr>
<td>20</td>
<td>385</td>
<td>416</td>
<td>444</td>
<td>475</td>
<td>505</td>
<td>536</td>
<td>566</td>
<td>597</td>
<td>628</td>
<td>658</td>
<td>689</td>
<td>719</td>
</tr>
<tr>
<td>21</td>
<td>386</td>
<td>417</td>
<td>445</td>
<td>476</td>
<td>506</td>
<td>537</td>
<td>567</td>
<td>598</td>
<td>629</td>
<td>659</td>
<td>690</td>
<td>720</td>
</tr>
<tr>
<td>22</td>
<td>387</td>
<td>418</td>
<td>446</td>
<td>477</td>
<td>507</td>
<td>538</td>
<td>568</td>
<td>599</td>
<td>630</td>
<td>660</td>
<td>691</td>
<td>721</td>
</tr>
<tr>
<td>23</td>
<td>388</td>
<td>419</td>
<td>447</td>
<td>478</td>
<td>508</td>
<td>539</td>
<td>569</td>
<td>600</td>
<td>631</td>
<td>661</td>
<td>692</td>
<td>722</td>
</tr>
<tr>
<td>24</td>
<td>389</td>
<td>420</td>
<td>448</td>
<td>479</td>
<td>509</td>
<td>540</td>
<td>570</td>
<td>601</td>
<td>632</td>
<td>662</td>
<td>693</td>
<td>723</td>
</tr>
<tr>
<td>25</td>
<td>390</td>
<td>421</td>
<td>449</td>
<td>480</td>
<td>510</td>
<td>541</td>
<td>571</td>
<td>602</td>
<td>633</td>
<td>663</td>
<td>694</td>
<td>724</td>
</tr>
<tr>
<td>26</td>
<td>391</td>
<td>422</td>
<td>450</td>
<td>481</td>
<td>511</td>
<td>542</td>
<td>572</td>
<td>603</td>
<td>634</td>
<td>664</td>
<td>695</td>
<td>725</td>
</tr>
<tr>
<td>27</td>
<td>392</td>
<td>423</td>
<td>451</td>
<td>482</td>
<td>512</td>
<td>543</td>
<td>573</td>
<td>604</td>
<td>635</td>
<td>665</td>
<td>696</td>
<td>726</td>
</tr>
<tr>
<td>28</td>
<td>393</td>
<td>424</td>
<td>452</td>
<td>483</td>
<td>513</td>
<td>544</td>
<td>574</td>
<td>605</td>
<td>636</td>
<td>666</td>
<td>697</td>
<td>727</td>
</tr>
<tr>
<td>29</td>
<td>394</td>
<td>425</td>
<td>453</td>
<td>484</td>
<td>514</td>
<td>545</td>
<td>575</td>
<td>606</td>
<td>637</td>
<td>667</td>
<td>698</td>
<td>728</td>
</tr>
<tr>
<td>30</td>
<td>395</td>
<td>426</td>
<td>454</td>
<td>485</td>
<td>515</td>
<td>546</td>
<td>576</td>
<td>607</td>
<td>638</td>
<td>668</td>
<td>699</td>
<td>729</td>
</tr>
<tr>
<td>31</td>
<td>396</td>
<td>427</td>
<td>455</td>
<td>516</td>
<td>577</td>
<td>608</td>
<td>669</td>
<td>730</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
21.21:47 is S. T. @ L 13° 40' ascending in T. H.; change it to 21.20:107
Minus 1:52 the excess S. T. (correction for
28m.)

'21.19.55 = S. T. when the desired 13° 12'
Π is on the ascendant, and this is the Sidereal Time at Epoch.

To Find the Time of Epoch

Take from Raphael's Ephemeris* the Sidereal Time on the Day of Epoch. The difference between it and the S. T. at Epoch will give the time of the Epoch. In other words, when the S. T. of the desired ascendant of Epoch is found, as above, from it always subtract the S. T. at noon on Epoch Day as given in ephemeris. Thus:

- 4.07:07 S. T. noon May 24, 1920, the Epoch Day.

17.12:48 When this result is over 12.00:00, then 12 hours must be subtracted from it, the remainder being the time in A. M.

-12.00:00

† 5.12:48 A. M. is the time of Epoch. The Moon's place at this time will represent the degree ascending at BIRTH.

How To Find Moon's Place at Moment of Epoch

The next problem is "how much before or after Noon did Epoch occur, and where was the Moon at that moment?"

* Raphael's Ephemeris was used in this example because it quotes the seconds of Sidereal Time as well as the seconds of Moon's Longitude. The Simplified Ephemeris does the same commencing 1937.

† If we had desired to study the horoscope of the Pre-Natal Epoch, the time just derived would be the approximate time to use for its erection, subject to a slight adjustment due to the Moon's changed place caused by the corrected time of birth. In this example we have no need for such horoscope and we use the derived time only for the purpose of finding the Moon's place at that moment, because it is the degree to place on the ascendant of the birth chart.
6:16 A.M. is Noon Mark for 86° West Longitude, (presuming that the mother was there 10 lunar months before birth), call it

6:16 60 A.M. noon mark.
— 5:12:48 time of Epoch.

1. 103:12 = Amount of time Epoch occurred before the Noon Mark. Omit the 12 seconds, call it 1h 3m and turn it into logarithm 1.3590.

Now find motion of Moon on Epoch Day:

\[ 11^\circ38'54" \] on May 25, 1920; change it to
\[ 41^\circ38'54" \] then subtract position on May 24
less \[ 28^\circ11'46" \] \( \varpi \) on May 24

\[ 13^\circ27'08" = \text{Moon's motion} = \text{logarithm} \ 0.2515. \]

To this log. always add the previously found log.

\[ 0.2515 \]
\[ 1.3590 \]

1.6105 = 0° 35'. This amount is minus because in this example Epoch occurred before the Noon Mark, therefore subtract the amount from Moon's place in Ephemeris on Epoch Day, May 24, 1920.

\[ 28^\circ11'46" \] in \( \lambda \) on Epoch Day.

minus \[ 0^\circ 35'00" \]

\[ 27^\circ36'46" \] \( \varpi \) in \( \lambda \) at time of Epoch. This position of the Moon at time of Epoch represents the degree, minute and second to put on the ascendant of the birth chart. In other words, it is the corrected ascendant of the nativity.

But we perceive that it will not do in this case, as the given time of birth supposed to have been observed fairly correctly, as indicated in the estimate chart, calls for \[ 2^\circ 26' \] (approximately) as being the degree ascending. But let us proceed with the example and find the time of day when \( 27^\circ 36'46" \) is ascending, which is intended, ordinarily, to be the rectified time of birth.
Refer to No. 2 Simplified Tables of Houses, page 28, gives Ω. 27° 41' ascending in latitude 42° N., which is 5' of longitude in excess of what is desired (27° 36'). The table of "Relation of Longitude to Sidereal Time," page 697, shows 5' of longitude in excess would be equivalent to 20 sec. of S. T. in excess. The Table of Houses show

S. T. 3.14:15 when Ω. 27° 41' ascends
minus :20


For convenience change S. T. 3.13:55 to be suitable for subtraction by adding the circle of 24 hours and transposing the minutes.

S. T. 3.13:55 transposed is 26.73:55
minus 21.43:44 = S.T. noon on birth
day, Feb. 16, 1921.
5.30:11 P. M. should represent the corrected time of birth.

5.55:60 P. M. = observed birth time.
— 5.30:11 = time of birth as calculated.

0.25:49 difference. This discrepancy is too great, and, furthermore it places the wrong sign on the birth ascendant, i.e., Ω instead of Ω. The difference is further increased by the fact that in places at 86° West Longitude the clocks are 16 minutes slow. Hence, when a given or observed birth time is stated as 5:56 p. m. it must be adjusted to 5:56
+ 16

6:12 p. m. as the mean local given time. Consequently the pre-natal calculations should derive a time close to this figure. In this case the difference is 6.12
— 5.30

.042 minutes difference. The pre-natal calculations should always provide a corrected birth time close to the estimated mean local time. Otherwise (as in this case) they show that it is not a "regular" epoch and must
be discarded and new calculations made involving an "irregular" epoch. The operations are similar, except that the Moon's sign at birth (\(\Pi\) in this case) should be reversed and the opposite sign (\(\nabla\)) used instead, as shown in the example on next page.

