

PART 1.

CHANAY'S
PRIMER OF ASTROLOGY
AND
AMERICAN URANIA:

OLD RULES SIMPLIFIED, NEW RULES ADDED, WITH IMPROVED NOMENCLATURE AND NUMEROUS TABLES NEVER BEFORE PUBLISHED.

Book sale 1970

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BY

W. H. CHANEY,

AUTHOR OF "ASTROLOGICAL DEFINITIONS," "CHANAY'S EPHEMERIS," CHANEY'S ANNUAL, ETC."

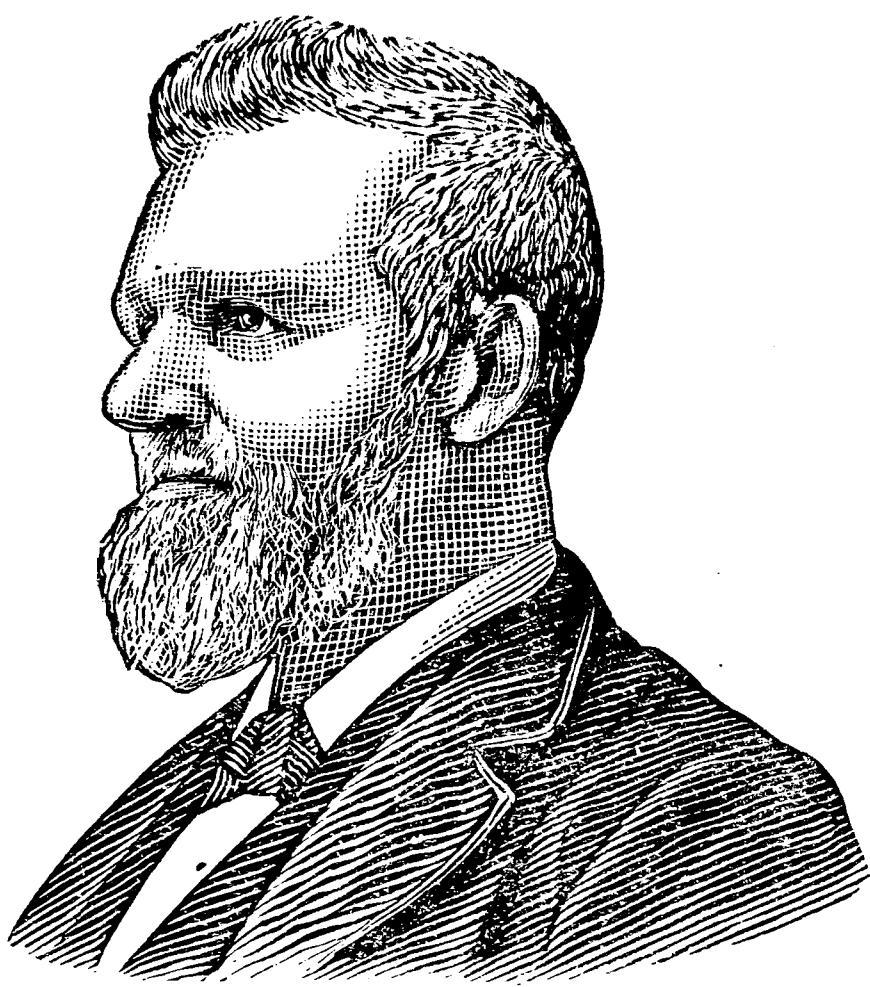
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*Yours Truly,
W. G. Chaney.*

DEDICATION.

I dedicate this work, the first of the kind ever published in America, to

JOHN W. BECKMANN and

MILDA J. BECKMANN,

the little children of J. HENRY and LENA BECKMANN, hoping that they may prove as true friends to the celestial science of Astrology as their parents have been true in their friendship to me.

Mr. Beckmann was one of my most earnest students in the astral science, and but for his aid in advancing several hundred dollars I should not have been able to even begin publications concerning my idolized science, while no daughter could have been kinder to me than Mrs. Beckman, making me welcome in the family for months together. With a sense of gratitude that can subside only with subsiding nature, and hoping for their prosperity long after my mortal frame has returned to its primitive dust, I subscribe myself,

W. H. CHANEY.

St. Louis, Mo. Jan. 1. 1890.

PREFACE.

No era in the history of our planet has been more distinguished for investigating the occult in nature than the present. New forces are constantly being discovered, while the intelligence of the past, long buried beneath the dust of the dark ages, is once more beaming from the altars of science. The ponderous wheel of the engine now turns thousands of shafts where formerly the hand of man turned but a single one. Electricity, once the dread of the superstitious, has become subservient to man, lights his streets and houses, and carries his messages swifter than the fabled Mercury with wings on his cap and heels. Psychic research has discovered a sixth sense, and millions are infatuated with a belief in Hypnotism, Clairvoyance, Spirit Raps and Spirit Materializations.

Amid all this search for the wonderful, Americans are among the foremost, yet it is remarkable that so few are interested in the science and philosophy of the celestial orbs. Is there porportion

in the universe? Ask Jupiter, with his moons, and Saturn, with his far off cloudy skies and broad girdle of light, if there is not room for their spheres as they wheel through space and turn towards the unwinking eye of day. Infinite Intelligence makes no mistake in the Time Tables of the unseen celestial railways, and though the orbs go thundering through space with a speed that almost defies the power of thought, yet they never dash against each other to darken the heavens with the fragments of their ruins. Even the comet, the mail-carrier from one system of worlds to another, as he drives by torch-light across the abyss of space profound, coming up to each goal with a curve, bending the necks of his fiery coursers in a graceful, elongated sphere, even he can be calculated in his orbit and his returns precisely foretold.

Throughout the universe we read the evidences of Infinite Intelligence and Almighty design; we see them inscribed upon every mountain and embedded in every vale. As so eloquently declared by Rev. Edward Everett: "In the universe of God's Providences, there is no such a thing as an accident." Every event is foreseen, else God would cease to be Infinite. Man has been given the power of choice between good and evil, and hence his responsibility. He can elect whether to plant the thorn or grapevine, but if he plants the

thorn, it will never yield grapes. He may prune the thorn and render it less mischievous, but it will always remain a thorn and an object of distrust. So too, when a thief has been conceived, he must be born a thief; yet in proportion to his intelligence he may be trained in ways of honesty, and the dishonest inclination dwarfed, verifying the old proverb that "habit becomes a second nature." But to be effective, this training should begin in infancy, for experience daily proves that "an ounce of prevention is worth a pound of cure."

Very bad children are sometimes born to very good parents. The present Prince of Wales is a notable illustration of this fact. In spite of every effort to conceal his weaknesses, even the English people admit that the tastes of the Prince are low and vicious. When the great John L. Sullivan honored England with a visit, two or three years since, the Prince of Wales proved to be one of his warmest admirers. Of course the English try to deny this, for monarchy smarted under the disgrace. But it was no new feature in the character of this scion of royalty. From his youth up he has shown a depravity which would consign an American to the House of Correction. Therefore it was not strange that he was fascinated with the big fellow whom Nature intended should go on all fours, but by some occult force he has raised up on his hind legs and when sober can walk about.

Justin McCarty would be quite likely to give a correct estimate of the character and ability of the Prince of Wales; and according to an article in 1870, is peculiarly interesting at this time. In 1870, is peculiarly interesting at this time. In years, indeed, there was already more than a mere child and refined young wife, hardly more than a mere child in years. Indeed, there was already considerable doubt in the public mind as to the personal character of the Prince of Wales. He certainly did not look a very intelligent or refined sort of person even then, and some at least were inclined to think, as Steerforth says of little Emily's lover, rather a chuckle-headed kind of fellow, to get such a girl. There was certainly a herath of serious distrust abroad,"

"Those who saw the Prince of Wales when he visited this country would surely fail to recognize the slender, fair-haired, rather graceful youth of that day, in the heavy, fat, solid, permutations bodily build, elderly young man this. It would not be easy to see in any assembly of this, some thinning of ambition to his usually expressive features. But when his eyes and features lapse into their habitual condition of indolent, good-natured, solid pose, all light of intellect seems to have been banished. The outline of the head and face, and the general expression, all the outline of the head and face, seem to have a shill-

he says:

And of his personal appearance at that time

"Even then there were stories and reports about which ascribed to the Prince habits and tendencies not likely to promote the domestic happiness of a delicate and refined young wife, hardly more than a mere child in years. Indeed, there was already considerable doubt in the public mind as to the personal character of the Prince of Wales. He certainly did not look a very intelligent or refined sort of person even then, and some at least were inclined to think, as Steerforth says of little Emily's lover, rather a chuckle-headed kind of fellow, to get such a girl. There was certainly a herath of serious distrust abroad,"

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public opinion of the Prince at that date:

on the day of the Prince's wedding, and the this article Mr. McCarty refers to the ill omens of the Prince of Wales; and according to an article contributed by him to the *Galaxy* for March, 1870, is peculiarly interesting at this time. In 1870, is peculiarly interesting at this time. In years, indeed, there was already more than a mere child and refined young wife, hardly more than a mere child in years. Indeed, there was already considerable doubt in the public mind as to the personal character of the Prince of Wales. He certainly did not look a very intelligent or refined sort of person even then, and some at least were inclined to think, as Steerforth says of little Emily's lover, rather a chuckle-headed kind of fellow, to get such a girl. There was certainly a herath of serious distrust abroad,"

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ing or half crown of George III's time, can see on the coin a very fair presentment of the countenance of the present heir apparent of the English throne. Whether the Prince of Wales resembles George IV in character and tastes or not, he certainly does not resemble him in face. Even a court sycophant could not pretend to see beauty or grace in our present Prince. I think, that to the eye of the cynic or the satirist the Prince of Wales shows to greater advantage when he sits in his box at an advanced hour of some rather heavy classic opera, or has to endure a long succession of speeches at a formal public dinner. The heavy head droops, the heavy jaws hang, the languid eyes close, the heir apparent sinks into a doze. Loyalty itself can see nothing dignified or kingly in him then. I have watched him thus as he sat in his box during some high-class, and to him, doubtless, very heavy performance at the Italian opera, and have thought, that at times he might remind irreverent and disloyal observers of Pickwick's immortal fat boy."

Of a Prince who is to be the head and ruler of an empire much is to be observed as to the tendencies of his patronage, and we read:

"All that he could do by countenance and patronage to encourage a debauching and degrading style of theatric entertainment, he has done. He is said to be fond of the singing of the vulgar and low buffoons of the music hall, and to have had such persons brought specially to his residence, Marlborough House, to sing.

* * * * * He constantly visits theatres at which his wife and sisters are never seen, and in which it would be idle to deny that are actresses who have made themselves conspicuous objects of popular scandal.

Night after night, even during the long and lamentable illness of his young wife, he visited such theatres, and gazed upon 'those prodigies of myriad nakedness.' Likewise did he much delight in the performances of Schneider."

And of the essential selfishness of the man Mr. McCarthy says:

"Unless his face, his head, his manners in public, and the tastes he so conspicuously manifests wholly belie him, the heir of the British throne is a remarkably dull young man. He cannot deliver, with any decent imitation of intelligence the little speeches which Arthur Helps or somebody else usually gets up for him when the exigencies of the situation compel the Prince to make a speech in public. He is reputed to be parsimonious even in his pleasures, and has managed to get himself deeply into debt without being supposed to have wasted any of his substance in obedience to a generous impulse. The Prince inherited a splendid property. His prudent father had looked well after the revenues of the Duchy of Cornwall, which is the appanage of the Prince of Wales, (even in some very dingy parts of London you may, if you hire a house, find that you have the Prince of Wales for a landlord), and the property of the heir must have been raised to its very highest value. Yet it is notorious that a very few years after he had attained his majority, Albert Edward had contrived to get deeply immersed in debt.

* * * But this much is certain, that the same almost universal rumor which attributes coarse and dissipated habits to the Prince of Wales, attributes to him likewise a mean and stingy parsimony where aught save his own pleasure is concerned; and even there, if, by any possibility the pleasure can be obtained without superfluous cost."

This, then, is the character which the son of the Queen of England bears in the estimation of the vast majority of his mother's subjects. Almost every one you meet in London will tell you, as something beyond doubt, that the Prince of Wales is dull, stingy, coarse and profligate.

These low and grovelling tastes of the Prince of Wales are not a *natural* inheritance from either of his royal parents, and hence their existence was hardly suspected until too late for dwarfing

them by culture and discipline. With such good parents, people naturally wonder why the Prince should have been so degraded. I will explain.

The Princess royal, his eldest sister, has matured into just such a woman as would naturally be expected from such parents. Why such a wide difference between a sister and brother? We must look to antenatal conditions for an answer, rather than to inheritance or the planets for the cause, as the English do.

The marriage of Queen Victoria and Prince Albert was one of love. The queen loved her husband first, last, and all the time, as few men are ever loved; and in turn the prince idolized her. This affection and congeniality are extremely fortunate for good, intellectual, moral and beautiful offspring. Both were young, and full of vitality. No wonder their first born proved a superior woman.

The Prince of Wales was born less than eleven months after his sister. In this fact lies the whole secret of his inferiority. The queen had not recovered from the shock to her system before she was again called upon to prepare for maternity. She was in no condition for gestating an offspring worthy of his royal parentage. There should have been at least three years between the births of these children, and—but I must stop right here.

Were I to explain, in purely scientific language, all the causes which produced this blot upon humanity, as well as royalty, Anthony Comstock would have me in the penitentiary before we could publish part second of this work. There is a law of Congress which consigns to a dungeon any one who attempts to explain the laws of gestation so that superior children may be born. Dr. Foote, of New York, tried it, and Tony Comstock pursued him till it had cost the doctor five thousand dollars to escape going to prison, and I have not five thousand cents to save me. George Francis Train undertook to test the law by publishing some extracts, copied verbatim from the Bible, but Tony made him pay for his temerity by languishing in the New York Tombs for nearly a year.

I, too, have already had a taste of New York justice, seasoned with Roman Catholicism. In 1867, when I first began the practice of astrology, while living wth my preceptor, Dr. Broughton, at 814 Broadway, we displeased "Boss" Tweed, then mayor of the city, and forthwith he had us sent to Ludlow-street Jail, where I remained, *without a trial*, for twenty-eight weeks and was then *honorabley liberated*. No, I have had all the prison life I need, and so must be silent regarding generation. Yet before closing this digression I will remark that the law of com-

pensation did not slumber in the case of the Catholic thieves who stole more than thirty millions of dollars from the city, for "Boss" Tweed died in that same Ludlow-street Jail where he had Dr. Broughton and myself confined for the awful crime of being ASTROLOGERS!

Justin McCarthy speaks of the Prince of Wales as though that unhappy man was responsible for his bad organization, and thus far I have apparently endorsed him; but I must enter my solemn protest against being so understood regarding the Prince, Slugger Sullivan, or any other degraded wretch. They are only the victims of the sins that were committed against them before birth, not the sinners. As well blame one for being consumptive or idiotic as to blame him for being weak in moral principle.

A grave question now arises. When a child has been born, predisposed to vice and crime, the parents being virtuous and honorable, does it not seem unjust, even cruel, that God should have thus cursed the innocent offspring, and then give no sign or token that such is the case until too late for successful discipline? This query assumes as true something which requires proof. God does give warning of every event, but man is too heedless to observe the warning. We turn our eyes heavenward and watch the form and appearance of the clouds and there read the warning

of a rain-storm, a shower, a wind-storm or a cyclone. But can we not read more?

"And God said let there be lights in the firmaments of the heaven, to divide the day from the night, and let them be for signs, and for seasons, and for days, and for years." Gen. I, 14.

These "lights" are for "signs." True, they are also for seasons, days and years, but it is evident from their having been mentioned first as *signs*, they were of the first importance. That the science of astronomy was known before the Bible was written is evidenced by the frequent reference thereto, wherein the names of stars and constellations are given. "Canst thou guide Arcturus with his sons?" Arcturus is the brightest star in the constellation Bootes, and hence the father of the other stars in Bootes. The ancient Hebrew had no adjectives, and therefore a noun could be described only by comparison, as, a hill like a mountain, a pea like a mustard seed, etc. Bootes was pictured as a man holding the leash of his dogs and apparently chasing *Ursa Major*, (the great bear,) around the star *Polaris*; hence the term "guide." In the thirty-eighth chapter of Job we find Orion and Pleiades called by name. The astrologers are frequently mentioned in the Bible, and never with disrespect. The "wise men of the East," were astrologers. We also find this expression: "The stars in their courses

fought against Sisera;" that is, the evil configurations of the heavenly bodies were against Sisera. Thus we see how the "lights" were for "signs," and there is no other rational interpretation that can be given to the meaning that the celestial orbs were for "signs."

If the Bible is the oldest of all books, then astrology, older than the Bible, must be the oldest of all sciences. But it was nearly lost during the dark ages, from having been perverted into a system of divination. Frauds, pretending to tell fortunes by the aid of a deck of cards, now call themselves "astrologers," when they know no more of this ancient and sublime science than a donkey does of music. They dress themselves in some fastidious manner, claim to be "the seventh son of a seventh son," and talk about the "star of destiny," as though our traits of character and events of life are influenced by the stars, when the truth is, it is the *planets*, and not the stars, that are the "signs."

. It is not the heavenly bodies, but antenatal conditions, that make us what we are. When a murderer has been conceived, God will not interfere to prevent a murderer from being born. This is because He has given us the ability to prevent the conception of a murderer, and if we heedlessly err in this particular, then we must suffer the consequences, But God will write

“murderer” upon the brow of the unborn infant as indelible as the mark upon Cain, thus giving warning to those who learn to read his hand writing. Nor is this all. The period of gestation will be hastened or retarded so that the child will be born at a time when the configurations of the celestial “signs” will indicate the true status of the man, unless after birth he shall be carefully “trained in the way he should go.”

From these considerations it is evident that astrology, if true, is a great necessity to humanity, for the moment a child is born all the leading characteristics may be discovered. Then as habit is a sort of second nature, the child may be trained in a way to dwarf the evil propensities and develop all that is good. I know from my own experience how much depends upon the manner in which a child is brought up. My horoscope teaches that Nature did much for me and that I should have been above the average in goodness. But losing my father at nine, without a home, without friends, imposed upon, tyrannized over and cruelly flogged, the good that was in me was dwarfed and the evil so highly developed that when but sixteen I enjoyed the reputation of being the worst boy in the county and all predicted that I would die in prison, or on the gallows.

Disowned by relatives, who looked upon me as a disgrace, I changed from place to place till

every door of respectability was closed against me, and then becoming reckless, I went to sea, secretly resolved to turn pirate, for if mankind would not respect me I would make them fear me. Two years on the ocean completed my primary studies as a wild rover and I resolved to graduate by entering the Navy. But nine months on board of a man-of-war seemed to satisfy me and I deserted in July 1840, from the receiving ship Columbus then lying in Boston harbor.

A refugee, a price set on my head, every man's hand against me, Ishmael was a model of gentleness in comparison. Travelling only at night, skulking and sleeping by day, under an assumed name, I directed my steps for what was then the "far west," namely, Ohio. As a sailor I crossed lake Ontario, went through Welland Canal, across lake Erie, and was finally landed in the night, in a raging fever. In seven weeks I resumed my travels, went to Cleveland, thence worked my passage down the Ohio canal to Portsmouth where I hired on a flat boat to go to New Orleans, and resume work as a sailor. Half an hour before the boat was to start, not having fully recovered from the fever and being unacclimated, I was seized with a violent chill. The captain ordered me ashore, and as I sat there on the bank, still shaking, as the boat floated away, it seemed as though home was going from me.

I counted my money—\$1. 27; had no baggage—not even a spare shirt; sick and in a strange land; not yet twenty years old—really, my prospects looked gloomy.

I pass over four weeks of such suffering and privation, that although nearly half a century ago, the mere recollection is painful. Early in life I had set my heart upon having a college education, and when I realized that I could never succeed in aquiring it, then it was that I became reckless, often, during my sailor days, denying that I could read or write. But stern necessity now drove me back to my books. Still shaking with the ague, I obtained a situation as teacher, through some kind friends at the Sciota Furnace, who rigged me out with a suit of second-hand clothes and a pair of new shirts. My school was in Porter Township, ten miles from Portsmouth, and I began it 1841, Jan. 13, the day I was twenty years old.

As I regained my health, my thirst for knowledge returned, my visions of the life of a rover, on the high seas, slowly faded, and one year later, when I was twenty-one, I looked back with a shudder to the time when I was training to become the most distinguished pirate that ever scuttled a ship. And I am free to confess that but for that sickness I should have carried out my resolves or died in the attempt. This experience

proves to me how much we are the creatures of circumstances and how habit will develop a sort of nature. Unkind treatment, and bitter disappointment made me reckless, and for two years I never faltered in my determination to become a pirate. Kind treatment under terrible misfortunes, changed the whole current of my life, and for nearly fifty years I have tried to aid in the elevation of humanity. Had my father lived, no doubt I should have been a very different boy and escaped that sad experience.

I have smothered my feelings of mortification, in making these confessions, in order that an object lesson may be set before parents. I would like to teach them how to have good children born, but my respect for law, although a law that disgraces civilization, my dread of prison and fear of Tony Comstock, will keep me silent upon that subject. Still, I can say to parents, if, through ignorance bad children are born to them, very much can be done to redeem them. How naturally the child of a Chinaman grows up a pagan, wears a pigtail and eats with chopsticks. It is equally natural for the child of a Catholic to hate paganism, burn heretics and abstain from meat on Friday. Change these children at birth and the Catholic will grow up a pagan, delighting in a pigtail while the Chinaman will take to burning heretics as naturally as a duck takes to the wa-

ter. It is these things which prove to us how much we are indebted to our training for being what we are. Yet it is only through astrology that parents can learn the characteristics of the new-born infant and thus be able to give the proper training.

The English teach, with rare exceptions, that the planets exert an influence over us and cause us to be what we are. If this doctrine is true, then neither inheritance, antenatal conditions, nor training after birth, will produce the least impression in fixing the status of the child. Such a doctrine renders man a mere machine, no more responsible for his acts than the buzz saw that clips off a hand. Yet no one thinks of arraigning the buzz saw for mayhem. I have become very obnoxious to some of the English, especially Raphael, because I refuse to endorse this stupid philosophy. In his Almanac for 1885, page 92, he has the following:

"W. H. Chaney, of Oregon, has been wandering in his mind. This is what he says,—'take to the unphilosophical astrologer the horoscope of a boy born with Sagittary rising, and Jupiter in the same on the ascendant in exact trine to the Sun in Leo, with other favorable configurations, and instantly he would declare that the boy would become a great man, a prince, a president; and so would I. But the astrologer might insist that all this good fortune was CAUSED by the boy having been born under such fortunate aspects, whereas I should look BEYOND the birth for the "CAUSE." And

he then alleges that the CAUSE would probably be that the parents had been apart sometime previous, living a life of chastity, that they were in health, and so forth —his exact language is hardly moral enough for me to quote verbatim, but the above is his argument. What nonsense for a man to write, for if it were as he states, then the FIRSTBORN should be mostly fortunate; but the FACT is just the contrary. May I ask, Why do strong, healthy parents have sickly offspring? How are deformities caused? Why do accidents, resulting in permanent deformity occur? And a hundred other questions I might ask and which would prove W. H. Chaney to be the very identical, unphilosophical astrologer, at whom he laughs. The planets CAUSE results, just the same as their different locations and configurations upset the atmosphere, producing storms, etc. W. H. Chaney does not, I presume, deny this, but in his philosophical researches for CAUSES, he is looking in the wrong directions."

How sad! Raphael thinks nothing of advertising a "child's caul" for sale at \$10. as a charm for a sea captain, but is too "moral" to quote the language of science! The questions which he asks are answered in the sketch given of the Prince of Wales and also gives the lie to his assertion that the first born is not the most fortunate. The *moral* deformity of the poor Prince is readily accounted for by the condition of his mother prior to his birth. But suppose Raphael is right, then God is to be blamed for causing the planets to make the Prince such a sad dog, for God alone controls the planets. If this is true,

and God is the direct author of all the thieves and murderers, then where is the justice of a hell and a devil to torment forever these poor creatures who were made criminal by the influence of the planets? Raphael is a rank blasphemer, and he was not made so by planetary influences, else God would be responsible for his blasphemy.

Raphael says: “The planets *cause* results, just the same as their different locations and configurations upset the atmosphere, producing storms, etc.” and presumes that I will not deny it. But I do deny it most emphatically. If the planets *caused* these varying phenomena, then even a child could soon learn to foretell the weather and signal offices would become obsolete. Let us test Raphael by his own rules. It will be remembered that from the 19th to the 21st of May, 1889, was the coldest snap ever known at that season of the year. And this is the way Raphael predicted it: “19th to 21st fair, generally warm.” The 6th of Oct., same year, was the coldest day of the whole month, and Raphael predicted it thusly: “5th to 6th fairer, windy.” Now if his theory is correct, he is either a knave or a fool to make such blunders. For my part, I would not contradict any one who said he was both knave and fool.

I have paid especial attention to the “Raphael Ring” because they are the leading frauds in this

country as well as Europe, and have done more to bring astrology into disrepute than all its enemies ever have or ever can. I have determined to diffuse a knowledge of the science throughout America, and to popularize it if possible. This can be accomplished only by exposing the humbugs in it. If Raphael and his gang do not like it, they should blame the planets as the cause of my exposing them.

Since the foregoing was in type and stereotyped, cablegrams from Europe have announced the "Reeking Scandal," that has not only convulsed London, but even Paris, in which Albert Victor, son of the Prince of Wales, figures as a first-class debauchee: I copy;

"What this really mirrors is a public awakening to the fact that this stupid, perverse boy, who has become a man, and has only two highly precarious lives between him and the English throne, is an utter blackguard and ruffian. Heretofore people have not known much about him, save that he was a dull chap, whose nickname was Prince Collars and Cuffs. The revelation now that he is something beside a harmless simpleton has created a very painful feeling everywhere. Although he looks so strikingly like his mother, it turns out that he gets only his face from the Danish rose and that morally and mentally he combines the worst attributes of those sons of George III., at whose mention history still holds her nose."

In the case of Albert Victor we see a manifestation of the law of heredity. I have already explained why his father was such a sad dog, and as there was never much done to counteract his vicious nature, it is not strange that he bequeathed

his weaknesses to his son. When a man plants thorns he need not expect a harvest of roses. Like produces like, unless there are varying conditions to modify.

Albert Victor was born, 1864, Jan. 8th, at 8.^o 58 p. m. Hence, Virgo was rising and Mercury was his ruling planet. Mercury was in the humane, scientific sign Aquarius. These are favorable testimonies, denoting that it was his privilege to become a worthy, intellectual man. But the moon, which governs the moral and sensual nature, was very weak, being afflicted by a quartile aspect of Saturn and in her detriment. Therefore it was possible for Albert Victor to become as vicious and degraded as his father. At his birth, two careers awaited him. Proper training and rigid discipline would have made him a worthy man. But he was of royal descent, was taught that the blood of kings flowed in his veins ; that he was better than other children, and so came up, accustomed to have his wishes gratified, however unreasonable.

It is true that some children cannot become degraded. I have known many a lady who could not become vicious ; she could die, but not put a stain upon the purity of her womanhood. The opposite extreme of this is a poor girl, so weak in her moral nature that she cannot be good if she tries. Between these extremes there is a medi-

um. There are girls who will become vicious or virtuous, according as they are trained.

The richest soil, if the culture is neglected, will produce only disgusting weeds, overshadowing and destroying the plants that would have been a joy had they been cared for properly. These things are not destiny, and it is only the fool and coward who offers that for an excuse. Neither do the planets *cause* these events, whether good or evil. Man has been endowed with an ability to choose, else it would be an outrage to punish him for choosing the wrong.

From these comparisons the student can understand that it was in the power of those who had the training of Albert Victor to have made him a good man. But with the example of his father before him, the poisonous weeds grew and flourished, choking out the good inherited from his mother, until he matured into a degraded, licentious dude, a disgrace, not only to royalty, but to humanity.

The English serve God according to law; they have church and state united, and maintain the absurd and barbarous doctrine of the "divine right of kings." In free America such twaddle provokes only a smile of pity. England has demonstrated that neither law nor religion can restrain even a prince from committing the most horrible crimes. America has demonstrated that

her sons can become nobler and purer than the English, and she has no union of church and state, nor even God in her Constitution.

In view of these things is it strange that the English astrologers attempt to apologise for their terrible crimes by laying it all on the planets? Was it the planets which impelled the noble (?) lords to annually buy four thousand little girls to torture and ruin? Was it the planets that made these "lords of licentiousness" have the rooms padded so that the shrieks of their childish victims might not be heard? Was it the planets which induced the doctors to examine these little children and certify that they were virgins? Where is the angelic Jim Cross, who styles himself "Raphael?" Let him rise and explain.

I aim at making the PRIMER OF ASTROLOGY the easiest understood and the most complete work ever published. Were I able I would issue it all at one time, but I am a poor old man, struggling with poverty, while my associates have no money to spare for the enterprise. Therefore it must be issued in monthly parts so that the proceeds of the sales of one part will aid in getting out the next.

When all the parts are bound in one volume it is designed to have the reading matter all in one body and the Tables in another. Hence, they will be paged with that object in view. Tables

of Houses will constitute a department and paged by themselves. The same with Tables of Oblique Ascension, etc., so that when bound the last page of Tables of Houses will show how many pages of those Tables there are. Then begin with page 1 for the first page of Oblique Ascension, and so on. But as Ada Deeley will set the type for the reading matter and I shall do the Table work, a portion of each will appear in each part and eventually be arranged by the binder. Neither myself or Ada Deeley expect pay for our labor, but we do hope that the friends of American enterprise, the opponents of English charlatry and the lovers of Astrology will be sufficiently liberal in their patronage to enable us to receive back each month, the money that must be paid for stereotyping, paper, press work, etc.

We design making the work complete whether six parts or a dozen are required, and when completed, on the first of the following month to issue the first number of the **MAGIC CIRCLE**, a monthly magazine that will criticise error, injustice and superstition in all their forms. Astrology will be a leading feature, and in each issue I will answer queries for the benefit of those who are studying without a teacher, for I want all to learn it.

W. H. C.

CHAPTER I.

THE PLANETS, SIGNS OF THE ZODIAC,

ASTROLOGICAL SYMBOLS, ETC.

THE PLANETS.

SYMBOLS.	NAMES.	SYMBOLS.	NAMES.
○	Sun.	♃	Jupiter.
○	Moon.	♂	Mars.
Ψ	Neptune.	♀	Venus.
⊕	Uranus.	☿	Mercury.
♄	Saturn		

SIGNS OF THE ZODIAC.

NORTHERN.

SYMBOLS.	NAMES.
♈	Aries.
♉	Taurus.
♊	Gemini.
♋	Cancer.
♌	Leo.
♍	Virgo.

SOUTHERN.

SYMBOLS.	NAMES.
♎	Libra.
♏	Scorpio.
♐	Sagittarius.
♑	Capricornus.
♒	Aquarius.
♓	Pisces.

MISCELLANEOUS.

Scientific Signs; ☽ ♀ ☽ and first half ♀,

Fruitful Signs; ☽ ☽ ☽.

Barren Signs; ☽ ♀ ☽.

Signs of Short Ascension; ♀ ♀ ☽ ☽ ☽ ☽.

Signs of Long Ascension; ☽ ♀ ☽ ☽ ☽ ☽.

Cardinal Signs; ♀ ☽ ☽ ☽.

Equinoctial Signs; ♀ ☽.

Solstitial Signs; ☽ ☽.

Double-bodied Signs; ☽ ♀ ☽.

Humane Signs; ☽ ☽ ☽ and first half ♀.

ASPECTS.

- Conjunction; when two planets are together.
- ✖ Semi-sextile; distance in longitude of 30°
- ∠ Semi-quartile; " " " " 36°
- * Sextile; " " " " 60°
- † Quintile; " " " " 72°
- Quartile, or Square; " " " " 90°
- △ Trine; " " " " 120°
- ☒ Sesqui-quartile; " " " " 135°
- ‡ Biquintile; " " " " 144°
- ❖ Quincunx; " " " " 150°
- Opposition; " " " " 180°
- P. D. Parallel Declination; when two planets are the same distance from the ecliptic, regardless of whether both are north of it; or both south; or one north and the other south; it being the same distance from the ecliptic which constitutes a parallel declination.

THE DIFFERENT KINDS OF SIGNS.

Movable;	.....	♀	☽	△	☿
Fixed;	.....	♂	♃	♄	♅
Common;	.....	□	♆	‡	♇

TRIPPLICITIES.

Fiery;	.....	♀	♃	‡	ruled by ♀ and ♈.
Earthy;	.....	♂	♆	♅	" " C " ♀.
Airy;	.....	□	△	♅	" " h " ♈.
Watery;	.....	☽	♇	♇	" " ♂.

RULING AND DETRIMENT OF THE PLANETS.

♂	rules	♀	and	♆	and has his detriment in	♂	and	△	;
♀	"	♂	"	△	"	"	her	"	" ♀ " ♈.
♀	"	□	"	♆	"	"	his	"	" ♁ " ♉;
♀	"	‡	"	♇	"	"	"	"	" □ " ♈.
C	"	☽	"	"	"	"	her	"	" ♀;
h	"	☿	"	"	"	"	his	"	" ♂.
⊗	"	♃	"	"	"	"	"	"	" ♈;
⊕	"	♅	"	"	"	"	"	"	" ♉.

Ψ is not known as the ruler of any sign.

EXALTATION AND FALL.

⊗	is exalted in	♀	and has his fall in	△	;
h	"	"	△	"	" "
C	"	"	♂	"	her " " ♈.

There is no planet exalted in ♈.

♀	is exalted in	☽	and has his fall in	☿	;
♂	"	"	☿	"	" "
♀	"	"	♆	"	" "
♀	"	"	♇	"	" hes " " ♈.

CHAPTER II.

MUNDANE HOUSES.

Make a circle and then divide the periphery, or circumference, into 12 equal parts. As the circle contains 360° , regardless of whether it is a lady's ring or a circle in the heavens which extends entirely around the earth, it is evident that one of the 12 divisions will contain just 30° , or one-twelfth of 360° . Draw 12 lines from the circumference, at the end of each division, to the center, and then the boundaries of the divisions will be plain. Each line thus drawn, like the spoke of a wheel, is called a "cusp;" the space between any two cusps is a "Mundane House."

The cusp on the left hand of the diagram, which is horizontal, or parallel with the earth's surface, is the cusp of the 1st house, while the cusp immediately below is the cusp of the 2d house; moving on down, the next is the cusp of the 3d house; continuing on to the next, which is perpendicular to the horizon, is the cusp of the 4th, and so on, moving around all the time in the same direction until you reach the cusp of the 12th house, which is immediately above the cusp of the 1st, or place of beginning.

The 1st house is the space between the cusps of the 1st and 2d. The 2d house is the space between the 2d and 3d, and so on around, the

cusp preceding the house. Remember that you must always count around from the 1st towards the 2d, for this is the order in which the signs must be placed on the cusps, and the order in which the planets move through the Zodiac, in their orbits, around the sun.

Suppose Capricornus on the cusp of the 10th house, which is called the "Midheaven," and Aries on the cusp of the 1st, which is the Ascendant, and the planet Mercury in Capricornus. It is evident that Mercury is moving towards Aries, and that he will reach it in less than a month, unless he turns retrograde, as he performs a revolution in about 88 days. The Ascendant is the east, and therefore Mercury is moving in his orbit towards the east, not only at this time, but *all* the time, and so are all the planets, no matter whether in Capricornus, on the Midheaven, or in Cancer, at the lower heaven.

The planets have a *real* motion, and two *apparent* motions. The real motion is through the heavens, in the order of the signs, from west to east. When above the horizon they move from the right, or west, towards the left, or east. When below the horizon they move from left to right and seemingly towards the west, although astronomers call it still towards the east, for in space the terms east and west, like up and down, are only rela-

tive. But they define R. A. to be the distance from the first point of Aries, measured east on the equinoctial. This is measuring around the heavens, from Aries to Aries again, in the order of the signs, which is the exact direction in which the planets *really* move, therefore the planets are *always* moving towards the east.

Now for the *apparent* motions. When Venus is an evening star, observe her apparently rising in the east, moving up the heavens till she culminates, that is, gains the Midheaven, or cusp of the 10th house, then descends and disappears in the west. This apparent motion of a planet is called "rapt motion," and is really no motion at all, but a phenomena which results from the motion of the earth on its axis, as it revolves toward the east.

The other apparent motion of a planet is called "retrograde." Mr. Pearce, one of the ablest of modern astrologers, thus defines it:

" 'DIRECT' and 'RETROGRADE' MOTION; When a planet moves forward in the Zodiac in the order of the signs, its motion is direct.' When a planet moves in the contrary manner, its motion is 'retrograde'." [Vol. I. Text-Book, p. 41.]

A planet never moves in a "contrary manner," but only *appears* to be moving back in the Zodiac, contrary to the order of the signs. As I do

not design to teach astronomy, the student is referred to works on that science for a diagram and full explanation of the term "retrograde."

The reader has probably learned that the top of a map of the heavens is south, and the left hand east, being the reverse of a geographical map. The reversion is the result of projecting the earth's equator, and other mundane circles, into the heavens, where the equator receives the name of "equinoctial;" the "tropics" of Cancer and Capricorn are called the "signs" Cancer and Capricornus, etc. So much for Mundane Houses.

A "Celestial House" is another name for a sign of the Zodiac. Thus Aries is the Celestial House of Mars, Taurus of Venus, etc. We also say: "Aries is the own house of Mars," Taurus of Venus, etc.

CHAPTER III.

NAMES OF THE MUNDANE HOUSES AND TRANSITS THEREIN.

1. THE HOUSE OF LIFE.

The Ascendant, or 1st house, has reference to life, and whatever supports life. Persons with feeble constitutions generally suffer in health during a transit of Saturn on the Ascendant, which continues about two years and a half, and is re-

peated in a little less than thirty years. Death sometimes occurs, but the transit does not properly signify death. It is a dull, dragging period, when one is more likely to lose than gain. Or, in a very strong Nativity, one may gain much wealth, yet likely to lose it all again. Even if health is not affected, the mind is harrassed, friends prove negligent or treacherous and one feels anxious to leave a situation, to sell out, move away, or make changes of some kind. It is much better not to make important changes under this transit of Saturn, for whatever is begun under evil aspects will not prove very fortunate even when good aspects come on.

The transit of Mars in the 1st house is repeated about every two years. It indicates evil, but not of the same kind as Saturn. Mars denotes even severer evils than Saturn, but they are of short duration, the transit continuing from four to eight weeks, unless Mars retrogrades on the Ascendant when the transit will be prolonged to six or eight months. Mars was retrograding on the Ascendant of my Horoscope at the time the "Boss" Tweed gang put me in Ludlow-st. jail, April, 1867, on false accusations. But if Mars caused my imprisonment, then he, or some other evil planet, caused Tweed to be put into the same jail where he had me, and there he died.

The transit of Uranus in the 1st house, which continues seven years, although evil, is not evil all the time. There will be strange and unexpected events, even calamities, for a brief period, and then all become serene again, like the cyclone, brief but terrible. I have had Uranus on my Ascendant since June 1886. My worst trouble was when he reached the cusp, for I was suddenly attacked with disease of the kidneys and bladder, so severely that I lost twenty odd pounds of flesh, and physicians pronounced my case incurable; yet in eight months I had entirely recovered. About the time of my attack, circumstances arose, with no fault of mine, which resulted in a separation from my wife, a most excellent and intellectual lady, in the September following, and a divorce has since been obtained, with Uranus still transiting on my Ascendant. In addition to these, there have been numerous other sudden misfortunes, such as human knowledge could not foresee. Still, between the happening of the calamities, I have had brief periods that were quite fortunate. Uranus repeats this transit in eighty-four years, but it seems a long time to wait in order that I may study the indications at his second coming.

The transits of Jupiter in the 1st house are repeated in a little less than twelve years. They

indicate a bright and joyous period, when one is in good health and spirits, feels younger and more active, if an elderly person, and he is generally successful in legitimate undertakings. Whatever is begun under this transit will seem to be prosperous even when evil aspects prevail. Now is the time to push business and make changes.

No doubt the transits of Neptune and Venus in the 1st house denote good fortune, but the indications of those of the former are so weak, and of the latter of such short duration, that I do not base my predictions on them. It requires nearly fourteen years for Neptune to complete this transit, and about 160 years till he repeats it. Venus completes this transit in about a month, unless she retrogrades on the Ascendant, when it will be prolonged to nearly four months, but even then the indications are not strong. She repeats this transit about once a year,

The sun makes this transit in a month, and of course repeats it annually. I could never discover any important indications from the transit of the sun, but if there are any they should be fortunate.

Unless he retrogrades, Mercury transits the Ascendant in about two weeks; if he retrogrades there, the transit will be prolonged to four or five weeks.

The moon transits through the 1st house in two or three days and repeats every four weeks, or once in a "lunar" month. I pay no attention to the moon's transits when predicting the future.

The observations as to the length of time required for each planet to transit through the 1st house, applies to all the other houses, but the *indications* are different, varying with each house. In this connection I will state that the old astrologers taught that when a planet arrived within 5° of a cusp, say the cusp of the 1st house, although actually transiting in the 12th, it must be judged as though in the 1st, and so of all the others. In other words: A mundane house begins 5° before its cusp, and ends 5° before the cusp of the next house. Some astrologers declare that when a planet arrives within 15° of the cusp of the Midheaven its "influence" is felt as though transiting on the Midheaven, and I have observed that the *indications* are similar, for I am not aware that a planet has any "influence" whatever.

2. THE HOUSE OF MONEY.

This house has reference to ones possessions, property as well as money. The transits of Uranus, Saturn and Mars denote misfortunes in financial affairs, each according to his peculiarities, Uranus portending strange, sudden and myster-

rious troubles or losses; Saturn signifying slow, dragging and long continued financial losses and annoyances; Mars indicating quick and violent misfortunes.

The transit of Jupiter in the 2d house denotes that money is easy and one generally handles more than usual. Sometimes it is the money of others, but money of his own is more easily obtained.

3. THE HOUSE OF KINDRED.

This house has more special reference to brothers and sisters, but may include relatives generally, except parents and children. I have little or no confidence in any indications based on transits in this house.

4. THE HOUSE OF THE FATHER.

Transits in this house, if the father is living, generally indicate either good or evil fortune to the father, according to the peculiarity of the planet. It also indicates a fortunate or unfortunate period for one, generally, though much less than transits on the Ascendant.

5. THE HOUSE OF CHILDREN.

Transits in this house sometimes denote fortunate or unfortunate periods for children, according to the peculiarity of the planet, but I do not have much confidence in the indications. It is also claimed that it is the house of speculations,

and that one will be fortunate in gambling, making hazardous investments, etc., if Jupiter is transiting therein, but my experience teaches that a transit of Jupiter on the Ascendant denotes a far more fortunate period for speculating and all kinds of dealing.

6. THE HOUSE OF SICKNESS.

I know of no reason why this house should be so called, so far as calculating a Nativity is concerned, for I never discovered that either a good or evil transit had any more effect on the health than the risings and settings of the sun.

7. THE HOUSE OF MARRIAGE.

This house is next in importance to the Ascendant. It is the house of the husband for a woman and the house of the wife for a man. The transit of Jupiter therein denotes a more fortunate period for the wife or husband, while Uranus, Saturn and Mars portend evil, according to their respective peculiarities. I have often observed that persons lost their companions while Saturn was transiting in the 7th, but I never predict such an event, based alone on the transit; nor do I predict death at all as indicated by *any* transit. During this transit one is generally much more fortunate or unfortunate than usual, according as the planet is one that indicates good or evil fortune.

8. THE HOUSE OF DEATH.

I never could perceive that a transit in this house indicated death, or anything else of much importance, and am inclined to think the name a misnomer, as applied to Nativities.

9. THE HOUSE OF SCIENCE AND RELIGION.

Had this been named "the house of heat and cold," it would have been just as appropriate, for heat and cold are not more opposite than science and religion. In this I make no reference to Christianity, but mean religion in its general signification, for Christians constitute less than a fourth of the earth's population, while Buddhism is the prevailing religion of the world. Science has no affinity with the religious act of a mother casting her child into the Ganges; or the widow who mounts the funeral pyre with the body of her dead husband; or those who burn heretics; or men who establish harems under the flimsy pretext that there is no salvation for a woman's soul unless she is sealed to a man. Science abhors such monstrosities. Transits in the 9th house have no more indications for the good or evil of science or religion than a rainbow has for a bow and arrow.

10. THE HOUSE OF HONOR AND BUSINESS.

The 10th house is of the most importance of any of the 12. A transit of Saturn here is

often coincident with bankruptcy and ruin. Only a very strong Nativity can resist the potent indications of this transit. Therefore every business man should be advised of its approach and prepare for it as the mariner prepares for an approaching storm. If a blind man unconsciously approaches a precipice, but has due warning of his danger, he may escape the fall that would be almost inevitable without the warning, or if he disregards it.

[Continued in Part 2.]

