

ALAN LEO'S
ASTROLOGICAL TEXT BOOKS

CASTING THE HOROSCOPE
(ASTROLOGY FOR ALL PART II)

WITH EPHEMERIS

Diagram of Half the Sphere.

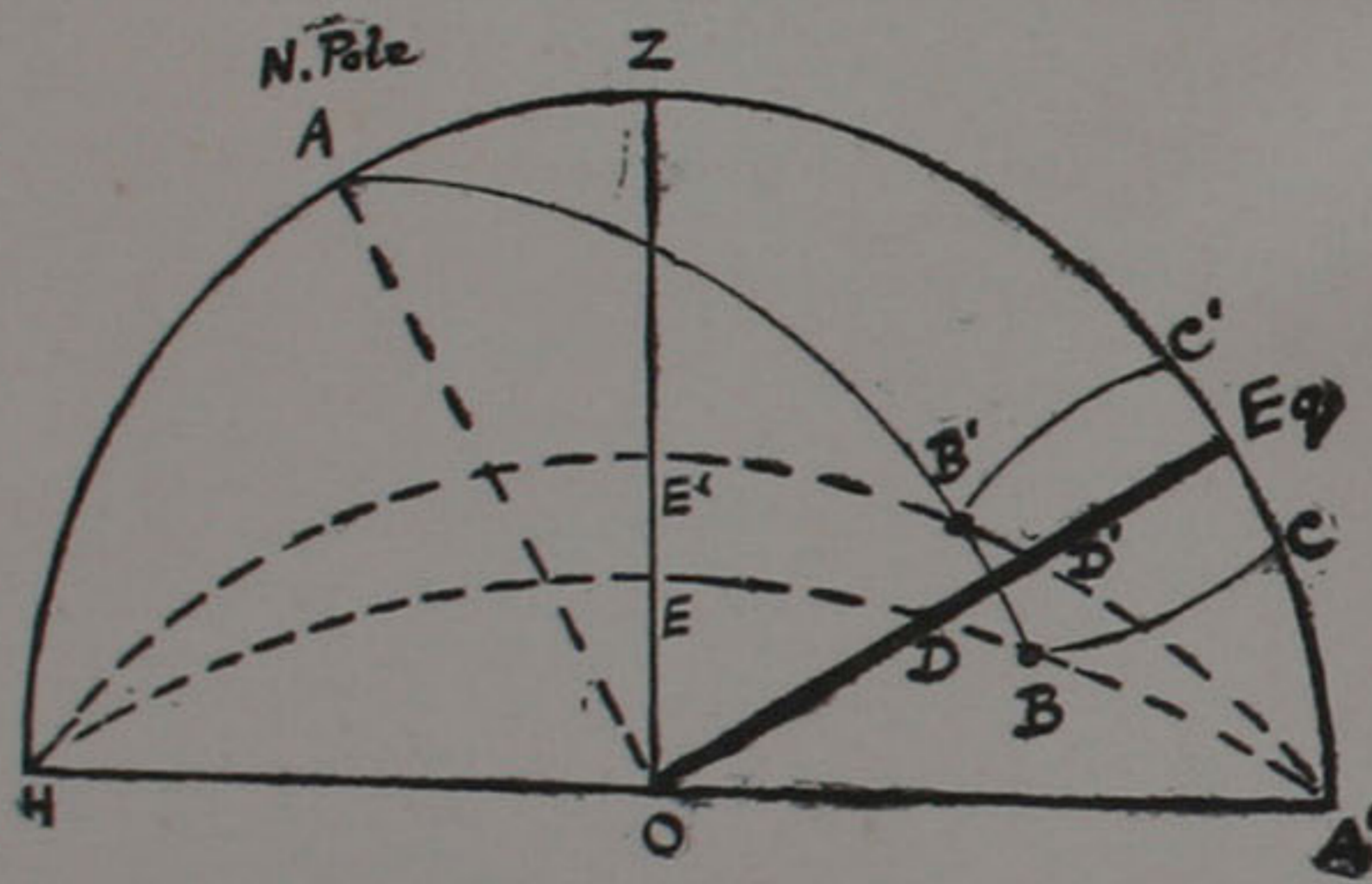


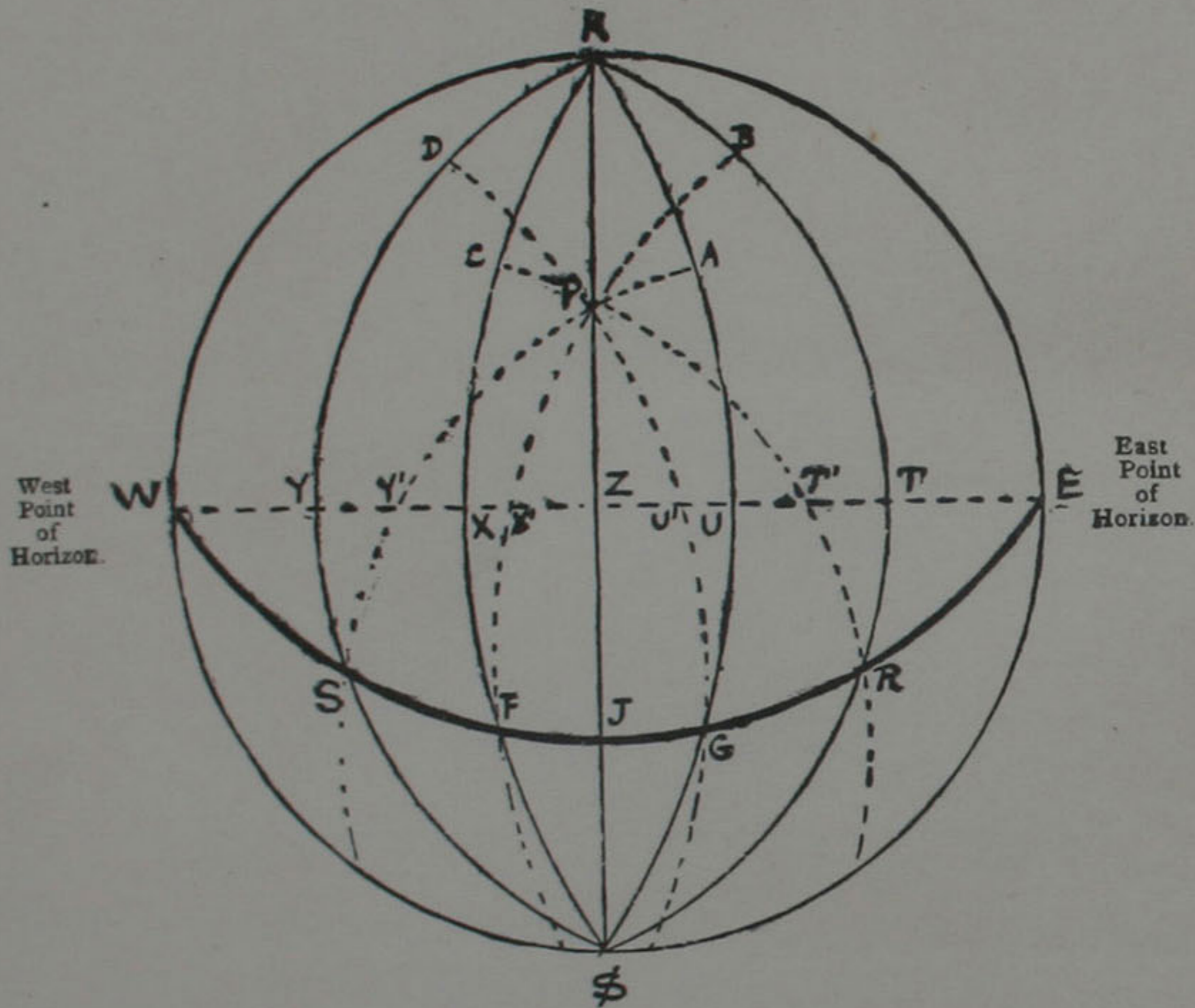
DIAGRAM EXPLAINING THE METHOD OF CALCULATING THE EXACT HOUSE-POSITION OF A PLANET.

SEE APPENDIX, P. 180.

Projection of Celestial Sphere on to Horizontal Plane (for $51^{\circ} 32'$ N. lat.)

REGIOMONTANUS.

North Point of Horizon.



South Point of Horizon.

(The thick line shews the Equator.)

Z is the Zenith. P is the North Pole of Heavens.

For REGIOMONTANUS:

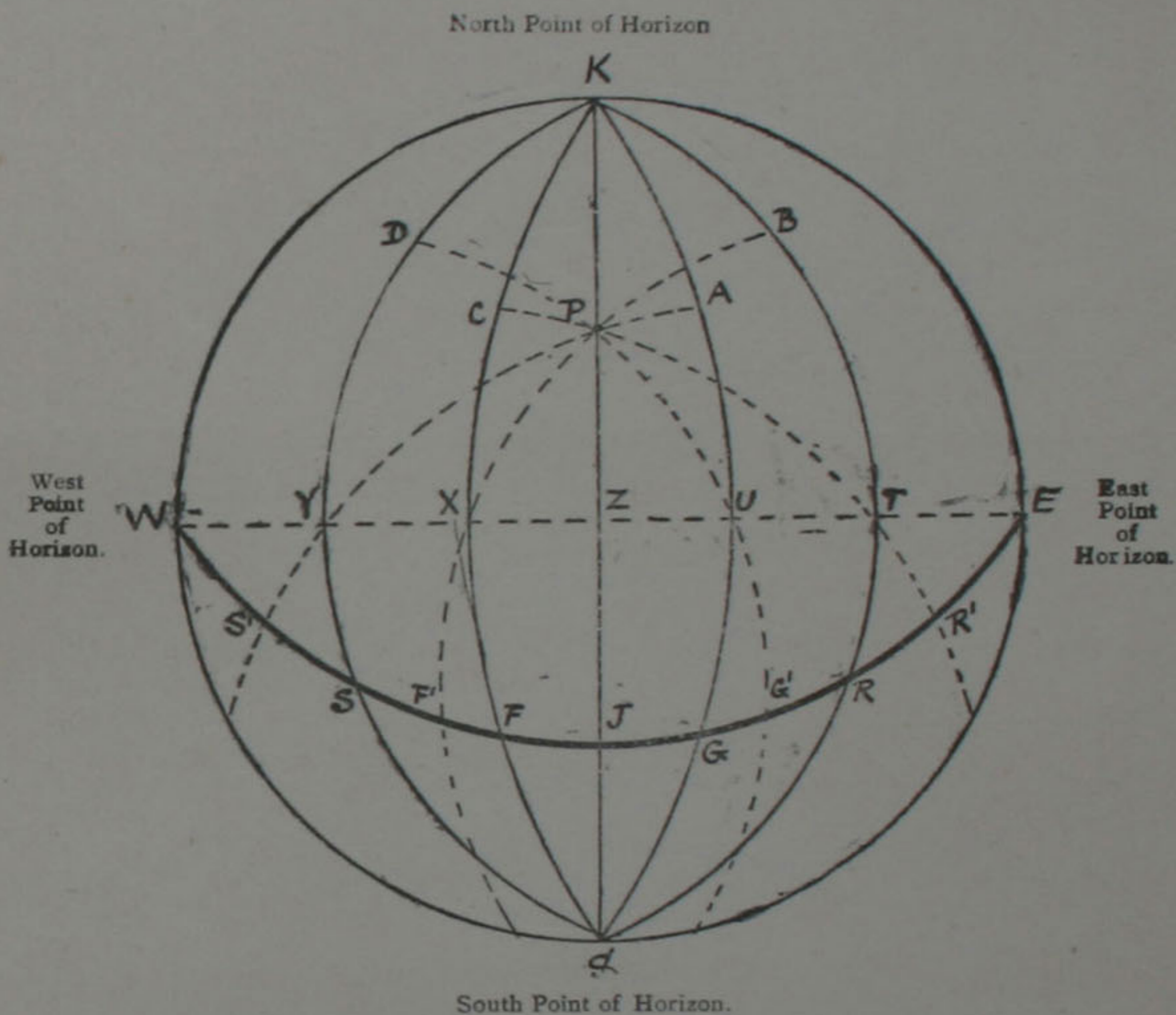
$$\begin{array}{l}
 SJ = JR = \angle APK = \angle CPK = 60^{\circ}00'00'' \\
 WS = SF = FJ = JG = GR = RE = \angle BPK = \angle DPK = 30^{\circ}00'00'' \\
 XZ = ZU = WY' = T'E = 42^{\circ}51'53'' \\
 YZ = ZT = WX' = U'E = 70^{\circ}15'00''
 \end{array}$$

The produced polar arcs cut the Equator in the same points, S, F, G, R, as the House Circles, but they do not cut the Prime Vertical in the same points as the House Circles cut it.

SEE APPENDIX, P. 173.

Projection of Celestial Sphere on to Horizontal Plane (for 51° 32' N. lat.)

CAMPANUS.



(The thick line shows the Equator.)

Z is the Zenith. P is the North Pole of Heaven.

FOR CAMPANUS:

$$\begin{aligned} WY &= YX = XZ = ZU = UT = TE = 30^{\circ}00'00'' \\ WS &= RE = F'J = JG' = \angle BPK = \angle DPK = 42^{\circ}51'53'' \\ WF &= GE = S'J = JR' = \angle APK = \angle CPK = 70^{\circ}15'00'' \end{aligned}$$

The produced polar arcs CPT, APY, DPU and BPX, cut the Prime Vertical in the same points Y, X, U, T, as the House Circles, but they do not cut the Equator in the same points as the House Circles cut it.

SEE APPENDIX, P. 173.

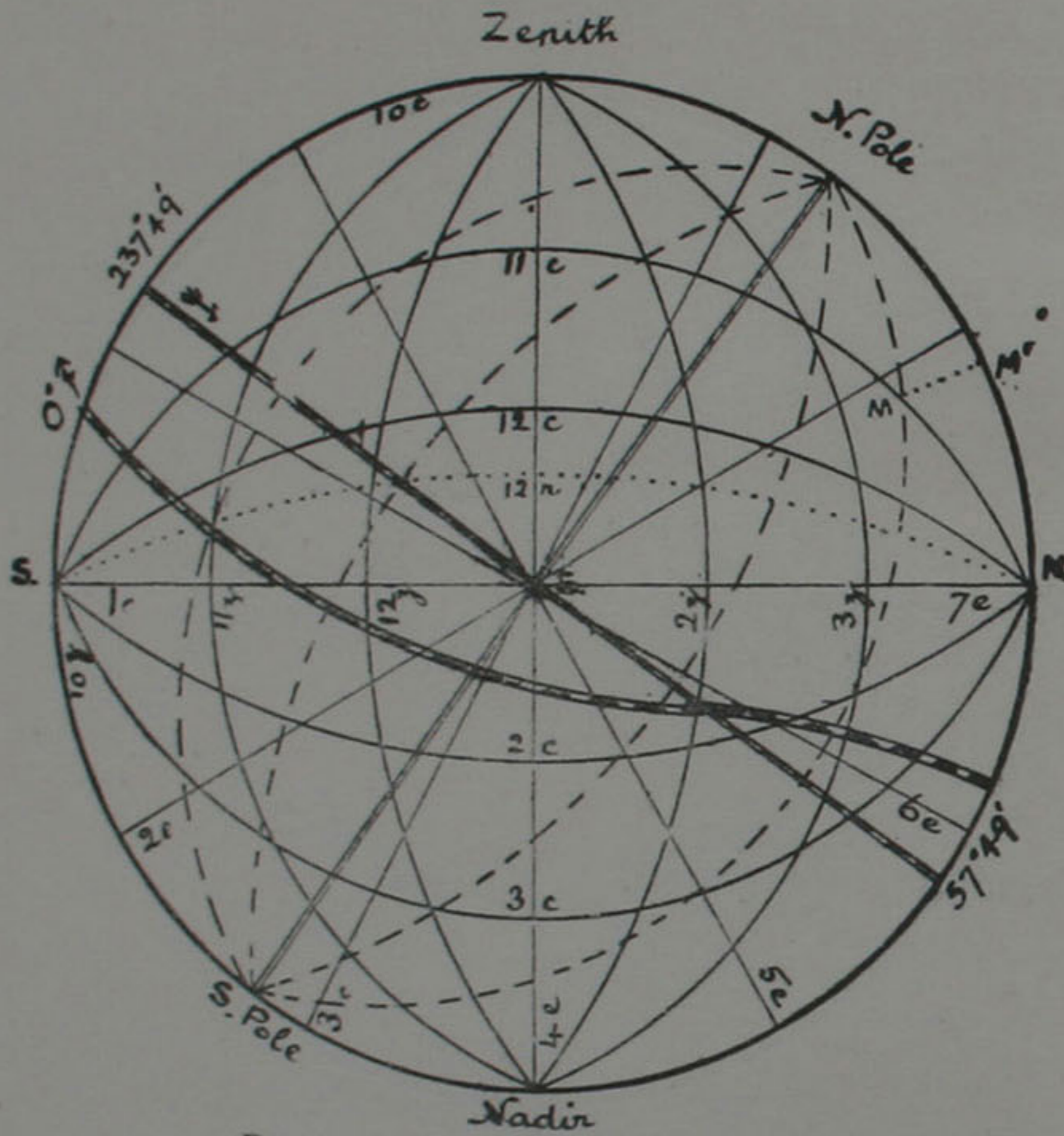


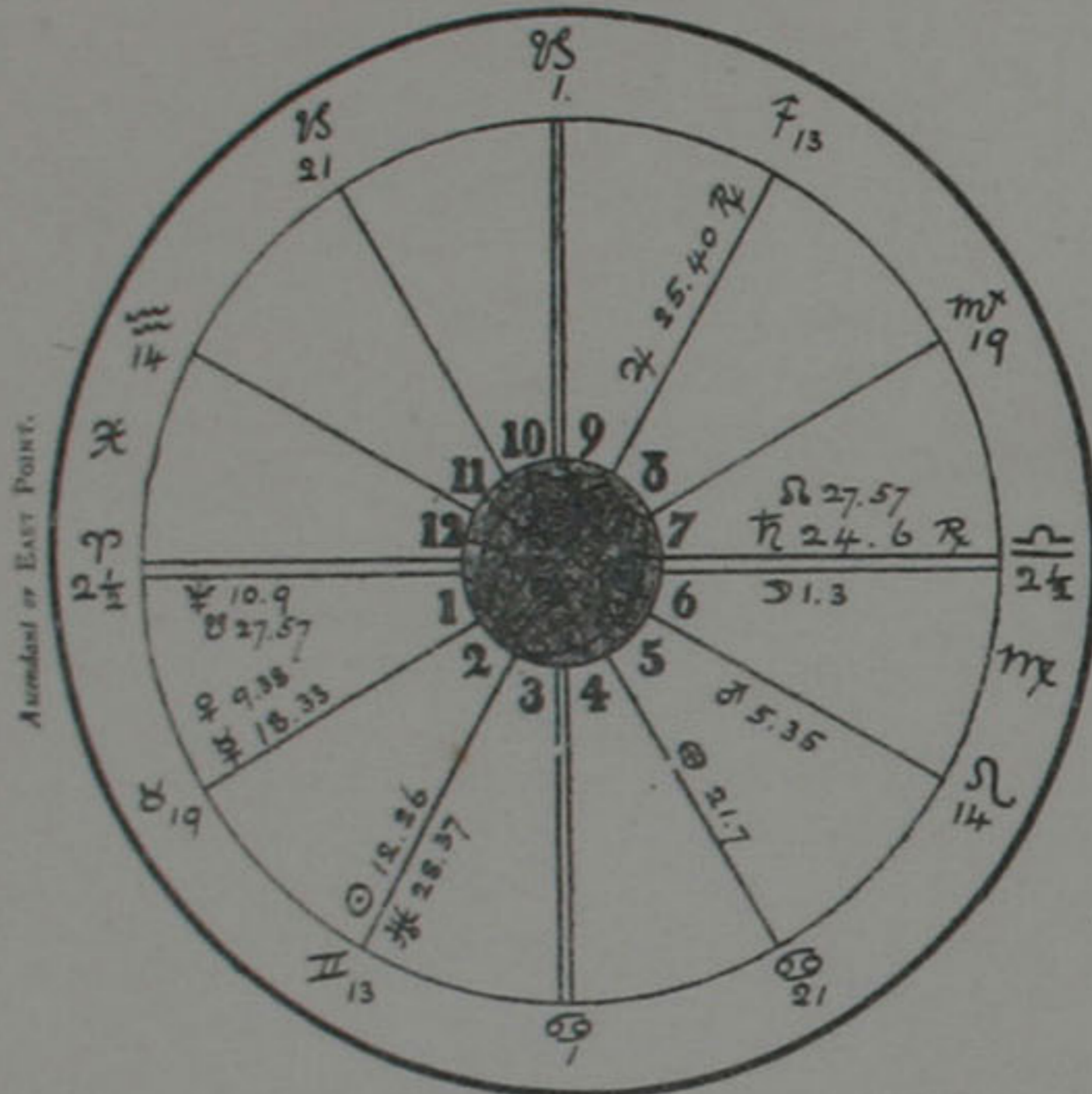
DIAGRAM OF THE CELESTIAL SPHERE.
 Calculated for S.T. 15.51.15, at London, or any place in Latitude $51^{\circ}32'N$

DIAGRAM OF THE CELESTIAL SPHERE SHOWING VARIOUS
 METHODS OF HOUSE-DIVISION.

SEE CHAPTER XII., P. 117.

THE HOROSCOPE

Zenith or SOUTH POINT.



Ascendant or EAST POINT.

Descendant or WEST POINT.

Nadir or NORTH POINT.

(1) DATE—	D.	M.	Y.
DATE OF BIRTH	3	6	'65
(2) PLACE—	London		
BIRTH PLACE			
LATITUDE	51	30	N.
Longitude	0	17	W.
(3) TIME—	h.	m.	—
LONG. EQUIV.	—	1	8
LOCAL STANDARD	1	18	a.m.
G.M.T.	1	18	
True Local Mean	13	16	52
S.T. at previous Noon	4	43	53
Corrct. to Sid. Time		2	11
S.T. AT BIRTH	13	18	41
OR R.A.M.C.			

Number of Planets in:—

3	FIREY SIGNS	EARTHY SIGNS	2
4	AIRY SIGNS	WATERY SIGNS	0
3	CARDINAL	FIXED	3
3	COMMON	FI: Exalted	♃ ♀ ♁

PLANET	LAT	DECL.	ASPECTS												PROGRESS FOR 1908			
			☉	☾	♃	♄	♅	♆	♁	♂	♀	♁	♂	♀	♁	♂	♀	
SUN ☉			☉	☾														
MOON ☾				☾														
MERCURY ☿																		
VENUS ♀																		
MARS ♂																		
JUPITER ♃																		
SATURN ♄																		
URANUS ♅																		
NEPTUNE ♆																		

AS AT
Dec. 22nd '08
☉ 23.24
☾ 4.24

THE NATIVITY OF KING GEORGE V.

SEE CHAPTER I. OF SECTION B.

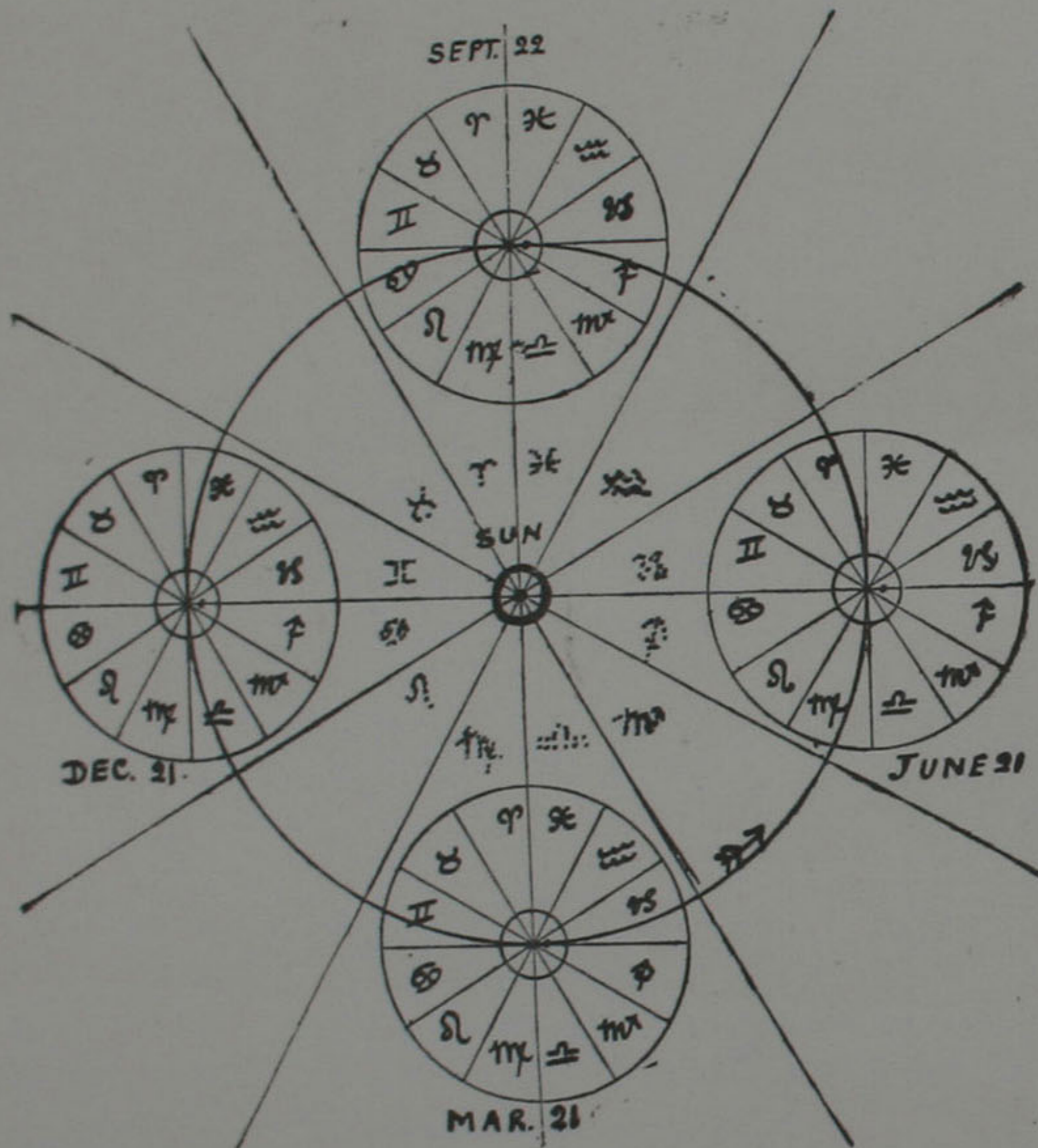


DIAGRAM SHOWING THE POSITION OF THE REAL ZODIAC
AT THE FOUR QUARTERS OF THE YEAR.

SEE CHAPTER XIII., P. 128.

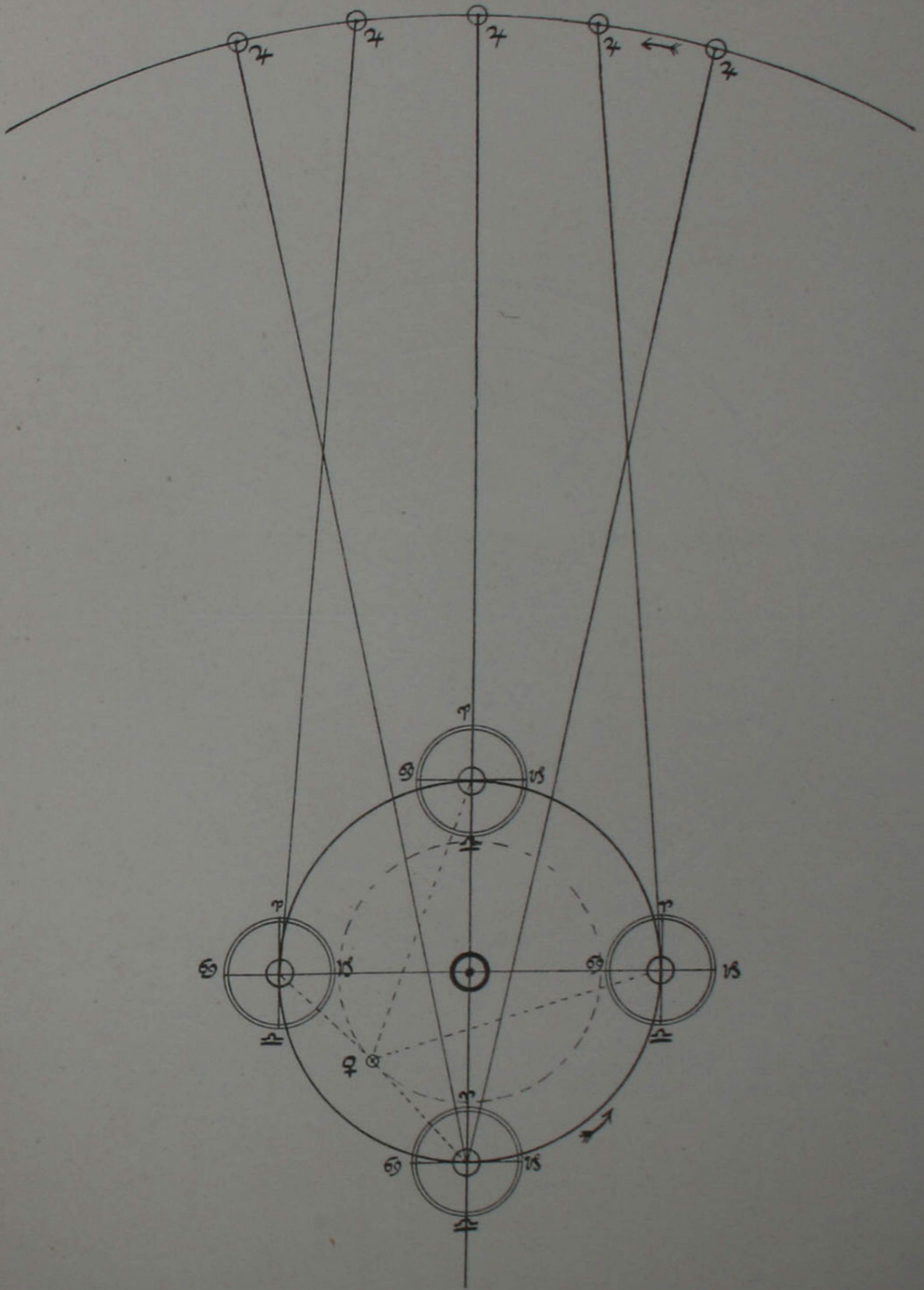
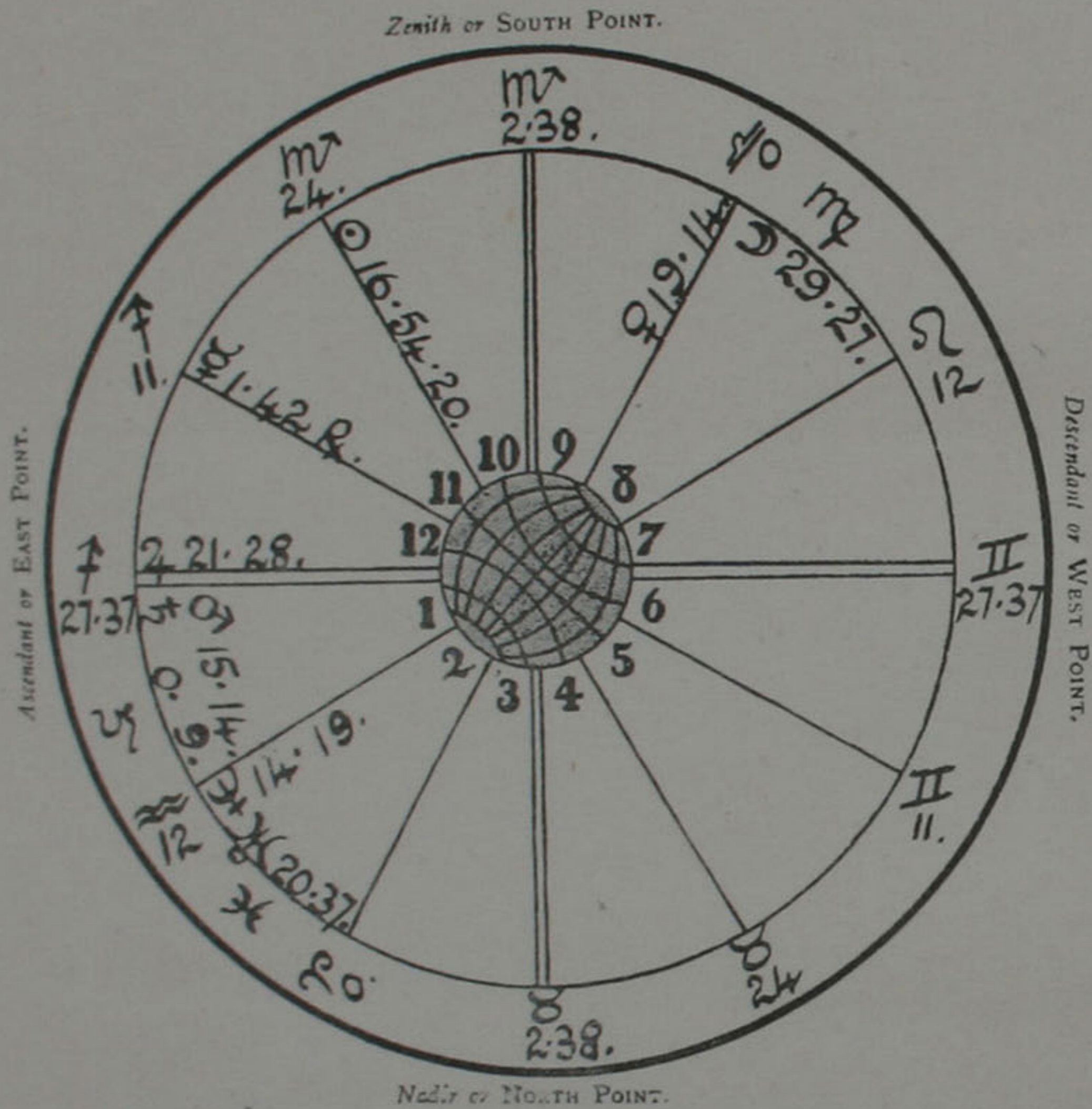


DIAGRAM EXPLAINING THE PHENOMENON OF RETROGRADATION.—
SEE CHAPTER XIII., P. 130.