Table of The Approximate Relation of Longitude to Sidereal Time

| 1' of Long. | = | 4 S of S. T. |
| 2' of Long. | = | 8 S of S. T. |
| 3' of Long. | = | 12 S of S. T. |
| 4' of Long. | = | 16 S of S. T. |
| 5' of Long. | = | 20 S of S. T. |
| 6' of Long. | = | 24 S of S. T. |
| 7' of Long. | = | 28 S of S. T. |
| 8' of Long. | = | 32 S of S. T. |
| 9' of Long. | = | 36 S of S. T. |
| 10' of Long. | = | 40 S of S. T. |
| 11' of Long. | = | 44 S of S. T. |
| 12' of Long. | = | 48 S of S. T. |
| 13' of Long. | = | 52 S of S. T. |
| 14' of Long. | = | 56 S of S. T. |
| 15' of Long. | = | 60 S or 1 M of S. T. |
| 16' of Long. | = | 64 S or 1 M 4 S of S. T. |
| 17' of Long. | = | 68 S or 1 M 8 S of S. T. |
| 18' of Long. | = | 72 S or 1 M 12 S of S. T. |
| 19' of Long. | = | 76 S or 1 M 16 S of S. T. |
| 20' of Long. | = | 80 S or 1 M 20 S of S. T. |
| 30' of Long. | = | 120 S or 2 M of S. T. |
| 45' of Long. | = | 180 S or 3 M of S. T. |
| 60' of Long. | = | 240 S or 4 M of S. T. |

*Note: The example on page 695 for finding motion of Moon on Epoch Day, should more properly have used May 23rd and 24th, because epoch time (5.12:48) occurred before the Noon Mark (6:16 a.m.).*
PROCESS FOR "IRREGULAR" EPOCH

Use all the same Elements as in the previous example and work along in the same manner except that we use the sign and degree opposite to the birth Moon for determining the time of Epoch.

Male, born Feb. 16, 1921, Lat. 42° N., Long. 86° W. 5:56 p. m. given (clock) time. Noon Mark is 6:16 a. m.

Feb. 16 is 412th day
— 273

139th day = May 19 but the period is to be less than 273 and on Epoch Day D is to be in sign ascending at birth (2° 26' approx.). On May 24 D crosses 2° 26', so it is the Epoch Day.

Element No. 3, A is to be reversed, that is, the D sign at birth (II) should be setting instead of rising, at time of Epoch, and the sign opposite D at birth (I) will be rising at exact time.

Element No. 3, A: This regularly calls for the increasing Moon's place at birth (II 13° 12') to be rising at time of Epoch. But for an "irregular" Epoch use the sign and degree opposite (I 13° 12') to be rising at time of Epoch. Or, in other words, instead of D place at birth rising at time of epoch, it will be setting.

Refer to No. 2 T. H., page 33, Latitude 42° and note that the nearest ascendant is given as I 13° 17' which is 5 minutes more than that required; hence the corresponding S. T. 12.14:41 must be reduced an equivalent to 5 minutes. The table of "Relation of Longitude To Sideral Time" (page 697) shows that 5m of longitude is equal to 20s of S. T.; so

12.14:41 S. T. in T. 'H.
less 20

12.14:21 = S. T. when I 13° 12' is rising on Epoch day, May 24, 1920
minus 4.07:07 = S. T. at noon on Epoch Day.

8.07:14 P. M. = time of Epoch:
The Moon's place on Epoch day calculated to this time (8.07:14 p. m.) will represent the degree to be ascending at the corrected time of birth.

(Note: If a chart of the Pre-Natal Epoch is desired for other purposes, this is the approximate time, 8.07:14 P. M., May 24, 1920, by which it should be made, subject to a slight adjustment due to the Moon's changed place caused by the corrected time of birth.)

The next problem is to find how much after Noon Mark is 8.07:14? Noon Mark is 6.16 A. M., thence to noon is 6h 44m to which is added the 8.07:14 p. m.

11.60 = noon.
- 6.16 Noon Mark.

5.44 to noon.
+ 8.07:14 time of Epoch.

13.51:14 = amount of time Epoch occurred after Noon Mark. Call it 13.51. The logarithm for which is .2388.

Next, correct Moon's place in ephemeris on Epoch day, May 24, 1920, for the amount of its motion in this length of time.

11° 39' on May 24, 1920, add 30 degrees and call it 41°39'
minus 28°12' on May 24, 1920.

13.27 = logarithm .2515. Always add this log. to the one previously found.

.2388
+.2515

.4903 = 7°46' to be added to Moon's place on Epoch Day (added because Epoch occurred after the Noon Mark).

28°12' on Epoch Day.
+ 7°46' = 13h 52m since N. Mj.

35.58 = (Δ place at time of Epoch (8.07:14 P. M.),
It is seen that the Moon has left \( \odot \) and has gone into \( \mathfrak{M} \) 5° 58', and this position of Moon represents the rectified ascendant at birth.

It now remains to find the time of day when 5° 58' \( \mathfrak{M} \) ascends, as that will be the corrected birth time. T. H. No. 2, page 29, latitude 42° N. shows the nearest ascendant as 5° 40' \( \mathfrak{M} \), which is 18 minutes less than required. Consequently, the corresponding S. T. must be advanced the equivalent of 18 minutes of longitude. The table of "Relation of Longitude to Sidereal time" shows this equivalent as 1m 12s; to be added to the given S. T.

S. T. 3.55:26 when 5° 40' \( \mathfrak{M} \) ascending.

\[
3.56:38 = \text{S. T. when 5° 58' } \mathfrak{M} \text{ ascends.}
\]

S. T. 27.55:98 is 3.56:38 transposed for convenience.

\[
\text{minus } 21.43:44 = \text{S. T. at noon on birth day, Feb. 16, 1921.}
\]

6.12:54 P. M. = corrected mean local time at birth and is to be used for making the natal chart.

Recollect that the given birth time was said to be observed as 5.56 P. M. But clock time is 16m slow in longitude 86° W. Hence the observed time, 5.56 plus 16m would make 6.12 as the mean local time at the corrected observed or given time. It will be noticed that the correction by "irregular" Pre-Natal Epoch rules makes the actual time as 6.12:54 P. M., or only 54 seconds later.

Remarks: I have noticed many times that when Uranus is near the ascending or descending degree the Epoch is more apt to be "irregular" than regular; this being another interesting case of that sort as \( \odot \) is in \( \mathfrak{X} \) 5°, that is, opposite the ascending degree at birth. If the period is known to be but 7 months (Solar measure) count back 212 days from birth day to locate Epoch Day, instead of 273 days normally.

In the foregoing examples, properly the corrections to Sidereal Time should have been employed, but for simplicity of illustration they were here omitted. See p. 690.
In actual practice students will find there are several other variations of the "irregular" epoch which, reverse or interchange the regular rules. But the one adopted must be that which at Epoch renders a sex degree conforming to the gender of the native. This is a feature not within the scope of this review but is given treatment in the books previously mentioned.

It is hoped that this brief survey of the Pre-Natal Epoch will emphasize the value of this very interesting subject and serve as an introduction to its application.

FOR TECHNICAL STUDENTS

As we have shown on page 696, given time of birth 5:56 p.m. = 6:12 p.m. Mean local time. Estimate chart for this time (with correction added for time and long.) shows $\pi$ 6° 6' ascending; $\delta$ $^{\Pi}$ 13° 21.8 lat. 3° 37' S. which is equivalent to "R. A. Long."† $^{\Pi}$ 13° 47'. This is the accurate Descendant for the "Irregular" Epoch calculated on page 698; $\delta$ 13° 47' ascending. This gives S. T. 12:17:04. And 12:17:04 minus S. T. Noon May 24th minus cor. for time and long. = 8:07:40 p.m., accurate time of Epoch. The Moon's place at the time of Epoch as shown on page 699 is $\pi$ 5° 53' lat. 4° 56' S., which is equivalent† to $\pi$ 4° 1'.5, the accurate value for Rectified Ascendant of Birth. By using method shown in this article (and applying cor. for time and long.) the rectified mean local time of birth is easily found.