N. B. The foregoing rudiments, especially all the symbols, should be learned in the order written. Learn the sigs of the Zodiac which are opposites, before attempting to make a horoscope. The reading matter need not be memorized, but become familiar with it for easy reference.

If you have questions to ask, enclose at least 25 cents in 2-cent or 1-cent stamps, for I have to work to earn my living while setting type for the PRIMER, and cannot afford to work gratuitously for others. As it is, must deny myself many a comfort.

PART 2.

PRIMER OF ASTROLOGY.

CHAPTER III.—*Continued.*

After my release from imprisonment, in the fall of 1867, I gave a delineation of the Nativity of Rufus Hatch, known as "Uncle Rufus." I saw that in about ten years he would experience this transit and warned him to prepare for it. In 1869 I went to the Pacific Coast and for several years made annual calculations for him, in each of which I reminded him of the evil period to come. I also informed him of the transit of Saturn in his 7th house and predicted that it would prove evil in some way for his wife. Her health began to fail when Saturn crossed the cusp of the House of Marriage, and she was ill for two years, then died, before the transit was completed. I learned that Mr. Hatch was greatly displeased with me, for he thought I knew he would lose his wife and would not warn him.

Before Saturn reached the cusp of the Midheaven for him, Mr. Hatch was a reputed millionaire. Before Saturn had completed his transit in the 10th house, Mr. Hatch had made an assignment. He disregarded my warning, joined

Jim Keane in an attempt to make a corner on wheat, failed as I knew he would, and as I knew Grover Cleveland would fail of a re-election while Saturn was transiting on his Midheaven.

The transit of Jupiter through the 10th house is most fortunate, provided there are no evil transits or Directions operating at the time. Wage workers often have their salaries increased, officers are promoted, business prospers and one becomes more popular than usual. I will illustrate this by the experience of a gentleman who might not be pleased to see his name in this connection and will therefore call him William Henry.

In 1873 I calculated the transits for Mr. Henry and notified him that 1887 would be one of the most fortunate years of his life, for Jupiter would then transit through his 10th house. He was then in the employ of the old O. S. N. Co., and had always shown himself one of the best of young men, pinching himself that he might the better contribute to the support of his mother and sisters. Ten years ago, while under potent influences of evil, a conspiracy was formed to disgrace and ruin him. He lost his position, which had been one of honor and trust, his name was heralded through the press, especially that of Portland, Oregon, as an embezzler and the door of respectability seemed closed against him forever.

It was at this crisis that he came to Portland and called on me, when I saw him for the first time. I never saw a young man more completely crushed. His own life seemed wrecked, yet he was less distressed for himself than for his good mother and sisters, with whom I was acquainted and knew to be the best and purest of women. It was a very sad case, because he was innocent—a victim of circumstances beyond his control.

In October, 1889, I received a letter from him enclosing twenty dollars, and from that I make the following extracts:

"You remember when you calculated the future for me, in 1873, you said that the year '1887 would be extra fortunate, and that I should make every effort in my power to push business.' Well, as I say, I resigned my position as cashier of the bank in January, 1887, and went to Portland, Oregon, where I raised the capital to start the National Bank. * * * * * I raised sixty thousand dollars and was not asked the scratch of a pen for security of any kind. * * * My bank is now transacting a *daily* volume of business of from fifty to sixty thousand dollars."

This may sound more like romance than reality, yet it can be verified in every particular. Right there in the city, where it once seemed as though he had been permanently disgraced, under the

encouraging indications of Jupiter, the millionaires of Portland did not hesitate to give him their most complete confidence. Let every young man who reads this take courage, as Mr. Henry did, and not throw himself away because Saturn seems pointing the way to hopeless despair, for as spring succeeds to winter, and day to night, so all experience proves that man may arise triumphant from poverty and disgrace, if he will be patient and persevering.

The transit of Mars in the 10th house often indicates, for a brief period, greater misfortunes than Saturn. No important enterprises should be undertaken while Mars is making this transit any more than under Saturn. Wait till the evil period passes, as the judicious sailor will lay in port until the storm passes.

The transit of Uranus on the Midheaven does not indicate constant evil, but the indications are spasmodic, like alternations of shower and sunshine. Uranus is a very strange indicator, and although rated as evil by astrologers, I have found that when well aspected by Venus and Jupiter and not afflicting the luminaries, that he indicates benefits of a sudden and unexpected kind.

11. THE HOUSE OF FRIENDS.

I have not found that the transits in this house

ever gave only weak indications. Partners are considered as pertaining to this house and are judged the same as friends. I have sometimes thought that the transits of Jupiter in the 11th house were significant of more than usual kindness on the part of friends, but it will not do to rely upon as a basis for prediction.

12. THE HOUSE OF SORROW.

The position of the planets in this house at birth, as also in a Figure of Solar Return, I have found to be strong indicators, but could never perceive any results from the transits therein. My Figure of Solar Return, (that is, a horoscope made for the moment when the sun annually returns to the exact place which it occupied at my birth, which may occur several hours before or after the moment of birth, because the year is not an even number of days, there being a fraction of nearly six hours annually); my Figure of Solar Return for January, 1867, showed both Mars and Uranus in the 12th house, which, among other sorrows, signifies imprisonment. Dr. Broughton, who calculated the Figure, remarked that imprisonment was threatened, but we both laughed at the seeming absurdity. Nevertheless, "Boss" Tweed and his gang got me into Ludlow-st. Jail the following April. The 12th house also has reference to secret enemies, and they were very

numerous during the year that followed. But there were no evil transits in the 12th house at the time, the transit being Mars retrograding on the Midheaven.

CONCLUSION.

In concluding these remarks upon the Mundane Houses I will observe that some astrologers have repudiated the division of the heavens into 12 houses, being of the opinion that it was an invention of the diviners in the dark ages. Doubtless there is force in this, for I have failed to verify much of the trash which I find in the books regarding the Mundane Houses, especially in all that pertains to Horary Astrology, which means to note the time a question is asked, or an event occurs, and make a horoscope for that moment the same as the moment of a birth, because that was the time of birth of the event or idea.

Ancient astrologers made the horoscope square instead of round, a practice still observed by Raphael and the old foggy English. Having discovered that the houses which occupied the four cardinal points of the compass, namely, the 1st, 4th, 7th and 10th were most important, instead of naming them the "cardinal" houses they called them "angles," a term still preserved even by astrologers who have repudiated the square horoscope. The Bible speaks of "the four corners

of the earth," [Isaiah, xi, 12,] and I suppose the English took it for granted that if the earth had four corners, then it must have four angles, and so have perpetuated the stupidity of their ancestors. I confess that I have often spoken of a planet as being "angular," when writing Nativities, but hereafter shall say "cardinal" and recommend all American students to do the same. To say "angle" smacks too much of the times when the people thought the earth was flat, square and stationary.

"Again the devil taketh (sic) him up into an exceeding (sic) high mountain, and sheweth (sic) him all the kingdoms of the world, etc. [Mat. iv, 8.

Either the author of that ungrammatical sentence, or the English translator, believed the earth to be flat, and hence, by going upon the top of an "exceeding" high mountain they could see all over it. But as the earth is an oblate spheroid, if Jesus and the devil could see "all the kingdoms," then they must have been able to look around a semi-circle of 12,000 miles whose radius was 4,000 miles. It may be replied that Jesus being God was able to see around a half circle whose radius was millions of miles. I give it up, but I would like to ask, this being the case, why Jesus took the trouble to climb an "exceeding" high mountain.

To be serious. This stupidity in rendering into English, the Holy Bible, and then perpetuating the blunder for centuries, shows that our English cousins run too much in the footsteps of their fathers to keep pace with the progress of the age, or to be authority even in the nomenclature of astrology. Therefore I shall endeavor to correct these errors as far as possible, and will call the 1st, 4th, 7th, and 10th, "cardinal" houses, for they are not "angles," and the cusp of each, respectively, is exactly at the east, north, west and south, or the four cardinal points of the compass.

The 2d, 5th, 8th and 11th houses have been called "succeedent" and the name will do very well, for they succeed to, or follow the cardinal houses, to which they are next in importance.

The 3d, 6th, 9th and 12th have been called "cadent," which signifies "falling," some English writers using the expression, "cadent tears," and when snowing, "cadent snow." Cadent was applied to these houses because they preceded the angles and were said to "fall from angles." That was what ailed Adam, he fell from an angle, precisely as Scorpio, by the recession of the equinoxes, fell from the "angle" at the latter "end of heaven," [see Mat. xxiv, 31] and because the sign accursed, "that old serpent, the devil, which is called Satan." These last four houses do not

fall from angles, because there are no angles in a circle from which to fall. Still, I will retain the name, although obsolete except in astrology, because these four are the weakest, and it is the weak that are most likely to fall. I have no desire to change the nomenclature merely for the sake of changing, and shall not do so without good cause.

To sum up: The cardinal houses are of the first importance, or the strongest; that is, a planet is more potent as an indicator in a cardinal house than in any other. The next are the succedent houses, and the weakest are the cadent.

CHAPTER IV.

INDICATIONS OF THE SIGNS OF THE ZODIAC.

The sign that is rising at the moment a child is born indicates, in a general way, the stature, complexion, disposition, etc., of the child when grown to maturity. But there is such a complication of other causes, indications and testimonies to modify these general descriptions that it is not uncommon to find one possessed of peculiarities exactly opposite to the general indications.

In 1871, on the occasion of my first lecture, in Salem, Oregon, at the conclusion I requested persons in the audience to write out the data

of their birth and send it up to the stand so that I should not know who the person was, and I would give the delineation as a test of the science. Among those sent to me was one of a lady who had Capricornus rising at her birth. I described her in accordance with that sign, as I shall give it in this chapter. Of course I said she was of short stature, etc. When I had concluded the description I requested the lady to rise so that the audience could see how my description tallied with her appearance. She began to rise, slowly and deliberately, and I thought she would never stop. She was Miss Lizzie Greenstreet, and six feet tall.

Of course the audience laughed and I joined with them. Then I asked her how the description suited her.

"I am not very short, am I?" she replied.

"No, I confess that I have failed in that, but how about others?" I asked.

"You came just as near to my hight as you did to anything else."

"You have that nodding motion of the head when you are excited," I replied, in a sarcastic tone.

"No, sir; nothing of the kind," she snapt out, at the same time nodding her head so that there came a second roar of laughter from the audience.

Then she sat down, angry, and refused to answer any more questions, but a gentleman in the audience stated that except as to Miss Green-street's height, I had described her quite accurately. Subsequently I became well acquainted and quite friendly with Lizzie and she admitted that her disposition, the diseases to which she was subject, and several other points, were correctly given that night at the Opera House. I have since studied her Nativity and failed to find satisfactory testimonies to account for her being so tall. I have also examined the Nativities of dwarfs and giants without discovering the indications that they would be such. So, too, in the case of those born deaf and dumb, I have failed to find indications sufficiently reliable to say that the person was so afflicted.

But in cases of idiocy and insanity it is different, for I find the indications plainly outlined. Therefore I conclude that astrology is far from being perfected, and moreover, that finite man will never succeed in perfecting it, for in its essence it partakes of the infinite, which the finite can never comprehend. Yet we find finite clergymen who know all about the hereafter, all about God, the devil, etc. I only wish I knew as much about astrology as they *think* they know about the infinite.

The case of Miss Greenstreet illustrates only one discrepancy between the general indications and the special manifestation, yet it affords an illustration of very many that may arise. Besides, as remarked in the Preface, early training and the surroundings under which one is brought up, have much to do with modifying the various traits. The son of a king and the son of a laborer, born at the same moment, in the same longitude and latitude, will have very different careers awaiting them.

Addison, in his *Spectator*, gives an account of a boy, born of the lower class, on the same day that George III. was born. George rose above the status of his brothers and sisters by becoming king; the peasant rose above the status of his kindred by becoming a green grocer, which he did the same day George was made king. They were subject to similar diseases and vicissitudes of life at the same dates. They married on the same day, and their wives were of similar type of woman. There was this difference between the men, however. Both would act similarly at certain periods. Of the king it was kindly said that he was partially insane; of the green grocer man that he was having one of his "mean spells." Finally, both died on the same day, and if one went to heaven, no doubt both took the same elevator up.

Among the modifying causes may be mentioned the race, or nationality. From what has been said it is evident that the child of Chinese parents, born in the same house, at the same moment of one born of very superior Caucasian parents, would have a very different career before him. The Chinese might come up a Pagan, be a boss laundryman, wear a pigtail, eat with chop sticks and have a fondness for stewed rats, while the Caucasian would be an Infidel, or Christian, according to his training, go to college, study law, become a Prosecuting Attorney and prosecute this same Chinaman for stealing. Yet, notwithstanding all these differences, both might have heart disease; be near sighted; hard of hearing, dyspeptic, etc. With these explanations I will give what the general indications are, of each sign of the Zodiac.

ARIES, the Ram, rules the head and face and is ruled by Mars. When ascending at birth denotes a spare, strong, tallish person; sharp sight; oval face; reddish hair; swarthy complexion; dark eyebrows; longish neck; large shoulders; inclined to rule instead of being ruled; cannot bear contradiction, and of rash or violent disposition.

TAURUS, the Bull, rules the neck and throat and is ruled by Venus. Denotes a shortish, well set person; full face and eyes; wide nose and mouth;

shining face; thick neck; short, broad hand; dark, wavy or curly hair; large shoulders; fond of good living; subject to fits of sadness; slow to anger but furious when enraged, though usually cheerful and obliging.

GEMINI, the Twins; rules the arms and chest and is ruled by Mercury. Denotes a tall, well-formed person; (Saturn occidental less comely;) long arms; shortish hands and feet; high instep; smart quick step; dark hair; sanguine complexion; good wit and intellect; hazel eyes, having a peculiar sparkle, and sharp sight.

CANCER, the Crab; rules the breast and lungs and is ruled by the Moon. Denotes a medium stature; the upper portion of the body larger than the lower; soft skin and flesh; round face; grayish eyes; small features; brown hair; palish or tawny complexion; gentle disposition; weakly constitution; suppressed voice, peacably inclined, and averse to storm and bluster.

LEO, the Lion; rules the heart and back, and is ruled by the Sun. Denotes a large wiry body; (the first of the sign rising not so tall;) good proportions; broad shoulders; round head; light or ruddy complexion; large full eyes; bushy or curly hair; strong, deep voice; grip with the hand strong; ambitious; noble; haughty; generous; gentle when unprovoked, but in anger terrible.

VIRGO, the Virgin; rules the stomach and intestines, and is ruled by Mercury. Denotes a middle or tallish stature; slender and well-formed; oval face; high cheek bones; shrill voice but not loud; ingenious mind; fond of learning; disposed to waver or hesitate; very industrious; diffident; bashful, and if a woman very modest.

LIBRA, the Balance; rules the reins and loins, and is ruled by Venus. Denotes a tall graceful figure; fine, soft auburn hair (sometimes hair jet black;) roundish face; pink and lily complexion, which becomes ruddy or pimpled in old age; blue, beautiful eyes; amiable disposition; averse to cruelty and bloodshed; (if a woman dislikes to kill even a chicken;) a lover of justice; neat and particular, but not fond of hard or dirty work.

SCORPIO, the Scorpion, rules the lower portion of the body and generative organs, and is ruled by Mars. Denotes a medium size; well-set; strong and robust; broad, square face; dusky complexion; dark, curly hair which is bushy and plentiful; thick neck; lower limbs sometimes not very symmetrical; hasty; stirring and energetic, but subtle and reserved.

SAGITTARIUS, the Archer; rules the hips and thighs, and is ruled by Jupiter. Denotes a well-formed, tall person; long limbs and features; straight Grecian nose; expressive eyes; chestnut

hair growing thin above the temples and disposed to baldness; jovial disposition; generous and charitable; swift runner and good jumper; daring and intrepid; fond of horses and hunting.

CAPRICORNUS, the Water Goat; rules the knees and calves and is ruled by Saturn. Denotes a short stature; (I have seen them quite tall;) slender and not very graceful figure; inclined to bend forward, or bow or nod the head; long or pointed chin; slender neck; narrow breast; lower limbs not well-formed; has a skippish movement; firm sensitive and nervous; capricious; subject to fits of melancholy and to brood over an injury, especially when alone.

AQUARIUS, the Waterman; rules the legs and ankles, and is ruled by Uranus and Saturn. Denotes a tallish, stout person; robust, healthy appearance; long and rather fleshy face; clear complexion inclining to sanguine; sandy or darkish hair not so light as beard; hazel eyes; gentle, benevolent disposition; grave aspect and dignified in speech; a firm friend but determined enemy; cheerful yet subject to gloomy forebodings.

PISCES, the Fishes; rules the feet and is ruled by Jupiter. Denotes middle or shortish stature; full face with palish or sanguine complexion; round shoulders; short fin-like limbs; placid, sleepy eyes; sometimes webbed between the fingers a

short distance; thirst for fluids; a good swimmer; generous and good-natured; not overly industrious but somehow always provided for; laughs at misfortune and takes the world easy.

N. B. These descriptions seldom prove exact, but generally approximate in most particulars. The discrepancies arise from a conflict of the indications and the planetary configurations. I endeavor to point out these discrepancies in the Nativity, but since exactness is dependent solely upon judgment, even the best astrologers are liable to err.

I have frequently observed that beginners in the science, after learning the rudiments and how to make a horoscope, would turn to these descriptions of what each sign indicates, and read the sign on the cusp of the 1st house, supposng it would describe the person accurately, when not one case in ten is free from discrepancies. It is true that in *every* case, when the horoscope has been correctly made, there will be found many general features which are correct. I hope the student will always remember this warning, not only as to the signs, but in *all* cases. Therefore he should never risk giving judgment on *one* testimony, for there are likely to be others which will greatly modify the one testimony.

CHAPTER V.

EXPLANATIONS OF THE ASPECTS WITH
COMMENTS AND CRITICISMS.

Aspect means the relative situation of one planet with another. Look into the heavens and behold two planets, one on the midheaven and the other just one-third of the distance from the horizon to the midheaven. Those planets are in aspect and as they are 60° distant from each other, they are in sextile aspect.

The circle contains 360° . As the distance is always 90° from the midheaven to the horizon, we know that two-thirds the distance will be two-thirds of 90 , which is 60 .

But why should 60° be called a sextile, and a quintile be called 72° , when sextile has reference to six and quintile to five? Why should not a quintile be 50° instead of 72° , if a sextile is 60° ?

My students frequently ask questions like these, and therefore I will make the matter plain to the general reader.

Divide a circle into two equal parts and one of those parts will contain one-half of 360° , or 180° . If there is a planet at the extremities, or ends, of the diameter that thus divides the circle,

it is self-evident that those planets are in opposition, or distant 180° from each other.

Divide the circle into three equal parts and one of those parts will contain one-third of 360° , or 120° , and is called a trine which has reference to three.

Divide the circle into four equal parts and we have four quadrants, of 90° each, often called "a square." Two diameters which cross each other at right angles, (a right angle is 90° ,) divide the circle into quadrants. The sun, in its *apparent* transit around the heavens requires three months, or a "season," to transit from the extremity of one diameter to that of another. These two diameters drawn around the apparently concave heavens, constitute the colures, for they cut the ecliptic at right angles, at the four points at which the sun arrives at the beginning of each of the four seasons, namely, the first point of Aries, Cancer, Libra and Capricornus.

Divide the circle into five equal parts and each part will contain one-fifth of 360° , or 72° , which is a quintile.

Finally, if the circle is divided into six equal parts, one part will contain 60° , or half as much as a trine, and is a sextile.

In PART 1 I have given a long list of aspects, but must caution the reader against placing much

reliance upon any except the *Conjunction*, *Sextile*, *Quartile*, *Trine* and *Opposition*. Of these the sextile and trine are indications of good; the quartile and opposition indicate evil. The conjunction of good planets denotes good fortune, while the conjunction of evil planets denotes evil. The conjunction of an evil planet with the significator in a Nativity is more indicative of evil than if the planet was not significator. When an evil planet is in conjunction with a luminary, that is, the sun or moon, it denotes more evil than if in conjunction with a promittor. The promittors are Neptune, Uranus, Saturn, Jupiter, Mars, Venus and Mercury. But when one of these is ruler of the sign rising, for the purpose of reading the horoscope, it is called "significator," or "ruling planet."

It is recorded that Kepler "discovered" some new aspects, such as the *Semi-sextile*, *Semi-quartile*, *Quintile*, *Sesvui-quartile*, *Biquintile*, etc. The door of discovery being thus thrown open, every fakir in the science has sought distinction by discovering other aspects. But why some smart Aleck has not discovered a *Semi-quincunx* before this time is very strange, for it would be as scientific as its name is poetical.

The reason assigned for a quartile, trine, etc., is that it is the quotient, leaving no remainder,

after dividing the circle by a given *whole* number. But to obtain *Quincunx* the circle must be divided by a mixed number, namely, two and two-fifths. Where did Kepler find his two and two-fifths?

If we are to have a *Biquintile*, by all means let us have a *Biquincunx*, or 300° , that is, from the first point of Aries around, in the order of the signs, to the first point of Aquarius. But when old fogy England sets up the Biquincunx aspect, depend upon it some enterprising Yankee will move backward in the Zodiac, or converse, and discover that it is exactly a sextile, instead of going through the English "circumlocution," as Dickens called it.

What I have called the *Semi-quintile*, Kepler named the *Decile*, because one-tenth of the circle. The half of this he called *Vigintile*, because the twentieth of the circle. But I will not waste time combatting with hypotheses, and have referred to these "new aspects" only that I might expose the quackery which has sprung up in consequence. It is in no way a personal matter, but if men calling themselves astrologers feel that the coat fits them, they are welcome to it. I cannot do justice to truth without exposing error.

A "partile" aspect is one when two bodies are in exact aspect. Thus, the sun 1° in Aries is in partile trine with Mars, 1° in Leo. But if the

sun is 13° in Aries and Mars 1° in Leo, then the sun is in platic trine to Mars, or 12° from an exact trine. This distance of 12° is called as being "within orb." The word orb is herein used in a restricted sense, meaning the distance from a partile aspect which a planet can operate. Some operate at a greater distance than others, and it is alleged that the following is the respective orb of each:

Orb of sun,	.	.	.	17° .
" " moon,	.	.	.	12° .
" " Jupiter,	.	.	.	12° .
" " Saturn,	.	.	.	9° .
" " Venus,	.	.	.	8° .
" " Mars,	.	.	.	7° .
" " Mercury.	.	.	.	7° .

It is asserted that the "orb" applies to latitude as well as longitude, and of course to parallel declination also. Asking the reader to keep in mind the facts stated regarding both aspects and orbs, let us proceed to some deductions.

Suppose the sun is 1° in Aries and Saturn 21° in Gemini. They are distant from each other 81° , or within 9° of a quartile, which is very evil. Sun's orb 17° , plus Saturn's orb, 9° , equal 26° , the half of which is 13° . The aspect then is within 9° of a quartile and 4° within the greatest orb. Hence, one of the fakirs reading the horo-

scope, knowing something evil in the Nativity of John Doe, and finding this aspect, would ascribe it to this affliction of the sun by Saturn.

On the other hand, another fakir reading the horoscope of Richard Roe, finding this aspect, and knowing that Richard has been benefited by an old man, would ascribe it to this aspect, because the sun and Saturn were within 9° of a Quintile aspect, which is very fortunate, as judged by Kepler, who seemed to have a great veneration for the number 5, the divisor of the circle which gives the quintile.

Here, then, is an aspect that can be read both ways, for good or evil, according to circumstances. If the fakir has some bad luck to account for, he reads it as a quartile but keeps mum about the quintile. On the other hand, if there is good fortune to be accounted for, he reads it as a quintile and is as silent as the grave about the quartile.

I might cite scores of similar aspects that can be read either way by adopting the orb theory, and "new aspects," but I deem it a waste of time. With such extended orbs, and aspects so close together, even a tyro can see that they will overlap each other throughout the entire Zodiac, and the fakir will never be at a loss for an aspect to account for any kind of an event. If his client has had a conflicting time, that is, a mixture of good

and evil, then the fakir reads the aspect both ways and shows how correctly astrology always points out the event. The pagan "oracles" were managed on precisely this principle. *Viva la humbug!*

I am trying to weed out the errors and superstitions which have crept into this sublime science, and yet my publications arouse opposition, because so different from "standard works." I shall review some of the letters I have received, in order to bring out the truths of astrology; others I will answer, believing that *all* will be interested in what I shall say to the honest, earnest inquirer. Others I shall publish by way of showing up the errors of some noted astrologers in this country. One in particular, from ALYTHIA, who is among the ablest mathematicians in America. His review of a distinguished Boston astrologer is unanswerable, and will do more to enlighten the public and put the people on their guard against quacks and ignoramuses, than anything ever published.

I had intended, in the PRIMER, to defer criticism until I had given the rules for making a horoscope, then preface the lessons for reading the same by exposing the errors and superstitions which have so long burdened astrology. But men are so slow to accept new ideas, and so many have written me, protesting against the make-up of my

ANNUAL and PART 1, that I believe the interests of astrology require me to lay aside dogmatism and give the reasons more at length for the innovations I am making in treating upon this ancient science.

One gentleman, for whom I entertain the highest respect, whose "book" knowledge is excellent, but whose practical experience has been less than mine, has written:

"I have your almanac for 1890. I need not say I am pleased with it in the main. I should have liked it better if you had given the aspects, as you did in 1889. * * * It would seem that the common public would be more likely to acquire an interest in it if you kept in the calendar and the items of interest in regard to planetary influence upon everything in general."

My friend means well by his suggestions, yet he is asking for what I repudiate. There is no more evidence of "planetary influence" than there is of the existence of a personal devil, on whom cowards lay the blame when caught in a mean act. "The devil tempted me or I would not have done it." This was mere bald assertion, without a particle of proof that the devil was an accessory before the fact. Yet so common was the belief, during the dark ages, that no crime was ever committed unless the devil had a hand in it. Indict-

ments always ran: "Not having the fear of God before his eyes, *and instigated by the devil*, etc." When Young America began to repudiate this superstition in an indictment, there were many who regretted that the spirit of progress was abrogating this good and time-honored English mummary. Just so with all steps in advance of a past age, and doubtless many will grieve over my heresy on the subject of planetary influence.

So, too, thousands will sorrow because I ridicule the talismans, "crystal balls, and babies' cauls," which Raphael advertises. Yet I honestly think that a child's caul has just as much influence upon things mundane, as the planets have. But I will answer my friend, who regrets my omission of the aspects, seriously and scientifically.

Raphael gives the planets' places for Greenwich noon; hence, any aspect that may be formed either within 12 hours before noon, or 12 hours past noon, on January 1st, is given as occurring that day, but no hint as to the hour of the day.

Now suppose the moon forms a trine to Saturn, at Greenwich, on January 1st at 15 minutes past midnight; that aspect will be formed in St. Louis, local time, December 31st the year before, at a quarter past 6 p. m. When the moon is transiting 15° a day, and a child is born in St., Louis, January 1st, at 6. 15 p. m., it is plain that the

moon has advanced 15° from where it was Dec. 31, 6. 15 p. m. at which time it was in trine to Saturn, St. Louis time, and Raphael gives it as being in trine. But 120° plus 15° equal 135° , a sesqui-quadrate and evil! Yet the novice in astrology, who depends upon Raphael's list of aspects, will declare that the child is very fortunate to have been born with moon and Saturn in trine, when they were actually in quartile.

I never allow my students to depend upon the aspects as given in the almanac, because errors in reading would constantly arise. I require them to memorize "The Different Kinds of Signs," as arranged on page 28, PART 1, and having learned that Aries, Cancer, Libra and Capricornus are "movable signs," they readily perceive that two planets, one in each of any two of the movable signs, will be either in quartile or opposition, provided the orb does not exceed 5° . The same is true of the fixed signs and common signs. This lesson once well learned, the student can tell at a glance, and in a tenth of the time required to turn to the list of aspects, when two planets are in quartile or opposition.

On the same page of the PRIMER the Triplicities are given and must be memorized. Then when two planets are in any two signs of the fiery triplicity, if within orb, they are read as being in

trine. The same of the Earthy, Airy and Watery Triplicities.

For a sextile, if there is just one sign between the signs in which the planets are, then one is sure that they are 60° distant, and if within orb, the horoscope must be read accordingly; and this can also be discovered at a glance.

Even if Raphael's aspects were correct, as applied to America, I should insist upon my students learning to find them by these rules, instead of being always compelled to refer to the list.

As for a calendar, the calendar of 1889 cost us more than \$100 extra, when, if a person desires a calendar the druggists will give them to him by the armful. Then why ask us to go to that useless expense when we are still \$310 behind on the almanac for 1889?

A Boston gentleman writes, complaining that the ANNUAL omits to give the longitudes of the sun and moon at Washington, and adds that I give—

"Only a copy—pardon the word, but it appears to be only a copy—of the English Ephemeris *without* the moon's aspects or mutual aspects between the planets. This poor appology (*sic*) for an American Ephemeris is a very great disappointment I assure you. * * * your Ephemeris for 1890 does not state that the calcula-

tion is for London, and is therefore misleading, to put it mildly. Is there any way by which you can issue, as in yours of 1889, a table giving the longitude of the sun and moon for Washington, or is there any rule by which that of the English, as given in your Ehemeris, can be adapted to our use?"

Answering the last query first, I refer the gentleman to "Chaney's Department," beginning on page 55, for 1889, where he will discover a full and complete explanation of the methods for finding the longitudes of *all* the planets for Washington noon, *or any other place on this globe*, and plainer than ever before published.

But of what benefit would it be to the American astrologer to have the longitudes of the planets calculated for the meridian of Washington?. Not the slightest, but on the contrary a disadvantage. The proof of this is very simple.

Suppose the gentleman has such an Ephemeris and desires to calculate a horoscope for Boston. Boston is 23 minutes .58 seconds east of Washington, and 4 hours 44 minutes 14 seconds west of Greenwich. If he makes his horoscope accurately, he must allow for the difference in longitude between Washington and Boston and it will require the same time to calculate this difference as to calculate the difference between Greenwich

and Boston. So he would gain nothing in that way.

On the other hand, suppose the gentleman desires to make a horoscope, from a Washington Ephemeris, for Cincinnati, which is 29 minutes 47 seconds *west* of Washington, instead of being east, he must not only allow for this difference, but the rule must be modified and therefore different from the rule by which he worked in calculating for Boston, or any place east of Washington. But with an Ephemeris for the meridian of Greenwich, the rule is not modified in the slightest in making a horoscope for any part of America. Therefore the student is less liable to become confused, working by *one* rule only.

The Smithsonian Institute, at Washington, publishes a Nautical Almanac, calculated for Greenwich meridian, expressly for the convenience of American navigators, because experience has proved that errors are less likely to occur working by *one* rule only.

This gentleman charges that my ANNUAL "does not state that the calculations are for London and is therefore misleading." Not at all; the calculations are *not* for London, but for Greenwich, and if he will put on his spectacles and look carefully at the bottom of the pages for February, he will see, in capital letters, this legend:

"GREENWICH MEAN TIME THROUGHOUT."

PART 3.

PRIMER OF ASTROLOGY.

CHAPTER VI.

INTERESTING CRITICISM.

BY ALYTHIA.

PROF. W. H. CHANEY,
ST. LOUIS, Mo.;

DEAR SIR: In the October issue of THE SIGNS OF THE TIMES, an astrological publication, issued in Boston in 1885, the Natus of Gen. Ulyssus S. Grant was given, with lengthy remarks by the editor, REGULUS. This article contains so many misleading errors that I crave a little space to call attention to a few of the more important. The writer says Gen. Grant was one of the few prominent Americans whose hour of birth is known with any degree of certainty, and then informs his readers that Grant's father stated it occurred just as the sun arose on the morning of April 27, 1822. I don't know where the writer got his authority for this statement, but I do know that it is not correct. Prof. Thomas Lister, the celebrated Boston astrologer, wrote to Gen. Grant's father soon after the commencement of the Civil War, asking for the hour of his son's birth and he informed him by letter that it was "about 6 o'clock a. m." I have a letter from Prof. Lister now before me, dated Sept. 3d, 1872, in which he says this was the time given him. It is now known that this let-

ter from Grant Sen. was among Prof. Lister's papers at the time of his death, as several of his acquaintances in New York will testify. Prof. Lister delivered a public lecture in New York City in 1878, on astrology, and at that lecture he exhibited the Nativity of Gen. Grant, via. illustration, and that showed 2° of w on the meridian, showing the time was about 6 a. m. From this it is seen that REGULUS is mistaken by about 48 minutes.

REGULUS gives evidence of being a very capable reader of horoscopes but taking the natal figure of Gen. Grant as an illustration he is not a very accurate mathematician. He gives the place of the moon at sunrise as $26^{\circ} 30' \text{ } \textcircled{\text{S}}$, but its true place at that moment was $25^{\circ} 50' \text{ } \textcircled{\text{S}}$, a difference of 40', which would produce considerable error in working primary directions in the Zodiac. There is also an error of 11' in the moon's dec. The latitude of Gen. Grant's birth place is about 39° . Allowing $5^{\circ} 53' \text{ } \textcircled{\text{S}}$ to occupy the Ascendant, as REGULUS gives it, then $20^{\circ} 42' \text{ } \textcircled{\text{S}}$ falls on the cusp of the M. C. instead of $20^{\circ} 00'$ as appears in the figure given in THE SIGNS OF THE TIMES.

But it is the primary arcs of direction which are given by REGULUS as fatal arcs, and by which he accounts for the death of the native with which I find the most fault. They are \odot p. $\textcircled{\text{C}}$ zo.; \odot p. $\textcircled{\text{M}}$ zo. con., and $\textcircled{\text{C}} \square \textcircled{\text{S}}$ zo. REGULUS says the sun had been traveling close to the zodiacal parallel of the moon for more than three years. But the truth is as I shall demonstrate, the sun had left the parallel of the moon at the age of 61 years and 4 months, Ptolemaic measure, (which is, I understand, the measure REGULUS uses,) or nearly two years before the death of the native. Taking the declination of the moon's center, and the arc measures

only to the age of 58, but I give REGULUS the benefit of using half of the moon's semi-diameter as taught by Oxley, who is the best authority on this subject, so far as I know. Applying this theory it appears that the influence of ☽ p. ☽ zo. operated from the age of 53 years and 7 months until the the age 61 years and 4 months, and no longer. I would give the calculations in full did your space permit, and will yet if the correctness of the results is questioned. This, then, disposes of one of the arcs given, and a very important one. We must then look to some other arc, fatal to the "giver of life," to account for death. REGULUS says that at the time of death the sun was approaching close to the zodiacal parallel of ♂, by converse motion, but the fact is this direction would not come up until the native was nearly 66 years of age, Ptolemaic measure, while the native died at about the age of 63 years and 4 months. That there may be no doubt about the correctness of my figures I will give the calculation:

☽ Sac.	.....	101° 25'
" M. D.	.....	102° 05'
♂ Dec.	.....	15° 37'
Asp. Long.	.....	17° 27'
" Sac.	.....	76° 55'
" R. A.	.....	319° 55'
" M. D.	.....	27° 34'

Then by Proportional Logarithms:

As Aspect's Sac. (a. c)	76°. 55'	log.=0. 63075
:	" M. D.	27. 54 " =0. 81489
::	☽ Sac.	101. 25 " =0. 24916
:	☽ 2d Dist.	36. 21 " =0. 69480

Then:

☽ M. D. 102°. 05'—2d Dist. 36°. 21'=65°. 44', which is the arc of direction of ☽ p. ♂ zo. con,

I don't think Zadkiel or Pearce would venture to refer to this arc as having any influence over the health or affairs of the native. It is not a long arc as it does not fall near the tropics.

We have an arc left, ☽ □ ☽ in zo., and here I am sorry to see REGULUS' reputation as a mathematician does not fare much better. Directed without latitude, the arc is $67^{\circ} 17'$, but with latitude, $65^{\circ} 44'$, then in either case the arc was not operating when the native died. I will give the calculations of these arcs in full, at another time, if any of your readers are disposed to question their correctness. REGULUS gives Asc. ☽ ♀ zo. con. as belonging to the fatal chain. Few professors recognise this as any direction at all, but granting its power, it measures $62^{\circ}. 19'$, that is, 62 years and four months, taking RFG.'s figure, and assuming the Asc. to be correct, which I dont believe, is justly entitled to be included among the operating arcs, but as the Asc. is not hyleg it could not kill.

This Boston astrologer also gives another arc; Asc. to the mundane opposition of the moon. A strange arc of direction truly and one I never heard of before! Perhaps he means Asc. to the opposition of the moon zo. con., which is the only direction of the Asc. to the moon that I can discover that measures any where near the time of death, and the measure of that is 64 years and about four months, assuming his Asc. correct, which it is not, as I said before.

It is an axiom among astrologers, and one which I presume REG. will not question, that if the hyleg be not afflicted life will not be destroyed, however evil the directions and however much they may injure the native's health. The sun, according to this figure by REG. is without question hyleg, or giver of life, and we have

shown conclusively that not one of the evil directions to the sun that he has given was operating at the time of the native's death.

There is, however, another arc which belongs to the train but it is a saving one, and that is, ☽ p. ♀ zo. con.= $61^{\circ} 35'$, but REG. says nothing about it; and another; ☽ * ♀ in mundo, arc $63^{\circ} 34'$, a very close arc indeed to the fatal period. But our author may say Jupiter had no power to save because under the sun's beams at birth; if that was so then Saturn had no power to render harm, supposing his sextile harmful, which few, I believe will admit, because he was nearer the sun than Jupiter. There was one other primary direction of an evil, (not fatal) nature which came up about the time of the native's death, and that was, ☽ □ ♂ zo-con., measuring $63^{\circ} 44'$, but REGULUS apparently overlooked it.

At some future time, if you so desire, I may give you some calculations based upon a figure erected at the estimated time given by Gen. Grant's father, and present the causes, astrologically speaking, of the death of the distinguished military chieftain, for the hyleg was afflicted by directions at that period, and there were several other evil arcs in the train.

☞ A few words of comment on the foregoing are necessary. REGULUS takes high rank as an astrologer and probably not one person in a hundred thousand, in this country, would have had the least suspicion, on reading his description of the fatal arcs denoting the death of Gen. Grant, that the

whole screed was nothing but a tissue of sophistry.

But instead of proving the truth of astrology, its worst enemy could not have asked for stronger logic against it.

Unfortunately the enemies and critics know nothing of the science. They oppose it from the basis of what they *don't know*, while the true astrologer advocates it on the ground of what he *does know*.

Relying upon the prevailing ignorance regarding astrology, REGULUS made his publication, no doubt fancying that as mathematicians could detect no error in his work, and that astrologers would not trouble themselves to look after him, he would appear to the public as deeply learned in the science. Perhaps he is, but if he takes this horn of the dilemma, what about his honesty?

I am not actuated by any feeling of jealousy or ill-will towards REGULUS, for I wish there were a thousand honest, genuine astrologers in St Louis this moment. Five thousand could not do the work, if once the public understood the value of the science. But such men as REGULUS are false teachers, and not only mislead the public, but students, who are anxious to learn. Novices write me, quoting him as authority to show that I am wrong. Practitioners criticise the Nativities which I write and say to my patrons: "I differ from Prof. Chaney because Raphael, Regulus and others teach otherwise." I

must meet this opposition continually and that is why I have called a halt in my work to defend myself.

The avowed enemies of the science do not cause me half as much trouble as the professed friends. But instead of fair and candid criticism, like this of my friend ALYTHIA, some resort to personal flings, like Roffe and Co., of Boston, who denounce me as "that old crank, Chaney." But they are interested in a commission which they derive from the sale of Raphael's trash, and care nothing for science. Yet it shows the weakness of their ground of opposition when they sneer at me instead of criticising my work.

When Prof. Morse asked Congress for an appropriation to aid him with his telegraph, Congressmen sneered at him in the same way, instead of showing that telegraphing was scientifically improbable. In like manner the learned (?) men of Gotham cried out, "Fulton, the fool!" while the first steamboat was being built.

I had intended this chapter for a later place in the PRIMER, but was goaded into giving it now, that the public might understand how unjust have been the criticisms of my enemies, and also to give warning against the false prophets, who would deceive the very elect, by their great show of learning and pomposity. Besides, unless I turn upon them in selfdefense, the public may think me an impostor, unable to defend myself, and then the publication of the PRIMER may prove a failure. With a happy smile for friends and a grin of defiance for enemies, I will now resume my regular work.

CHAPTER VII.

PRELIMINARY TO THE HOROSCOPE.

NOONMARK.

The Noonmark [N—k] of a place is the clock time of that place when it is noon at Greenwich. All American Ephemeris are, or should be, calculated for Greenwich noon, and then, as the whole continent is west, but one rule for computing the horoscope is necessary.

It makes no difference whether the planets are calculated for the noon of a place, or for 4 a. m. I might compute the longitudes, etc., for New Orleans, La., for 6 a. m., and then for other places, either east or west, could calculate the difference in time from New Orleans, and it would be just as easy to make a horoscope from the New Orleans Ephemeris as from one calculated for Washington D. C., at noon. The only objection that could be urged against the New Orleans Ephemeris would be that it was contrary to custom to calculate the longitudes, latitudes, etc., at 6 a. m. Only one with a feeble intellect can fail to discover the force of this reasoning.

It might come a trifle awkward at first, to one accustomed to having the planets' places given at noon instead of 6 a. m., but to the student, it would be just as easy to learn as to have their places given at noon. To illustrate:

'A child is born in New Orleans at 7. 30 a. m. The Ephemeris shows where the planets were at 6 a. m. Therefore we find how far each planet moved from 6 to 7. 30, or during 1 h. 30 m. and add that distance to the longitude given in the New Orleans Ephemeris, unless the planet is retrograde, when it must be subtracted.

It seems to me that this must be perfectly plain, and I fancy I hear my Boston grumbler say that if I had only done that, so we might have an American Ephemeris, he would have been perfectly satisfied with 6 a. m. at New Orleans, instead of noon at Washington.

Well, that is what I have done ; aye, and a thousand times more, for my Ephemeris has the planets' places computed to a second for every place on the American continent, only at a different hour and minute from New Orleans, according to the difference of distances the places may be, east or west of the New Orleans meridian. Thus: My Ephemeris are calculated for the city of Washington, D. C. at precisely 6h. 51m. 59s. a. m., but it is near enough to say at 6. 52 a. m. Therefore any one who

desires to figure from Washington can do so, only he must remember the planets' places are given for Washington at 6. 52 a. m. instead of noon.

Or, my Ephemeris is calculated for New York city at 7. 4 a. m. Or, for Boston at 7. 16 a. m. Or for St Louis at 6. 1 a. m., and so on. In other words, I have only to find the distance in longitude of a place from Greenwich, convert the longitude into time and subtract that time from 12h. and I shall have the exact moment of the local time of that place, when it is noon at Greenwich, and hence, the Ephemeris for Greenwich at noon is the Ephemeris for that place at its local time.

HOW TO CALCULATE A NOONMARK.

First learn the relation of time to space, and then the matter will be plain. You know that the earth revolves from west to east every day; you know that a circle contains 360° ; then it follows that 24 hours of time are equal to 360° of space. 360 divided by 24 equal 15. Then 1 hour of time is equal to 15° of space. One hour is 60 minutes, and 60 divided by 15 equal 4. Then we find that 4 minutes of time are equal to 1° of space.

I will now apply data to calculate the Boston Noonmark. Boston is 71° west of Greenwich, rejecting seconds. I say 15 in 71 is contained 4 times and 11 over. The 11 over are degrees,

and as 1° is equal to 4 minutes of time I multiply the 11 by 4 and get 44 minutes, showing that Boston is 4 h. 44 m., in time, east of Greenwich. Then I say: 12 h. minus 4h. 44 m. equal 7 h. 16 m. This is a. m. and is the Noonmark of Boston.

I desire the Noonmark of a place in Russia that is $36^{\circ} 43'$ longitude west of Greenwich. Here is the work:

$$\begin{array}{r} 15)36^{\circ} 43' \\ \hline 2. \quad 24 \\ \hline \qquad\qquad\qquad 3 \\ \hline 2. \quad 27 \end{array}$$

I say: 15 in 39 twice and 6 over; set down the 2 and multiply the 6° over by 4 which make 24 minutes of time and set this under the minutes of the dividend; then I say 15 in 43 is contained so nearly 3 times that I call it 3 and add to the 24; this shows that the difference in time between the two places is 2 hours and 27 minutes. As the place is east of Greenwich the difference in time must be added to 12 hours, showing that the Noonmark at that point in Russia is 2. 27 p. m. and my Ephemeris can be used for making the horoscope of a person born there exactly as though I had printed on it:

“Ephemeris showing the planets’ places at 2. 27 p. m. in the city of Blank, Russia.”

Then I can print on another copy of the same Ephemeris this title:

"Ephemeris showing the planets' places at 6. 1-a. m. for St. Louis, Mo."

In like manner the Ephemeris is for the Noonmark of any place on this planet. All we have to do is to find the Noonmark of the place, and if any student fails to understand my rules herein given, if he will write and tell me what is obscure I will reply and make it plain.