THE HOROSCOPE OF KING EDWARD THE SEVENTH.

Calculated for Buckingham Palace 51°30'N., 0°8'30''W., 10.48 a.m., G.M.T. (bulletin time), November 9th, 1841. In the calculations on pp. 98, 99, the geocentric latitude 51°20' and the new Table of Ascendants have been employed, to ensure greater precision.

SEE CHAPTER XI., P. 96.

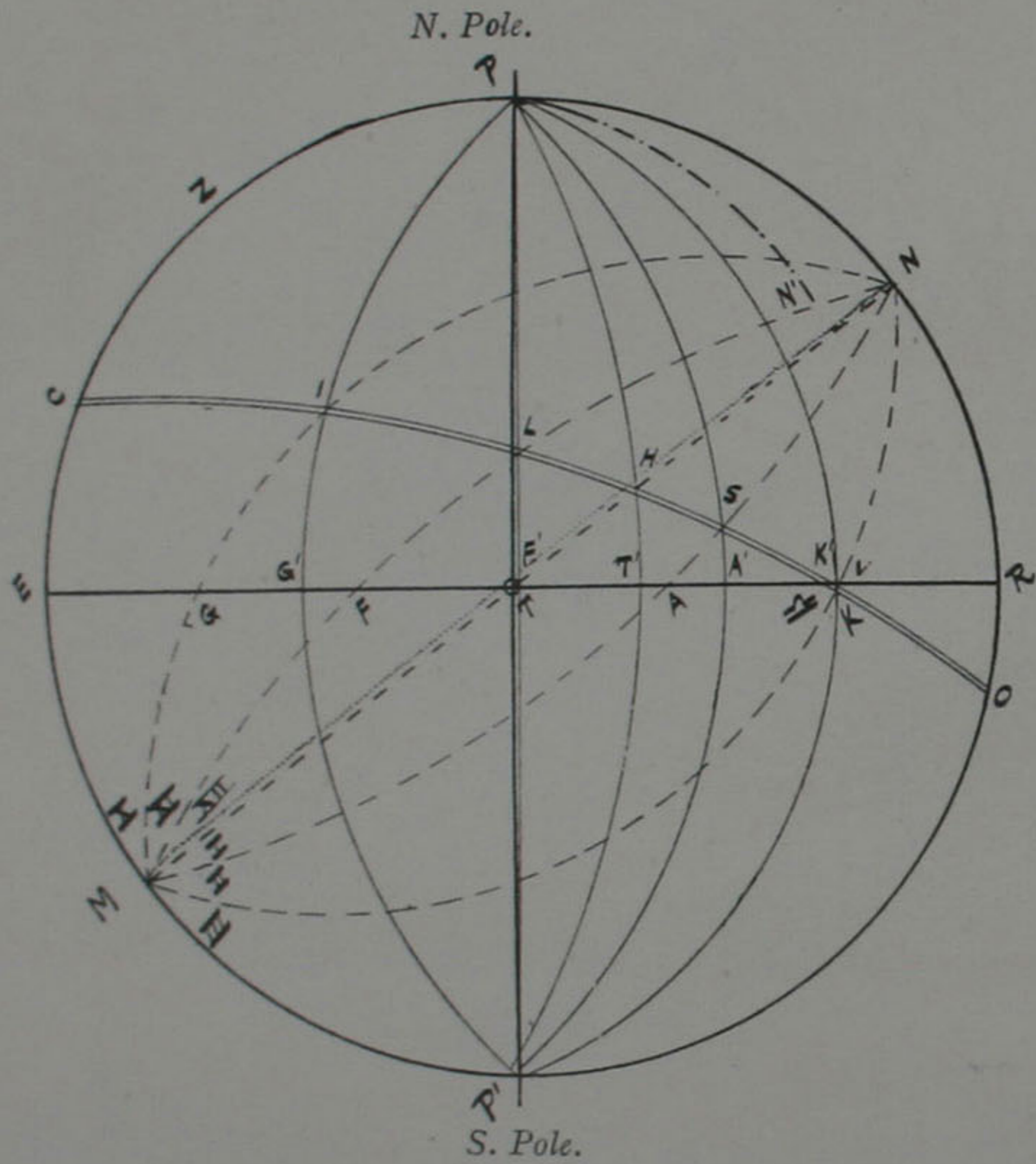


DIAGRAM SHOWING THE MANNER IN WHICH THE DIVISION INTO HOUSES IS EFFECTED.

SEE CHAPTER IV., P. 23.

FRONTISPIECE.

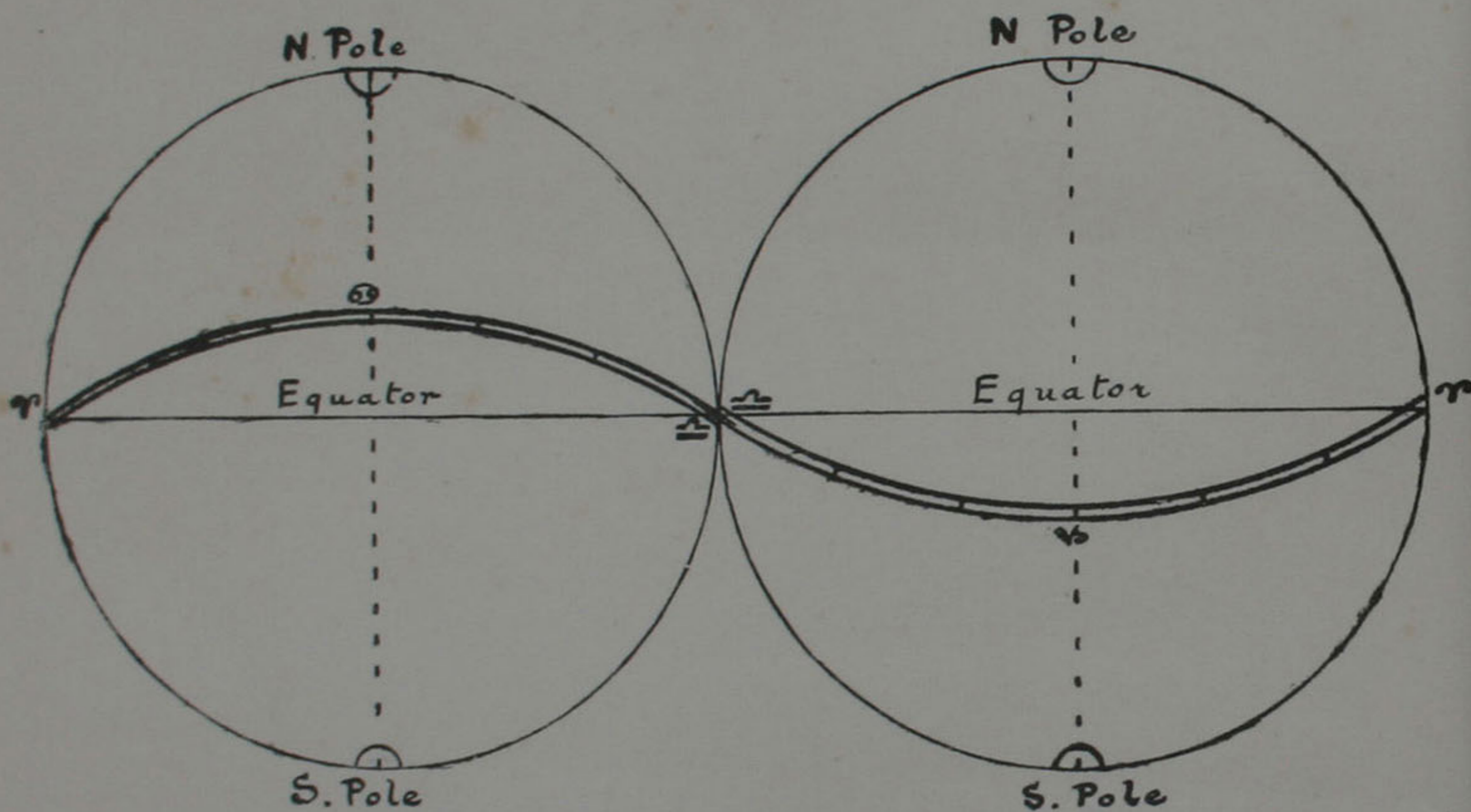


DIAGRAM SHOWING THE RELATIONSHIP OF THE ECLIPTIC TO THE EQUATOR.

SEE CHAPTER I. OF SECTION A., AND CHAPTER II. OF SECTION B.

(pp. 3 and 157).

"Astrology for All" Series.—Vol. II.

Casting the Horoscope

*Formerly issued as "ASTROLOGY FOR ALL, PART II.," of which work
the present volume constitutes the Third Revised Edition.*

A CONCISE EXPOSITION OF THE METHOD OF CASTING A HOROSCOPE, WITH A DETAILED EXPLANATION OF ALL TECHNICAL TERMS LIKELY TO BE MET WITH IN COURSE OF READING; INCLUDING ALSO A TABLE OF ASCENDANTS FOR ALL LATITUDES FROM 1° TO 70° AND A CONDENSED EPHEMERIS FOR THE YEARS 1850 TO 1913 INCLUSIVE, WITH SIMPLE INSTRUCTIONS FOR USING THE SAME IN CALCULATING A NATIVITY; TOGETHER WITH TABLES OF LOGARITHMS, ETC., ETC. ALTOGETHER A VADE-MECUM INDISPENSABLE ALIKE FOR THE ADVANCED STUDENT AND FOR THE BEGINNER.—*See Preface.*

*The various chapters are by several contributors to "Modern Astrology,"
the whole being supervised
and edited*

by

ALAN LEO.

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PUBLISHER'S ANNOUNCEMENT

RE-ISSUE OF THE "ASTROLOGY FOR ALL" SERIES

IN entering upon a re-issue of the whole of this Series in a uniform style as regards size, binding, etc., it has been deemed expedient to do away with a possible source of confusion. A change of title has therefore been decided upon in two cases, and the six books of this series now stand as follows:

Vol. I.	ASTROLOGY FOR ALL	formerly	<i>Astrology for All, Part I.</i>
" II.	CASTING THE HOROSCOPE	"	<i>Part II.</i>
" III.	HOW TO JUDGE A NATIVITY	"	<i>How to Judge a Nativity, Part I.</i>
" IV.	THE ART OF SYNTHESIS	" "	<i>Part II.</i>
" V.	THE PROGRESSED HOROSCOPE	"	<i>The Progressed Horoscope</i>
" VI.	THE KEY TO YOUR OWN NATIVITY		

*This explanation is prefixed to all copies of
the New Issue for the information
and safeguarding of
purchasers.*

ERRATUM.—Page 76, lines 14 and 19: '010145 and '01013643 . . should be 1'0145 and 1'013643 . . respectively.

*Readers are requested to notify the author of any other errors they may
discover so that they may be removed in future editions.* ***

INTRODUCTORY PREFACE.

THIS book is designed to serve two distinct classes of readers :—

- (1) Those who wish to possess, in one volume, complete material and simple rules for casting the horoscopes of their friends with the least amount of labour and calculation, and without the necessity of purchasing an expensive set of Ephemerides, which cost as a rule not less than 1s. per year.
- (2) Those who having already arrived at such proficiency as is aimed at by class 1, nevertheless desire a competent knowledge and understanding of all the factors they are dealing with in casting a horoscope, provided they can have the same explained in a clear and direct manner and without the need of consulting other books.

To meet the needs of both the above classes this work is arranged in two sections, SECTION A being concerned with the explanations needed by the second class of readers, while SECTION B consists of a Condensed Ephemeris of the Planetary Positions for the past sixty years, with instructions for its use and the method of setting up horoscopes by its aid.

SCOPE OF THE BOOK.

It is presumed that the reader is already familiar with *What is a Horoscope and How is it Cast*, which deals briefly with the nature of a horoscope and describes how it may be calculated with the help of a Table of Houses from the ordinary ephemeris.

In a work of that description, however, it is not possible to enter into an explanation either of the terms or the methods therein employed; nor is it indeed advisable in what is merely an elementary manual. But the conscientious student, whether book-learned or not, will desire to form clear ideas regarding every factor that enters into his calculations—for rule-of-thumb work is abhorrent to all earnest minds—and will wish to “see for himself” the actual basis on which is founded the edifice of Astrology.

The present Volume therefore aims to supply this need,—simply,

yet with a degree of completeness that no previous publication has attempted.

All terms used, other than those that have been made clear in the manual referred to, are carefully explained, not by dry definitions but in a direct and common-sense way which should make them readily apprehended by any intelligent person—vagueness and ambiguity being especially avoided. Moreover, exact methods are given whereby anyone with the requisite application can calculate a true figure of the heavens for any time and place, without any further knowledge than the four rules of arithmetic.

In short, the intention of this book is to place before the man or woman of average education a concise treatise which will enable him or her to erect a map of the heavens that will bear the most critical investigation, and *to understand and see the reason of each step in the process.*

NOTE.—THE ELEMENTARY STUDENT IS RECOMMENDED TO TURN AT ONCE TO SECTION B, P. 133, AND TO DEVOTE HIS ATTENTION EXCLUSIVELY TO THAT SECTION UNTIL THE SIMPLE INSTRUCTIONS THERE GIVEN HAVE BEEN MASTERED.

HISTORY OF THE BOOK.

This book was first issued as *Astrology for All, Part II.*, in November 1904 and consisted of Chapters i to x of the present book, a portion of Chapter i of Section B, the Condensed Ephemeris, and Tables. The price was 7s. 6d.

In the Second Edition, published in 1908, Chapter vi was re-written, the Table of Ascendants re-calculated and extended, and the book enlarged to nearly twice its former size by a "Supplement" consisting of the present Chapters xi, xii, xiii of SECTION A, ii of SECTION B, and the Appendix. At the same time the price was made uniform with other books of the Series, *viz.*, 10s. 6d.

The Present Edition consists of practically the same matter as the Second Edition.

It has however been thoroughly revised, considerably added to in various places, and entirely rearranged—with the object of making its large fund of information more conveniently accessible; for example,

the Condensed Ephemeris and Tables have been placed at the end of the book, and all speculative or debatable matter has been transferred to the Appendix.

PRESENT TITLE.

The previous title having been found inconvenient owing to confusion with *Astrology for All, Part I.*, (now *Astrology for All*), which led to frequent misunderstandings with booksellers, it was at length decided to change it. After much thought it was considered best to revert to the old title CASTING THE HOROSCOPE, which had been used in 1901 for a book intended for the second volume of this series but subsequently withdrawn from circulation as not suited to the purpose. The new title as the advantage of being more descriptive as well as distinctive.

SPECIAL FEATURES.

The special features of this book which entitle it to the attention of the experienced student, and which indeed render it unique, are chiefly two: (i) the CONDENSED EPHEMERIS (1850 to date) and (ii) the TABLE OF ASCENDANTS, which latter is practically equivalent to a Table of Houses for Every Place in the World. See Chapter VII.

Other important features are the chapters on Logarithms, Rectification, Methods of House-Division, the Trigonometrical Method, the Real Zodiac, the Phenomenon of Retrogradation. It is these features, together with the various Tables, etc., which in the publisher's opinion entitle the book to be called "THE ASTROLOGER'S BAEDERER."

Further particulars may be gleaned from the Detailed Table of Contents overleaf.

* * * The Compiler feels exceedingly grateful for the assistance he has received from various helpers and critics, and particularly for the generous service of three ladies without whose ungrudging aid in the necessary but tedious arithmetical details connected with the re-calculation and extension of the TABLE OF ASCENDANTS referred to above, that useful piece of work could not have been carried out. He also desires to take this opportunity of cordially thanking those students who have drawn attention to errors or suggested improvements.

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USEFUL INFORMATION.

The following items of information, quoted from Wightman's tables, will be found useful for reference.

TIME TABLE.

60 Seconds	...	...	...	1 Minute.
60 Minutes	...	...	...	1 Hour.
24 Hours	...	...	...	1 Natural Day.
7 Days	...	...	...	1 Week.
4 Weeks or 28 Days	...	...	...	1 Lunar Month.
52 Weeks 1 Day, or 13 Lunar Months 1 Day	...	...	...	1 Year.
365 Days 6 Hours	...	...	...	1 Julian Year.
365 Days 5 Hours 48 Minutes 57 Seconds 39 Thirds	...	...	...	1 Solar Year.

A **SIDEREAL DAY** = the time that elapses between two successive passages of a *fixed star* over the meridian. The Sidereal day never varies in length (=86164.1 mean solar seconds).

An **ASTRONOMICAL DAY** = the time elapsing between two successive passages of the *Sun* over the meridian. This exceeds the Sidereal day by nearly four minutes, and is of different lengths at different times of the year.

A **MEAN SOLAR DAY** is the *average* length of the Astronomical Day. This is what is called in the above table the *Natural day*.

A **SIDEREAL MONTH** is the period of one complete revolution of the Moon round the Earth. Its length is $27\frac{1}{2}$ days, or more accurately 27.321661423 days.

A **LUNAR (OR SYNODIC) MONTH** is the period between two successive conjunctions of the Sun and Moon on the same side of the Earth. In a Lunar Month the Moon passes through $360^\circ + 27^\circ$ (approximately) and takes 29.530588716 days.

A **CALENDAR MONTH** is the month as computed in an almanack and consists of either 30 or 31 days except in February, when it has 28, but in Leap Year 29 days.

A **SIDEREAL YEAR** is the period of one complete revolution of the Earth round the Sun.

A **TROPICAL (OR SOLAR) YEAR** is the interval between two successive returns of the Sun to the same tropic or equinox.

Owing to the *Precession of the Equinoxes* the Sidereal Year exceeds the Tropical Year by 0.14119 days, or 20m. 20s.

The **ANOMALISTIC YEAR** is the period between two successive times at which the Earth is at perihelion. In this year the Earth passes through $360^\circ 11' 25''$, and takes 365.259344 days.

The **JULIAN Year** (arranged in the time of Julius Cæsar) was made to consist of $365\frac{1}{4}$ days.

The **CIVIL Year** always consists of an exact number of days, 365 or 366. The extra periods of 6 hours, when the years are made to be of 365 days, are added together every fourth year and added to February, which then has 29 days, and we are then said to have Leap Year. To prevent error further adjustments are made; see page 11, "How to tell Leap Year."

EQUINOCTIAL TIME is the time that has elapsed since the Vernal Equinox (March 21st); that is, since the sun crossed the line (or Equator) in Spring.

TO FIND LONGITUDE BY TIME.

Ships' chronometers are set by Greenwich Time.

The Earth rotates through 360° in 24 hours, that is through 15° in 1 hour. Thus 1 hour difference of mean time at two places denotes that they differ 15° in longitude.

e.g.—If time by chronometer is 4 p.m., and time by the sun is 8 p.m., the place differs from Greenwich in longitude by $15^\circ \times 4 = 60^\circ$. But the sun must have crossed the observer's meridian first. Therefore, the longitude of the observer is 60° East.

ANGULAR MEASURE.

60 Seconds (")	make	1 Minute (')	60 Minutes (')	make	1 Degree (°)
30 Degrees	"	1 Sign (s)	12 Signs or 360°	"	1 Circle
		90°	make		1 Right Angle.

The ZODIAC was the name given by the ancients to an imaginary belt extending 8 degrees on each side the Ecliptic and containing the orbits of the planets.

This belt was divided into 12 equal parts named after the constellations which occupied those signs in the early days of Astronomical Science. The names and symbols of the signs are:—

Aries.	Taurus.	Gemini.	Cancer.	Leo.	Virgo.
♈	♉	♊	♋	♌	♍
Libra	Scorpio.	Sagittarius	Capricornus.	Aquarius.	Pisces.
♎	♏	♐	♑	♒	♓

TABLE OF THE PLANETS.

The following table gives the order of the Planets in distance from the Sun, beginning with the nearest. The mean distance of the Earth (92 million miles) is taken for the unit of distance, and the period of revolution is expressed in days.

Name of Planet.	Mean Distance from Sun.	Period in Days
Mercury	0.3871	87.969
Venus...	0.7233	224.700
Earth	1.0000	365.256
Mars	1.5237	686.980
Minor Planets (av)	2.6	1531.
Jupiter	5.2028	4332.585
Saturn	9.5389	10759.220
Uranus	19.1827	30686.821
Neptune	30.0370	60126.720

EXPLANATION OF MATHEMATICAL SIGNS.

+ plus or more.	{ The sign of <i>Addition</i> ; as $6+2=8$, shows that 6 added to 2 is equal to 8.
- minus or less.	{ The sign of <i>Subtraction</i> ; as $12-5=7$, shows that 5 subtracted from 12 leaves 7 remaining.
x multiplied by.	{ The sign of <i>Multiplication</i> ; as $7\times 9=63$; that is, 7 multiplied by 9 is equal to 63.
÷ divided by.	{ The sign of <i>Division</i> ; as $28\div 7=4$, expresses that 28 divided by 7 gives 4 as the quotient.
= equals.	{ The sign of <i>Equality</i> ; for example, $2+3=5$, which shows that 2 added to 3 equals 5.
∴ denotes the word 'therefore.'	∴ denotes the word 'because.'
: is to	} As 9 : 3 :: 18 : 6, signifies:—As 9 is to 3, so is 18 to 6.
:: so is	
: to	

The following signs are used in geometry:— \perp perpendicular to; \parallel parallel to; \backslash oblique to; \sphericalangle angle; \triangle triangle; \square right angle; \square square; \square parallelogram; \odot circle; \circ circumference; \frown semi-circle; \square quadrant or quarter circle; ∞ infinity; δ difference; \frown arc; R° Radius expressed in degrees; ρ radius; $>$ greater than; $<$ less than; δ variation; $\pi=3\frac{1}{7}$, (approximately) the ratio of the circumference of a circle to its diameter. $()$ or $[\]$, called brackets, denote that all between them is regarded as one quantity. This is sometimes denoted by a line, called a *vinculum* (Latin for chain or link), placed over the quantities; thus $x+y-z$.

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Casting the Horoscope.

Section A.

CHAPTER I.

THE EPHEMERIS AND THE INFORMATION IT SUPPLIES.

IN commencing the study of 'casting the horoscope,' that is to say of erecting a map of the heavens for the moment of birth,¹ the first thing to do is to master the "Ephemeris."

An Ephemeris is a compilation of various *data* regarding the Sun, Moon and other planets (the Sun and Moon being regarded as planets for astrological purposes), arranged in a concise and handy form. It is in fact an almanack, giving the planetary positions for every day in the year. The best known is "Raphael's," which is issued at 1/- per year, is conveniently arranged and reliable, and as it is the Ephemeris used by most astrological students, we shall make it the basis of all the explanations that follow, till we come to the simple explanation of the Condensed Ephemeris in SECTION B.

Before proceeding with other matters however, it will be well to give definitions of a few technical terms which are used in the Ephemeris and elsewhere, and which beginners often find both puzzling and misleading. The reader may put away the fear that we are going to be unduly abstruse, for although some of the terms certainly sound rather formidable, the actual ideas to which they are related are perfectly simple.

We will start with (1) *Right Ascension* and *Declination*, (2) celestial

¹ Strictly speaking, the word "horoscope" applies only to the ascendant or rising sign,—the "hour pointer." But it is rarely employed in its purely etymological sense.

Longitude and *Latitude*, two pairs of terms, either of which may be used for defining the position of a planet, sometimes one being more convenient and sometimes another.¹

RIGHT ASCENSION AND DECLINATION.

The reader is of course aware that in geometry the circle is divided into four 'quadrants' of 90° (ninety degrees) each, making 360° in all. Now since the figure of a globe or sphere, such as the earth for instance, may be considered as formed by turning a circle or disc round about on an axis, a moment's thought will make it clear that the position of any point on the sphere may be defined by referring it to two circles at right angles to each other. In fact, this is what is done by geographers in making maps: the *Equator* is one circle to which reference is made, and, starting from a certain point taken as 0° of geographical longitude, any place is said to be so many degrees of longitude east or west of Greenwich. Since, however, as will be easily seen, a whole semi-circle of the earth's surface (meridian of longitude) might be said to be that, reference is also made to the distance north or south of the equator, measured in degrees, minutes, etc., and termed geographical latitude. Thus, the bearings of New York Observatory are given as $73^\circ 58' W.$, $40^\circ 45' N.$

This is a piece of elementary knowledge familiar to every schoolboy nowadays, and it has only been entered into here to lead up to the fact that the position of any planet in the heavens is registered in precisely the same way; only, and this is a very important point, the term *Right Ascension* is used in place of 'longitude' and *Declination* in place of 'latitude.' These terms, however, exactly correspond to each other, so many degrees of R.A. corresponding to the same number of degrees of longitude and so many degrees of Dec. corresponding to the same number of degrees of latitude. Thus, to take an illustration, the star Gamma Draconis has $51^\circ 30'$ of "North declination," that is to say, it 'declines' away from the Equator northward at that angle; and it will therefore be immediately overhead, when culminating, at all places which have $51^\circ 30'$ N. Latitude, such as London for example. Furthermore, its R.A. is $268^\circ 30'$; that is to say, it is distant $268^\circ 30'$ measured

¹ Abbreviated R.A., Dec., Long., Lat.

along the celestial equator,¹ from a certain point whose position will be explained later on.

In this way the position of any planet is defined in all ASTRONOMICAL books, being referred, as will be seen, to the Celestial Equator, which is practically equivalent to the Earth's equator; so much *along it* (R.A.), and so much *away from it* (dec.)—north or south as the case may be.

CELESTIAL LONGITUDE AND LATITUDE.

There is, however, another means of referring to a planet's position, one that is much more important for astrological purposes, though comparatively seldom used by astronomers; and that is, the planet's celestial *Longitude* and *Latitude*. These terms have no relation to geographical longitude and latitude, but refer to the planet's position in relation to the Ecliptic.

The *Ecliptic* is the Sun's apparent path in the heavens during the year.

In order to form some idea what this sentence means, let us pretend (as children say) that every day at twelve o'clock noon the Sun shoots down a fierce shaft of heat which scorches a little patch of earth immediately beneath its rays but nowhere else. By the end of the year a sort of S-like cinder-track will have been made round the Earth, of the shape shown by the curved band in Figure 1 (facing title). This has been represented on two circles as hemispheres, such as are ordinarily used in an atlas, in order to convey the idea more clearly.

If now this curve—which is really a *circle*, inclined to the Equator at an angle of $23^{\circ}27'$ —be projected on to the heavens in the same way that was just spoken of in reference to the celestial equator, we have the "Ecliptic." Any good celestial map will show this far more clearly than words can describe it.

The tracks of the planets are all found to lie along this line, being only a few degrees north and south of it at farthest, whereas when referred to the equator they vary sometimes as much as 30° . It is therefore most convenient for ASTROLOGICAL purposes to refer all planets to the Ecliptic or, as it is called when the space of $7\frac{1}{2}^{\circ}$ on either side is

¹ The Celestial Equator is an imaginary line in the heavens, such as the earth's rotation would cause to be traced out by an infinitely long vertical pole, erected at any point on the terrestrial equator; to speak technically, it is "the projection of the earth's equator upon the celestial sphere."

included, the Zodiac. And all astrological measurements are made with reference to this circle, or band, the results being expressed as ecliptic or celestial or zodiacal *longitude* and celestial *latitude* respectively.

To recapitulate what has been said. There are two methods of defining a planet's position:—

- (1) By reference to its position (a) *along*, and (b) *away from*, the celestial EQUATOR.
 - (2) By reference to its position (c) *along*, and (d) *away from*, the Sun's path or ECLIPTIC.
- (a) and (b) are called *Right Ascension* and *Declination*, while (c) and (d) are called celestial *Longitude* and *Latitude* respectively.

We have explained this at some length and with great thoroughness, in order that clear ideas may be formed at the start. Many beginners become quite quick at all the "rule of thumb" processes, and quite glib with various technical terms, yet never clearly understand what they mean by the words they so often employ. Hence if they are questioned by anyone who has made a little study of astronomy, they are easily made to look foolish; not, perhaps, because they really know less than their questioner, but because they are not in the habit of thinking out clearly what they mean by the words they use.

If the reader will turn to the preceding volume of this series, *Astrology for All*, p. 8, he will see a diagram showing the Ecliptic and equator in relation to the earth, and from that diagram he will see that the cause of the "obliquity," as it is termed, of the Ecliptic is the fact that the axis of the Earth is not perpendicular to the plane of its orbit as one might have expected, but *oblique* thereto, at an angle of 90° less $23^\circ 27'$, i.e., $66^\circ 33'$. For the Ecliptic, or Sun's apparent path in the heavens, is really only a 'phenomenon' produced by the revolution of the earth in its orbit round the Sun. Any modern school geography will make this point quite clear by the aid of illustrations, so that it is scarcely necessary to go into it further here.

THE EQUINOCTIAL POINT.

This diagram also shows us that the two circles of the Ecliptic and Equator cut one another at two points, known respectively as the vernal and autumnal "equi-nox"; a word signifying 'equal night.' For when the Sun is at either of these points, on March 21st or September 22nd, day and night are equal all over the earth. When the Sun is ascending

from S. to N., and has reached 0° of declination or in other words is exactly over the equator, it is said to be in 0° of Aries, or at the *equinoctial point* (vernal); the opposite point, 180° distant, being the corresponding autumnal equinox, 0° Libra.

This equinoctial point, $\Upsilon 0^\circ$ (often abbreviated by astronomers as Υ) is extremely important, as it is the commencement of both Right Ascension which is measured along the celestial Equator, and Ecliptic or zodiacal Longitude; $\simeq 0^\circ$ being 180° , or half-way through, in both cases.

“PRECESSION.”

It is well to state here that this equinoctial point is not absolutely fixed, being subject to a slight retrogression of $50''$ *per annum*, which is known as the Precession of the Equinoxes, and which is considered by many to be due to the Sun's own motion through space. Into this we need not enter at present, as it does not concern us at this stage of our studies, and it will suffice to say that this “equinox” is the point from which all measurements either astrological or astronomical are made.¹

THE CONDENSED EPHEMERIS.

Let us now return to the Ephemeris. We will first describe the abridged ephemeris presented at the end of this book, and will afterwards touch on the other details given in the more extended ephemerides issued for each year by various publishers. The reader will have learnt in *Astrology for All* that the zodiac, which we have shown to be virtually synonymous with the ecliptic, is divided into spaces of 30° each, known as “signs,” named after the Constellations, though having now (owing to precession) no longer any relation to them other than that of *sympathy*. The Condensed Ephemeris at the end of this book gives, in terms of signs, degrees, and minutes, the zodiacal position of the Sun, and also that of each planet, for *every seventh day* each year from 1850 to 1913 at the moment of noon, mean solar time at Greenwich; Mercury's position

¹ NOTE.—It is one of the great difficulties attendant on a work of this kind, that those who will take it up include people of all ages and all classes, representing every variety of mental type, and embracing all extremes of general elementary knowledge. The Compiler aims to satisfy the needs of all, without provoking the impatience of any, and realising that the explanations just given, while almost wholly superfluous to those who have had the advantage of a modern public school education are yet not altogether elementary enough for some, he has added a later chapter in which the subject is treated in a less technical manner (See SECTION B.)

being given—by means of an extra column—for every *third or fourth* instead of every seventh day, on account of its rapidity of movement. There is also given the position of Ω , the Moon's ascending node, known as the Dragon's Head—a term explained in Chapter V. Finally, on separate pages are given the zodiacal positions of the Moon for *each day* at noon: these, though previously given in *Astrology for All*, are included here for convenience of reference.

At the foot of each page there are given the dates when respective planets are *stationary*. These it is very necessary to know because, as a little study of any page will show, the planetary motions are not uniform,¹ being sometimes nearly twice and sometimes less than half their mean rate in the case of Mercury and Venus. Should a birth occur near one of these dates, it is possible by substituting the planet's stationary position and the date thereof for the one that would otherwise have been employed, to secure with this concise ephemeris a degree of accuracy only very slightly below that obtainable from one giving the planet's positions every day.

THE ORDINARY EPHEMERIS.

We have now described the features of the ephemeris which will be employed in the majority of the calculations in this book. The ordinary Ephemerides contain, besides the planets' positions for each day, their *declinations* and their *latitudes*. The declination of a planet is in most cases approximately that of the zodiacal degree which it occupies, unless the planet has considerable latitude, except in the case of the Moon, which has occasionally both extreme declination and extreme latitude. In order to include the declinations of the planets in any satisfactory fashion, it would have been necessary almost to double the size of the Condensed Ephemeris and thus inconveniently add to the size of the book besides unwarrantably increasing the expenses of publication, and they have therefore been omitted.

Since, however, a table of the zodiacal position corresponding to each degree of declination is separately given, it will be seen that, except for work of such precision as would not be entered into unless the birth-time were known to within less than a minute, and without any possibility

¹ This remark of course applies only to their *apparent motions* as viewed from the earth, which is all that we as astrological students are concerned with.

of error, the Condensed Ephemeris supplies practically all the information required by the student in setting up a map. For the latitudes of the planets do not enter into our present considerations, being of importance chiefly in working what are known as "Primary Directions," which will be explained in due course in a subsequent volume, and for which the usual shilling ephemeris is a *sine qua non*.

Note. Complete instructions for the use of the Condensed Ephemeris, with an example of the method of working, are given in SECTION B.

CHAPTER II.

SIDEREAL TIME; WHAT IT MEANS, AND WHY IT DIFFERS FROM
CLOCK TIME.

THE next thing we must consider is *Sidereal Time*. This is really the same thing as Right Ascension, being measured along the celestial equator in the same way, but using hours and minutes and seconds instead of degrees and minutes and seconds.¹

In every observatory there is an "astronomical clock," a very accurately adjusted chronometer, so regulated as to register exactly twenty-four hours—no more, and no less—during one complete revolution of the earth.

Let us suppose that at the moment of the Vernal Equinox, when the Sun has reached $\Upsilon 0^{\circ}0'0''$, which is the official commencement of the spring quarter, and happens about March 21st each year—let us suppose that at Greenwich Observatory the Sun is found to be culminating; exactly on the meridian (M.C.); perpendicular to the east-west horizontal line²; these are all different ways of saying the same thing. In other words, it is exactly noon. The sidereal clock will show 0h. 0m. 0s.³, and this will then be the *Sidereal Time at Noon* on that day.

Now let us suppose that a complete day elapses, and the astronomer observes the Sun exactly culminating again: what will the clock show?—24h. 0m. 0s., or 0h. 0m. 0s.?