†Some investigations have indicated that the exchange between the Moon and Horizon planes takes place strictly on the basis of the Moon's "Right Ascensional Longitude"; that is, the longitude of the point where R. A. Plane, passing through $\delta$, intersects the ecliptic. This "R. A. Long." is found with facility by the use of Tables for Right Ascension with Latitude. The method is: Find the R. A. of $\delta$ at its actual latitude, then find Long. of that point on the ecliptic (i.e., with lat. 0°) having the same R. A. (as the $\delta$ at its actual latitude). This Long. of the point on the ecliptic is the desired "R. A. Long." to be used in all† Epochal calculations in place of $\delta$'s Zod. Long. calculated from the ephemeris. For illustration R. A. $^{\Pi}$ 13° 21.6 lat. 3° 31' S. is found from Tables to be 72° 24' 2. It is then found from Tables that 72° 24' 2 is the R. A. of $^{\Pi}$ 13° 47' lat. 0°. Therefore $^{\Pi}$ 13° 47' is the "R. A. Long." of the $\delta$ in $^{\Pi}$ 13° 21.6 lat. 3° 31' S.

‡‡For determining in what sex area the $\delta$ lies remember to use the Zodiacal Long. strictly.
THE ARABIC PARTS

The Several Parts Proper to the Twelve Houses of the Horoscope
According to the Historical Records of the Old Works,

Watch the progressions and transits over these Points, the aspects giving significance of benefit or anxiety concerning such matters signified by the nature of the aspects, whether favorable or unfavorable.

How to find the Arabic Parts

The Part of Life is taken by day and night from the degree of the preceding conjunction or opposition of the Lights unto the Moon in the Nativity, and accounting from the Ascendant, thus:
Part of Life Ascendant + 9 — New or Full Moon nearest before birth. ("By day" and "by night" has reference to the time of birth, "by day" meaning from sunrise to sunset, "by night" from sunset to sunrise.)

Example: In the Nativity following, a new Moon (conjunction) preceded it, in 16 degrees of Capricorn, according to Origannus. Tome II.

<table>
<thead>
<tr>
<th>Signs</th>
<th>11° 01' which equals</th>
<th>7 11 01</th>
</tr>
</thead>
<tbody>
<tr>
<td>D's radical place is X 16° 52'.</td>
<td>11 10 52 add</td>
<td></td>
</tr>
<tr>
<td></td>
<td>18 21 53</td>
<td></td>
</tr>
</tbody>
</table>

Conjunction of lights preceding birth, in 16° = 9 16 00 sub.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>9 5 53</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Therefore the Part of Life is in 16° 5° 53

THE 32 ARABIC PARTS

Parts Proper to the First House

1. Part of Life Asc. + D — New, or full moon nearest before birth
2. Part of Understanding Asc. + 3 — 9
3. Part of Spirit Asc. + ☎ — D

Parts Proper to the Second House

4. Part of Fortune Asc. + D — ☎
5. Part of Goods Asc. + cusp of 2nd — lord of 2nd

* This book is out of print.
PART V. ADDITIONAL STUDIES

Parts Proper to the Third House

6. Part of Brethren By day: Asc. + 24 - ²
   By night: Asc. + ² - 24

7. Part of the Love of Brethren Asc. + ¹ - ³

Parts Proper to the Fourth House

8. Part of the Father Asc. + 0 - ²

9. Part of Fortune in Husbandry Asc. + ² - ²

10. Part of Inheritances and Possessions Asc. + 3 - ²

Parts Proper to the Fifth House

11. Part of Male Children Asc. + 24 - ²

12. Part of Female Children Asc. + ² - ²

13. Part of Plays Asc. + ² - ³

Parts Proper to the Sixth House

14. Part of Sickness Asc. + ³ - ²

15. Part of Slavery and Bondage Asc. + ² - ² - Dispositor of ²

16. Part of Servants Asc. + ² - ²

Parts Proper to the Seventh House

17. Part of Marriage Asc. + cusp of 7th - ²

18. Part of Discord and Controversy Asc. + 24 - ³

Parts Proper to the Eighth House

19. Part of Death Asc. + cusp of 8th - ²

20. Part of the Perilous and Most Dangerous Year Asc. + lord of 8th - ²

Parts Proper to the Ninth House

21. Part of Faith Asc. + ² - ²

22. Part of Journeys by Water Asc. + 15° ² - ²

23. Part of Travels by Land Asc. + cusp of 9th - lord of 9th

Parts Proper to the Tenth House

24. Part of the Mother Asc. + ² - ²

25. Part of Nobility and Honor By day: Asc. + 19° ² - ²
   By night: Asc. + 3° ² - ²

26. Part of Sudden Advancement Asc. + ² - ² (If ² is common substitute 24)

27. Part of Magistracy and Profession Asc. + ² - ²

28. Part of Merchandise Asc. + ² - ² - Part of Spirit

Parts Proper to the Eleventh House

29. Part of Friends Asc. + ² - ²

30. Part of Honorable and Illustrious Acquaintance
    By day: Asc. + ² - ²
    By night: Asc. + ² - ²

Parts Proper to the Twelfth House

31. Part of Imprisonment, Sorrow, and Captivity Asc. + ³ - ³

32. Part of Private Enemies Asc. + cusp of 12th - lord of 12th
RESEARCH METHODS
FOR ASTROLOGICAL STUDENTS

An Introduction to the Principles of Statistical Analysis as Applied to Astrological Research

Students of astrology are increasingly aware of the need and value of the statistical method as an organized treatment of whatever branch of our science they are studying. They realize that the future of astrology rests in our ability to demonstrate its validity with data which will withstand scientific tests of significance. More and more, astrologers are coming to recognize that their science will be awarded the approval of universitatus just as soon as their claims are even partly proven correct by methods acceptable to scientists. It will teach us much to review in our minds a brief history of modern psychical research.

The past few decades have seen a complete turnabout face on the question of psychical phenomena. But it was not the many independent test-condition experiments, the vast well-authenticated literature on the subject, nor the roll-call of famous personages and intellectuals convinced of its reality, which wrought this academic revolution. The respect of the erstwhile materialistic school of thought was given only after many years of patient and exhaustive research into extra-sensory perception proved the reality of transcendentals. The results of this research were reported to the world in terms of statistics. Rigid statistics tested for significance and proved significant are the proving-ground for scientific acceptance.

The subject of astrology is now about to undergo this same sort of status reversal. The name of astrology will stand for all that is admirable and worthy of acceptance in American education. The great popularity of the subject, the roll-call of intellectuals interested in it, and the practicable worth of applied horoscopy to individuals,
however, will not bring about the recognition and attention which astrology deserves, however. Only systematic research by established, rigid statistical methods will win for our cosmic science the station in education we seek for it.

Many statistical techniques are elaborate and rigorous to apply. This fact has discouraged many ambitious students of astrology who are willing to engage in orderly research. Another deterrent to more wide-spread enthusiasm has been the total lack of any available, simple set of instructions describing how the less difficult methods of analysis may be adapted and applied to astrology in particular. Astrological research is subject to numerous peculiarities of approach not shared by research in the other social sciences. Elementary textbooks on-statistical analysis have confined their instructions and examples to social problems, economics and biometry. And advanced textbooks are usually unintelligible to the individual without a prerequisite mastery of higher algebra and the calculus.

Astrological students are constantly aware of the potential contribution to scientific progress that lies unorganized in their files and notebooks for the reasons stated. Even the beginner often possesses a wealth of raw information (birth and inception data, historical and case notes, etc.) that he has compiled in the passing of time. If collated and treated, this refined information may be of great value to astrologers and astrology as well as the world as a whole.