My Boston critic, whom I answered at the close of PART 2, wrote: "As yours is the only Ephemeris for America I have used it, especially for the sun and moon, the other planets' positions being near enough as given for London."

I have quoted this to show the loose manner in which astrology is being learned from the English authors. Mercury often moves 2° a day; then in 6 hours he would move $30'$; the difference in time between London and St. Louis is 6 hours. Yet this man thinks it near enough if Mercury is calculated within $30'$, or half a degree. I do not blame him for this stupidity so much as I blame English astrologers for not making these matters plain. They give Sidereal Time to seconds, but fail to explain the science properly, so that one will err $30'$ and think it is "near enough."

I hope that every American student will adopt

the rule of being exact in making a horoscope, for if wrongly computed, the reading must prove a failure and then the enemies will blame astrology instead of the astrologer. Thomas Lister, of whom *ALYTHIA* speaks, made an error of 20 minutes in computing the horoscope of President Hayes, and then predicted his defeat. Had he made the horoscope correctly, he would have said Hayes would be the next President.

SIDEREAL TIME

Remember that this is given in the Ephemeris for the local noon and not for Greenwich noon. When making a horoscope you must find Sidereal Time for the moment of birth. To do this you find it in the Ephemeris where it is given for noon at the place where the person was born, whether in America or any other part of the world. The clock strikes to 12 and then begins at 1 again; but Sidereal time runs up to 24 hours and then begins again.

Hence, if Sidereal time is 1 h. 12 m at noon, and a person was born at 4 a. m., as the birth was 8 hours before noon, it is evident that Sidereal Time was 8 hours less when he was born than it was at noon. But we cannot subtract 8h. from the Sidereal Time at noon, and so subtract it from the circle, which leaves 16 hours; to this add Sidereal Time at noon, namely, 1 h. and 12 m.

and we have 17. 12 as the Sidereal Time at birth, which is found at the head of the first column in The Tables of Houses, and which some astrologers call the "Right Ascension of the Meridian."

As it requires 365 days and 6 hours, nearly, for a year, it is evident that we lose 6 hours annually except on leap year when the loss is made up by adding a day to February. Sidereal Time increases 4 minutes a day, very nearly, so that in one year it will amount to 24 hours. It begins and ends annually when the sun reaches the vernal equinox. Each leap year it will be within a few seconds of what it was four years previously. The next year it will be about 1 minute later on account of the 6 hours loss; and thus a minute of Sidereal Time is lost annually until leap year comes again and it is made up.

Although Sidereal Time is given to seconds in the Ephemeris, yet it is given in the Tables of Houses only for every degree of longitude on the Midheaven, or about every 4 minutes of time. This shows the absurdity of giving it to seconds in the Ephemeris, for it often happens that in taking the nearest Sidereal Time at birth we cannot find one unless two minutes too large, or two minutes too small.

LOGARITHMS.

The Tables of Constant Logarithms which I

have calculated are for the benefit of those not familiar with compound numbers. Thus, if a birth occurs in New Orleans at 2. 45 a. m. it is evident that the longitudes of the planets must be calculated for the three and a half hours to the Noonmark and then subtract it from the longitude of each planet as given in the Epnemeris for 6 a. m.

Suppose the moon's longitude is $6^{\circ} 27'$ in Aries, on the day of the horoscope, and on the previous day $21^{\circ} 39'$ in Pisces. It is evident that the moon moves $14^{\circ} 48'$ during the 24 hours; then how far would it move in 3 h. 30 m? Even good mathematicians might be bothered to figure it accurately if in a hurry. But by logarithms it is not only very easy, but very accurate.

CHAPTER VIII.

RULES FOR MAKING A HOROSCOPE.

1. On the left upper corner write the data, in the form as hereafter given.
2. Under the hours and minutes of data write the Noonmark, [N—k.]
3. Either the time which the data lacks of the N—k is the number of hours [No. h.] for which to compute the longitudes of the planets, and must be marked —(*minus*), or,
4. The time which the data is past the N—k is the No. h. and must be marked + (*plus*.)

RE Rules 3 and 4 may be worded as follows to aid in understanding them:

3. If the data is earlier in the day than the N-k., subtract it from the N-k. and mark the number of hours (No. h.) minus.

4. If the data is later in the day than the N-k. subtract the N-k. from the data and mark the (N. h.) plus.

REMARKS. Remember that to find the No. h. you must always subtract. When you cannot subtract the hours, borrow 12, because clocks only strick to 12 instead of 24, as they should. When the N. h. is a. m. and data p. m. always borrow the 12 hours even if not needed to made the subtraction. The No. h. is the difference in time between the moment of the horoscope and Greenwich noon.

5. On the right upper corner of the horoscope write Sidereal Time, (S. T.) for the day of the month.

6. Under S. T. write the hours and minutes which the data lacks of the local noon or is past it.

7. If the data is a. m. subtract from the S. T.; if p. m. add, and in either case the result will be S. T. for the moment of birth, or the horoscope.

REMARKS.—When you cannot subtract the hours of S. T., borrow 24, because 24 hours of S. T.

make one day or one year. If, when you have added to S. T. the sum exceeds 24, "reject the circle," that is, subtract 24 from the sum and the remainder will be S. T. at birth, or time of horoscope

8. Take a Table of Houses for the latitude—regardless of longitude—nearest the place of the horoscope and see the first column headed "Sidereal Time;" look in these columns for S. T. nearest that which you have found for the moment of birth.

9. Having found it, move your finger to the right; pass over the columns of Right Ascension to the first single column headed "10," which means 10th house, or midheaven, or M. C.

10. See what sign of the zodiac is placed at the head of this column and what figure or figures are in it at the point of intersection and write both on the cusp of the 10th house.

11. Move your finger to the right into the column headed "11"; glance up that column and look sharp for a sign of the zodiac; take the first you come to; if you find none before reaching the top, take the sign at the head, and the figures at the point of intersection, and put them on the cusp of the 11th house.

12. In like manner find the sign and figures for the 12th house.

13. You next arrive in the column of the Ascendant, or 1st house, the longitude of which is given in degrees and minutes.

14. You now have the longitudes for four of the cusps, but before finding it for the 2nd house, turn the horoscope around so your work will be right side up. Then place the longitudes for the 2nd and 3rd houses on their cusps in the same manner.

15. You are now done with the Table of Houses, but pass to the cusp of the 4th and look up to the 10th for the sign; do not take it but ask what sign is opposite to it and take the opposite sign for the 4th placing the same figures to the right of it as are at the right of the sign on the 10th. See page 29, that Aries is opposite Libra, Pisces opposite Virgo, etc.

16. For the cusp of the 5th look across to the 11th taking the opposite sign, but the same degrees of longitude. In like manner find the longitude for the 6th and 7th.

17. Turn the horoscope back so that your work will not be bottom up, and place the longitude on the cusps of the 8th and 9th by the same rule.

CHAPTER IX.

EXAMPLE FOR MAKING A HOROSCOPE.

When it is desirable to rectify the Nativity so as to accurately calculate Primary Directions, Solar Returns, etc., great care should be used to have it exact to a secoud, for there are Directions in which an error of one minute would vary the arc two or three years.

But when making a horoscope merely for the purpose of delineation and calculating the transits, such exactness is not necessary. I proved this by actual experience, while on the Pacific Coast.

I lectured upon astrology and gave tests by delineating persons in the audience who were unknown to me. Several would write the full data of birth on separate slips of paper and deposit them in a hat. The hat would be shaken and then a child allowed to draw one out, when it would be passed to me for delineation. I would find what Sidereal Time was on the day of the month when the birth took place, turn to the proper Table of Houses, placing the same open before me, find the

year and month in the Ephemeris, and then, without any horoscope would give the delineation.

I merely glanced at the Table of Houses when I desired to know the longitude of a particular cusp, glanced at the Ephemeris to see the longitude of the planets, and being familiar with the signs of the Zodiac I could see the aspects at a glance, all the time talking and giving the delineation. This is much easier than to play chess blindfold.

From this it will be readily perceived that great exactness is not necessary for a brief, verbal delineation, for I gave excellent tests in hundreds of instances. But the student will bear in mind that I touched only upon the most prominent traits of character, which were indicated by testimonies not conflicting; otherwise I should have made serious errors.

When I write a Nativity I am then careful to make the horoscope as correctly as it can be done from Tables of Houses, but even then the longitude of the cusp of the Midheaven may be in error half a degree. Thus, suppose the Sidereal Time at birth, as found on the horoscope, is 10h.-14m. Turning to the Table I find 10h. 12m., and 10h. 16m. It makes only a few seconds difference which I take, and besides, when I do not rectify the hour of birth, the time given may be anywhere from one minute to half an hour

wrong. This exposes the folly of computing the Tables to seconds, when there may be an error of thirty minutes, for clocks and watches are rarely exact. Besides, in the hurry and excitement of a birth no one thinks to notice, for some time after, and then guesses that it was "about 9," or, as it is often given to me, "between 9 and 10."

My mother thought my birth occurred just after midnight, Sunday morning, January 14th, but by comparing the dates of the transits of Saturn and Mars with the dates of the beginning of the evil periods, I saw that they did not come on soon enough, and finally *guessed* that the birth was at 11. 30 p. m. January 13th.

Some reckon the birth as complete at the first cry of the child. This is erroneous. Not until the umbilical cord is severed does the separate and independent life of the child begin. That is the moment to be taken and not the moment of *apparent* birth, for there have been cases when half an hour elapsed between the *apparent birth* and the *real birth*.

I will make the horoscope for my self at my estimated hour of birth, and hereafter will rectify it from the date of the death of my father who lost his life by his horse running away with him. And I will caution the student not to rely upon these *guesses*, for the time of transits are not relia-

ble. True, I guessed very near in my own case, but might err widely in guessing for another, because my life had been very eventful and I knew the exact dates. I was born one year after leap year, in latitude $44^{\circ} 30'$ N. and longitude 70° west of Greenwich. I pick up the first Ephemeris at hand. It is 1890, which is two years past leap year and see that Sidereal Time, taking nearest minute, is 19h. 32m. on Jan. 13th. This is within a fraction of one minute too small, and so I write down 19. 33. Sidereal Time increases about 4m. a day, and as it is almost 12h. past noon, I add to it 2m. for the Sidereal Time since noon; I also add the 11. 30m. past noon. This gives 31h. 5m., but as it exceeds the circle I subtract from it 24h., leaving 7h. 5m. for Sidereal Time at birth.

I have no Tables of Houses for the latitude of Chesterville, Maine, where I was born, but have one for Bangor, which is 19' farther north, but would be near enough for a verbal delineation and transits if two or three degrees either north or south of my birthplace. I find the Bangor Table in PART 1, of PRIMER, and in the first column which is headed "R. A. or S. T. at birth," I seek for the nearest Sidereal Time to the 7h. 5m. which I have on the right, upper corner of the horoscope, and find it exactly, on page 5, 15th line from the top.

I move my finger to the right into the next column and see the figures "15." At the head of this column is "10," under "Ho's." which is an abbreviation of "house." I then know that this is the column for the 10th house. Holding my finger under the "15" I glance up the column, carefully looking for a sign of the zodiac, and shall take the first one that I find. I see none till reaching the top and there see Cancer. Then I write on the cusp of the 10th, "Cancer 15," using the symbol.

I move my finger to the right, into the next column and stop at "19." This column is headed "11," meaning 11th house. Glancing up from the "19" I find no sign till I reach the top and see Leo. So I place the symbol of Leo with the "19" to the right on the cusp of the 11th.

The next column to the right contains the longitudes for the cusp of the 12th, as the 12 at the head of it shows, and in the same manner I find "Virgo 18" for the cusp.

The next is the column for the 1st house, the longitudes of which are given in ° and ' and in the same manner I find it to be "Libra 12° 47'."

I now turn the horoscope around so that my work will not be wrong side up, and move into the next column where I find "10." Glancing up I see Scorpio before reaching the top. So I place "Scorpio 10" on the cusp of the 2d.

Moving into the next column I find "11" and in that column I find Sagittarius before reaching the top. So I place "Sagittarius 11" on the cusp of the 3d.

I am now done with the Table and so for the remaining six houses proceed as follows:

Coming to the 4th I look up to the 10th and see "Cancer 15." Then I ask: "What sign is opposite Cancer?" Capricornus. I write the symbol of Capricornus on the cusp and the 15° to the right of it, for being opposite it must have just 180° more longitude, or the same number that Cancer has.

Moving to the 5th I see "Leo 19" on the cusp of the 11th and so place "Aquarius 19" on the cusp of the 5th because Aquarius is opposite Leo,

From the 6th I see that the 12th has "Virgo 18," and write "Pisces 18" on the cusp of the 6th.

The 7th is the Descendant, and as the Ascendant has Libra " $12^{\circ} 47'$ " I put "Aries $12^{\circ} 47'$ " on the cusp of the 7th.

I turned the horoscope around after placing the longitude on the cusp of the Ascendant, and now must turn it back after putting the longitude on the Descendant.

Looking from the 8th down to the 2nd I see "Scorpio 10" and therefore write "Taurus 10" on the cusp of the 8th.

Finally, from the 9th I look down to the 3d, and as that has "Sagittarius 11," I place "Gemini 11" on the 9th.

I next examine to see if all the signs are there, for owing to the obliquity of the ecliptic sometimes a sign is "intercepted," that is, is omitted between two cusps. For instance: If the Sidereal Time at birth had been 8h. 5m., "Cancer 26" would have been on the 10th and Virgo 2 on the 11th, with Leo intercepted. Then I would write the symbol of Leo, in the Zodiac, between Cancer and Virgo, without any degrees of longitude, and if a planet should be found in Leo, write its symbol and longitude in the 11th at right angles with the cusps of the 10th and 11th and not parallel with the cusps as in other cases. I should then find that Aquarius, the opposite sign from Leo, would be intercepted in the 5th and any planets in Aquarius should be within the 5th house at right angles with the cusps of the 4th and 5th.

From long experience I am convinced that it will save time to write the date, Noonmark and Sidereal Time at the upper corners of the Horoscope and make the calculations as I have done in this example, and therefore always advise my students to adopt the same practice.

The next step will be to find how far each planet moved, or how much it increased its longitude

When the No. h. are an aliquot part of 24 and I	have found how far the planet moves in 24 hours,	I take the aliquot part of the whole distance for	the distance it moves in the given No. h., thus:
" " 3 " 1-8	" " "	" 4 " 1-6	" 6 " 1-4
" " 8 " 1-3	" " "	" " 8 " 1-3	" " 8 " 1-3
" " 12 " 1-2	" " "	" " 12 " 1-2	" " 12 " 1-2

from 7. 20 a.m. till 11. 30 p.m.; that is, during the No. h, which are 16. 10. But before making this calculation I will insert a Table to aid the inexperienced mathematician in the work.

It will be observed that for every 6' a planet moves in a day, it moves a fourth of a minute an hour. If it moves 8' a day, I figure it as though 6' and if there is a fraction I make it a whole minute. If it moves 10' a day I figure it as though 12' a day and if there is a fraction, reject it. Of course this method is not exact, but it will not vary more than two or three minutes, and this is near enough for the transits and delineation.

To find the distance a planet moves in 24 hours, observe the following rule: If the No. h. are less than 12, subtract the longitude of the previous day from the longitude on the day of the horoscope; but if more than 12, subtract the longitude of the day of the horoscope from the following day. The reason for this is because the moon moves with an increasing and decreasing motion, alternately. When a planet is retrograde subtract its longitude on the day of the horoscope, from the previous day, or the longitude of the following day, from the day of the horoscope, to find its motion in 24 hours. Also, when retrograde, if the No. h. are marked minus, add, and if plus, subtract, to find the longitude for the moment of the horoscope, for retrograde reverses everything.

In the case of my Nativity the No. h. are more than 12; therefore I subtract the longitudes on the day of the horoscope from the following day.

Looking in the Ephemeris for January 13th 1821 I see the longitude of the sun was $23^{\circ} 5'$ in Capricornus and the next day $23^{\circ} 6'$; hence, sun moved $61'$ in that 24 h. Then in 16h. 10m. he moved $41'$; the No. h. being marked *plus*, shows that this $41'$ must be added to the sun's longitude as given in the Ephemeris, which answers for my place of birth at 7. 20 a. m., which makes the sun's longitude at my birth $23^{\circ} 46'$ in Capricornus.

The moon is $24^{\circ} 10'$ in Taurus and on the 14th she is $7^{\circ} 49'$ in Gemini. Persons not familiar with mathematical astronomy are liable to subtract the $7^{\circ} 49'$ from the $24^{\circ} 10'$ to find how far the moon moved that day, but they should remember that Gemini is 30° farther from Aries than Taurus is, and therefore cannot be subtracted from Taurus.

By inspection it will be seen that the moon lacks but $5^{\circ} 50'$ of being out of Taurus and then she moved $7^{\circ} 49'$ into Gemini. So $5^{\circ} 50'$ plus $7^{\circ} 49'$ equal $13^{\circ} 39'$. Or I can subtract the upper from the lower in the Ephemeris, thus:

$$\begin{array}{r} \textcircled{C} \text{ long. Jan. 13th, } 24^{\circ} 8' 10'' \\ " " " 14th, \underline{7^{\circ} 49'} \\ 13^{\circ} 39' \end{array}$$

In subtracting the degree I did it as though 37° instead of 7° because Gemini is 30° greater than Taurus, or, as we say in arithmetic, it is a "higher

denomination," requiring 30° to make a sign, and therefore we borrow the 30.

When the moon moves just 12° a day, it moves half a degree an hour; then by taking half the No. h. we have the distance she moved at 12° a day. Half of 16h. 10m. equal 8h. 5m.. The time is thus converted into space. But the moon moved $1^{\circ} 39'$ more than 12° a day. This is 99' and we see by the Table this is a little more than 4' an hour. I multiply the 16h. 10m. by 4, equal 64 2-3', but as the moon moves more than 4' an hour at 99' a day I call it 65; which added to the $8^{\circ} 5'$ equal $9^{\circ} 10'$ as the longitude gained from the moment of the N-k till the moment of birth, and which must be added to the moon's longitude on the 18th of Jan. thus: $24^{\circ} 10'$ plus $9^{\circ} 10'$ equal $33^{\circ} 20'$. But as Taurus has only 30° it is evident that the moon had transited out of Taurus at the time of birth. Then $33^{\circ} 20'$ minus 30° equal $3^{\circ} 20'$. As Gemini succeeds Taurus, it is evident that the moon is $3^{\circ} 20'$ in Gemini.

In my large Ephemeris the longitude of Uranus is given for every 6th day only, and therefore we first find how far Uranus moves in 6 days and first take the sixth of it for one day. Jan. 7th Uranus longitude was $0^{\circ} 1'$ in Capricornus, and the 13th it was $0^{\circ} 22'$ showing that it moved 21' in 6 days, or 3 1-2' a day. As the No. h. are more than half a

day I say it moves 2' on the 13th from the time of N-k to the time of birth which I add to its longitude making it $0^{\circ} 24'$ of Capricornus.

Saturn was moving 4' a day and so it required 6 hours to move 1'; then in 16h. 10m. he moved almost 3' which I add to the longitude given in the Ephemeris, making his place $7^{\circ} 52'$ of Aries,

In like manner I calculate all the other planets, but will give the process again by computing Mercury, which moves 87' a day, or a fraction over 3 1-2' an hour. I can find this 3' by a short and easy method without turning to the Table, thus:

Instead of dividing the 87' by 24 I divide by 12 and take half of the quotient, which gives the same result. Thus: I say 12 in 87 is contained 7 times and half of 7 is 3 1-2, leaving a small remainder. I multiply the No. h. by 3 1-2, thus: 3 times 16 are 48; *plus* half of 16 equal 56; but the No. h. are 10' more than 17 and Mercury moves a fraction over 3 1-2 an hour; so I add 3' more at a guess, making 59' and this 59' added to Mercury's longitude as given in the Ephemeris for the 13th of Jan. gives $7^{\circ} 8'$ of Capricornus.

These longitudes are likely to vary a little from exactness, but as before remarked they are near enough for a verbal delineation, and the method enables one to compute them mentally and in far less time than with pencil and paper.

Yet in calculating the moon I would advise one to write down half the number of hours, and then add to it for the excess that the moon moves above 12° a day. When the moon moves less than 12° a day, still take half the No. h. and then calculate for the minutes less than 12° a day which must be subtracted. Thus:

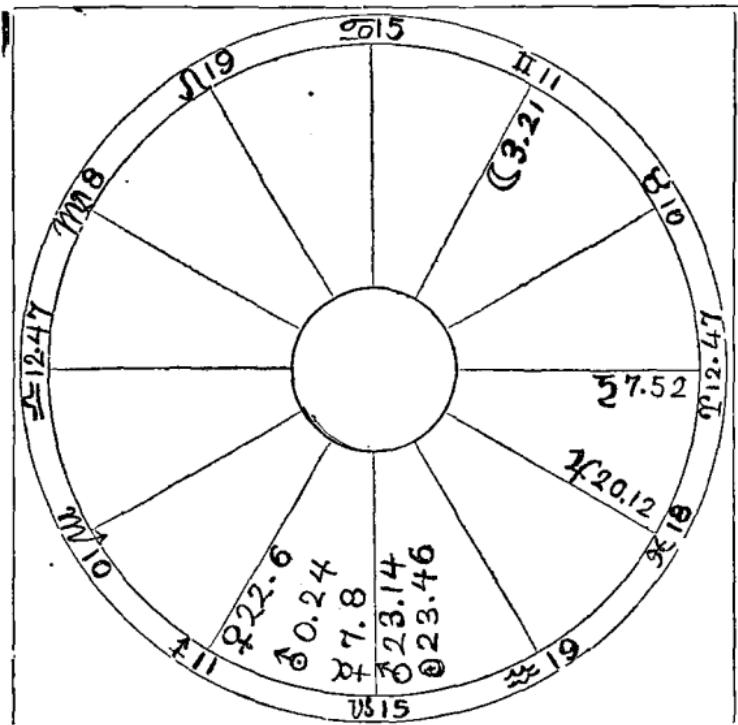
The moon moves $11^{\circ} 46'$ a day; how far will she move in 9h. 46m.? Half of 9h. 46m. equal $4^{\circ} 53'$; the moon moves $14'$ a day less than 12° ; $14'$ a day is half a minute an hour, and for 6h. it is $4^{\circ} 1-2'$, but I call it $5'$ because $14'$ a day is a fraction more than half a minute an hour. Then for the 46m. at half a minute an hour it would be more than a fourth of a minute and I call it a minute, or reject it altogether, it does not matter much which. Suppose it is rejected, then the $5'$ subtracted from $4^{\circ} 53'$ leaves $4^{\circ} 48'$ as the distance the moon moved in 9h. 46m. when moving $11^{\circ} 46'$ a day.

On page 102 the horoscope is inserted with the planets therin, but want of space in this number of the PRIMER prevent me from explaining the rule for inserting them.

PROF. W. H. CHANEY'S NATIVITY.

THE HOROSCOPE.

1821 Jan. 13. }	Data.	S. T. at noon	19. 32
11. 30 p. m. }		+ " since "	2
7. 20 = N-k.		+ time past "	11. 30
16. 10 = No. h.		S. T. at birth	7. 04



Born in a log cabin, in a forest of Maine, town of Chesterville, and Franklin county.

PART 4.

PRIMER OF ASTROLOGY.

CHAPTER IX.—*Continued.*

EXAMPLE FOR MAKING A HOROSCOPE.

Resuming the work on my horoscope we will collect the planets, with their longitudes computed for the moment of birth and write them down for the convenience of inserting them on the cusps, as follows:

○	.....	23	VS	46
C	.....	3	II	21
⊕	.....	0	VS	24
☿	.....	7	♀	52
♃	.....	20	※	12
♂	.....	23	VS	14
♀	.....	22	♀	6
♂	.....	7	VS	8

It now only remains for me to insert the planets in the horoscope and then it is complete. I must keep in mind that the planets move through the Zodiac in the order of the signs, and looking at the horoscope I see that they move from right to left while above the horizon, (that is, a line drawn through the horoscope along the cusps of the 1st and 7th house,) and from left to right while below the horizon.

Furthermore, I observe that each cusp has a given longitude, that is, a sign and degree, the Ascendant and Descendant having also minutes, and that the planets have a sign, degree and minute of longitude. Therefore the planets must be placed before or after the cusp, according as their longitude is less or greater; if less than the cusp, it shows that it has not reached the cusp and must be placed before it; if greater, it has crossed the cusp and must be placed after it. Consider the signs and cusps as stationary, with the planets moving around, all the time, in the same direction, and although such is not the case, yet it will aid in inserting the planets,

~~If~~ If a planet is retrograde, disregard the retrograde entirely, while inserting the planets in the horoscope.

Looking at the list of planets I see that the sun, Uranus, Mars and Mercury are in Capricornus; the sun and Mars have greater longitude than the cusp which has Capricornus on it, and therefore have crossed it; Mars has less longitude than the sun and must be placed behind the sun; Uranus and Mercury have not reached the cusp, but Mercury is ahead and must be so placed.

The moon has less longitude than the cusp with Gemini on it and has not crossed; so I place

it accordingly. The same also applies to Saturn. Jupiter and Venus have both crossed and are so placed. The horoscope is now completed.

Several have written me asking why I omit the Part of Fortune and the Dragon's Head and Tail from the horoscope. I might in turn ask them why insert them? But I am confident that they could give no better reason than to say that Raphael is their authority, for I defy any one to show that either of this trinity of myths has any more effect in a Nativity than the prayer of a Chinaman has on his Joss. Yet a Chinaman has great faith in praying to his heathen idol, because he was so taught, and the student of Raphael can give no better reason. The fool's curriculum is based on *belief* and *authority*; that of the philosopher on *knowledge* and *verification*.

I have heretofore spoken of the "new aspects" and platic orbs of the planets as inventions to account for events not otherwise provided for in astrology, before the discovery of Uranus and Neptune. Still, they would occasionally discover that a link was missing, and then was born the Part of Fortune and Dragon's Head and Tail. Triplets, you see, a Witch for their mother and a Fortuneteller for their father.

The Part of Fortune is a point in the horoscope which is the same distance from the moon

that the Ascendant is from the sun, both being computed by either longitude or R. A. It is very handy to have something "to lay things to," as the boy said of cats, "for they are dumb brutes and can't deny it." When a good event occurs and you fail to discover a good aspect among the planets, say the Part of Fortune caused it. Or if it is evil, lay all the blame on the same nonentity and it will not talk back.

I always contended that something could not be made out of nothing until I heard of Jim Cross and the Part of Fortune—now I give it up.

The Dragon's Head, or Ascending Node, is a point in the ecliptic where the moon crosses from south to north latitude; the Dragon's Tail, Descending Node, is where the moon crosses from north to south latitude. Both are myths in astrology, and cannot cause anything unless *nothing can cause something*.

CHAPTER X.

TO READ A HOROSCOPE.

We come now to the all important particular—the reading of the horoscope. But I must admonish the reader that unless the data of birth has been approximately given, and the prelimi-

nary calculations correctly made, the failures in reading are likely to be as numerous as the successful hits. Furthermore, as my disciple, he must not have the "new aspects," nor wide orbs, nor dragon's head or tail, nor part of fortune, as scape goats for his mistakes.

At the moment of my birth the sign Libra, which Venus rules, was rising on the eastern horizon; therefore Venus is my significator, or "ruling planet," as it is popularly styled. All the planets save the moon were below the horizon, and hence the moon has much more significance in reading the horoscope than if other planets had also been above the horizon.

Saturn was on the cusp of the 7th house, within orb of opposition to the cusp of the Ascendant, and therefore his indications are powerful, not only specially, but generally, as regards all the peculiarities of my life and its events. To read this horoscope, according to the popular methods, as taught in the books, would describe John Doe, Santa Claus, or any other man, about as correctly as it would your humble servant.

Recently the *Sunday Star Sayings*, of this city, opened an Astrological department, requesting data of birth to be sent for delineation. Evidently the astrologer is a scientific man, although I have no idea who he is, unless he is the same

who writes for the *N. Y. Sunday Mercury*. At any rate, we decided to test him, and so Ada Deeley sent him my true data of birth, calling me "Rev. G. W. Wallace," although my experience as a clergyman has been brief, and not very brilliant.

On Feb. 16th, 1890, a short delineation was published, and although not exactly correct, I give the astrologer credit for having worked correctly, according to popular rules. I will copy the sketch in full, occasionally interpolating in parentheses, such comments as the occasion seems to require:

A lady of Clark avenue sends this: "I would be much pleased to have a delineation of the data of birth enclosed. Rev. G. W. W., born in latitude $44^{\circ} 30'$ north, longitude 70° west, 1821, Jan. 13th at 11, 31 p. m." The birthplace is a little northwest of Augusta, Maine., and the equinoctial sign Libra ascended, with Venus, his significator, in the sign Sagittary, indicating, with other cognate testimony, quite a nice looking man, (Saturn in opposition to the Ascendant spoiled my beauty and broke my heart,) of rather a slender build, (just so; my usual weight is 200, and have weighed 220 lbs.) with a remarkably irrasible temper, combined with a forgiving nature, (that's so; I once waited 17 years to get even with a man who used to knock me down and beat me when a boy, then gave him a tremendous whipping, which is always my style of forgiving one who wrongs me,) a generosity allied to impulsiveness. (I am so close and saving that people often call me "stingy old Chaney.)

He was necessarily a proud, self-conscious man, (not a bit of it; my friends frequently rebuke me for my lack of pride, for I have always felt that I was not as good as most people, and if left to myself inclined to be slovenly,) of sarcastic utterance, (that is a good hit, for sarcasm is my "strong suit,") sinning and repenting, (great on sinning, but never repent till I get even on the other fellow,) inculcating what is right, yet according to his own judgment, often doing what is wrong. (Nothing can be more true; in my lectures I always strive to make people better, but will confess that I set them a poor example.)

His circumstances towards the close of life can hardly be satisfactory. He is ingenious and apprehensive, but must have often been mistaken in judgment. (There is no specific point in this remark as it will apply to every one except the Pope of Rome.) If married, his connubial life must have been curiously chequered with happiness and vexation. (No chequer about it, but all one color—dark—very dark; have been married five times, buried my first wife in less than three months after marriage and up to date have survived four separations.) There are no evidences of any remarkable intellectuality in this gentleman. (Korrekt as h—— hades; I often feel like kicking myself because I am such a fool.)

But to be serious. Probably there is no astrologer living who could have read my horoscope any better, if presented with the data under similar circumstances, for it is the most difficult to read of any that I ever saw. Besides, as heretofore stated, the popular rules were adopted in the

dark ages, before the discovery of Uranus, and are full of errors. Modern astrologers, instead of seeking for the truths of the science, as founded in Nature, study the opinions of the ancients and cite them as *authority*, just as a third-rate clergyman quotes the opinions of preachers, who lived centuries ago, as to the meaning of certain passages in the bible. This style of teaching astrology may do for conservative England, but should not satisfy young America.

As Luther sought to reconstruct the Christian religion, so I am aiming to reconstruct the rules of astrology, so that they may conform to the truth. To do this successfully, I must pursue my own course, for I cannot write in the style of others, much less think in their channels. The result is that not only enemies, but friends and admirers do not like my style. A cousin writes me that I am giving Raphael too much free advertising. A friend for whom I have a very warm admiration, writes: "I must still find fault with you for detracting so much from the evident worth of the PRIMER by inserting so much of your personal feeling toward such as Raphael." And so it goes, leaving me a sort of Ishmael, my hand against every man and every man's hand against me.

Yet there was never a reformer who did not

have a similar experience. Their boldness in rebuking error alarmed their friends. Even the Savior was more bitter in his denunciation of the frauds and hypocrites of his day, than I am. Besides, Raphael stands head and shoulders above any other astrologer living, in the opinion of the public, and I know of no way of correcting his errors so successfully as by exposing the fraud and villainy of the whole Raphael gang. When I show their dishonesty in a few particulars, I shall be able to shake public confidence in them as scientists.

In the winter of 1871-2 I sent from Salem, Oregon, \$100 to the R. R. (Raphael Robbers,) for astrological books. In due course of time I received a bill from them with the amount of postage and an assurance that the books had been mailed to me. But the books never came. Being suspicious of foul play, I had the Postmaster calculate the amount of postage by weighing duplicates of the books ordered, when I found that the postage would have amounted to more than \$4 above the sum charged in their bill. This was evidence conclusive that the books had never been sent, for men who think so much of money that they make astrological merchandise of "talismans, crystal balls, babies' cauls, etc," would not blunder in that way, cheating themselves.

Then my combattive and destructive nature was aroused. I wrote them that I thought of visiting England, and if I did, I would not dirty my hands with them, but would hire a negro to give them a flogging. In reply to this they stated that the books ordered were out of print, that the money had been used and at present they were unable to refund it. Then they capped the climax of impudence by getting on their dignity, and saying they had no respect for a man who "lost his temper when he lost his money."

I have their letter yet, and published this extract in the Preface of my large Ephemeris, in 1877, sending the same to them, as I shall this screed. They replied that if they had me in England they would imprison me for libel. I answered that they might, for by English law "the greater the truth, the greater the libel;" but in America the truth of the alleged libel was always a justification.

In 1880 Roffe and Co., 11 Bromfield st., Boston, wrote for a copy of my Ephemeris, saying they had an order for it and asking what commission I would allow them on the sale. I sent it, and like the idiot that I am in finance, said they knew better than I did what it was worth and to take out whatever commission was right.

They took out \$15, which I thought rather high for handling a single book and wrote them that I could not furnish any more at that rate, but would allow them \$5 on each book they sold.

Afterwards they wrote for two more copies. I sent them, saying that if they were not willing to handle them at \$5 a copy to return them at my expense. They never returned them, but refused to settle without deducting \$20 commission on the two, and they still retain the money.

They also charged me \$3. 75 for vol. II, Pearce's Text-Book, which they were to send when published. After waiting several years, and the publication not appearing, I asked them to return the \$3. 75, but they refused, and still refuse to send the book, although it was published about a year ago. I have the documents to prove all these statements. Now Roffe and Co. are hand-in-glove with the Raphael Robbers, according to Darwin's law of "natural selection," for the owl never mates with the eagle, and of course all these parties are my bitter enemies.

No doubt many readers will think this episode foreign to the subject of reading a horoscope and yet I deem it applicable, as well as highly important. The frequency with which I have projected my individuality into this work has not been without a legitimate motive. There is no

method whereby one can judge of the merits and demerits of a stranger, half so satisfactory as to know the events of his life and how he has conducted himself in both prosperity and adversity. Witnesses who testify for and against him may lie and mislead, but circumstances show what the man really is.

I consider my life a wreck, having proved a failure in everything except in the pursuit of knowledge, and now here comes an astrologer who "can see no evidences of any remarkable intellectuality" in me. Thus perishes my last hope of distinction. So I have no vanities, no selfesteem to cramp my pen, and am willing to put the worst side out. Then, when I give the delineation of my horoscope, the student will more readily understand the testimonies which indicate me as one of the strangest of mortals.

Having learned the testimonies which denote all these eccentricities, and which cannot be found in any other work, then, when one or more of them are found in a common Nativity, the student will understand it and not make such errors as the Professor who honestly thought I had a feeble intellect.

Pursuing this line of teaching, for I must teach in my own way, before I begin a regular delineation, I will insert an astrological sketch

of my Nativity which I published in "Astrological Definitions," in 1872, interpolating parenthetical comments by way of more full explanation:

MY HOROSCOPE.

This has been published merely for the purpose of illustrating the science, and I will now add a few words by way of delineation.

All the planets under the earth, save the Moon, shows the first half of life dark, discouraging and unsuccessful. The affliction in the fourth indicates that "the end of the matter" will never be brilliant, and always unlucky with real estate, (although I never owned any except in a grave yard.) Saturn on the seventh provides me most abundantly with bitter, public enemies. Besides, he makes it evil for marriage; I have buried one wife, been divorced, and for three years have been detained by circumstances from my present wife, one of the best of women, as well as a very talented artist. Thus Astrology is verified.

(I wrote this paragraph in Salem, Oregon, expecting to start for New York but was still detained another year, and finally succeeded in reaching San Francisco in October, 1873, where my pocket was picked, leaving me among strangers, without a dollar. A gentleman advanced money to hire Dashaway hall and pay advertising for a course of eight lectures on Astro-Theology, on condition that I would share the profits equally with him. This gave me a start again.

I spent the winter in San Jose, lecturing, teaching and practicing astrology, and had an eight-days debate with Elder Miles Grant, the great Second Adventist of Boston. By May, 1874, I had saved money enough to return east, but just before starting, received an anonymous letter from my wife—I feel sure she wrote it—stating that she was divorced and could marry again, but if I ever married again she would have me imprisoned.

This aroused my ire and on June 11th, 1874—three weeks later—I took another wife. We lived together till June 3d 1875—almost a year—then separated.

In Feb. 1880 I tried marriage for the fifth, and I think the last time. This wife was a very intellectual and accomplished lady, having a brother who is a millionaire. I had taught her astrology years before, and she fully realized the risk she would run. One day she remarked: "I am afraid to try where so many have failed." But she concluded to risk it and we lived together till September 9th, 1886.

In August, 1889 she obtained her divorce. It is nobody's business why we separated, nor have I a word to say against any woman who has been my wife. I consider any man a coward and sneak who will try to injure the woman who has borne

his name, no matter if she has been in the wrong, for it is ten to one that he has been equally so.

Mercury in a cardinal sign, joined by Uranus, gives me an odd, versatile, original mind, while the moon, in a scientific sign, on the cusp of the House of Science, in sextile to Saturn, denoting mathematics, shows an intellect above average. My last years of life will be the best, yet I can never be very popular or have much wealth. Nor will life ever prove successful long at a time.

With "movable" signs on the four cardinal houses, and the moon, (the synonym for change,) so strong, Astrology indicates that I am a restless, unsettled person, ever ready to move and make changes. Well, I was brought up in the fear of God and a big stick, and early and often flogged for the good of my soul. From nine until fifteen went to live with seven different men till twenty-one, but always ran away; worked on a farm, with a threshing machine, in a saw-mill, and experienced religion twice; worked at carpenter's trade, went to sea two years, nine months off board a man-of-war and then deserted; taught school, clerked and kept books; practiced law ten years, edited half-a-dozen different newspapers; wrote novels and poetry; have been Whig, Democrat and Native American; was sprinkled by the Congregationalist in infancy, joined the Methodist in youth, and later the Baptist who put me "all under" for fear the sprinkling did not take; have long since given up politics and religion; am now simply a detested Astrologer, and wondering what I shall be at the next change.

CHAPTER XI.

READING MY OWN HOROSCOPE.

PERSONAL APPEARANCE.

The sign Libra denotes one above medium height, and indicates more personal beauty than any other sign, (See Part 2, page 55) but this must not be relied upon as my description. Venus, the significator, with her position and aspects must be considered as a modifying factor. Venus is in Sagittarius, which denotes a stouter and heavier person than Libra. Besides, she is in close quartile with Jupiter and he is in a watery sign, denoting a still stouter person-

True, the aspect between Venus and Jupiter is evil, but that does not change the indication of fleshiness, which is always denoted by a watery sign. Allowance must always be made for the position and aspects of the moon, *in all cases*, but more especially in this Nativity, because the only planet above the earth.

The moon in Gemini denotes a tall person, (I am 5 feet 9 1-2 inches.) and her sextile to Saturn is very important, for except the moon,

Saturn is elevated above all the other planets, is in opposition to the Ascendant and on the cusp of a cardinal house. Saturn is also in close quartile with Mercury, ruler of intellect, and Mercury is in the celestial house, [sign of the Zodiac,] which Saturn rules. The power of the brain, or the lack of power, gives shape to the head and form to the features; therefore Mercury joins the configuration in denoting the personal appearance. Saturn denotes a large head, even when the brain is not powerful, with small eyes, angular features and absence of beauty. This, joined to the beauty denoted by Venus and Libra, describes my head and face quite correctly. Saturn being in Aries, which rules the head, and in his fall, the indication of evil is much greater.

In this horoscope, Saturn denotes a cold, unfeeling, cruel, revengeful nature, mingled with the rashness and impetuosity denoted by his position in the house of Mars, and these conflicting testimonies must be mingled with the tenderness and amiability denoted by Venus and Libra, giving that cast of countenance which enabled Dr. Simms, the distinguished physiologist, to read me very accurately, before a large audience, not knowing that I was the "great unaccountable."

Saturn is the symbol of age, deified as the

God of Time, denoting a stoop of the shoulders, or bowing forward of the head, even in youth, and often deformity, such as spinal curviture, hunchback, etc. I have the stoop and "down look," peculiar to Saturn, which greatly detracts from the elegant form of the pure Libra man.

I can remember being called "Tow Head," on account of the whiteness of my hair, when a boy, but when Saturn got in his work, my hair turned to a jet black. At 13 I weighed 134 lbs; at 15 my weight was 171 lbs., and at 20 it had increased to 200. But by the excessive use of tobacco I reduced it to about 185 for many years. I quit tobacco in March 1874, and have since run beyond 200. I found gray hairs in my head at 17, and at 31 was quite gray. Saturn in Aries denotes some ailment for the head, yet the student must not predict gray hair early in life from this testimony, for the astrologer cannot point out precisely what the evil will be, with Saturn in Aries.

Thus it will be seen that by a careful and critical observation of all the testimonies, the configurations of the heavenly bodies, at my birth, indicated with a fair degree of accuracy, my unsymmetrical and lumpy appearance, which is a trifle different from what the *Star Sayings* astrologer has given me. Furthermore, a glance

at my picture, which is from a photo and a very good likeness, (except a trifle flattering, for the artist required me to hold up my head, which is not natural,) shows the heavy brow, small, sunken eyes, and angular features of Saturn, more than the beauty and elegance of Venus. It is important for the student to observe these modifications, for the books heretofore published, fail to explain, in a clear manner, how the aspects of the other planets modify the indications of the Significator, or ruling planet.

Nevertheless, the student must not conclude that Saturn has smothered out the indications of Venus. In my normal state my voice is smooth and flowing, my appearance quite youthful for one in his seventieth year, with a genial laugh, inclined to be witty and humorous and considered quite amiable in disposition. But when angered all this sunshine vanishes. My voice is loud and harsh, my features become rigid, my little eyes are set and seem to glare with the fierceness of a demon more than a human.

Saturn alone, from his position and aspects, does not denote this evil phase of my appearance. There are four other planets disposed by Saturn, that is, they are in Capricornus, which Saturn rules, and in a small degree partake of the nature of Saturn, mingled with their own natures,

and their aspects. Mars and the sun are in close conjunction, both of a fiery nature; Jupiter is in close sextile with both, and Venus is in close quartile with Jupiter. Thus the circuit is complete. I do not count at all on the semi-sextile of Venus with Mars and the sun, for I have never found much, if any, force, in the semi-sextile unless there were auxiliary testimonies. Persons who have been accustomed to see me only in my gracious mood, are astounded at my appearance when angry. Some have told me that when they have seen me drawing a knife or revolver that I looked more like an incarnate fiend than an earthly mortal.

Another peculiarity in my appearance is the smallness of my face as compared with my avoirdupois, for I have seen persons who weighed less than 150 pounds whose faces were larger. This deformity may be ascribed in part to my student life, which chisels off the excess of flesh in the face, but not entirely. Capricornus denotes a long, thin face and Pisces a full face. Mine is short and thin, being a compromise between Pisces and Capricornus, the indications of Pisces being directed to my significator by the close quartile of Jupiter.

Finally, it will be observed that my eyes are situated near midway between my chin and the

top of my head, while a very large proportion of the brain is in front of a vertical line drawn from ear to ear. I have never noticed these deformities in the head of an idiot, and under the title of "Mental Faculties" shall refer to the matter again.

From these brief remarks the student will perceive the importance of first making himself familiar with *all* the rudimentary principles of the science, before attempting to read a horoscope. No doubt the *star sayings* astrologer ranks among the best in this country or England; and moreover, he has, in a vague manner, made many good hits; but the discrepancies are so numerous that a skeptic might cite the failures as an evidence that the science is unreliable, declaring that the hits were accidental, or of that general character that they would apply to a majority of men.

CHAPTER XII.

READING MY OWN HOROSCOPE.

[*Continued.*]

LIFE AND HEALTH.

The Egyptian, Claudius Ptolemy, who flourished at the beginning of the second century, designated the 1st house, 7th, 9th, 10th and first half of the 11th as "hylegiacal places," by which he meant for the student to look first in these places and if the sun was found in one of them to take the sun as hyleg, which has been translated, "giver of life," and means *the indicator of a strong constitution, long life, etc., or otherwise*, according as the hyleg is strong or weak.

If the sun was not in a hylegiacal place, and the moon was, then select the moon, and if neither of the luminaries was in a hylegiacal place, then take the cusp of the Ascendant, giving preference in the order stated. So far as my experience extends I have no criticisms to make on this statement and adopt it as a rule.

In my horoscope, as now made, $12^{\circ} 47'$ of Libra must be selected as the hyleg, because neither

the sun or moon is found in a hylegiacal place. The hyleg has the opposition of Saturn, but so near the extremity of the 5° orb from the cusp that the affliction is very light, denoting a strong constitution, but little illness and extra long life.