No: because in the twenty-four hours during which the earth has made one complete rotation, the Sun has moved forward 1° or very nearly

¹ The two terms are in fact convertible, either being employed according to convenience, Right Ascension being often expressed in hours and minutes although, oddly enough, sidereal time is never expressed in degrees. It is easy to convert one into the other: 1 day = 360° ; 1 hour = 15° ; 1 minute = $15'$; 1 second = $15''$. (See *Tables* at end of book.)

² It cannot be perpendicular to the horizontal *plane*, of course, since Greenwich is not on the Equator.

³ *Astronomical* time always counts from noon to noon: *civil* time, from midnight to midnight.

so and consequently the earth must turn 361° or thereabouts, instead of only 360° , before the Sun can be exactly on the meridian.¹ Therefore the clock will show about 0h. 4m. 0s.² and this will be the sidereal time at noon on that day. Similarly, next day at exact noon the clock will show about 0h. 8m. 0s., and so on every day, gaining about four minutes every twenty-four hours.

Hence on any particular day, according to the time of the year the Sidereal Time at Noon may be anything from 0h. 0m. 0s. to 23h. 56m. 0s., for it will be evident that the sidereal clock must gain one whole day in the year.

A special column is therefore given in all ephemerides, showing the *Sidereal Time at Noon*, or what amounts to the same thing, the *Right Ascension of the Meridian at Noon*, either in hours and minutes, or in degrees, as the case may be;³ usually the former, which is generally adopted in Nautical Almanacs.

As a general statement it may be said that the Sidereal Time at Noon on March 21st is 0h., and that it increases two hours each month; or in other words, the sidereal time at noon each day is four minutes later than on the day previous. The precise amount differs for each day during the year, as can be seen by referring to the table on p. 328, but it closely approximates to four minutes a day.

SIDEREAL TIME *versus* CLOCK TIME.

This brings us to another point. We have just seen that the sidereal time each day increases by about 4m., and therefore it is clear that the astronomical clock not only registers a different time, but also moves at a different rate to that of the ordinary clock, twenty-four hours by the former being four minutes short of twenty-four hours by the latter. The reason for this will be easily perceived when we reflect that the astronomical clock, registering 'sidereal' time, completes twenty-four

¹ *I.e.*, before its 'semi-diameter' or middle can be once more on the meridian. The earth moves round the sun in $365\frac{1}{4}$ days, which is at the rate of about 1 degree a day, since there are 360 degrees in a circle. This being the actual movement of the earth round the Sun, the apparent movement of the Sun round the earth, regarded from the standpoint of the earth as centre, will of course be the same, namely the whole circle in a year or about 1° a day. Some beginners find this subject a little confusing, and for their benefit a later chapter goes into it more fully (See SECTION B).

² Slightly more or slightly less, the variations being due to causes with which we need not concern ourselves here.

³ "In time" or "in arc," as it is called.

hours during the time that the earth executes one complete rotation, *i.e.*, turns through 360 degrees; while the ordinary clock only registers twenty-four hours when the earth has turned through 361 degrees,—when, in fact, the earth has not only turned through the complete circle, but ‘*caught up*’ the Sun as well, he having during the day advanced 1° or thereabouts. And this suggests that the word “day” may have more than one meaning.

DIFFERENT KINDS OF “DAY.”

There are no less than three different kinds of “day”: *sidereal*, *astronomical or solar*, and *mean solar or mean*.

- (1) The Sidereal Day is the time of one complete revolution of the earth—*e.g.*, from one transit of any given fixed star across the meridian (mid-heaven) till its next transit thereof.
- (2) The Astronomical Day is similarly the time between successive transits of the Sun’s semi-diameter across the meridian, and is therefore *about* 1° (or 4m.) longer.
- (3) The Mean Solar Day is twenty-four hours of “mean time,” as ordinarily used for all civil purposes, and is measured by a seconds’ pendulum of 39.13929 inches in length for the latitude of Greenwich.

Of these three kinds of “Day” we are only concerned with the first and third, which furnish us with our “Sidereal” and “Mean” time by which our calculations are made.

The reason why the astronomical day is not used, is that owing to the Sun’s irregular motion,¹ sometimes more and sometimes less than 1° , the true astronomical day is not a convenient standard, being sometimes less and sometimes more than 24h. 4m. of sidereal time. This discrepancy it is which gives rise to the “Equation of time” found in certain old Ephemerides calculated for ‘apparent noon.’ Astronomers therefore adopt as their standard the mean solar day. The mean solar day is simply the *average value* of the varying solar days throughout the entire year, and therefore actually consists of $1/365\frac{1}{4}$ part of the Equinoctial year—which is the time between two successive passages of the Sun across the equator from S. to N., or in other words its entry into Aries.

¹ This is due to the fact that the orbit of the earth is not quite circular, although approximately so.

CORRECTION FROM MEAN TO SIDEREAL TIME.

Sidereal Time as we have seen is slightly quicker than mean or ordinary clock time, 24 hours of the latter being equivalent to 24h. 4m. of the former. The discrepancy is called the "Correction from Mean to Sidereal Time."

But the only way in which we shall need it practically is when we require to set up a map for some precise moment, which in the case of a birth we are rarely able to obtain. For instance, let us suppose a birth was accurately timed as having taken place at exactly 6 p.m. This means 6h. of *mean time* after noon. But 6h. mean time = 6h. 1m. sidereal time, and therefore to find the sidereal time, or right ascension of the meridian, at birth we must add to the Sidereal Time at Noon (1) the clock-time, namely 6h., and (2) the "correction," namely 1m. Similarly also for any other interval of time. The table on p. 349 gives the correction for any period up to thirty hours. The correct way of using this is to take the S.T. (sidereal time) at the noon *previous to birth* add the number of hours and minutes elapsed since then, and then add the correction for that amount of time. Thus; birth, 5.49 a.m., August 7th, 1860, London.

			<i>h.</i>	<i>m.</i>	<i>s.</i>
S. T. Noon, 6/8/60	-	-	9	0	58
Time elapsed	-	-	17	49	0
Correction for 17h.	-	-		2	47.56
" " 49m.	-	-			8.05
			<hr/>		
			26	52	53.61
Less circle of 24h.	-	-	24	0	0
			<hr/>		
Sidereal time or R.A.M.C. at birth	-	-	2	52	53.61

In practice it is generally found easier to reckon the Correction at 10 secs. per hour or 1 sec. for each 6 minutes, which is quite near enough and saves referring to the Table. Worked in this way the above example gives 2h. 52m. 56s., which is within 2½ secs.

In most cases it is hardly necessary to trouble about the Correction, and it is never essential unless the birthtime is known to *within less than two minutes*—since in a whole day the discrepancy cannot exceed four minutes.

CHAPTER III.

LOCAL TIME AS A FACTOR IN THE HOROSCOPE.

HAVING now arrived at a clear understanding of the terms Right Ascension and Declination, Longitude and Latitude, and the relation of these to geographical longitude and latitude; and having also mastered the difficulties regarding time and its various measurements, known as sidereal, solar, mean; we are now in a position to consider the bearing of *locality* on the construction of the horoscope.

The Ephemerides in use in this country are invariably calculated for Greenwich: that is, they give the positions the planets will occupy at the moment when it is mean noon at Greenwich. And therefore when the birthplace is London or neighbourhood very little difficulty is experienced, even by the beginner, in calculating the horoscope. The sidereal time being found as before explained, the zodiacal degrees on the cusps of the various houses are found from the "Table of Houses for London," the planets' places (determined by proportion from their noon positions) are inserted in their proper houses, and the thing is done.

It is otherwise when dealing with places abroad, or even with some localities comprised within the limits of the British Isles: and the beginner sometimes gets hopelessly fogged over the perplexing "conversions" from local to Greenwich time, or *vice versâ*. These difficulties it is our aim now to remove.

In another chapter of this book there is a detailed account of the different methods of *registering time* in use in various parts of the world, and therefore we shall not enter into that question here, but shall start with the assumption that the true local time is known. The chief rule to be borne in mind is that in every case

- (1) The HOUSES should be calculated from *the true local mean time*.
- (2) The PLANETS' PLACES should be calculated from *the equivalent Greenwich mean time* (or any other standard for which the Ephemeris may be calculated).

If this fundamental principle is clearly grasped, much of the confusion that frequently arises will be avoided from the start.¹

WHAT LOCAL TIME IS.

But what *is* local time? Let us see. Reverting to our illustration on p. 8 we observe that at the moment of time there spoken of it would be exactly noon, at Greenwich, but only at Greenwich, or any other place on the same geographical meridian (0°). For on meridian 180° , the opposite side of the Earth, it is easy to see that the Sun would be at its lowest point beneath the Earth, and that therefore the time would be midnight. And between these two points places might be found where the time was anything from noon to midnight or from midnight to noon, according as one proceeded round the world in an easterly direction starting from Greenwich. Thus, at Calcutta, which is about $88^{\circ}20'E$. it would be nearly 6 p.m.; in the Fiji Islands it would be 12 p.m.; at Chicago, on the other hand, it would be about 6 a.m.; while at intermediate places the time would vary from 0.1 a.m. to 11.59 p.m., according to locality. And all this difference, remember, at *the very instant* when at Greenwich it was noon.

The various times here spoken of would be the *Local mean time* at the places in question, and from this we see that the local mean time at any place can readily be found from Greenwich time by *adding* to the latter at the rate of

1 hour for every 15° E.	}	(or, on the other hand, subtracting if W.)
4 min. " " 1° "		
4 sec. " " $1'$ "		

and conversely, if we require to find Greenwich mean time from a given local mean time, we *subtract* when the longitude is East and *add* when it is West.

WHAT LOCAL TIME IS NOT.

Some people have an idea that "local time" is the particular standard of time in common use in the neighbourhood. It may be. But not necessarily.

For instance, the time in general use in Liverpool is G.M.T., and it might therefore be argued that this was the local time.

¹ A useful mnemonic is "Houses local, planets Greenwich."

The expression "local time" however is a technical expression with a certain definite meaning, and its use should be restricted to that meaning. If we speak of 'local' time at Liverpool, therefore, it will be understood that we refer to a time that is 12 minutes behind Greenwich time, and not to the time shown by the local clocks. They will show Greenwich Time, as that is the standard time used throughout the whole of Great Britain.

It may at first sight seem a paradox that the local clocks should not show the local time, but the apparent paradox will disappear if we write down the standard and local times at the moment of noon, G.M.T., for Liverpool $2^{\circ}59'$ W. and Norwich $1^{\circ}16'$ E.

$\left\{ \begin{array}{l} \text{At} \\ 0.0 \text{ p.m.} \\ \text{G.M.T.} \end{array} \right\} =$	{	The local mean time at Liverpool is	11.48 a.m.	*
	{	The local clocks show	12.0 ,,	
	{	The local mean time at Norwich is	12.5 p.m.	
	{	The local clocks show	12.0 ,,	

Each place has its own Local Time, depending on its longitude, and this is its real time whatever time the inhabitants of that place may for convenience employ instead.

Clock Time at any place should therefore properly be termed the local Standard Time at that place, rather than the Local Time. It may be identical with Local Time, but is not necessarily so.

The use of Standard Time is fully explained in a later Chapter.

TRUE LOCAL TIME *versus* LOCAL MEAN TIME.

The expression "local" time, in the strictest technical sense of the term, means true solar or 'apparent' time at the place under consideration, and is determined for scientific purposes by the hour angle of the Sun. This means the angle between a great circle passing through the N. Pole and the Sun's centre, and the great circle which constitutes the meridian of the place; thus, if this angle is $15^{\circ}0'$ and the Sun is west of the meridian, then the "true local time" is 1 p.m. exactly, whatever clock-time may be employed by the inhabitants of the town or village in question.

The words "local time" or "time local" are however generally employed for *true local mean time*, and this can always be determined from the Greenwich mean time and the known geographical longitude of the place, as already explained. It will be seen, therefore, that *true*

local time and *true local mean time* at any place are not necessarily the same. Indeed they are never the same except on the dates given below. There is of course no difference between local time and true local time, the word true being only used for emphasis.

For example, a student who was born in London 7/2/'72, at noon, G.M.T., which of course was the local mean time, on first calculating his horoscope was very puzzled to find that the Sun was not on the meridian but $3\frac{1}{2}^{\circ}$ east of it. The explanation was that mean noon and true noon had not coincided since the previous Christmas, and the astronomical day being at that part of the year a few seconds longer than the mean, the discrepancies had been gradually accumulating, so that true noon did not occur till about a quarter of an hour after mean noon on February 7th. The days in the year when true noon¹ and mean noon coincide are given in this list, which also shows the dates when the discrepancy is at a maximum.

<p><i>Max. AND Min.</i></p> <p>DIFFERENCE BETWEEN</p> <p>MEAN AND APPARENT TIME</p>	}	February 12th	+	m.	s.
		April 15th	+	0	0
		May 15th	-	3	49
		June 14th	+	0	0
		July 27th	+	6	18
		September 1st	+	0	0
		November 3rd	-	16	20
		December 25th	+	0	0

The plus and minus signs in the list signify that the respective minutes and seconds are to be added to, or subtracted from, True Time to find Mean Time; and *vice versa*, if one wishes to find True time from Mean.

True time is the time shown by a properly mounted sun-dial, and in order to make use of a sun-dial to correct a clock, it is necessary to make use of this correction, which is known as the EQUATION OF TIME. The equation of time varies from day to day, and only the extreme limits have been given in the above list. But unless the student has occasion to make astronomical observations for himself, he will never need to trouble himself about the Equation of Time. Mean Time is universally employed throughout the civilised world, and Mean Time only is needed in calculating the horoscope.

¹ True noon is the moment when the Sun's centre reaches the meridian. True noon is also called by astronomers "apparent" noon, since it can be observed, whereas mean noon must be calculated from true noon. This use of the word is rather strange at first because the word apparent is generally used in contrast to real instead of being made synonymous with it.

SOLAR OR APPARENT TIME AND ITS CONVERSION INTO MEAN TIME.

Although as already stated Mean Time is used practically all over the world, there are still some places where true solar time is used, or some modification of it. This can be converted into mean time by means of the Equation of Time as already explained. The "equation of time" if not given in the ephemeris may be found as follows: Find in any table of houses the Sidereal Time when the degree and minute occupied by the Sun at noon is exactly on the cusp of the tenth house; this is then the *sidereal time at true (or 'apparent') noon*: and the difference between this and the Sidereal Time at Noon as given in the Ephemeris, *plus* or *minus* as the case may be, is then the "Equation of time."

Suppose, for instance, that we want to find the Greenwich mean time corresponding to true or observed time 6.57 a.m., August 17th, 1904, at Calcutta. We proceed as follows:

Sun's place at mean noon; Greenwich, $\Omega 24^{\circ}7'$.

	h. m. s.
Sidereal Time, August 17th, 1904, at mean noon, Greenwich -	9 41 44
Sidereal Time, when Leo $24^{\circ}7'$ culminates	9 45 44
Difference (= "Equation of Time") -	4 0
True Local Time, Calcutta, a.m. -	6 57 0
Subtract the Equation of Time -	4 0
Gives Local Mean Time, Calcutta -	6 53 0
Subtract difference of time, Calcutta to London ($88^{\circ}20'E.$) -	5 53 20
Gives the equivalent mean time at Green- wich, <i>i.e.</i> -	0 59 40 a.m.

It is unnecessary to give further examples, as the principle is the same in all cases.

LOCAL TIME IN THE EAST.

In many parts of India it is customary to reckon time, not as we do from Noon, but from Sunrise.

As the time of sunrise varies from day to day in a fashion that is

dependent upon the latitude of the place, it is necessary to ascertain the Mean Time of Sunrise before the calculation of the horoscope can be proceeded with. This is rather beyond the scope of the present chapter and must therefore be deferred.¹

The measure of time generally employed is the "ghatika" and the "vi-ghatika," which are easily converted thus :

$$1 \left\{ \begin{array}{l} \text{Ghatika} \text{ or} \\ \text{Ghati} \text{ or} \\ \text{Naliga} \text{ or} \\ \text{Nali} \end{array} \right\} = 24 \text{ minutes.}$$

$$1 \left\{ \begin{array}{l} \text{Vighatika} \text{ or} \\ \text{Vighati} \text{ or} \\ \text{Vinali} \text{ or} \\ \text{Vinadi} \end{array} \right\} = 24 \text{ seconds.}$$

GEOGRAPHICAL LATITUDES AND LONGITUDES.

The latitude and longitude of all important places will be found in the index to any good atlas.²

Latitudes are in ALL cases given in degrees and minutes N. or S. of the Equator; *Longitudes*, in degrees and minutes E. or W. of Greenwich—except in foreign works, French geographers for instance reckoning from the meridian of Paris.

¹ Chapter VII., p. 55.

² A useful list will be found on p. 348.

CHAPTER IV.

THE HOUSES OF THE HOROSCOPE.

So far we have concerned ourselves only with matters which are, properly speaking, purely astronomical. On the one hand we have discussed the *data* of the planetary positions, and on the other, the means of discovering the Sidereal Time or Right Ascension of the Meridian at the moment of birth.¹ This latter is the keystone, as it were, of the whole horoscope. For when once the R.A.M.C. is calculated, the only other factor required to determine the houses of the horoscope is the latitude of the birthplace.

We have, then, as the three necessary factors for computing a horoscope:—

1. The Local Time, from which the R.A.M.C. is determined.
2. The Standard Time, which may be calculated from the local time and the geographical longitude; this is necessary in order to compute the planetary positions from the Ephemeris. The Standard Time we are concerned with for any English Ephemeris is *Greenwich Mean Time*, abbreviated G.M.T.
3. The Geographical Latitude of the Birthplace; it must of course be known, too, whether this is N. or S.

These are the three fundamental elements without which it is impossible to calculate the horoscope. The first two of these factors have been fully explained. It now remains to consider the "houses" of the horoscope, how they are calculated, and what bearing the latitude of the birthplace has upon the calculation.

THE SIMPLEST CASE.

We will first attempt the simplest case. Suppose that a birth occurs at some place on the Equator, and at a time when the R.A.M.C. is 18h. 0m. 0s. or $270^{\circ}0'$, so that $\nu^{\circ}0'0''$ is on the mid-heaven or cusp of the tenth house.

¹ Often abbreviated *R.A.M.* or *R.A.M.C.*, or *A.R.M.C.*, or *R.A. of M.C.*

Reference to the diagram of the ecliptic facing p. 7 will show that $\Upsilon 0^{\circ}0'$ would then be rising at the Equator, since it would be immediately vertical to that point of the terrestrial sphere which is 90° east of the meridian of the birthplace. This will be apparent if we imagine the place to be represented by the letter *a* in the word *Equator* in the right-hand circle; then the dotted line will represent the meridian or cusp of the tenth house passing through $\Upsilon 0^{\circ}$, and the circle itself the horizon with $\Upsilon 0^{\circ}$ upon the eastern point. If this is not quite obvious at a glance, a little thought will make it plain.

A little further thought will show, moreover, that $\Upsilon 0^{\circ}0'$ would be rising, not only at the given place on the equator, but also at any other place on the same geographical meridian, (and hence, at the given moment, under the same *celestial* meridian). And this for the following reason:—

If the R.A. of the mid-heaven is $270^{\circ}0'$, the R.A. of each point of the celestial equator through which pass the twelve circles marking the cusps of the various houses of the horoscope, X., XI., XII., I., II., III., etc., will be 270° , 300° , 330° , 360° (or 0°), 30° , 60° , etc.;¹ 30° being added for each house. In other words the celestial equator will be divided into twelve equal parts, of 30° each, by semi-circles corresponding to the meridians of longitude represented on an ordinary map of the world or geographical globe. This system of division, which is easily perceived to be quite logical and orderly, will, as seen, give us R.A. 360° , or $\Upsilon 0^{\circ}0'$, for the ascendant; or rather, to be exact, for the oblique ascension of the ascendant. There is a reason for this distinction, as will be seen below.

To put it in another way. Through this point of the equator must pass the plane of the horizon of the birthplace. The following definitions and the distinctions they imply, should be carefully noted.

“O.A.,” “CUSP,” AND “R.A.” OF THE ASCENDANT.

(1) This point is the O.A. or oblique ascension of the ascendant, as just stated: (2) the degree of the Zodiac cut by the line passing through this point and the horizon of the birthplace is the “cusp” of the ascendant: (3) the point of the equator perpendicular to this latter is the R.A. of the ascendant. From this explanation it will be seen how the terms oblique ascension of the ascendant and right ascension of the

¹ These points, in fact, mark the *Oblique Ascension* of the respective houses.

ascendant arise, and also what they really mean, and how they differ from the zodiacal cusp.

In the case under consideration these distinctions do not appear to exist, but that is only because $\Upsilon 0^{\circ}0'$ is a point of the zodiac and also at the same time a point of the equator, and therefore it is clear that all lines which are drawn as above described, from whatever horizon, will pass through it; in fact, it will be "on the ascendant" at all places which have 360° for the O.A. of their ascendant, or, what amounts to the same thing, 270° for the R.A. of their M.C. This fact will be more readily appreciated, perhaps, on reference to the Table of Ascendants at end of book, under R.A.M.C. 270° , when it will be seen that in all latitudes $\Upsilon 0^{\circ}0'$ is on the ascendant.

The significance of the distinctions made in the last paragraph but one will not yet be apparent, but the reader will be able to refer back to them later.

We have advisedly selected the simplest case for our illustration and though it is hardly to be expected that the beginner will follow the explanation with perfect comprehension at first, it has been put as clearly as we are able to do it. The student is advised to work the whole matter out for himself, with the aid of a geographical globe if possible, or if not, with an ordinary white gas-globe, india-rubber ball, or anything of a nearly spherical shape—even an orange would do—on which have been represented (1) the circle of the equator, (2) the circle of the Zodiac, crossing it at an angle of about $23\frac{1}{2}^{\circ}$, and (3) the N. and S. poles, on which axis the sphere must be supposed to turn. By so doing he will form clear and definite ideas, and avoid once and for all a great many of the errors and misconceptions into which many beginners fall. If he will not take the trouble to do this then he must be for ever content to let others do his thinking for him, and to work always by rule of thumb, trusting to good fortune to help him out of actual mistakes, and relying always on Tables of Houses where procurable.

THE SIMPLEST CASE NOT THE ONLY CASE.

It has been shown that when $\Upsilon 0^{\circ}0'$ is on the M.C., then $\Upsilon 0^{\circ}0'$ rises, whatever the latitude of birthplace: and a little reflection will show that this is equally true of the opposite points; *i.e.*, M.C. $\ominus 0^{\circ}0'$ = ascendant $\simeq 0^{\circ}0'$. This may be expressed as an abstract rule thus: "When the

points of extreme declination culminate, the points of no declination ascend."

THE CONVERSE OF THIS RULE IS NOT TRUE, HOWEVER. It must not be supposed that when $\varnothing 0^{\circ} 0'$ ascends, $\Upsilon 0^{\circ} 0'$ will culminate in every latitude. On the contrary, this will only be the case *at the equator*; for even a few degrees away from the equator a different point will culminate, as may be seen by reference to the Table of Ascendants.

If we turn once more to the diagram previously alluded to, and bestow some attention thereon, we shall discover why this is so. If the semi-circle passing through $\Upsilon 0^{\circ}$ be considered the meridian, then it is clear that the dotted line passing through the point of the equator 90° east of it (left-hand circle) must represent the ascendant for any place on the equator. But *only when the birthplace is on the equator* will this give $\varnothing 0^{\circ} 0'$ on the ascendant. For if a line passing through the point where the dotted line intersects the equator (which point marks the "oblique ascension" of the ascendant), be drawn through the horizon of any place *not* on the equator, it will pass, not through $\varnothing 0^{\circ} 0'$ but through some other point of the zodiac, nearer either $\simeq 0^{\circ}$ or $\Upsilon 0^{\circ}$ according as the latitude of the place is N. or S.¹

In fact if we suppose this place to be steadily moved along its own meridian away from the equator and towards either of the poles, we can easily see that the zodiacal point which forms the "cusp" of the ascendant will gradually move from $\varnothing 0^{\circ} 0'$ to $\simeq 0^{\circ} 0'$ as we approach the North Pole, or $\Upsilon 0^{\circ} 0'$ as we approach the South Pole. For at the same moment of time $\Upsilon 0^{\circ}$ may be M.C. at the equator, and horizon (theoretically at least) at the poles.

In this way we have shown that the ascendant is always Υ or $\simeq 0^{\circ}$ when the midheaven is \mathcal{H} or $\varnothing 0^{\circ}$, but \varnothing or $\mathcal{H} 0^{\circ}$ when the midheaven is Υ or $\simeq 0^{\circ}$ *at the equator only*. For instance, if we take London, we

¹ NOTE ON THE MEANING OF THE WORD "HORIZON."—The horizon of a place is a plane perpendicular to the vertical at that place. In astronomical usage the plane of the horizon is supposed to pass through the *centre* of the celestial sphere, to which position it actually very closely approximates, on account of the inconsiderable size of the earth in relation to the immensity of the Celestial Sphere. The astronomical horizon of London, for instance, would be a plane passing through the centre of the earth and perpendicular to the zenith of London. In the diagram facing titlepage, "N. Pole & S. Pole" represents the horizon at the Equator, " Υ Equator \simeq " the horizon at the poles. The horizon of London would be represented by a line falling obliquely about half way between N. and \simeq , passing through the central point ("a" in Equator), and cutting the Ecliptic in $\varnothing 26^{\circ} 36'$, or $\Upsilon 3^{\circ} 23'$, according as we take the left-hand circle or the right-hand circle, that is according as we take $\Upsilon 0^{\circ}$ or $\simeq 0^{\circ}$ for the M.C.

shall find that when $\Upsilon 0^{\circ}0'$ culminates $\ominus 26^{\circ}36'$ ascends, and when $\sphericalangle 0^{\circ}0'$ culminates $\dagger 3^{\circ}23'$ ascends.

IN ORDINARY LATITUDES.

We have taken the simplest case and considered the two extremes, on the one hand the points of *no* declination and on the other the points of *extreme* declination ($23^{\circ}27'$ N. or S.).

Any point of the zodiac lying between these two extremes will ascend at a place of any latitude with a varying margin of "disagreement," so to speak, with the mid-heaven; approximating most closely to the equatorial position when the R.A.M.C. is near 90° or 270° and differing most widely therefrom when the R.A.M.C. is 0° or 180° . At the equator, the ascendant is *always* that degree of the zodiac which has an R.A. of 90° more than the M.C., and hence is always very nearly the point in square to the M.C. To put it differently, at the equator the O.A. and the R.A. of the ascendant are always the same, a fact which is often familiarly expressed by saying that the signs "rise evenly" at the equator. At places distant from the equator they do not, the signs ♋ - ♌ - ♍ - ♎ being of "short" ascension, and ♏ - ♐ - ♑ - ♒ of "long," in the Northern Hemisphere; and *vice versa* in the Southern Hemisphere. For example, whereas the average time needed for a sign to pass over the ascendant is about two hours, at Glasgow (56° N.) the signs Pisces and Aries take but forty minutes apiece, while Virgo and Libra take three hours each.

The above is in fact the whole secret of the difference between a "Table of Houses" for one place and that for another of different latitude, for the same considerations which apply to the ascendant in relation to the midheaven apply also, in a modified form, to the other houses of the horoscope. The student is strongly advised not to take this or any other statement for granted, but to test it for himself, by comparison of all the Tables of Houses to which he has access, and by the Table of Ascendants given elsewhere in this book. Recourse to the globes—or an orange, as before suggested—will enable him to grasp the principle involved.

HOW A TABLE OF HOUSES IS CONSTRUCTED.

A Table of Houses for any place is constructed thus. The "semi-arc" (see definition) of each degree of the Zodiac being computed, the

R.A.M.C. or Sidereal Time is known for the moment when each degree arrives upon the horizon. After the lapse of an interval of time determined by $\frac{1}{3}$, $\frac{2}{3}$, $\frac{3}{3}$, of its diurnal semi-arc, the degree in question is regarded as having arrived at the cusps of the XII., XI., and X. houses respectively, and the R.A.M.C. thus obtained is filled in in its due place. Similarly also for the IX., VIII., and VII. houses.

In this way it is merely a matter of a little practice in the use of the formulæ which are given in the chapter devoted to the trigonometrical method of casting the horoscope, combined with assiduity and care, to construct a Table of Houses for any place between the Equator and the Arctic Circle. It could, in fact, be done by anyone of average intelligence who had carefully studied what has been already explained, and who possessed the necessary application—for it is a tedious though by no means a formidable task. The process is described more fully in a later chapter.

However, the patience of the reader will need no such severe test. For in Chapter VII. there is given a simple explanation whereby, with the aid of the Table of Ascendants we have already spoken of, an accurate horoscope can be calculated for any latitude from 0° to 70° . This method the student as he gains in knowledge and ambition will find of increasing service, and he is advised to lose no time in mastering the few details connected with its practical use.

SOME TECHNICAL TERMS DIAGRAMMATICALLY EXPLAINED.

The subject of house division is too technical to enter into quite fully here, though later on an attempt will be made to do justice to the subject. For the present it will be enough to say that roughly speaking, the equator is divided into twelve equal parts by "great circles" passing through the North and South points of the celestial sphere, one of which, the M.C. or "meridian," also passes through the zenith of the place for which the horoscope is computed. The method of calculation of the ascendant has been already hinted at, and the other houses are arrived at in an analogous way.

This is illustrated in Figure 2, which is worth attentive study.

It is drawn to represent the celestial sphere projected on to the plane of the meridian, at a time when about 20° of Aries is culminating. The

centre of vision is a point due east, and thus both equator and horizon are represented by straight lines, the latter dotted for distinction. The faint dotted line shows the sensible horizon, the bolder dotted line the astronomical. The position of the zenith is indicated by the letter *Z*.

P, P' represent the North and South poles of the celestial sphere, *E R* the equator, and *C I L H S V O* the ecliptic (zodiac). The points *G, F, T, A, K*, are where the 'great circles' referred to (*M G I N*, etc.) cut the equator, at equal spaces of 30° from the meridian; which latter is represented here by the whole circle,—*M E C P N* being the upper meridian (tenth house), and the remainder, *N R O P' M*, the lower meridian (fourth house). *M T N* represents the horizon of the place, which in the example chosen is in $51\frac{1}{2}^\circ$ N. Lat. (London).

The dotted arcs passing through *G, F, (T), A, K*, indicate the lines of limitation of the houses, or what are elsewhere called House-Circles; thus the tenth house comprises the space *M E C P N I G M*; the first, *M T N S A M*; and similarly with the others.

The thin-line arcs show great circles drawn so as to pass through the poles and that point of each House Circle where it cuts the Ecliptic.

The arc *P N* shows the elevation of the pole star above the horizon, and this, of course, is equal to the latitude of the place, $51\frac{1}{2}^\circ$. This is the "Polar Elevation" of the ascendant, a term we shall frequently meet with. The angle *P N M* is a right-angle, so that *P N* is perpendicular to *M N*, and if a similar perpendicular *P N'* be dropped upon the House Circle of the twelfth house *M F L N* we should have in *P N'* the measure of the Polar Elevation for the twelfth house, while the angle *N P N'* would show the Meridian Distance of the Polar Arc,—a term which need not detain us now but which will become of interest later on. The Polar Elevations of the other houses can be found in like manner.

The points to be observed are, that: (1) the *Cusp of the ascendant* is *H*, where the horizon, *M T N*, cuts the ecliptic *C O*; (2) *T*, where the horizon cuts the equator, is the *Oblique Ascension of the ascendant*; and (3) *T'*, through which passes a polar circle (and which is therefore perpendicularly below *H*), is the *Right Ascension of the ascendant*. It is interesting to note that in this diagram the point *T'* which shows the R.A. of the ascendant is almost identical with *A* which marks the O.A. of the second house.

Similarly of the other houses : *I, L, H, S, V*, represent the respective zodiacal *cusps* ; *G, F, T, A, K*, their *oblique* ascensions ; and *G', F', T', A', K'*, the equivalent *right* ascensions. The spaces *E G, G F*, etc., are uniformly 30° each, corresponding to 2hrs. sidereal time, and *G, F*, etc., will represent the Right Ascensions of the various houses at the equator, for there the O.A. and R.A. of the various houses are identical.

In fact, this diagram gives the R.A. of each house *for a place on the equator* at the given moment of Sidereal Time, in the points *G, F, T, A, K* ; and the R.A. of the same houses *at the supposititious place we are considering, say London*, in the points *G', F', T', A', K'*. The differences, *G G', F F'*, etc., are the respective ascensional differences under the poles of the houses in question, the pole of the first and seventh being the same as the geographical latitude, as already stated. The meridian, of course, has no pole.

The system of division here treated of is known as the "rational method" explained in a later Chapter. Although not identical with that by which the ordinary Tables of Houses are constructed, the ascendant is the same by both methods, and with regard to the succedent and cadent houses it may be said that the difference is not sufficient in the majority of cases to make the above description in any general sense misleading.

A RECOMMENDATION.

With this chapter the consecutive explanations and instructions end. The chapters that follow are each complete in themselves, having been contributed by various pens, and have no immediate connection with what has been written up to the present. For with this chapter we have concluded that which was our purpose at the commencement ; to explain the precise meaning of the astronomical *data* supplied in the ephemeris, and to indicate the rational basis of the construction of the horoscope.

For the meanings of aspects, the classification of the signs, the terms "exaltation" and "detriment," etc., etc., the reader is referred to the succeeding Volume of this Series, *How to Judge a Nativity*, which deals exhaustively with the ordinary or exoteric meaning of the horoscope, while later volumes afford a glimpse into the occult basis of the Science of Astrology.

The reader is earnestly counselled to master the astronomical and the mathematical features of the subject, and not to "funk" them, or any part of them, because they are or appear—more often the latter—difficult. For he will find that by his researches in this direction his interest is strengthened and his judgment steadied. He will moreover feel his will braced in the "effort to overcome," apart altogether from the satisfaction of knowing that in his subsequent dealings with that part of the science, still more engrossing, in which the intuitive faculties are so largely brought into play, he is building on a sure foundation,—the sure foundation of *accurate knowledge* and *clear thinking*.

CHAPTER V.

A FEW DEFINITIONS.

Angle. This word is used astrologically to signify the cardinal points of the heavens, and also the whole of the several houses of which they mark the cusps, *viz.*, the first, fourth, seventh and tenth. They have a sympathetic affinity with the cardinal signs, and planets occupying these houses are said to be "angular."

Application. The approach of planets to an aspect that is not yet complete.