Tests of Significance

It is our aim in this article to introduce to students the general nature of statistical analysis and to present the more common and doubtless most valuable methods for determining whether the data one has collected is significant from a scientific viewpoint. Any analytic method in research is ordinarily called a test of significance. A test of significance may be defined as a determination whether or not a measure of unusualness is greater than can reasonably be attributed to chance alone. In standard laboratory practice it is assumed that
if the characteristic in question actually is found to occur a certain number of times more than its probability of occurrence, it has a corresponding degree of unusualness and is therefore significant.

In statistical terminology, the probability of its occurrence is known as its theoretical frequency or its expectation. The actual number of its occurrences is called its observed frequency or its incidence.

For example, in tossing a coin forty times, the theoretical frequency of its turning up heads is 50% of the time, or twenty times. But suppose that actual observation, by counting the number of heads and tails in the series of forty tosses, shows that heads appeared 23 times and tails only 17 times. The actual, observed frequency, then, differed from what we might expect. It then behooves the coin-tosser to subject this situation to a mathematical analysis, to learn whether 23 heads could reasonably turn up by chance alone. The steps to take are very simple. In our illustration here, it is found that there was nothing unusual about the higher percentage of heads, because, according to probability theory, it is not unusual when between 14 and 26 items occur out of 40 if their probability of occurrence is 50%. We will learn shortly how to reckon these margins of allowance for chance-occurrence.

How might this scientific theory of probabilities be applied to astrological research? Let us take sign-positions of the Moon as an example. The probability of any event or individual's birth with the Moon in a given sign is 1/12th of the time, or 8.333% of the time. For mathematical reasons we state that the probability is .08333, or, writing it, we say, \( P = .08333 \). Suppose we collected one hundred birth-charts of persons suffering from a specific disease or possessed of a common trait. And that twenty, rather than eight, of these persons were born with the Moon in one sign, while only two of the hundred have their natal Moons in another sign. We refer to the tally of 100 Lunar positions as a frequency distribution.

It is apparent, then, that the observed frequency for one sign is 20% while we should expect only 8.333% of
the charts to show the Moon so situated. And that only 2% of the charts show the Moon in the other sign, whereas, if there was nothing to the astrological theory, we should anticipate the birthdates in question to have the Moon fairly evenly distributed among the zodiacal sectors. It behooves us, however, to test the significance of the observed frequencies before we can be justified in assuming that the uneven distribution found did not occur by chance.

In making this test, it is important that we proceed on the hypothesis that the observed distribution of the Moon among the signs actually did take place by chance alone and that there are no grounds for a belief in an astrological explanation of the deviations. In other words, we must try to disprove astrology, rather than nurture any bias in favor of an astrological tenet. Every test of significance is made in an effort to prove that chance and nothing else accounts for the discrepancies. In standard statistical practice, we call this negative approach a null hypothesis. Then, if the data under consideration passes the test of significance, we will be forced to reject the null hypothesis and concede that there actually is an influence or conditioning factor in the Moon’s position which accounts for the variations noted.

**Statistical Induction: The Sampling Theory**

Let us now learn the rudiments of the method by first considering the scientific theory underlying probability, and give the reader simple directions how to make the test of significance in sign-positions of faster-moving celestial bodies, and other important astrological factors. The basic principle involved is universally known as the sampling theory. A simple comprehension of the sampling theory is essential for proficiency in any handling of data by statistical techniques. In order to give the reader an appreciation and adequate description of the sampling theory, let us dramatize its purpose and practice.

It would surely be an impossible task to compile the birthdata of every victim of a given disease. The mass of data would be too great to handle in its entirety even
if it were possible to obtain. Should an entomologist wish to accurately determine the wing-span of the adult gall wasp, it would be foolish for him to even attempt the capture andometry of every adult gall wasp in the world. The average of his measurements of the wing spreads of several thousand specimens, gleaned from their habitats everywhere, however, would be nearly or exactly the same as the average spread of every gall wasp in the world. In preparing his scientific report, he could confidently state the wing-span of mature gall wasps. Or should a botanist wish to mention in his textbook the structural characteristics of a particular species of swamp fern, he would undertake the careful study of a large number of representative specimens. Averaging the measurements of their fronds, the size of stomata and other constitutional features, he could authoritatively describe the characteristics of that species of fern. In other words, definite information about an entire species can be arrived at through statistical analysis of a sample number of representative items.

The entire mass of data relating to one characteristic is called a universe, inasmuch as it represents the total population of the data concerned. The attribute of the population which is being estimated from the study is termed a parameter. The items selected from that population as representative of its whole are referred to collectively as the sample. Finally, the results from study of the sample are expressed mathematically and are called statistics. It is important that the student learn the meaning of these terms and to use them in practice if he is intent upon appreciating and becoming deft in statistical procedures.

The term “population” has a special and frequent use in statistical analysis. We speak of a “population” whenever we are referring to an aggregate. The aggregate may be of persons, things, individual measures, or simply any class of objects or subjects which have in common certain characteristics or causes. The word may be used where we mean the parent population of which a given sample is held to be representative. Or it may designate a purely hypothetical population from which
the sample may or may not have been taken. Hence, in statistical literature, we read of a population of pumpkins, a population of deaf mutes, a population of commodity prices, ad infinitum.

We understand now that a sample of the total population of anything, a cross-section of its universe, enables us to generalize concerning the universe from which the sample is drawn. The sampling process is itself a special problem, as it becomes the duty of the investigator to see to it that the variates (individual cases) composing his cross-section are selected at random and are therefore truly representative of the whole. The process of random sampling in some cases has become itself an art within science.

In astrological research, however, we are seldom confronted with this problem of random sampling, by virtue of the fact that the human race is so immense numerically and births are nearly continuous (one baby born every thirteen seconds in the United States alone), that any ordinary compilation of birthcharts will meet the requirements of true randomness of selection. Nevertheless, even in a sample array of birthcharts, break-downs are often necessary. A break-down is a further arrangement of the items in the array by natural classifications inherent in the sample itself. For instance, in any fine analysis, the charts of males and females should be dealt with separately at first, then combined in the final interpretation. Age, occupation, social class, educational level, marital status, nationality, and even religion, are customary break-downs. Why such stratifications are desirable and often necessary in an astrological project should be obvious even to the layman.

In order to make as comprehensive an analysis as possible, the number of variates in the sample should be as large as possible without its becoming too bulky to handle conveniently. Furthermore, this sample must be a selection without bias or prejudice for preconceived ideas or notions. Astrological workers should not be guilty of rejecting from their sample cases which on the surface appear to be contrary to their beliefs, or of using only cases which they believe will corroborate their con-
cept. It will harm more than help the cause of astrology if the sample is deliberately misrepresented. On the other hand, it is wise to reject cases which are questionable in authenticity or whose inclusion will bring adverse criticism for slip-shoddiness by scientists who doubtless will check the validity and accuracy of the data used after it has been published. A recent problem of this nature presented itself in an analysis of stock-market fluctuations during a fifty-year period for which daily records are available. It was decided to exclude from the project any items which represented market activity during the first few months after expiration of the bank moratorium of 1933. Rates of increase in stock prices were so hectic and rapid, inclusion of that action in a market analysis would so distort arithmetic means, et cetera, it would be foolishness, even a scientific "boner," to do so.

According to theory, a random sample of thirty or more cases will serve to give reasonably accurate results from a study of frequency of distribution. Because of the great number of variables comprising an astrological distribution (12 in the case of signs, 36 in the case of decanates, 4 in the case of Lunar quarters, 144 in the case of dual sign combinations, etc.), it is wise to establish minimum sample sizes in accordance with the number of variables in question. A sample of 100 cases would be a confident minimum for truly valid results for a sign analysis; 306 should be quite adequate for decanate analysis. Where Lunar quarters are entailed, 36 are sufficient. The size of the adequate sample obviously depends upon the number of variables and upon the size of the universe. For instance, an analysis of factors in the charts of American Presidents will be made of the total population of Presidents to date, and the issue of sample size does not enter the problem. But if the Lunar positions of infantile paralysis victims are to be tabulated, no less than one hundred cases should be considered with confidence.