The factors in this conclusion are in part found in the slight affliction by Saturn, but more especially in the testimonies that there are no malignant planets in the signs denoting the vital organs, namely, lungs, heart and stomach. Had Saturn been posited in Leo, I should have had organic disease of the heart; if in Virgo, dyspepsia; if in Cancer, consumption, and had either been case, I should not have lived to be so old as I probably shall.

Saturn is in Aries which rules the head; therefore ailments for the head are indicated.

Now for the facts. From my earliest recollection until thirty, I had periodical attacks of the sick headache, which would utterly prostrate me. At seventeen my teeth began to decay and I lost several before cutting my "wisdom teeth." At that age I also found a gray hair in my head, and by thirty half my hair was gray. Soon after, I began to be "near-sighted." At forty, nearly all my teeth were gone, my hair almost white, and I discovered that my eyes were not mates, the focus for my right eye being

at the distance of about fourteen inches, while that of the left was less than nine inches. When fifty-four, my hearing began to fail and now I am unable to understand a word of ordinary conversation.

When twenty-five, while a student at law in Wheeling, W. Va., I received a blow on the top of the head which caused concussion of the brain and for a long time I was thought to be dangerously injured. All my life my head has been my greatest trouble. I could never have a fight without getting my eyes blacked, and when I fell, it was always the head that collided with the earth.

The testimony of the sun afflicted by the conjunction of Mars in a cardinal house, the 4th, which is the house of the father, denotes trouble for the eyes, and danger of blindness. The sun or moon, even if not hyleg, afflicted in either of the cardinal houses, denotes diseases or, injuries to the eyes. So this testimony must be considered with that of Saturn in Aries. Mars being posited in Capricornus denotes accidents to the knees and lower limbs, and I have had both accidents and diseases. My knee joints have been so stiff for years that I can hardly get my hands to my feet or climb into a wagon,

An additional testimony of this trouble is

found in the presence of Uranus in Capricornus, which indicates odd and acute ailments. When nine years old I was pushed into the water, at noon, by a school mate—it was the "January thaw," in Maine, and the water came up to my knees and as a punishment for having wet feet the teacher compelled me to sit away from the stove, by a hole in the floor, all the afternoon.

The weather turned suddenly cold, and when dismissed, my trousers were frozen and I was unable to walk. Severe illness followed and for many days they despaired of my life, or expected I would be permanently crippled. My joints were stiffened and never regained their suppleness. Of late years this trouble has greatly increased. But I am strongly of the opinion that the sextile of Jupiter to Mars and the sun, indicates that the evil which Mars denotes will be less than usual under a similar aspect.

The opposition of Saturn to the cusp of the Ascendant, where Libra is, which rules the kidneys and that portion of the body, shows ailments in that region. When a boy a man knocked me down and kicked me in the side, injuring my ribs, and of late years my kidneys trouble me.

The old astrologers teach that the mundane houses rule the different parts of the body the same as the celestial houses or signs of the zodiac.

Thus, the 1st house corresponds to Aries and rules the head; the 2d to Taurus and rules the neck; the 3d to Gemini and rules the chest; the 4th to Cancer and rules the lungs, and so on, regardless of what sign is on the cusp.

I think there is a grain of truth in this, but am rather skeptical on the subject. If true, then Mars in my 4th, afflicting the sun, would signify diseases in the region of the lungs, which I have never had, save a severe cold, such as is common to all persons. The 7th house would correspond to Libra, and Saturn being on the cusp, disease of the kidneys would be indicated, but there is the testimony of Saturn in opposition to the hyleg indicating that, so the other indication is not necessary.

I recommend that students make careful observations concerning the mundane houses before they venture predictions on them as testimonies. It is better to give one page correctly, in a delineation, than to give ten pages, one-half of which is incorrect.

PART 5.

PRIMER OF ASTROLOGY.

CHAPTER XIII.

READING MY OWN HOROSCOPE.

[*Continued.*]

MENTAL FACULTIES.

All astrologers are agreed that Mercury bears chief rule over the intellect, and that the intellect is strong or weak, according to the position and aspects of Mercury, but there is a great disagreement between them when it comes to deciding what testimonies signify strength and what weakness.

The word Zodiac, derived from the Greek, signifies "a circle of beasts," and formerly beasts were used as symbols for each of the Zodiaca signs. The symbol for Gemini was two kids, but in course of time they observed that persons born with the third 30° of the Zodiac, reckoned from the first point of Aries, on the Ascendant, were more humane and intellectual than a beast would

properly signify. Then the Twins were substituted for the kids. All this was before there was any Alphabet known, and when hieroglyphics were employed, instead of words to express ideas.

Subsequently, when they had a written language, the poets, and writers of fiction, named the Twins "Castor and Pollux," and drawing upon imagination for their facts, gave a glowing account of the supernatural origin of "the two loving brothers," as though they had been real persons instead of myths like Santa Claus, or the Goddess of Liberty which is stamped on our coin, etc. These writings, subsequent generations accepted as historical truths.

In like manner the place of the beast, which represented the harvest, and is now symbolized by the Virgin, holding five heads of wheat in her hand, symbolical of the five winter months against which provisions must be stored, was given to Virgo, the heavenly Virgin, who is prominent in every religion invented till the time of Mohammed.

For similar reasons the amphibious beast that filled the eleventh division of 30° , was displaced and a man, represented as pouring water from an urn symbolical of the rainy period while the sun was transiting there, or in higher latitudes, "the January thaw," was substituted and named "Aquarius," meaning "the waterman."

Conceiving that only the first half of Sagittarius indicated humane and intellectual persons, and observing that the person born with this division of the Zodiac at the east was fond of a horse and hunting the centaur was invented. They made him as a hieroglyphic because they had no Alphabet to express in words, the different indications of the sign. My experience has proved that persons born when Sagittarius was rising answered very well to all the particulars except that I could never discover any difference in the intellect whether the first half or last half of the sign was rising.

Furthermore, Mercury is in his detriment in Sagittarius, denoting a *feeble* intellect, as the English teach, and yet the first half of the sign is scientific, denoting a *powerful* intellect. Here is a self-contradiction which has been taught for centuries, because modern authors rely upon *authorities* instead of searching for the truth.

No matter which half of Sagittarius was rising at ones birth, I have always found those persons are humane, jovial, intellectual and fond of horses, unless there were evil aspects indicating the contrary. I therefore recommend the student to disregard these distinctions. They may do well enough for conservative England, but Young America cares more for truth than for doubtful fossils of antiquity, or the prestige of the inherited titles from a corrupt and enervate aristocracy.

The truth is, I have found persons possessed of fine intellects who were born when Mercury was in Pisces, its place of detriment and fall; on the other hand I found a man in the state of Washington who was born with Mercury in Virgo, a scientific sign, its own house and exaltation.

His data was sent up to me for public delineation, at the close of my lecture. I was then young in the science and described him as having a most brilliant intellect. He rose and stated that my description was exactly right. The audience roared with laughter, for the fellow's intellect was so feeble that he did not have sense enough to know that he was a fool.

Another superstition which has been perpetuated since the days of Ptolemy is, that Mercury in conjunction with the sun, called "combust," is "burnt up" and the intellect must be very feeble. I have found this aspect in scores of the horoscopes of brilliant men and women, notably in those of Rev. Henry Ward Beecher and T. A. Edison, the great American Inventor. Yet at this day there are astrologers in both England and America who would pronounce these men as having poor intellects not knowing who they were and judging by the popular rules.

I have found more disagreement between astrologers as to the rules for judging intellect than all

other points combined, and account for it thusly:

I notice that generally those persons who have heads indicating immorality, and other evil tendencies, are loud in their denunciations of phrenology. Furthermore, before the discovery of the art of printing, when a schism sprang up among the early and very ignorant "Church Fathers," a new "Gospel," or "Epistle," would appear in which the doctrine, as stated by one of the disputing parties, would be plainly announced as a "divine revelation."

These new sacred (?) books were usually found something in the same manner in which Joe Smith found the plates on which were engraved the text of the Book of Mormon. In this manner hundreds of books appeared.

When Constantine espoused the cause of Christianity, these books had become so numerous that they were a great nuisance, *for no one could distinguish between the genuine and spurious!*

Constantine settled the matter, however, and ordered the spurious to be burned, threatening the penalty of death upon all who should dare to preserve any from the flames. But scores of them were secreted and have since been published, called the "Apochryphal New Testament."

This lesson teaches that men will pervert eve_n

The Word of God in order to accomplish their own selfish ends. They will also deny the truth when it tends to their injury. All men who set up as teachers are anxious to appear wise, except myself, and it is only in the last few years that I have so far conquered the "old Adam" in me that I am resigned to be scoffed at, abused and lied about in order that truth may be established.

Astrologers who were puffed up with pride, anxious to be lionized for their gigantic intellects, studied their horoscopes and grouping the aspects, declared that these were testimonies of a very superior intellect.

Probably the emotion next in power to self-love, is hatred of a rival. If two brothers fall in love with the same woman, even though she encourages neither, they will seek out pretexts for killing each other, so strong is the hatred of a rival.

I can therefore fancy that when Mr. Astrologer had doctored the rules to make himelf great, his next thought was to belittle his rival. Then he grouped the aspects in his rival's horoscope and announced that such testimonies showed a very poor intellect. The rabble that was friendly to him, endorsed his new science and thus it became established. In return, his rival paid him

in his own coin and his friends endorsed him, reminding one of Pope's words :

"Heaven was built on pride and hell on spite."

Another avenue for the introduction of errors and discrepancies may be traced to the speculations of men whose practice was very limited. Kepler affords a good example. He suggested "new aspects" merely as hypotheses, but others put them forth as scientific facts, and the worst of it was, were able to prove them to be facts on account of the indiarubber tenacity of the plastic orbs. This loose method of reasoning was entirely overlooked for centuries, and even now I expect to be abused for presuming to criticise so great a man as Kepler. Therefore I will record a specimen of the sophistry with which I am at war :

A quartile is evil; therefore half a quartile is half as evil; furthermore, a quartile and a half must necessarily be evil.

Again: A sextile is fortunate; therefore a half-sextile is half as fortunate; furthermore, a sextile and a half must be fortunate. But lo! a sextile and a half is exactly a quartile: Ergo, good and evil are the same. This sort of logic is worthy only of the tenant of a cradle or a mad house.

Some spiteful astrologer may accuse me of *also* falsifying the rules of astrology in order to make

my horoscope show that my intellect is above average, but all who know me personally will testify that instead of trying to appear my best, I always put the worst side out, before strangers, so that I may improve in their opinion on acquaintance.

Furthermore ; there is my picture, made from a photograph, with instruction to produce as exact a likeness as possible, without the least shadow of flattery. Look at that from the stand points of phrenology and physiognomy—it plainly shows one who has more than average intellect. Examine my literary and scientific labors—the conclusion is the same. Yet describe me from my horoscope, according to English rules, and I am rather lacking in brain power. Then if their rules are correct, what becomes of me? I am simply a nondescript. Darwin might say that I have “no place in nature,” verifying the old deacon’s declaration when I was a boy, that I was “the devil’s unaccountable.”

CHAPTER XIV.

READING MY OWN HOROSCOPE.

[*Continued.*]

DISPOSITION.

No feature of my horoscope is more difficult to describe than my disposition. When Dr. Simms, the physiognomist, delineated me before an audience in Salem, Oregon, some one asked if I was easy to be persuaded from a course that I had once resolved upon, when the Doctor said :

"No, sir, you might as well try to turn Niagara up stream."

Dr. Wheeler, a phrenologist, gave me a public delineation in Ellsworth, Maine, not knowing who I was, when he said in substance:

"Here is a strange man with a strange disposition. He can be as tender as a child, or as brutal as a savage, according to his environments. He remembers a kindness like an Indian; he holds a grudge like an Indian; he will seek revenge like an Indian and in short, he looks like an Indian."

Perhaps I could say nothing myself that would offer a better clue to my strange disposition than the remarks of these gentlemen. If asked for an abstract description I should be as much puzzled as if asked the color of the chameleon. Besides, assertions of my own would have less weight than the opinions of others, or the statement of facts in my life history. I have alluded to the grudge of seventeen years which I held against the man who kicked me in the side when I was a boy, but a still more remarkable case occurred at a later period.

In 1875 I was intending to return east, after separating from my wife in San Francisco, when Abigail Scott Duniway, of Portland, Oregon, published in her paper, *The New Northwest*, that I was a wife-beater, had compelled my wife to take in washing far my support and had finally turned her out of doors, pennyless.

I wrote Mrs. Duniway the facts in the case substantiated by the testimony of T. G. Cocherell, Chief of Police, and asked her to publish them. She refused. I turned about, went back to Oregon and remained there ten years to prove by my life and conduct that she was a liar and slanderer.

She had borrowed \$500 of Mrs. Mc Caslin, of Salem; neglected to pay it; Mrs. Mc Caslin died,

and at the request of the guardian of the orphan children I brought suit on the note. She paid her lawyers, Caples and Mulkey, large sums of money to fight the case, and when driven to a corner, instructed them to demur to the complaint on the ground that more than six years had elapsed since giving the note. This was true; the debt was outlawed, and I knew it at the start, but I had it placed on record that to defraud the little orphans of money their mother had earned by keeping birds and running a sewing machine, she pleaded the statute of limitations at a time when she owned a nice house and lot in Portland.

I claim no credit for taking the part of these orphans, because I was influenced more by hatred for the Duniway than anything else.

While this suit was going on, hoping to prejudice the public against me, she published me as a "fraud and swindler," when I sued her for libel, and made things torrid for her till I left, when of course the case was dismissed, and I learn she was glad to so sell out and leave Oregon.

The Duniway was born with Scorpio rising. Mercury on the Ascendant and near the cusp. For craft, cunning and marvellous executive ability, I have rarely seen her equal. But in judgment and common sense she was greatly deficient. For instance:

Judge Prim, of Jacksonville, Oregon, a judge of the Supreme Court, refused to subscribe for her paper. Thinking to bulldoze him, and as a warning to others not to refuse, she began such vile, slanderous attacks upon him that it nearly broke the heart of his beautiful daughter, who was the belle of the city. This angered the young men of the place and when next the Duniway came there to lecture, they pelted her with stale eggs, utterly regardless of her sex. I will publish her horoscope and Nativity either in the ANNUAL, or Magazine, if we succeed in getting it started.

I am aware that the mere fact of this reference to the Duniway is an evidence of a vindictive disposition, but as I am working for science, and not to laud myself, I could not conscientiously suppress it. The student now has ample evidence to convince him of the absurdity of trying to describe me from the testimonies: 1. Of Libra rising. 2. Of having Venus for signifier. 3. Venus disposed of by Jupiter. 4. The moon in a humane sign, unafflicted and in good aspect with Saturn.

These testimonies, it is true, would show me as an elegant, refined, gentle, loving man. Astrologers would see these at a glance and think me a harmless sort of dude, rather than one with

a disposition more like a wild Indian than a white man. Probably my unsupported declaration as to my disposition would not have been credited, and therefore I have given facts which are notorious and can be easily verified. Now for the testimonies in my horoscope.

Mars and the sun, both fiery, are in close sextile with Jupiter, which in turn is in close quartile with Venus, my significator, and Venus in a fiery sign. Thus, Jupiter is the transmitter of the intensified, fiery indications of the sun and Mars. This is a testimony which I have been observing for years, and have found that even when the transmitter is a good planet, if he transmits by an evil aspect, the indication of evil is marked. I consider it far more powerful than "collection of light" or "translation of light." If the transmitter both receives and transmits the indication by a good aspect, it is very favorable. True, the English astrologer, in my case, would say that the semi-sextile of Venus to Mars and the sun *causes* me to be fiery, overlooking the fact that the semi-sextile is a good aspect and of but very little force.

The revenge and vindictiveness are indicated by Saturn: 1. His opposition to the Ascendant. 2. His very close quartile to Mercury, ruler of the mind. It is the peculiar combination

of the mental faculties which constitutes the disposition. Mercury disposed of by Saturn, in addition to the very severe affliction, plainly shows the stubborn, morose, gloomy indications of Saturn.

If the benefics had cast a friendly ray to Mercury, a gentler disposition would have been denoted. The moon sends a beneficent ray to Saturn, but he completes the circuit by transmitting it to Mercury by a malignant quartile. Thus, not only is the aspect evil, but the transmitter also.

The English astrologers would style the aspect between the moon and Mercury a "quincunx" and pronounce it very good. Why? Because Kepler said so. Humbug. Yet even Alfred J. Pearce adheres to the old fossil doctrine of the quincunx, although he has the good sense to reject its barbarous name and call it "150°."

CHAPTER XV.

READING MY OWN HOROSCOPE.

[*Continued.*]

FRIENDS AND ENEMIES.

The sun rules the house of friends and is very seriously afflicted by Mars. This testimony virtually denies friends altogether. But Jupiter in his domal dignity, in such close sextile to the sun, promises a few friends among the class denoted by Jupiter in his own house, such as the wealthy, influential, aristocratic, etc. But Jupiter is hidden away in a cadent house, as though ashamed to be friendly, and this quadrates quite correctly with my experience in the matter of friends.

Venus, my signifier, sends an evil ray to Jupiter, as though it was my fault that my high-toned friends are generally ashamed to acknowledge my acquaintance, and I suppose this is so. While in Oregon I enjoyed the friendship, *in private*, of U. S. Senators, Congressmen, Governors, Judges of the Supreme and lower Courts,

etc., but they were timid about recognizing me in public, except to salute me pleasantly. I helped many a one to his position, working in secret, but they dare not reward me openly, although in private they were my best and truest friends.

Mercury rules the house of secret enemies and suffers from almost an exact quartile of Saturn. This denotes secret enemies in abundance, especially such as are denoted by Mercury, namely, scientific and intellectual people. And it is a remarkable fact that all my life, nine out of ten of my secret enemies have been intellectual, but malicious people.

School teachers disliked me because I repudiated so much of science and philosophy that they believed true. Lawyers disliked me because I would not run in the old rut of "precedents," unjust laws, etc., but more especially because if employed to prosecute one of them I did not spare him any more than I would a common thief. Judge Hathaway, at Ellsworth, Maine, once stopt me in an argument to the jury to say:

"It is a filthy bird that fouls its own nest."

Astrologers hate me as the devil is alleged to hate holy water, and the very fact of my writing and publishing this work has made me scores of secret enemies, who are barking at my heels

and would bite if their courage was equal to their secret hatred.

Mars rules the house of public enemies, and as though that was not enough, Saturn is there, rendered more malicious by being in his fall. All my life I have been pursued by bitter, public enemies. Probably my combattiveness, and utter refusal to compromise on *anything*, (for I hold that a compromise implies a surrender of something that should be retained,) renders me an object of great abhorrence.

I refused to keep silent about "Boss" Tweed and his gang and the result was they chucked me into prison, as foreshadowed by my horoscope. The 12th is the house of imprisonment, of self-undoing, etc. Mercury rules it and is afflicted by Saturn. So "it had to come" as they say in Kentucky when two men meet and slay each other.

But I have given the dark side on the subject of friends and enemies. The sun rules the house of friends, and although so afflicted, yet Jupiter's indications are of far more power than those of Mars, and therefore I cannot be entirely friendless. The sun denotes exalted and influential persons and Jupiter the wealthy. Hence, I have *always* enjoyed the friendship and confidence of this class of people, yet the number

has been very small, and as before remarked, they have always been handicapped, which placed me in such a position that I felt myself an inferior. All this is indicated by the ray from Mars and the sun being transmitted by Jupiter through an evil aspect to my significator, the indication being direct and fortunate from the sun to Jupiter, which denotes the exalted friends.

But my millionaire brother-in-law always despised me, for he believed the Duniway slanders, or rather that was the reason he gave for disliking me, and the Duniway was delighted to think that her lies were believed by a man who hob-nobbed with Villard and went "cahoots" with the North Pacific in stealing the timber from Government land. But I got even with all of them and they do not understand how.

"For time at last sets all things even,
And if we do but watch the hour,
There never yet was human power,
Which could evade if unforgiven,
The patient search and vigil long,
Of him who treasures up a wrong."

CHAPTER XVI.

READING MY OWN HOROSCOPE.

[*Continued.*]

MORAL QUALITIES.

According to the popular rules of astrology I am very unfortunate under this head. Wilson, deemed by many, an astrological reformer, in his day, in speaking of Saturn, configurated with Mercury, and Mercury "ill disposed," thus sums up the traits of character:

"Malicious, cruel, treacherous, thieves, swindlers, forgers, pettifoggers, house-breakers, and every way base and infamous."

It will be seen that Mercury is disposed of by Saturn, (that is, Mercury is in Capricornus, which Saturn rules,) and in close quartile to Saturn. I have examined the horoscopes of scores of noted criminals, but never yet found one where Mercury was so "ill disposed" as in my own.

How sad to think that I am "every way base and infamous!" No wonder I have enemies.

No wonder Tweed had me put behind the bars. No wonder the Duniway hated me and that my model brother-in-law despised me, for they were all, especially the Duniway, as holy as the pharasee who thanked God that he was better than other men, or St. Judas who loved his lord so dearly that he kissed him as he winked at the officers.

To be serious. A portion of this is applicable to me, and is indicated by the square of Saturn to Mercury. When enraged, and reason no longer holds control, no man can be more malicious and cruel, not even a Kentuckian when "it has to come." But there is a sunny side to my nature, as shown by Venus and Libra, and when not angry I get faint if I attempt to pick out a splinter from under ones nail, and cannot bear to shed blood at all.

As for the other charges which the astrologers might make against me, judging from my horoscope, the only denial I have to offer is the history of my life. I have been prominently before the public for half a century and make no concealment of where I have been or where I have lived. Therefore I can do no more than refer to that history as evidence of the falsity of this doctrine, so far as I am concerned individually. But I have known many, among our

best men and women, who had Mercury more "ill disposed" than many a hardened criminal.

In my experience I have found that the moon bears chief rule over the propensities. [The English say "sensual" and I followed them blindly for years, as I have in many other particulars. The word "sensual" does not convey the true idea like "propensity," and besides, it conveys more than what is meant, for it would be an insult to talk to a pure and refined lady about her "sensual nature." She may have a propensity to be truthful, or to be false, etc. Therefore it is not insulting to speak of her propensities]

When I find the moon well posited, free from affliction and strongly fortified, I feel sure the person is not in danger of becoming degraded, no matter how much Mercury may suffer. Moreover, even the moon may be greatly debilitated and yet the person escape disgrace, provided there are other strong and favorable testimonies. I have known many such cases. How often we hear of a young man's fall who is really good and honorable, but of a weak and yielding nature. Temptation should never be placed in the way of such, for they cannot resist like an old hard-head, obstinate as a mule, who pulls off his coat and fights rather than drink a glass of whisky.

just to please somebody. I have fought sooner than be forced against my will and would do so again, old as I am.

But in the case of a young woman who has the moon and Venus both debilitated, it is far worse, for woman is more confiding than man. And how many of such are continually falling because of the sins of their parents. Or, put it as Raphael does—*the planets cause them to fall.* In either case they should be objects of pity, just as Jesus taught. But his *professed* followers of to-day understand these things far better than Jesus did, for they exile her and shun her like the plague-spot. Finding every door of decency closed against her, she has only to choose between death and degradation. Yet we are told that the Christianity of to-day is the same as that taught by Jesus. Perhaps it is, but I don't see it.

When a wolf is wounded, his companions put him out of his misery by killing and eating him. So, too, when a weak sister is morally wounded, every wolish biped seeks to put her out of her misery. How kind and affectionate!

The testimonies regarding moral qualities are greatly wanting in my horoscope. True, I have been a bad man, a dangerous man, but I will not seek refuge under the plea of moral weakness.

If I choose to do so, I can resist any and every propensity except to get angry when insulted, and I always managed to resist the anger if I thought the other fellow could whip me. But if I thought I was the best man, I would rage like a wild Indian. Of course there is no one else like me in this particular!

CHAPTER XVII.

READING MY OWN HOROSCOPE.

[*Continued.*]

BUSINESS OR PROFESSION.

No other question has proved so puzzling to me as to determine from the testimonies, explained by rules laid down in books, the business one is likely to pursue. The books direct that the planet in the Midheaven, (I know a boy in this city, William Phillips, with six planets between the cusps of the 10th and 11th houses,) and the one nearest the sun, (Pearce says: "making its oriental appearance nearest the sun," but does not say whether rising *before* or *after* the sun,) has the most influence over business or employment.

It so happens that each planet denotes a dozen or more kinds of business, and consequently these two planets alone would signify twenty or thirty kinds of employments. Besides, all other planets with these two, or aspecting them, must be considered, each giving a dozen or more significations, so that if all the planets join, the number of different kinds of business would amount to a hundred or more.

Now fancy an astrologer checking off the client's business from this long list till the latter becomes weary with the guesses and finally tells it. Then the astrologer will point to the list and say:

"Do you see? That's the very business I was about to say you would adopt—you see, here it is as plain as day."

I object to this sort of guessing as being no part of astrology, no matter whether Ptolemy or any one else suggested it. It is like the multiplicity of aspects sandwiched between orbs wide enough to cover two aspects without stretching.

Take my horoscope for instance. There is no planet in the Midheaven and Mars is nearest the sun. Therefore Mars alone must be signifier of my business, which, in a *general* sense, signifies military and naval matters and occupation

where fire and iron are much used. But to be specific I should be a general, or some officer, or a soldier of, and in, an army; or I might be a doctor, apothecary, surgeon, chemist, gunner, butcher, marshal, sargent, bailif, hangman, thief, slugger, smith, baker, armorer, watchmaker, tailor, cutler, barber, dyer, cook, carpenter, gamester, bear-ward, tanner, or currier, according as Mars may be strong or weak, for all come under Mars.

I have already given a partial list of the various kinds of business in which I have engaged; and it is singular that since I became a man I have not been engaged in *any* of these occupations, which it is alleged that Mars rules, except as a slugger. So it hits about as well as Raphael's weather predictions.

Based upon my own experience I find that the employment should agree with the indications of the signifier and planets strongest at birth, considering also the ruler of the Midheaven and any planet found therein.

The moon, which signifies the public, rules my Midheaven, is in a scientific sign, denoting a love of science, is applying to Saturn, transmitter to Mercury, in an earthy sign, ruled by Saturn who in turn rules agriculture. Well, I was born on a farm and spent my youth working as a farm

hand, save a short period when I did rough work at carpenter business, till I was eighteen. Since then I have been sailor, teacher, lawyer, poet, author, editor, lecturer, publisher, etc., the last of which are signified by the moon and Mercury.

Venus, my significator, denotes light and genteel employment, working with nice and fine tools, etc., signifying a modification of other kinds of work more than a specific business. Had Venus also been ruler of the Midheaven and strong, as well as significator; then she would signify a florist, decorator, dealer in ladies' goods, finishing, polishing, etc. But an aspect of Saturn neutralizes that, to a great extent, as I can can testify.

One need not be an astrologer to know that a coarse, slovenly woman, such as Saturn and Scorpio sometimes denote, does not engage in nice embroidery, flower work, etc., for she has no taste for the ornamental in that direction, even if Venus is ruler of the Midheaven.

On the other hand, a lady denoted by Venus, free from affliction, is neat and orderly about her house, fond of ornaments and all things beautiful. No matter how poor she may be, her children are clean, their clothes fit them, and when worn threadbare a patch is nicely sewed on, while the Saturn woman is the reverse in these things.

Saturn may rule the Midheaven, but still the Venus woman, or one who has Venus strong in her Nativity, will choose some nice, genteel employment, unless, as often happens, circumstances crowd her out of her natural groove.

I think if the student will carefully observe and reflect, he will come to the conclusion that our modern authors make a mistake in citing Claudius Ptolemy, who lived in Egypt and flourished nearly two thousand years ago, as authority to show what business or occupation Young America is likely to choose.

CHAPTER XVIII.

READING MY OWN HOROSCOPE.

[*Continued.*]

RICHES AND POVERTY.

Jupiter is the chief significator of wealth, yet even paupers and beggars have Jupiter in their horoscopes. Consequently all depends upon his position, dignities, aspects and whether or not the ruling planet. Usually those persons denoted by Jupiter become wealthy, but I have found

many marked exceptions to the rule. Sometimes a Jupiter man has the sun in the 2d house, and then even if born to wealth, he may die poor.

Furthermore, if a Saturn man has Jupiter on the Midheaven, unafflicted, the luminaries strong, he may become very wealthy. Any aspect between the moon and Jupiter is favorable for wealth, especially if either is in the 2d house. Jupiter retrograde at birth, I have found a far greater debility than if in his fall or detriment.

In my horoscope there is not even *one* testimony of wealth, and yet people are continually expressing astonishment that I am so poor. They often say:

“If I had your education, ability, and knowledge of astrology, I would soon be a millionaire.”

That shows their ignorance of astrology. If I should become wealthy, in my own right, that fact would disprove astrology. On the other hand, had Commodore Vanderbilt always remained poor, that fact would show that astrology is founded in error. I did not commence to study it till past forty-five, but up to that time was “angry every day” because I could not get rich. Since then I have learned that the ability to master science rarely enables one to become wealthy, while some, with very feeble intellects, amass a fortune.

A century ago there was a man named "Dexter," who flourished in Newburyport, Mass. He was very simple minded, called himself "Lord Dexter," and did many foolish things, yet they generally proved successful.

Some Boston merchants one day told him that no merchant had ever shipped warming pans to the West Indies. So he sent out a cargo and they were laughing at the joke for months. Then Dexter got returns from his venture. The planters had bought the warming pans for ladling syrup and the covers, with their little air holes, were just the thing for straining out the pieces of sugar cane.

Even if there is nothing in astrology, the case of "Lord" Dexter shows that brains cannot win against luck. There is nothing remarkable about the intellect of Jay Gould except as a money grabber, and even at that he confesses it is mostly luck. He sells, buys and makes changes to put his business in better shape, and not expecting to make money by the operation, but somehow his warming pans always find a good market.

The good aspect between Jupiter and the sun does not denote wealth so much as good positions, and then the positions often bring money. In my case I find this aspect, but the sun is so

afflicted that with my education, and ability to do almost any kind of business which merely requires brains, without financial ability, I have rarely succeeded in obtaining an exalted position, or if I did I could not retain it, so wealth will never come in that way.

Venus usually denotes small fortunes, when strong in a Nativity, or significator, but in my Nativity she is so handicapped that it amounts to nothing. The only testimony that saves me from hopeless destitution is the sextile of Jupiter to the sun, yet the affliction of the sun greatly weakens that testimony.

In 1857, during Saturn's transit on the Mid-heaven, I lost every thing I possessed, all my books went for rent, I could not find employment of any kind, (this was after I had been editor and had been practicing law for ten years,) and when my last penny was gone, sooner than beg or steal, I walked the streets of Boston for three days without tasting food. On another occasion I hired to work in a match factory at \$4 a week and board myself—cheap food, but the salary kept me alive and paid for lodging.

I have heretofore concealed from the public these dark periods in my life, but I am now so old I do not care. Besides, it is for the sake of science, which should be founded on facts,

and not on the theories of men who lived centuries ago, when the conditions of life were so different. I scorn to quote any one as *authority*. All modern authors delight in proving their positions by the opinions of old astrologers, and students who prefer that system, are respectfully referred to them.

While at the confessional I may as well own that during the winter and early spring of 1887—8, here in St. Louis, while Saturn was transiting on the Midheaven and Mars on the Ascendant, with books in pledge, which I could not redeem, I hired lodgings and for months lived on lunches which I bought and carried to my room; some weeks the cost of the food was less than a dollar, and I lived well when I could spare \$1.25 a week.

Even since I began the publication of this PRIMER I have been so short that I could not buy a pound of butter, and so bought sausage, using the gravy instead. During the winter I have worn neither overcoat nor underclothing, because every dollar was needed to keep the publication going on.

Astrology does not indicate these *special* events, nor thousands of others quite similar, and only a knave or fool will attempt to point out the precise events which result from poverty. But there is my horoscope; it shows an idiot in financing and, the history of my life fills the bill in every particular.

NOTE.

I invite attention to the following predictions and their wonderful fulfillments:

ZADKIEL PREDICTED FOR AMERICA DURING WINTER QUARTER, 1890: "Albeit there will be some falling off or loss connected with foreign trade."

FULFILLMENT: In January and February our country's exports exceeded the imports by \$19,000,000, while a year or two ago the balance was against us.

PREDICTION: "A great loss of life by some public catastrophe."

FULFILLMENT: Nothing of the kind during the winter quarter of 1890; this occurred at Johnstown, in the spring of 1889, without waiting for the prediction to be made.

PREDICTION: "Also, a lamentable number of duels and murders."

FULFILLMENT: These duels came off before the late civil war and the murders have been happening ever since.

PREDICTION: "The weather of the winter quarter will be cold and stormy."

FULFILLMENT: It usually is more so in winter than summer, but this year, the winter was the mildest ever known.

RAPHAEL made different kinds of predictions, but all have been fulfilled as accurately as Zadkiel's. Neither of these angels have predicted our terrible flood for either winter or spring, neither did either predict the cyclone, for the spring quarter, which swept over the country, devastating Louisville and other places. Probably the flood and cyc'one are reserved for predictions in 1891. This is the safe way of predicting—after the event has transpired. I commend it to the consideration of Rev. Hix, and to Wiggin, who is not Rev.

PART 6.

PRIMER OF ASTROLOGY.

CHAPTER XIX.

READING MY OWN HOROSCOPE.

[*Continued.*]

MARRIAGE.

Marriage is said to be a divine institution and that matches are made in heaven. Judging from my own experience I should sooner think they were made in the other place. But as I am an exception to general rules in most particulars, probably I am in marriage also. Yet I have plenty of company. St Louis is strongly Roman Catholic, and the church prohibits divorces; but I have known of twenty-four divorces here in one day, with fair weather and wind from the east.

For marriage of males we look to see what aspect, that is, conjunction, sextile, quartile, trine and opposition, and *no other aspect*, the moon first makes after birth. To find this aspect you

will suppose the radix of each planet to be stationary and move the moon forward in the Zodiac, looking sharp to see when she makes an aspect.

And right here I will admonish the student that astrology will not point out whether a ceremony of marriage has been performed or not. I know of several couples in this city which are living together and have children, but there was never any marriage ceremony. Therefore the astrologer is often confounded and thinks the man did not marry the lady described by the planet to which the moon first applies, or with which the moon forms an aspect. Therefore, after describing the lady to him, in order to avoid a dispute, let the astrologer ask if such a lady was his wife, or was it only a love affair. With some men it is necessary to describe several before you reach his wife, yet he will assure you that he has never married but once.

In my horoscope I imagine the moon to be moved forward till it is $7^{\circ} 52'$ in Gemini and notice that it is then in exact sextile with Saturn in Aries. Saturn is out of all essential dignities and in his fall, but in the terms of Venus. This describes my first wife very well.

Saturn in his fall denotes that either in the generation of the lady, or that of her parents, the family had become reduced by either losses or

misfortunes. It was in both generations. Her parents had been wealthy but were then comparatively poor. Her brother was arrested and imprisoned for passing counterfeit money just before her illness, which proved fatal in five days. After hearing the news of his arrest, she never left her bed alive.

Aries denotes reddish hair and florid or swarthy complexion, while Saturn denotes dark hair and pale complexion. She was a compromise between the two; her hair of mahogany color and face freckled. She was of medium size, fine eyes, not handsome but an interesting expression of countenance and a very pleasant smile.

There is no testimony to indicate this, save Saturn in the terms of Venus. Besides, she was a milliner, with correct taste, made artificial flowers and was very expert in all womanly arts; qualities which neither Saturn nor Aries indicates. The close sextile of the moon to Saturn joined in denoting her mild and gentle nature. The aspect of Mercury to Saturn indicated her good intellect, although she inclined less to science and philosophy than to literature and the fine arts.

She was naturally of very delicate health, as shown by Saturn, her signifier, being debilitated and in no aspect to either Venus or Jupiter. Had Jupiter been her signifier, in his fall, and with

the same aspect, her health would have been much more robust and she might have lived to see fifty, for Jupiter denotes a good constitution, even when handicapped, if he is not retrograde.

Mr. Pearce, one of the best of modern astrologers, says: "If Saturn receive the moon's application the wife will prove troublesome and morose, etc." My first wife was the very opposite. Had she been morose I would either say so, or say nothing about it, for she has been in her grave 39 years and I have heard nothing of any of her people for more than twenty years. But without exception I never saw a girl more gentle, amiable and self-sacrificing than she was, to parents, brothers, sisters, husband, and in fact every one.

The indications of Saturn seemed turned into the channels of constancy and industry, save in one particular, which but few noticed, and which I would not mention but for the truth of science—with great taste and refinement, there were times when she showed a mere shadow of the lack of neatness. It would never be noticed in ordinary women, yet easily detected in one so delicate, if the observer loved her,

She was 23 years old at the time of our marriage, namely, 1851, July 10. The transit of Jupiter on the Midheaven, at that time, is the

strongest indication, by transit, denoting marriage. But there was a singular configuration between the evil planets, Saturn and Uranus, the latter of which is the great enemy of marriage, for they were in close conjunction, in the house of marriage, and both on the cusp of the house of death. At that time I looked upon astrology as a humbug, but now, with such testimonies before me I would advise one not to marry.

I have always found that the mere presence of Mars, Saturn or Uranus, in the house of marriage at birth, or within 5° of the cusp, as in my case, denoted trouble, sorrow, sickness, misfortune, or early death of companion, unless there were many strong counteracting indications.

In a woman's Nativity we take the sun, instead of the moon, to describe the husband and in like manner note the planet to whose radix the sun first applies. But if the moon applies to the sun's radix, I do not accept the sun as the significator of the wife, but move on till the moon makes the next aspect. In like manner, when the sun applies to the moon's radix, I reject it as the significator of the husband.

If the sun in a woman's horoscope, or the moon in a man's, apply by good aspect to Jupiter, and Jupiter strong, with other testimonies showing a fortunate Nativity, I have then found

marriage tolerably fortunate even with a malignant planet in the 7th house. But my Nativity being such a wretchedly poor one, nothing ever prospers with me except *hard luck* and a happy faculty of making knaves and fools hate me. Therefore happiness in the marriage relation, for one with a Nativity like mine, is an astrological impossibility. Mr. Pearce says:

"Astrologers generally consider that it is of the happiest augury when the moon in the bridegroom's Nativity happens to be in sextile or trine to the sun in the bride's Nativity."

Well, in my numerous marriages I had been trying to beat astrology until I found a very intellectual lady whose sun was in Leo and in sextile to my moon. I taught her astrology and a few years later proposed marriage. She was past forty-five, had never married, and probably thought this about her last chance. She studied our horoscopes for a week and finally found the foregoing in Pearce, which I had not observed in particular. This beguiled her into matrimony, the fifth and last of my wives. It was not her fault that we separated, but just my confounded hard luck.

For my second wife we move the moon forward in Gemini to $20^{\circ} 12'$ where she forms a quartile with the radix of Jupiter in Pisces; de-

noting a lady belonging to a wealthy family; (I think her father was worth a hundred thousand dollars.) But the aspect was evil, Jupiter cadent, and in quartile with my significator. These, testimonies, with Saturn on the cusp of the house of marriage, did not promise happiness. We worried along for six years and then I guess both were glad to quit. I was bankrupt, out of a job and had no prospect for the future, while she had rich father to take her home.

We move the moon forward to $22^{\circ} 6'$ in Gemini and then it makes an opposition to the radix of Venus in Sagittarius, which denotes my third wife. She was much shorter than Venus in that sign usually denotes, but otherwise is well described. She was a very talented artist, of English birth, and a descendant of the Sir Isaac Newton family. The application was evil, Venus in evil aspect with Jupiter, and afflicted by the parallel declination of Mars and the sun. We did our courting while I was in Ludlow-st-Jail, married in December 1867, much against the will of her brother, and in May 1869 we parted the best of friends, and I started for the Pacific coast, but have not met since.

Moving the moon forward we find that it will make no other aspect while in Gemini, or in

other words, "the moon is void of course," and I think I have said enough about my marriages. It is a disagreeable subject to discuss, and no other consideration, save for the cause of science, would have induced me to allude to it. And now, once and forever, I lay no blame upon any of these ladies. They were simply unfortunate in having their paths intersect with mine, and they should be pitied instead of blamed.

No doubt my domestic troubles, added to the cruel treatment of my younger years, and being constantly pursued by bitter enemies, has had much to do with souring my disposition and adding to my hatefulness, for the few friends I have, and who do not try to make me do things their way, think I am quite amiable. But whoever antagonizes me runs the risk of my making him feel sorry for it.

CHAPTER XX.

TRANSITS.

Astrologers differ very widely as to the force of Transits, Directions, Revolutions, etc. The English have but little faith in the transits of the superior planets through the four cardinal houses, namely; the Midheaven, Ascendant, 4th and

7th houses. Some American Astrologers have but little faith in Directions, and cite as proof, the different methods employed, by the different schools of English Astrologers, for computing the Arcs and equating the time from the length of the Arc, which may show a difference of years as to the date when the event will culminate.

From my own experience I am led to have confidence in both Transits and Directions, provided I reject all the "new aspects," that is, all except *conjunction*, *sextile*, *quartile*, *trine* and *opposition*. But when I admit these I can find authority to prove anything and disprove everything. Astrology is then like a fiddle, on which you can play any and every kind of music. I will explain these cunning methods.

For a dozen years or more Raphael has been making insinuating predictions of such a kind that had the Queen died he could have referred to the prediction and shown its wonderful fulfillment. But as the Queen persists in not dying, each succeeding year he explains the falling crown, or funeral cortege, etc., as having reference to some other potentate and always makes out a good showing. This year, however, there is nothing in his Hieroglyphic even squinting at such an event, so if the Queen should die or abdicate, Raphael would get left, as he has been on the retirement of Dom Pedro.

But it will be noticed that not even *one* astrologer in England calculates the Directions of even *one* of the millions, and shows a train of Directions that will result in death. Yet no matter who dies, then they all rush to find and calculate the Directions, showing that it was impossible to avert death. And the beauty of this system of astrology is that no matter what data they get, they arrive at the same result. The india rubber tenacity of this kind of astrology was splendidly illustrated in 1889, by the two English "angels" at the death of Frederick III. of Germany, when Raphael, with one hour for his birth, and Zadkiel; with a different hour, found no trouble in deducing the same results, thanks to the wide orbs and multiplicity of aspects.

I have several times predicted death from transits and the predictions have been verified. Also, from the same testimonies, I have predicted death, but death did not result. So, too, I get left in other predictions, for I am quite fallible. When I read with what confidence others make predictions, I think I am a very poor astrologer. But when I notice their failures, year after year, and see that a dozen failures on a certain train of testimonies does not in the least impair their confidence in Ptolemy, Cardan, etc., I cannot

help thinking that as big a fool as I am, I have sense enough not to trust to such fallible rules.

For convenience in writing Nativities, and to avoid repeating a description of each Transit, I have numbered them, enclosing the figures in parentheses, and have the descriptions printed on the cover. Then, in the Nativity, when my client, (I don't like the word "Native," for it sounds so much like calling one an Indian,) finds figures enclosed in parentheses, he has only to turn to the same printed figures and read the description of what is thus indicated. They are as follows:

EVIL TRANSITS.

(1.) **MARS ON MIDHEAVEN**—Affects business, causes delays, annoyances and frequently trifling losses. Defer commencing important enterprises while it is in operation.

(2.) **MARS ON ASCENDANT**—Similar to (1) but less evil for business, and affects health and spirits more; you are impatient and irritable.

(3.) **MARS IN 4TH AND 7TH HOUSES**—This is similar to (1) but much less evil.

(4.) **SATURN ON MIDHEAVEN**—A long, dull period, during which you are much more likely to lose than gain. Make everything safe before it begins. Avoid changes and commencing new enterprises as much as possible. Continue reg-

ular business, but do not branch out in new directions. Guard against treachery and conspiracy, and be careful how you trust *any one*. Let your chief aim be to *save*, if you have property, rather than to *gain* more. You feel dissatisfied and discouraged, tempted to sell out or resign your situation; do neither unless compelled by circumstances.

(5.) SATURN ON ASCENDANT—Similar to (4) yet less evil for business and worse for health and spirits.

(6.) SATURN IN 4TH AND 7TH HOUSES—Similar to (4.) but far less evil. In the 4th House, evil for father if living; in 7th House, evil for husband or wife if living.

GOOD TRANSITS.

(7.) JUPITER ON MIDHEAVEN—The most fortunate of all transits. You feel hopeful, good prospects offer, and you meet with advancement. Now is the time to strike out boldly and push business with confidence. Make changes and commence new undertakings. Remember that whatever is undertaken and established under this transit will prove more permanent than at any other time, and successful under evil aspects, when new schemes prove unsuccessful or failures.

(8.) JUPITER ON ASCENDANT—Similar to (7) but less fortunate for business though better for health and spirits.

(9.) JUPITER IN 4TH AND 7TH HOUSES—Similar to (7) but less fortunate. In the 4th House is fortunate for father if living; in 7th House fortunate for husband or wife if living.