Arithmetical Complement (abbreviated a.c.). Explained on pp. 73, 74.

Ascendant. This term is chiefly applied to what is more strictly called the 'cusp' of the ascendant, *i.e.*, that point of the ecliptic through which passes the eastern portion of the plane of the horizon, which latter (supposed to pass through the *centre* of the earth) is inclined to the plane of the equator at an angle equal to the co-latitude. It is also used to include the whole of the first house, that is, one-third of the celestial sphere measured between the eastern horizon and the lower meridian or *Inum Cœli*.

Ascension. See *Right Ascension*, *Oblique Ascension*.

Ascensional difference is the difference between the oblique ascension, and the right ascension, of the Ecliptic point on the ascendant (or other house). In North Latitudes it is + for degrees of N. decl., and —for degrees of S. decl.: and conversely in South Latitudes. See p. 24.

Astronomical Time counts from noon to noon, instead of from midnight to midnight as does ordinary civil time. Thus 6 a.m. on January 1st would be termed 18hrs. p.m. of December 31, according to astronomical reckoning, the hours running from 0 to 24. It is useful to remember this, as many medieval astrologers used the same terminology, which in some cases resulted in two dates obtaining currency for one event, in a manner that the foregoing illustration will explain.

Cadent Houses. Those immediately following the 'succeedent' houses (*q.v.*): third, sixth, ninth, twelfth. They correspond to the common or "mutable" signs.

Co-latitude. The co-latitude of a place is the complement of its latitude. Thus the latitude of London is $51^{\circ}32'$ and its co-latitude $90^{\circ} - 51^{\circ}32' = 38^{\circ}28'$.

Cusp. This word should be applied to the point of intersection of the semi-circle which forms the boundary of a house, with the Ecliptic: but it is often loosely used for that semi-circle itself. Thus, the eastern half of the circle of the horizon is sometimes spoken of as the cusp of the first house: strictly speaking, however, the degree of the ecliptic cut by the horizon is the 'cusp' of the first house—the word being derived from the Latin *cuspis*, a point. Similarly, of course, with the other houses. The term house-circle has been proposed as a convenient expression for the circle or semicircle which marks the end of one house and the commencement of the next. Thus, the meridian is the house-circle of the tenth and fourth houses.

Cuspal distance is a term used to indicate the number of degrees of R.A. intervening between a planet and the house-circle of any house to which it is applying.

Decanate. A space of ten degrees. Thus there are three decanates in each sign, the first 10° being the first decanate and being of the same nature as the sign itself, while the next decanate is of the nature of the next sign of the same triplicity. The three decanates of Aries are therefore of the nature of $\gamma \text{ } \Omega \text{ } \ddagger$, of Taurus $\delta \text{ } \text{m} \text{ } \text{b} \text{ } \text{f}$ —and so on.

Declination, explained in Chapter I.

Descendant. The opposite point, or house, to the ascendant (*q.v.*).

Descension, oblique. The reverse of Oblique Ascension (*q.v.*).

Directions. This word has been very loosely employed. In its original sense it referred to the arc between two significators in a nativity, along which the one was 'directed' to the conjunction, or aspect, of the other; the Arc of Direction being measured by the number of degrees of right ascension passing across the meridian during the intervening time. This Arc of Direction being converted into time at the rate of one year for each degree, the various critical periods of life were thus mapped out, and a series of such calculations came to be known as "Directions." This expression gradually grew into familiar use as a convenient term by

which to designate *any* series of calculations connected with the progressive influence of the nativity, whether founded upon this system of measurement or any other, and in this way the strict etymological significance of the word has been to some extent lost sight of. Directions are broadly classified as Primary and Secondary, the former being founded on the motion of the horoscope during the first day of birth, and the latter on its motion during subsequent days. The whole subject is dealt with fully in a later volume, entitled *The Progressed Horoscope*.

Diurnal Arc: see *Semi-Arc*.

Dragon's Head: *Dragon's Tail*. The Dragon's Head, ♁, is the point of ecliptic longitude which the Moon occupies when crossing the Ecliptic from S. to N. The Dragon's Tail, ♁, is the opposite point. In other words they are the points at which the Moon's Orbit intersects the Earth's Orbit. These points are subject to a slow retrograde motion, passing through the whole circle of the zodiac in about 19 years. The ephemeris gives the *mean* position of the node at any given date, but the *actual* node may differ slightly from this—a fact of which the student can easily convince himself by calculating the zodiacal position of the Moon when it has 0°0' of latitude, in several successive months, and comparing it with the position as given in the ephemeris. The two symbols ♁ and ♁ are little used by modern astrologers, though accounted respectively benefic and malefic by the ancients. It is clear, however, that ♁ corresponds as regards the Moon, to ♈ 0° as regards the Sun; and since we reckon the whole of the zodiacal signs from this latter point it would only seem reasonable to regard ♁ as equivalent to the starting point of the Moon in its path, and hence the ♈ 0° so to speak of *its* Zodiac, in which case ♁ would correspond to ≈ 0°. According to the Hindus, ♁ represents *Manas*, or mind, the thinking power; ♁ *Kama*, the animal desire-nature. The former is said to be exalted in ♀ 3°, the latter in ♃ 3°.

Equating Arcs of Direction. Explained at end of Chapter XI.

Equation of Time. Already explained in Chapter III. (p. 15).

G.M.T. See *Greenwich*.

Geocentric. The earth's centre being regarded as centre, for convenience of calculation, or observation, such observations and calculations are termed geocentric, in contradistinction to heliocentric in which the Sun is made the centre.

Geocentric Latitude (terrestrial). The earth not being a perfect sphere, any arc measured upon its surface is not necessarily equal to the angle which that arc subtends at its centre. The former is the geographical latitude, the latter the geocentric, and it is *this* which should properly speaking be used in calculating the houses of the horoscope. The difference is comparatively trifling and can safely be ignored except where great precision is required. *The geocentric latitude* is always less than the geographical and can be obtained from the geographical latitude as given in atlases, by subtracting the 'reduction' as follows:—Latitude 0° , $R=0'$: latitude 20° , $R=7'33''$: latitude 40° , $R=11'35''$: latitude 45° , $R=11'44''$: latitude 50° , $R=11'34''$: latitude 60° , $R=10'12''$. For intermediate latitudes R may be found by proportion from those given; or if desired, it may be calculated by the following formula: $\tan R = \frac{1}{2} e^2 \sin 2l$, where l is the geographical latitude and e a constant = .0832.

Greenwich Mean Time is Mean Time as calculated for the meridian of Greenwich (London), which is now adopted as the Standard of time throughout practically the whole of the civilised world. Mean Time is explained in Chapter III. Mean Noon is really an astronomical fiction; it is the moment at which the culmination would take place of an imaginary sun, moving with absolute uniformity throughout the year at the real Sun's *mean* velocity. The dates when true noon and mean noon coincide are given in Chapter III.

Heliocentric. Observations, calculations or measurements when referred to the sun as a centre, are termed heliocentric, as distinguished from geocentric when the earth is made the centre. Thus on March 21st the geocentric longitude of the Sun is 0° , and the same idea is expressed by saying that the heliocentric longitude of the earth is 180° . With the planets the nature of the difference is less obvious; thus on January 1st, 1906, at Paris noon the geocentric longitude of Venus was $269^\circ40'$ and its heliocentric longitude $255^\circ21'$, a difference of $14^\circ19'$, while six months later on July 2nd the geocentric longitude was $134^\circ3'$ and the heliocentric $186^\circ59'$, a difference of $52^\circ56'$ in the opposite direction. A formula for converting heliocentric latitudes and longitudes into geocentric is given in the Appendix.

Horary Astrology as a means of divination is an art quite separate and distinct from Natal Astrology, being concerned with the birth of an idea, or a fancy, a thought, or an opinion. Natal Astrology, on the other

hand, is a method of judging the unfoldment of the life of a human being, an individual, all that concerns the said life being judged from the nativity cast for the moment of birth. Many terms met with in astrological books are chiefly applicable to Horary rather than Natal Astrology and readers may be referred to the 20-page Glossary in the shilling manual devoted to this subject, for any not mentioned in this chapter.

Horizon, see under *Houses*, *Ascendant*.

Horizontal arc. This is obtained by subtracting a planet's meridian distance from its semi-arc, and represents the time-distance of the point in question from the *horizon*—ascendant or descendant as the case may be—it is being carried to. A term used in 'directions.'

House Circle. See under *Cusp*.

Houses. The divisions of the celestial sphere formed by trisecting the quadrants formed between the meridian and the horizon. Each of these divisions will therefore consist of 30° of space, as viewed from the place of birth. To take the simplest case. Suppose a birth to occur at the Equator when $0^\circ \Upsilon$ is rising: then $0^\circ \vartheta$ will be upon the meridian. If we divide this quadrant, the cusps of the eleventh and twelfth houses will be respectively $\vartheta 27^\circ 54'$ and $\approx 27^\circ 49'$. By comparing these with the $22^\circ \vartheta$ and $18^\circ \approx$ at New York and the $18^\circ \vartheta$ and $13^\circ \approx$ at London, as given in the Tables of Houses for those places, we shall have some idea how the Latitude of Birth-place influences the distribution of the signs in the horoscope. This is gone more fully into in its proper place, in Chapters IV and XII. The *Meridian* is a great circle of the celestial sphere passing through the Zenith and the Poles, and corresponds to the geographical longitude. The *Horizon*, astrologically and astronomically speaking, is a great circle passing through the centre of the earth and forming the same angle with the celestial pole as does the zenith of the birth-place with the equator, *i.e.*, the latitude of the place. Thus, at London (0° of Longitude and $51^\circ 32'$ North Latitude), when the astronomical clock marks 0h. 0m. 0s. sidereal time, then $\Upsilon 0^\circ$ is on the meridian and $\ominus 26^\circ 36'$ is on the horizon, while at the same moment, under the same meridian of longitude, $\ominus 0^\circ$ would be upon the horizon at the equator and $\Pi 3^\circ 23'$ at any place having $51^\circ 32'$ of *South* Lat. It will be seen, then, that the latitude of the birth-place is a most important factor in calculating horoscopes (ref. *Polar Elevation*).

I.C., *Imum Cæli*, see under *M.C.*

Inferior Planets. Those whose orbits lie within the earth's; ♀, ☿.

Latitude. Explained in Chapter I.

Lights, The. ☉ and ☽.

Local Time, Local Mean Time. Explained on pp. 13, 14.

Logarithms. Explained in Chapter IX.

Longitude. Explained in Chapter I. It should be borne in mind that Celestial Longitude is of two kinds, geocentric and heliocentric. The former is now very rarely used by astronomers and is only given in the Nautical Almanac for the Sun and Moon, but it is the only kind of longitude referred to by the astrologer, who by that term means nothing more nor less than zodiacal position. Thus if ♃ is in ♈^{3°} its longitude (geocentric) is 3°. A formula for converting heliocentric latitudes and longitudes into geocentric is given in the Appendix.

Luminaries. ☉ and ☽.

Lunation. The ♄, ♀ or ♁ of the ☉ and ☽; also the length of time in which the ☽ appears to move round the earth; the time from New Moon to New Moon. The term is most frequently used to signify the position ☽♄☉ (New Moon). When in square to each other the luminaries are said to be in quadrature, while their conjunction or opposition is referred to as syzygy.

Lune. The portion of the surface of a sphere which is contained within two great semi-circles is called a *lune*.

Mean Time. Explained on p. 10. See also under *Greenwich*.

M.C., Medium Cæli; Mid-Heaven; Meridian, Upper Meridian. These terms are all used synonymously for the cusp of the tenth house, and also for the tenth house itself. Etymologically considered, they imply a 'lune' or space of say 30° or thereabouts in extent, bisected by the meridian. The use of the word meridian should properly be restricted to its astronomical significance, defined above under *Houses*. The opposite portion of the heavens is denoted by the terms *I.C., Imum Cæli, Lower Meridian*, which are respectively antithetical to the above.

Meridian, see under Houses.

Meridian distance. This is the distance, measured on the equator, and expressed in degrees or time, between any celestial point and the upper or lower meridian. It is, in fact, a portion of the semi-arc (*q.v.*): thus, if a planet is on the cusp of the eleventh house, its meridian distance is one-third of its semi-arc.

Mundane Aspects. Explained in Chapter XI.

Nadir. The opposite point to the Zenith (*q.v.*).

Nocturnal Arc : see *Semi-Arc.*

Node. That part of the ecliptic where a planet passes out of North into South latitude (celestial) is its south or descending node, the opposite point is its north or ascending node. The symbol is ♁ (ascending) and ♁ (descending) in all cases, the Moon's Node being implied unless the symbol of a planet accompanies it. See *Dragon's Head.*

O.A., Oblique Ascension. This somewhat confusing term is applied to the R.A. of that degree which is on the ascendant, twelfth, eleventh, second or third house at a place *on the Equator*, at any given time; the expression being used in contradistinction to the quite different R.A. of that degree which is then on the ascendant, twelfth, eleventh, second or third house at a place *in the particular latitude to which reference is being made*: both places being understood to have exactly the same geographical longitude. (See pp. 23, 24, 25.) As a definition, this is not satisfactory from a technical point of view; but as an explanation of the distinction, in a practical sense, between the *O.A.* and the *R.A.* of a house, it will probably answer the purpose. The converse term "oblique descension" is similarly used of the descendant, sixth, fifth, eighth or ninth house.

Occidental and Oriental. From the fourth house eastward is 'oriental' or rising; from the tenth westward 'occidental' or setting. But the Sun and Moon are considered *oriental* between first and tenth or seventh and fourth, and *occidental* between tenth and seventh or fourth and first; oriental may be considered as positive in character, occidental as negative. A planet is said to be oriental of the Sun when it rises before, and occidental of the Sun when it sets before, that luminary.

Parallels. In the *zodiac*, these are equal distances from the equator, or having the same declination; whether one is North and the other South, or both North or both South, makes no difference (Par. dec.). In the *world*, they are equal distances from the meridian—or horizon—in proportion to the semi-arcs of the planets which form them (Par. mund.). *Rapt parallels* are parallels formed by the motion of the Earth on its axis, whereby both bodies are *rapt* or carried away by the same until they come to equal distances from the meridian.

Pars Fortunæ. The Part of Fortune, see p. 141.

Polar elevation. This term, often abbreviated into simply "pole," has caused much confusion. At the Equator, the Pole Star will lie exactly on the horizon. As we ascend northwards towards the Pole, it can easily be seen that the Pole Star will rise above the horizon and ascend higher and higher in the heavens. Consequently the height of the pole above the horizon, as viewed from any place, if measured in degrees will be equal to the geographical latitude of that place. It is this polar elevation that is usually meant when the 'pole of the ascendant' is spoken of. The 'pole' of the XII., II., XI. and III. houses is a certain fraction of the geographical latitude, as shown at foot of the *Table of Ascendants* given at end of book. So that to say, for instance, that the pole of the twelfth or second house in the latitude of London ($51^{\circ}32'N.$) is $40^{\circ}51'$, means really that *the degree on the cusp of the twelfth house at London is the same as that on the ascendant in a place having latitude $40^{\circ}51'N.$ WHEN the R.A.M.C. is 30° less—or, if the second house is concerned, 30° more,—and it can therefore be calculated in the same way.* The practical application of this is shown in the chapter devoted to the explanation of the *Table of Ascendants* (p. 46).

Pole, see under *Polar Elevation.*

Primary Directions. See *Directions.*

Prime Vertical. A great circle of the celestial sphere, passing through the zenith and through the east and west points of the horizon. Referred to in Chapter XII.

Promittor. A term used in connection with directions (*q.v.*), and signifying that which promises to fulfil some event. Thus Jupiter and Venus are promittors of good when the native's significator is directed to them.

Quadrature. See under *Lunation.*

R.A., Right Ascension. This term has been defined in Chapter I.

Rectification. Correcting the supposed time of birth to find the true time. This may be done either by the "Pre-Natal Epoch," or by calculating backwards from known events, and adjusting the birth-time to the aspects or transits signifying same. See Chapters VIII and XI.

Retrograde. The *apparent* motion of a planet backwards in the Zodiac, due to the motion of the earth in its orbit. The Sun and Moon are never retrograde, but all the others are at various times. This is explained in Chapter XIII.

Secondary Directions. See *Directions*.

S.A., Semi-arc, or more correctly semi-diurnal or semi-nocturnal arc. This is half the time that a planet, star, or degree of the Ecliptic is above the horizon (semi-diurnal arc or semi-arc diurnal), or, below it (semi-arc "nocturnal"). It is expressed either in Time (sidereal hours, minutes and seconds), or in degrees, minutes and seconds of Right Ascension, whichever is more convenient for the purpose intended. For instance, the semi-arc diurnal of the Sun at the time of the equinoxes (March 21st, September 22nd) is 6 hours of mean time (or 6h. 1m. of sidereal) all over the world, being then equal to its nocturnal semi-arc, the whole diurnal arc or "day" being of course 12 hours—whence the term equinox, day and night being then equal all over the world. Expressed in R.A. we should say semi-arc $\odot = 90^{\circ}15'$. The semi-arc of the degree $0^{\circ}\gamma$ or \simeq would of course be $90^{\circ}0'$, the $15'$ being due to the Sun's own motion in the Ecliptic, at the rate of 1° per day. On the other hand, the semi-arc (diurnal) of the Sun when in $\varpi 0^{\circ}$ (Summer Solstice) is, in the latitude of London, $124^{\circ}16'$ or in time (sidereal) 8h. 17m. 22s., but it varies with the latitude, increasing as the latitude increases. The semi-arc of intermediate degrees may therefore be anything between 90° and $124^{\circ}16'$ in this latitude. The semi-nocturnal arc is the difference between the semi-diurnal arc and 180° ; and the semi-diurnal arc of any degree is the semi-nocturnal arc of the opposite degree. The importance of these terms will be more fully apprehended when we come to deal with the houses, also when "directions" have to be considered.

Separation. When planets, having completed or approached an aspect, move away from it.

Significator is the planet or luminary representing a person or event. Thus the lord of the ascendant is the native's significator and the lord of the seventh is the significator of his partner, the lord of the second of his wealth, of the eighth, of his partner's wealth, and so on. A term used in directions or rectification.

Succedent Houses. Those immediately following the angular houses (*q.v.*): second, fifth, eighth, eleventh. They correspond to the fixed signs.

Superior planets. Those whose orbits lie outside that of the Earth; that is, δ ζ η θ ψ .

Syzygy. See under Luration.

Transit. (1) When a planet passes over the zodiacal degree occupying any influential point of a horoscope such as the M.C., ascendant, Sun's place, etc., it is said to transit that point by 'ephemeral motion.' (2) When by progressed motion at the rate of a day for a year, the planet comes to any such place it is said to transit the M.C., Asc., etc., by 'directional motion.' Thus, in the horoscope of King George V., given in SECTION B, whereas the D will transit the M.C. by 'ephemeral motion' once in every month, by 'directional motion' this will occur once in every twenty-eight years only, the first such transit occurring in the seventh year of life.

Zenith. The point in the heavens immediately overhead. The word is sometimes incorrectly used as a synonym for the midheaven, but no planet can ever be in the *zenith* except in latitudes not exceeding about 25° . Mathematically, the zenith is the pole of the horizon.

[For further information the *Comprehensive Glossary of Astrological Terms at the end of the Shilling Manual* entitled "*Horary Astrology*" may be consulted.]

CHAPTER VI.

THE CALCULATION OF THE HOROSCOPE IN DETAIL. STANDARDS OF TIME IN VARIOUS PARTS OF THE WORLD.

Raphael's Ephemeris and the *Nautical Almanac* both give the planets' places for mean noon at Greenwich, and because of this it is easier to calculate a map of the heavens for London (of which Greenwich is now a part) than for any other place. When casting a horoscope for any other place at home or abroad, it is necessary to keep in mind the difference in time between Greenwich and the place for which the horoscope is calculated, and to introduce various corrections for this difference.

The difference in time between any given town and Greenwich is found by taking the geographical longitude of the town (which may be ascertained from the index of any good atlas) and converting it into time at the rate of 4 minutes of time for each degree of longitude, or 4 seconds of time for each minute of longitude¹ (see *Table for Turning Degrees into Time*, on p. 347 of this book). For instance, the longitude of Bristol is $2^{\circ}32'W.$, which, when converted into time, gives 10 minutes 8 seconds. Places to the East of Greenwich are earlier in time, but places to the West are later in time than Greenwich. As Bristol is to the West, it is 10 minutes 8 seconds later than Greenwich; and when it is exactly noon at Bristol, it is 0h. 10m. 8s. p.m. at Greenwich. And vice versâ, when it is exactly noon at Greenwich it is 11h. 49m. 52s. a.m. at Bristol.

If this were all, the task of calculating a horoscope for any other place than London would be comparatively simple; but in practice it is complicated by the introduction of what is called Standard Time. This means that each town, instead of regulating its clocks by its own mean

¹ Multiply the degrees and minutes by 4; call the degrees of longitude *minutes* of time, and the minutes of longitude *seconds* of time.

time, adopts some arbitrary standard of time for the sake of uniformity with other towns.

Since the introduction of railways, the standard time for England, Wales and Scotland has been Greenwich Mean Time; and this fact must be taken into account in casting the horoscope; but the time of any birth that took place during the first half of the nineteenth century in Great Britain would be taken to be true local mean time, in the absence of information to the contrary.

GENERAL RULES.

When a time of birth is stated in standard time, the rules for calculating the horoscope are as follows:

(1) Convert the standard time into local mean time¹; and ascertain the difference between local mean time and Greenwich time.

(2) Calculate the cusps of the houses for local mean time.

(3) Calculate the planets' places for the corresponding Greenwich time.²

These are the preliminary rules only. The following rules give the further details that are necessary.

(4) Find the Sidereal Time for mean noon at the place of birth.

In the *Ephemeris* and in the *Nautical Almanac* the Sidereal Time is given for noon at Greenwich. If the place of birth is in West Longitude, a correction is to be *added* to the S.T. for Greenwich noon; but if it is in East Longitude, the correction is to be *subtracted* from the S.T. for Greenwich noon. The correction amounts, in round numbers, to 10 seconds for each hour of difference between Greenwich time and local mean time: some people find it easier to remember this as two seconds for each 3° of longitude. The exact amount of the correction can be ascertained from the *Table of correction between Mean and Sidereal Time* at the end of this book.

Example I.—Required, the S.T. at noon at Washington, 77°3' West longitude (or 5h. 8m. 12s. in time), on September 1st, 1890.

¹ The rules for converting standard time into mean time are given further on in this chapter, page 44.

² Rules (2) and (3) are well expressed in what has been termed the GOLDEN RULE: "Houses, local; Planets, Greenwich."

			<i>h.</i>	<i>m.</i>	<i>s.</i>
S.T. at noon, Greenwich	-	-	10	42	24.23
Add correction for 5 <i>h.</i> 8 <i>m.</i> 12 <i>s.</i>	-	-			50.62
S.T. at noon, Washington	-	-	10	43	14.85

Omitting the decimal places this is, in round numbers, 10 hours, 43 minutes, 15 seconds.

Example II.—Required the S.T. at noon at Auckland, New Zealand, 174°48'E. longitude (or 11*h.* 39*m.* 12*s.* in time) on September 1st, 1890, The fact of a place being in the Southern hemisphere makes no difference in calculating the Sidereal Time.

			<i>h.</i>	<i>m.</i>	<i>s.</i>
S.T. at noon, Greenwich	-	-	10	42	24.23
Subtract correction for 11 <i>h.</i> 39 <i>m.</i> 12 <i>s.</i>	-	-		1	54.86
S.T. at noon, Auckland	-	-	10	40	29.37

In round numbers this is 10 hours, 40 minutes, 29 seconds.

This correction for longitude is never very large. The two examples just given show that places so far from Greenwich as Washington and Auckland require a correction of less than one minute and two minutes respectively. For towns within the limits of Great Britain the correction is frequently ignored, as it never amounts to more than about 4 seconds. If the time of birth is very uncertain, and only a rough approximation is required, the error caused by ignoring this correction and working with the S.T. for noon at Greenwich will never exceed 2 minutes for any part of the globe.

(5) Find the S.T. at the moment of birth, or the Right Ascension of the M.C. (medium coeli).

To the S.T. at noon next preceding the birth, add the hours, minutes and seconds of mean time (not standard time) that have since elapsed; and add also a correction, about 10 seconds per hour in round numbers, for the difference between mean and sidereal time. This correction, like the previous one, is taken from the *Table of Correction between Mean and Sidereal Time* at the end of this book. Before doing this, the student must of course have applied rules (1) and (4).

This will give the Sidereal Time for the moment of birth, which, when converted into degrees and minutes, is called the Right Ascension of the Mid-heaven (abbreviated R.A.M.C.).

Example III.—Required the R.A.M.C. in the horoscope of a child born at 2 a.m. standard time at Washington, on September 2nd, 1890. The tables of standard time at the end of the Appendix show that Washington, $77^{\circ}3'W.$ long., is 5 hours slower than Greenwich. But the difference from Greenwich Mean Time (abbreviated G.M.T.) is 5h. 8m. 12s. (see Example I.). Therefore mean time is 8m. 12s. slower than standard time; and the time of birth, 2 a.m. standard time, will be 1h. 51m. 48s. a.m. mean time. The S.T. for the previous noon has been found in Example I.

	<i>h.</i>	<i>m.</i>	<i>s.</i>
S.T. noon Washington, Sept. 1st	-	10	43 14.85
Add mean time elapsed	-	13	51 48
Add correction for 13h. 51m. 48s.	-		2 16.64
			<hr/>
		24	37 19.49
Subtract the circle	-	24	
			<hr/>
S.T. at birth	-	0	37 19.49
			<hr/> <hr/>

When converted into degrees and minutes of arc by means of the Table, this gives the R.A.M.C. as $9^{\circ}20'$. If preferred, instead of using the Table, the conversion may be effected by the following method: reduce the hours, minutes, and seconds to minutes and seconds only, and then divide by four; the minutes call degrees, and the seconds of time call minutes of arc.

Example IV.—Required the R.A. of M.C. in the horoscope of a child born at 2 a.m. standard time, at Auckland, New Zealand, on September 2nd, 1890. The Tables of standard time at the end of the Appendix show that New Zealand standard time is $11\frac{1}{2}$ hours faster than Greenwich. Example II. shows that the difference between Auckland M.T. and G.M.T. is 11h. 39m. 12s., an excess of 9m. 12s. faster; which means that the standard time is that much too slow and that this must be added to the recorded birth time in order to convert it into mean time. This makes the mean time of birth 2h. 9m. 12s. The S.T. at noon at Auckland on the day before has been found in Example II.

	<i>h.</i>	<i>m.</i>	<i>s.</i>
S.T. noon Auckland, Sept. 1st	-	10	40 29.37
Add mean time elapsed	-	14	9 12
Add correction for 14h. 9m. 12s.	-		2 19.50
			<hr/>
		24	52 0.87
Subtract the circle	-	24	
			<hr/>
S.T. at birth	-	0	52 0.87
			<hr/> <hr/>

When converted into degrees of arc by means of the Table, this gives the R.A. of M.C. as $13^{\circ}0'$.

It will be seen that the fact of the birth having occurred in South Latitude makes no difference in the calculation of Examples II. and IV. up to this point.

(6) To find the cusps of houses.

This may be done in various ways. If a table of houses for the latitude of the birthplace is available, the simplest plan is to consult it. Knowing the S.T. of birth, the signs and degrees on the cusps of six out of the twelve houses can easily be found. The cusps of the other six houses have the same degrees but opposite signs. Further particulars, with an illustrative horoscope, are found in SECTION B. of this book.

In Chapter VII. will be found a simple method of ascertaining the cusps of houses by means of the *Table of Ascendants*, including instructions for South Latitudes. In Chapter X. will be found the method of calculating the horoscope, the cusps of houses, and the Speculum by means of Trigonometry. This is the method always followed when extreme precision is required. But the Table of Ascendants gives results accurate to within $1'$ or $2'$, which is all that is required as a rule: it is not quite so exact as this for latitudes over 60° however.

(7) To calculate the planets' places.

As stated in Rule (3) the planets' places must be calculated for Greenwich time. The longitude of the birthplace *in time* must first be ascertained by converting the degrees and minutes given in the Atlas into time, by the Table at the end of this book, as has been done in Examples I. and II. Then, knowing the local mean time of birth,¹ in order to find the corresponding Greenwich time:—

For W. long. add the long. in time to the local mean time of birth.
For E. long. subtract the long. in time from the local mean time.

The result will give the time of birth stated in Greenwich mean time. The planets' places can then be calculated for this time from the Ephemeris in the latter part of this book, or from Raphael's or any other Ephemeris, or from the *Nautical Almanac* for the year of birth. The easiest way of calculating the planets' places for any hour and minute is

¹ If the estimate time of birth is standard time, this can be converted into local mean time by means of the formula given further on in this chapter, p. 44.

by the use of Diurnal Proportional Logarithms, a table of which, with an explanation, has been given in Raphael's Ephemeris for every year since 1884. The table is also contained at the end of this book, and in *Chambers' Mathematical Tables*.

Example V.—Horoscope of a male born at 2 a.m. standard time at Washington on September 2nd, 1890, $77^{\circ}3'W.$, $38^{\circ}54'N.$

This is the horoscope some particulars of which have been worked out in Examples I. and III. The cusps of the houses are calculated for the local mean time of birth $1h. 51m. 48s.$ a.m.; and by adding to this the longitude of Washington in time (or $5h. 8m. 12s.$), the corresponding Greenwich mean time is found, 7 a.m., for which time the planets' places are calculated. The R.A. of M.C. is $0h. 37m. 19s.$ or $9^{\circ}20'$.

Cusps of	10th	11th	12th	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
	$\Upsilon 10.9$	$\text{♄} 16$	$\text{♁} 23$	$\text{♁} 25.28$	$\text{♁} 16$	$\text{♁} 10$	$\text{♁} 10.9$	$\text{♁} 16$	$\text{♄} 23$	$\text{♁} 25.28$	$\text{♁} 16$	$\text{♁} 10$
Planets	♃	♅	♁	♁	♄	♁	♁	♄	♄	♄	♄	♄
	$\Upsilon 22.29$	$\text{♁} 6.48$	$\text{♁} 7.37$	$\text{♁} 9.44$	$\text{♄} 6.42$	$\text{♁} 24.16$	$\text{♄} 24.51$	$\text{♄} 17.19$	$\text{♁} 3.26$	$\text{♁} 10$	$\text{♁} 16$	$\text{♁} 10$

Example VI.—Horoscope of a female born at 2 a.m. standard time at Auckland, New Zealand, on September 2nd, 1890, $174^{\circ}48'E.$, $36^{\circ}54'S.$ See Examples II. and IV.

The cusps of the houses are calculated for the local mean time of birth, $2h. 9m. 12s.$ By subtracting from this the longitude in time ($11h. 39m. 13s.$) the corresponding Greenwich mean time is found, $2h. 30m.$ p.m., on September 1st; for which time the planets' places are calculated. The R.A. of M.C. is $0h. 52m.$ or $13^{\circ}0'$.

In order to find the cusps of the houses for a place in South latitude, add $12h.$ to the S.T. of birth, and then turn to a Table of Houses for a latitude the same distance North as the birthplace is South. Write down the degrees on the cusps as there given, but substitute the opposite signs.

Cusps of	10th	11th	12th	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
	$\Upsilon 14.7$	$\text{♄} 11$	$\text{♁} 4$	$\text{♁} 24.35$	$\text{♁} 0$	$\text{♁} 9$	$\text{♁} 14.7$	$\text{♁} 11$	$\text{♄} 4$	$\text{♁} 24.35$	$\text{♁} 0$	$\text{♁} 9$
Planets	♃	♅	♁	♁	♄	♁	♁	♄	♄	♄	♄	♄
	$\Upsilon 12.40$	$\text{♁} 6.48$	$\text{♁} 7.32$	$\text{♁} 9.4$	$\text{♄} 5.58$	$\text{♁} 24.14$	$\text{♄} 24.7$	$\text{♄} 16.52$	$\text{♁} 3.28$	$\text{♁} 10$	$\text{♁} 16$	$\text{♁} 10$

The sign ♁ is intercepted in the 1st house and ♄ in the 7th.

When a person in New Zealand faces the Sun at noon, he will be looking towards the north, the east will be on his right hand and the west on his left. Because of this it is generally held that a horoscope for south latitude should show the houses reversed; with the cusp of the southern ascendant on the right, where the cusp of the seventh house

is in a northern horoscope; the cusp of the southern second in the place of the cusp of the northern sixth; the southern third on the place of the northern fifth; and so on round the map. This is technically correct but is apt to cause much confusion to the reader, and for this reason it is best to follow the same rule for south as north, and draw the ascendant always on the left. Moreover those astrologers who advocate the reversal of houses overlook the fact that, between the limits of $23^{\circ}27'N.$, and the same distance S. latitude (the limits of the Sun's declination), the Sun is sometimes to the north at noon and sometimes to the south; and that when the Sun is directly overhead it is neither north nor south. If these variations were rigidly followed in the map, the diagram might be clear to the expert, but it would only confuse other readers.

STANDARD TIME.

Standard time is a time arbitrarily chosen in order that uniformity may prevail throughout a country or district for convenience in matters pertaining to railways, telegraphs, and astronomical calculations. In Great Britain¹ the standard is Greenwich time, which means that this time is observed over the whole of the country instead of the true local mean time, no matter how far east or west of Greenwich a place may be. A list of standard times in other countries, so far as they are known, is given in the Appendix.

The result of the adoption of a standard time for any country or district is that in most places a discrepancy exists between the standard time and the local mean time. For instance, at Pembroke the longitude is $4^{\circ}52'W.$, which when turned into time by means of the table at the end of this book, is equivalent to $19m. 28s.$ That is to say, when the clocks point to noon at Pembroke, the true local mean time is $19m. 28s.$ earlier, or $11h. 40m. 32s. a.m.$, the standard being Greenwich time.

In countries where the standard is not Greenwich time the problem is slightly more complicated, because there are then three factors to take into account: standard time, local mean time, and Greenwich time. For instance, Dublin time is the standard in Ireland, and is $25m. 22s.$ slower (earlier) than Greenwich. If it were required to cast a horoscope for

¹ According to Irving's "Annals of our Time," "Greenwich time was adopted at Edinburgh, Glasgow, and other populous towns in Scotland on January 29th, 1848, when the public clocks were found to be about $12\frac{1}{2}m.$ behind Greenwich time."