Probability and the Standard Deviation

This is not the place to engage in a lengthy discourse on the technical phases of probability theory, but we are
obligated to make mention of certain facts which the student should always bear in mind. The mechanics of probability are rather simple, as was suggested by the coin-tossing illustration. The mathematics, however, are quite complicated, which limits the average student to the lone responsibility of becoming familiar with the use of tables and the elementary arithmetic required for their use. The purpose of this article is purely to introduce the subject and instruct in the use of the simplest tests of significance. We wish to show you how to determine whether an observed incidence of an astrological factor varies enough from evenness to have a significant degree of unusualness.

The expected frequency of a Lunar sign transit in any birthchart or given moment of time is 1/12th of the time, or 8.333%, as we have stated. But we also learned that it is not unusual to find more or less than .08333 of birthcharts in a sample to have the Moon in any given division of the ecliptic. In other words, there is a definite "margin for error" around the exact figure of the theoretical frequency, in which a factor might fall and continue to be classed as normal. The standard deviation is a mathematical device which defines the limits of this allowance. The value for the standard deviation of any sampling distribution depends upon the probability of occurrence of the parameter, the probability of its not occurring, and the numerical size of the sample itself. For instance, the standard deviation of a sample of 100, where the probability of an occurrence is .08333, is 2.764. This tells us that we can always anticipate the observed number of trials in a series of 100 to lie within 8.333 plus and minus 2.764, or 5.569 and 11.097. In actual practice, this means that it is normal, that, out of 100 items, 8 items will have a particular characteristic, and we may reasonably suppose that no significance should be attached to the series if between 5 or 11 actually are found possessed of it.

The odds are even ("50-50") that the distribution occurred by chance alone when the observed frequency is 0.6745 the amount of the standard deviation. If the incidence is equal to the standard deviation, the odds against the disproportion occurring by chance alone are
2.15 to 1. If the incidence is twice the size of the standard deviation, the odds are 21 to 1 against this happening by chance alone. When the incidence is 3 times the standard deviation, the odds amount to 369 to 1 that the deviation found existing might have taken place by pure coincidence.

**TABLE I**

**Significant Levels of the Normal Distribution**

*In Ratios to the Standard Deviation*

<table>
<thead>
<tr>
<th>Ratio of Deviation to Standard Deviation</th>
<th>Probability of the Ratio Itself</th>
<th>Odds Against Chance Occurrence of Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.64485</td>
<td>.10</td>
<td>10 to 1</td>
</tr>
<tr>
<td>1.95996</td>
<td>.05</td>
<td>20 to 1</td>
</tr>
<tr>
<td>2.05375</td>
<td>.04</td>
<td>25 to 1</td>
</tr>
<tr>
<td>2.17009</td>
<td>.03</td>
<td>33.3 to 1</td>
</tr>
<tr>
<td>2.32635</td>
<td>.02</td>
<td>50 to 1</td>
</tr>
<tr>
<td>2.57583</td>
<td>.01</td>
<td>100 to 1</td>
</tr>
<tr>
<td>3.29053</td>
<td>.001</td>
<td>1,000 to 1</td>
</tr>
<tr>
<td>3.89059</td>
<td>.0001</td>
<td>10,000 to 1</td>
</tr>
<tr>
<td>4.41717</td>
<td>.00001</td>
<td>100,000 to 1</td>
</tr>
<tr>
<td>4.89184</td>
<td>.000001</td>
<td>1,000,000 to 1</td>
</tr>
<tr>
<td>5.32672</td>
<td>.0000001</td>
<td>10,000,000 to 1</td>
</tr>
<tr>
<td>5.73073</td>
<td>.00000001</td>
<td>100,000,000 to 1</td>
</tr>
<tr>
<td>6.10841</td>
<td>.000000001</td>
<td>1,000,000,000 to 1</td>
</tr>
</tbody>
</table>

Table I accompanying this article shows what are the odds for various ratios of the observed deviation to the standard deviation. This table is one of the most important instruments a research worker includes in his simple regalia. Its use, however, is a later step to venture, for one must learn how to figure this ratio. The
student should first determine what the standard deviation of his parameter is, either by calculation or by reference to a table. Table II tabulates the standard deviation for the expectations in samples of

**TABLE II**

*Expected Frequency and Standard Deviation Under Lunar Transit for Samples of Various Size.*

(Probability = .08333 = 1/12.)

<table>
<thead>
<tr>
<th>Sample Size</th>
<th>Expected Frequency</th>
<th>Standard Deviation</th>
<th>Sample Size</th>
<th>Expected Frequency</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>8.333</td>
<td>2.764</td>
<td>1000</td>
<td>83.333</td>
<td>8.740</td>
</tr>
<tr>
<td>200</td>
<td>16.667</td>
<td>3.909</td>
<td>2000</td>
<td>166.667</td>
<td>12.360</td>
</tr>
<tr>
<td>300</td>
<td>25.000</td>
<td>4.787</td>
<td>3000</td>
<td>250.000</td>
<td>15.138</td>
</tr>
<tr>
<td>400</td>
<td>33.333</td>
<td>5.528</td>
<td>4000</td>
<td>333.333</td>
<td>17.480</td>
</tr>
<tr>
<td>500</td>
<td>41.667</td>
<td>6.180</td>
<td>5000</td>
<td>416.667</td>
<td>19.543</td>
</tr>
<tr>
<td>600</td>
<td>50.000</td>
<td>6.700</td>
<td>6000</td>
<td>500.000</td>
<td>21.400</td>
</tr>
<tr>
<td>700</td>
<td>58.333</td>
<td>7.313</td>
<td>7000</td>
<td>583.333</td>
<td>23.124</td>
</tr>
<tr>
<td>800</td>
<td>66.667</td>
<td>7.817</td>
<td>8000</td>
<td>666.667</td>
<td>24.721</td>
</tr>
<tr>
<td>900</td>
<td>75.000</td>
<td>8.292</td>
<td>9000</td>
<td>750.000</td>
<td>26.223</td>
</tr>
</tbody>
</table>

various sizes for which the probability is exactly 1/12th. Its use is readily mastered. The first column lists the sample size. The second column shows what 1/12th of this number is. The third column gives the standard deviation for the theoretical frequency shown in column two. Table II applies, in precision work, only to Lunar sign-position, or to elements where the hypothetical frequency is a twelfth of the time.

The values listed in the first column of Table I are usually referred to as *levels of significance*, for they represent definite, discrete probabilities so small as to immediately reveal a *measure of unusualness*. Unusualness may be said to begin where the odds are 10 or more to 1 against chance occurrence for the noted deviation. In most scientific work, the .05 level (ratio = 1.96, odds 20 to 1) is generally considered to be the line of demarcation between normalcy and abnormalcy. Where astrological projects are concerned, unusualness should
begin at the .10 level, due to the myriads of variables which are the components of every birthchart. In other words, one's attention should be arrested by the unusualness of any situation in an astrological array of adequate size where the ratio exceeds 1.64. Any scientist would agree to our establishing the boundary of normalcy at this point. Whenever a ratio exceeds 1.64, we state that the statistic lies in the region of rejection. The term rejection here means that we have a value which departs sufficiently from the norm (or, mean) of expectation that we are behooved to reject the null hypothesis we started with, as discussed earlier.

Use of Table II may be illustrated for the benefit of the reader. Let us say that we have on hand a sample of 200 birthcharts of encephalitis patients, and that 27 of these are found with the Moon in Sign X. Normal expectation has it that 16.667 of these should have the Moon so posited by sign. The standard deviation for this size sample is 3.909. The difference between expectancy and incidence is 10.333, the ratio of which to 3.909 is 2.64. Entering Table I with this ratio, we see that it is greater than 2.58 which marks the .01 level of significance. This tells us that the odds are greater than 100 to 1 that the incidence should so greatly exceed the expectation by chance alone. The ratio found lies far into the region of rejection, so we must desert the null hypothesis and concede that Lunar occupancy of Sign X is associated with the disease in question.