N. B. Whenever good and evil transits occur at the same time, good prospects offer but fail of full realization, and the events are conflicting. You are worried and harrassed, even if in the end successful. Sometimes you experience only annoying delays, at other times serious disappointments and losses, according to which is stronger the good or evil transit.

Remember that there are "Directions," "Parallels," "Revolutions," etc., indicative of either good or evil, which are not calculated in this Nativity, and that they will somewhat vary or modify the effect of the transits for a time, but as a whole I think the transits are reliable.

I do not particularize regarding the transits of Uranus, because he requires 84 years to make a revolution around the sun and I have not had an opportunity to verify by observation what events are indicated. Instead of pretending to know everything, and thus mislead the student, I think it better to advise him to observe for himself. It is in this manner that astrology has been developed into a science, and if all the American students will pursue this course, in-

stead of hunting up and paying extravagant prices for old books, out of use as well as out of print, we may soon make the science respected, in our own country at least.

I have learned that Uranus indicates odd, unexpected events, *entirely evil*. He denotes calamities in ones life, but what these calamities will be cannot with certainty be predicted. If the aspect relates to the Ascendant, the event may be a strange shooting, stabbing, burning, acute illness, etc., something like Mars; or it may be a strange ailment, both acute and chronic, like the indications of Mars and Saturn combined. If any good fortune occurs while the indications of Uranus are in force, don't jump at the conclusion that he is the indicator, but look for the indications of the benefics.

If the aspect relates to the 2d house, the event may be sudden bankruptcy, brought about in a strange way; or money unexpectedly stolen, etc. In like manner judge of the other houses, but do not risk much on any but the four cardinal houses, and even these may prove unreliable, for Uranus is so eccentric that when you fear him least he may strike the hardest, and vice versa.

When Saturn or Mars passes over the radix of un or moon, or in quartile or opposition to same,

evil is generally indicated, after the malignant approaches within 5° of the radix, and so long as he remains within 5° of radix. When approaching, the evil increases until after the culmination, then gradually subsides. This is more especially true of Saturn, which may be compared to a bull dog that bites and holds fast, while the evil of Mars is more spasmodic, snapping like a hound.

When Jupiter or Venus transit the radices of sun and moon, or in sextile or trine of same, good events are indicated, subject to the orb of 5° .

If Uranus is transiting in good aspect at the same time, the good event may come suddenly and unexpectedly, but don't give Uranus credit therefor, any more than you would give a wall of ice for the heat from a fire built near it. An evil planet may modify the quality of good denoted, but I never discovered that positive evil could indicate positive good. It may be different, however, in London.

Morally and philosophically, or as our religious friends say Providentially, what seems a serious evil at the time, may in the end prove a blessing. Thus, in California, before the building of the trans-continental railroad, a miner had made his "pile" and intended to sail on the next steamer

for his home in the east. He missed his passage to San Francisco from Sacramento, but found he was in time to make the trip on horseback. But everything seemed against him. He missed his road, then his horse took sick, and after a long tramp on foot, finally hired another horse and reached San Francisco an hour after the steamer had sailed. That steamer was wrecked and many lives lost.

Our Christian friends would describe this as an instance when "God overruled evil for good." I will not dispute them but will say this: At the time the event occurred the miner had Jupiter transiting in the house of life and Mars on the Midheaven. Therefore there was nothing supernatural about it. Mars indicated misfortunes and trifling losses, while Jupiter indicated that in spite of misfortunes, his life would be spared. Had he been in time for the steamer, I contend that he would not have lost his life, although he told me he would not have knowingly risked it for all the gold in California.

Astrologers who predict; "A fortunate day for dealing with Mars people," because the moon is in sextile or trine with Mars, might argue that in the case of the miner, Mars was the *cause* of saving his life by *causing* the various accidents that detained him from reaching San Francisco in time

for the steamer. I think this is very poor logic. But admitting it to be true, the miner must have been a favorite with Mars to have been thus singled out for salvation while so many were allowed to perish.

I will now point out some transits in my Nativity by way of instructing the inexperienced how to calculate them. Open PART 3, at page 102, and notice my Horoscope. Take PART 1 and turn to page 2, "Approximate Longitudes." Now look sharp.

The sign Cancer is 15° on the cusp of the Midheaven. Deduct 5° for orb, leaves 10° ; then when Mars arrives 10° in Cancer his transit on the Midheaven may be said to begin. I look in the column headed Mars and run down till I see "6 Cancer." Running out to the left, in the column headed "Month" I see "July." Then on July 1st Mars will be within 4° of orb of cusp. From the first of July till the first of August, Mars will move 20° , or about two-thirds of a degree a day. Consequently Mars will come within orb about July 6, and then (1) will begin.

On the cusp of the 11th house is "Leo 19° ." Deduct 5° for orb, leaves 14° . Then when Mars reaches 14° of Leo (1) will end. Turning to the Table of Approximate Longitudes I run

down the column from July and see that Mars is 16° in Leo Sept. 1. That is 2° too large, so I say (1) ended Aug. 28th. But in writing it in a Nativity I would say: "(1) from the first of July till the last of August."

The transits of all the other planets on the Midheaven, for any year, past or future, may be calculated in the same manner as this of Mars. Also, transits on the Ascendant, first deducting 5° for orb, from the longitude of the cusp, to find the date of beginning, and subtracting 5° from the longitude of the cusp of the 2d house to find the date of ending. Of course it makes no difference what sign, or how many degrees of longitude may be on the cusp, find when the planet reaches within 5° of it and then the transit will begin or end.

Finding when a planet forms on aspect to its own radix, or the radix of another planet is by the same method, always allowing the 5° orb. I will explain an example of Mars and Saturn forming evil aspects to the moon's radix, in my Nativity.

Observe that the moon is $3^{\circ} 21'$ in the sign Gemini. The Common Signs are Gemini, Virgo, Sagittarius and Pisces. Therefore an evil planet must be within 5° of $3^{\circ} 21'$ in one of the Common Signs to afflict the moon's radix, that

is, when approaching, it will begin to afflict when it arrives in $28^{\circ} 21'$ of Taurus, Leo, Scorpio and Aquarius, which are the Fixed Signs, and cease afflicting when it arrives in $28^{\circ} 21'$ of a Common Sign, the affliction being by a conjunction, quartile and opposition with moon's radix.

Although I speak so definitely of the " 5° orb," I am satisfied that the indications may extend much beyond, at times, but have not found them sufficiently reliable to risk predictions beyond the 5° , which I denominate "powerful orb." Mr. Pearce is of the opinion that what he calls the "influence" and I call "indication" begins when a planet arrives within 15° of the cusp of the Midheaven, and I have found cases corroborating his views, but they have been too rare to be accepted as a rule.

I pass now, in the Approximate Longitudes, to the year 1890 and notice that in January Saturn was 4° in Virgo; looking up to 1889 I see that he was within orb of quartile of moon's radix during Oct., Nov. and Dec. Looking forward, I see that he continues within orb until the first of April, and then retrogrades beyond orb, but returns within orb the first of June and finally passes out of orb the first of Sept.

Mars entered Sagittarius March 1st, (and therefore, came within orb the last of Feb.,) was

in opposition to moon's radix, and formed the partile (exact,) aspect about March 10th, Saturn being still within 5° of quartile of moon's radix. Thus, the moon's radix was severely afflicted by these two indications, yet my trouble was not as great as I have experienced coincident with a transit of Mars on the Midheaven.

True, I was greatly worried in mind, for there was a period of more than a month when money enough to pay rent did not come in. Besides, I was almost prostrated from overwork, had a light attack of influenza, a slight relapse, from beginning work too soon, "and was not very well myself." It was at this time that I felt so discouraged and issued my "appeal" in PART 5. But Saturn and Mars are now giving me a little rest, and like the wounded soldier, after recovery, I am again ready for battle but shall probably break down the last of July or first of Aug. when Saturn and Mars will renew their attack on the moon's radix. Hence, my great anxiety to complete the PRIMER before a second "Bull Run defeat."

CHAPTER XXI.

HOW TO RECTIFY A NATIVITY.

In choosing an event from which to rectify I usually take date of marriage, or date of death of parent, or severe fever, or a serious accident. I would prefer a direction of Venus for marriage, were there not so many exceptions to it as a general rule.

In a man's Nativity marriage sometimes occurs under either a good or evil direction of moon to the M. C. or Ascendant; or the M. C. or Ascendant to the moon. The same in a woman's Nativity, substituting the sun for the moon.

But Uranus is such a disturbing element, when afflicting the significators of marriage, that I find a frequent failure of all rules given by the ancients regarding marriage. Sometimes a woman marries a man described by a planet from which the sun had separated a short time before her birth, and then I am greatly puzzled, for the rarity of this exception prevents founding a rule by induction.

Sometimes a woman lives with a man without marriage, then afterwards marries another man.

She calls this her *first* marriage, but in astrology it is her *second*. Of course, men do the same; hence the difficulty and uncertainty of rectifying by a direction of Venus, or the sun or moon. As for directing the sun or moon to Venus for rectification, I consider it very unreliable under any circumstances, especially the moon.

When in a Nativity I find my client naturally virtuous and honorable, with the indications denoting that marriage is fortunate, I can generally depend upon rectifying, by directing the cusp of the M. C. or Ascendant to Venus or the moon, for a man, or to Venus or sun, for a woman, and find that the direction is by a good aspect. If the direction is by an evil aspect I generally find that the testimonies in the horoscope show marriage to be unfortunate, but even this is not without exception.

Thus, we see that as marriage is a lottery, in real life, where prizes are not always drawn, so in rectifying a Nativity by the event of marriage, there is great uncertainty.

I have always found the date of an accident the most reliable for rectification. Usually an accident is indicated by a direction to Mars, yet Uranus denotes accidents also, especially of an odd and unexpected kind. Mars indicates common fevers, and Uranus denotes strange ailments

of an inflammatory nature, but is not so reliable as Mars for rectifying.

The student must always keep in mind that when the hour of birth is not approximately known, there is no method whereby it may be found by rectifying. I will illustrate why this is the case by reference to my horoscope.

I was married 1851, July 10; the arc of direction is $30^{\circ} 30'$. Now suppose I knew nothing of the hour of birth and attempt to rectify by directing the moon to an aspect of the M. C. If I direct to the moon by conjunction, converse, [con.] about 1° of Cancer must be placed on the cusp; but if M. C. to conjunction of moon by direct direction [d. d.] then about 4° of Taurus must be on cusp of M. C. There would be a difference of about four hours between the times of these two. Then for the sextile, quartile, trine and opposition, d. d. and con., the rectification could be made to suit almost any hour in the twenty-four. With these preliminaries I will proceed to rectify my Nativity, remarking that the method is solely my own.

1830, March 2d, my father started from his home, in Chesterville, for Augusta. The snow was two or three feet deep, but trodden solid in the road. It had been drifted in places so that what the Oregonians call "chuck-holes" had been

worn out. He was riding in a single sleigh and in crossing one of these holes the sleigh shot forward, striking the horse's heels. He was a vicious brute and immediately began to run. Half a mile from there lived a man named Perry. All winter Mr. Perry had used a stone in his fireplace as a support for the wood in the place of an andiron, but the previous night had bought a pair of andirons and brought home. On this morning he had risen, thrown the stone out of doors, in front of his house and had just finished building a fire when he heard sleigh bells as of a horse running away.

Mr. Davenport was in the sleigh with father and jumped out, without serious injury, when he discovered that the horse had become unmanageable. Father reined the horse through the gate, into Mr. Perry's yard, but the sleigh struck the post, tearing it free from the horse, when it turned over. Father sprang clear of it, and lighting on his feet, still held to the reins, for the single-tree was dangling at the horse's heels. The next moment father's feet became entangled in the lines and he fell backwards, his head striking on the stone which Mr. Perry had just thrown out, crushing in his skull,

I have been thus particular with the details, because all the points are material. If the

astral indications fail to quadrate with the events, we ought to know and try to revise the rules, instead of either twisting and warping the events to fit the rules, or of doing as so many astrologers do, stretch the aspects, invent new ones, widen the orbs, etc., in order to make the events fit the indications. No matter how, where or when a man dies, it is an easy matter, with the great abundance of rules, to account for everything, perhaps show why Mr. Perry did not put off to another day the buying of his andirons; why he threw the stone in front of the house, etc. Gammon!

The 4th is "the house of the father." In my horoscope the sign Capricornus, which Saturn rules, is on the cusp. Capricornus symbolizes large, and four-footed animals and is an earthy sign. Saturn signifies agriculture and whatever pertains to the earth, such as rocks, stone, coal, etc. Saturn is debilitated from being in his fall and therefore his indications are more malignant.

The sun, symbol of life, is in the 4th house, very seriously afflicted by the close conjunction of Mars, the potent indicator of violence and accidents. To one ignorant of the science of astrology, this may seem a most remarkable coincidence of events and indications, but after

practicing a quarter of a century it does not seem in the least surprising. Indeed, it is no more strange than that the fish is supplied with fins and gills, the bird with wings and lungs, nor the thousands of cases where we witness the wonderful means for the adaptation of everything to the end designed by Infinite Intelligence.

After discovering so much sympathy between the events and indicators, we are encouraged to look for other "pointers," for Nature never becomes bankrupt in either knowledge or resources.

The ancient Egyptians taught, allegorically, that a degree was as a day, and that a day was as a year, with the Lord of day, or the sun. This teaching was for the Exoteric. The Esoteric understood thus: There are 360 degrees in a circle; the zodiac is a circle; it requires 360 days for the sun to perform a revolution around the zodiac; there are 24 hours of Siderial Time in a year; therefore a degree is like a day and a day is like a year.

Here we find the explanation of that beautiful esoteric expression: "That one day is with the Lord as a thousand years, and a thousand years as one day." [II. Peter, III. 8.] The Second Adventist stumbled on this expression and applied it to interpret prophecy. Thus: There

are 7 days in a week; then in 70 weeks there are 490 days; therefore the 70 weeks mentioned by Daniel mean 490 years. But this method of reasoning is very shallow, for Paul to Peter does not say a day *is* a thousand years, but is with the Lord *as* a thousand years, or "like unto," or "may be likened unto," which is vastly different. "Likened unto," is a common expression in the New Testament.

Besides, if we adopt the rule of interpretation proposed by our Adventist friends, then the sun stood still for a year, at the command of Joshua, and Jonah was three years in the belly of the great fish, whereas I have always thought it tough enough to be there three days, since in three hours he would have been so thoroughly digested there would have been nothing but slop to vomit up.

Reckoning one day for a year I must convert into degrees and minutes, the time that elapsed after my birth, till the death of my father, to find the length of the arc of direction by which to rectify. 1830, March 2, minus 1821, Jan. 13, equals 9 years, 1 month and 19 days. Each year being 1° , each month, $5'$ and each 6 days $1'$, the arc of the event is $9^{\circ} 8'$.

We must now make the horoscope so that the R. A. of Mars shall be just $9^{\circ} 8'$ greater than

the R. A. of the cusp of the 4th house. Or in other words; So the M. D. of Mars shall be just $9^{\circ} 8'$, for the M. D. is the arc of direction in this case.

Longitude of Mars is $23^{\circ} 14'$ of Capricornus and Lat. 0 S 59. I turn to Tables of R. A. on the page headed: "Cancer with North Lat.—Capricornus with South Lat." and notice also the words: "For Capricornus add 180° ." I run down the first column on the left, which is *degrees of longitude*, (although no author has ever before so informed the student,) until I find the 23° of Mars longitude. I see that Mars has 0° degrees of latitude and so move my finger into the column to the right headed 0° and there see $114^{\circ} 61'$. This is the R. A. of Cancer 23° with 0° N Latitude; but as we want the opposite R. A. I add to it 18° which make $294^{\circ} 51'$.

RESPONSES TO MY APPEAL.

That I am not entirely friendless will appear from the following prompt replies with dates of writing:

A. Rothwell, 102 Cambridge st, E. Cambridge, Mass.
April 16th. \$10.

H. Schwabacher, 195 1-2 Thalia st, New Orleans,
Louisiana, April 17th. \$5.

PART 7.

PRIMER OF ASTROLOGY.

CHAPTER XXI.

HOW TO RECTIFY A NATIVITY.

[*Continued.*]

But there are still 14' of longitude to be converted into R. A. So I find how much R. A. 1° of longitude will make at this point of the ecliptic. Dropping to the next degree below I see 115° 54', from which subtract 114° 51' and there remain 1° 3', or 63'. Then by Tables of 4th Terms: If 60 : 63 :: 14 be? [To be read: If 60 be 63, what will 14 be? Ans. 15.] And as the R. A. is increasing, this 15' must be added to the 294° 51' already found, making it 295° 06'.

There still remain 59' of latitude to be converted into R. A. So I slip my finger to the right, in the column headed 1° and see 115° 1', showing that 1° of latitude at this point in the ecliptic makes but 10' of R. A. Then by tables

of 4th Terms: If $60 : 10 :: 59$ be? Ans. 10. This 10' must be added to the $295^{\circ} 6'$ already found, making it $295^{\circ} 16'$ as the R. A. of $23^{\circ} 14'$ Capricornus in 59' south latitude.

NOTE.—If at any time in equating for the minutes of either the longitude or latitude, you find the R. A. or Dec., or A. D. or Ob. Asc. *decreasing*, (for all these different Tables are worked in a similar manner,) the minutes thus found must be *subtracted*. In this example both were increasing, but sometimes the R. A. will increase and the latitude decrease, when you must add and subtract accordingly. Furthermore, in this example had Mars' latitude been 3 S 44, I should have found the 23° of longitude the same, but move my finger into the column headed 3° and there have taken $115^{\circ} 23'$ instead of $114^{\circ} 51'$ and worked from it in the same manner.

From the $295^{\circ} 16'$ R. A. I subtract the arc of direction, namely, $9^{\circ} 8'$, which leaves $286^{\circ} 8'$ as the R. A. of the cusp of the 4th house, which must be converted into longitude, without latitude, or as some authors say: “*sine latitude.*”

In Tables of R. A. I turn to the one headed “Capricornus with North Latitude” and entering the column of R. A. headed 0° I run down looking for a R. A. next smaller than $286^{\circ} 8'$ I find $285^{\circ} 13'$. Running out to the left, in the column

of longitudes I see 14 and know it is 14° and some minutes of Capricornus.

I must now find how much R. A. is needed to make 1° of longitude at this point in the ecliptic by subtracting the $285^{\circ} 13'$ from the next R. A. below, which is $286^{\circ} 17'$ and find it leaves $1^{\circ} 4'$ of R. A. as equal to 1° of longitude I subtract the $285^{\circ} 13'$ from $286^{\circ} 8'$ and find that I have 55' of R. A. to be converted into longitude; so I say: If $64 : 60 :: 55$ be? Ans. 52', which I find by the Tables of Porportionals. This 52' I place at the right of the 14° already found and now have 14 Capricornus 52 as the longitude of the cusp of the 4th house, and know that the cusp of the M. C. is 14 Cancer 52.

The R. A. of the 4th house being $286^{\circ} 8'$ I subtract 180° which leaves $106^{\circ} 8'$ as the R. A. of M. C., and now am ready to compute the longitudes of the cusps of the 11th, 12th, 1st, 2d and 3d houses.

CHAPTER XXII.

TO FIND THE POLES OF THE HOUSES

AND

CALCULATE THE LONGITUDES
OF THE CUSPS BY OB-
LIQUE ASCENSION.

1. RULE TO FIND THE ASCENSIONAL DIFFERENCE.—To the log. tangent of the latitude of birthplace, add the log. tangent of the obliquity of the ecliptic, (O. E.) namely, $23^{\circ} 27'$; find the sine of the sum of these logarithms and you will have the A. D. (Ascensional Difference.)

EXAMPLE.

$$\begin{array}{r} \text{Lat. of my birthplace } 44. 30 \tan = 9.992420. \\ + \text{Obliquity of the Ecliptic } 23. 27 \tan = 9.634838. \\ \hline = \text{Ascensional Difference } 25. 05 \text{ sine} = 9.627258. \end{array}$$

2. TO FIND THE POLES OF THE 11TH AND 3D FROM A. D.—To the log. sine of one-third the A. D. add the log. cotangent of the O. E. and the log. tan. of the sum of these logs. will be the poles of the 11th and 3d houses.

EXAMPLE.

$$\begin{array}{r} \text{One-Third A. D. } 8. 22 \text{ sine} = 9.162885 \\ + \text{Obliquity Ecliptic } 23. 27 \text{ cot.} = 10.369735 \\ \hline = \text{Poles 11th and 3d houses } 18. 33 \text{ tan.} = 9.525620 \end{array}$$

3. TO FIND THE POLES OF THE 12TH AND 2D FROM A. D.—To the log. sine of two-thirds the A. D., add the log. cot. of the O. E. and the log. tan. of the sum of these logs. will be the poles of the 12th and 2d houses.

EXAMPLE.

$$\begin{array}{rcl}
 \text{Two-thirds A. D.} & 16.43 \text{ sine} = & 9.458848 \\
 +\text{Obliquity Ecliptic} & 23.27 \text{ cot.} = & 10.362735 \\
 \hline
 =\text{Poles 12th and 2d houses} & 33.33 \text{ tan.} = & 9.821583
 \end{array}$$

The pole of the Ascdt. is always the latitude of the birthplace.

A Table like the following will be found very convenient for calculating, and in which to insert the longitudes of the cusps:

HOUSES.	ASCENSIONS.	POLES.	CUSPS.
10	106 08 R. A.	00 00	14 ☽ 52
11	136 08 O. A.	18 33	18 ♐ 55
12	166 08 O. A.	33 33	18 ☽ 17
1.	196 08 O. A.	44 30	12 ☾ 19
2	226 08 O. A.	33 33	8 π 43
3	256 08 O. A.	18 33	10 ♫ 27

The cusp of the 10th house having been found and placed in the foregoing Table, opposite its R. A., we add 30° to the R. A. for the O. A. of the 11th and have $136^\circ 08'$, to which add 30° for the O. A. of the 12th, and so on filling down the column. The Pole of the 10th is nothing, because the place of beginning to reckon the latitude; so I place ciphers there and following

them, the Poles of the remaining houses in their order. It will save time and prevent mistakes to always arrange the data in a Table like this before beginning to calculate the cusp of the 11th house.

The Pole of the 11th $18^{\circ} 33'$; this is nearer 19° than 18° and if the horoscope was required only for delineation, transits, etc., I should turn to Tables of Ob. A's ns. at page 40, which gives the latitudes of the Poles for 19° and find the longitude in degrees only. But for calculating Directions, each cusp must be calculated to minutes. Therefore I find the longitude, for the latitude, of both 18° and 19° and then equate for the $33'$ by Tables of Proportionals.

EXAMPLE.

In Tables of O. A's for 18° N. lat. I look for an O. A. next smaller than $136^{\circ} 08'$ and find it is $135^{\circ} 18'$, being $50'$ two small. At the head of the column wherein I find $135^{\circ} 18'$ I see Leo, and opposite, at the left, in the column of Longitudes, I see 18. Thus I have Leo 18° , but must find the longitude of the $50'$ of O. A., thus: I see the O. A. next larger than $135^{\circ} 18'$ is $136^{\circ} 24'$, or $1^{\circ} 6'$ more, showing that it requires $66'$ of O. A. at that place in the Tables to make $60'$ of longitude. So I say: If $66 : 60 :: 50$ be? Ans. 46, which I

find in the Tables of Proportionals. This 46' must be placed on the right of the 18° previously found, giving "Leo 18° 46'" as the longitude of the cusp of the 11th provided the Pole had been even 18° latitude; or, if not wanted for computing Directions I should call it 19° as the nearest even degree. But I must now make the same calculation with the latitude of the Pole 19°.

The O. A. next smaller than 136° 08' in latitude 19°, is 136° 06', (or 2' too small,) which gives 19° of Leo. At this place in the Table it also requires 66' of O. A. to make 1° of longitude; so I say: If 66 : 60 :: 2 be? Ans. 2, which 2 I place at the right of 19° and have "Leo 19° 2'".

The difference between 18° 46' and 19° 2' is 16', showing that 1° of latitude of the Pole, at this place in the Table, gives 16' of longitude. As there are 33' of latitude to be converted into longitude, I say; If 60 : 16 :: 33 be? Ans. 9. This shows that the longitude computed for the Pole of even 18° is 9' too small: adding the 9' to the 18° 46' we have Leo 18° 55' as the exact longitude of the cusp of the 11th house. I proceed in the same manner, working with the respective Poles and O. A.'s, to find the cusps of the 12th, 1st, 2d and 3d houses placing them in the Table.

But as in all astro-mathematical work there are either variations or exceptions to the best general rules that can be framed, so in these calculations will be found variations. It will be noticed that in calculating the 11th house the longitude of 18° was not so great by $16'$ as the longitude of 19° , and that on equating for the $33'$ latitude of Pole it amounted to $9'$ which was added to the longitude of 18° . On calculating the 12th and 3d the same rule was observed. But on calculating the 1st a variation arose, for the longitude of 44° was greater than that of 45° , and on equating for the $33'$ I found the difference $4'$ which had to be subtracted from the longitude of 44° . The same variation occurs in computing the 2d, and also another which will appear by the following explanation:

In latitude $33^{\circ} 33'$ I look for an O. A. next smaller than the $226^{\circ} 08'$ but on finding it discover it is $225^{\circ} 4'$, or $64'$ less than the O. A. given. As my Table only runs to $60'$ I cannot equate by it. So I take the O. A. next larger than $226^{\circ} 08'$ which is $226^{\circ} 17'$, or $9'$ too large, and on equating the $9'$ O. A. get $7'$ longitude which I subtract from Scorpio 9° leaving Scorpio $8^{\circ} 53'$. In this case also the higher latitude gives less longitude, and having found by equating that $33'$ O. A. give $10'$ longitude, and subtract the $10'$ from Scorpio $8^{\circ} 53'$, leaving $8^{\circ} 43'$.

CHAPTER XXIII.

TO FIND THE MOMENT OF BIRTH,
AFTER RECTIFYING THE NA-
TIVITY BY MY METHOD.

The R. A. of M. C. was $106^{\circ} 08'$, and its equivalent in Sidereal Time must first be found. As it is a small fraction more than 7h. 4m. 30s. I call it 7h. 5m. for I can see no sense in calculating the seconds, since I find all astrological authors claim a Direction as a testimony if the arc measures within six months, either way, of the date of the event, and some will try to stretch it out nearly a year. Sidereal time having been 7h. 5m. at my birth I desire to know what it was at noon.

As one may not have S. T. for a remote period in the past I have made rules for calculating it very accurately.

NOTE—Beginning with the first year after leap-year S. T. loses nearly 1m. each year till leap-year again when the lost time is made up by adding one day extra to February, which is based on taking no account of extra seconds. But this is not exactly correct. When we desire S. T. for

a particular day in the past, we find a variation of nearly 2 seconds a year, or 19 seconds in 10 years; that is, when we find S. T. at the present day we must subtract from it in the proportion of 19 seconds for 10 years and the remainder will be S. T. for the year and day of month in the past.

EXAMPLE.

Required S. T. at noon, 1821, Jan. 13. As 1821 is 1 year after leap-year, I look for S. T. Jan. 13. 1889, which is also one year after leap-year, and find it 19h. 32m. 37s. The difference in time between these two dates is 68 years. Then: If $10 : 19 :: 68$ be? Ans. 229, or 2m. 9s. which must be subtracted from S. T. of 1889, leaving 19h. 30m. 28s.

In order to be very accurate I will carry into seconds the R. A. of M. C. and find it 7h. 4m. 32s., from which I must subtract the S. T. at noon to find the moment of my birth. I borrow the circle of 24h. to make the subtraction and find the remainder is 11h. 34m. 4s. This includes nearly 2m. S. T. that elapsed between noon and birth, and therefore the 2m. must be subtracted, leaving the time of birth 11h. 32m. 4s. past noon, so that as rectified, my full data of birth stands: 1821, Jan. 13, at 11.32 p. m. lat. $44^{\circ} 30' N.$; long. $70^{\circ} W.$ of Greenwich.

It appears from the rectification that the birth occurred 2m. later than the time estimated and for which I made the horoscope published in PART 3, page 102. In calculating that, I was interrupted and used the Tables of Houses for Chicago instead of Bangor, both being on the same page. This does not affect the delineation in the least, for with a difference of 3° in latitude it will be observed that some of the cusps are the same. There is a prominent astrologer who makes all horoscopes as though the birth occurred in London. The latitude of New Orleans differs $21^{\circ} 34'$ from London, and the longitude differs 90° . Yet he works to seconds in some of his calculations, impressing upon the mind of the novice the idea that he is very accurate, while the longitude of the moon may be 3° in error.

Dearly as I love astrology, I will not cover up the seeming discrepancies nor attempt to whitewash the apparent failures. Therefore I am free to admit that the practice of working to seconds in one branch, and swallowing a discrepancy of months in another, does not seem either logical or mathematical, even if I do it myself. I did not intend working to seconds when I began this rectification, but thoughtlessly drifted into it. I will illustrate this inconsistency of "saving at the spigot and wasting at the bung."

All things considered, Alfred J. Pearce is the best astrologer we have. In Vol. 1, Text-Book, pages 208 to 214, are devoted to rectifying the Nativity of Napoleon I. and giving lists of Directions. Of course, he carries his work into seconds, and after rectifying, attempts to prove his correctness by giving the dates of events and setting opposite each, the Direction or Directions, that *caused* it. I will give specimens:

The arc of the event when he was proclaimed consul was $32^{\circ} 58'$ and the annexation $33^{\circ} 5'$. The arcs of the *events* are $32^{\circ} 34'$ and $33^{\circ} 19'$, respectively. Now, $32^{\circ} 58'$ minus $32^{\circ} 34'$ equal $24'$; as 1° is taken for a year, and $5'$ for a month, here is a discrepancy of 4 months 24 days, that is, the event transpired almost 5 months *after* the aspect culminated. Then, $33^{\circ} 19'$ minus $32^{\circ} 58'$ equal $21'$, equal to 4 months and 6 days *before* the aspect culminated.

It is true, that by a judicious use of gum elastic, these arcs of Direction may be made to cover the events, but it is very straining on mathematics.

Of course there are other methods, from which mine differs for rectifying a Nativity, but in teaching I have found that mine was easier understood. Indeed, many have informed me that they could not understand the methods prescribed by either ancient or modern astrologers, not even,

those of Mr. Pearce. I trust, however, the student will investigate *all* methods and try to perfect a system of some kind that is reliable. The example which I gave from Mr. Pearce, instead of an exception, is a fairly representative case among astrologers, and I confess my faith in Directions is not strong. Perhaps it is my fault, for I am a constitutional unbeliever.

CHAPTER XXIV.

METHOD FOR CALCULATING THE CUSPS BY TRIGONOMETRY.

It is hardly worth while for me to occupy space by repeating the rules here, for nearly all the works contain them. But I do not like their formula and will therefore give my own, because I think easier to be understood, and I know it is far easier to examine when looking for an error.

Having found the R. A. of M. C, as instructed in Chap. xxii., add 30° for the O. A. of the 11th house; you see at a glance it measures more than half way from Aries to Libra, and as you must always work from the first point of Aries, Cancer, Libra or Capricornus, and *from the cardinal sign to which you are the nearest*,

either direct or converse, it is evident the $136^{\circ} 8'$ must be subtracted from 180° , to find how far your place of beginning is from Libra converse. This gives:

O. A. from Δ con.,	$43.52 \cos.$	$= 9.857908$
+ Pole of 11th house,	$18.33 \cot.$	$= 10.474222$
<hr/>	<hr/>	<hr/>
= $< A$	$24.57 \cot.$	$= 10.332130$
- Ob. Ecliptic	23.27	$[9.999851]$
<hr/>	<hr/>	<hr/>
= $< B$	$1.30 \cos.$	$= 0.000149$ (a. c.)
$\therefore < A$	$24.57 \cos.$	$= 9.957452$
\therefore O. A. from Δ con.	$43.52 \tan.$	$= 9.982814$
<hr/>	<hr/>	<hr/>
: Long. from Δ con.	$41.07 \tan.$	$= 9.940415$

As the longitude is more than 30° from Libra converse, and less than 60° we know it falls in Leo, and must subtract it from 60° to find its longitude; 60° minus $41^{\circ} 7'$ equal $18^{\circ} 53'$ in Leo, as the longitude of the cusp of the 11th house. It differs 3' from the calculation made by O. A. which may be accounted for in taking out the logs.; or by an error in the Tables; or in the calculations, I do not know which and am too hard worked to look it up. At any rate, it is less than the discrepancy of 4 months and 24 days as in the case of Napoleon I.

NOTE—Had the O. A. measured nearer to Aries than Libra, either direct or converse, I should have *added* the Obliquity of the Ecliptic ($23^{\circ} 27'$) to angle A to find angle B. After adding, observe two things:

1. If angle B exceeds 90° subtract 90° from

it and proceed with the remainder, because there are only 90° in a quadrant and this shows that it falls in the next quadrant, just as many degrees as it exceeds 90° , and the longitude also will fall in the next quadrant.

2. In proceeding with the remainder, after subtracting 90° as aforesaid, you must work with the sine, instead of the cosine.

~~Now~~ When the O. A. is nearer to Libra, either direct or converse, always work as in the foregoing example, remembering that when you cannot subtract the Ob. Ec. from angle A, you must subtract angle A from Ob. Ec. ($23^\circ 27'$), for it is the difference between them which makes angle B.

Next proceed to find the longitude of the 12th house. As we are advancing in the Zodiac, towards Libra converse, it is evident that we must now subtract 30° from the O. A. of the 11th, thus: $43^\circ 52'$ minus 30° equal $13^\circ 52'$, being the O. A. from Libra converse. Then proceed:

O. A. from \simeq con.,	$13.52 \cos.$	=	9.987155
+Pole of 12th house,	$33.33 \cot.$	=	10.178394
= < A	$34.20 \cot.$	=	10.165549
-Ob. Ecliptic	23.27	[	9.992118
= < B	$10.53 \cos.$	=	0.007882 (a. c.)
: < A	$34.20 \cos.$	=	9.916859
:: O. A. from \simeq con.	$13.52 \tan.$	=	9.302447
: Long. from \simeq con.	$11.43 \tan.$	=	9.817188

As the longitude is less than 30° from Libra converse, we subtract it from 30° to find its long-

itude in Virgo. 30° minus $11^{\circ} 43'$ equal $18^{\circ} 17'$ of Virgo as the longitude of the cusp of the 12th house. In this calculation the two methods agree to a minute.

I deem these examples sufficient for the student to work by trigonometry, if he has any knowledge of logarithms; but if he has had no experience with them and knows common arithmetic, any friend in the least familiar with higher mathematics can easily teach him. It is well to practice both methods by Tables of Oblique Ascensions and Trigonometry.

I am so hard pushed for money to meet the expenses of this publication that I cannot pay the cost of engraving and stereotyping another horoscope, as now rectified, but if the student desires to make calculations in the Nativity, it can be easily done, since the longitudes of the cusps have been calculated.

CHAPTER XXV.

HOW TO MAKE A TABLE OF ELEMENTS.

English astrologers call a Table of Elements a "Speculum," a term signifying "a looking glass," and which belongs more especially to

surgery, although used in Natural History, but has no more reference to a Table Elements for computing the arcs of direction in a Nativity than a drug store has to a pig pen, nor half as much.

After wasting months of time at work by Trigonometry and the various methods proposed by different astrologers, I finally decided in favor of working by the Semi-Arcs of the planets as the most natural and reasonable. Hence, Tables of Proportional Logarithms are an indispensable necessity, and I have found by experience that a Table of Elements should be constructed by computing the constant Logarithms for both the sun and moon.

For inserting the elements of data in the Table, the paper should be ruled across the ruled lines so as to have a column for each, to be inserted in the following order:

Planets; Lat.; Long.; R. A.; M. D.; Dec.; A. D.; Sac.; 2-3 Sac.; and Const. Log. for sun and moon. No Const. Log. is needed for the Promitors, [planets,] for I never direct one planet to another. This is a modern invention and very convenient to find the arc for a past event, but of no value for predicting. I formerly extended the Table of Elements so as to include data for all the "new aspects", but I no longer compute any but Conjunction, Sextile,

Quartile, Trine and Opposition, and these are more than inspire my full confidence.

When Peter, the Great was in London he attended the Court of Queen's Bench and was surprised to see so many powdered and wigged men there. So he asked what their business was, and on learning that they were lawyers, remarked: "I have only two lawyers in all my dominions, and when I return to Russia I think I will have one of them executed." That is about the way I feel regarding the "new aspects."

As the sun has no latitude, it is evident that there will be a blank in the Table of Elements opposite the sun, in the column headed Lat. In this blank I always insert the latitude of birthplace, as convenient for reference.

I have already explained the method for finding, from the Tables of R. A. and Dec., what the R. A. and Dec. of a given longitude, with latitude, may be. The process for finding from Dec. what the A. D. (Ascensional Difference) may be, is precisely the same. You turn to the Table of A. D. and find the *degree* of latitude of birthplace, and equate for the minutes, if there be any. Thus, in my case, I find the column headed "44" and as it is $44^{\circ} 30'$ I equate between the 44 and 45 for the minutes.

The order in which I arrange the Table of El-

ements I have found most convenient for these reasons: I must find R. A. Before finding M. D. and M. D. naturally follows next after R. A. then Dec. must be found before A. D. and A. D. before Sac., 2-3 of Sac., and Const. Log., all of which follow in natural order.

Ascensional Difference is the difference between R. A. and a required Oblique Ascension, and may be found by Logarithms, as previously explained, or by the Tables. Mr. Pearce does not give Tables of A. D. in his Text-Books, but they can be found in "The Grammar of Astrology," by the elder Zadkiel, (Commander Morrison, of the Royal Navy,) as a sort of supplement to Lilly's Astrology, which I can furnish at \$1.50 per copy. Lilly's Astrology is purely Horary, and probably as good as any extant, for I notice that other authors all either copy from him, or compile, changing the language so as to give their work an appearance of originality.

The latitudes of the planets should be accurately calculated for the hour of birth, the same as the longitudes. In my large Ephemeris the Decls. are not given, but can be computed from the Tables of Declination, after the longitudes and latitudes have been calculated. Even in Ephemeris containing the Dec. for only every other day, it is better to work from the Tables,

especially if the Dec. falls on the odd day when not given, than trust to the hurried and often imperfect calculations made for the Ephemeris. I have detected errors of more than a degree in other Ephemeris, and mine may be no better.

The Ephemeris of a Nautical Almanac, however, is always reliable, and every practitioner should have one from which to make his calculations when computing a Table of Elements. The English Nautical Almanac is not only better for this purpose, but cheaper. (I am glad of an opportunity to speak a good word for the English, for I am eclectic and desire the best, no matter if I find it in a spot that is disagreeable.)

The English Nautical Almanac gives the R. A. and Dec. of all the planets, with sun and moon, and also longitudes and latitudes of sun and moon, and is published three years in advance of the current year, so that ships going on a voyage of three years may not be at a loss in keeping their reckoning. The great difficulty with the astrologer, however, is to learn how to convert R. A. and Dec. into longitude and latitude. English astrologers have a monopoly of the business and do not take kindly to the idea of letting out the secret. But I propose to give it away, so that Americans may learn, for as near as I can discover there are not a dozen, out of the hun-

dreds of London astrologers, who can make the computation.

TO FIND LONGITUDE FROM R. A. AND DEC.

1. The R. A. is given in time and must first be converted into space, or degrees and minutes, finding the nearest minute and omitting seconds of a degree.

2. From the R. A. in degrees, subtract 90° , 180° , or 270° whenever you can and proceed with the remainder.

3. When you have subtracted 90° reckon the remainder as beginning at the first point of Cancer; if you subtract 180° the remainder begins at the first point of Libra; and if 270° at the first point of Capricornus. If nothing is subtracted, of course your R. A. begins at the first point of Aries.

4. When you subtract nothing, or have subtracted 180° , work by the following formula.:

R. A. from ♍ or \simeq	00.00 sine = 0.000000
+ Dec.	00.00 cot. = 0.000000
= < A	00.00 tan. = 0.000000
± Ob. Ec.	23.27
= < B	00.00 [0.000000]
As < A	00.00 sine = 0.000000 (a c.)
: < B [exc'ds 90° use cos.]	00.00 sine = 0.000000
; R. A.	00.00 tan. = 0.000000
: Long.	00.00 tan. = 0.000000

NOTE—1. When the longitude and Dec. ar

same name, that is, when both are north, or both south, the Ob. Ec. must be added to angle A for angle B. But if of a different name, then take the difference between them for angle B.

NOTE—2. Should angle B exceed 90° , after adding, subtract 90° and proceed with the remainder, remembering to use the cos. instead of the sine, in which case the latitude will be of a contrary name to the Dec.

5. After converting the R. A. in time into space, if you subtract 90° or 270° , proceed with the remainder and work by the following formula:

R. A. from \odot or \wp	00.00	cos. = 0.000000
+ Dec.	00.00	cot. = 0.000000
= $\angle A$	00.00	tan. = 0.000000
\pm Ob. Ec.	23.27	
= $\angle B$	00.00	[0.000000]
As $\angle A$	00.00	sine = 0.000000 (a.c.)
: $\angle B$ [exc'ds 90° use cos.]	00.00	sine = 0.000000
:: R. A.	00.00	cot. = 0.000000
: Long.	00.00	cot. = 0.000000

NOTE—3. It will be observed that I have placed this symbol, \pm , which means *plus* or *minus*, on the left of $23^\circ 27'$, which is the Obliquity of the Edliptic, to show that O. E. is to be added or subtracted, or the difference taken, as explained in Note 1.

NOTE—4. Angle A and angle B are auxiliary angles to help in the computation. Some mathematicians designate them as 1st angle and 2d

Angle, but I have found it more convenient to make the symbol of an angle, thus: <

6. After finding the longitude by either of the foregoing formulas, work by the following to find the latitude:

As	< A	00.00 cos. =	0.000000
: < B [exc'ds 90° use sine]	00.00 cos. =	0.000000	(a.c.)
:: Dec.	00.00 sine =	0.000000	

: Lat.	00.00 sine =	0.000000	

NOTE—5. When the student has a long task before him, in these calculations, he will gain time and avoid many errors by copying each of the three foregoing formulas on three separate cards, and as he works by only one at a time, lay the other two out of sight, for if all three are before him, with his mind burdened, he may get them mixed.

It is not necessary for a person to be thoroughly versed in Geometry and Trigonometry in order to make any calculations required in astrology. One may learn in a few hours to work by logarithms, although considerable practice is necessary to become sufficiently expert to take out the logarithms without making an occasional mistake. After fifty years experience, if I am tired, or interrupted and have to answer a question, I am very liable to mistake the cos. for the sine, or the sine for the cos., etc.

For the benefit of the novice, I will work out a case in full, and if he will carefully follow the work all through, find all the logs. etc., as though looking over to see if I have done the work right, he can soon familiarize himself with the method and be able to do it himself, merely by following the formulas and consulting the rules.

PROBLEM. In 1891, Feb. 1, the apparent R. A. of Venus is 17 hours, 43 minutes 58 seconds and 44 hundredths of a second, and the Dec. $19^{\circ} 13' 14''$. 9 south; required the longitude.

EXAMPLE.

17h.	43m.	58s.	44
15			
255°	45'	30"	
10	14	6	
265°	59'	36"	

I see by inspection that the R. A. in Space lacks but $24''$ of being 266° , and as I work from the nearest minute I call the R. A. 266° .

As my method of converting time into space is original with myself and may not be clear to the student, I will explain it.

As 1 hour of time is equal to 15° of space I multiply the given hour by 15, thus: 15 times 7 are 105; set down the 5 and carry the 10; 15 times 1 are 15 and 10 to carry make 25 and set it at the left of the 5. Then, as it requires 4 minutes of time to make 1° of space, and divide

the given minutes by 4 and set the quotient under the degrees already found, thus: 4 in 4 is contained 1 time and set it under the ten's place; then 4 is not contained in 3 and I set down a cipher, having the 3 minutes of time for a remainder which make 45' of space; I set the 45' under the 43 minutes of time. In like manner I divide the seconds by 4 and place the quotient under the 45'; this time the remainder is 2 seconds which make 30" and I set them under 58 seconds. For the 44 hundredths of a second it is near enough to divide them by 7, (for 15 is contained in 100 nearly 7 times,) and set the quotient under the 30"; then add all together. Now for the work:

$266^\circ - 180^\circ = 86^\circ$. Then the R. A. is south and distant from the first point of Libra 86° . The R. A. and Dec. are of the same name and I must add the O. E. to $\angle A$ for $\angle B$.