Cork, the longitude of this town is $8^{\circ}28'$ W., or $33m. 52s.$ in time; and this is $8m. 30s.$ in excess of the standard or Dublin time.

It will readily be seen that in all cases in which standard time, mean time, and Greenwich time are not the same, the mean time must necessarily be either in excess of (more than) the standard or in defect of (less than) the standard. Bearing this distinction in mind, and remembering that the time of birth is generally stated in standard time, whereas the horoscope must be calculated for mean time, the following rule for converting the one into the other will be understood easily.

TO CONVERT STANDARD TIME INTO LOCAL MEAN TIME.

- (A) If the standard time is *not* Greenwich time:
- (1) For West longitude, subtract the excess from the standard time but add the defect.
 - (2) For East longitude, add the excess to the standard time, but subtract the defect.

The meaning of the terms excess and defect has been given above. When there is neither excess nor defect, mean and standard times are the same.

(B) If the standard time is Greenwich time, the longitude of the birthplace in time must be added to the estimate time of birth for east longitude but subtracted from it for west longitude.

The result in each case will be the mean time at the birthplace.

Example.—What is the local mean time at Rome when it is 2 p.m. standard time? The standard time for Italy is 1 hour fast of Greenwich. The longitude of Rome is $12^{\circ}29'E.$, or $49m. 56s.$, which is a defect of $10m. 4s.$ This subtracted from 2 p.m. gives $1h. 49m. 56s.$ as the mean time required.

The tables of standard time in the Appendix embody the most recent information obtainable up to the date of publication. They are compiled from lists published at the Royal Observatory, Greenwich, and at the United States Naval Observatory.¹

One important fact, however, must be borne in mind in connection with this subject. A standard time for a country or for any large district is intended primarily for the convenience of railways and telegraphs; and after it has been adopted and enforced by law for these purposes, it

¹ In their courteous replies to the Compiler's letters, the Principals of both these institutions stated that they were unable to give any further information as to the dates when the respective standards were introduced. They added also that they did not know of any source from which such information might be obtained. Some further dates have however since been obtained.

has generally happened that, in most countries, a long interval, perhaps many years, has elapsed before the standard time has been used by the people at large. There is, therefore, a possible source of serious error here; for it is not always safe to assume that a time of birth is stated in standard time. To this day in many parts of Europe, the official standard time is not in popular use; and the complication is made worse by the fact that, in some parts, the time used is neither the national standard time nor the true local mean time. For instance, in the Netherlands, while Greenwich time is used for postal and railway purposes, in some towns Amsterdam time is still followed, about 20 minutes faster than Greenwich, while in others local time is in use. The same is true of some parts of Germany. In India a time of birth may generally be taken to be local time unless the contrary is stated.

When calculating a horoscope for a foreign country, therefore, the astrologer must be careful to ascertain whether the estimate time of birth is standard time, local time, or what it is. A case has been known in which a German, writing to an English astrologer, first converted his estimate time of birth into Greenwich time and then sent it to the astrologer *without informing him what had been done!* The resulting confusion can be imagined.

N.B.—Where it is impossible to ascertain whether a given birth time is standard or not, it is safest to assume it to be true local time unless there are very strong reasons for supposing it otherwise.

CHAPTER VII.

A SIMPLE METHOD WHEREBY TO CALCULATE A CORRECT
HOROSCOPE FOR ANY PLACE, BY MEANS OF THE
TABLE OF ASCENDANTS.

AT the first glance this method may appear elaborate and difficult, but those who follow the explanation will find that in practice it is simple enough, and little more trouble than the ordinary "Table of Houses."

FOR NORTH LATITUDES.

- (1) Having found the Sidereal Time in the usual way, turn it into R.A. at the rate of 15° for every hour, 1° for every four minutes, and $1'$ for every four seconds. For this purpose the Table on p. 347 may be used.
- (2) From this (having previously added the circle of 360° if necessary) subtract 90° and call the result the "Root R.A."
- (3) To the Root R.A. :—

for the Tenth	House	add	0°	and call the result	R.A.M.C.	(a)
" Eleventh	"	"	30°	"	"	(b)
" Twelfth	"	"	60°	"	"	(c)
" First	"	"	90°	"	"	(d)
" Second	"	"	120°	"	"	(e)
" Third	"	"	150°	"	"	(f)
- (4) Turn to the Table of Ascendants, and, at the foot of either of the columns devoted to the Latitude of the Birth-place, find the Polar Elevations of the Houses.
- (5) Against the amounts R.A.M.C. (a) (b), etc., arrived at as the result of Step (3) above, set down the proper Polar Elevations, remembering that:—
 - (i) the P.E. of the Tenth House is *in all cases* 0° ; (a)
 - (ii) the P.E. of the First House is equal to the Latitude of the Birth Place; (d)
 - (iii) the P.E. of the Eleventh House equals the P.E. of the Third House; (b, f)
 - (iv) the P.E. of the Twelfth House equals the P.E. of the Second House; (c, e)
- (6) Turning once more to the Table of Ascendants search out, in their respective columns, as determined by the Polar Elevations of the Houses, the amounts denominated R.A.M.C. (a), R.A.M.C. (b), etc.; and in the column on the left-hand side of the same page will be found the degree upon the cusp of the house.

The Example given below will show how this is done in practice.

FOR SOUTH LATITUDES.

- (A) Having found the Root R.A. add 180° thereto, and then proceed exactly as before, treating the map entirely as if for North latitude. Note the cusps of the houses on a slip of paper.
- (B) Having thus ascertained the cusps of the houses, reverse the signs, putting ♄ for ♀, ♃ for ♁ and so on. The map is then ready to be proceeded with.

These rules may appear rather formidable, but that they are easy enough in practice the following examples will show.

EXAMPLE: To set a figure for 0h. 18m. 29s. Sidereal Time, for a place in latitude 45°N.

(1) Convert this Sidereal Time into degrees and minutes of Right Ascension, as follows:—

oh. (× 15)	-	-	0 0 0
18m. (÷ 4)	-	-	4 30 0
29s. (÷ 4)	-	-	7 (15)
			4 37 0 (rejecting the odd ")
(2) Add the circle	-	-	360 0 0
			364 37 0
Subtract	-	-	90 0 0
			" Root R.A." = 274 37 0

(3) (4) (5) House.	R.A.M.C.	Polar Elevation
Tenth	274 37 (a)	0°
Eleventh	304 37 (b)	19°
Twelfth	334 37 (c)	34°
First	4 37 (d)	45°
Second	34 37 (e)	34°
Third	64 37 (f)	19°

obtained from pp. 338, 339.

(6) R.A.M.C.	(a)	p. 330,	col. 0°	♄ 5°2'	cusp of X.
"	(b)	p. 332,	" 19°	♃ 12	" XI.
"	(c)	p. 336,	" 34°	♂ 23	" XII.
"	(d)	p. 338,	" 45°	♁ 25	" I.
"	(e)	p. 336,	" 34°	♂ 14	" II.
"	(f)	p. 332,	" 19°	♃ 6	" III.

In practice, steps (3) (4) (5) and (6) can be worked together in one line, thus saving space and time. They have been worked separately here for the sake of clearness.

In this result the cusps of all the houses—except the tenth which happens to fit exactly—are approximated. The exercise of a little common-sense will always enable this to be done without any greater error than, at the most, one degree.

The Ascendant, however, as a rule needs to be calculated to the nearest minute, and the following procedure shows how this may be done:

Turning to the column for latitude 45° we find the amounts there given which are nearest to the *R.A.M.C.* (*d*), $4^\circ 37'$, to be $5^\circ 11'$ or as we may call it for convenience, adding the circle of 360° , $365^\circ 11'$, and $357^\circ 31'$. Thus,

$$\begin{array}{rcl}
 365^\circ 11' & \text{gives on the ascendant } \text{♁} & 25^\circ 46' \\
 357^\circ 31' & \text{,, ,, ,, } \text{♁} & 19^\circ 43' \\
 \hline
 \text{that is } 7^\circ 40' & \text{diff. in R.A. = diff. in asc.} & \underline{\underline{6^\circ 3'}}
 \end{array}$$

Now the difference between the given *R.A.M.C.* (*d*) and the lower of the two above quantities is

$$364^\circ 37' \text{ minus } 357^\circ 31' = 7^\circ 6'$$

and we therefore have a simple rule-of-three sum to determine the exact degree and minute in the ascendant at the given time. Thus, we say: "If a difference of $7^\circ 40'$ *R.A.M.C.* gives a difference of $6^\circ 3'$ on the ascendant what will a difference of $7^\circ 6'$ give?"—which is stated thus:

$$7^\circ 40' : 7^\circ 6' :: 6^\circ 3' : (6^\circ 3' \times 7^\circ 6' \div 7^\circ 40')$$

Reducing them all to minutes we have for the answer $\frac{363 \times 426}{460}$ or

$$\begin{array}{r}
 363 \\
 426 \\
 \hline
 2178 \\
 726 \\
 \hline
 1452 \\
 \hline
 460 \overline{)154638} \text{ (336.2 minutes, which is equal to } 5^\circ 36' \\
 \underline{1380} \\
 1663 \\
 \underline{1380} \\
 2838 \\
 \underline{2760} \\
 780 \\
 \underline{920}
 \end{array}$$

But the neatest way—and it is the least trouble in the long run—is to work such proportions by *Logarithms*, the use of which is explained in Chapter IX., whereby the whole operation can be performed by the addition of three lines.

Log.	363'	-	-	-	2.5599 ¹
	" 426'				2.6294
	" 460'		(arith. comp.) ²		7.3372
	" 336.2'				12.5265

which gives us the same result as before.

The use of logarithms both economises space and tends to diminish error, and where many calculations are necessary is a *sine qua non*, reducing labour to a minimum. The student is strongly recommended to avail himself of the help they afford; *though if he is unacquainted with decimals it will be better not to attempt them.*

The result thus obtained shows us that the given R.A.M.C. being 7°6' more than that in the column, 357°31', the ascendant must similarly be 5°36' more than the ascendant there given, namely, ☽ 25°19'. And this result will be found, if checked by the trigonometrical method, correct to within 1'.

So much for the ascendant. It now remains to find the tenth house, or M.C.,³ which must be calculated accurately. The other houses may be allowed as sufficiently correct for most purposes if only the approximate degree is placed on the cusp.

The given R.A.M.C. (a) is - - - 274°37'

The "polar elevation" of the M.C. or tenth house is always 0°; but otherwise we proceed exactly as before, looking in the 0° column in just the same way as previously we had looked in the 45° column. Here we find the exact amount, *viz.*: 274°37', giving as cusp of tenth house ♄ 5°2', and hence our map will now stand as follows:—

X.	XI.	XII.	I.	II.	III.
♄ 5°2'	♃ 12°	♂ 23°	☽ 25°19'	♁ 14°	♅ 6°

For the sake of simplicity this example has been worked for a *clear degree* of latitude. When, as usually happens, the latitude of the birth-place lies between two degrees, the extra working entailed is not very great.

Let us suppose that in the foregoing example the latitude instead of

¹ See table of four-figure logarithms at end of book. Not to be confused with Proportional Logarithms.

² See p. 73 (at foot).

³ Note the distinction between M.C., which implies a degree of the *zodiac*, and R.A.M.C., which implies Right Ascension in *equatorial degrees*.

being $45^{\circ}0'N$. had been $44^{\circ}33'N$. We find from the Table of Ascendants, that

in lat. 44°	the ascendant is $\varpi 25^{\circ}46'$	when R.A.M.C. is $5^{\circ}59'$	
" 45°	" " " " "	" " "	<u>$5^{\circ}11'$</u>
i.e. a diff. in lat of $+1^{\circ}$ causes a diff. in R.A.M.C. of			$- 0^{\circ}48'$

That being so, we can easily see that

for $+30'$	the difference would be	$- 0^{\circ}24'$
and for $+ 3'$	" " "	$- 0^{\circ} 2'4'$
		<u> </u>
i.e. for $33'$	" " "	$- 0^{\circ}26'4'$
in lat. $44^{\circ} 0'$	to which add R.A.M.C. when $\varpi 25^{\circ}46'$ ascends	<u>$+ 5^{\circ}59'$</u>
then in lat. $44^{\circ}33'$	the R.A.M.C. when $\varpi 25^{\circ}46'$ ascends will be	<u>$5^{\circ}32'6$</u>
adding the circle of 360° this becomes		<u><u>$365^{\circ}32'6'$</u></u>

Similarly it may be found that

in lat. $44^{\circ}33'$	the R.A.M.C. when $\varpi 19^{\circ}43'$ ascends will be	<u><u>$357^{\circ}54'4'$</u></u>
-------------------------	--	---

These quantities [therefore, $365^{\circ}22'6'$ and $357^{\circ}54'4'$ are used in place of the quantities $365^{\circ}11'$ and $357^{\circ}31'$ used in the previous example on p. 48, and the rest of the sum is worked in exactly the same way, giving as a result for the ascendant in lat. $44^{\circ}33'$ when the Sidereal Time is 0h. 18m. 29s.— $\varpi 25^{\circ}9'$, a difference of $10'$ from the result we obtained for latitude $45^{\circ}0'$.

The extra working looks a good deal on paper, but in practice it is quite easy to do it all in one's head, just writing down the modified quantities thus obtained instead of simply copying the printed figures in the book.

As a rule the difference made by any fraction of a degree of latitude is of no great consequence for practical purposes—the maximum variation being produced as the ascendant approaches $\varpi 0^{\circ}$ or $\var� 0^{\circ}$ —and in any case it will only need to be calculated for the Ascendant; the tenth house is unaffected by it, and for the remaining houses the nearest clear degree of Polar Elevation will always give quite accurate results.

This illustration shows us that any desired degree of precision is obtainable by the use of the Table of Ascendants. It should be added, however, that for latitudes much over 60° the method of working by proportion given in this chapter is only *approximately* correct, although even then quite near enough for most purposes.

The student is now advised to work out his own horoscope, which has probably already been calculated from an ordinary Table of Houses, by the method just given. The fact that he "knows the answer," as schoolboys say, will prevent him from falling into any serious error, and the mastery of the method which he will thus gain will render him able to attack any foreign horoscope with ease and confidence.

HOROSCOPES FOR SOUTH LATITUDES.

The student will probably be grateful for any extra help over this unfamiliar task, and therefore the following example will be worked out in full, the reason for every step being explained. The calculation naturally divides itself into two parts, the house cusps and the planets.

REQUIRED: A map for 0.39.57 a.m., March 24th, 1863, at Dunedin, New Zealand, 170°40'E., 45°54'S. Time taken as Standard Time,¹ which is 11½ hours East (see p. 205).

PART I.—THE CUSPS OF THE HOUSES.

Longitude of Dunedin 170°40' E. = 11h. 22m. 40s.

		h.	m.	s.	
Standard Time	-	11	30	0	East (or before Greenwich)
True Local "	-	11	22	40	" " "
Difference	-	0	7	20	
Time of birth a.m.	-	0	39	57	Standard
" " "	-	0	32	37	True Local

The true Local Time being earlier than the Standard Time in this case.

The Houses of the Horoscope are always calculated from true local time. It is best to work from the *previous* noon, as this makes all corrections additive and thus simplifies the working.

Sidereal Time at noon, Greenwich 23/3/63	-	0	1	55
Less correction for 11h. 22m. 40s. East Long.	-	0	1	52
Gives Sidereal Time at noon, Dunedin 23/3/63	-	0	0	3
Add mean time elapsed	-	12	32	37
Plus correction to Sidereal Time	{	-	-	58
		-	-	5
True Sidereal Time or R.A.M.C. at Birth: at Dunedin	-	12	34	43

¹ Only for the sake of illustration: Standard Time was not then in use. The longitude of Dunedin is taken from Philip's large Atlas, and not from the Table on p. 348.

As our Table of Ascendants is calculated for North Latitudes, we must work from the *opposite* R.A.M.C., obtained by adding 12 hours thus:

True R.A.M.C. at birth	-	-	-	12	34	43
Add half-circle of 12 hours	-	-	-	12	0	0
				24	34	43
Deduct circle	-	-	-	24	0	0
				0	34	43
R.A.M.C. to be used for purposes of calculation				0	34	43

Reduced to degrees this becomes $8^{\circ}41'$ or $368^{\circ}41'$, giving us for our "Root R.A." $278^{\circ}41'$ and yielding for the

Tenth House	R.A.M.C.	278.41 (a)	P.E.	0°
Eleventh "	"	308.41 (b)	"	19°
Twelfth "	"	338.41 (c)	"	35°
First "	"	8.41 (d)	"	46°
Second "	"	38.41 (e)	"	35°
Third "	"	68.41 (f)	"	19°

Looking for 338.41 in column for latitude 35° we find it gives us, in round numbers, $\Pi 27^{\circ}$ for cusp of twelfth house, and in the same column 38.41 gives us $\Omega 17^{\circ}$ for the second house. Also 308.41 and 68.41 in column for latitude 19° give us respectively $\gamma 17^{\circ}$ and $\mu 10^{\circ}$ for cusps of eleventh and third houses.

The cusp of the Ascendant house must be calculated more nearly, by proportion, using for simplicity latitude 46° instead of $45^{\circ}54'$.

ONE WAY THE BEST WAY.

Of the many possible ways of doing a thing there is always *one* way which is on the whole the best, and it is just as well to find out what that is, and get into the habit of using it.

Copy out the two nearest R.A.M.Cs. and Ascendants for latitude 46° just as given in the book, thus:

	R.A.M.C.		Ascendant.		R.A.M.C.
Subtract upper line	4.20	...	♁ 25.46	...	4.20
from lower	10.48	...	♋ 00 45	...	8.41 (d)
Then say:—AS	6.28	IS TO	4.59	SO IS	4.21 TO THE ANSWER "x"

One easily becomes accustomed to the "downward" subtraction, and this way of stating the sum minimises the risk of error in copying from the Table.

Here notice that the R.A.M.C. on the left hand of upper line is *repeated* on the right hand, and that below is written the *new* R.A.M.C. (d

to which we require to find the proper ascendant. The answer x to the above rule-of-three sum may be found in the ordinary way, but it is best to work by logarithms as explained in Chapter IX.:

$6^{\circ}28' = 388'$	log. (<i>a.c.</i>)	4112
$4^{\circ}59' = 299'$	..	4757
$4^{\circ}21' = 261'$	..	4166
<u>ANSWER $x = 201.1$</u>	..	<u>3035</u>

We need not trouble about the "characteristics" of the logs., because common-sense will tell us where to place our decimal point, since we know the answer must be *somewhere about 200*.

Neglecting the decimal our answer becomes

201' or

To which we add the Ascendant shown in the *upper* line

$3^{\circ}21'$
 $\approx 25^{\circ}46'$

ASCENDANT IN LAT. 46° N. WHEN R.A.M.C. IS $8^{\circ}41'$

$\approx 29^{\circ}7'$

This we must remember is the Ascendant for a place in 46° North latitude when the R.A.M.C. is $8^{\circ}41'$ or *0h. 34m. 43s.*; and it is consequently the opposite point to that which is ascending at a place in 46° South latitude at the same moment, namely when the R.A.M.C. at the latter place is $188^{\circ}41'$ or *12h. 34m. 43s.*, which is the Sidereal Time we started with. Thus the true Ascendant at Birth is $29^{\circ}7'$ of CAPRICORN. The discrepancy introduced by taking the latitude as $46^{\circ}0'$ instead of the true latitude $45^{\circ}54'$ is very trifling, a few minutes at most. The exact ascendant may, if desired, be found by the method already described.

The cusp of the X. house must be found in the same way. The "polar elevation" of the X. house is always 0° and we therefore look in the 0° column, in which we find

<i>R.A.M.C.</i>	<i>Asc.</i>	276.56															
276.56	Υ 7.33	276.56															
279.17	10.06	278.41 (<i>a</i>)															
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: left;">As 2.21</td> <td style="text-align: center;">IS TO</td> <td style="text-align: center;">2.33</td> <td style="text-align: center;">SO IS</td> <td style="text-align: right;">1.45 TO x</td> </tr> <tr> <td style="text-align: left;">from which we find x</td> <td style="text-align: center;">=</td> <td style="text-align: center;">113'9</td> <td style="text-align: center;">say</td> <td style="text-align: right;">$1^{\circ}54'$</td> </tr> <tr> <td style="text-align: left;">which add to</td> <td></td> <td></td> <td></td> <td style="text-align: right;">Υ 7.33</td> </tr> </table>									As 2.21	IS TO	2.33	SO IS	1.45 TO x	from which we find x	=	113'9	say	$1^{\circ}54'$	which add to				Υ 7.33
As 2.21	IS TO	2.33	SO IS	1.45 TO x																			
from which we find x	=	113'9	say	$1^{\circ}54'$																			
which add to				Υ 7.33																			
<i>Asc. at 0° Lat. when R.A.M.C. is 278.41, or M.C. at 46° Lat. when R.A.M.C. is 8.41</i>								<u>Υ $9^{\circ}27'$</u>															

We must remember to take the *opposite* signs to those given, as directed on p. 47, and therefore we have houses as follows:

X.	XI.	XII.	Asc.	II.	III.
\cap	m	z	v	=	\times
$9^{\circ}27'$	17°	27°	$29^{\circ}7'$	17°	10°

NOTE.—The foregoing method is so arranged that with the exception of the first “downward” subtraction, all the processes of calculating are made by *addition*, thus simplifying the work and lessening the chance of mistakes.

PART II.—THE PLANETARY POSITIONS.

We have now only to calculate the planets' places. Dunedin or New Zealand Standard time being $11\frac{1}{2}$ East, Greenwich time is that amount earlier, and therefore we say

24/3/'63 New Zealand	-	0.40 a.m.
Subtract Standard Time	-	11.30
		1.10 p.m.
23/3/'63 G.M.T.	-	1.10 p.m.

and the planets are therefore calculated for this time in the ordinary way.

ANOTHER EXAMPLE.

DATA.—8.30 a.m., “Cape” Time, 21/3/1894; at Britstown, S. Africa, $30^{\circ}38'$ S.; $23^{\circ}29'$ E.

Here the first question to be decided is what is meant by “Cape Time.” Does it mean true local time at Cape Town? or Standard Time in Cape Colony? Cape Standard Time is 2hrs. fast of Greenwich: *i.e.*, at the moment when it is 0.0 p.m. or *noon* at Greenwich, it is reckoned 2 p.m. in S. Africa.

The question is, whether this Standard of Time was in use at the time for which we wish to cast the horoscope, namely 1894. It was not officially adopted until later, but unofficially it may have been. For our present purpose we will assume that it was, and calculate our horoscope on that basis.

Now $23^{\circ}29'$ E. is equivalent to 1.33m. 56s., which represents the difference between—not Standard Time but—*true* Local Time at Britstown, and Greenwich. We therefore say:

Standard Time	-	8 30 a.m.
less two hours	-	2 0
		6 30 a.m.
G.M.T.	-	1 33 56
plus Longitude	-	8 3 56
True Local Mean Time at Britstown at minute of birth		8 3 56

This is therefore the time from which we are to find the houses of the horoscope, the planets of course being calculated for 6.30 a.m. Greenwich Time. So we say, working from the previous noon :

Sidereal Time at Noon, Greenwich (as per table on p. 328) 20/3/1893	-	23	52	58
Subtract diff. between S.T. Noon 1/1/'93 and 1/1/'94, as per rule	-		0	57
<hr/>				
S.T. Noon, Greenwich 20/3/'94	-	23	52	1
Subtract corr. for longitude at 10 secs. per hour of longitude	-			16
<hr/>				
S.T. Noon Britstown 20/3/'94	-	23	51	45
Add True Local Mean Time elapsed	-	20	3	56
Corr. to Sid. Time, as per table on p. 349	-		3	21
<hr/>				
TOTAL : True Sidereal Time at Birth		43	59	2
or		19	59	2
<hr/> <hr/>				

Convert this into degrees, thus :

		°	'	
18hrs. (× 15) =	270	0		
1hr. (× 15) =	15	0		
56m. (÷ 4) =	14	0		
3m. (× 15) =		45		
		<hr/>		
		299	45	
Subtract the Half-Circle	180	0		and use this
		<hr/>		
Imaginary R.A.M.C.	119	45		with the Table of Ascendants.
		<hr/> <hr/>		

This shows $\approx 26^\circ$ rising in Lat. 30° North, hence we say Aries 26° is our true Ascendant. The other houses are

X.	XI.	XII.	I.	II.	III.
♊ 28	♋ 29	♌ 29	♍ 26	♎ 24	♏ 24

and the exact positions can be calculated by proportion if it seems worth while.

INDIAN HOROSCOPES. SUNRISE MAPS.

In India, as has been already stated in Chapter III., time is most commonly reckoned from sunrise instead of from noon, as with us, so that in order to cast such an Indian horoscope it is necessary to know how to ascertain the time of sunrise. This can easily be done from the Table of Ascendants as shown in the following example, which incidentally shows how a "sunrise map" may be calculated.

Suppose a person born at Lhasa in Tibet at 58g. 57vg. after sunrise, Lhasa being 30° N. 91° E., on the same day as King George V., namely 3/6/'65.

On that day the Sun at noon G.M.T. was in $\square 12.51$ and Lhasa

being 6h. 4m. east, the noon position of the Sun would of course be 15' earlier, *i.e.*, $\Pi 12.36$. The Table of Ascendants informs us that in latitude 30°N . $\Pi 12.36$ rises under R.A.M.C. of about $327\frac{1}{2}^\circ$ or Sidereal Time 21h. 50m. And S.T. at noon on that date being 4h. 48m. we see that sunrise occurred 6h. 58m. earlier, or about 5h. 2m. a.m. local mean time. But it is possible to obtain greater accuracy than this. Knowing the approximate time of sunrise we say:

	Sun's place at noon, Lhasa, 3/6/65	$\Pi 12\ 36$
	Less motion in 6h. 58m. at 57' per day	<u>0 16</u>
	Sun's place at sunrise	<u>$\Pi 12\ 20$</u>
Then say ¹		
in lat 30°	$\Pi 10.17$ rises under R.A.M.C. 325.10	$\Pi 10\ 17$
" "	19.04 " " 333.56	$\Pi 12\ 20$

as 8.47	is to	8.46
		so is $\frac{2}{3}$
		to the answer "x"
8.47 = 527'	log. (a.c.)	2781
8.46 = 526		7210
2. 3 = 123		<u>0899</u>
	122.8 = $2^\circ 2.8'$	0890
to which add	<u>325 10</u>	
R.A.M.C. when	} $327^\circ 12.8' = \text{S.T. } 21\text{h. } 48\text{m. } 51.25.$	
$\Pi 12.20$ rises in lat. 30°		

We have thus found the S.T. at sunrise, and it is now merely necessary to ascertain the local time.

	h.	m.	s.
Sidereal Time at noon, Greenwich, 3/6/65	4	47	49
Less correction for 6h. 4m. E. long. at 10 secs. per hour		<u>1</u>	<u>1</u>
Sidereal Time at noon, Lhasa, 3/6/65	4	46	48
Add circle	24	0	0
	28	46	48
Sidereal Time when $\Pi 12.20$ rises in 30°N . lat.	21	48	51
Time before noon (in sidereal h.m.s.)	6	57	57
Conv. from sidereal to mean time		<u>1</u>	<u>10</u>
Time before noon (in mean h.m.s.)	6	56	47
	12	0	0
Diff. = Local mean time of sunrise a.m.	5	3	<u>13</u>

The data inform us that birth took place 58g. 57vg. after birth

¹ The procedure is analogous to that on pp. 52, 53 except that here we have the ascendant given and the R.A.M.C. to find.

As stated on p. 17 each ghatika is equivalent to 24 minutes and each vi-ghatika to 24 seconds. Hence we say:

	<i>h.</i>	<i>m.</i>	<i>s.</i>
$58g \times 24 \div 60$	= 23	12	0
57^{vg}		22	48
Local Mean Time of Sunrise	5	3	13
	<hr/>	<hr/>	<hr/>
	28	38	1
	24	0	0
	<hr/>	<hr/>	<hr/>
Local Mean Time of birth a.m.	4	38	1
	<hr/>	<hr/>	<hr/>

In this example several points call for comment. (a) The Sun's place and Sidereal Time at noon G.M.T. can be obtained from the Condensed Ephemeris and the Table of S.T. at Noon, given at the end of this book. (b) In this particular case the proportion sum worked out by logarithms is of course unnecessary, as commonsense will supply the answer here, but the sum has been worked in order to show the usual procedure. (c) The correction from M.T. to S.T. may be made from the table if preferred, although the difference is trifling. (d) For a "sunrise map" the local mean time of sunrise 5.3.13 a.m. is taken as a birth-time and the map set up in the ordinary way. (e) It must not be overlooked that our final answer 4.38.1 a.m. refers to a point of time some twenty-three and a half hours after sunrise on 3/6/65, and is therefore 4/6/65 according to English reckoning; so that in obtaining birth-data according to the Indian reckoning it is essential to ascertain whether the sunrise from which the *hour* of birth is reckoned is that of the date given, or of the day previous.

The houses of the horoscope having been calculated for the local mean time as thus determined, the planets must be calculated for the equivalent Greenwich time in the usual way. Lhasa being 6h. 4m. east of Greenwich the G.M.T. would be 10.59.13 p.m. 2/6/65, for the "sunrise" map, and 10.34.1 p.m. 3/6/65 for the birth map for the time stated.

Further examples will hardly be needed, for with this and the previous Chapter the student has all that he requires for casting a horoscope for any time and any place.

The examples given have been gone through in detail, in order that the reader shall be quite clear as to what are the factors involved. It is not always necessary to be quite so precise.

CHAPTER VIII.

THE TIME OF BIRTH. METHODS OF RECTIFICATION.

IN previous chapters it has been tacitly assumed that the time of birth is known exactly. But in actual practice it is rarely possible, except in the case of quite young children, to obtain exact information. Usually the information available takes some such form as "between three and half past in the afternoon" or "about a quarter of an hour before midnight."

In such a case, in order that we may be sure of the right degree ascending, it is necessary to have recourse to the operation known as "rectification," and this chapter will deal with the two methods generally adopted for this purpose. But first it will be profitable to devote a little consideration to the expression "time of birth" and the different meanings which may be given to it by different people.

In the first place it is well not to take for granted without question *any* statement of the time of birth, since experience proves that the most positive assertions are frequently made by those present, which assertions however on further examination turn out to be quite untrustworthy. When one takes into account the general unreliability of the average person in regard to the actual moment of time at which any event of interest, whether personal or general, has transpired, this remark need surprise no one. And it implies no imputation against the carefulness of either doctor or nurse that *even* their statements should be accepted with some reserve, when one reflects that their attention is almost entirely occupied with, as they themselves would express it, "more important matters than looking at the clock."

And yet it not infrequently happens that a question as to the source of, or authority for, any statement of the time of birth is taken as implying a reflection upon the veracity of the individual supplying the information!

A careful person, on being asked to supply such an item of informa-

tion, would first put to himself these questions. (1) "What IS the time of birth?" and (2) "What is the real meaning of the 'two-forty-five a.m.' or 'twelve-ten p.m.' that I answered?—(a) What do the words themselves mean? (b) What was the actual, absolute point of time that I was thinking of? (c) What ought I to have said?"

The answers to these questions are much less simple than might be supposed.

In the first place, what is "birth"? *Chambers' Dictionary* says: The act of bearing or bringing forth. Technically, then, birth is the extrusion of the child, and the moment of birth is either the *first* or *last* moment of the period occupied in delivery—unless one desires to strike an average and take the mid-point.

But the child might be still-born: in this case no horoscope of life is possible, yet the conditions satisfying the above definition have all been met.

Again, there is the moment of severing the umbilical cord; or constriction thereof.¹ There is more warrant for regarding this as the commencement of independent life, since it is clear that when the infant is no longer supplied with the maternal life-force through the blood it is then living on its own account. This is incontrovertible. But it does not prove that the child was not living independently prior to the constriction of the cord. It is readily conceivable that it might be; indeed had not some evidence of this been given, one is led to doubt whether the doctor would sanction severance, unless the patient would otherwise be seriously injured in some way. So far, then, we have four or five points of time wherefrom to choose our horoscope.

The question at issue on such occasions, "is the child alive?" will be most completely answered by the live youngster himself. *He* (or she) *cries!* This is absolute evidence of independent life—for a certain amount of individuality is manifested in some cases—and this point, namely that of the first cry, which is usually contemporaneous with

¹ In the extremely interesting account by Colonel de Rochas of experiments with a hypnotised subject, wherein the sensitive is made to recount the experience of the soul in seeking reincarnation, the statement is made that the astral body in an inchoate form surrounds the yet unborn child, to which it is attracted some little time before birth, and that this astral body *only takes form at the moment of severance* [Query: or else constriction?] *of the umbilical cord.* A statement which seems to establish this as the true moment of birth. The article, entitled "The Regression of Memory," is to be found in the *Annals of Psychological Science* for July, 1905.

that of the first *complete* breath, is usually, and as the author thinks rightly, held to be the true birth-moment. It is the first moment of the inspiration of air, the new physical environment towards which the soul has been borne. And by analogy we should expect this to be also true with regard to the astral atmosphere and the circumstantial environment.

This we may take to be the Actual Moment of Birth. But who is there to record it? Doctor and nurse are otherwise engaged; papa, holding his breath in the adjoining room, is now too overjoyed to think of aught but running downstairs to drink the youngster's health; and all the female relations not otherwise fussing are "trusting she will get over it, though, poor dear,"—etc., etc., etc. Presently, things being comfortably arranged or beginning to look serious, as the case may be, the doctor remembers another appointment and consults his watch; nurse has to run downstairs for more water and observes "Grandfather"; paterfamilias, flushed with his new dignity, bethinks himself of the dining-room time-piece, which he forgot to wind the other night; or a neighbouring clock strikes.

And it is THIS time (as nearly as memory can establish it) which is twenty or thirty years later advanced in all good faith as "*quite correct, you know, because so-and-so remembers looking at the clock.*" From such data the horoscope will be carefully computed, with correction from mean to sidereal time, reduction to geocentric latitude, and all the other refinements of astronomical precision!

Before students talk about "testing Astrology from a scientific point of view," they should first of all consider what are the requisites for an accurately noted time of birth. **FIRSTLY**, we must make up our minds what we are to consider birth: failing that, the times of commencement of extrusion, completion of delivery, first complete breath (cry), and stricture or severing of the umbilical cord, should severally be noted. **SECONDLY**, this determination should be made by means of a watch or clock whose error from some fairly reliable standard is very shortly after obtained, the difference between said standard and Greenwich mean-time being known: thus the actual point of time when birth occurred is known. This then only needs to be corrected to true local mean time by means of the known longitude of the place . . . and *then* the map may be set up to °, ', ", without being in any sense misleading.