The simplest test of significance, that which we are describing, is usually called the u-test to distinguish it from other tests. In order to outline the subject for the reader, let us make use of abbreviations which come in handy in actual fieldwork. Let P stand for the probability of a given event occurring, and Q for the probability that the event will not occur. Q is always (1-P); or the difference between the decimal P and unity (1.0000...). Then N will be the number of items (variates, cases) in the sample. M is the number of items in the sample which will share in this event (attribute, position, characteristic, nature, etc.) if the distribution is normal. M therefore is the theoretical frequency, or expectation.
Expressing \( P \) as a decimal at all times, multiply \( N \) by \( P \) to find \( M \), i.e., \( M = NP \). Then multiply \( M \) by \( Q \), or, expressing it otherwise, \( N \) times \( P \) times \( Q \). The standard deviation is the square root of \( NPQ \). None of this procedure is at all difficult, for simple multiplication is all that is necessary up to the point where one wishes to derive the square root of \( NPQ \). The square root is most easily found in a table of square roots, familiar to everybody. Where no such table is available, logarithms are handiest, five-place logarithms sufficing in every case. In fact, logarithms will shorten the process of the earlier multiplication itself.

In order to figure the ratio of the observed deviation to the standard deviation as computed, simply find the difference between the incidence and the expectation. Incidence may be symbolized by the letter \( F \), and the standard deviation by the letter \( S \). The difference between \( F \) and \( M \) may be abbreviated as \( X \). The all-important ratio is therefore: \((F-M)\) divided by \( S \), or, better, \( X \) divided by \( S \). There is nothing in any of these steps that is formidable or rigorous from the viewpoint of work. The u-test is the easiest, as well as the most prolific, test of significance at the command of an astrologer.

Astrological Probabilities

Table II was presented as a probability table for the Moon's position among the signs, for samples of various size. That is, the theoretical frequencies \((M)\) and standard deviations \((S)\) for different samples have already been computed for convenience. The other planets, however, do not have probabilities of exactly \(1/12\)th. The Sun's sign-positions vary because the earth, revolving in its elliptical orbit, attains perihelion in January and aphelion in July, causing the Sun to apparently transit the "summer signs" in greater lengths of time than it occupies the "winter signs." The other planets, in relation to the earth, under similar variations in the lengths of time spent in each ("tropical") sign. Tables III, IV and V give the sign-probabilities of the Sun, Mercury, and Mars, respectively, and are offered for their serviceability to students who might like to try their hand at
actual experimental work along analytical lines. Notice the surprising range of difference between Mars’ positions in various parts of the zodiac, being found in Leo, for instance, nearly one-tenth of the time. Similar tables for Venus cannot be computed, due to peculiarities in its cycle. For measuring significance of Venus’ sign-positions, one must balance the observed frequency against the percentage of time that planet is found in each space during the period covered by the birthdata one is working with.

Almost every astrological element has its distinct probability of occurrence; the Lunar quarters have each a P of 0.25 and a Q of 0.75, with PQ together equal to 0.1875. Even the mean amounts of time when planets are found in retrograde motion, are constant values (see Table VI). The probability of finding two celestial bodies within orb of aspects (for the orbs of various sizes) have been calculated.

<table>
<thead>
<tr>
<th>Planet</th>
<th>Dir.</th>
<th>Retro.</th>
<th>PQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>☉</td>
<td>0.80237</td>
<td>0.19763</td>
<td>0.15857</td>
</tr>
<tr>
<td>☉</td>
<td>0.82731</td>
<td>0.07219</td>
<td>0.06698</td>
</tr>
<tr>
<td>☉</td>
<td>0.90675</td>
<td>0.09325</td>
<td>0.08456</td>
</tr>
<tr>
<td>☉</td>
<td>0.89758</td>
<td>0.30252</td>
<td>0.21086</td>
</tr>
<tr>
<td>☉</td>
<td>0.83808</td>
<td>0.36394</td>
<td>0.23149</td>
</tr>
<tr>
<td>☉</td>
<td>0.58937</td>
<td>0.41063</td>
<td>0.24201</td>
</tr>
<tr>
<td>☉</td>
<td>0.59673</td>
<td>0.43125</td>
<td>0.24527</td>
</tr>
<tr>
<td>☉</td>
<td>0.55884</td>
<td>0.44116</td>
<td>0.24654</td>
</tr>
</tbody>
</table>
Table VII gives these values for orbs of 5°, 10° and 15°, for the major aspects separately and in combination. Ambitious students may perform a great service to themselves and their colleagues by undertaking the computation of various unavailable probability tables for specific conditions which may be met in general horoscopy. When workers have the proper tools, true progress is made. In the meantime, little can be accomplished by careless methods, as unscientific reports cannot be accepted by the editors of scientific journals. In everyday life and in the regular application of astrology to daily affairs, we are prone to overlook the fact that we are in a position to give the world something of true worth, something which will solve many thorny social problems; and something which may one day be regarded as the salvation of man from his own undoing.
Research Work Illustrated

Sun-Sign and Vocational Aptitude: An excellent way to excite interest in the statistical side of astrological work is to show a bona fide example of some sort in which the u-test is used with highly satisfactory results. For our illustration, our two arrays consist of the tabulated sign-positions at the birthdates of 2492 eminent clergymen, and of 621 notable male artists. Our samples are made up of every individual in these two categories whose full birthdate is given in the 14th edition of WHO'S WHO IN AMERICA. We could have selected, say, 400 of each profession by random sampling in that source-volume and obtained similar if not nearly identical results. As preliminary steps, we computed the theoretical frequencies and standard deviations in the manner prescribed for our two samples (cf differing size), the probabilities being the same. Our aim was to determine whether there was anything unusual about the distribution of the Sun's position through the signs at the births of men in these two somewhat divergent fields of activity and thought. Our arrays and primary data took shape as follows:

<table>
<thead>
<tr>
<th>Sun in Sign</th>
<th>Clergymen</th>
<th>Artists</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>M</td>
</tr>
<tr>
<td>Aries</td>
<td>192</td>
<td>208.02</td>
</tr>
<tr>
<td>Taurus</td>
<td>186</td>
<td>211.44</td>
</tr>
<tr>
<td>Gemini</td>
<td>196</td>
<td>213.87</td>
</tr>
<tr>
<td>Cancer</td>
<td>175</td>
<td>214.61</td>
</tr>
<tr>
<td>Leo</td>
<td>236</td>
<td>213.42</td>
</tr>
<tr>
<td>Virgo</td>
<td>230</td>
<td>210.67</td>
</tr>
<tr>
<td>Libra</td>
<td>233</td>
<td>207.15</td>
</tr>
<tr>
<td>Scorpio</td>
<td>208</td>
<td>203.83</td>
</tr>
<tr>
<td>Sagittarius</td>
<td>187</td>
<td>201.58</td>
</tr>
<tr>
<td>Capricorn</td>
<td>200</td>
<td>200.88</td>
</tr>
<tr>
<td>Aquarius</td>
<td>236</td>
<td>201.97</td>
</tr>
<tr>
<td>Pisces</td>
<td>204</td>
<td>204.56</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2492</td>
<td>2492.00</td>
</tr>
</tbody>
</table>

By finding the differences between the tallied numbers of clergymen and artists born with the Sun located in the various signs, it becomes apparent that a measure of
unusualness is actually exhibited in the array—an unusualness which exceeds the .05 level of significance in five instances, two among clerics, and three among artists. Five factors in the arrays are found with u-test ratios in the region of rejection beyond the point where the odds against chance explanation are 20 to 1 or more. You will recall that it is customary and rational in scientific procedure to reject null hypotheses when the ratio of the standard deviation and departure from true normalcy exceeds 1.96. When the ratio exceeds 2.58, the odds are more than 100 to 1, and there is little probability that the variation may reasonably be relegated to "coincidence."

It is noticeable from the outset that the Sun prefers to avoid the sign Cancer at clergymen's birthdates, while enjoying a distinct preference for Aquarius. As instructed, we computed the ratio of $X$ to $S$, and have the following to report:

Sun in Cancer: $X/S = -2.83$; Odds 215 to 1.
Sun in Aquarius: $X/S = 2.50$; Odds 81 to 1.