R. A. \simeq	86. 0 sine = 9.998941
Dec.	19. 13 cot. = 10.457719
$\angle A$	70. 44 tan. = 10.456660
+O. E.	23. 27
$=\angle B$	4. 11 [$94^\circ 11' - 90^\circ = 4^\circ 11'$] 9.974969
As $\angle A$	70. 44 sine = 0.025031 (a. c.)
: $\angle B$	4. 11 cos. = 9.998841
\therefore R. A.	86. 0 tan. = 11.155356
26 \dagger 13 =	86. 13 tan. = 11.179298

The longitude will be found $86^\circ 13'$ from the first point of Libra; 30° reach to the first point

of Scorpio, and 30° more to the first point of Sagittarius; it is therefore evident that the remaining $26^\circ 13'$ are from the first point of Sagittarius. So the longitude of Venus on Feb. 1, 1891, at Greenwich mean noon, is $26^\circ 13' +$.

~~It~~ It will be observed that I used the cos. for the excess above 90° instead of the sine as in formula when $\angle B$ is less than 90° . Now for the latitude:

As $\angle A$	9.518468
$\therefore \angle B$	$70.44 \cos. = 0.481532$ (a. c.)
\therefore Dec.	$4.11 \sin = 8.863014$
	$19.13 \sin = 9.517382$
: Lat.	$4.10 \sin = 8.861928$

In this case I used the sine for $\angle B$ instead of the cos. as in the formula, and consequently the latitude is not of the same name as the Dec.; the Dec. was south, therefore the latitude is north. So the latitude of Venus on Feb. 1, 1891, at Greenwich mean noon, is $4^{\circ} N 10'$.

One of my students in St. Louis is a shoemaker, who works daily at his trade, and who never studied higher mathematics till he began work in astrology, and he can make all these calculations as accurately as the best London astrologer. So the intelligent reader need not hesitate to undertake it.

CHAPTER XXVI.

TO FIND THE TIME OF SUNRISE
AND SUNSET.

EXAMPLE.—At what time will the sun rise and set, 1890, Dec. 19, in latitude $59^{\circ} 47'$ N.?

We look in Ephemeris and find sun's Dec. on that day $23^{\circ} 26'$. Turning to Tables of Asc. Dif. we look for 59° Mundane Latitude (which the English mysteriously call "Elevation of the Pole,") and run down the column of Declination to 23; at the point of intersection with 59° we see $44^{\circ} 57'$ which is the Asc. Dif. of 23° in 59° of N. lat.; but we have $26'$ more of Dec. and $47'$ more of Mundane Latitude which must be computed and added to the $44^{\circ} 57'$.

In the column of 59° we see that the Dec. for 24° is $47^{\circ} 49'$ or $2^{\circ} 52'$ greater than for 23° Dec., showing that 1° Dec. at this point is equal to $2^{\circ} 52'$, or $172'$ A. D. Then: As $60' : 172' :: 26' : 75' = 1^{\circ} 15'$. Then for $47'$ Mundane latitude:

Keeping in the line of 23° Dec. move the finger from 59° to 60° Mundane Latitude and see $47^{\circ} 20'$, or $2^{\circ} 23'$ more A. D. then 59° give,

showing that one degree of Mundane Latitude at that point is equal to $2^\circ 23'$ or $143'$ A. D. Then: As $60' : 143' :: 47' : 112' = 1^\circ 52'$. We next make the additions thus:

$$\begin{array}{r} 23^\circ \text{ Dec. in } 59^\circ \text{ N. Lat.} = 44^\circ 57' \text{ A. D.} \\ + \quad 26' \quad " \quad " \quad " \quad = 1 \quad 15 \quad " \\ + \quad 47' \text{ Lat. in } 23^\circ \text{ Dec.} = 1 \quad 52 \quad " \\ \hline = 33^\circ 26' \text{ Dec. in } 59^\circ 47' \text{ Lat.} = 48^\circ 4' \text{ A. D.} \end{array}$$

Those who prefer to work by Trigonometry may find the A. D. as follows:

$$\begin{array}{r} \text{Dec. } 23 \ 26 \ \tan. = 9.636919 \\ + \text{Lat. } 59 \ 47 \ \tan. = 10.234776 \\ \hline = \text{A. D. } 48 \ 5 \ \text{sine} = 9.871695 \end{array}$$

There is a discrepancy of $1'$ between the two methods, and I have noticed that this discrepancy between the Tables and Trigonometry is very common, sometimes amounting to three or four minutes, and may be thus explained:

The Tables are all made by Trigonometry; in finding the natural number from a logarithm we take the nearest minute, which may be either half a minute too small or too large; hence the Tables are not exact, and when two equations are to be made, if the minutes in the Table are only one-third of a minute too small, the first number taken, plus the two equations, will make a discrepancy of a minute. But the Tables are often $45''$ in error, from hurriedly taking out the natural number, and sometimes even $1'$.

These are professional secrets, to be concealed from the public, like many of the difficult calculations in Astrology, but as the popular Professors say I have "not much intellect," they must not be too hard on me for giving away the secrets.

As the method by Trigonometry is more likely to be correct, we convert the $48^{\circ} 5'$ A. D. into time, which makes 3h. 12m. So we see the sun will rise either 3h. 12m. before 6 a. m., or 3h. 12m. later. Were it for June or July, we should know it would rise before 6, but in Dec. it must be past 6. Therefore the answer to the question in the example is: The sun will rise 3h. 12m. past 6 a. m. and set 3h. 12m. before 6 p. m. Or, it will rise at 9. 12 a. m. and set at 2. 48 p. m. Or, it will rise 2h. 48m. before noon and set 2h. 48m. past noon, being above the horizon only 5h. 36m. and below it 18h. 24m.

From this example the reader can readily perceive that with the aid of a Nautical Almanac it is even easier to calculate a common almanac than to compute the interest on a note when partial payments have been made. But these things belong to the secrets of the inner circle of aristocratic science and must be disclosed only at a high price. How strange it is that the public is so ready to pay this high price, and get it in

driblets, from a patrician, but when a poor exoteric like myself offers to *give it away* by wholesale, the people not only refuse to aid in defraying the expense, but join my patrician enemies in denouncing me. Even for writing this paragraph, some "Smart Aleck" will abuse me and say it has nothing to do with astrology.

CHAPTER XXVII.

TO MAKE A HOROSCOPE FOR MUNDANE SOUTH LATITUDE.

1. Find Sidereal Time for the moment of birth precisely as if for N. lat.
2. To the S. T. thus found, if less than 12h. add 12h.; if more than 12h., subtract 12h. and proceed with the sum, or remainder.
3. Take Tables of Houses computed for a N. lat. the same, or nearly the same number of degrees as the S. lat. for which you desire to cast the horoscope.
4. Proceed to find the longitudes of the cusps precisely as if for N. lat., with this difference: Instead of taking the sign at the head of the column, *take its opposite sign*; If Aries is there, place Libra on the cusp; if Taurus, take Scorpio, and so on. I will give an example.

PART 8.

PRIMER OF ASTROLOGY.

CHAPTER XXVII.

TO MAKE A HOROSCOPE FOR MUNDANE SOUTH LATITUDE.

[*Continued.*]

Required the horoscope of a child born in $34^{\circ} 44'$ S. lat. 1890, July 4, at 5. 14 a. m.

Sidereal Time on that day is 6h. 50m.; the birth occurred 6h. 46m. before noon. Then $6.50 - 6.46 = 0^{\circ} 4'$, which is S. T. at the moment of birth; add 12h. and we have 12h. 4m. Huntsville, Ala. is $34^{\circ} 44'$ N. lat.; so we take Tables of Houses for Huntsville and having found S. T. at birth, 12. 4, in the column for the 10th house see Libra 1 and on cusp of the 10th put Aries 1. Scorpio 0° is on the cusp of the 11th, and we place Taurus 0° there. For the 12th, instead of Scorpio 24, place Taurus 24. The Ascdt. will be $15^{\circ} 20'$ Gemini; the cusp of the 2d Cancer 18, and of the 3d, Leo 26.

By this method we merely take the opposite S. T. and opposite signs, for the opposite side earth's equator. This is easy for any one to learn, and all who have learned, while computing Directions, to work with the opposite semi-arc, will readily understand the reason why it should be done; but for the better understanding of young students some further explanations are necessary.

Mr. Pearce explains it in Vol. I. of his Text-Book, and in Vol. II, gives Tables of Houses calculated for Melbourne. But, what with his obscure explanations and his awkward manner of arranging his Tables, beginning with the Ascdt. instead of the M. C., the young, and even old students, get confused. They can make a horoscope for Melbonrne, from his Tables, but cannot transpose Tables made for north mundane latitude.

It will be seen from my explanation and example that we do not need Tables for the southern hemisphere at all. When I have occasion to calculate a Nativity for a southern latitude, for instance 59° and have no Tables for the north near enough to 59° I calculate the cusps for north latitude, and then transpose the houses so as not to make mistakes in the reading. But for the reason why.

Suppose that instead of water, at the earth's equator, there was a great plain, with a trail running east and west to mark where the equator is. On the morning of March 21st, Mr. A. takes his stand 100 feet north of the equator, facing it, and Mr. B takes a stand 100 feet south of the equator, also facing it. At 6 a. m. they both see the sun rise in a line with the equator, at right angles with the horizon, and in the first degree of the sign Aries. A sees it rise on his left hand and B sees it on his right.

Now suppose they can stand in that position till June 21st. Every day it will continue to rise about 40' farther north than on the previous day till it arrives at the first point of Cancer, when it will be $23^{\circ} 27'$ north of the equator, which shows the "Obliquity of the Ecliptic." There it halts for about three days, and then it will daily rise farther and farther south, till about the 22d of Sept. when it will rise again on a line with the equator.

After that it will rise daily, farther south, till it reaches Capricornus, about Dec. 22d where it will again halt for about three days, and then start on its return north.

About June 21st any man at $23^{\circ} 27'$ north latitude, will see the sun exactly over his head at noon; so will a person at the equator about March

21st and Sept 23d; so will one about Dec. 22d who is living in $23^{\circ} 27'$ south latitude. Thus the sun (apparently, only,) seems to forever journey from Cancer to Capricornus and return. The space thus travelled over is called the "Torrid Zone," or "tropical region," while Cancer and Capricornus are called the "tropics," or "tropical signs."

If A stands at the equator June 21st and faces north, he will see the sun $23^{\circ} 27'$ north of the Zenith at noon; if on the same day a man stands $46^{\circ} 54'$ north of the equator, and faces south, he will see the sun $23^{\circ} 27'$ south of the Zenith at noon. Reverse all the factors named, and a similar phenomenon will be visible south of the equator.

Suppose A is an angel, (not Raphael,) and can fly around the earth in 24 hours. He is at the equator March 21st and at sunrise wings his flight north. All the time, till he arrives at the north pole, he will see the sun on the horizon, as though it had just risen, although it is noon at the equator and B., who has remained there, will see the sun in the Zenith, or exactly overhead.

Angel A may now doff his wings and pitch his tent at the north pole till Sept. 23d. Every day he will see the sun *apparently* move entirely round the earth, each day about 40' farther from

the horizon till it gains an altitude of $23^{\circ} 27'$. There it will halt, at midsummer, maintaining apparently the same altitude, yet daily performing a revolution about the heavens, for about three days, and then daily decreasing his altitude, at each revolution around the heavens, till Sept. 23d when he will sink below the horizon, in the first point of the sign Libra, and appear to a spectator at the south pole, performing a revolution around the heavens at the verge of the horizon.

Six months night has now begun for angel A. Suppose B is an angel at the south pole, the six months of day has begun for him, and of course the sun is in Libra to him also. When the sun reaches Capricornus, Dec. 22d, it will be noon or midsummer at the south pole; at the north pole it will be midnight, or midwinter.

It is now evident that the sun is in *the same sign*, to observers at the south pole that it is at the north pole. Yet the student may have fancied from my instruction to take the opposite S. T., and opposite sign, in making the horoscope, that the sun would be in the opposite sign also. The reason I so instructed was that the horoscope might be read by the same rules, *in every particular*, by which we read here in the north.

Aries rises, bringing up the sun, when spring

begins in the northern hemisphere, and Libra rises, bringing up sun, when spring begins in the southern hemisphere. Then Scorpio corresponds to Taurus, Sagittarius to Gemini, etc.

To complete the horoscope for the southern hemisphere, after inserting the longitudes on the cusps, we have only to calculate their longitudes precisely as if north of the equator, that is, find the Noonmark of the place of birth reckoned from Greenwich, and place the planets in the same signs, on the horoscope, in which they are in the Ephemeris, for the signs have been transposed and it will be remembered that our antœci see the same sign and planets rise on their right hand, at or about the same time that we see them at our left. There is a difference of time, however, when the planet is not at the equinox, on account of the obliquity of the ecliptic.

When the horoscope for the southern hemisphere has been completed, then all the conclusions and calculations, such as R. A., Dec., A. D., Semi-arc, dignites and debilities of the planets, etc., are to be considered in the same manner as a horoscope made for the northern hemisphere.

In this connection the Recession of the Equinoxes, [erroniously called Precession] must be considered, because certain educated idiots who know nothing of the sublime science of astrology,

save what they have learned from the chumps, who teach "planetary influence" in opposition to "heredity," declare that the constellations having changed their places since the days of Claudius Ptolemy, it is evident that they have no influence over man. The constellation Pisces came to the vernal equinox two or three centuries before the beginning of our present Era, and at this date the constellation Aquarius is there.

The astronomy contained in the Bible, so beautifully veiled in allegories, is extremely interesting, when once understood. In Genesis XLIX we have an account of the blessing which Jacob bestows on eleven of his sons; Ephraim having been omitted, but supplied in Deut. XXXIII, 17. Verses 22, 23 and 24 of Gen. XLIX, record the blessing bestowed on his favorite son:

"Joseph is a fruitful bough, even a fruitful bough by a well, whose branches run over the wall: The archers have sorely grieved him, and shot at him, and hated him: But his bow abode in strength, and the arms of his hands were made strong by the hands of the mighty God of Jacob: from thence is the shepherd, the stone of Israel."

Let us see if this description will not quadrat with Sagittarius. The date indicates a period, or era, when the vernal equinox had recessed about 15° in Gemini, and of course the autumnal equinox had recessed the same distance

in Sagittarius, which has a half man and half horse for its symbol. The man has a bow and arrow, symbolical of an archer, or hunter, and faces the summer solstice. When the sun entered Sagittarius, at that period, summer ended and all were busy gathering the last fruits of the year and shouting the harvest home.

Here is an explanation of the "fruitful bough." It "run over the wall," has two significations.
1. Many of the fruits were not gathered till *after* the sun had passed the autumnal equinox.
2. The constellation Sagittarius was, *apparently*, falling backwards and below the equinoctial, at the rate of 50".3 a year. The "fall rains," "equinoctial storm, etc.,," began about that time, symbolized by a "well," the receptacle of water. The "wall" is always symbol of a boundary, and here was the boundary between summer and autumn, or summer and winter, when the year was divided into two seasons only.

The "hunting season" also began when the sun entered Sagittarius, but when the equinox had recessed 15° through Sagittarius the beginning of the season was about two weeks later than it was before the recession began. The hunters were impatient and cross about it, which is poetically described by saying, "the archers have sorely grieved him, and shot at him, etc."

We know very well that there is not a word in the Bible that will corroborate this in a *literal* sense, while scientifically it fits in every particular.

The region of the Zodiac where the sun was transiting in summer was metaphorically "the kingdom of heaven," "the Elysian," "the region of light," because the days were longer than the nights, while the winter portion was "the infernal regions," it was "hell" and "outer darkness." When half of Sagittarius had apparently fallen below the equinoctial, then the horse part was in hell, but the arms which held the bow were still in the summer region, which is beautifully described by saying: "But his bow abode in strength."

When the sun was passing the autumnal equinox, then the shepherds were required to be doubly attentive to their flocks, for violent storms often arose suddenly, at that season; the "stone," like a "wall," was also a symbol of boundary, set up by Jacob as a dividing line between summer and winter, and therefore "the stone of Israel." But the translators, evidently not comprehending the esoteric meaning, rendered it rather awkwardly, and then in acknowledgment of their ignorance, enclosed it in parenthesis, which I omit, for I know of no rule of interpre-

tation to justify making it a parenthetic sentence.

Veiled in the most beautiful allegory ever constructed by the wit of man, is the touching story of "Joseph sold into Egypt." Refering to the Hebrew we find that the Jews used the name "Egypt" as meaning something that "troubles;" "oppresses;" "binds;" "straitens, etc." *Strait* does not mean the opposite of crooked, but narrow, difficult, distressful, etc. This describes the winter season, when they often suffered with cold and hunger, corresponding with the oppression of the Egyptians, in later years. Thus we find "Egypt," used as a synonym for winter, as Babylon was for harlots.

In the lapse of time the vernal equinox passed over Gemini and entered the 30th degree of Taurus. Sagittarius then entirely disappeared in the winter region, or "Egypt," and Scorpio came to the autumnal equinox. Jacob anticipated this phenomenon in blessing Dan, for he says:

"Dan shall be a serpent by the way, an adder in the path, that biteth the horse-heels, so that his rider shall fall backward." [Gen. XLIX, 17.]

No language can more eloquently describe the recession when Sagittarius finally completed his fall into the winter region, closely pursued by Scorpio which was metaphorically, biting his "horse-heels." Had it read "horse's heels,"

there might have been room for quibbling as to its true meaning, but the author provided against that by employing the compound noun "horse-heels," which cannot by any stretch of the imagination signify anything but the "archer and horse," symbol for Sagittarius.

When Scorpio came to the autumnal equinox, and Taurus, [generic term for bull, ox, cow, calf,] was established at the vernal equinox, then the oriental nations made all Taurus animals sacred.

But 2,154 years later Scorpio also fell out, or was "cast out" of the kingdom of heaven to where there was "weeping, and wailing, and gnashing of teeth," that is, into the region of winter, when they were supposed to gnash their teeth for want of food to gnash.

Figuratively, the "casting out" of Scorpio was "the war in heaven," and Scorpio was supposed to resist, but Michael, [the same as God] and "the angels of light," or good angels, [the summer constellations,] "fought against the dragon," [Scorpio, Rev XII, 7, 8,] "neither was their place found any more in heaven." Then "the powers of heaven were shaken," and the stars of Scorpio fell below the equinoctial.

Then Libra came to the autumnal equinox and Aries to the vernal. This brings us to the

period when astrology was popular at the court of Pharaoh, where Moses was brought up and educated in all the science of the Egyptians. Having resolved to lead his oppressed people out of Egypt and deliver them from bondage, and also having discovered by calculating the recession that Taurus had "passed over" the equinoctial and given place to Aries, (generic term for ram, lamb and sheep,) he established the "Pass Over" and commemorated it by the slaughter of a male lamb, sprinkling the blood upon the door post, etc.

In the journey through the wilderness, while Moses was away on the mountain, the people murmured against him, repudiated Aries, "the sheep of Israel," and persuaded Aaron to make them an emblem of Taurus. So he made a "golden calf" and they relapsed into the Taurus worship.

When Moses came down from the mountain and discovered their apostacy, he lost his temper, threw down and broke the tables of stone on which God had engraved his laws, burned the calf and caused about three thousand to be put to death. Such was the penalty for their "thirsting for the flesh-pots of Egypt."

In 2,154 years more the vernal equinox had recessed into Pisces and "the sheep of Israel"

was "lost." The Essenes, in imitation of the Theraputæ of Egypt, (evidently the same school of philosophers,) undertook the task of saving "the lost sheep of the house of Israel." [Israel claimed the celestial house, Aries, while Judah had Leo, "the lion of the tribe of Judah."]

This hasty glance at the history of recession may provoke some of the fossils to abuse me for not sticking to astrology, but I felt obliged by the rules of logic to base my premises on *facts*, instead of *imagining* them, as so many do who discuss astrology.

Claudius Ptolemy, the Egyptian, who flourished 1,800 years ago, taught that the constellations had nothing to do with astrological calculations. He declared that the first 30° , beginning with the first point of the vernal equinox, had the same signification as to the weather, the coming of spring, making calculations in a horoscope, etc., regardless of what constellation happened to be there. Since then other astrologers have corroborated this doctrine till no one can be found who will *directly* dispute it, however much they may do so indirectly.

During the 2,154 years that Pisces occupied the vernal equinox, astrology was taught and practiced precisely the same as when the constellation Aries was there. Yet all astrologers know

that the *sign Aries* denotes an entirely different man from the sign *Pisces*. This is axiomatic needing no proof; so I will proceed to the next point.

A man born in the southern hemisphere with the sign *Libra* rising, must be described exactly the same as one born in the northern hemisphere when the sign *Aries* is rising, yet *Libra* denotes a *Venus* man and *Aries* a *Mars* man, no more alike than gentleness and violence. This fact is also an axiom. But I fancy when Raphael reads this he will exclaim:

"W. H. Chaney has again been wandering in his mind. We know, and have proved, thousands of times, that the planets, and stars that are within a short distance of the ecliptic, influence and mould the man in every particular."

Very well; let us see if it is not you who are wandering in your mind.

Our present system of astrology was established when the constellation *Aries* was at the vernal equinox. It was then discovered that *Aries* denoted a spare, wiry body; long, slender neck, with a face tapering towards the chin, like the outline of a sheep's face, and that *Pisces* denoted a plump, fleshy person; short, thick neck, short, fin-like limbs and one that would "drink like a fish."

Well, if the constellations have an independent *influence* to *cause* these very different kinds of persons, a change of the equinoctial point would not affect that influence. Ice is cold, and it is just as cold in July as January. Then if Pisces had this influence as a constellation, when within 30° of the vernal equinox, it is preposterous to assert, in the absence of all proof, that, chameleon-like, it suddenly changed the influence and took on the influence of Aries. To assert this, is to admit the correctness of my position, namely, that the heavenly bodies only *indicate*, like the hands of a watch, and that they do not *cause*.

This is my case with its proofs, and I appeal to the intelligent ladies and gentlemen of America to decide whether or not it is logical for Jim Cross to overlook my proofs, deny heredity, and without a particle of proof on his side, to sneer at me and slur me as a man deficient in intelligence.

Some months ago Mr. Lacy, of London, wrote me that he thought Foulsham and Co., publishers for Raphael, might sell a thousand copies of each PART of the PRIMER if I would eliminate from it my strictures on the Prince of Wales and his hopeful son, Albert Victor, and other Englishmen. I respectfully declined.

He has since written that several of the Eng-

lish students would purchase the PRIMER, when completed, if I would strike out what I have said about Raphael, but I still declined. It seems to me the English must have a very low opinion of an American author, to suppose that such a contemptible offer would bribe him to silence. I am too near my grave to be influenced by malice, even against Raphael, and as for British gold, if I sold out, I could not take it with me.

CHAPTER XXIX.

TO FIND A PLANET'S DAILY MOTION WHEN THE HOROSCOPE IS FOR A PLACE EAST OF GREENWICH.

For America, and all places west of Greenwich, the N-k is always a. m., but for all places east of Greenwich the N-k will always be p. m. Therefore the rule for subtracting to find a planet's daily motion must be the reverse of what has been taught and should read as follows:

If the No. h. are less than 12, subtract its longitude on the day of the horoscope from the following day; but if the No. h. are more than 12, subtract the longitude of the previous day from the day of the horoscope, and in either case the

remainder will be the planet's daily motion. I will explain why I have made these rules, which the "angels" have thought beneath their notice.

Suppose the moon is moving at an accelerated motion, that is, that she moves 12' farther on Monday than she did on Sunday; it is evident that she will not move so far during the first 12 hours of Monday as she will the last 12 hours. But by observing this rule an error of 3 or 4 minutes may be avoided. The most accurate method, when computing Directions, is to have a Nautical Almanac, where the moon's R. A. and Dec. are given for every hour.

CHAPTER XXX.

ANNUAL REVOLUTIONS.

While I feel assured there is some truth in the doctrine taught regarding Revolutions, my experience has been to find far more error than truth in the teachings of Simmonite, who has published a work entirely devoted to Solar Revolution.

Pearce follows the elder Zadkiel, and gives us nothing new, nor tells us how to read the Figure, while I disagree with his instructions for making the Figure and agree with Simmonite in that particular, but reject more than half he says

about the reading. I had expected to give readings of the Solar and Progressive Revolutions, but the dead failure of public patronage, and failure of health from overwork, compel me to stop. I will, however, teach how to make the Figures and then students must learn by experience, as I have, how they should be read.

SOLAR REVOLUTION.

At the moment of my birth the place of the sun was $23^{\circ} 46'$ of Capricornus. I desire to know at what moment the sun will reach that point in 1890, and then make a horoscope for that moment. I look in the Ephemeris for a longitude next smaller than sun's radix and find it on Jan. 13th, namely, $23^{\circ} 19' 27''$ of Capricornus. As I must make the Figure the same as though still living in the place of my birth, this is the sun's longitude at 7. 20 a. m., or N-k of my birth place.

I say: $23^{\circ} 46' - 23^{\circ} 19' 27'' = 25' 33''$ showing that the sun lacked that much longitude of reaching its radix. Therefore I must find the time required for this. I subtract the sun's longitude on the 13th from the 14th and find it moved $1^{\circ} 1' 10''$ in 24 hours; then how long a time will be required for the sun to move $19' 27''$? By Proportion:

As $61' 10'' : 24\text{h.} :: 26' 33'' : 10\text{h. } 25\text{m.}$

As it will require 10 h. 25 m. for the sun to gain his radix, I add the time to the N-k, thus: 7h. 20m. + 10h. 25m. = 17h. 45m. — 12h. = 5h. 45m. p. m. I then make a horoscope for 1890, Jan. 13th at 5. 45 p. m. and that is my Figure of Solar Revolution.

PROGRESSIVE REVOLUTION.

This Figure is very easy to compute. I have only to set down Sid. Time at my birth and add to it 4m. for each year of life. 1890, Jan. 13th I was 69 years old. Then $69 \times 4\text{m.} = 276\text{m.} = 11\text{h. } 12\text{m.}$ to which add Sid. Time at my birth. which was 7h. 4m. and we have 18h. 16m., which must be added to 11h. 30m. p. m. the time of my birth, and it gives 29h. 46m., from which take away the circle of 24h. and there remain 5h. 46m.

Then the data will stand: 1890. Jan 14 at 5. 46 p. m. for which make the Horoscope, remembering that the Sid. Time for the moment of the horoscope must be 18h. 16m. which gives about 4° of Capricornus on the M. C. and $8^\circ 23'$ of Aries on the Ascdt., using Bangor Tables of Houses, which is near enough for the latitude of my birthplace.

Jupiter will be found on the cusp of the 11th

House, denoting that some wealthy person or persons will befriend me this year, which has been fully verified, for without such help I should have failed before getting out PART 2.

The time from the N-k till time of horoscope is 10h. 26m. which is the No. h. for which to calculate the longitudes of the planets on Jan. 14th, and place in the Horoscope, after the longitudes of the cusps have been found as aforesaid.

CHAPTER XXXI.

IMPORTANT PAPER BY PROF. WIELAND.

PROF. W. H. CHANEY.

DEAR SIR: I have bought the 6 Parts now published of your PRIMER and am very much pleased with it, especially with your original and profound method of reading horoscopes, by which, it seems to me, we are enabled to grasp the very nature of the native as it feels and acts.

As you so vigorously and fearlessly attack the errors and abuses that have crept into the doctrine and practice of the grand old science, I feel encouraged to send you a paper that contains, I think, not a discovery but a recovery. I hope you will publish it, if you can accept its contents, because the subject is well worth earnest consideration.

Respectfully yours,

CHARLES WIELAND.

HOW TO FIND THE CORRECT POSITION OF THE MOON IN ASTROLOGY.

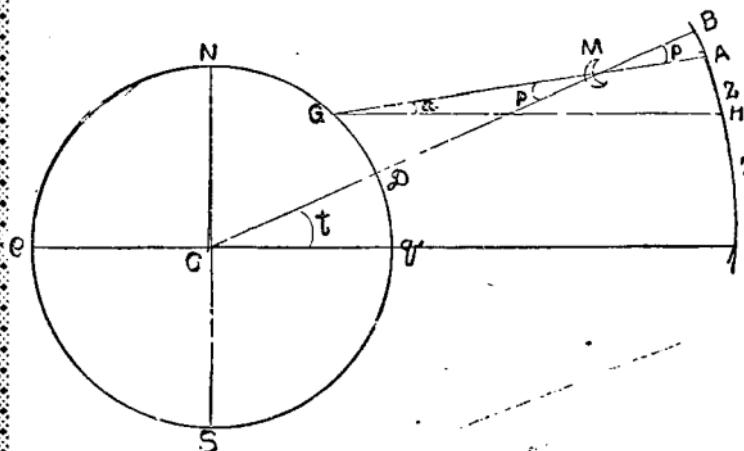
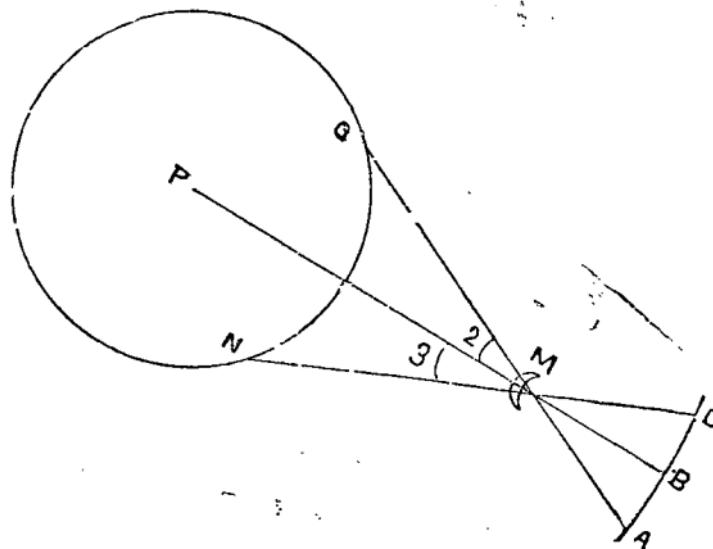
The fact which we are about to consider is of so much importance that without it we cannot obtain correct Primary Directions of the moon. Sometimes the error may amount to a whole year. I am therefore astonished that modern authors like Raphael and Zadkiel make no mention of the matter, and can hardly realize that I am the first to direct attention to the subject.

Suppose a person born in Philadelphia, at 10 a. m. To make the horoscope we turn to the Greenwich ephemeris and calculate therefrom, the planets' places at 3 p. m., (allowing for a difference of just 5 hours between the two cities.) The places for sun and planets proper, thus found, will differ so little from their correct positions that the variation can scarcely be perceived, amounting at most to a few seconds. But for the moon the difference is important, because the moon is distant only 60 earth's radii from the earth's center. At Philadelphia the moon is not seen at the same point in the zodiac that it is at Greenwich, the observations being made at the same moment.

We must first calculate the moon's longitude and latitude by the rules just mentioned and given in the Primer, and rectify it by taking into account what is called in astronomy the "moon's parallaxes," of which there are three kinds, namely, P'x in Altitude, P'x in R. Ascension and P'x in Declination. We are concerned with the latter two only and shall first speak of the Parallax in Declination.

EXPLANATION OF FIG. 1.

In the following diagram the circle may represent the meridian at Greenwich, or any other place: e q is the earth's equator, while N and S are the poles. ZZ is an arc of the heavens and must be understood to be an immense distance from the earth; also understand that the moon is distant from C, the earth's center, 60 earth's radii, (plural of radius, meaning half the diameter.)

FIGURE 1.**FIGURE 2.**

The angle $A G H = a$ which the moon-line $M G$ forms with the line $G H$, parallel with the equator, is the moon's "apparent declination" at Greenwich, while the angle $B C q = t$ is the moon's "true" declination, as it is called in astronomy.

The angle $G M C = p$ is the moon's Parallax in Declination. The "true" moon is always higher than the "apparent" moon if the place G is north of the point D , or, if the latitude of the place is greater than the true declination.

To define the Parallax in R. A. we look upon the earth from above.

EXPLANATION OF FIG. 2.

P is the north pole; G is Greenwich, placed on its parallel circle. G sees the moon on the heavenly sphere at A , while if it could be viewed from the earth's center, it would appear at B , which marks the moon's "true" R. A., measured, of course, on the equinoctial, while A marks the "apparent" R. A. at Greenwich, west of the true moon. The true R. A. is the same for all places on the earth, as is also the true declination. The angle $G M P = 2$ is the moon's Parallax in R. A. at Greenwich. From New Orleans (for the sake of simplicity, placed on the same parallel as Greenwich) the moon would be seen at D , and farther east than the true moon.

Now the astrological ephemeris gives us the "true" longitudes, latitudes and declinations of the moon directly copied from the official Nautical Almanacs, and therefore we have but to determine the two parallaxes for any place of birth after having calculated the true Long., Lat., Dec. and R. A. according to the common method. But what astonishes me is that no astrologer seems to trouble himself about parallaxes and even the London High Priests of Astrology do not breathe a word of the existence of such a thing and evidently expect us to take the moon of their ephemeris as our moon because they take it as theirs. I wonder how this true moon first crept into the science. Ptolemy, is innocent this time. He had no earth's center, nor

radius, nor did he know anything about the moon's distance from the earth; and therefore took her as she appeared to him, and that was correct. For astrology deals with the planets' light as its rays come straight to the observer. What is technically termed "true" in Astronomy is an abstraction necessary for mathematical purposes, but it is false if considered as an astrological position. Thus it seems to us; and if others teach differently, they ought to give their reasons.

From the foregoing explanations regarding the two kinds of parallaxes we proceed to our problem:

What are the moon's apparent R. A., Dec., Long. and Lat. at any place, if these four factors are given "true" in the ephemeris?

For the purpose of solving this question we have prepared two sets of Tables of Parallaxes which will be found at the end of this paper. Both kinds of parallaxes are dependent upon the moon's distance from the meridian of the place, as well as upon her Dec. Therefore the first column contains the moon's true M. D.

The figures at the top of the columns in the Table for Parallax in Dec. give the moon's Dec. for every fifth degree, varying from 0° to 25° , both north and south.

In the Table for parallax in R. A., the same Dec., whether north or south, gives the same parallax: but in the Table for P'x in Dec., a distinction is made between north and south.

For the geographical lat. of C's distances and declinations not found in the Tables we determine the parallax by the general method used with tables, namely, by proportion or equation which, by the way, can be done here almost at sight.

With these preparations we will further illustrate the use of the tables by a few examples.

EXAMPLE. 1. Locate the moon for a person born at Greenwich, noon, Sept. 18th, 1889.

SOLUTION.

Greenwich S. T.	11h. 50m. 23s
× No. of deg. in 1h.	15
= R. A. of M. at G.	177° 26
- C's true R. A.	100 40
= " true M. D.	76 56
" true R. A.	100° 40
- " P'x in R. A.	38
= " Ap't R. A.	100 2
" true Dec.	23° N 10'
- " P'x in Dec.	38
= " Ap't Dec.	22 32

To the foregoing changes in R. A. and Dec. correspond the moon's Long., 9° 16', and Lat. 0° S 37' computed, not from the ephemeris, but by the trigonometrical rules given in PART 7 of the PRIMER. The Lat. is really south because the Parallax depresses the moon below the sun's Dec.

If the P'x in R. A. is disregarded in Directions, an error is caused here of about 8 months in the happening of the event, the prediction being based on a false Arc.

Before we proceed to other illustrations let us state the rules to be observed in this work of rectification.

1. The apparent moon's R. A. is less than the true, when the moon is west of the place, and the reverse when she is east. Therefore subtract the P'x in R. A. in the first case, and add in the second.

2. This obtains on both sides for a moon's M. D. from 0° to 180°. At these two points the parallax is zero; while it reaches its maximum at M. D.=90°.

3. If the moon's M. D. is greater than 90° take its supplement when looking for the P'x in the tables; for instance: for 97° take 180° - 97° = 83°.

4. The latter are computed for the moon's mean distance from the earth, namely, when she is 90°, or near that, from the perigee or apogee.

If the moon is in, or near, the perigee, add, if near the apogee subtract from the P'x one-fourteenth of its amount; for instance, if the moon is in perigee in the foregoing example, (which I am not able to ascertain at present), add $38 \div 14 = 3$; then $38' + 3' = 41'$. For intermediate places of about 45° from the four positions mentioned, add, or subtract one-thirtieth. As to the P'x in Dec., always add or subtract $2' 30''$ in the extremes, $1'. 15''$ in the intermediate positions.

EXAMPLE 2. 1889, Sept. 4, at 3. 15 p. m. N, Orleans, Lat. 30° N., Long. 90° W. Locate the moon.

SOLUTION.

3h. 15m. at N. O. = 9h. 15m. at Greenwich, and for this time we find the moon's true Long. = $9^{\text{h}} 49$ in Lat. 0° N $1'. 42''$. Dec. = 23° S 1. To this corresponds the moon's true R. A. $280^\circ 43'$. (Table of R. A.) Then:

	S. T. Greenwich noon		10h. 55m. 11s.	
+ " N. O.	" "	0 0 59		
+ " past	" "	3 15		
+ " hours	" "		32	
= " at N. O.		14 11 42		
\times No. of deg. in 1h.				15
= R. A. of M. C. at N. O.		212° 55' 30"		
$\underline{-}$ C's true R. A.		280 43		
$\underline{-}$ R. A. of M. C. at N. O.		212 55 30		
= C's M. D. at N. O.		67 47 30		
$\underline{+}$ " P'x in R. A. (Table 1)			50	
$\underline{+}$ " true R. A.		280 43		
= " apparent R. A.		281 33		
$\underline{+}$ " P'x in Dec. (Table 2)			32	
$\underline{+}$ " true Dec.		23 1		
= apparent Dec.		23 S 33		

From the rectified R. A. and Dec. we compute the moon's correct long. and lat. by the rules given in PART 7 of PRIMER: Long. $10^{\text{h}} 35'$: Lat. $0^\circ 56'$.

EXAMPLE 3. C's true R. A. = 24° ; true Dec. = $14^{\circ} S\ 45'$. Locate the moon for Los Angeles, Cal., $35^{\circ} N.$ and $120^{\circ} W.$, when the M. C. of Los Angeles has $116^{\circ} 15' R. A.$

SOLUTION.

C's true M. D. at Los Angeles = $116^{\circ} 15' - 24^{\circ} 30' = 91^{\circ} 45'$, instead of which we use $88^{\circ} 15'$ to find the P'xes in the Table.

C's true R. A.	$24^{\circ}\ 30'$
- " P'x in R. A.	$48\ 30''$
= " apparent R. A.	$23\ 41\ 30$
<hr/>	
C's true Dec.	$14^{\circ} S\ 45$
+ " P'x in Dec.	31
= " apparent Dec.	$15^{\circ} S\ 16$

The correct Dec. has to be known for three reasons.

First. It is desirable to know whether there is a close moon's parallel in the Nativity itself. A parallel is complete if the moon's center falls on the planet's parallel of Dec.; and it extends to the point, where the moon's disk, which has a diameter of $30'$, touches that parallel circle with one of its limbs.

Second. A transit over the moon by parallel continues until the planet has past the entire disk, (unless he should recede and leave the moon's belt of Dec. by the same limb it entered it.) This often continues for months, and it is necessary to know the days when it begins and when it ends, that is, to know the moon's rectified Dec.

Third. We need the moon's correct Dec. when she forms an aspect, in order to obtain the correct semi-arc or oblique ascension, in Direction direct. Therefore, after speaking hitherto only of one of the two ends of the Arc of Direction, namely, the moon's position at birth, we have now to consider the other end where she forms the aspect. The moon's Parallel shall be treated afterwards; in all other aspects the moon is seen at the same point of the zodiac from all places of the earth; but she is not seen there at the same time from all places; for when forming the as-

pect, she is on a straight line drawn through the place parallel to the line that connects the aspect with the earth's center. While the true moon forms the aspect the apparent moon does not form it, generally, but we make use of that aspect in order to get to the apparent aspect, by stages.

To bring the matter to a clear understanding, let us determine the moon's apparent Dec. at $\textcircled{C} \delta^{\circ} h$ d. d. in our Example 2.

The place of this aspect at Greenwich 9. 15 p. m. is $26^{\circ} 16'$. We begin with the true moon forming this aspect and from that calculate the moon's position and declination in the apparent aspect. We find by proportion that the true moon is in δ° to h on Sept. 8, at 2. 44 a. m. Greenwich on Sept 7, at 8. 44 p. m. N. Orleans, with Dec. 16S14, Lat. 3. 40.

Sept. 7, S. T. Gr'ch noon	11h. 7m. 1s.	
+ " N. O. "	59	
+ hours past "	8 44	
+ S. T.	1 26	
= S. T. at N. O.	19 53	26
\times No. deg. in 1h.		15
= R. A. M. C. at N. O.	298 21	30
(C's true R. A.	327° 15'	30' (table)
- R. A. M. C. at N. O.	298 21	30
= C's M. D. at N. O.	28 54	(east)
" P'x in R. A.	25	(table)

The moon is seen from N. O. 25' too far east: she formed the aspect in N. Orleans 42m. earlier, as found by proportion from ephemeris, thus: $60 \times 25 \div 35.5 = 42$. At that moment the city was $42 \div 4 = 10^{\circ} 30'$ farther west; and the moon's M. D. from N. Orleans was $28^{\circ} 54' - 24' + 10^{\circ} 30' = 39^{\circ}$. This causes another parallax of 33', or N. Orleans still sees the moon $33 - 25 = 8'$ too far east. Repeating the backward movement which takes place in $8 \times 60 \div 35.5$ m., we push N. Orleans farther west by $8 \times 60 \div 35.5 \div 4 = 3^{\circ} 23'$ to a moon's distance $= 39^{\circ} - 33' + 3^{\circ} 23' = 41^{\circ} 50'$. This produces a parallax of 35'. Our

moon, therefore, is still $35' - 33' = 2'$ too far east. Its removal of $2'$ takes $2 \times 60 \div 35.5$ m. and causes the city to retire by $2 \times 60 \div 35.5 \div 4 = 50'$ to a M. D. $= 41^\circ 50' - 2' + 51' = 42^\circ 38'$, with a parallax $= 35.5$ and only $30'$ more westward movement. P'x in Dec. equal $37'$.

Thus the true moon is 35.5 m. too far west for N. Orleans to form the aspect. This excess is made in $35.5 \times 60 \div 35.5 = 60$ m., in which time the Dec. changes by $120' \div 12 = 10'$, so that the true Dec. is $16^\circ S\ 14' + 10' = 16^\circ S\ 24'$, and the apparent Dec. is $16^\circ 24' + 37' = 17^\circ S\ 1'$, by which Dec. the semi-arc is to be calculated.

(By the method just illustrated we can also compute the correct full and new moons, etc., for a place. Our common almanacs seem to give the true moon's phases accurately to minutes, without heeding the parallax.) For a perfect understanding, the student should make a diagram according to the foregoing calculation. For those who prefer to compute with trigonometrical logarithms, we have deduced the following accurate formula for calculating the apparent moon of an aspect. It is based on the condition that the line N M, from the place to the apparent moon must be parallel with C A, the line that connects the aspect, ($\odot h$) with the earth's center.

Sine p = $(\sin 57' \times \cos. l \div \cos. d) \times \sin(e + 15 \times p \div s)$. Where p = the ultimate parallax required in minutes, sine $57' = r \div R$ = earth's radius \div moon's distance; (it would be sine $53'$ for apogee, sine $61'$ for perigee;) l = Lat. of the place (N. Orleans 30°); d = moon's true Dec., when forming the aspect ($16^\circ 14'$); e = moon's true M. D. at the city, $28^\circ 54'$ when forming the aspect; s = the moon's speed in minutes per hour ($36'$). After obtaining a = $28^\circ 54'$ and the first insufficient P'x = $25'$, we might try p = 30 , then p = 35 and find sine p too small; but $36'$ would be too great, and therefore p = 35.5 is the correct parallax. But as we know where we shall land we begin with p = 35 .

		9.9812
True Dec.	$16^{\circ} 44' \cos. = 0.0187$ (a. c.)	
	0 57 sine = 8 2196	
Lat.	30 00 cos. = 9 9375	
=		8 1758
+		$43^{\circ} 32' \sin e = 8 8381$
=		8 0139
-p =	0 35 sine = 8 0078	
=	Too small by	0 0061
		8.1758
+		$43^{\circ} 54' \sin e = 9 8410$
=		8 0168
		$0 36 \sin e = 8 0200$
-		8 0168
=	Too great by	0 0032

And p = 35.5 correct. The rest as in the foregoing.
In the first case we get for a + 15 × p ÷ s:

$$28^{\circ} 54' + 15 \times 35 \div 36 = 43^{\circ} 32'$$

In the second:

$$28^{\circ} 54' + 15 \times 36 \div 36 = 43^{\circ} 54'$$

It still remains to show how the rectified R. A. and Dec. for a moon's Parallel are determined. For an illustration we take C Par. ♂ d. d., in our Example 2.

At 9. 15 p. m., Greenwich, the Dec. of ♂ is 16N26, while the moon's nearest Parallel will have south Dec. We therefore assume the true moon with 16S26 — 36' = 15S50 to form the aspect. For 36' is the mean parallax for the case. This takes place Sept. 8, 4h. 46m. after midnight, Greenwich, or 10. 46 p. m., N. Orleans; or 7h. 31m. later, when the Dec. is $16^{\circ} 40'$, or 50' more south.