ALL ACCURACY PURELY RELATIVE.

These reflections are apt at first to make one feel rather hopeless of ever securing accuracy. But there is no need to be pessimistic. It is necessary to realise where "accuracy" is in question, that all accuracy is purely relative: the question at issue being *the margin on either side* of a given point within which the point for which we seek must be found. The extent of this may safely be left to the judgment of the individual artist to whom the data are to be submitted, so long as the authority for the time given is stated.

For instance, the following would be *accurate* within the limits of the foregoing definition. "Male born at such a place, on such a date, within a few minutes of sunrise: nurse who was present describes seeing the reflection of rising sun in a neighbouring window, and the perfectly red appearance of the sky, as though there were a huge fire somewhere close by." Here the clue is supplied by the word "red": a little calculation would show the approximate time during which in any given latitude the sun at dawn on any given date would continue to tinge the sky *red*.

In passing, it may be said that the expressions "a.m." and "p.m." sometimes prove confusing. Morning, midday, afternoon, and evening seem preferable as admitting of no uncertainty. But where the expressions a.m. and p.m. are used, noon should always be expressed as 0.0 p.m., and not as 12 a.m., which is ambiguous; similarly midnight should be recorded as 0.0 a.m. of the day just commencing.

TWO METHODS OF RECTIFICATION.

There are two chief methods of rectification: (1) by important events that have occurred during the life, and (2) by the relation of the Moon to the Horizon at birth. These methods will now be outlined, a fuller treatment of the method of "rectification by events" being reserved for a later chapter.

1. RECTIFICATION BY EVENTS. This depends on the motion of the heavens after birth, whereby the places of the planets are carried towards the 'angles' of the figure, or towards aspects thereof, or towards aspects of the places of other planets.

Since *some* such aspect can be calculated for every year and nearly

every month of life, and since in certain cases it is a matter of very delicate astrological judgment to fit the given event to the precise aspect indicative thereof, the student is recommended to restrict his investigation entirely to *transit of the angles*, and to avoid aspects in this connection altogether.

In the early chapters it has been shown that the R.A.M.C. is 1° or 4 m. more each day at the same hour, which is termed the 'diurnal acceleration of the meridian.' If, therefore, a planet be within 1° of culmination at the actual moment of birth, that particular point of the zodiac will be just culminating at the exact hour and minute of birth on the following day. Now it is found that the events of life are in harmony with the movements of the planets after birth, each *day* foreshadowing the events of the corresponding *year* of life. In the case supposed the influence exerted by the planet would thus culminate about a year after birth, after which its power would gradually wane. The house or houses ruled by the planet at or about the time of birth should be considered, and, since the M.C. is significant of either the father, or the external environment in general, as opposed to the purely *domestic* environment, it should not be difficult to see whether or not the given event corresponds with the transit of the planet in question.

In practice, the method may be worked thus: Turn to the Table of Houses and find therein the approximate degree culminating, *i.e.*, on the cusp of the tenth house at the estimate time of birth. Run the eye down the table and see if during the life of the native—taking 1° of the M.C. for each year of life—the degree occupied at birth by any planet has arrived at the M.C., descendant, I.C. or ascendant. If not, it will be advisable to abandon this method of rectification entirely; but if, on the contrary, this has happened, a very little perspicacity will generally enable one to see if the given event coincides in nature with what might be expected in consideration of (1) *the nature of the planet*, and (2) *the house ruled by it*.

This method, indeed, may be often employed with success when the birth-time of the native is entirely unknown. Equipped with a photograph and a few of the leading events of life, the careful investigator may with a little trouble ascertain the approximate moment of birth in this way, and it can then be confirmed and rectified by the method now to be described.

It should be remembered that the influence of a planet (and its corresponding house) when coming to the

Ascendant	.	.	<i>commences</i> , and thenceonward increases
Midheaven	.	.	<i>culminates</i> , and thenceonward decreases
Descendant	.	.	<i>is broken</i> , and thenceonward wanes
Nadir	.	.	<i>disappears</i> , or "dies"

A little questioning of the native, where possible, often elucidates something of considerable interest not thought of at the time of setting down events on paper, and is invariably of great assistance when trying to determine a doubtful ascendant.

2. RECTIFICATION BY THE RELATION OF THE MOON TO THE HORIZON. This method has been used from very early times and is generally known as the "Trutine of Hermes."

The account here given is adapted from an article in *The Astrologer's Magazine* for 1794. The author quotes Sir Christopher Heydon.

"The rule of Hermes teaches, by the Moon's place in the nativity, to come to the true time of conception;¹ for her place in the nativity was the true ascendant in the generation; and her place at the conception, or the opposite, is the true ascendant, or the opposite, of the nativity; which being (as I can speak of my own experience in divers genitures, besides the confirmation of the learned ever since Hermes' time) found true, is alone sufficient to strike all those barkers against Astrology dumb. I know that some say they have sometimes failed in the practice of this rule, but then they neither [*sic*] consider the true rule, taking the degree of her true motion in the Zodiac for her place, when, as in truth, her place considered with latitude, is truly understood in the rule, and the degree co-ascending therewith." The last part of this paragraph should be noted by all who wish to make any deep study of this subject.

It may be added that the figure for 'conception' obtained in this way is by many thought to be the horoscope of the Astral Body and environment in the same way that the nativity is of the Physical Body and environment.

The more technical details connected with very precise working on this subject are given at the end of the chapter devoted to *The Trigono-*

¹ *Note.*—There would seem to be some doubt as to whether this epoch is necessarily identical with conception proper.

metrical Method, so that we will limit ourselves here to a general outline of the process which will be sufficiently exact for all but exceptional cases.

First it is necessary to find the day of 'conception' or as we will call it the Epoch, since it may not be coincident with conception in a physiological sense.

GENERAL RULE.

1. The *Horizon*, *i.e.*, the Ascendant or Descendant, at birth is the Moon's Place at Epoch, and the *Moon's Place* at birth is the Horizon at Epoch.
2. When the Moon at birth is *increasing in light*, *i.e.*, passing from \odot to \ominus , consider the *Ascendant*, and make the Moon's Place at Birth *rise* at the Epoch. Conversely, when *decreasing* consider the *Descendant* (cusp of seventh house), and make the Moon's Place at Birth *set* at Epoch.

Distance of D from Horizon. Ascendant if below earth. Descendant if above.	D increasing and below <i>or</i> decreasing and above.	D decreasing and below <i>or</i> increasing and above.
<i>Degrees.</i>	<i>Days.</i>	<i>Days.</i>
0	273 + 0	273 - 15
12	1	14
24	2	13
36	3	12
48	4	11
60	5	10
72	6	9
84	7	8
96	8	7
108	9	6
120	10	5
132	11	4
144	12	3
156	13	2
168	14	1
180	15	0

The number of days between epoch and birth is given in the accompanying table. The 'degrees' are strictly speaking the number of degrees of *Oblique Ascension* intervening between the Moon and the horizon to which by the rotation of the earth it is next proceeding, *i.e.*, the ascendant if below the earth and the descendant if above; but they may be taken for practical purposes as *degrees of the Zodiac*. Thus if for example the Sun is in $\ominus 5^\circ$ and the Moon is in $\uparrow 16^\circ$ and the ascendant is $\Omega 16^\circ$, look under 120° and in the column headed " D increasing and below," and the answer will be $273 + 10$, *i.e.*, 283 days; D 's place Asc. at epoch.

The day having been thus determined, it will be found that the Moon was then in the sign ascending at birth, or descending as the case may be, and near the exact degree; or if not, such day will be very near and must be taken instead.

To find the *exact degree* occupied by the Moon at epoch, turn to the Table of Houses and note the sidereal time when the Moon's place at birth or the opposite point ascends; find the difference between this amount and the S.T. at noon on day of epoch, and the result determines the time a.m. or p.m. of the moment of epoch, for which the Moon's place can be calculated in the ordinary way. This degree when found is then the ascendant or descendant of the nativity.

The above may be taken as a concise statement of the general law governing the large majority of cases, but there are certain exceptional births, such as seven months' children, etc., where this general rule will not apply. Should the reader find that the rectification necessary appears excessive in any particular case, he will do well to consider it one of the exceptions spoken of and revert to method (1), of which a detailed example is given in Chapter XI.

We will conclude with an example, showing the method of working.

ILLUSTRATION.

Male, born in London, 7/8/60, 5.50 to 6.10 a.m. What was the true time of birth?

At the estimate time of birth, say 6.10 a.m. we find (1) the ascendant $\text{m}\eta 1^{\circ}13'$, (2) longitude of $\text{D}\Upsilon 15^{\circ}31'$, the latter (3) *decreasing* in light and (4) *above* horizon, (5) the estimate R.A.M.C. being 3h. 15m.

Now since $\text{m}\eta 1^{\circ}13'$ ascends, $\text{K} 1^{\circ}13'$ will be on the cusp of the seventh house, and therefore the D will be *above* the earth and proceeding, by the earth's rotation (which is the factor concerned, and not the D 's motion in the zodiac), to the descendant or western horizon. The distance from this latter, $\text{K} 1^{\circ}13'$ to $\Upsilon 15^{\circ}31'$, is about 44° , and we therefore look in the table under 48° , the nearest thereto, and in column marked D decreasing and above. This shows the period to be 273 days (or ten lunar months) *plus 4, i.e., 277 days*, which must be counted backwards from the date of birth, August 7th, 1860, bringing us to November 4th, 1859.

A simple and ready method of finding the date, without the tedium of counting days, is to turn back to early portion of given year, or to previous year, when the Sun was in square to its radical place, *i.e.*, 90° further on in the Zodiac: within two or three days of this date the \mathcal{D} will be found in the same sign and degree as at birth. Consider the latter date as 273 days before birth, and count + days *backward* and - days *forward* from this date to find the day of epoch. For instance in this case \odot at birth is in $\Omega 15^\circ$, and is in $\mathfrak{m} 15^\circ$ on November 8th, 1859, the \mathcal{D} being in $\Upsilon 15^\circ$, its radical place, on the same day; counting then four days back brings us to November 4th, the day of epoch required.

To find the exact degree of \mathcal{D} at epoch, and hence of descendant at birth, we proceed thus:

	<i>h.</i>	<i>m.</i>	<i>s.</i>
R.A.M.C. noon 4/11/59	14	52	49
R.A.M.C. $\simeq 15^\circ 31'$ rising at London	7	28	5
<hr/>			
Time before noon, in sidereal h.m.s.	7	24	44
Less correction to mean time		1	14
<hr/>			
Time before noon, in mean h.m.s.	7	23	30
<i>I.e.</i> , G.M.T. of Epoch, a.m., 4/11/59	4	36	30
<hr/>			
			<i>o</i>
\mathcal{D} 's place noon 4/11/59	\times	1	14
" " " 3/11/59	\approx	19	25
<hr/>			
\mathcal{D} 's motion in 24 hours		11	49
<hr/>			
P. log. $11^\circ 49'$			3077
P. log. 7h. 23m. 30s.			5115
<hr/>			
P. log. \mathcal{D} 's motion in 7h. 23m. 30s.			8192
			= $3^\circ 38'$
<hr/>			
			<i>o</i>
\mathcal{D} 's place, noon, 4/11/59	\times	1	14
Less \mathcal{D} 's motion in 7h. 23m. 30s.		3	38
<hr/>			
\mathcal{D} 's place at epoch	\approx	27	36
<hr/>			

This gives us the descendant at birth, and as the opposite point is consequently rising, the true time of birth can now be found.

	<i>h.</i>	<i>m.</i>	<i>s.</i>
R.A.M.C. noon, 7/8/60	9	4	55
R.A.M.C., $\Omega 27^\circ 36'$ rising at London	2	55	27
<hr/>			
Time before noon, in sidereal h.m.s.	6	9	28
Less correction to mean time		1	2
<hr/>			
Mean time before noon	6	8	26
<i>I.e.</i> , G.M.T. of Birth, a.m.	5	51	34
<hr/>			

We thus find that birth occurred at eight and a half minutes to six in the morning.

Other illustrations in abundance will be found scattered through the pages of *Modern Astrology*, Old Series, especially in volumes XI., XII., XIII. and XIV.

N.B.—When the Moon is found *very near* the horizon at birth, its declination and latitude need to be considered, as it may be that it has really passed below the horizon while the ecliptic degree occupied is as yet above; and *vice versâ*. See end of chapter on “The Trigonometrical Method.”

CHAPTER IX.

LOGARITHMS AND THEIR USE.

IT is assumed that the reader is familiar with decimals; otherwise, he will do well to defer the consideration of this chapter till that knowledge has been acquired. But should this be the case, he is earnestly recommended to spare no pains to master decimals as soon as possible, and not to allow himself to be daunted by the *word*; for "decimals" can be understood by any one who can do ordinary figuring, being merely the same principles adopted in quantities greater than one, applied to fractions or quantities less than one. Any modern school primer of arithmetic gives easy explanations and examples that make the whole matter clear in a very short time, and the gain to the student will very much more than compensate for the trouble taken.

The use of logarithms very greatly facilitates all calculations where much multiplication or division is necessary,—especially in proportion sums of any kind,—and in working some of the more elaborate problems where absolute precision is required, such as calculating primary directions, etc., etc., they cannot be dispensed with.

The word LOGARITHM is derived from the Greek words *logos*, ratio, and *arithmos*, number, and hence really means "ratio of numbers." Logarithms, in fact, are a series of numbers in arithmetical progression answering to another in geometrical progression, whereby it is possible to perform multiplication by the process of *addition* and division by that of *subtraction*.¹

¹ *Arithmetical progression* : a series of numbers differing by some common quantity, which is successively added or subtracted : thus, 1, 2, 3, 4, 5, 6, 7, 8, . . . is an arithmetical progression, the "constant difference," 1, being successively added to each term.

Geometrical progression : a series of numbers successively increased through multiplication by a common factor, thus, 10, 100, 1000, 10000, 100000, 1000000, 10000000, 100000000, form a geometrical progression, the "constant factor" being 10. The two series here given as examples are, in fact, the two upon which is based the system of ordinary or "common" logarithms; for the logarithm of 10 is 1, of 100 2, of 1000 3, and so on.

It will therefore be easily seen that logarithms, once understood, will very greatly assist the student. It is no slight boon to be able to perform a proportion sum, which consists of one or more multiplications and one division, by the mere process of *adding* together three or four numbers; for the use of the arith. comp. enables division to be made by addition instead of subtraction, if desired.

THE RATIONALE OF LOGARITHMS.

When a number is multiplied by itself the product is called the *square* of that number; thus, if a be any number, then $a \times a = a^2$, called " a squared." Similarly, if this be again multiplied by a , the result is called " a cubed," or " a to the third power" ($a \times a \times a = a^3$), while $a \times a \times a \times a$ is called a^4 , " a to the fourth power"; and so on, any number of times, the small figure being called the "index." Thus, 144 is 12^2 ; 100 is 10^2 , $1,000$ is 10^3 , and so on. If we take any series of numbers obtained in this way, say

$$a^1 \quad a^2 \quad a^3 \quad a^4 \quad a^5 \quad a^6$$

or, say

$$10 \quad 100 \quad 1,000 \quad 10,000 \quad 100,000 \quad 1,000,000$$

these numbers are called the *powers* of a or 10 , or whatever the number originally taken may be, the number a^1 being a to the first power, *i.e.*, a itself, or a multiplied by 1 instead of by itself. Thus the second line might have been written

$$10^1 \quad 10^2 \quad 10^3 \quad 10^4 \quad 10^5 \quad 10^6$$

This is the principle of *all* systems of logarithms, the a or the 10 being called the *base* and the $1^2 3^4 5^6$ or index, the *logarithm*. The logarithms in ordinary use are, to express it in technical language, "logarithms to base 10 ."

In short, the logarithm of any number may for our present purpose be defined as the number of times 1 must be multiplied by 10 in order to produce that number. From what has been said it will be seen that the logarithms of

$$1 \quad 10 \quad 100 \quad 1,000, \dots \text{etc.}$$

are

$$0 \quad 1 \quad 2 \quad 3, \dots \text{etc.}$$

and it may here be remarked that in *any* system of logarithms the logarithm of 1, or unity, is *always* 0. This it is important to remember.

We can now see how multiplication can be performed by adding. For $10 \times 100 = 10^1 \times 10^2 = 10^3$ i.e., the *indices* (or "logarithms") are simply added together, and the resulting index or logarithm is the index or logarithm of the product.

It is unnecessary to say more on the theoretical side of the subject, and those who wish to pursue the matter and to examine other systems of logarithms are referred to any good treatise on algebra, in which they will find the proofs of the rules here cited.

For our present purposes it will suffice to remark that since the index or logarithm of 1 is 0 and of 10 is 1, the index of all numbers lying between 1 and 10 must be some fraction or decimal lying between 0.00 and 1.00; similarly, all numbers between 10 and 100 will have a logarithm lying between 1.00 and 2.00; and so on. In other words, the logarithm of

All numbers in the *units* place is 0 + a decimal.
 " " " " *tens* " " 1 + a decimal.
 " " " " *hundreds* " " 2 + a decimal.

and conversely :

The log. of all numbers in the *1st decimal* place is -1 + a decimal.
 " " " " " *2nd* " " " -2 + a decimal.
 " " " " " *3rd* " " " -3 + a decimal.

and so on. Further it must be pointed out that the logarithm of any number consists of *identically* the same DECIMAL (which is called the *mantissa*) whether it be multiplied or divided by 10 or any multiple of 10, only the WHOLE NUMBER (which is called the *characteristic*) being changed. For example, the

	Logarithm of	365256.0	is	5.562 5978
	" "	36525.6	" "	4.562 5978
	" "	3652.56	" "	3.562 5978
	" "	365.256	" "	2.562 5978
	" "	36.5256	" "	1.562 5978
	" "	3.65256	" "	0.562 5978
	" "	0.365256	" "	$\bar{1}.562 5978$
	" "	.0365256	" "	$\bar{2}.562 5978$
or, if preferred,	" "	0.365256	" "	9.562 5978
	" "	.0365256	" "	8.562 5978

The last two lines need a word of explanation. By $\bar{1}$ we mean that *minus 1* is to be added to +0.5625978: in the last two lines +10 has been added, so as to avoid having any *minus* quantities. This is really

equivalent to moving the decimal place of the original number ten places to the left; that is, it is equivalent to multiplying by $10,000,000,000$. In such cases it must of course be remembered to subtract this 10 after the sum is concluded.

In practice it is often unnecessary to concern oneself about the characteristic, since the *digits* in the answer are bound to be correct, if the sum has been correctly worked, and the characteristic can only affect the *position of the decimal point*. Since in most cases the approximate value of the answer—that is to say whether it lies between a certain quantity and ten times that amount—is already known, it is clear that the decimal point may be inserted at sight. For instance, in doing a sum of any kind one will know from the factors involved whether the answer, say 365, should be 365, 3650, or 36.5.

PRACTICAL EXAMPLES.

We may therefore now proceed to practical examples. With the method by which tables of logarithms are computed we are not concerned: it is enough to know that they can be procured ready calculated. For simplicity we shall confine ourselves to 4-figure logarithms, of which a table is given on p. 346. As we are chiefly concerned with a somewhat limited application of their use, we shall give only one or two elementary illustrations.

EXAMPLE 1. *Find how many seconds there are in a day.*

The student is recommended to work this illustration carefully through, and not to despise it because of the easiness of the sum concerned. He will learn far more in this way than might at first be supposed.

Looking in the table of logarithms, we find:

Hours in a day,	24	-	logarithm	3802
Minutes in an hour,	60	-	logarithm	7782
Seconds in a minute,	60	-	logarithm	7782
Adding these logarithms together we get				19366

Here we have five figures in the answer, and we therefore mark off four thus, 1.9366 . Looking in the table we find that 9366 corresponds to 8641, and since the 'characteristic' is 1 we know that this means 86.41. There is manifestly some mistake here, for we know that there are more than 80 or 90 seconds in a day!

What is the error? A little thought will show that the logarithms given above are really those of 2'4 and 6'0 respectively, and not of 24 and 60. This brings home to us the rule: Where the Number is greater than unity the characteristic is always *one less* than the number of digits to the LEFT of the decimal point; where the Number is less than unity, the characteristic is always *one more* than the number of ciphers to the right of the decimal point. In the latter case the characteristic is always negative, and represented thus $\bar{1}$, $\bar{2}$, $\bar{3}$ or by its difference from ten as explained on p. 70. Hence our sum should stand:

Logarithm	24	-	-	-	1.3802
"	60	-	-	-	1.7782
"	60	-	-	-	1.7782
					4.9366
					4.9366

Since the 'characteristic' or whole number is 4 we know that the answer must contain a whole number that has *four plus one* digits to the left of the decimal point: the answer is therefore 86410. Now this is wrong, for the result of multiplication shows 86400 as the answer. The error results from the use of logarithms calculated only to four places of decimals, which cannot be depended on for more than three significant figures, the error being thus something less than one-tenth per cent.

This illustration has been chosen deliberately, as showing at once the method employed and its simplicity, and also its limitations in regard to accuracy when only *four-figure* logarithms are used. Since, however, in all calculations for which the student is at present likely to desire to use logarithms, a degree of accuracy represented by three significant figures is quite sufficiently exact, he is advised to keep to 4-figure logarithms for the present, as they are so much quicker in use than the more exact 5- or 6- or 7-figure ones. For the sake of comparison let us work the same sum by 7-figure logarithms.

Logarithm	24	-	-	-	1.380 2112
"	60	-	-	-	1.778 1513
"	60	-	-	-	1.778 1513
Answer :					4.936 5138
					4.936 5138

This is the logarithm of 86400'02, so that we see that by the use of 7-figure logarithms we obtain absolute accuracy up to six significant figures.

It hardly needs to be pointed out that in this particular case it would

have been far easier to work the multiplication in the ordinary way, instead of troubling to look up logarithms. But the process would have been equally simple if the numbers had been say 24'17, 60'05 and 60'19, instead of 24, 60 and 60: thus,

Logarithm	24'17	-	-	-	1'3832
"	60'05	-	-	-	1'7786
"	60'19	-	-	-	1'7795
					4'9413
Answer: Log. 87360-					

Here it would not have been necessary to trouble about anything more than the decimal part of the logarithm: for we knew that the result must be "somewhere about 86400." The answer correct to six significant figures is 87360'3, so that the above result is practically correct. Actual multiplication yields the answer 87360'277615, which looks rather staggering, but is not materially different.

EXAMPLE 2. *How many sidereal months are there in a year?*

	Log. days in a year	(sidereal)	365'25	2'5626	
<i>minus</i>	"	"	" month	(sidereal) 27'322	1'4365
					(Answer) 13'37
					1'1261

To find log. of 365'25 turn to table on p. 346. Look for 36 in first column of figures. This shows the horizontal line in which the decimal portion of the answer is to be found. Look for the next figure (5) in the first series of units at top of table, and proceed downwards till the horizontal line is reached at the number 5623. Next for the fourth figure (2) look at the second series of units at top and proceed vertically as before to the horizontal line at the number 2. Add 2 to 5623 = 5625. This is the *mantissa* or decimal portion of the answer. As there are three figures to the left of the decimal point in 3652, the *characteristic* of the logarithm will be 2 (see p. 70) and the log. itself will accordingly be 2'5625. This of course is the log. of 365'2, not 365'25; but it is near enough for our present purpose, although the quantity given above, *viz.*, 2'5626, is nearer the true value, which (to seven places of decimals) is 2'5625962.

The above explanation will sufficiently illustrate the method of using the Table, and a little practice will soon make one feel quite at home with it.

An interesting variation of this method is to use the "arithmetical complement" or a.c. of the logarithm of the divisor, and then to *add*

instead of subtracting. The a.c. is found by subtracting the logarithm from 10'0000 thus

	10'0000			
Logarithm 27'322	1'4365	-	-	<u>8'5635</u>
Arithmetical complement				<u>8'5635</u>

This is most easily done by taking each figure from 9, beginning at the left-hand side, and the right-hand figure from 10. In this way the a.c. can be written down at sight.

The utility of this method is only apparent when multiplication and division form part of the same sum, as in the following example.

EXAMPLE 3. *It is stated that 38837 revolutions of Venus are just equal to 23892 of the Earth, and 12703 of Mars. Examine this statement, using the following values:—*

rev. Venus	-	-	-	224'700 794 days
„ Earth	-	-	-	365'256 351 „
„ Mars	-	-	-	686'979 826 „

Using symbols, this may be stated graphically

$$38837 \text{ ♀} = 23892 \oplus = 12703 \text{ ♂}$$

and if the stated relations are true we should find that

$$\frac{(38837 \text{ ♀})^2}{23892 \oplus \times 12703 \text{ ♂}} = 1$$

With our 4-figure logarithms we cannot expect to demonstrate this relation to be exactly true, but nothing is easier than to prove it approximately. All we have to do is to take the logs. of all numbers in the numerator and the “a.c.” of all the numbers in the denominator, and add them together. Thus:—

Log.	38837	(taken twice)		4'5893
				4'5893
	♀ 224'70	„ „		2'3516
				2'3516
	23892	(a.c.)		5'6217
	⊕ 365'26	(a.c.)		7'4373
	12703	(a.c.)		5'8961
	♂ 686'98	(a.c.)		7'1630 ¹
				<u>39'9999</u>

¹ The log. is 2'8370. The last digit on the right hand being a cipher we therefore leave it, and subtract the previous digit from 10, yielding 7'1630 as the a.c.; for 10'0000 - 2'8370 = 7'1630.

Allowing 1 for margin of error in the right-hand column, the total becomes 40'0000, and of this the 40 consists of the four successive tens we borrowed for the four "a.c.'s"; they must therefore be cast out, and our answer becomes 0'0000.

Thus with a trifling expenditure of time we have shown the truth of the statement quoted, which it would have required a whole pageful of figures to do without the aid of logarithms.

The first two logs. are repeated, of course, because the numerator is the *square* of Venus's period in days.

Our final example is a very interesting one.

EXAMPLE 4. *What is the Vibration Ratio of the interval between the notes B sharp and C, called the "Pythagorean Comma"?*

The interval of an Octave in music is expressed by the ratio $\frac{2}{1}$. That is, the upper note vibrates twice as rapidly as the lower one. The interval termed a Fifth, such as C to G, is expressed by the ratio $\frac{3}{2}$, the upper note vibrating three times while the lower vibrates twice. Two Octaves is represented by $\frac{2}{1} \times \frac{2}{1}$ or $\frac{4}{1}$, and two Fifths by $\frac{3}{2} \times \frac{3}{2}$ or $\frac{9}{4}$, the addition of one interval to another being expressed by the multiplication of their vibration ratios.

If we start at the lowest C of a pianoforte, and go up by Octaves, we can find on some modern pianofortes another C seven octaves higher. And if we suppose our lowest C to vibrate once in a given fraction of a second, the highest C would, as we can see from what has been said above, during the same fraction of a second vibrate

$$\frac{2}{1} \times \frac{2}{1} \times \frac{2}{1} \times \frac{2}{1} \times \frac{2}{1} \times \frac{2}{1} \times \frac{2}{1} \text{ or } (\frac{2}{1})^7$$

times. If we went up by Fifths instead of Octaves, thus, C-G, G-D, D-A, A-E, E-B, B-F \sharp , A \sharp -E \sharp , E \sharp -B \sharp , we should come to the same note, by the name of "B \sharp ," after having passed over twelve Fifths. The rate at which the highest note would vibrate would be ascertained as above, multiplying $\frac{3}{2}$ by itself twelve times, thus

$$\frac{3}{2} \times \frac{3}{2} \times \frac{3}{2} \times \frac{3}{2} \times \frac{3}{2} \times \frac{3}{2} \times \frac{3}{2} \times \frac{3}{2} \times \frac{3}{2} \times \frac{3}{2} \times \frac{3}{2} \times \frac{3}{2} \text{ or } (\frac{3}{2})^{12}$$

But this note, as we said, is the same on the piano, except that we call it "B \sharp ." Hence we can say:—B \sharp equals C, or

$$(\frac{2}{1})^7 = (\frac{3}{2})^{12}$$

This is true in a practical sense, but not quite in a scientific. The two notes are *not* the same, there is an interval between them, only it

would require a practised ear to recognise it. The ratio of this interval is found by dividing the higher of these two numbers by the lower, thus

$$\begin{aligned} & \left(\frac{3}{2}\right)^{12} \div \left(\frac{2}{1}\right)^7 \\ \text{or } & \left(\frac{3}{2}\right)^{12} \times \left(\frac{1}{2}\right)^7 \\ = & (3)^{12} \times \left(\frac{1}{2}\right)^{12} \times \left(\frac{1}{2}\right)^7 = (3)^{12} \div (2)^{19} \end{aligned}$$

Three and two are very simple numbers, but it would be fatiguing to multiply one by itself twelve times, and the other by itself nineteen times, and still more fatiguing to divide the first product by the second. But by logarithms it can be done quite easily.¹ We say:

Log. 3 = 0.4771	Log. 2 = 0.3010
<u> </u>	<u> </u>
× 12	× 19
<u> </u>	<u> </u>
Log. (3) ¹² = 5.7252	Log. (2) ¹⁹ = 5.7190
Log. (2) ¹⁹ = 5.7190	
<u> </u>	
Log. (3) ¹² ÷ (2) ¹⁹ = 0.0062	= log. 0.010145
<u> </u>	<u> </u>

The reader will hardly need to be told that this is an approximate result, and not an exact one. But the simplicity of the method will be apparent, and any degree of exactitude can be secured by using logarithms calculated to seven or more figures. The exact result is expressed by the ratio $531441 \div 524288$ or by the decimal $.01013643$

Small as is this interval, it is interesting to know that in tuning a pianoforte a tuner is required to tune each Fifth flat of true pitch by about *one-eleventh* of this Pythagorean Comma, which is itself about one-fifth of a semitone!

DIURNAL PROPORTIONAL LOGARITHMS.

(See pp. 344, 345.)

It is important not to confuse these with the common logarithms just treated of.

Instead of these being the logarithms of the number of minutes in the time they are the logarithms of the minutes in twenty-four hours or degrees (=1440), less the logarithm of the minutes in the given time. For instance, the logarithm for 7 hours 14 minutes or $7^{\circ}14' = 434m.$ or $434'$ is .5208, which has been obtained thus,

¹ Multiplying a logarithm, is equivalent to raising the corresponding number to the square, cube, 4th power, etc., and dividing is equivalent to extracting the square, cube, fourth, etc., root of the corresponding number.

Log.	1440	that is	3.1584
minus log.	434	minus	2.6375
		equals	<u>0.5209</u>

Consequently these are only to be used when the *daily* ("diurnal") motion of a planet is in question. But for this purpose they are invaluable and the student is recommended to use them *always*, except when the time of birth is, in Greenwich Time, 4, 6, 8, or 12 hours from noon; in which case it is of course simpler to divide the daily motion of the planet by 6, 4, 3, or 2 as the case may be, and add or subtract according as the time of birth is p.m. or a.m. at Greenwich. The Diurnal Proportional Logarithms are used as follows:—

RULE. Add the p. log. of the planet's daily motion to the p. log. of the time from noon; the sum will be the p. log. of the planet's motion in the given time. Find the value of this p. log. by looking in the tables and ADD TO OR SUBTRACT FROM the planet's position at noon, according as the time was p.m. or a.m.: if the planet is *retrograde*, subtract for p.m. and add for a.m. The result will give the planet's place at birth. By "time" is meant not local time but G.M.T.

EXAMPLE 1. *What is the longitude of the Moon on April 21st, 1901, at 7.35 p.m. G.M.T.? The Moon's motion from April 21st to April 22nd, 1901, is 14°27'. Then say:*

Prop. log.	14°27'	.2203
" "	7h. 35m.	.5003
		<u>.7206 = 4°34'</u>

D's longitude April 21st, noon	7 ° 12
D's motion in 7h. 35m.	4 34
D's longitude at 7h. 35m. p.m. G.M.T., April 21st	<u>11 ° 46</u>

This example may suffice, since the procedure is exactly the same in the case of a planet, retrograde planets having the daily motion subtracted for p.m. and added for a.m. as given in the rule.

The same method may be employed with the planetary motions as ascertained from the *Condensed Ephemeris* at the end of this book; but, the positions being there given for every seven days (three or four in the case of ♃), instead of one for every day, the motion must of course be first divided by 7, 3 or 4 as the case may be—or by 8, after December 23rd in leap years.

For declinations, latitudes, etc., as given in the ephemeris for every

two or three days, the same procedure may be followed, dividing by 2 or 3 to obtain the daily motion.

Where the Moon's longitude or declination is given for every twelve hours it may also be used. In that case treat the motion as though it were daily, and double the result, being careful to add it to the proper noon or midnight position.

EXAMPLE 2. *To find time of a New Moon, Sun's entry into a sign, etc.*

For this purpose the proportional logarithms are most useful. We will first calculate the time of a New Moon: say that which occurred on 12/7/66. We proceed as follows:—

♃'s place, noon 12/7/66	-	-	-	23	26
.. .. 11/7/66	-	-	-	8	56
♃'s motion per day	-	-	-	14	30
☉'s	-	(19-50—18-53)	-	0	57
♃'s acceleration over ☉ during day	-	-	-	13	33
o ' /					
♃'s place, noon 12/7/66	-	-	-	23	26
☉'s	-	-	-	19	50
♃'s distance from ☉ at noon	-	-	-	3	36

We thus see that at noon the ♃ has joined the ☉ and proceeded $3^{\circ}46'$ further on, her greater rapidity, or "acceleration," being $13^{\circ}33'$ per day. Hence we have this sum: If ♃ is quicker than ☉ by $13^{\circ}33'$, how long will she take to get $3^{\circ}36'$ distant after conjunction? We then say

From P. logarithm	3°36'	-	-	8239
Subtract	13°33'	-	-	2483
(Answer)				5756

which is the p. logarithm of 6h. 23m. This shows that the conjunction or New Moon occurred 6h. 23m. before noon, i.e., 5.37 a.m. G.M.T.