Why should the Sun in Cancer be so scarce a component in the birthcharts of eminent clergymen? And why should it be found an occupant of the sign Aquarius so frequently? Surely, one cannot read the delineations for Sun in Cancer and Aquarius given in Llewellyn George's masterly "A to Z Horoscope Maker and Delineator" without being impressed by the deliberate mention of traits and general qualities associated with these positions as parts of the psychological apparatus of individuals with strong religious inclinations, or lack of them. Every student of astrology is well aware of the spiritual prowess and metaphysical inclinations of natives with the Sun in Aquarius.

Three factors in the array of artists' Sun positions stand out with significant ratios. These are the preferential of Scorpio in Aquarius, and its avoidance of Scorpio and Capricorn. The ratios read:

Sun in Scorpio: $X/S = -3.48$; Odds 2000 to 1.
Sun in Capricorn: $X/S = -2.07$; Odds 260 to 1.
Sun in Aquarius: $X/S = 2.45$; Odds 70 to 1.
According to astrology, Scorpio and Capricorn are essentially "coarse" signs, falling, as they do under the rulerships of Mars and Saturn, respectively. Hence it is no surprise that these signs register lowest as producers of artistically inclined individuals. Aquarius, the introvert, the harmony-lover, with Prometheus foresight- edness and Uranian appreciation of subtilities, stands out with both artists and clergymen, corroborating the astrological theory. Simple little research projects prove astrology, vindicate the wisdom of its scholars, and serve to enrich the fund of our knowledge.

**Mars and Major Marine Disasters:** Making use of the Mars sign-probability table, we tabulated the positions of that planet for the dates of the 339 major marine disasters since 1833 catalogued in the 1947 World Almanac and Book of Facts. More than 82,000 persons lost their lives in these tragedies on the high seas. No positive ratios found in the array exceeded the 0.05 point, but two negative ratios are 50 to 1 that the abnormalcy can be accounted for by chance. Mars avoids the signs Capricorn and Pisces so frequently at the eventuality of marine disasters, that the odds are 63 and 65 to 1, respectively, that the observed frequencies are so sparse by chance. That Mars in Capricorn should be a negative factor is understandable, for that position is a sort of damper on the trouble-making influence associated with that planet. Why Mars in Pisces is the rarest component is not quite clear to the writer; theories advanced by thoughtful students will probably prove enlightening as well as interesting. In passing, it is well to mention that the frequency of Mars in airy signs for these marine disasters is significant. This is fascinating in the light of the mundane astrological viewpoint which relates airy signs to the earth's atmosphere. With Mars as the disturbing factor, little wonder is it that the vast majority of marine disasters, quite naturally, are the dismal results of storms and other bad atmospheric conditions.

**Coalmine Disasters and Sun-square-Mars:** The U. S. Bureau of Mines published a list of the dates, localities and casualty tolls of the 143 worst mine disasters in American history (in which 20 or more men were killed). We decided to tabulate the longitudinal differences be-
between the Sun and Mars for these dates, to determine whether unfavorable aspects were more frequent than might reasonably be ascribed to coincidence. We learned that 34 of these 143 infamous days found the Sun and Mars within 15° of a square aspect, of which 24 quadratures were within an orb of 10°. Making use of the values given in Table VII, we discovered that this excess of square aspects over the expected mean was too significant to be sheer coincidence. The u-test ratio for the 15° orb squares was 2.24, for which the odds are 40 to 1 against chance. The u-test ratio for the closer 10° orb square aspects was 2.16, for which the odds amounted to 32 against 1. Surely, astrologers for ages have not been mistaken in their interpretation of the changing relationships between the heavenly bodies as viewed geocentrically.

The Chi-Square Test of Significance

It matters very little to the scientist and statistician whether the odds against chance-occurrence are 100 to 1 or 1000 to 1, so mastery and use of probability calculation is not essential to skill in statistical analysis. In practical usage, to demonstrate that a deviation has a measure of unusualness beyond the .10, .05 or .02 levels of significance is all that is required under most circumstances.

A simple, yet extremely useful, test easily adapted to the analysis of arrays in astrological research is commonly known as the chi-square test. It is so named because the critical factor used in making the test is conventionally abbreviated by the small Greek letter, chi, with an exponent of 2, meaning that the value of chi is squared. Chi-square is a measure of discrepancy between observation and hypothesis. The value chi-square reveals the magnitude of departure between numbers in an observed frequency distribution and what these numbers actually should be if the distribution were normal. The hypothesis, as always in such tests of significance, states that the distribution is normal and that any deviations observed are the product of chance conditions.

To every value of chi-square there is a corresponding probability rating. When any computed value of chi-
square equals or exceeds the .05 level, we are behooved to attach significance to the data under test. Naturally, when the computed chi-square equals or exceeds the .05 point, the distribution under inspection obviously departs far enough from normalcy to deserve further attention. The significance of a calculated chi-square is evaluated by its size as compared with what the value should be if the distribution in each category were normal, or within reasonable proximity to normalcy. This evaluation is made by reference to a table of chi-square values for the various levels of significance at different class intervals. The class intervals used most often in astrological research are the twelve zodiacal signs (n = 12), the lunar quarters or sign-triplicities (n = 4), and fourfold groupings of the signs (n = 3). The letter-symbol n is used to distinguish this factor, and is usually called the number of degrees of freedom, for it tells in how many ways an item may vary in the series under scrutiny, i.e., the number of classes it can fall into.

Chi-square may technically be defined as the sum of the squares of observed deviations from an expected mean or means. It is readily apparent from this definition that the chi-square analysis is but another form of the simple u-test already treated with one important difference. This difference is that the u-test treats the class intervals singularly in the search for significance, while the chi-square test deals with the distribution as a whole.

In practice we wish to know whether the class interval positions of a planet in the cases making up our sample vary significantly from that of a normal distribution. If our calculated chi-square exceeds the chi-square value in the table at selected levels, then we must reject the original null hypothesis and concede that the observed distribution of the planet among the signs is such that it cannot be rationally imputed to chance alone.

Table VIII gives the corresponding values for chi-square at three levels of significance for numbers of degrees of freedom most often encountered in astrological research. Its use will be explained shortly, if it is not already apparent to the reader.
TABLE VIII

Table of Chi-Square for Numbers of Class Intervals

The column headings are selected levels of significance. Figures in the table are chi-square values at these levels. The stub of the table gives \( n \), the number of degrees of freedom (class intervals).

<table>
<thead>
<tr>
<th>( n )</th>
<th>.05 Level</th>
<th>.02 Level</th>
<th>.01 Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.481</td>
<td>6.412</td>
<td>6.635</td>
</tr>
<tr>
<td>2</td>
<td>5.991</td>
<td>7.824</td>
<td>9.210</td>
</tr>
<tr>
<td>3</td>
<td>7.815</td>
<td>9.837</td>
<td>11.341</td>
</tr>
<tr>
<td>4</td>
<td>9.488</td>
<td>11.668</td>
<td>13.277</td>
</tr>
<tr>
<td>5</td>
<td>11.070</td>
<td>13.388</td>
<td>15.086</td>
</tr>
<tr>
<td>6</td>
<td>12.592</td>
<td>15.033</td>
<td>16.812</td>
</tr>
<tr>
<td>7</td>
<td>14.067</td>
<td>16.622</td>
<td>18.475</td>
</tr>
<tr>
<td>8</td>
<td>15.507</td>
<td>18.168</td>
<td>20.090</td>
</tr>
<tr>
<td>9</td>
<td>16.919</td>
<td>19.679</td>
<td>21.666</td>
</tr>
<tr>
<td>10</td>
<td>18.307</td>
<td>21.161</td>
<td>23.209</td>
</tr>
<tr>
<td>11</td>
<td>19.675</td>
<td>22.618</td>
<td>24.725</td>
</tr>
<tr>
<td>12</td>
<td>21.026</td>
<td>24.054</td>
<td>26.217</td>
</tr>
<tr>
<td>18</td>
<td>23.587</td>
<td>30.985</td>
<td>33.409</td>
</tr>
<tr>
<td>24</td>
<td>36.415</td>
<td>40.270</td>
<td>42.980</td>
</tr>
<tr>
<td>30</td>
<td>43.779</td>
<td>47.962</td>
<td>50.882</td>
</tr>
</tbody>
</table>

Inspection of the table shows that, in order to be of any true significance whatsoever when dealing with projects where \( n = 12 \), the computed chi-square must be at least 21.026. When the class-intervals are four in number (as with projects analyzing possible significance in variations under the four Lunar quarters, quadrants, or
signs grouped by fours), the computed chi-square must equal or exceed 9.488 in order to have meaning.