C's Long.	$24^{\text{h}} 38' + 2^{\circ} 50' = 27^{\text{h}} 28'$
" Lat.	3S34 + 10 = 3S44
" R. A.	331°

S. T. Greenwich noon	11h.	7m.	1s.
+ " at N. O. "			59
+ hours past "	10	46	
. + S. T.		1	46
= " at N. O.	21	55	46
× No. deg. in 1h.			15
= R. A. M. C. at N. O.	328	56	40
(C's R. A	331		
- R. A. M. C. at N. O.	328	56	30
= C's M. D. at N.O.	2	4	
" P'x in Dec.			40'

Or the apparent moon would be in $15^{\circ} 50' + 40' = 16S30$; or 4' too low. We therefore take the true C with a Dec. equal 15S46, or 54' in Dec. equal 5h. 9m. in time, later than midnight, Greenwich, or 11h. 9m. p. m., N. O., Sept. 7, which is later by 23' than in the first assumption. Now the moon's true Long. equal $27w34$, Lat. $3^{\circ} 45'$. C's true R. A. equal $331^{\circ} 8'$. N. Orleans travels $23 \times 15 \div 60 = 5^{\circ} 45'$ eastward and therefore has a R. A. equal $328^{\circ} 56' + 5^{\circ} 45' = 334^{\circ} 41'$. Moon's M. D. at N. Orleans equal $3^{\circ} 33'$ west.

Moons Parallax in Dec. equal 40', again, which shows that the true moon has the correct position; and that the apparent R. A. is $331^{\circ} 8' - 4' = 331^{\circ} 4'$, (4' being the P'x in R. A.,) with an apparent Long. of $27w30$, Lat. $3S45$, and the correct Dec. is $15S46 + 40' = 16S26$.

These calculations are somewhat troublesome, especially until we are familiarized with the matter. But this circumstance should not become a pretext for neglecting the same, if there are no other reasons against it. The question is: Will pale Cynthia, when seated in her natural position, look with a closer interest upon some of the many battles, defeats, victories, births, deaths, marriages, divorces, etc., at which she has hitherto stood as godmother, if not the real mother, and on the other hand turn her face from those with whom she showed sympathy only to please the astrological gentlemen?

But how can anything certain be learned about Directions as long as we measure with two measures, that is, have not decided which of the two methods of reducing Arcs of Direction to time is correct, and which false?

The astronomical formulas from which our Tables have been calculated are as follows:

$$1. \sin P R = \frac{\sin 57' \times \cos. l \times \sin(m + P R)}{\cos. d}$$

$$2. \cot. a = \frac{\cos. \left\{ m + \frac{P D}{2} \right\} \cot. l}{\cos. \frac{P D}{2}}$$

$$3. b = \frac{\sin 57' \times \sin l}{\sin a}$$

$$4. \sin P D = b \times \sin(a - d + P D)$$

P R, Parallax in R. A.; P D, Parallax in Dec.; l, latitude of the place; m, C's true M. D. at the place; d, C's true Dec. The formulas 2 and 3 are auxiliary to 4. As the exactness required did not prove to be affected by P R and P D, the formulas were simplified to:

$$(1) \sin P R = \frac{\sin 57' \times \cos. l \times \sin m}{\cos. d}$$

$$(2) \cot. a = \cos. m \times \cot. l$$

$$(3) b = \frac{\sin 57' \times \sin l}{\sin a}$$

$$(4) \sin P D = b \times \sin(a - d)$$

EXAMPLE.—Required the Parallaxes, Greenwich, when the moon's M. D. is 50° , and Dec. 20° south, the latitude being $51^\circ 32'$ and longitude 0.

FOR PARALLAX IN R. A.

		9.9730
Dec.	20. 00	cos. = 0 0270 (a. c.)
+ +Lat.	0 57	sine = 8 2196
+M. D.	51 32	cos. = 9 7938
	50 00	sine = 9 8842
=P'x in R. A.	0 29	sine = 7 9246

FOR PARALLAX IN DEC.

M. D.	50. 00	cos. = 9.8081
+Lat.	51 32	cot. = 9 9001
=< A	62 57	cot. = 9 7032
+Dec.	20 00	
=< B	82 57	
		9.9497
< A	62. 57	sine = 0 0503 (a. c.)
+< B	82 57	sine = 9 9967
+ +Lat.	0 57	sine = 8 2196
	51 32	sine = 9 8937
=P'x in Dec.	0 50	sine = 8 1603

NOTE.—To find $\angle B$ we have the formula, $a-d = 62^\circ 57' - (-20^\circ)$. This is "minus a minus quantity", which is equivalent to plus the same quantity. Therefore we say: $62^\circ 57' + 20^\circ = 82^\circ 57' < B$. What sine $57'$ means has been explained in the foregoing.

CONCLUSION.

Several months ago I stated in the PRIMER that I feared I should break down about the first of August. This was predicted on the indications of Saturn transiting a quartile of my moon's radix and Mars an opposition of the same. In order that I might be prepared for the expected evil, I decided to rush the work as fast as possible

and print PART 8 before the impending evil commenced. During June I was constantly overtaxing my strength, confident that I should be able to stand it till the middle of July, before which time I should have this PART issued.

July 3d I was suddenly attacked with cholera morbus, having symptoms of cholera, which I readily comprehended, having previously seen hundreds of cases and had it myself. On the 5th the symptoms were unmistakable, for the rice-water discharges began. I concealed the nature of my illness lest there might be a panic and people die of fright, as so many do in such cases. I succeeded in checking this dangerous form of the disease, but had a relapse on the 6th, which was speedily checked and barely in time to escape the collapse state. Perhaps my will and imagination had something to do with my speedy recovery, but no matter as long as I recovered.

From this experience I have learned that the evil indicated may be hastened, and begin before it is due, by overtaxing, etc. Also, that when the allotted evil has been dealt out, improvement may begin before the aspect actually culminates, for I was steadily gaining health and strength when it did culminate, and when I expected to be all broken down in both health and

finance. So the imagination had nothing to do with the attack, nor did fear and imagination prevent me from improving at the very time I had predicted I should be the worst.

The reader will now understand why PART 8 has been delayed for a month, and why we shall not be able to issue the first number of the magazine—THE MAGIC CIRCLE—before the beginning of 1891. The ANNUAL for next year is not yet calculated in full; none of the copy has been written; I am a month behind in work that has been ordered, and in answering letters, and finally, must earn the money needed to start the new monthly, as the public seems to be more interested in divination, Raphael's Book of Dreams, Crystal Balls and Baby's Cauls, than in Natural Science.

The ANNUAL will certainly be ready by the first of November, and we will try to get it out in October. The Ephemeris for 1891 will be the most complete ever published, for it will contain the Latitudes and Declinations for *every* day, and also the Right Ascension of the moon to aid in correcting the Parallax of the moon.

The magazine will be \$1 a year, in advance, and in it we will continue to give instruction in astrology, simplify the rules, etc.

Poverty and sickness have prevented me from publishing two more parts of the PRIMER, and

hence the Index, Errata, Vocabulary, etc., have been crowded out. I regret the many typographical errors, but with so much work, and always in a hurry, the errors escape unnoticed. But I am somewhat consoled with the reflection that I have made a beginning in the work of reform, which I trust my students will not fail to continue.

Rectifying the Parallax of the moon is of the highest importance, before computing Directions, and for this I feel very grateful to Prof. Wieland. It is not for myself that I thank him, for I shall hardly live to profit by it; but in the name of my students and all American Astrologers who are disgusted with the ignorance and pomposity of the London Astrologers, who, unable to read a horoscope correctly, denounce me as having not much intellect, call me "Dr. Quack" and say that I am from "Jackass Hill,".

Prof. Wieland has also discovered an error in the English method of computing the Poles of the Houses. In low latitudes the discrepancy is trifling, but at Greenwich may amount to $45'$ and in latitude 63° amounts to $4^\circ 32'$. I had intended publishing the rules for making this correction, so important for calculating Directions, but misfortunes have compelled me to leave that, as well as so much of my other work, unfinished, that it constitutes my chief regret at the thought of death.

With a smile for my friends and a frown of defiance for my enemies, I subscribe myself,

W. H. CHANEY.

Moon's Parallax in R. A. for

Merid. Dist.	N. O. LA	Wash D C	Boston	Green'ch	St. Pet'g
	30° 00' Lat.	38° 54' Lat.	42° 23' Lat.	51° 32' Lat.	60° 00' Lat.
	Dec.	Dec.	Dec.	Dec.	Dec.
	0° 15° 25°	0° 15° 25°	0° 15° 25°	0° 15° 25°	0° 15° 25°
5	5 5 5	4 4 4	4 4 4	3 3 3	2 3 3
10	9 9 10	8 9 9	7 8 8	6 7 7	5 5 6
20	17 18 19	15 16 17	14 15 16	12 13 14	10 10 11
30	25 27 28	23 24 25	21 22 23	18 19 20	14 15 16
40	32 34 36	30 31 32	27 28 30	24 25	18 19 20
50	38 41 43	35 36 38	32 34 36	27 28 30	22 23 24
60	41 45 48	39 40 43	37 38 41	30 32 34	25 26 27
70	44 48 51	42 43 46	40 41 44	33 35 37	27 28 30
80	49 51 53	44 45 48	42 43 46	35 36 39	28 29 31
90	50 52 54	45 46 50	42 44 47	35 37 40	29 29 31

Merid. Dist. in the above Table is the Moon's Meridian Distance at the place where the Parallax is to be found.

The Declinations, $0^\circ 15^\circ 25^\circ$, are for both N. and S. Dec.

Table of Moon's P'x in Dec.

St. Petersburg, Lat $59^{\circ} 56'$. | Washington Lat. $38^{\circ} 54'$.

TABLES OF APPROXIMATE LONGITUDES.

I had not time to calculate these Tables myself, and so copied from Raphael, which I consider a sufficient guaranty that they are not accurate. However, it is not important that they should be exact, as their chief use is to calculate transits in the future, and these transits are seldom on time, being, like the breaking up of winter—sometimes two weeks early and sometimes two weeks late.

HOW TO USE THE TABLES.

You wish to know when Mars will reach your Midheaven and how long he will continue his transit there. Suppose you have Aries 12° on the cusp. Look in the Tables and find when Mars arrives 7° in Aries, for then he is within 5° and his transit is reckoned to begin. Suppose Taurus 14° on the cusp of the 11th. Then when Mars gains 9° in Taurus he has completed his transit on the Midheaven. In like manner you look for the transit of Mars, and all the other planets, through any and all of the mundane houses.

Remember that when Mars is transiting on your Midheaven, he will not be transiting on the Midheaven of any one else who does not have Aries on the cusp.

APPROXIMATE LONGITUDES.

Month.	1889.				1892.			
Jan.	21 Δ	19Ω	22 \ddagger	24 ϖ	5π	0 Δ	13 \aleph	15π
Feb.	22R	17R	29..	19 \aleph	6..	29 ϖ	19..	5 \ddagger
Mar.	21..	15..	4 $\nu\delta$	9 \aleph	6R	29R	26..	22..
Apr.	20..	13..	7..	28	5..	25..	3 \aleph	10 $\nu\delta$
May.	19..	13D	8R	24..	4..	24..	11..	26..
June.	18..	15..	6..	16II	3..	23D	17..	4 ω
July.	18..	18..	3..	6 ϖ	2..	24..	22..	4R
Aug.	18D	22..	29 \ddagger	26..	2D	27..	24..	28 $\nu\delta$
Sept.	20..	26..	28..	16Ω	3..	0 Δ	24R	1 ω
Oct.	21..	29..	0 $\nu\delta$	5 ϖ	5..	4..	21..	16D
Nov.	23..	2 ϖ	5D	24..	7..	8..	17..	4 \aleph
Dec.	25..	4..	11..	12 Δ	8..	10..	15..	19..
1890.				1893.				
Jan.	26 Δ	4 ϖ	18 $\nu\delta$	0π	9π	12 Δ	16 \aleph	5 π
Feb.	27R	2R	25..	17..	9..	13R	19..	24..
Mar.	26..	0..	1 ω	0 \ddagger	10R	11..	24..	11 $\nu\delta$
Apr.	25..	28Ω	7..	11..	9..	9..	18	2II
May.	24..	27..	11..	13R	8..	7..	8..	22..
June.	23..	28D	12..	5..	7..	6..	16..	11Ω
July.	23D	0 ϖ	11R	28π	6..	6D	22..	1Ω
Aug.	23..	4..	7..	3 \ddagger	6D	8..	27..	21..
Sept.	24..	8..	3..	17D	7..	11..	1II	10 ϖ
Oct.	26..	11..	2..	5 $\nu\delta$	9..	15..	1R	0 Δ
Nov.	28..	14..	4D	26..	11..	19..	28 \aleph	20..
Dec.	0π	17..	8..	18 ω	13..	22..	24..	9π
1891.				1894.				
Jan.	1π	17 ϖ	14 ω	11 \aleph	14π	24 Δ	23 \aleph	0 \ddagger
Feb.	1..	16R	21..	4 \aleph	15..	25..	22D	21..
Mar.	1R	14..	28..	25..	15 ω	24R	24..	10 $\nu\delta$
Apr.	29 Δ	11..	6 \aleph	17 \aleph	14..	22..	0II	2 ω
May.	28..	10..	11..	7II	13..	20..	6..	23..
June.	27..	11D	16..	29..	12..	19..	13..	14 \aleph
July.	28D	12..	18..	18 ϖ	11..	18..	20..	5 π
Aug.	28..	15..	17R	8Ω	11D	20D	26..	22..
Sept.	29..	19..	14..	28..	12..	22..	2 ϖ	4 \aleph
Oct.	0π	23..	10..	17 ϖ	13..	26..	5..	2R
Nov.	2..	26..	8..	7 Δ	15..	0π	6R	23 \aleph
Dec.	4..	29..	9D	26..	17..	3..	4..	22..

APPROXIMATE LONGITUDES.

3

Month.	1895.				1898.			
Jan.	19 m	6 m	0 D	0 s	2 f	8 f	9 s	29 f
Feb.	20..	7..	27 \square	14..	3..	10..	10..	22 v
Mar.	20..	7..	26..	0 II	3..	12..	8 R	14 w
Apr.	19 R	5 R	28 D	18..	5 R	12 R	5..	8 x
May.	18..	3..	3 D	6 D	2..	11..	2..	1 y
June.	17..	1..	9..	24..	1..	9..	0..	25..
July.	16..	1..	16..	13 v	0..	7..	2 D	17 v
Aug.	16..	1 D	23..	2 v	0..	6..	6..	8 v
Sept.	16 D	3..	29..	22..	0..	6 D	11..	29..
Oct.	18..	6..	5 Ω	11 s	1 D	8..	18..	16 v
Nov.	19..	10 v	8..	2 m	2..	11..	24..	1 Ω
Dec.	21..	14..	9..	23..	4..	14..	1 m	9..
	1896.				1899.			
Jan.	23 m	17 m	7 Ω	15 f	6 f	18 f	6 m	5 Ω
Feb.	24..	19..	3 R	7 v	7..	21..	9..	24 v
Mar.	24..	19 R	0..	28..	8..	23..	10 R	21..
Apr.	24 R	18..	29 v	21 w	8..	24..	8..	25..
May.	23..	16..	1 Ω	14 x	7 R	23 R	4..	7 Ω
June.	22..	14..	5..	7 v	6..	21..	1..	22..
July.	21..	13..	11..	29..	5..	19..	0..	9 v
Aug.	20..	13 D	18..	20 v	4..	17..	2 D	27..
Sept.	21 D	14..	24..	9 II	4..	17..	6..	17 s
Oct.	22..	17..	0 v	23..	5 D	18 D	12..	7 m
Nov.	24..	20..	6..	0 v	6..	21..	18..	29..
Dec.	26..	24..	9..	22 II	8..	24..	25..	21 f
	1897.				1900.			
Jan.	27 m	27 m	10 v	13 II	10 f	28 f	1 f	14 v
Feb.	28..	0 f	8 R	14 D	11..	1 v	6..	9 w
Mar.	29..	1..	5..	21..	12..	4..	10..	1 x
Apr.	28 R	0 R	1..	4 v	12..	5..	11..	25..
May.	27..	29 m	0..	20..	12 R	5..	9 R	18 y
June.	26..	26..	2 D	7 Ω	10..	3 R	5..	11 v
July.	25 m	2..	6..	25..	9..	1..	2..	8 v
Aug.	25..	24..	11..	14 v	8..	29 f	1 D	24..
Sept.	25 D	25 D	18..	4 s	8..	28..	3..	14 v
Oct.	26..	27..	24..	24..	9 D	29 D	7..	4 Ω
Nov.	28..	1 f	1 s	15 m	11..	1 v	12..	19..
Dec.	0 f	4..	6..	6 f	12..	4..	19..	4 v

APPROXIMATE LONGITUDES.

Month.	1901.				1904.			
	⊕	h	Ω	♂	⊕	h	Ω	♂
Jan.	14↑	8v3	26↑	13v3	26↑	8w	18x	17w
Feb.	16..	12..	3v3	10R	28..	12..	24..	11x
Mar.	17..	14..	8..	0..	29R	15..	0v3	3v3
Apr.	17..	16..	12..	24Ω	0v3	18..	8..	26..
May.	16R	16..	13..	28D	29↑	20..	15..	18x
June.	15..	15R	11R	9v3	28..	21..	21..	10II
July.	14..	13..	8:	23..	27..	20R	26..	1x
Aug.	13..	11D	4..	11△	26..	18..	29..	21..
Sept.	13..	10..	3..	1v3	26..	16..	08	11Ω
Oct.	13D	10..	5D	21..	26D	15..	27v3	0v3
Nov.	15..	12..	9..	13↑	27..	14..	25R	19..
Dec.	17..	14..	14..	6v3	28..	16D	21..	7△
1902.				1905.				
Jan.	18↑	18v3	21v5	0w	0v5	19w	21v	24△
Feb.	20..	22..	29..	25..	2..	22..	24..	10v3
Mar.	21..	24..	5w	17x	3..	26..	29..	20..
Apr.	21..	27..	11..	11v3	4..	29..	58	26..
May.	21R	28..	15..	3v3	4..	1x	12..	19R
June.	19..	27R	17R	26..	3R	3..	20..	10..
July.	18..	25..	16..	17II	2..	2R	26..	11D
Aug.	17..	23..	13..	8D	0..	1..	2II	21..
Sept.	17..	22..	9..	28..	0..	29w	6..	6↑
Oct.	17D	21..	7..	17Ω	0D	27..	6..	25..
Nov.	18..	22D	9D	5v3	1..	26..	4..	17v3
Dec.	20..	25..	12..	21..	3..	27D	0..	11w
1903.				1906.				
Jan.	22↑	28v3	18w	6△	5v5	29w	27v3	4x
Feb.	24..	2w	25..	15..	6..	3x	27..	27..
Mar.	25..	5..	2x	15R	8..	6..	29..	18v3
Apr.	25..	7..	10..	4..	8..	10..	4II	118
May.	25R	9..	16..	29v3	8R	13..	10..	2II
June.	24..	9R	21..	3△	...	14..	17..	23..
July.	23..	8..	23..	12..	6..	15..	24..	13x
Aug.	22..	6..	23..	27..	5..	14R	0D	3Ω
Sept.	21..	4..	20R	16v3	4..	12..	6..	23..
Oct.	22D	3..	16..	7↑	4D	9..	10..	12v3
Nov.	23..	3D	13..	0v3	5..	8..	11..	1△
Dec.	25..	5..	14D	22..	7..	8D	9R	20..

APPROXIMATE LONGITUDES.

5

Month.	1907.				1910.			
Jan.	19⅔	9.Ⅲ	24	11Ⅳ	20⅔	16Ⅲ	13.△	18.Ⅲ
Feb.	10..	14..	2	29..	22..	18..	14..	5.8
Mar.	12..	17..	1..	15.‡	24..	21..	13.R	22..
Apr.	12..	21..	3.D	2.3	25..	24..	9..	11.II
May.	12.R	24..	7..	13..	25..	28..	6..	0.3
June.	12..	26..	13..	18..	25.R	18	4..	19..
July.	1..	27..	19..	13.R	24..	4..	6.D	8.Ω
Aug.	9..	27.R	26..	6..	22..	6..	9..	27..
Sept.	8..	25..	3.Ω	11.D	21..	6.R	15..	17.Ⅳ
Oct.	8.D	23..	8..	24..	21..	4..	21..	6.△
Nov.	9..	21..	12..	13.Ⅲ	22.D	2..	28..	27..
Dec.	11..	21..	14..	2.‡	23..	0..	4.Ⅳ	17.Ⅳ
1908.					1911.			
Jan.	13⅔	22.‡	12.Ω	24.‡	24⅔	29.Ⅲ	9.Ⅳ	8.‡
Feb.	14..	25..	8.R	16.Ⅲ	26..	0.8	13..	1.3
Mar.	16..	28..	5..	5.3	28..	2..	14..	22..
Apr.	17..	2.Ⅲ	4..	26..	29..	6..	13.R	14.Ω
May.	17.R	5..	5.D	16.II	29..	10..	9..	7.‡
June.	16..	8..	9..	7.△	29.R	14..	6..	0.Ⅲ
July.	15..	10..	14..	26..	28..	17..	5..	21..
Aug.	14..	10.R	21..	16.Ω	27..	19..	6.D	12.8
Sept.	13..	8..	28..	5.Ω	26..	20.R	10..	29..
Oct.	13.D	6..	4.Ω	24..	25..	19..	15..	9.II
Nov.	13..	4..	9..	14.△	25.D	17..	22..	9.R
Dec.	14..	3.D	13..	4.Ⅳ	27..	14..	28..	28.8
1909.					1912.			
Jan.	16⅔	4.Ⅲ	14.Ⅳ	24.Ⅳ	28⅔	13.8	5.‡	24.8
Feb.	18..	6..	13.R	15.‡	0.Ⅲ	13.D	10..	1.II
Mar.	20..	9..	9..	4.Ⅲ	1..	15..	14..	12..
Apr.	21..	13..	6..	24..	3..	18..	15..	29..
May.	21..	17..	4..	14.Ⅲ	3..	22..	14.R	14.Ω
June.	20.R	20..	6.D	4.‡	3.R	26..	10..	2.Ω
July.	19..	22..	9..	22..	2..	29..	...	20..
Aug.	18..	23.R	15..	4.Ⅲ	1..	2.II	5..	10.Ⅳ
Sept.	17..	22..	21..	3.R	0..	+	7.D	29..
Oct.	17..	20..	28..	26.‡	29⅔	3.R	10..	19.△
Nov.	17.D	18..	4.△	25.D	29.D	2..	16..	10.Ⅳ
Dec.	19..	16..	9..	4.Ⅲ	0.Ⅲ	29.8	23..	1.‡

APPROXIMATE LONGITUDES.

Month.	1913.					1916.				
	⊕	b	♈	♂		⊕	b	♈	♂	
Jan.	3.✉	27.8	0.♈	23.♈		14.✉	13.♉	23.♓	11.♏	
Feb.	4..	27.D	6..	17.♍		15..	10..	28..	25.♌	
Mar.	5..	28..	12..	8.✉		17..	9..	4.♈	13..	
Apr.	7..	0.♊	16..	2.♓		18..	10.D	12..	17.D	
May.	7..	4..	18..	25..		19..	11..	19..	20..	
June.	7.R	8..	17.R	18.♀		19..	15..	26..	2.♍	
July.	6..	12..	13..	10.♌		19.R	19..	1.♎	17..	
Aug.	5..	15..	10..	2.♊		18..	23..	5..	6.△	
Sept.	4..	17..	8..	21..		17..	26..	6..	25..	
Oct.	3..	18..	9.D	9.♉		16..	29..	3.R	16.♏	
Nov.	3.D	17.R	13..	21..		16..	0.Q	29.♀	8.♈	
Dec.	4..	15..	18..	24.R		16..	0..	26..	0.✉	
	1914.					1917.				
Jan.	7.✉	12.□	25.♍	16.♉		18.✉	28.♉	26.♀	24.♎	
Feb.	8..	11..	3.✉	7..		19..	26.R	29..	18.✉	
Mar.	9..	11.D	9..	8.D		21..	24..	3.♌	10.♓	
Apr.	11..	13..	15..	17..		22..	23..	10..	5.♀	
May.	11..	16..	20..	1.Q		23..	24.D	17..	28..	
June.	11.R	20..	22..	17..		23..	27..	24..	20.♌	
July.	10..	24..	22.R	3.♍		23.R	1.Q	0.□	12.□	
Aug.	9..	28..	19..	22..		22..	5..	6..	3.♉	
Sept.	8..	0.♉	15..	12.△		21..	9..	10..	23..	
Oct.	7..	2..	13..	1.♏		20..	12..	12..	12.Q	
Nov.	7..	2.R	13.D	23..		20..	14..	10.R	29..	
Dec.	8.D	0..	17..	15.♈		20.D	14.R	6..	15.♍	
	1915.					1918.				
Jan.	10.▫	27.□	23.✉	8.♍		21.✉	13.Q	3.□	27.♍	
Feb.	12..	26..	29..	2.✉		23..	11.R	2..	3.△	
Mar.	13..	25..	6.♓	25..		25..	8..	3.D	29.♍	
Apr.	15..	26.D	14..	16.♓		26..	7..	8..	18..	
May.	15.R	29..	20..	12.♀		27..	8.D	14..	15.D	
June.	15..	3.♉	25..	6.♌		28..	10..	21..	22..	
July.	14..	6..	28..	27..		27.R	11..	2..	4.△	
Aug.	13..	10..	28..	19.□		26..	17..	4.♉	20..	
Sept.	12..	13..	26.R	9.♉		25..	21..	10..	10.♏	
Oct.	11..	15..	22..	27..		24..	21..	14..	0.♈	
Nov.	11.D	16.R	19..	14.Q		24..	27..	16.R	23..	
Dec.	12..	15..	19..	25..		24.D	28..	15..	15.✉	

TABLES OF HOUSES.

The student should ever bear in mind that celestial longitude is distance from the first point of Aries, measured east on the ecliptic. A horoscope has 12 cusps, and each cusp has its own longitude which is calculated on this basis. Mundane longitude has no reference to the heavens, but mundane latitude is an important factor in calculating the Tables. The deduction from these facts is that Tables for all places north, or south, of the equator, are precisely the same, when the mundane latitude is the same.

The cusp of the 10th house, which is the place of beginning, whether to make Tables or a horoscope, has its longitude calculated by R. A., so that whether in mundane latitude 1° or 60° , the longitudes of the 10th and 4th are the same. All the other cusps are calculated by oblique ascension, so that they vary with the variations of mundane latitude.

At the earth's equator, where the latitude is 0, the sun is in the Zenith at noon, whenever it is at an equinox, namely, about the 21st of March and 23d of September. But in latitude 45° north, we see the sun at noon, on the same days, a long distance south of the Zenith, while the people in the southern hemisphere, in the same latitude, see it the same distance north of the Zenith. All these facts are considered in constructing Tables of Houses, rules for which, and other explanations, will be given hereafter.

2 TABLES OF HOUSES.

R. A. or S. T.	H ^o	CHICAGO, ILLS.,						BANGOR, ME.					
at Birth.		LAT. 41° 50' N.						LAT. 44° 49' N.					
	10	11	12	1	2	3		10	11	12	1	2	3
H. M.	♀	♂	π	Ω	♈	♉	♀	♂	π	Ω	♈	♉	♀
0 04	1	8	17	20	23	10	2	1	8	19	22	18	11
0 07	2	9	18	21	7	10	3	2	9	19	23	1	12
0 11	3	10	19	21	51	11	4	3	10	20	23	44	12
0 15	4	11	19	22	35	12	5	4	11	21	24	27	13
0 18	5	12	20	23	19	13	6	5	13	22	25	10	14
0 22	6	13	21	24	3	13	7	6	14	23	25	52	15
0 26	7	14	22	24	47	14	7	7	15	24	26	35	15
0 29	8	15	23	25	31	15	8	8	16	25	27	18	16
0 33	9	16	24	26	15	16	9	9	17	26	28	1	17
0 37	10	17	25	26	59	16	10	10	18	26	28	44	18
0 40	11	18	26	27	43	17	11	11	19	27	29	28	18
0 44	12	19	26	28	27	18	12	12	20	28	0Ω	9	19
0 48	13	20	27	29	11	19	13	13	21	29	0	52	20
0 52	14	21	28	29	54	20	14	14	22	25	1	35	21
0 55	15	22	29	0Ω	38	20	14	15	23	1	2	18	21
0 59	16	23	25	1	21	21	15	16	24	1	3	0	22
1 03	17	24	1	2	4	22	16	17	25	2	3	43	23
1 06	18	25	2	2	48	23	17	18	26	3	4	26	24
1 10	19	26	3	3	32	24	18	19	27	4	5	9	24
1 14	20	27	3	4	16	24	19	20	28	5	5	52	25
1 18	21	28	4	5	0	25	20	21	29	6	6	34	26
1 21	22	29	5	5	44	26	21	22	π	7	7	17	27
1 25	23	11	6	6	28	27	22	23	1	7	8	0	28
1 29	24	1	7	7	12	27	22	24	2	8	8	43	28
1 33	25	2	7	7	56	28	23	25	3	9	9	26	29
1 36	26	3	8	8	40	29	24	26	4	10	10	9	24
1 40	27	4	9	9	24	♈	25	27	5	11	10	52	1
1 44	28	5	10	10	9	1	26	28	6	12	11	35	1
1 48	29	6	11	10	54	1	27	29	7	12	12	18	2
1 52	30	7	12	11	38	2	28	30	8	13	13	1	3

TABLES OF HOUSES 3

R. A. or S. T.	H ^o	CHICAGO, ILLS.						BANGOR, ME.					
at Birth.	10°	LAT. 41° 50' N.						LAT. 44° 49' N.					
H. M.	8	II	8	Q	Q	吸	吸	8	II	8	Q	吸	吸
1 55	1	8	13	12	22	3	29	1	8	14	13	44	4
1 59	2	9	13	13	6	4	△	2	9	15	14	27	5
2 03	3	9	14	13	51	5	1	3	10	16	15	10	1
2 07	4	10	15	14	36	6	2	4	11	17	15	54	6
2 11	5	11	16	15	21	6	3	5	12	17	16	38	7
2 15	6	12	17	16	6	7	4	6	13	18	17	21	8
2 19	7	13	18	16	51	8	4	7	14	19	18	5	9
2 23	8	14	18	17	36	9	5	8	15	20	18	49	9
2 26	9	15	19	18	21	10	6	9	16	21	19	33	10
2 30	10	16	20	19	7	11	7	10	17	21	20	17	11
2 34	11	17	21	19	52	12	8	11	18	22	21	12	8
2 38	12	18	22	20	38	12	9	12	19	23	21	45	13
2 42	13	19	22	21	24	13	10	13	20	24	22	30	14
2 46	14	20	23	22	10	14	11	14	21	25	23	15	11
2 50	15	21	24	22	56	15	12	15	22	26	24	0	15
2 54	16	22	25	23	42	16	13	16	23	26	24	45	16
2 58	17	23	26	24	28	17	14	17	24	27	25	30	17
3 02	18	24	27	25	15	17	15	18	25	28	26	15	15
3 06	19	25	27	26	2	18	16	19	26	29	27	1	19
3 10	20	26	28	26	49	19	17	20	26	Q	27	47	19
3 14	21	26	29	27	36	20	18	21	27	1	28	33	20
3 18	22	27	Q	28	23	21	19	22	28	1	29	19	21
3 22	23	28	1	29	11	22	20	23	29	2	0吸	5	22
3 26	24	29	2	29	59	23	21	24	Q	3	0	51	23
3 31	25	Q	3	0吸	47	24	22	25	1	4	1	38	24
3 35	26	1	4	1	35	24	23	26	2	5	2	25	22
3 39	27	2	4	2	23	25	24	27	3	6	3	12	26
3 43	28	3	5	3	11	26	25	28	4	7	3	59	26
3 47	29	4	6	3	59	27	26	29	5	7	4	46	27
3 51	30	5	7	4	48	28	27	30	6	8	5	33	28

4 TABLES OF HOUSES.

R. A. or S. T.	H. o. at Birth.	CHICAGO, ILLS.							BANGOR, ME.						
		LAT. $41^{\circ} 50' N.$							LAT. $44^{\circ} 49' N.$						
		10	11	12	1	2	3		10	11	12	1	2	3	
		°	°	°	,	°	°		°	°	°	,	°	°	
H. M.		II	○	λ	吸	吸	△		II	○	λ	吸	吸	△	
3 55	1	6	8	5	37	29	28		1	7	9	6	20	29	27
4 00	2	7	9	6	26	△	29		2	8	10	7	7	△	28
4 04	3	8	10	7	15	1	29		3	9	11	7	55	1	29
4 08	4	9	11	8	4	2	π		4	10	12	8	43	2	π
4 12	5	10	11	8	53	3	1		5	11	13	9	31	3	1
4 16	6	11	12	9	42	4	2		6	11	13	10	19	3	2
4 21	7	12	13	10	31	4	3		7	12	14	11	8	4	3
4 25	8	13	14	11	21	5	4		8	13	15	11	56	5	4
4 29	9	13	15	12	11	6	5		9	14	16	12	45	6	5
4 33	10	14	16	13	1	7	6		10	15	17	13	33	7	6
4 38	11	15	17	13	51	8	7		11	16	18	14	21	8	7
4 42	12	16	18	14	41	9	8		12	17	19	15	10	9	8
4 46	13	17	18	15	31	10	9		13	18	20	15	59	10	9
4 51	14	18	19	16	22	11	10		14	19	20	16	48	11	10
4 55	15	19	20	17	13	12	11		15	20	21	17	37	11	11
4 59	16	20	21	18	3	13	12		16	21	22	18	26	12	12
5 03	17	21	22	18	54	14	13		17	22	23	19	16	13	13
5 08	18	22	23	19	45	15	14		18	23	24	20	5	14	14
5 12	19	23	24	20	36	16	15		19	24	25	20	55	15	15
5 16	20	24	25	21	27	16	16		20	25	26	21	44	16	16
5 21	21	25	26	22	18	17	17		21	26	27	22	34	17	17
5 25	22	26	27	23	9	18	18		22	27	28	23	24	18	18
5 29	23	27	28	24	1	19	19		23	28	29	24	14	19	19
5 34	24	28	29	24	52	20	20		24	29	π	25	4	20	20
5 38	25	29	π	25	43	21	21		25	Ω	0	25	54	21	21
5 43	26	Ω	0	26	34	22	22		26	1	1	26	43	22	22
5 47	27	1	1	27	26	23	23		27	2	2	27	32	22	23
5 51	28	2	2	28	17	24	24		28	3	3	28	21	23	23
5 56	29	3	3	29	9	25	25		29	4	4	29	10	24	24
6 00	30	4	4	30	0	26	26		30	5	5	30	0	25	25

TABLES OF HOUSES

5

R. A. or S. T. at Birth.	H. M.	CHICAGO, ILLS.							BANGOR, ME.						
		LAT. 41° 50' N.							LAT. 44° 49' N.						
10°		11	12	1	2	3	10	11	12	1	2	3	10	11	12
6 04	1	5	5	0	52	27	27	1	5	6	0	50	26	26	26
6 0	2	6	6	1	43	28	28	2	6	7	1	40	27	27	27
6 1	3	7	7	2	34	29	29	3	7	8	2	30	28	28	28
6 1	4	8	8	3	25	27	27	4	8	8	3	20	29	29	29
6 22	5	9	9	4	16	0	1	5	9	9	4	9	7	7	7
6 26	6	10	10	5	8	1	2	6	10	10	4	59	1	1	1
6 30	7	11	11	5	59	2	3	7	11	11	5	49	1	2	2
6 35	8	12	12	6	50	3	4	8	12	12	6	38	2	3	3
6 39	9	13	13	7	41	4	5	9	13	13	7	28	3	4	4
6 44	10	14	13	8	32	5	6	10	14	14	8	17	4	5	5
6 48	11	15	14	9	23	6	7	11	15	15	9	7	5	6	6
6 52	12	16	15	10	14	7	8	12	16	16	9	56	6	7	7
6 57	13	17	16	11	5	8	9	13	17	17	10	45	7	8	8
7 01	14	18	17	11	56	9	10	14	18	18	11	34	8	9	9
7 05	15	19	18	12	47	10	11	15	19	19	12	23	9	10	10
7 09	16	20	19	13	38	10	12	16	20	19	13	12	10	11	11
7 14	17	21	20	14	29	11	13	17	21	20	14	1	10	12	12
7 18	18	22	21	15	20	12	14	18	22	21	14	50	11	13	13
7 22	19	23	22	16	10	13	15	19	23	22	15	39	12	14	14
7 27	20	24	23	17	0	14	16	20	24	23	16	27	13	15	15
7 31	21	25	24	17	50	15	17	21	25	24	17	16	14	16	16
7 35	22	26	25	18	40	16	17	22	26	25	18	5	15	17	17
7 39	23	27	25	19	30	17	18	23	27	26	18	53	16	18	18
7 44	24	28	26	20	20	18	19	24	28	27	19	41	17	19	19
7 48	25	28	27	21	9	18	20	25	29	27	20	29	17	19	19
7 52	26	29	28	21	58	19	21	26	27	28	21	17	18	20	20
7 56	27	29	29	22	47	20	22	27	1	29	22	5	19	21	21
8 00	28	1	23	36	21	23	28	2	22	22	53	20	22		
8 05	29	2	1	24	25	22	24	29	3	1	23	41	21	23	23
8 09	30	3	2	25	13	23	25	30	4	2	24	28	22	24	24

6 TABLES OF HOUSES.

R. A. or S. T.	H	CHICAGO, ILLS.,						BANGOR, ME.					
		LAT. $41^{\circ} 50' N.$			LAT. $44^{\circ} 49' N.$								
at Birth.	10	11	12	1	2	3	10	11	12	1	2	3	
	°	°	°	,	°	°	°	°	°	,	°	°	
H. M.	§	¶	△	△	¶	¶	§	¶	△	△	¶	¶	
8 13	1	4	3	26	2	24	26	1	5	3	25	15	23 25
8 17	2	5	4	26	50	25	27	2	6	4	26	2	23 26
8 21	3	6	5	27	38	25	28	3	7	4	26	49	24 27
8 25	4	7	5	28	26	26	29	4	8	5	27	36	25 28
8 29	5	8	6	29	14	27	¶	5	9	6	28	22	26 29
8 34	6	9	7	0	¶	2	28	1	6	10	7	29	9 27
8 38	7	10	8	0	50	29	2	7	11	8	29	55	28 1
8 42	8	11	9	1	37	¶	3	8	11	9	0	¶ 41	28 2
8 46	9	12	10	2	24	1	4	9	12	10	1	27	29 3
8 50	10	13	11	3	11	2	4	10	13	11	2	13	4 4
8 54	11	14	12	3	58	2	5	11	14	11	2	59	1 5
8 58	12	15	12	4	45	3	6	12	15	12	3	45	2 5
9 02	13	16	13	5	32	4	7	13	16	13	4	30	3 6
9 06	14	17	14	6	18	5	8	14	17	14	5	15	4 7
9 10	15	18	15	7	4	6	9	15	18	15	6	0	5 8
9 14	16	19	16	7	50	7	10	16	19	16	6	44	5 9
9 18	17	20	17	8	36	7	11	17	20	16	7	30	6 10
9 22	18	21	18	9	22	8	12	18	21	17	8	15	7 11
9 26	19	22	18	10	8	9	13	19	22	18	8	59	8 12
9 30	20	23	19	10	53	10	14	20	23	19	9	43	9 13
9 34	21	24	20	11	39	11	15	21	24	20	10	27	9 14
9 37	22	25	21	12	24	12	16	22	25	21	11	11	10 15
9 41	23	26	22	13	9	12	17	23	26	21	11	55	11 16
9 45	24	26	23	13	54	13	18	24	27	22	12	39	12 17
9 49	25	27	24	14	39	14	19	25	27	23	13	23	13 18
9 52	26	28	24	15	24	15	20	26	28	24	14	7	18 19
9 57	27	29	25	16	9	16	20	27	29	25	14	51	14 20
10 01	28	△	26	16	54	17	21	28	△	25	15	34	15 21
10 05	29	1	27	17	39	17	22	29	1	26	16	17	16 22
10 08	30	2	28	18	23	18	23	30	2	27	17	0	17 22

TABLES OF HOUSES 7

R. A. or S. T.	H. at Birth.	CHICAGO, ILLS.							BANGOR, ME.								
		LAT. 41° 50' N.			LAT. 44° 49' N.				LAT. 41° 50' N.			LAT. 44° 49' N.					
10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
H. M.	吸	△	△	吸	△	△	吸	吸	△	△	△	吸	△	△	吸	△	△
10 12	1	3	28	19	8	19	24	1	3	28	17	43	18	23			
10 16	2	4	29	19	52	20	25	2	4	29	18	26	18	24			
10 20	3	5	吸	20	36	21	26	3	5	29	19	9	19	25			
10 24	4	6	1	21	20	22	27	4	6	吸	19	52	20	26			
10 27	5	7	2	22	4	23	28	5	6	1	20	35	21	27			
10 31	6	8	2	22	48	23	29	6	7	2	21	18	22	28			
10 35	7	8	3	23	32	24	吸	7	8	2	22	1	23	29			
10 39	8	9	4	24	16	25	1	8	9	3	22	43	23	吸			
10 42	9	10	5	25	0	26	2	9	10	4	23	25	24	1			
10 46	10	11	6	25	44	27	3	10	11	5	24	8	25	2			
10 50	11	12	6	26	28	28	4	11	12	5	24	51	26	3			
10 54	12	13	7	27	12	28	5	12	13	6	25	33	27	4			
10 57	13	14	8	27	56	29	6	13	14	7	26	16	28	5			
11 01	14	15	9	28	40	吸	7	14	15	8	26	58	28	6			
11 05	15	16	10	29	23	1	8	15	15	9	27	41	29	7			
11 08	16	16	10	0	吸	7	2	9	16	16	9	28	23	吸	8		
11 12	17	17	11	0	51	3	10	17	17	10	29	6	1	9			
11 16	18	18	12	1	35	4	11	18	18	11	29	49	2	10			
11 20	19	19	13	2	19	4	12	19	19	12	0	吸	32	3	11		
11 2	20	20	14	3	2	5	13	20	20	12	1	15	3	12			
11 27	21	21	14	3	46	6	14	21	20	13	1	58	4	13			
11 31	22	22	15	4	30	7	15	22	21	14	2	41	5	14			
11 34	23	22	16	5	14	8	16	23	22	15	3	24	6	15			
11 38	24	23	17	5	58	9	17	24	23	15	4	7	7	16			
11 42	25	24	17	6	42	10	18	25	24	16	4	50	8	17			
11 45	2	25	18	7	27	11	19	26	25	17	5	33	9	19			
11 49	27	26	19	8	12	11	20	27	26	18	6	17	10	20			
11 53	28	27	20	8	56	12	21	28	27	19	7	0	11	21			
11 56	29	28	20	9	40	13	22	29	27	19	7	44	11	22			
12 00	30	29	21	10	24	14	23	30	28	20	8	27	12	23			

8 TABLES OF HOUSES.

R. A. or S. T.	H ^o	CHICAGO, ILLS., LAT. 41° 50' N.						BANGOR, ME. LAT. 44° 49' N.					
		10	11 °	12 °	1 ° ,	2 °	3 °	10 °	11 °	12 °	1 ° ,	2 °	3 °
		H. M.	��	時	時	分	秒	時	時	時	分	秒	時
12 04	1	0	22	11	9	15	24	1	29	21	9	10	13 24
12 08	2	0	23	11	54	16	25	2	22	9	54	14	25
12 11	3	1	23	12	39	17	26	3	1	22	10	38	15 26
12 15	4	2	24	13	24	18	28	4	2	23	11	22	16 27
12 18	5	3	25	14	9	19	29	5	2	24	12	6	17 28
12 22	6	4	26	14	55	20	※	6	3	25	12	50	18 29
12 26	7	5	26	15	41	21	1	7	4	5	13	35	19 *
12 29	8	5	27	16	27	22	2	8	5	26	14	20	20 2
12 33	9	6	28	17	13	23	3	9	6	27	15	5	21 3
12 36	10	7	29	18	0	24	4	10	7	28	15	50	22 4
12 40	11	8	†	18	47	25	5	11	7	28	16	36	23 5
12 44	12	9	0	19	34	26	6	12	8	29	17	22	24 6
12 48	13	10	1	20	21	27	7	13	9	†	18	8	25 7
12 52	14	11	2	21	8	28	9	14	10	1	18	54	26 8
12 55	15	11	3	21	56	29	10	15	11	1	19	41	27 9
12 59	16	12	4	22	45	※	11	16	12	2	20	28	28 10
13 03	17	13	4	23	34	1	12	17	13	3	21	16	29 12
13 06	18	14	5	24	23	2	13	18	13	4	22	4	28 13
13 10	19	15	6	25	12	3	14	19	14	4	22	52	1 14
13 14	20	16	7	26	1	4	15	20	15	5	23	40	2 15
13 18	21	17	8	26	51	5	17	21	16	6	24	30	3 17
13 21	22	17	8	27	41	6	18	22	17	7	25	20	5 18
13 25	23	18	9	28	32	7	19	23	18	8	26	10	6 19
13 29	24	19	10	29	23	8	20	24	18	8	27	0	7 20
13 33	25	20	11	0 15	10	22	25	19	9	27	50	8	21
13 36	26	21	11	1	7	11	23	26	20	10	28	42	9 23
13 40	27	22	12	2	0	12	24	27	21	11	29	34	10 24
13 44	28	23	13	2	53	13	25	28	22	11	0 15	26	11 25
13 48	29	23	14	3	47	14	26	29	23	12	1	18	12 26
13 52	30	24	15	4	42	15	27	30	24	13	2	11	14 27