EXAMPLE 3. *At what time did the Sun enter 0° Aries on the 21st March, 1904.*

☉'s daily motion 20th to 21st	-	-	-	1° 0' (approx.)
☉'s place, noon, 21/3/04	-	-	-	70°27'
From P. logarithm ☉'s distance from 70°0', i.e., 0°27'				1.7270
Subtract ☉'s daily motion in zodiac				1.3802
.. .. 10h. 48m.	-	-	-	3468

which amount must of course in this case be subtracted from noon, as ☉ had passed $0^{\circ}\Upsilon$ by then, giving *1h. 12m.* a.m. as the time of his entry into the sign. Owing to the irregularity of the ☉'s motion, however, this result is not quite accurate; it is therefore better to use the *declination*, since the ☉ is in $0^{\circ}0'\Upsilon$ when he has $0^{\circ}0'$ of declination. Thus,

<i>From</i> P. logarithm ☉'s decl., noon, March 21st	($0^{\circ}11'$)	2.1170
<i>Subtract</i> „ „ „ diff. March 20th to 21st	($0^{\circ}24'$)	1.7781
„ „ „ 11h. om.		.3389
		.3389

this gives *1* a.m. as the time of entry, which is very near the true time *0h. 58m. 23s.* a.m. G.M.T., which can be found more nearly by taking the more *exact* declination as given in the *Nautical Almanac*, and making a proportionate difference in the p. logarithms.

Other examples of the use of proportional logarithms occur in Chapter VII.

It is needful to remember that these are not logarithms at all in the ordinary sense of the word; and hence they should never be spoken of as logarithms, but as Diurnal or Proportional Logarithms, and written *prop. log.* or *p. log.* not simply *log.*, which implies those to which the earlier portion of this chapter has been devoted.

CHAPTER X.

THE TRIGONOMETRICAL METHOD.

THE formulæ at the end of this chapter will enable horoscopes to be calculated without the use of Tables of Houses, and, if desired, directly from the *Nautical Almanac*. The student who wishes to become thoroughly proficient in calculation is strongly advised to familiarise himself with them. Although they may seem intricate at first, they are in reality very simple; and the results obtained by their use are more accurate than proportional calculation from tables. The logarithms required will be found in *Chambers' Mathematical Tables*, under the head of "Logarithmic Sines, Tangents and Secants."

By way of illustration of their use, let us take the horoscope of King George V., born June 3rd, 1865, 1.18 a.m., Marlborough House, London. Latitude $51^{\circ}30'$ N., longitude $9^{\circ}15''$ W. (or 37 seconds in time).

We start with the S.T. for noon at Greenwich on June 2nd, and add to it a correction (taken from the table to reduce mean to sidereal time, which is given in *Chambers'* and at the end of this book) for the 37 secs. W. longitude. This gives the S.T. for noon at the birthplace. To this is added the time elapsed from noon on the 2nd to 1.18. a.m. on the 3rd, and also the correction for the same time. This gives the S.T. or R.A.M.C. at the moment of birth.

				<i>h. m. s.</i>
S.T. noon, Greenwich, June 2nd	-	-	-	4 43 52 ¹³
Correction for 37 secs. W.	-	-	-	¹⁰
S.T. noon birthplace	-	-	-	4 43 52 ²³
Time elapsed	-	-	-	13 17 23 ⁰⁰
Correction	-	-	-	2 10 ⁹⁸
R.A. of M.C., in time	-	-	-	18 3 26 ²¹

If the question be asked why the time elapsed is not taken as 13h. 18m. the reply is that the estimate time of birth is assumed to be Green-

wich mean time, and this is converted into local mean time by subtracting 37 seconds.

The R.A. of the M.C. in time thus arrived at must be converted into arc by means of the table for reducing time to degrees, given at end of book. This gives $270^{\circ}51'33''$, or in round numbers $270^{\circ}52'$, as the R.A. of the M.C. in *arc*. The calculations that follow are made to the nearest minute of arc only. If the student wishes to work to seconds, he can do so by taking proportional parts of the differences between successive logarithms according to the number of seconds.

The R.A. of $0^{\circ}\Upsilon$ is 0° , of $0^{\circ}\ominus$ is 90° , of $0^{\circ}\sphericalangle$ is 180° of $0^{\circ}\wp$ is 270° .

The R.A. of the M.C. in this case measures $0^{\circ}52'$ from \wp . This must be converted into longitude by formula II.

Log. cosine obliquity of ecliptic (O.E.) $23^{\circ}27'$	-		9.962 5624 ¹
Log. tangent $0^{\circ}52'$	-		8.179 7626
			8.142 3250
Log. tangent $0^{\circ}\wp 48'$	-		8.142 3250

This means that $0^{\circ}\wp 48'$ is on the cusp of the tenth house and $0^{\circ}\ominus 48'$ on the cusp of the fourth.

To find the cusp of ascendant, proceed by formula VII., first ascertaining the oblique ascension of the ascendant by formula V.

R.A. of M.C.	-		270 52
Add	-		90 0
			360 52
Subtract the circle	-		360 0
			0 52

This is measured from Υ . Then by Formula VII.

Log. cosine	$0^{\circ}52'$	-			9.999 9503
Log. cotangent	$51^{\circ}30'$	-			9.900 6052
	A = $51^{\circ}30'$	-			9.900 5555
	$23^{\circ}27'$	-			9.900 5555
	B = $74^{\circ}57'$				
Log. cosine	$74^{\circ}57'$ (Arith. comp.)	-			0.585 5918
Log. cosine	$51^{\circ}30'$	-			9.794 1496
Log. tangent	$0^{\circ}52'$	-			8.179 7626
	$2^{\circ} 5'$	=			8.559 5040

¹ Seven-figure logarithms are used here, as they are given in *Chambers*, but it may be worth while to point out that 5-figure logs. give sufficiently accurate results in most cases and are much quicker to use.

This means that the longitude of the cusp of the ascendant is $2^{\circ} 7' 5''$. In this case the cusps of the other houses can be filled in from a Table of Houses for London; but if no such table existed they could be calculated in the same way as the ascendant by formulæ V. and VII.

SPECULUM.

R.A.M.C. $270^{\circ} 52'$.

		Declin.	R.A.	Merid. Dist.	Semi-Arc
	o /	o /	o /	o /	o /
Asc.		0 50 N	1 55		
☉		22 18 N	70 58	19 54	58 37
☽	2 27 S	2 40 S	179 59	89 7	93 22
☿	3 18 S	14 10 N	46 57	43 55	71 29
♀	1 30 S	13 17 N	37 43	53 9	72 44
♂	1 27 N	20 17 N	128 20	37 28	62 19
♃	0 27 N	22 57 S	265 18	5 34	57 51
♄	2 40 N	6 51 S	203 16	67 36	81 18
♅	0 12 N	23 39 N	88 30	2 22	56 35
♆	1 29 S	2 39 N	9 55	80 57	86 40

*King George V., born 3/6/'65, 1.18 a.m., London.*¹

Then follows the calculation of the Speculum. The declination of each planet is given in the *Nautical Almanac*. The longitude of each can be taken from *Raphael's Ephemeris*, or, if preferred, it may be calculated direct from the *Nautical Almanac* by means of Formula VIII. The R.A. of each planet may be taken from the *Nautical Almanac*, where it is given in hours, minutes, and seconds, which must be converted into degrees and minutes of arc. If preferred, it may be calculated from the *Ephemeris* by Formula IX.²

The Meridian Distance of each is obtained by taking the difference between the R.A. of the planet and the R.A. of the M.C., or the R.A. of the I.C., whichever is nearest. The I.C. or *Imum Cæli* is the cusp of the fourth house. Its R.A. is exactly 180° from that of the M.C.

The Semi-arc of each may be calculated by Formula VI.; before using which, it will be first necessary to find the Ascensional Difference for each by Formula IV. When the planet is nearest to the M.C. its Diurnal Semi-arc is written down; but when nearest the I.C., its

¹ The Horoscope is given later on in SECTION B.

² The R.A. of the ☉ by Formula I.

Nocturnal. When Primary Directions are to be calculated for a number of years, it is often necessary to have both Semi-arcs noted.

Instructions for calculating Primary Directions are not given here as a full treatise on the subject will be found in Section D of the fifth volume of this Series, *The Progressed Horoscope*.

HOW TO CALCULATE A "SUNRISE" MAP.

It is sometimes required to calculate a map for 'Sunrise. In that case ascertain the approximate time of sunrise from a Table of Houses, or if necessary by a rough calculation based on the method which follows. From this the exact longitude of the Sun at sunrise can be calculated, and when the longitude on the cusp of the ascendant is thus known, the R.A. of the M.C. and the time of birth may be calculated. Such procedure is sometimes necessary, too, when rectifying a horoscope by what is termed the "Pre-natal Epoch" method; because that method gives the cusp of the ascendant only, and from this the time of birth has to be calculated.

Let us assume that the ascendant has been ascertained to be $2^{\circ} 7' 5''$; it is required to calculate the time of birth in this horoscope. First convert $2^{\circ} 7' 5''$ into R.A. by Formula I.

Log. cosine	$23^{\circ} 27'$	-	-	9.962 5624
Log. tangent	$2^{\circ} 5'$	-	-	8.560 8276
R.A.	=	$1^{\circ} 55'$	-	<u>8.523 3900</u>

Then ascertain declination by Formula III.

Log. sine	$23^{\circ} 27'$	-	-	9.599 8270
Log. sine	$2^{\circ} 5'$	-	-	8.560 5404
Dec.	=	$0^{\circ} 50'$	-	<u>8.160 3674</u>

Then, knowing the declination, find the ascensional difference of $2^{\circ} 7' 5''$ for the latitude of the birthplace by Formula IV.

Log. tangent	$0^{\circ} 50'$	-	-	8.162 7267
Log. tangent	$51^{\circ} 30'$	-	-	10.099 3948
Asc. Diff.	=	$1^{\circ} 3'$	-	<u>8.262 1215</u>

Then, by Formula V., as the declination is N. :—

R.A.	-	-	-	$1^{\circ} 55'$
Ascensional Difference	-	-	-	$1^{\circ} 3'$
Oblique Ascension of Ascendant	-	-	-	<u>$0^{\circ} 52'$</u>

From this subtract 90° (first adding 360°):—

	360°52'
	90° 0'
R.A. of M.C.	270°52'

Convert this into time by means of the Table for Reducing Degrees to Time at end of book, and the result is $18h. 3m. 26.21s.$ From this subtract the S.T. for preceding noon at the birthplace, also the correction taken from the table to reduce sidereal to mean time.

	<i>h. m. s.</i>
S.T. noon	18 3 26.21
	4 43 52.23
Correction	13 19 33.98
	2 10.98
Mean time since noon	13 17 23.00

By subtracting $12h.$ this gives the mean time of birth as $1h. 17m. 23s.$ at the birthplace, or $1h. 18m.$ in Greenwich mean time.

TRIGONOMETRICAL FORMULÆ.

Note.—The first three formulæ are used in the case of the \odot , or of any heavenly body without latitude, or of the degree on the cusp of the M.C., or of any degree in the ecliptic taken without latitude.

FORMULA I.

To convert Longitude into Right Ascension, without Latitude.

Log. cosine of obliquity of ecliptic ($23^\circ 27'$)
 + Log. tangent long. from Υ or ♋ (or log. cotangent long. from ♎ or ♏)
 = Log. tangent R.A. from Υ or ♋ (or log. cotangent R.A. from ♎ or ♏).

If in Υ , ♌ or ♍ , the answer will be the R.A. required. If in ♎ , ♏ or ♐ , add to 90° . If in ♋ , ♍ or ♎ , add to 180° . If in ♏ , ♐ or ♑ , add to 270° .

FORMULA II.

To convert Right Ascension into Longitude, without Latitude.

Log. cosine of obliquity of ecliptic ($23^\circ 27'$)
 + Log. cotangent R.A. from Υ or ♋ (or log. tangent R.A. from ♎ or ♏)
 = Log. cotangent long. from Υ or ♋ (or log. tangent long. from ♎ or ♏).

R.A. of $0^\circ \Upsilon = 0^\circ$; of $0^\circ \text{♎} = 90^\circ$; of $0^\circ \text{♋} = 180^\circ$; of $0^\circ \text{♏} = 270^\circ$.

FORMULA III.

Longitude being given, to find Declination, without Latitude.

Log. sine of obliquity of ecliptic ($23^{\circ}27'$)
 + Log. sine longitude from Υ or \sphericalangle (or log. cosine from \ominus or \wp)
 = Log. sine declination.

FORMULA IV.

To find Ascensional Difference.

Log. tangent declination
 + Log. tangent latitude of birthplace
 = Log. sine ascensional difference.

FORMULA V.

To find Oblique Ascension.

With N. declination, R.A. - Ascensional Difference = Obl. Asc.**
 With S. declination, R.A. + Ascensional Difference = Obl. Asc.**
 To find the oblique ascension of the cusp of a house:—

R.A. of M.C.	+ 30°	= oblique ascension of cusp of 11th.
"	" + 60°	" " " " 12th.
"	" + 90°	" " " " 1st.
"	" + 120°	" " " " 2nd.
"	" + 150°	" " " " 3rd.

FORMULA VI.

To find semi-Arc.

For diurnal** semi-arc with N. declination, 90° + Ascensional Difference.
 " " " " S. " " 90° - Ascensional Difference.
 For nocturnal** " " N. " " 90° - Ascensional Difference.
 " " " " S. " " 90° + Ascensional Difference.
 Either semi-arc subtracted from 180° will give the other semi-arc.

FORMULA VII.

Oblique Ascension being given, to find the degree of longitude on the cusp of any house.

PART I. Log. cosine oblique ascension from Υ or \sphericalangle (or log. sine oblique ascension from \ominus or \wp)

+ Log. cotangent pole of the house
 = Log. cotangent first angle. Call this *A*.

The pole of the ascendant is the latitude of the birthplace. The Mid-heaven has no pole. The poles of the other houses are given at end of book, and by formula VII(a).

** This is, of course, for places in the northern latitudes. For places in the southern latitudes these rules must be reversed; also in northern latitudes above $66^{\circ}33'$.

PART 2. If oblique ascension be less than 90° or more than 270° , $A + \text{obliquity of ecliptic } (23^\circ 27') = B.$ **

If oblique ascension be more than 90° and less than 270° , the difference between $23^\circ 27'$ and $A = B.$ **

PART 3. Log. *cosine* B (arithmetical complement)

+ Log. *cosine* A

+ Log. *tangent* oblique ascension from Υ or \sphericalangle (or log. *cotangent* oblique ascension from ♄ or ♅)

= Log. *tangent* longitude from Υ or \sphericalangle (or log. *cotangent* longitude from ♄ or ♅).

NOTE.—If B exceed 90° , take log. *sine* (arithm. complement) of its excess. The longitude will fall the reverse way from the point from which the oblique ascension is taken.

When the R.A. of M.C. is exactly 0° (or 360°) or 180° :—Log. *sine* obliquity of ecliptic + log. *tangent* latitude of birthplace = log. *cotangent* ascending degree from nearest equinox.

FORMULA VII. (a)¹

To find the Pole of any House.

(i) Log. *tangent* of obliquity of ecliptic ($23^\circ 27'$)
+ Log. *tangent* latitude of birthplace
= Log. *sine* X. Take $\frac{1}{3}$ X, $\frac{2}{3}$ X.

(ii) Log. *sine* $\frac{1}{3}$ X
+ Log. *cotangent* obliquity of ecliptic ($23^\circ 27'$)
= Log. *tangent* Pole of Eleventh and Third Houses (which have each the same Pole).

(iii) Log. *sine* $\frac{2}{3}$ X
+ Log. *cotangent* obliquity of ecliptic ($23^\circ 27'$)
= Log. *tangent* Pole of Twelfth and Second Houses (which have each the same Pole).

FORMULA VIII.

R.A. and Declination being given, to find Longitude and Latitude.

PART 1. Log. *sine* R.A. from Υ or \sphericalangle (or log. *cosine* R.A. from ♄ or ♅)
+ Log. *cotangent* declination
= Log. *tangent* angle A.

PART 2. R.A. and declination same name (if R.A. is less than 180° , call it *North*; if more, call it *South*), $A + \text{obliquity of ecliptic } (23^\circ 27') = B.$
But if R.A. and declination be of different names, the difference between A and $23^\circ 27' = B.$

** This is, of course, for places in the northern latitudes. For places in the southern latitudes these rules must be reversed; also in northern latitudes above $66^\circ 33'$.

¹ This is the usual formula, based upon the point of extreme declination $23^\circ 27'$, and by it have been calculated the Poles or 'polar elevation of House Cusp' given at foot of the Table of Ascendants. Mr. J. G. Dalton of Boston has recommended the use of a point of about $18\frac{1}{2}^\circ$ declination, and has published a table of poles so calculated. The difference is quite trifling, except in very high latitudes.

PART 3. For Longitude:—

Log. *sine* A (*arithm. complement*)
 + Log. *sine* B
 + Log. *tangent* R.A. from φ or \simeq (or log. *cotangent* R.A. from \ominus or \wp)
 = Log. *tangent* longitude from φ or \simeq (or log. *cotangent* longitude from \ominus or \wp).

PART 4. For Latitude:—

Log. *cosine* A (*arithm. complement*)
 + Log. *cosine* B
 + Log. *sine* declination
 = Log. *sine* latitude.

NOTE.—If B exceed 90° , use the *cosine* of its excess in Part 3 and its *sine* in Part 4. The latitude will then be of contrary name to the declination.

FORMULA IX.

Longitude, Latitude, and Declination being given, to find R.A.

Log. *cosine* declination (*arithmetical complement*)
 + Log. *cosine* latitude
 + Log. *cosine* long. from φ or \simeq (or *sine* longitude from \ominus or \wp)
 = Log. *cosine* R.A. from φ or \simeq (or *sine* longitude from \ominus or \wp).

FORMULA X.

As the subject of the Pre-natal Epoch has been touched upon here, and as the mathematical method is necessary in certain cases where the Moon is so close to the horizon at birth as to leave a doubt as to whether it is above or below, the following rules are given for determining the 'conception' or epoch in the mathematical way. They are adapted from *The Astrologer's Magazine* of 1794 (p. 161).

To calculate the moment of epoch (or 'conception') when the Moon is close to the horizon, or for places for which there is no Table of Houses.

1. Erect your figure to the given estimate time of birth, as usual, to which time find the Moon's place both in longitude and latitude.
2. Find the O.A. (*Oblique Ascension*) of the degree ascending, to which if you add 180° you will have the O.D. (*Oblique Descension*) of the seventh house. Find also the O.A. of the Moon if between the first and tenth or fourth and first houses, otherwise find the O.D., under the pole of the latitude of birthplace.
3. If D is *under* the horizon, then from its O.A. or O.D. subtract the O.A. of the ascendant; the remainder is the distance of D from the ascendant. If *above* the horizon, then similarly from its O.A. or O.D. subtract the O.D. of the seventh house; the remainder is the distance of the D from the seventh house.
4. 5. Having ascertained this distance, find from the table given in chapter VIII the day of epoch as there explained.

6. From the true O.A. of the Moon at the estimate time of birth (taken under the pole of birthplace) subtract 90° , and from that remainder subtract the R.A.M.C. at noon on the day of epoch: this last remainder, converted into time, will give the hour and minute of epoch (or 'conception').
7. To the true time of epoch, thus ascertained, find the Moon's longitude and latitude, and thereby her true O.A. or O.D. under the pole of birth, for that will be the true O.A. of the ascendant at birth; or, it will be the O.D. of the seventh house, according as the Moon at epoch is found in same or opposite sign to the ascendant at birth.
8. If the number last found be the O.A. of the ascendant, *subtract* 90° therefrom; if the O.D. of the seventh house *add* 90° thereto. This will give the true R.A.M.C. at birth, from which the true time of birth can be determined in the ordinary way.

When the Moon at birth is very close to the horizon, as in the case of King George's horoscope, given in this chapter, it is often doubtful how to regard it, whether as above or below. For if there is any doubt as to the birth-time, a few minutes either way would make all the difference: moreover, as the D has $2^\circ 27'$ S. latitude, it might be *below* the horizon while the actual degree of the Zodiac (ecliptic) occupied, $\approx 1^\circ 5'$, was yet *above*—as is, indeed, the case.

Therefore in all cases when the Moon is on the horizon at the estimate time of birth, or so near it that a few minutes either way would bring it either above or below—and in this respect it is necessary to have regard to the latitude as well as the longitude of the Moon—count just 273 days (ten lunar months) back and then proceed as in paragraphs 5, 6, 7, 8, to find the true time of birth in accordance with customary procedure. In all such cases the Moon at epoch will, of course, be found on or near the horizon—ascendant or descendant as the case may be.

Certain other Formulæ will be found in the Appendix.

CHAPTER XI.

THE RECTIFICATION OF A HOROSCOPE WHEN BIRTHTIME IS APPROXIMATE OR UNKNOWN.

THE subject of rectification is one which is of perennial interest to every student of Astrology, for very few times of birth can be relied on as being altogether accurate, even in those cases where there is no doubt regarding the general authenticity of the facts supplied. Some of the difficulties have already been mentioned in Chapter VIII. Setting aside the obvious one of mistake or confusion on the part of the person supplying the information, let us suppose that a reliable witness—say the nurse present at birth—declares the time of birth to be five minutes past five in the morning, adding “I remember looking at the clock.”

Assuming the complete correctness of this information from the witness's point of view, namely a distinct memory of having looked at a clock, and observed the hands pointing to 5.5 a.m., it is necessary to consider the additional data that must be ascertained before a correct horoscope can be calculated from the stated time. To compute the true horoscope we require only (a) date, (b) place, and (c) time, but the time must be the ‘absolute’ time of birth, *i.e.*, the time as referred to some definite and unvarying standard. Given these, the horoscope is a mere matter of figures.

The supplementary items required are explicit and definite answers to the following questions:—(1) At what moment precisely was it that the above observation was made, (a) immediately before, after, or during delivery? (b) at the moment of complete extrusion? (c) at the first complete breath? (d) at the moment of stricture (a), or severance (β), of the umbilical cord; or finally, (e) was this time only noted, as is usually the case, after the whole excitement and suspense of waiting were over and the doctor was preparing to take his leave? (2) Was the clock from which the observation was taken a reliable one, and if so, was it adjusted to local or standard time? (3) If the latter, was the local time *true mean*

local time, or 'local' time according to some arbitrary standard, such as "the railway station clock," which is often designedly two or three minutes fast, especially in excursion towns? (4) Or was it Greenwich or other standard time, such as is now-a-days employed by the great railway companies and displayed by important public clocks?

Unless these questions can be satisfactorily answered, we have no guarantee that the horoscope when calculated will be a perfectly true one. And yet it is rarely indeed that any birth-time is observed or recorded so definitely as the foregoing considerations show to be essential for the accurate determination of the cusp of the ascendant—though of course the planets would not be appreciably altered by a few minutes' error. Therefore if an accurate horoscope is desired rectification becomes imperative, while where the birth-time is unknown it is impossible to do without it.

The two chief methods of rectification in general use were outlined in Chapter VIII. The method of "events" is the one which it is intended to discuss in the present chapter, since it is the only one available when merely the day of birth and not the hour is known.

PRELIMINARY PROCEDURE.

Let us follow, in imagination, the procedure of an astrologer who has been furnished with the day of birth of someone unknown to him. A photograph, a specimen of the handwriting, the Christian name or names, the style of dress affected—any little clue of the kind is seized upon to afford a hypothetical ascendant from which a directional scheme can be worked.

Let us suppose that the birthday of the late King Edward VII. has been given, with a request for a horoscope, it being stated that the birth-time is "not known."

It is necessary to proceed gradually, advancing from generalities to particulars; and hence the first thing to do is to decide which of the twelve signs is likely to occupy the ascendant. The general temperamental idiosyncrasies, coupled with the appearance, and perhaps the Christian name, afford the readiest clue. And here the King's well-known sporting proclivities immediately suggest the sign Sagittarius, which suggestion is supported by the personal appearance of His Majesty, while the name Albert has something of a Jupiterian flavour about it.

Accepting, then, Sagittarius as a provisional hypothesis, it becomes necessary to determine the probable decanate. The third, *i.e.*, the Leo decanate, seems most appropriate for the heir to a crown: moreover the Ephemeris shows Jupiter in that decanate on the day of birth, 9/11/'41, which would place Jupiter very near the first-house cusp. As the King's appearance is quite in accordance with such a position (full habit of body, head somewhat oviform, tendency to baldness near temples), this seems quite good enough to start work upon.

The items alluded to are by no means all those that suggest themselves to the mind, in fact they are typical rather than inclusive, but they serve to show the process of induction by which some idea of the ascendant is more or less empirically arrived at.

The next point is to decide upon some important planetary position which will help to determine the exact degree ascending. This is where the real work of rectification, as ordinarily understood, commences. The method generally used employs what are commonly termed *primary directions*. We will use King Edward's nativity by way of illustration.

THE UNDERLYING PRINCIPLE.

The principle underlying the method is, that by some arcane analogy of Nature, the 90° of Right Ascension or in other words the first quadrant of the equatorial circle to pass over the meridian subsequent to birth, bears a relation to the span of human life at the rate of one year per degree. The various successive mundane positions assumed by the planets during the six-hour period alluded to, will consequently be reflected in the train of events observed in the native's life. What the true natural basis of this analogy is, it is hard to determine, but it has been suggested that the whole circle of the day (360°) corresponds to a cycle of 360 years,¹ during which the soul passes through the various lower "worlds," of which objective physical existence on this globe of ours is one. This seems a fairly rational supposition, can at least hardly be disproved, and, at any rate, forms a convenient basis for thought.

Applying this idea to the case in hand, and assuming the third decanate of Sagittarius as rising upon the ascendant, it will be seen that

¹ The "Divine Year" of the Hindus—see *Zadkiel's Legacy*, p. 38. It may be of interest to add that since this chapter was originally written the existence of an ultra-Neptunian planet, "Isis," whose period is stated to be 360 years, has been declared highly probable. See *Modern Astrology* for March, 1906, p. 113.

Jupiter will come to the cusp of the first house during the early years of life, unless that cusp has been already passed at the moment of birth. This can be readily determined by a reference to a table of houses for London, by which we see that Υ in $\uparrow 21^{\circ}28'$ will be \odot asc. when but a few degrees have passed the M.C. after the ascension of $\uparrow 20^{\circ}$, the commencement of the third decanate. Now the transit of any planet across one of the angles of the figure affords one of the most reliable methods of 'rectifying' a nativity, partly (a) because the angles of a figure are the points most concerned with objective manifestation, and partly (b) because the transit of a planet over any such point is not a matter of dispute—such as is the house-space of a cadent or succedent house. The presumed effect of such an influence has first to be judged, and then the early years of the native's life searched for some event of sufficient significance and of a like nature to correspond to such a direction.

In the present instance the direction "Asc. $\odot \Upsilon$ " means that the lord of the ascendant has come to the horizon, and consequently its especial influence will *dawn* upon the native's life—in short, the native himself will obtain prominence, actual or potential, in some way; in fact his own career may be said virtually to date from the time indicated.

Here we are face to face with somewhat of a difficulty, for if Jupiter should have already crossed the ascendant at the moment of birth, it is obviously futile to look for events *subsequent* to birth to correspond with its exact ascension. We will therefore waive this point for the moment and turn to the first important event in the native's life. This was the death of the Prince Consort, in December, 1861. It may here be remarked that in selecting events for the purpose of rectification in this way it is advisable as far as possible to choose such as can have been in no way influenced by the personal free-will of the native; such events, in short, as are determined by the Karma or 'fate,' rather than by the native's own actions—of which the death of one of the parents furnishes a good example.

In this case, we find that the place of Mars, $\uparrow 15^{\circ}13'$, comes to the ascendant during the second decade or so of life. Mars being the ruler of the M.C.¹ (father), the passing of this planet out of the positive

¹ That is, supposing it is the latter half of the third decanate of \uparrow on the ascendant, so that \uparrow is on the mid-heaven.

(objective) quadrant [fourth to first] into the negative (latent) quadrant [first to tenth] is clearly indicative of the passing out of manifestation of the parent in question. Accepting this as at least a working hypothesis, we proceed thus :

	y.	m.	d.
Date of father's death, 13th Dec., 1861	1861	12	13 ¹
„ „ native's birth, 9th Nov., 1841	1841	11	9
Time elapsed	20	1	4
Equivalent in Sidereal h. m. s., at the rate of 4m. (1°) = 1yr. ("Arc. of Direction")	1	20	23
	h.	m.	s.
Sidereal time of the place of δ , $\approx 15^{\circ}13'$, ascending at London	15	12	31
Less sidereal time equivalent to 20y. 1m. 4d.	1	20	23
Gives sidereal time at Birth	13	52	8

This sidereal time is equivalent to the ascension of $\uparrow 25^{\circ}27'$, and this we assume to be the actual ascendant, to be subsequently verified or corrected by additional testimony.

It will be pertinent here to quote from Zadkiel's *Handbook of Astrology*, Vol. II. (published in 1863 and now very scarce), in which the same rectification was made from the same event, namely, death of the father. Alluding to the discrepancy between the time for which the figure is thus erected (10.38 a.m.) and that mentioned in the official bulletin (10.48 a.m.) the author says :

"The student may ask why we make the difference of $2^{\circ}27'$ in the right ascension of the M.C. from that arising from the medical report. It is for these reasons: the medical report, as stated by Dr. Locock, in a letter now in my possession, was that the Prince was 'perfectly born' at the period named in the bulletin, but of course the worthy doctor was too much occupied to notice the moment of the infant's *first cry*; and he

¹ This method of tabulating the date is open to some cavil from an academic point of view. Strictly speaking it should be 1861-11-13, since only *eleven* complete months of the year have elapsed, and not twelve. and similarly of course, the date of birth should be expressed as 1841-10-9 and not 1841-11-9. But so long as the same method is adopted for *both* dates, for practical purposes it does not matter which one is employed, since the result of the subtraction will be the same in either case, and it is probable that most students will prefer the one adopted as less likely to cause confusion, being familiar as the customary method of writing a date, e.g., 25/12/1900 for Christmas day, 1900.

would not notice the time at all till all was over, and the child was 'perfectly born.' There would thus elapse some few minutes from the true moment of the *astrological* birth. Then also the clock may have been, as most clocks were in those days, two or three minutes fast, as at that period there was no electric telegraph to keep those clocks as exact as they are now kept. Thus the difference of time, *9m. 41s.*, is readily explained." Later on in the same work he says:

"There have been various devices for obtaining the true time of birth; but none are so certain as the comparison of the time of events (accidents as they are termed) with the arcs of direction which are suitable to produce those events. Thus, in the nativity of the Prince of Wales we find Mars in the ascendant; and as we know that he always produces 'grievous events' when by direction he comes to the cusp of the ascendant, and as we find that the arc *Asc. ϕ δ in Zodiac, $20^{\circ}6'$* , tells to the time of the lamented death of his father, we may conclude, on certain conditions, that the time must be rectified so much as will make that aspect agree with that fatal event. The conditions are that other events of moment shall also agree with aspects formed to the angles, thus rectified, or to the place of the Moon. Now by taking the rectified M.C., $208^{\circ}0'$ [*i.e.* sid. time, *13h. 52m. 0s.*] we get $\text{D} * \text{♀}$ *Zod. con.*, $21^{\circ}20'$, the arc for the time of marriage, and *Asc. $* \odot$ *Zod.*, $21^{\circ}33'$* , follows close on the latter and agrees with the time when the Prince was so highly honoured and complimented by the whole nation."

AN IMPORTANT CONSIDERATION.

Now this brings us to a very important consideration. Namely, that the correspondence, in time, of a certain arc with a certain event is no proof in itself that the said arc is the efficient cause of the said event. By way of a practical illustration, the prediction of the same writer relative to King Edward's marriage may be quoted.

The Prince of Wales, as he then was, was married in 1863 at $21\frac{1}{2}$ years of age. In *Zadkiel's Legacy*, published in 1842, on p. 58 the author gives some 'important directions,' under which heading he says, "M.C. $* \text{D}$, arc $24^{\circ}21'$, operating at twenty-three years three months—the Prince will marry." This prediction was made from an unrectified horoscope, and therefore the incorrectness of the prediction as regards time might be excused. But the point to note is this: The royal

marriage was predicted in 1842, in the *Legacy*, from the arc for "M.C. * D." Yet in 1863, in the *Handbook*, the arc claimed as significant of the marriage and measuring thereto is "D * ♀, *Zod. con.*," supplemented by "Asc. * ☉ *Zod.*,"—no mention whatever being made of "M.C. * D" from which the marriage had been predicted!

It would be difficult perhaps to find a better illustration to point the moral which is one of the especial purposes of this chapter, *viz.*, that arcs of direction OF SOME KIND OR OTHER can be found to fit any event, or indeed any year and month in the native's life. To say this is not to charge the author of the *Handbook* with intentional dishonesty or even conscious inconsistency. It is merely to draw attention to the patent but often overlooked fact, that in themselves primary directions are so numerous that some kind of primary direction is to be found for almost every month of life.¹ Not that they are of no effect; for events of a sort, more or less significant, are constantly happening to each one of us. But what we perceive from these considerations is that the judgment of the astrologer regarding the *nature* of the events signified, and their practical importance as viewed from the external standpoint, is often sadly at fault.

RECTIFICATION OF KING EDWARD'S HOROSCOPE.

To return to our example. It will be clear from what has been said that it will not do to rectify a horoscope by one event alone, the risk of having fitted the wrong position to the event is too great.² It is also advisable to select very significant and distinctive events with nothing of a 'milk-and-water' character about them, if possible such as are in the nature of absolute fate or "karma."

Such an event in King Edward's case was the death of Queen Victoria on January 22nd, 1901, his accession *ipso facto* to the sovereignty and Empire of Great Britain, and his subsequent coronation; and there is little doubt that such an event would have been used by the author of the *Handbook* to verify his previous rectification, had he been living at the present day. The strange train of events leading to the postponement of

¹ A proof of this statement is given later on—p. 105.

² For again, ♄♄ Asc. was held in *Zadkiel's Legacy* (1842) to signify "Hurt on the head or the knee: some illness" (*op. cit.*, p. 58), while in the subsequently issued *Handbook* (1863) it is claimed as having signified the death of the father, and used to rectify the horoscope accordingly as the foregoing quotations show.

the coronation will occur to the reader, and it certainly constitutes a factor to be taken into consideration, coming under the same category of *karma* or fate as the fact of coronation itself.