Handled systematically, calculation of the chi-square for an array of data is rather simple and should offer no difficulties if the directions are followed faithfully. In ordinary problems, such as testing sign-positions of a planet, the work is arranged into steps through six columns.

Step 1. Let column (1) be a listing of class intervals.

Step 2. Tabulate the incidence figures in column (2), or the number of times the planet in question occupies the class interval in each row.

Step 3. Column (3) should be a listing of the expected number of times the planet occupies each respective class. This step is undertaken by multiplying the probability of the position and the number of variates in your sample. (The number of variates is \( N \), the number of cases in your sample, and is not to be confused with \( n \) which is the number of class intervals.) Under ordinary circumstances, give the figures of theoretical frequency to hundredths, or two decimal places.

Step 4. Column (4) is a tabulation of the differences in each row of the observed and theoretical frequencies. Successively subtract the values given in column (3) from the values given in column (2), entering them in (4).

Step 5. Square the values in column (4) and enter them in (5).

Step 6. Column (6) is a series of values derived by successively dividing the values in column (5) by the values in column (3).

Step 7. Total the values in column (6). This sum is chi-square.

Knowing the chi-square value of the array, consult Table VIII, entering the column giving the value of chi-square at the .05 level for the number of class intervals.
THE CHI-SQUARE TEST:
Zodiacal Distribution of the Sun
At Birthdates of 2492 Clergymen

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Γ</td>
<td>192</td>
<td>208.02</td>
<td>—</td>
<td>16.02</td>
<td>256.64</td>
</tr>
<tr>
<td>θ</td>
<td>188</td>
<td>211.44</td>
<td>—</td>
<td>23.44</td>
<td>549.43</td>
</tr>
<tr>
<td>Π</td>
<td>196</td>
<td>213.87</td>
<td>—</td>
<td>17.87</td>
<td>319.34</td>
</tr>
<tr>
<td>Ξ</td>
<td>175</td>
<td>214.61</td>
<td>—</td>
<td>36.61</td>
<td>568.95</td>
</tr>
<tr>
<td>Ω</td>
<td>236</td>
<td>213.42</td>
<td>22.58</td>
<td>509.86</td>
<td>2.389</td>
</tr>
<tr>
<td>π</td>
<td>230</td>
<td>210.67</td>
<td>19.33</td>
<td>373.65</td>
<td>1.774</td>
</tr>
<tr>
<td>θ</td>
<td>233</td>
<td>207.15</td>
<td>25.85</td>
<td>368.22</td>
<td>3.226</td>
</tr>
<tr>
<td>m</td>
<td>203</td>
<td>203.83</td>
<td>—</td>
<td>0.83</td>
<td>0.69</td>
</tr>
<tr>
<td>ι</td>
<td>199</td>
<td>201.56</td>
<td>—</td>
<td>2.56</td>
<td>6.55</td>
</tr>
<tr>
<td>γ</td>
<td>200</td>
<td>200.88</td>
<td>—</td>
<td>0.88</td>
<td>0.77</td>
</tr>
<tr>
<td>ε</td>
<td>236</td>
<td>201.97</td>
<td>34.03</td>
<td>1158.04</td>
<td>5.734</td>
</tr>
<tr>
<td>χ</td>
<td>204</td>
<td>204.50</td>
<td>—</td>
<td>0.56</td>
<td>0.31</td>
</tr>
<tr>
<td>—</td>
<td>2492</td>
<td>2492.00</td>
<td></td>
<td></td>
<td>Chi-Square = 25.800</td>
</tr>
</tbody>
</table>

If the tabular value is greater than the computed value, then the null hypothesis must be accepted and we conclude that the observed deviations do not vary sufficiently from normal to have significance. If the tabular value is smaller than the computed value, the null hypothesis must be rejected in favor of some other explanation than chance, for the odds are too great that the discrepancy is coincidental.

• If the chi-square test is passed and we are obligated to append genuine significance to the uneven distribution, we are further obligated to seek a possible explana-
tion for the discrepancy elsewhere than in our primary data. In other words, we are still unjustified in assuming that astrological influences account for the deviations. We must first demonstrate that factors intrinsic to our primary data are not to blame for the apparent abnormalcy. However, this condition applies mostly to tests of significance in Solar positions, and seldom will we have to make extra demonstrations in support of astrology when our analysis treats of other than Solar factors. Deviations found in arrays of Solar data might be otherwise accounted for in normal seasonal variations.

To show our readers what the worksheet for an average chi-square test looks like, following the directions just given, we present herewith a chi-square table of six columns for the Solar distribution among signs at the birthdates of 2492 eminent clergymen (the same array dealt with earlier from the u-test angle). The chi-square is most valuable, probably, for the reason that it reveals whether the departures from normalcy in the individual class intervals, as shown by the u-test ratios, are compensated for in the over-all distribution. In other words, a significant ratio from the u-test is "cinched" as scientifically valid if the chi-square test shows the over-all distribution sufficiently disrupted by normalcy in any of its class intervals. In preparing a conclusive scientific report on any astrological research project, it is a scholastic obligation to state the chi-square value for the whole distribution whenever an array is u-tested.

In our summation of the 2492 clergymen's natal Sun positions, the calculated chi-square is found to be 25.800, which exceeds both 21.026 at the .05 level and 24.954 at the .02 level. Hence, we must reject the null hypothesis and admit that the placements of the Sun in the array is sufficiently abnormal to be an influential factor in the psychic make-up of religious leaders. The non-uniformity found demands another hypothesis to explain itself. The logical line of reasoning leads directly to the astrological theory which claims, evidently with good reason, that the Sun is the primary differentiator of personality types. In turn, individual differences of temperament and behavior-patterns are influential in vocational aptitude or selection.
Hence, we see from the foregoing outline example the lines of procedure and thought which every astrological student and research worker must follow in order to test his data and evaluate his findings. The chi-square test is a method rich in opportunities for establishing as scientific fact many of the tenets and theories we ordinarily take for granted.

Correlation of Attributes

The analysis of degrees of correlation between any two sets of items or information is one of the more elaborate branches of statistical methods. However, one doing astrological research will not have frequent need for finding correlation coefficients of the complex sort taught in the textbooks, except in certain instances. There is a simple test of significance, though, which makes use of the chi-square principle in order to prove or disprove the existence of any correlation between two sets. This system makes use of what is known as a 2-by-2 classification, in the form of a fourfold table, for which reason it is often called the fourfold test. Its technical name is generally termed the correlation of attributes.

This test finds a wide variety of applications in astrological work. Because it is but another adaptation of the chi-square analysis, it is easily comprehended by students who have assimilated the fundamentals of the common tests already discussed. Again, simple arithmetic is all that is required, and those processes may be greatly simplified by the use of logarithms in performing every step but the preliminary addition. The accompanying figure is a standardized box-diagram with its various portions labelled by letters. Study the figure briefly and you will quickly arrive at an understanding of the entire procedure. The data used in every fourfold test must be put into a form in which two groups of data are possessed of common attributes in different proportions. That is, speaking conveniently, Category A is possessed by Conditions X and Y, and Category B also share in X and Y. However, the proportions of X and Y in either Category are different. The fourfold test is devised to learn how actually different, from the "significant" point of view, are these proportions in the two sets.