Let us first judge the horoscope of birth on p. xii, and determine what configuration should be held to signify this accession of dignity and responsibility. Questions of karma, good karma especially, are typically represented by the second house, the house of fortune and wealth. Here we find Aquarius, the day house of Saturn, has control of the second house, and Saturn, its lord, strong in Capricorn, is in the ascendant (personality), indicating that the responsibility denoted by Saturn is innately present in the personal character, and may therefore be expected to devolve upon the native during the present life, at such time as the influence of Saturn shall become paramount; which is clearly when the M.C. is reached. In other words $\frac{1}{2} \circ$ M.C. is the 'direction' to which we look as signifying of the culminating point of the royal fortunes, that is to say, the actual coronation.

KING EDWARD'S HOROSCOPE.

DATA FOR RECTIFICATION.

Date of Event.	Event.	Age.			Measure of Direction.		
		Y.	M.	D.	H.	M.	S.
9/8/'02	Coronation (actual)	60	9	0	4	3	0
24/6/'02	Coronation (postponed)	60	7	15	4	2	30
30/5/'02	Birthday celebration	60	6	21	4	2	14
22/1/'01	Accession	59	2	13	3	56	49

BIRTH.

9/11/'41	} (rectified)	Asc.:	$\neq 27^{\circ}5'$	
10.44.37		M.C.:	$\text{m } 1^{\circ}36'30''$	"
G.M.T. a.m.		\oplus	$\text{m } 9^{\circ}35'$	"
		R.A.M.C.:	13 57 47	"

In order that the tabulated 'directions' given below, and the dates to which they measure, with corresponding events, may be the more readily checked by the reader, the equivalents for minutes and months, etc., at the rate of 1° R.A. (4m. sid. time) to the year, are appended.

H.	M.	S.		YRS.	MTHS.	DAYS
1	.	.	equivalent to	15	.	.
.	4	.	" "	1	.	.
.	1	.	" "	.	3	.
.	.	20	" "	.	1	.
.	.	10	" "	.	.	15
.	.	2	" "	.	.	3

This Sidereal Time gives $\uparrow 27^{\circ}5'$ rising and $\text{m}1^{\circ}36'30''$ culminating; these will therefore be regarded as the true ascendant and mid-heaven, and 10.44.37 a.m., the corresponding G.M.T., as the True Time of Birth. This, it will be seen, is about $5\frac{1}{2}$ minutes later than the time deduced on p. 93—a notable difference.¹ It is accepted as correct by the present writer for the reason that certain other directions based on this birth-time measure *exactly* to significant events, such as the official alteration of birthday celebration, postponement of coronation, etc. These will be apparent from the following list of directions and their corresponding dates, all calculated by a strict measurement of $4m=1yr$, from a radical R.A.M.C. of 13-57-47. The dates given in the "chronology" are chiefly taken from the *Encyclopædia Britannica*, 10th Ed. See overleaf.

The method of calculation may be illustrated by the 'direction' just referred to, and others can be checked by a like process.

Y.	M.	D.			
1902	8	9	Date of coronation		
1841	11	9	" " birth		
60	9	0			
60	0	0	is equivalent to	H.	M.
9	0	"	" " "	4	0
			Arc of Direction	4	3
			S.T. of $\frac{1}{2}$ in $\text{V} 0^{\circ}11'$	18	0
			culminating	47	
			<i>Difference = S.T. at birth</i>	13	57

It will be seen that some of the aspects seem unsuggestive of the event. Who for instance would expect Asc. ΔD to indicate an attack of typhoid fever? And why should Asc. $\ast \odot$ indicate the death of the father? Yet even here opinions will differ according to individual notions of the nature of disease; many hold that an attack of typhoid fever is of benefit, clearing away impurities and thus ensuring longer life. Nevertheless, even from this standpoint one would rather have expected an aspect to Mars to have effected such benefit, rather than any to the Moon². However a study of the list given cannot fail to be instruc-

¹ See, moreover, footnote on p. 95.

² It is worthy of note that by *secondary* direction $\text{D } \acute{\rho} . \square \delta \acute{\rho} .$ from m to = was in operation.

PARTIAL TABLE OF DIRECTIONS.

R.A.M.Cs. (recalculated for certain "directions" from the Table of Ascendants, for the true geocentric latitude, taken as 51.20 N.).

R.A.M.C. AT BIRTH TAKEN AS 13.57.47 OR 209°27'.

			Asc.	M.C.	Direction	Measures to
18	7	0		♁ 1.36.30	M.C. * M.C. r.	28/ 2'04
18	2	53	♄ 1.44		Asc. ♂ ♃'s place at time of setting	18/12/'02
18	0	48		♁ 0.11	M.C. ♂ ♃*	9/ 8/'02
18	0	18	♄ 0.11		Asc. ☐ ♃	24/ 6/'02
18	0	0	♄ 0.0	♁ 0.0	Asc. ☐ M.C.	30/ 5/'02
17	59	0	♁ 29.24		Asc. ♂ ♃ r. (vect.)	28/ 2/'02†
17	57	24		♄ 29.24	M.C. ☐ ♃ r. ,,	4/10/'01
17	55	7	♁ 27.5		Asc. ☐ Asc. r.	9/ 3/'01
17	47	19		♄ 27.5	Asc. r. ♂ M.C. p.	27/ 3/'99
17	44	12	♁ 20.37		Asc. ♂ ♃ r.	16/ 6/'98
17	22	54		♄ 21.28	♃ ♂ M.C.	19/ 2/'93
17	19	16		♄ 20.37	M.C. ☐ ♃	22/ 3/'92
16	34	16	♁ 14.19		Asc. ♂ ♃	22/12/'80
15	58	26		♄ 1.42	M.C. ♂ ♃	8/ 1/'72
15	56	12	♁ 29.24		Asc. Δ ♃ r.	16/ 6/'71
15	48	48		♁ 29.24	M.C. * ♃	10/ 8/'69
15	25	2	♁ 19.14		Asc. ☐ ♃	1/ 9/'63
15	16	48	♁ 16.54		Asc. * ☉	10/ 8/'61
15	10	54	♁ 15.14		Asc. ♂ ♂	19/ 2/'60
14	57	44		♁ 16.54	M.C. ♂ ☉	4/11/'56
14	12	5	♁ 0.11		Asc. ♂ ♃	6/ 6/'45

CHRONOLOGY OF THE KING'S LIFE UP TO THE DATE OF HIS CORONATION †

DATE.	EVENT.	AGE.			TIME EQUIV.		
		y.	m.	d.	h.	m.	s.
9/11/'41	Birth at Buckingham Palace	0	0	0	0	0	0
4/12/'41	Created Prince of Wales and Earl of Chester	0	0	25	0	0	17
25/ 1/'42	Baptised by Archbishop of Canterbury	0	2	16	0	0	51
6/ 8/'44	Birth of the present Duke of Saxe-Coburg	2	8	27	0	10	58
?/11/'58	Knight of the Garter	17	0	0	1	8	0
?/ ?/'59	Travelled Italy and Spain	17	0	0	1	8	0
?/ ?/'60	Travelled as "Lord Renfrew" to the U.S.	18	0	0	1	12	0
?/ ?/'61	Completed Cambridge Course and joined Camp at Curragh	19	0	0	1	16	0
13/12/'61	Prince Consort, his father, died	20	1	4	1	20	23
?/2 to 6/'62	Travelled to Holy Land	{ 20	3	0	{ 1	21	0
		{ 20	7	0	{ 1	22	20

* Through an error of the artist, in the block ♃ is put as in ♁0.9, but the true place is ♁0.11.

† Anglo-Japanese Treaty signed 30/1/'02; statement in Reichstag concerning it, by Count v. Bulow, 3/3/'02: (a seventh house matter).

‡ NOTE.—Where the exact date has not been ascertainable the age and time equivalent of previous birthday only are given, e.g., as 0/0/'63, 21.0.0., 1.24.0.

DATE.	EVENT.	AGE.			TIME EQUIV.		
		y.	m.	d.	h.	m.	s.
0/ 0/'63	Sworn of Privy Council early in year	21	0	0	1	24	0
"	Took Seat in House of Lords as Duke of Cornwall						
"	Sandringham purchased						
"	Town Residence fixed at Marlborough House	21	4	1	1	25	21
10/ 3/'63	Married at St. George's Chapel, Windsor (His bride born 1/12/44)						
17/ 1/'64	Prince Albert Victor born						
3/ 6/'65	Prince George (present Prince of Wales) born	23	6	24	1	34	16
20/ 2/'67	Princess Louise Dagmar born	25	3	11	1	41	8
0/ 0/'68	Initiated Freemason in Sweden	26	0	0	1	44	0
7/ 6/'68	Princess Victoria Mary born	26	6	28	1	46	19
6/11/'69	" Maud born (married C.P. of Denmark)	28	0	17	1	52	13
23/11/'71	Illness announced	30	0	14	2	0	10
29/11/'71	Declared serious (typhoid fever)	30	0	20	2	0	13
21/12/'71	Slight rally	30	0	22	2	0	15
8/12/'71	Life despaired of	30	0	29	2	0	20
16/12/'71	Crisis of Illness surmounted	30	1	7	2	0	23
25/12/'71	Danger over	30	1	16	2	0	31
27/ 2/'72	Public Thanksgiving at St. Paul's	30	3	18	2	1	12
?/ 1/'74	Attended marriage of brother, the Duke of Edinburgh, to G.D. Marie of Russia	32	0	0	2	8	0
?/ ?/'74	Visit to Birmingham	32	0	0	2	8	0
	Elected Grand Master of English Masons	33	11	2	2	15	42
11/10/'75	Left England on Visit to India						
21/ 4/'76	Arrived home						
0/ 0/'85	Visited Ireland	43	0	0	2	52	0
0/ 0/'86	President of Indo-Colonial Exhibition	44	0	0	2	56	0
"	Opened Mersey Tunnel	44	0	0	2	56	0
"	Laid Stone of Tower Bridge (opened 1894)	44	0	0	2	56	0
0/ 0/'87	Queen Victoria's Jubilee, took active part in	45	0	0	3	0	0
0/ 0/'89	Visited Paris Exhibition and Eiffel Tower	47	0	0	3	8	0
27/ 6/'89	Princess Louise married Duke of Fife	47	7	18	3	10	32
0/ 0/'90	Opened Forth Bridge	48	0	0	3	12	0
"	Tranby Croft Baccarat Case	48	0	0	3	12	0
14/ 1/'92	Duke of Clarence died (recently engaged to Princess Victoria M. of Teck, born 26/5/'67)	50	2	5	3	20	44
6/ 7/'93	Prince George of Wales married Princess Victoria	51	7	27	3	26	38
0/ 0/'94	Opened Tower Bridge (laid stone 1886)	52	0	0	3	28	0
"	Two Visits to Russia	52	7	14	3	30	30
23/ 6/'94	Birth of Prince Edward of York (Grandson and heir)						
0/ 0/'96	Chancellor of University of Wales						
0/ 6/'96	Won the Derby with "Persimmon"	54	7	0	3	38	20
22/ 7/'96	Princess Maud married Pr. Chr. of Denmark	54	8	13	3	38	49
0/ 0/'97	Diamond Jubilee of Queen Victoria	55	0	0	3	40	0
18/ 7/'98	Fractured Knee-cap by a fall	56	8	9	3	46	46
0/12/'99	Fired at by Sipido	58	1	0	3	52	20
0/ 6/1900	Won Derby with "Diamond Jubilee"	58	7	0	3	54	20
22/ 1/'01	Death of Queen Victoria	59	2	13	3	56	49
14/ 2/'01	Opened Parliament in State, with Q. Alexandra	59	3	5	3	57	3
22/ 5/'01	Narrow escape on Yacht "Shamrock"	59	6	13	3	58	9
30/ 7/'01	Parliament passes Bill to call him Edward VII.	59	8	21	3	58	54
9/11/'01	Duke of York made Prince of Wales	60	0	0	4	0	0
30/ 5/'02	End of the Boer War	60	6	21	4	2	14
"	Birthday first celebrated officially on this date						
24/ 6/'02	Operation for Appendicitis						
26/ 6/'02	Coronation Ceremony postponed	60	7	17	4	2	32
9/ 8/'02	Coronation takes place	60	9	0	4	3	0
1/ 1/'03	Delhi Durbar	61	1	22	4	4	35

tive, for it seems improbable in the highest degree that several events should be so accurately measured to by any mere coincidence, and the difficulties will at least serve to bring home to the reader the fact that rectification calls for very profound judgment, as well as a certain readiness in calculation.

The R.A.M.C. thus adopted (13-57-47) may be considered as tentative. Other possible R.A.M.Cs., each within a reasonable margin of the bulletin time of birth (14-1-11) result from:—

- (1) Regarding M.C. $\square \text{H}$ as measuring to the death of the Duke of Clarence, which gives 13-58-28;
- (2) M.C. ζU as birth of Prince Edward of York, 13-52-24;
- (3) Asc. ζh as birth of the Duke of Saxe-Coburg, 6/8/44, resulting in 14-1-7 as R.A.M.C. at birth.

Each of these may be experimented with by the curious student, and the very full chronology will supply him with ample material.

A USEFUL HINT.

In the foregoing calculations only zodiacal points and their aspects have been worked with, and not the actual position of the planet, which sometimes differs from the former considerably, owing to its *latitude*. The student is advised to adopt the same practice, at least in his early stages, as it will enormously simplify his work, enabling him to work direct from the Table of Ascendants instead of being compelled to resort to the trigonometrical method; and since all our notions of Astrology are derived from zodiacal influences, it seems reasonable to work with that point which measures the zodiacal position of a planet, rather than with the point which marks its astronomical position. But he is recommended not to enter upon any detailed treatment of the subject till he has studied the remarks on methods of equating at the end of this chapter.

DIRECTIONS OTHER THAN SIMPLE TRANSITS OF ANGLES.

The foregoing examples have been given as illustrations of the method employed in rectifying a nativity, but are not to be considered exhaustive. They have been chosen because the method of calculation is simple and the rational basis easily understood, since they all depend

upon the zodiacal position of a planet, or an aspect to that position, coming to one or other of the *angles* of the figure.

The thing to be borne in mind is that these calculations are all based upon certain mundane positions attained by the radical positions of the planets within some six hours or so after birth. It is clear therefore that such a one as the latter of the two given, M.C. $\delta \text{ } \frac{1}{2}$, could not be made available to determine the ascendant in the case of a child or youth.

There are, however, many positions, other than the actual transit of angles by planets in the way described, which may be made available for purposes of rectification. And before going further it will be advisable to consider briefly directions of a significator to mundane or zodiacal aspects of the M.C.,⁶ Asc., or other significator, whereby rectifications (so-called) are frequently performed, and to determine why such directions should be regarded with suspicion when used *alone* for purposes of rectification. They depend on the formation of certain "mundane" aspects, and it is one of the especial purposes of this chapter to draw attention to the immense number of these, and to emphasise the unsatisfactoriness of rectifications based on them. The unsatisfactoriness alluded to is due less to their number or to any difficulty in their calculation (which is merely a matter of time and patience) than to the extreme subtlety of judgment required to decide just what event is signified by any particular aspect.

By way of illustration we will enumerate the arcs adduced by Commander Morrison as the cause of death in the case of his own daughter, whose nativity the author presents in the *Companion to Zadkiel's Almanack for 1855* because, as he says, "of the time having been noted by myself, and known to be correct."

☉	par.	♄	Zod.	= 21°22'	Solar arc for August, 1852, when symptoms of consumption were observed. 21°54' = Solar arc for February, 1853, when she broke a blood-vessel in the lungs from coughing.
☽	∠	♃	con.	= 21°22'	
Asc.	☐	☽		= 21°59'	
Asc.	☐	♀	Zod.	= 22°15'	
☉	♄	♀	Zod.	= 22°32'	Fatal arc 22°32' = 21st September, 1853. On the 8th the native again ruptured the blood-vessel, and died in thirteen days, from excessive loss of blood, attended with suffocation.
☽	☐	♄	d.d.	= 22°49'	
Asc.	Δ	♄		= 22°59'	
☽	∠	♃	con.	= 23° 4'	
☽	♄	♃	Zod.	= 23°21'	
☽	♄	♃	d d.	= 23°29'	

This illustration will serve as a very good object lesson in the number of aspects it is possible to compute, all of which measure very approximately to the same time. Yet there seems to be no discrimination shown

as regards their relative importance. Why $\odot \acute{\circ} \text{♀}$ should indicate a ruptured blood-vessel is not at all clear, nor does it seem likely that such an event would have been predicted from such an arc.

Our purpose is not to find fault with the practices of others, but rather to see what can be done to improve them, and these anomalies are only pointed out in order to draw attention to the habit of jumping to the conclusion that because an aspect *measures* to an event it must therefore *indicate* it.

MUNDANE ASPECTS.

Let us give an illustration of what is meant by mundane aspects, and how these are formed.

If a planet at birth is on the cusp of the ascendant, and another on the cusp of the third house, these are in *mundane* sextile aspect.¹ Similarly, any planet which by the Earth's rotation arrives at the cusp of the twelfth, eleventh, tenth, . . . etc., houses will be then in mundane semi-sextile, sextile, or square to the ascendant as the case may be. Again, the cusps of the houses change in like manner, and the ascending degree will arrive by direction, some time during the first thirty or forty years of life, at the cusp of the twelfth house; while the degree in true (zodiacal) semi-sextile to the ascendant will arrive upon the cusp of the twelfth house at some other date, not very far distant from that just mentioned.

These are instances of the simplest directions, such as may easily be followed by a little study of the Table of Houses for London.

Suppose we take our present example. The ascendant, $\uparrow 27^\circ$, will arrive at the cusp of the twelfth house in the 19th year of life, while $\text{♁} 27^\circ$ will not come to the ascendant till the 29th year: the former would be termed "Asc. r. \sphericalangle Asc. p. *mundo*," and the latter "Asc. p. \sphericalangle Asc. r. *zod.*" As there are twelve houses, or six twice over, each of these six can come into relation with the progressed ascendant in the two ways here shown, so that we have 12 different directions from this source alone, or 36 if we include the \ast and \square , quite apart from the transits of planets over an angle, and the movement of these planets over the cusps of houses, which will be approximately 9 for each 30 years of life, or 27

¹ But they will not be in *zodiacal* sextile aspect, unless the cusps of the two houses themselves are in zodiacal sextile, a thing that only happens infrequently in the temperate latitudes.

altogether (exclusive of semi- and sesqui- aspects). These total to 72, but are further increased by another 27 if we include those directions formed by the M.C. coming to the zodiacal \sphericalangle , \ast , \square , etc., of the planets, making 99 altogether. Some few of these may occur simultaneously, but in any case the number will not fall far short of that mentioned.

These may all be classified under one head, *viz.*, direct aspects, mundane and zodiacal, of (a) cusps of houses and (b) radical positions of planets, to the ascendant or mid-heaven—radical or progressed. The mundane aspects to both places form obviously only one series, but two distinct series are formed of the *zodiacal* aspects to these two points. For the sake of clearness it will be well to tabulate them thus:

POSITIONS OR ASPECTS.	DIRECTIONS.
9 Planets, each passing cusp of three houses in quadrant (= mundane aspects to M.C. and Asc. simultaneously)	27
9 Planets, to the aspect of which, by \sphericalangle \ast \square , \square Δ $\overline{\wedge}$, etc., the progressed M.C. arrives (=zod. asp. to M.C.)	27
9 Planets, to the aspect of which, by \sphericalangle \ast \square , \square Δ $\overline{\wedge}$, etc., the progressed Ascendant arrives (=zod. asp. to Asc.)	27
5 House cusps, arriving at 3 different zodiacal aspects to M.C.	15
Ditto, ditto, to Ascendant	15
TOTAL	111

Of course at or near the equator where the houses are uniformly about thirty zodiacal degrees apart, these will practically be reduced to about 42 or fewer, but for the European latitudes we are accustomed to deal with, the number stated will not be excessive.

Yet, in addition to these, there are an almost infinite number of "mutual" aspects; that is, mundane aspects formed by the movement of a planet along its own semi-arc, to a distance proportional to that already traversed by some other planet, along *its* semi-arc, at the moment of birth.¹ Under "mutual aspects" are included four distinct kinds:—

- (a) the approach of one planetary *body* to the [mundane] aspect of the radical position of the body of another planet;
- (b) the similar approach of the *zodiacal degree*² occupied by a planet to the [mundane] aspect of the degree occupied by another planet (if neither planet has latitude *a* and *b* will coincide of course, but this rarely happens);
- (c) the approach of a planet to a *mundane* aspect of an angle;
- (d) the approach of an angle to the *zodiacal* aspect of a planet.

¹ The planet does not really *pass along* the semi-arc, strictly speaking, but the phrase conveys the meaning well enough for all practical purposes.

² That is, the point of the Ecliptic corresponding thereto.

These two latter are not strictly mutual aspects, but are included here because they do not fall under the head of actual *transits* of angles such as we have hitherto been considering.

An example of such an aspect as is described in (d) occurs in the list given on p. 98, where Asc. p. $\square \frac{1}{2}$ in *zodiaco* measures exactly to the postponement of the coronation. Similarly (c) would be represented in a sense by the arrival of any planet at the Ascendant, when it would necessarily be in square to the M.C., whatever the zodiacal degree occupied by the latter might be; or again when it had traversed one-third (or two-thirds) of its semi-arc after crossing an angle, when it would be on the cusp of a cadent (or succedent) house and consequently in \ast or \sphericalangle to M.C., or Asc. as the case might be. These two latter, (c) and (d), are therefore quite easy to understand and (a) and (b) will not prove difficult of comprehension when divested of technical terms.

EXAMPLE OF A "MUNDANE" DIRECTION.

We will imagine a simple case. Let us suppose that on a given date the diurnal semi-arc of Mars is 60° and that of Saturn 90° : then Mars will pass through 2° in the same time that Saturn will pass through 3° . Let us further suppose that at birth Saturn has just risen, and that 3° have passed over the meridian or M.C. since he was *exactly* on the ascendant: when Mars comes to the ascendant, 2° more only need to pass over the M.C. before he is in the same *equivalent* position as Saturn was at the moment of birth. He is then said to have reached the *conjunction* of Saturn *in mundo*; and if, say, 72° of Right Ascension had passed over the meridian from the time of birth until the moment of Mars coming to the ascendant, we should have: Arc of Direction, Mars conjunction Saturn *in mundo*, $72^\circ + 2^\circ = 74^\circ$, measuring to the 74th year of life.

This will serve as an illustration of the method employed in all cases, since if it is the $\ast \Delta \square$, etc., instead of the conjunction we wish to calculate, the zodiacal point in question is treated just as though it were a planet, and the work proceeded with as above. It is not necessary to describe the actual calculations employed, since they are given in Section D of *The Progressed Horoscope*. But a little thought will show that the number of possible aspects so to be computed, mundane and zodiacal, direct and converse, is practically infinite.

THE MULTITUDE OF POSSIBLE DIRECTIONS.

Suppose we take an example from the illustration just given, the following directions may be calculated:—(1) δ arrives at the mundane sextile of the radical position of η : (2) the degree in zodiacal sextile to δ arrives at the mundane position of η : (3) δ arrives at the mundane position of the zodiacal sextile of the radical η . This is simply regarding the movement of δ , the quicker, (semi-arc 60°).

Now, taking the movement of η , the slower, (semi-arc 90°) there remain to be calculated:—(4) η arrives at the mundane sextile of the radical position of δ : (5) the degree in zodiacal sextile to η arrives at the mundane position of δ : (6) η arrives at the mundane position of the zodiacal sextile of the radical δ : and lastly (7) η and δ arrive at the position in which they are in mutual mundane sextile.

Thus we have *seven* distinct positions calculable from just *one* aspect between any two planets, quite exclusive of any considerations of angles whatever. In only the rarest cases will the zodiacal and mundane positions coincide absolutely in point of time, though in many instances they will fall very near together. Now there are nine planets, and if we take each two at a time we obtain thirty-six possible combinations of any two.¹ Multiply this by the number of possible aspects, five, (*i.e.*, excluding complements, ♁ , \square , ♁ , \angle , \sphericalangle) and we obtain 180. Multiply this again by the seven possible cases enumerated, and we obtain 1260 possible varieties of mutual aspects, exclusive of the 111 directions to angles previously enumerated—total 1371, all of which are due to eventuate some time or other during the full span of human life. If we are to include *converse* directions, this figure must be doubled, which works out at something like THREE ASPECTS PER MONTH ON AN AVERAGE.²

Hence it is easy to see that reliance on *any* mutual aspect for purposes of rectification is unwise, to say the least of it. For who is to say that a given event is produced by just that particular one of the seven possible modifications which has been calculated for it, even granted that

¹ Thus: ψ and any one of the remaining 8; ♁ and any one of the remaining 7, and so on; and $8+7+6+5+4+3+2+1=36$.

² And even then we have not taken into account the 'mundane parallels' and 'rapt parallels,' let alone the parallel of declination between the zodiacal degree occupied by a planet and that on one of the angles!

the right planetary aspect has been selected? It is clear that each one must be different in its effect, in some way, but in *what* way?

A SAFE PRACTICE.

It is for this reason that in discussing the King's nativity no reference has been made to any directions except the actual transit of planets, or zodiacal points sensitive in the horoscope, across the *angles* of the figure—meridian or horizon as the case may be. And the reader is recommended in like manner to restrict himself to *transits of angles by the zodiacal degrees occupied by or in aspect to radical planets*, when attempting to rectify an uncertain horoscope or deduce an unknown birthtime by Primary Direction; choosing transits rather than aspects as the more likely to stamp their impress upon the native's external life; and selecting the square in preference to other aspects, for the same reason. The planetary *bodies*, when crossing angles earlier or later than the zodiacal degrees they occupy, do not seem to affect the life much externally, their power to do so seeming to be vested in the zodiacal degree and not in the actual mundane points which they occupy.

Too much stress cannot be laid upon the fact that mutual aspects of some kind or other can be found for every month of life. Even planetary directions to angles amount to forty-five (5 aspects \times 9 planets) or an average of one in two years. But in the nature of things there can clearly be only nine *transits* of angles by the planets during the whole life—and not always that if one or more, having a large semi-arc, be just past some angle at birth.

METHODS OF EQUATING THE ARC OF DIRECTION.

Before concluding this chapter it may be advisable to draw attention to methods of "equating" the Arc of direction.

The M.C. does not progress precisely 1° of R.A. from noon to noon, nor does the Sun move through precisely 1° of celestial longitude during the day.

Hence it is argued on the one hand that (i) the amount of acceleration of the M.C. per day after birth and not an invariable quantity of *4m. 0s.* all the year round should be the measure of the directional "year": for example in King Edward's horoscope *3m. 56s.* would be the measure for the first year of life, *3m. 57s.* for the second, *3m. 56s.* for the third, and

an average of $3m. 56s.$ up to nearly the sixtieth year of life. On the other hand, some declare that (ii) the year should be measured in ecliptic degrees, and consequently a diurnal solar movement of less than 1° will measure to a corresponding fraction of a year, while any day on which the Sun moves *more* than 1° will, accordingly, measure to *more* than a year.

Other methods have also been proposed, but these are the chief. It is not quite easy to see the rational basis of such "equating," seeing that we are here dealing with the *radical* positions of the planets, and not the progressed. But those who are interested in this matter can easily apply the method to the events—or to the aspects—given in the tables on pp. 98 and 99. For the purpose of illustration we will take $\frac{1}{2} r. \phi$ M.C. p., and 'equate' the arc of direction by both the above methods, (i) and (ii).

(i)¹ The period elapsed between birth and coronation is sixty years and nine months. We first find the acceleration of M.C. during sixty days after birth.

		<i>h.</i>	<i>m.</i>	<i>s.</i>
R.A.M.C. noon $9/11/41$	-	15	13	57
" " $8/1/42$	-	19	10	30
Difference (=60 years)	-	3	56	33
Add (=9mths.) $3m. 56\frac{1}{2}s. \times \frac{3}{4}$	-		2	57
Arc of Direction	-	3	59	30
R.A.M.C. when $\nu 0^\circ 11'$ culminates	-	18	0	47
R.A.M.C. at birth (=difference)	-	<u>214</u>	<u>1</u>	<u>17</u>

(ii) The most recently proposed method is fully worked out on p. 379 of *Modern Astrology*, Vol. I. (New Series), to which those interested are referred. It is sufficient to say here that working backwards from an assumed "M.C. p." at coronation of $\nu 0^\circ 11'$ the R.A.M.C. at birth becomes, according to this principle, $14h. 16m. 44s.$, which would place ν upon the ascendant, and is therefore altogether inadmissible. But the more simple way of merely taking 1° of longitude as the mean

¹ It will be seen that strictly speaking this is a 'secondary' direction, *i.e.*, "M.C. p. $\phi \frac{1}{2} r.$ " and not the primary "arc of direction, M.C. $\phi \frac{1}{2} r.$ " And it is therefore doubtless true, as some have urged, that this method of equating is based upon the real or fancied necessity of making the two methods, primary and secondary, coincide as regards the point of time when each falls due.

² This agrees extraordinarily closely with the bulletin time 10.48 a.m., G.M.T., which gives R.A.M.C. $14h. 1m. 11s.$ if regarded as accurate to the second. It also agrees well with the suggested rectification founded upon the birth of the Duke of Saxe Coburg, namely, 14-1-7. It will be seen that this equating does not invalidate in any respect the *reasoning* by which the original R.A.M.C. was arrived at.

motion of the Sun per day, whereby $10''$ will correspond to the 4 minute period used in previous illustrations, gives us $10'7''\cdot5$ as the directional arc, which at the rate of the Sun's longitudinal motion on day of birth, $1^{\circ}0'21''$, measures to $13h. 59m. 11s.$ as the R.A.M.C. of birth. With reference to this last method it may be said that it is certainly more reasonable than (i), since in 'primary' directions of this nature, we are only dealing with the motion of the earth during the first six hours after birth.

This remark suggests that if any equating of the meridional measure of " 1° R.A. = 1 year" is necessary at all, the most rational procedure to adopt is to take diurnal acceleration of M.C. on day of birth, found thus:—

				<i>h.</i>	<i>m.</i>	<i>s.</i>
R.A.M.C. noon	9/11/41	-	-	15	13	57
"	" 8/11/41	-	-	15	10	0
Diurnal Acceleration	-	-	-	3	57	0

and use this amount, greater or less than 1° whichever it happens to be, as the basis of measurement. At this rate 60 years 9 months will measure to

				<i>h.</i>	<i>m.</i>	<i>s.</i>
$(3m. 57s. \times 60) + (3m. 57s. \times \frac{3}{4}) =$		-	-	3	59	58
R.A.M.C. $130^{\circ}11'$ culminating		-	-	18	0	47
R.A.M.C. at birth		-	-	14	0	49

(iii) There is one last method, and that is based, not on the actual diurnal acceleration of the M.C., nor on the actual diurnal motion of the Sun, whether in longitude or R.A., but on the *mean* daily motion of the Sun. This, of course, is the same in R.A. as in longitude, since the Sun completes the circle of both in the same time, *viz.*, one tropical year. The measure therefore becomes, in place of 1° , $(360^{\circ} \div 365\frac{1}{4} =) 59'8''\cdot325$ (the decimals can be neglected). Equated in this way the directional arc is $3h. 56m. 3s.$, yielding $14h. 4m. 44s.$ as the R.A.M.C. at birth.

Some observations on Secondary Directions, and their relation to Primary, will be found in the Appendix.

CHAPTER XII.

VARIOUS METHODS OF HOUSE-DIVISION.

THE present chapter has been included because in addition to its primary object of providing beginners with all possible assistance, the "Astrology for All" Series of text-books is intended to serve the further purpose of stimulating research among those students who are sufficiently advanced to be able to undertake original investigations. Those readers therefore who are as yet in the early stages of their studies will do well to defer its perusal until a later period.

In Chapter IV an explanation was given of the, to beginners, puzzling fact that in a Table of Houses for such a place as London, the signs occupying the various houses are found to be unevenly distributed; and in the same chapter the construction of a Table of Houses was explained.

It is now necessary to inform the student that various methods of computing the houses are in existence, and that although the one referred to is that in common use, it is not necessarily the method of Nature.

Since all or nearly all of the methods now to be set forth find adherents it seems probable, or at least possible, that all of them are applicable in some sense or other, or in other words that each may have its own appropriate sphere of operation.

However this may be, our intention here is merely to describe the different methods in use and to state the principle on which each is based. A series of articles translated by Mr. Heinrich Däath from the French of Mons. H. Selva appeared some years ago in *Modern Astrology* under the title of "The Construction of the Celestial Theme," in which the various systems of house division that have at different times been proposed were enunciated and discussed, with suitable mathematical treatment. To this article readers are referred who wish to go more deeply into the matter.

Our present purpose is (1) briefly to outline the various methods; (2) to give special attention to two systems, namely, those of Regiomontanus and Campanus, also to two others deducible from the principle which forms the basis of the latter; and (3) to give a simple means of calculating the cusps of these houses from the "Table of Ascendants" whose use as a Table of Houses in the ordinary sense has been described in Chapter VII.

This last is really the justification for the whole chapter. For however interesting and profitable it may be from the point of view of astrological research to experiment with different house-systems, few students have sufficient familiarity with mathematical methods, and fewer still the necessary time, to calculate each horoscope afresh by trigonometrical formulæ. And therefore they would find it rather tantalising than otherwise to have their attention called to an interesting field of investigation which they could never hope to enter. Here this is not the case and the methods to be described will make it possible to determine the house cusps, according to any of the systems specially treated, in ten minutes or so, and with as much ease as though the ordinary system were in use.

EIGHT METHODS, AND THE PRINCIPLE INVOLVED IN EACH.

The methods of computing the twelve houses which have been adopted from time to time, and some of which are still employed, are as follows:

1. EQUAL METHOD (*modus equalis*) attributed to Ptolemy. The Ascendant is determined in the usual manner, as described in Chapter X. The cusps of the houses are then determined by successively adding 30° of the zodiac thereto. The tenth house consequently is in exact zodiacal square to the ascendant, but does not necessarily coincide with the degree of the zodiac then culminating. This may be described as a "rough-and-ready" method. It has been practically abandoned.

The principle of this system is the Trisection of a Quadrant of the Ecliptic, commencing with the Degree Ascending.

2. METHOD PROPOSED BY PORPHYRY. Here the Asc. and M.C. are determined in the usual way. The arc of the zodiac between them is then divided into three equal parts, giving thus the cusps of XI. and XII.; similarly, the arc between Ascendant and cusp of fourth house is divided into three parts, thus giving cusps of II. and III. This also may be described as a rough-and-ready method which has been practically abandoned.

The principle of this system is the Trisection of the Arc of the Ecliptic intercepted between the Horizon and the Meridian.

3. METHOD ATTRIBUTED TO ALCABITIUS. At a first glance this method