TABLES OF HOUSES 9

R. A. or S. T.	LAT. 41° 50' N.	CHICAGO, ILLS.						BANGOR, ME.					
		10	11	12	1	2	3	10	11	12	1	2	3
at Birth.	°	°	°	°	,	°	°	°	°	°	,	°	°
H. M.	m	m	m	‡	√5	≈	×	m	m	‡	√5	≈	×
13 55	1	25	16	5	37	16	28	1	4	14	3	6	15
13 59	2	26	16	6	33	18	†	2	25	15	4	1	16
14 03	3	27	17	7	29	19	1	3	26	16	4	57	17
14 07	4	28	18	8	26	20	2	4	27	16	5	53	19
14 11	5	29	19	9	24	21	3	5	28	17	6	49	20
14 15	6	29	20	10	23	23	5	6	29	18	7	46	21
14 19	7	‡	21	11	22	24	6	7	‡	19	8	44	22
14 23	8	1	21	12	22	25	7	8	0	20	9	43	24
14 26	9	2	22	13	22	27	8	9	1	21	10	42	25
14 30	10	3	23	14	22	28	9	10	2	22	11	41	26
14 34	11	4	24	15	24	29	11	11	3	22	12	42	28
14 38	12	5	25	16	27	≈	12	12	4	23	13	45	≈ 12
14 42	13	6	26	17	31	2	13	13	5	24	14	48	1 13
14 46	14	6	27	18	35	3	14	14	6	25	15	52	2 15
14 50	15	7	28	19	40	5	16	15	7	26	16	56	4 16
14 54	16	8	29	20	47	6	17	16	7	27	18	1	5 17
14 58	17	9	29	21	55	7	18	17	8	28	19	7	6 18
15 02	18	10	√5	23	3	9	19	18	9	29	20	16	8 20
15 06	19	11	1	24	12	10	21	19	10	29	21	26	10 21
15 10	20	12	2	25	22	11	22	20	11	√5	22	37	11 23
15 14	21	13	3	26	33	13	23	21	12	1	23	49	13 23
15 18	22	14	4	27	45	14	24	22	13	2	24	53	14 25
15 22	23	15	5	28	59	15	25	23	14	3	26	10	16 26
15 26	24	15	6	0 ≈	15	17	27	24	15	4	27	28	17 27
15 31	25	16	7	1	32	19	28	25	16	5	28	47	19 28
15 35	26	17	8	2	50	21	29	26	17	6	0 ≈	6	20 8
15 39	27	18	9	4	9	22	8	27	17	7	1	26	22 1
15 43	28	19	10	5	29	24	2	28	18	8	2	46	23 2
15 47	29	20	11	6	50	25	3	29	19	9	4	8	25 3
15 51	30	21	12	8	12	27	4	30	20	10	5	31	26 5

10 TABLES OF HOUSES.

R. A. or S. T.	H. at Birth.	CHICAGO, ILLS., LAT. 41° 50' N.						BANGOR, ME., LAT. 44° 49' N.					
		10 °	11 °	12 °	1 °	2 °	3 °	10 °	11 °	12 °	1 °	2 °	3 °
H. M.		4	4	45	~	6	8	4	4	45	~	6	8
15 55	1	22	13	9	36	29	5	1	21	11	6	55	28
15 59	2	23	14	11	1	~	6	2	22	12	8	22	7
16 04	3	24	15	12	28	1	8	3	23	13	9	52	1
16 08	4	25	16	13	57	3	9	4	24	14	11	24	3
16 12	5	26	17	15	28	5	10	5	25	16	12	57	5
16 16	6	27	18	17	0	6	11	6	26	17	14	31	6
16 21	7	28	19	18	33	8	13	7	27	18	16	7	8
16 25	8	29	21	20	8	9	14	8	28	19	17	44	9
16 29	9	45	22	21	44	11	15	9	29	20	19	23	11
16 33	10	1	23	23	22	12	16	10	45	21	21	3	12
16 38	11	2	24	25	1	14	17	11	1	22	22	45	14
16 42	12	3	25	26	41	15	18	12	2	23	24	29	15
16 46	13	4	26	28	23	17	20	13	3	24	26	17	20
16 51	14	5	27	0	6	18	21	14	4	26	28	6	19
16 55	15	6	29	1	50	20	22	15	5	27	29	57	21
16 59	16	7	~	3	34	21	23	16	6	28	1	49	22
17 03	17	8	1	5	20	23	24	17	7	29	3	42	24
17 08	18	9	2	7	8	24	25	18	8	~	5	37	25
17 12	19	10	4	8	58	26	27	19	9	2	7	33	27
17 16	20	11	5	10	49	27	28	20	10	3	9	31	28
17 21	21	12	6	12	41	29	29	21	11	4	11	31	8
17 25	22	13	7	14	34	8	~	22	12	6	13	32	2
17 30	23	14	9	16	28	2	1	23	13	7	15	33	3
17 34	24	15	10	18	23	3	2	24	14	8	17	34	5
17 38	25	16	11	20	19	5	3	25	15	10	19	36	4
17 43	26	17	12	22	15	6	4	26	16	11	21	39	5
17 47	27	18	14	24	11	8	5	27	17	12	23	42	6
17 51	28	19	15	26	7	9	7	28	18	13	25	48	7
17 56	29	20	16	28	3	10	8	29	19	15	27	54	9
18 00	30	21	18	30	0	12	9	30	20	16	30	0	14

TABLES OF HOUSES. 11

R. A. or S. T.	H. at Birth.	CHICAGO, ILLS.						BANGOR, ME.					
		LAT. 41° 50' N.						LAT. 44° 49' N.					
10	11	12	1	2	3	10	11	12	1	2	3		
°	°	°	,	°	°	°	°	°	,	°	°		
H. M.	5	5	5	5	5	5	5	5	5	5	5		
18 04	1	22	19	1	57	14	10	1	22	18	2	6	15 11
18 09	2	23	20	3	54	15	11	2	23	19	4	12	17 12
18 13	3	25	22	5	50	16	12	3	24	21	6	18	18 13
18 17	4	26	23	7	46	17	13	4	25	22	8	23	19 14
18 22	5	27	25	9	41	19	14	5	26	24	10	26	20 15
18 26	6	28	26	11	35	20	15	6	27	25	12	28	22 16
18 30	7	29	28	13	29	21	16	7	28	26	14	29	23 17
18 35	8	5	29	15	22	23	17	8	29	28	16	30	24 18
18 39	9	1	17	15	24	18	9	9	18	18	18	31	26 19
18 44	10	2	2	19	7	25	19	10	1	1	20	31	27 20
18 48	11	3	4	20	58	26	20	11	3	3	22	29	28 21
18 52	12	5	5	22	48	28	21	12	4	5	24	24	11 22
18 57	13	6	7	24	37	29	22	13	5	6	26	18	1 23
19 01	14	7	8	26	24	II	23	14	6	8	28	11	2 24
19 05	15	8	10	28	10	1	24	15	7	9	0	8	3 25
19 09	16	9	12	29	55	3	25	16	9	11	1	53	4 26
19 14	17	10	13	1	39	4	26	17	10	13	3	42	6 27
19 18	18	12	14	3	21	5	27	18	11	14	5	28	7 28
19 22	19	13	16	5	1	6	28	19	12	16	7	14	8 29
19 27	20	14	17	6	40	7	29	20	13	17	8	57	9 30
19 31	21	15	19	8	17	8	5	21	14	18	10	38	10 1
19 35	22	16	20	9	52	9	1	22	16	20	12	17	11 2
19 39	23	17	22	11	27	11	2	23	17	22	13	54	12 3
18 44	24	19	23	13	0	12	3	24	18	24	15	30	13 4
19 48	25	20	25	14	32	13	4	25	19	25	17	4	15 5
19 52	26	21	27	16	2	14	5	26	20	27	18	37	16 6
19 56	27	22	29	17	30	15	6	27	22	29	20	8	17 7
20 00	28	24	5	18	57	16	7	28	23	5	21	37	18 8
20 05	29	25	2	20	22	17	8	29	24	2	23	4	19 9
20 09	30	26	3	21	47	18	9	30	25	4	24	30	20 10

12 TABLES OF HOUSES.

R. A. or S. T.	H	CHICAGO, ILLS,						BANGOR, ME.					
at Birth.	10°	LAT. 41° 50' N.						LAT. 44° 49' N.					
		11°	12°	1°	2°	3°	10°	11°	12°	1°	2°	3°	
		◦	◦	◦	◦	◦	◦	◦	◦	◦	◦	◦	
H. M.	MM	MM	♀	♂	Π	Ω	MM	MM	♀	♂	Π	Ω	
20 13	1	27	5	23	10	19	10	1	27	5	25	55	21 11
20 17	2	28	6	24	32	20	11	2	28	7	27	18	22 12
20 21	3	※	8	25	52	21	12	3	29	8	28	39	23 13
20 25	4	1	9	27	10	22	13	4	※	10	29	58	24 13
20 29	5	2	11	28	27	23	14	5	2	11	1Π 14	25	14
20 34	6	3	12	29	43	24	14	6	3	13	2	30	26 15
20 38	7	5	14	0Π 58	25	15	7	4	14	3	45	27	16
20 42	8	6	15	2	12	26	16	8	5	16	4	59	28 17
20 46	9	7	17	3	26	27	17	9	7	17	6	12	29 18
20 50	10	8	18	4	38	28	18	10	8	19	7	24	29 19
20 54	11	9	19	5	49	29	19	11	9	20	8	33	Ω 20
20 58	12	11	21	6	58	Ω	20	12	10	22	9	43	1 21
21 02	13	12	22	8	6	1	21	13	12	23	10	51	2 22
21 06	14	13	23	9	13	2	22	14	13	25	11	58	3 22
21 10	15	14	25	10	20	2	23	15	14	26	13	3	4 23
21 14	16	16	26	11	26	3	23	16	15	28	14	9	5 24
21 18	17	17	27	12	31	4	24	17	17	29	15	14	6 25
21 22	18	18	29	13	35	5	25	18	18	8	16	17	7 26
21 26	19	19	8	14	38	6	26	19	19	2	17	19	8 27
21 30	20	20	2	15	40	7	27	20	20	3	18	20	8 28
21 34	21	22	3	16	40	8	28	21	22	5	19	20	9 29
21 37	22	23	5	17	40	8	29	22	23	6	20	19	10 29
21 41	23	24	6	18	40	9	Ω	23	24	7	21	17	11 Ω
21 45	24	25	7	19	39	10	1	24	25	9	22	15	12 1
21 49	25	27	9	20	38	11	1	25	26	10	23	13	13 2
21 53	26	28	10	21	35	12	2	26	28	11	24	10	13 3
21 57	27	29	11	22	31	13	3	27	29	13	25	7	14 4
22 01	28	♀	12	23	2	13	4	28	♀	14	26	2	15 5
22 05	29	1	14	24	23	14	5	29	2	15	26	56	16 6
22 08	30	3	15	25	18	15	6	30	3	16	27	50	17 6

TABLES OF HOUSES. 13

R. A. or S. T.	H ^o	CHICAGO, ILLS.						BANGOR, ME.					
		LAT. 41° 50' N.			LAT. 44° 49' N.								
at Birth.	10°	11°	12°	1°	2°	3°	10°	11°	12°	1°	2°	3°	
H. M.	⌘	♀	♂	♊	♋	♌	⌘	♀	♂	♊	♋	♌	
22 12	1	4	16	26	13	16	7	1	4	18	28	43	18 7
22 16	2	5	17	27	6	17	7	2	5	19	29	35	18 8
22 20	3	6	18	27	59	18	8	3	6	20	0 ♂	27	19 9
22 24	4	7	19	28	52	18	9	4	7	21	1	19	20 10
22 27	5	9	20	29	44	19	10	5	9	22	2	10	21 11
22 31	6	10	22	0 ♂	36	20	11	6	10	23	3	1	22 12
22 35	7	11	23	1	27	21	12	7	11	25	3	51	22 12
22 39	8	12	24	2	18	22	12	8	12	26	4	41	23 13
22 42	9	13	25	3	9	22	13	9	14	27	5	31	24 14
22 46	10	15	26	3	59	23	14	10	15	28	6	20	25 15
22 50	11	16	27	4	49	24	15	11	16	29	7	9	26 16
22 54	12	17	28	5	38	25	16	12	17	π	7	57	26 17
22 57	13	18	29	6	27	26	17	13	18	1	8	45	27 17
23 01	14	19	π	7	16	26	18	14	20	2	9	32	28 18
23 05	15	20	1	8	4	27	19	15	21	3	10	19	29 19
23 08	16	21	2	8	52	28	19	16	22	4	11	6	29 20
23 12	17	23	3	9	40	29	20	17	23	5	11	52	21
23 16	18	24	4	10	28	♌	21	18	24	6	12	38	1 22
23 20	19	25	5	11	15	0	22	19	.25	7	13	24	2 22
23 23	20	26	6	12	2	1	23	20	.26	8	14	10	2 23
23 27	21	27	7	12	49	2	24	21	27	9	14	55	3 24
23 31	22	28	8	13	35	3	24	22	28	10	15	40	4 25
23 34	23	29	9	14	21	4	25	23	8	11	16	25	5 26
23 38	24	8	10	15	7	4	26	24	1	12	17	10	5 27
23 42	25	1	11	15	53	5	27	25	2	13	17	54	6 28
23 45	26	2	12	16	38	6	28	26	3	14	18	38	7 28
23 49	27	3	13	17	23	7	29	27	4	15	19	22	8 29
23 53	28	5	14	18	8	7	♏	28	5	16	20	6	8 ⚪
23 56	29	6	15	18	53	8	0	29	6	17	20	50	9 1
24 00	30	7	16	19	38	9	1	30	7	18	21	34	10 2

TABLES OF HOUSES. 14

R. A. or S. T.	H	HUNTSVILLE.						ALASKA.					
		LAT. 34° 44' N.			LAT. 63° 0' N.								
at Birth.	10°	11°	12°	1°	2°	3°	10°	11°	12°	1°	2°	3°	
H. M.	♀	8	II	⌚	♀	⌚	♀	8	⌚	⌚	⌚	⌚	
0 0 4	1	7	13	16	12	7	1	1	17	8	8	30	20 6
0 0 7	2	8	14	16	59	8	2	2	18	9	9	1	21 7
0 1 1	3	9	15	17	45	9	3	3	20	10	9	32	22 8
0 1 5	4	10	16	18	32	10	4	4	21	10	10	3	22 9
0 1 8	5	11	17	19	18	10	5	5	22	11	10	35	23 9
0 2 2	6	12	18	20	4	11	6	6	23	12	11	6	24 10
0 2 6	7	13	19	20	50	12	7	7	24	12	11	38	24 11
0 2 9	8	14	20	21	37	13	8	8	26	13	12	9	25 12
0 3 3	9	15	21	22	23	14	8	9	27	14	12	41	25 12
0 3 7	10	16	21	23	9	15	9	10	28	15	13	12	26 13
0 4 0	11	17	22	23	55	15	10	11	29	15	13	44	27 14
0 4 4	12	18	23	24	41	16	11	12	11	16	14	15	27 15
0 4 8	13	19	24	25	28	17	12	13	1	17	14	47	28 15
0 5 2	14	20	25	26	14	18	13	14	2	17	15	18	29 16
0 5 5	15	21	26	27	0	19	14	15	3	18	15	50	29 17
0 5 9	16	22	27	27	46	19	15	16	4	19	16	21	⌚ 18
1 0 3	17	23	28	28	32	20	16	17	5	19	16	53	0 18
1 0 6	18	24	23	29	19	21	17	18	6	20	17	25	1 19
1 1 0	19	24	29	⌚ 5	22	18	19	7	21	17	57	2	20
1 1 4	20	25	⌚ 0	51	23	19	20	8	21	18	29	3	21
1 1 8	21	26	1	1	37	23	20	21	9	22	19	1	3 21
1 2 1	22	27	2	2	23	24	20	22	10	23	19	33	4 22
1 2 5	23	28	3	3	10	25	21	23	11	23	20	5	5 23
1 2 9	24	29	3	3	56	26	22	24	12	24	20	37	5 24
1 3 3	25	II	4	4	42	27	23	25	13	25	21	9	6 24
1 3 6	26	1	5	5	29	28	24	26	14	25	21	41	6 25
1 4 0	27	2	6	6	15	28	25	27	15	26	22	13	7 26
1 4 4	28	3	7	7	2	29	26	28	16	27	22	45	7 27
1 4 8	29	4	8	7	48	⌚ 27	29	17	28	23	18	8	27
1 5 2	30	5	9	8	35	1	28	30	18	28	23	51	8 28

TABLES OF HOUSES. 15

R. A. or S. T.	H's	HUNTSVILLE.						ALASKA.					
		LAT. 34° 44' N.			LAT. 63° 0' N.								
at Birth.	H's	10°	11°	12°	1°	2°	3°	10°	11°	12°	1°	2°	3°
	H. M.	8°	II	Ω	Ω	IV	IV	8°	II	Ω	Ω	IV	IV
1 55	1	6	10	9	22	2	29	1	19	29	24	24	9
1 59	2	7	10	10	9	3	Δ	2	20	Ω	24	57	10
2 03	3	8	11	10	56	4	1	3	21	0	25	30	11
2 07	4	9	12	11	43	5	2	4	22	1	26	3	12
2 11	5	10	13	12	30	6	3	5	23	2	26	36	12
2 15	6	11	14	13	18	6	4	6	24	2	27	9	13
2 19	7	12	15	14	6	7	5	7	25	3	27	42	14
2 23	8	13	15	14	54	8	6	8	26	4	28	15	14
2 26	9	13	16	15	42	9	7	9	27	4	28	49	15
2 30	10	14	17	16	30	10	7	10	28	5	29	23	16
2 34	11	15	18	17	18	11	8	11	28	6	29	57	16
2 38	12	16	19	18	7	11	9	12	29	6	0	31	8
2 42	13	17	20	18	56	12	10	13	Ω	7	1	3	18
2 46	14	18	21	19	45	13	11	14	1	8	1	39	18
2 50	15	19	21	20	34	14	12	15	2	8	2	14	19
2 54	16	20	22	21	23	15	13	16	3	9	2	49	20
2 58	17	21	23	22	12	16	14	17	4	10	3	24	20
3 02	18	22	24	23	1	17	15	18	5	10	3	59	21
3 06	19	23	25	23	50	18	16	19	6	11	4	34	22
3 10	20	24	26	24	40	19	17	20	7	12	5	9	22
3 14	21	25	27	25	30	20	18	21	7	12	5	44	23
3 18	22	26	28	26	20	21	19	22	8	13	6	19	24
3 22	23	27	29	27	10	21	20	23	9	14	6	54	24
3 26	24	28	29	28	1	22	21	24	10	14	7	30	25
3 31	25	28	Ω	28	52	23	22	25	11	15	8	6	26
3 35	26	29	1	29	43	24	23	26	12	16	8	42	26
3 39	27	Ω	2	0	34	25	24	27	13	16	9	18	27
3 43	28	1	3	1	25	26	25	28	14	17	9	54	28
3 47	29	2	4	2	16	27	26	29	15	18	10	30	28
3 51	30	3	4	3	8	28	27	30	15	18	11	6	29

16 TABLES OF HOUSES.

R. A. or S. T.	H ^o	HUNTSVILLE.						ALASKA.					
		LAT. 34° 44' N.			LAT. 63° 0' N.								
at Birth.	10°	11°	12°	1°	2°	3°	10°	11°	12°	1°	2°	3°	
H. M.	II	Ω	Ω	吸	吸	△	II	Ω	Ω	吸	吸	△	
3 55	1	4	5	4	0	29	28	1	16	19	42	29	23
4 00	2	5	6	4	52	△	29	2	17	20	12	19	△ 24
4 04	3	6	7	5	44	1	π	3	18	20	12	56	1 25
4 08	4	7	8	6	36	2	1	4	19	21	13	33	1 26
4 12	5	8	9	7	29	3	2	5	20	22	14	10	2 27
4 16	6	9	10	8	21	4	3	6	21	22	14	47	3 28
4 21	7	10	11	9	14	5	4	7	22	23	15	24	3 29
4 25	8	11	12	10	7	6	5	8	23	24	16	1	4 29
4 29	9	12	13	11	0	7	6	9	23	25	16	38	5 π
4 33	10	13	14	11	53	8	7	10	24	25	17	16	6 1
4 38	11	14	15	12	46	9	8	11	25	26	17	53	6 2
4 42	12	15	16	13	40	10	9	12	26	27	18	30	7 3
4 46	13	16	17	14	32	11	10	13	27	28	19	8	4
4 51	14	17	18	15	28	11	11	14	28	28	19	46	8 5
4 55	15	18	19	16	22	12	12	15	29	29	20	24	9 5
4 59	16	19	19	17	16	13	13	16	29	π	21	2	10 6
5 03	17	20	20	18	10	14	14	17	Ω	0	21	40	11 7
5 08	18	21	21	19	4	15	15	18	1	1	22	18	11 8
5 12	19	22	22	19	58	16	16	19	2	2	22	56	12 9
5 16	20	23	23	20	52	17	18	20	3	3	23	35	13 10
5 21	21	24	24	21	46	18	19	21	4	3	24	14	14 11
5 25	22	24	25	22	41	19	20	22	5	4	24	52	14 11
5 29	23	25	26	23	36	20	21	23	6	5	25	31	15 12
5 34	24	26	27	24	31	21	22	24	6	5	26	9	16 13
5 38	25	27	28	25	26	22	23	25	7	6	26	48	16 14
5 43	26	28	29	26	20	23	24	26	8	7	27	56	17 15
5 47	27	29	π	27	15	24	25	27	9	8	28	5	18 16
5 51	28	Ω	1	28	10	25	26	28	10	8	28	43	19 17
5 56	29	1	2	29	5	26	27	29	11	9	29	22	19 18
6 00	30	2	3	30	00	27	28	30	12	10	30	0	20 19

TABLES OF HOUSES. 17

R. A. or S. T.	H ^o 's	HUNTSVILLE.						ALASKA.					
		LAT. 34° 44' N.						LAT. 63° 0' N.					
at Birth.		10	11	12	1	2	3	10	11	12	1	2	3
H. M.	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖
6 04	1	3	4	0	55	28	29	1	12	11	0	38	21
6 09	2	4	5	1	50	29	4	2	13	11	1	16	22
6 13	3	5	6	2	46	31	1	3	14	12	1	55	22
6 17	4	6	7	3	41	1	2	4	15	13	2	33	23
6 22	5	7	8	4	36	2	3	5	16	13	3	12	24
6 26	6	8	9	5	31	3	4	6	17	14	3	50	25
6 30	7	9	10	6	26	4	5	7	18	15	4	29	25
6 35	8	10	11	7	20	5	6	8	19	16	5	7	26
6 39	9	11	12	8	14	6	7	9	19	16	5	46	27
6 44	10	12	13	9	8	7	8	10	20	17	6	24	27
6 48	11	13	14	10	2	8	8	11	21	18	7	2	28
6 52	12	14	15	10	57	9	9	12	22	19	7	40	29
6 57	13	15	16	11	51	9	10	13	23	19	8	18	7
7 01	14	16	17	12	45	10	11	14	24	20	8	56	0
7 05	15	17	18	13	39	11	12	15	25	21	9	34	1
7 09	16	18	19	14	33	12	13	16	25	21	10	12	2
7 14	17	19	19	15	27	13	14	17	26	22	10	50	2
7 18	18	20	20	16	21	14	15	18	27	23	11	28	3
7 22	19	21	21	17	15	15	16	19	28	24	12	6	4
7 27	20	22	22	18	8	16	17	20	29	24	13	44	5
7 31	21	23	23	19	1	16	18	21	⊖	25	13	22	5
7 35	22	24	24	19	54	17	19	22	1	26	13	59	6
7 39	23	25	25	20	47	18	20	23	2	27	14	36	7
7 44	24	26	26	21	40	19	21	24	2	27	15	13	7
7 48	25	27	27	22	33	20	22	25	3	28	15	50	8
7 52	26	28	28	23	25	21	23	26	4	29	16	27	9
7 56	27	29	29	24	17	22	24	27	5	29	17	4	10
8 00	28	⊖	⊖	25	9	23	25	28	6	⊖	17	41	10
8 05	29	1	1	26	1	24	26	29	7	1	18	18	11
8 09	30	2	2	26	53	25	27	30	7	2	18	55	12

18 TABLES OF HOUSES.

R. A. or S. T.	H ^o	HUNTSVILLE.						ALASKA.					
		LAT. 34° 44' N.			LAT. 63° 0' N.								
at Birth.	10°	11°	12°	1°	2°	3°	10°	11°	12°	1°	2°	3°	
H. M.	Q	吸	△	△	吸	4	Q	吸	△	△	吸	4	
8 13	1	4	3	27	44	26	28	1	8	2	19	31	12 15
8 17	2	5	4	28	35	27	29	2	9	3	20	7	13 16
8 21	3	6	5	29	26	23	25	3	10	4	20	43	14 17
8 25	4	7	6	0 ^m 17	29	1	4	11	4	21	19	14	18
8 29	5	8	7	1	8	4	1	5	12	5	21	54	15 19
8 34	6	9	8	1	59	1	2	6	12	6	22	30	16 20
8 38	7	10	8	2	50	1	3	7	13	6	23	6	16 21
8 42	8	11	9	3	40	2	4	8	14	7	23	41	17 22
8 46	9	12	10	4	30	3	5	9	15	8	24	16	18 22
8 50	10	13	11	5	20	4	6	10	16	8	24	51	18 23
8 54	11	14	12	6	10	5	7	11	16	9	25	26	19 24
8 58	12	15	13	7	0	6	8	12	17	10	26	1	20 25
9 02	13	16	14	7	49	7	9	13	18	10	26	36	20 26
9 06	14	17	15	8	38	8	10	14	19	11	27	11	21 27
9 10	15	18	16	9	27	8	11	15	20	12	27	45	22 28
9 14	16	19	17	10	16	9	12	16	21	12	28	20	22 29
9 18	17	20	18	11	5	10	13	17	21	13	28	54	23 25
9 22	18	21	18	11	54	11	14	18	22	14	29	28	24 1
9 26	19	22	19	12	43	12	15	19	23	14	0 ^m 2	24	1
9 30	20	23	20	13	31	13	16	20	24	15	0	36	25 2
9 34	21	23	21	14	19	14	17	21	25	16	1	10	26 3
9 37	22	24	22	15	7	15	17	22	25	16	1	44	26 4
9 41	23	25	23	15	55	15	18	23	26	17	2	18	27 5
9 45	24	26	24	16	43	16	19	24	27	18	2	51	28 6
9 49	25	27	25	17	30	17	20	25	28	18	3	24	28 7
9 53	26	28	26	18	17	18	21	26	29	19	3	57	29 8
9 57	27	29	26	19	4	19	22	27	29	20	4	30	4 9
10 01	28	△	27	19	51	20	23	28	△	20	5	3	0 10
10 05	29	1	28	20	38	21	24	29	1	21	5	36	1 11
10 08	30	2	29	21	25	21	25	30	2	22	6	8	2 12

TABLES OF HOUSES. 19

R. A. or S. T. at Birth.	H ^o s	HUNTSVILLE.						ALASKA.							
		LAT. 34° 44' N.			LAT. 63° 0' N.										
10°		11°	12°	1°	2°	3°	10°	11°	12°	1°	2°	3°			
H. M.		吸	△	𠂔	𠂔	𠂔	吸	△	𠂔	𠂔	𠂔	𠂔	吸	△	𠂔
10 12	1	3	0	22	12	22	26	1	2	22	6	41	3	13	
10 16	2	4	1	22	59	23	27	2	3	23	7	14	3	14	
10 20	3	5	2	23	46	24	28	3	4	23	7	46	4	15	
10 24	4	6	2	24	33	25	29	4	5	24	8	18	5	16	
10 27	5	7	3	25	9	26	25	5	6	25	8	50	5	17	
10 31	6	8	4	26	5	26	1	6	6	25	9	23	6	18	
10 35	7	8	5	26	52	27	2	7	7	26	9	55	7	19	
10 39	8	9	6	27	38	28	3	8	8	27	10	27	7	20	
10 42	9	10	6	28	25	29	4	9	9	27	10	59	8	21	
10 46	10	11	7	29	11	45	5	10	9	28	11	31	9	22	
10 50	11	12	8	29	57	1	6	11	10	29	12	3	9	23	
10 54	12	13	9	0	43	2	7	12	11	29	12	35	10	24	
10 57	13	14	10	1	29	2	8	13	12	𠂔	13	7	11	25	
11 01	14	15	10	2	15	3	9	14	12	0	18	39	11	26	
11 05	15	16	11	3	0	4	10	15	13	1	14	10	12	27	
11 08	16	17	12	3	46	5	11	16	14	2	14	42	13	28	
11 12	17	18	13	4	32	6	12	17	15	2	15	15	13	29	
11 16	18	19	14	5	18	7	13	18	15	3	15	46	14	35	
11 20	19	20	14	6	4	8	14	19	16	4	16	17	15	1	
11 23	20	20	15	6	49	9	15	20	17	4	16	48	15	2	
11 27	21	21	16	7	35	9	16	21	18	5	17	20	16	3	
11 31	22	22	17	8	21	10	17	22	18	5	17	51	17	5	
11 34	23	23	18	9	7	11	18	23	19	6	18	22	18	6	
11 38	24	24	19	9	53	12	19	24	20	6	18	54	18	7	
11 42	25	25	19	10	40	13	20	25	21	7	19	25	19	8	
11 45	26	26	20	11	26	14	21	26	21	8	19	56	20	9	
11 49	27	27	21	12	13	15	22	27	22	8	20	28	21	11	
11 53	28	28	22	13	0	16	23	28	23	9	20	59	21	12	
11 56	29	29	23	13	46	17	24	29	24	9	21	31	22	13	
12 00	30	30	23	14	33	17	25	30	24	10	22	2	23	14	

20 TABLES OF HOUSES.

R. A. or S. T.	H. or H.	HUNTSVILLE.						ALASKA.					
		LAT. 34° 44' N.						LAT. 63° 0' N.					
at Birth.	10°	11°	12°	1°	2°	3°	10°	11°	12°	1°	2°	3°	
H. M.	��	��	↑	晡	晡	晡	��	��	晡	晡	↑	晡	
12 04	1	0	24	15	20	18	26	1	25	11	22	34	23 15
12 08	2	1	25	16	7	19	27	2	26	11	23	5	24 16
12 11	3	2	26	16	54	20	28	3	27	12	23	37	25 18
12 15	4	3	27	17	42	21	29	4	27	13	24	8	26 19
12 18	5	4	27	18	30	22	*	5	28	13	24	40	27 20
12 22	6	5	28	19	18	23	1	6	29	14	25	12	27 21
12 26	7	6	29	20	6	24	2	7	29	15	25	43	28 22
12 29	8	6	4	20	54	25	3	8	時	15	26	15	29 24
12 33	9	7	0	21	43	26	4	9	1	16	26	46	25 25
12 36	10	8	1	22	32	27	5	10	2	16	27	18	1 27
12 40	11	9	2	23	21	23	6	11	2	17	27	50	2 28
12 44	12	10	3	24	10	29	7	12	3	18	28	22	3 *
12 48	13	11	4	24	59	*	8	13	4	18	28	54	4 1
12 52	14	12	4	25	48	1	9	14	5	19	29	26	5 2
12 55	15	13	5	26	38	2	10	15	6	19	29	58	6 3
12 59	16	13	6	27	28	3	12	16	6	20	0 4 30	7	5
13 03	17	14	7	28	18	4	13	17	7	20	1	2	8 6
13 06	18	15	8	29	8	5	14	18	8	21	1	34	9 8
13 10	19	16	8	29	58	6	15	19	9	22	2	7	10 9
13 14	20	17	9	0 4 39	7	16	20	9	22	2	40	11	11
13 18	21	18	10	1	41	8	17	21	10	23	3	13	12 12
13 21	22	19	11	2	34	9	18	22	11	23	3	46	13 14
13 25	23	20	12	3	28	10	20	23	11	24	4	19	14 15
13 29	24	20	13	4	21	11	21	24	12	25	4	52	15 17
13 33	25	21	13	5	15	12	22	25	13	26	5	26	16 19
13 36	26	22	14	6	9	14	23	26	14	26	6	0	17 20
13 40	27	23	15	7	4	15	24	27	15	27	6	34	18 22
13 44	28	24	16	7	59	16	25	28	15	28	7	8	19 23
13 48	29	25	17	8	54	17	26	29	16	28	7	43	20 25
13 52	30	26	18	9	59	18	27	30	17	29	8	18	21 26

TABLES OF HOUSES. 21

R. A. or S. T.	H. or H.	HUNTSVILLE.						ALASKA.					
		LAT. 34° 44' N.			LAT. 63° 0' N.								
at Birth.	10	11	12	1	2	3	10	11	12	1	2	3	
H. M.	m	m	4	16	26	36	m	m	4	4	16	26	*
13 55	1	27	19	10	46	19	29	1	17	0	8	53	2
13 59	2	27	20	11	43	20	29	2	18	1	9	28	4
14 03	3	28	20	12	41	21	1	3	19	1	10	3	5
14 07	4	29	21	13	39	23	2	4	20	2	10	38	7
14 11	5	4	22	14	38	24	3	5	20	2	11	14	8
14 15	6	1	23	15	38	25	4	6	21	3	11	52	6
14 19	7	2	24	16	38	26	6	7	22	4	12	30	1
14 23	8	3	24	17	39	27	7	8	23	4	13	9	3
14 26	9	4	25	18	39	28	8	9	24	5	13	48	5
14 30	10	5	26	19	40	26	9	10	24	6	14	27	6
14 34	11	5	2	20	42	1	10	11	25	6	15	6	7
14 38	12	6	28	1	5	2	12	12	26	7	15	45	9
14 42	13	7	29	22	49	4	13	13	27	8	16	25	11
14 46	14	8	16	23	54	5	14	14	28	8	17	5	13
14 50	15	9	1	25	1	7	15	15	2	9	17	45	15
14 54	16	10	2	26	7	8	16	16	29	10	18	26	17
14 58	17	11	3	27	14	9	18	17	4	11	19	7	19
15 02	18	12	4	28	22	11	19	18	1	11	19	48	21
15 06	19	13	4	29	31	12	20	19	2	12	20	29	23
15 10	20	14	5	0	40	13	21	20	2	13	21	11	26
15 14	21	14	6	1	50	15	22	21	3	14	21	54	28
15 18	22	15	7	3	2	16	24	22	4	14	22	39	*
15 22	23	16	8	4	16	17	25	23	5	15	23	26	3
15 26	24	17	9	5	29	18	26	24	6	16	24	15	6
15 31	25	18	10	6	43	20	27	25	7	17	5	4	9
15 35	26	19	11	7	50	21	28	26	8	17	5	54	12
15 39	27	20	12	9	15	23	29	27	8	18	26	45	15
15 43	28	21	13	10	33	24	8	28	9	19	27	37	18
15 47	29	22	14	11	50	2	2	29	10	20	8	21	21
15 51	30	23	15	13	10	27	3	30	11	21	29	26	13

22 TABLES OF HOUSES.

R. A. or H. S. S. T. at Birth.	H ^o s	HUNTSVILLE.						ALASKA.					
		LAT. 34° 44' N.			LAT. 63° 0' N.								
10		11	12	1	2	3	10	11	12	1	2	3	
		°	°	° ,	°	°	°	°	°	° ,	°	°	
H. M.	‡	‡	VS	**	X	8	‡	‡	‡	VS	X	8	
15 55	1	24	16	14	31	29	4	1	12	22	0	23	27 14
15 59	2	25	17	15	53	†	5	2	13	23	1	22	† 16
16 04	3	26	18	17	16	1	6	3	14	23	2	23	3 17
16 08	4	27	19	18	40	3	8	4	15	24	3	27	6 18
16 12	5	28	21	20	4	4	9	5	16	25	4	34	9 20
16 16	6	29	22	21	29	6	10	6	17	26	5	43	12 21
16 21	7	VS	23	22	55	7	11	7	17	27	6	56	15 22
16 25	8	1	24	24	22	9	12	8	18	28	8	1	17 24
16 29	9	2	25	25	50	10	14	9	1	29	9	34	20 25
16 33	10	3	26	27	20	11	15	10	20	VS	10	56	23 27
16 38	11	4	27	28	51	13	16	11	21	1	12	2	21 28
16 42	12	5	28	0	X 23	14	17	12	22	2	13	57	29 29
16 46	13	6	29	1	57	16	18	13	23	3	15	40	8 II
16 51	14	7	**	3	31	17	19	14	24	4	17	33	3 2
16 55	15	8	2	5	6	19	20	15	25	5	19	28	0 3
16 59	16	9	3	6	41	20	22	16	26	6	21	36	9 4
17 03	17	10	4	8	17	21	23	17	27	7	23	56	11 5
17 08	18	11	5	9	54	23	24	18	28	8	26	31	13 6
17 12	19	12	7	11	31	24	25	19	29	10	29	21	16 8
17 16	20	13	8	13	9	26	26	20	VS	11	2** 24	18	9
17 21	21	14	9	14	48	27	27	21	1	12	5	44	20 10
17 25	22	15	10	16	28	29	29	22	2	13	9	34	22 11
17 30	23	16	12	18	8	8	II	23	3	15	13	55	24 13
17 34	24	17	13	19	49	1	1	24	4	16	18	48	26 14
17 38	25	18	14	21	31	3	2	25	5	17	24	11	27 15
17 43	26	19	16	23	12	4	3	26	6	18	0	6	29 19
17 47	27	20	17	24	54	5	4	27	7	20	6	35	II 17
17 51	28	21	18	26	36	7	5	28	8	21	13	45	3 18
17 56	29	22	19	28	18	8	6	29	9	22	21	36	4 19
18 00	30	23	21	30	0	9	7	30	10	24	30	0	6 20

TABLES OF HOUSES. 23

R. A. or S. T.	H or S.	HUNTSVILLE.						ALASKA.					
at Birth.	10°	LAT. 34° 44' N.						LAT. 63° 0' N.					
		11	12	1	2	3	10	11	12	1	2	3	
		°	°	°	°	°	°	°	°	°	°	°	
H. M.	15	15	22	8	II	V3	15	15	8	II	II	II	
18 04	1	24	22	1	42	11	8	1	11	26	8	13	7 21
18 09	2	25	23	3	24	12	9	2	12	27	15	47	9 22
18 13	3	26	25	5	6	13	10	3	13	29	23	7	10 24
18 17	4	27	26	7	48	15	11	4	14	29	42	12	25
18 22	5	28	27	8	29	16	12	5	15	2	58	49	13 26
18 26	6	29	29	10	10	17	13	6	16	4	11	14	14 27
18 30	7	22	22	11	51	18	14	7	17	6	16	4	15 28
18 35	8	1	2	13	32	20	15	8	18	8	0	19	17 29
18 39	9	2	3	15	12	21	16	9	20	10	24	7	1 29
18 44	10	3	4	16	51	22	17	10	21	12	27	30	19 1
18 48	11	4	6	18	29	23	18	11	22	14	0 II	40	20 2
18 52	12	5	7	20	6	2	19	12	23	17	3	26	22 3
18 57	13	6	9	21	49	26	20	13	24	19	6	0	23 4
19 01	14	7	10	23	19	27	21	14	26	21	8	19	24 5
19 05	15	8	12	24	54	28	22	15	27	23	10	32	25 5
19 09	16	9	13	26	29	29	23	16	28	26	12	31	26 6
19 14	17	10	14	28	3	II	24	17	29	28	14	18	7 7
19 18	18	11	16	29	36	2	25	18	22	2	16	0	28 8
19 22	19	12	17	18	8	3	26	19	2	4	17	34	29 9
19 27	20	13	18	2	39	4	27	20	3	7	19	3	25 10
19 31	21	14	20	4	9	5	28	21	5	10	0	30	1 11
19 35	22	15	21	5	38	6	29	22	6	13	21	52	2 1
19 39	23	16	23	7	5	7	26	23	7	15	23	7	3 13
18 44	24	17	24	8	32	8	1	24	9	18	24	18	4 14
19 48	25	18	26	9	57	9	2	25	10	21	25	25	5 15
19 52	26	19	27	11	21	11	3	26	12	24	26	30	6 16
19 56	27	20	29	12	45	12	4	27	13	27	27	33	6 16
20 00	28	21	21	8	13	5	28	14	28	28	35	7 17	
20 05	29	22	2	15	30	14	6	29	16	3	29	36	8 18
20 09	30	23	3	16	50	15	7	30	17	6	0 25	37	9 19

24 TABLES OF HOUSES.

R. A. or S. T. at Birth.	H ^o	HUNTSVILLE.							ALASKA.						
		LAT. 34° 44' N.							LAT. 63° 0' N.						
		10	11	12	1	2	3	10	11	12	1	2	3	10	11
		°	°	°	,	°	°	°	°	°	,	°	°	°	°
H. M.		MM	MM	MM	8	II	25	MM	MM	MM	8	II	25	MM	MM
20 13	1	28	5	18	10	16	8	1	17	9	1	34	10	20	20
20 17	2	29	6	19	29	17	9	2	19	12	2	27	11	21	21
20 21	3	28	7	20	46	18	10	3	20	15	3	18	12	22	22
20 25	4	2	9	22	2	19	11	4	22	18	4	7	12	23	23
20 29	5	3	10	23	16	20	12	5	23	21	4	55	13	23	23
20 34	6	4	11	24	30	21	13	6	25	23	5	43	14	24	24
20 38	7	6	13	25	44	22	14	7	26	26	6	31	15	25	25
20 42	8	7	14	26	57	23	15	8	28	28	7	18	15	2	2
20 46	9	8	16	28	9	24	16	9	29	8	8	4	16	27	27
20 50	10	9	17	29	20	24	16	10	28	3	8	48	17	27	27
20 54	11	10	18	0 II 30	25	17	11	2	6	9	32	18	28	28	28
20 58	12	11	19	1	39	26	18	12	4	8	10	16	18	29	29
21 02	13	13	21	2	47	27	19	13	6	10	10	59	19	32	32
21 06	14	14	22	3	53	28	20	14	7	12	11	41	20	1	1
21 10	15	15	23	4	59	29	21	15	9	14	12	22	21	1	1
21 14	16	16	25	6	5	25	22	16	10	16	13	2	21	2	2
21 18	17	17	26	7	10	1	23	17	12	18	13	42	22	3	3
21 22	18	19	27	8	14	2	24	18	14	20	14	21	23	4	4
21 26	19	20	29	9	17	3	25	19	15	22	15	0	23	5	5
21 30	20	21	8	10	20	4	25	20	17	24	15	39	24	6	6
21 34	21	23	1	11	21	5	26	21	1	25	16	17	25	6	6
21 37	22	24	2	12	22	5	27	22	21	27	16	54	2	7	7
21 41	23	25	4	13	23	6	28	23	22	29	17	31	26	8	8
21 45	24	26	5	14	23	7	29	24	24	II	18	8	27	9	9
21 49	25	27	6	15	22	8	Q	25	25	2	18	44	28	9	9
21 53	26	28	7	16	20	9	1	26	27	3	19	20	28	10	10
21 57	27	29	9	17	18	10	2	27	29	5	19	56	29	11	11
22 01	28	28	10	18	16	11	3	28	28	6	20	31	Q	12	12
22 05	29	1	11	19	13	11	4	29	2	7	21	6	0	13	13
22 08	30	3	12	20	10	12	4	30	4	9	21	41	1	13	13

TABLES OF HOUSES. 25

R. A. or S. T.	H ^s H	HUNTSVILLE.						ALASKA.								
		LAT. 34° 44' N.			LAT. 63° 0' N.											
at Birth.	10 °	11 °	12 °	1 ,	2 °	3 °	10 °	11 °	12 °	1 ,	2 °	3 °				
H. M.	X	Y	Z	II	Ω	Q	X	Y	II	Ω	Q	Ω				
22 12	1	4	13	21	6	13	5	1	5	10	2	16	2	14		
22 16	2	5	14	22	1	14	6	2	7	11	22	50	2	15		
22 20	3	6	15	22	56	15	7	3	8	12	23	24	3	16		
22 24	4	7	16	23	51	16	8	4	9	14	23	58	4	16		
22 27	5	8	17	24	5	17	9	5	11	15	24	32	4	17		
22 31	6	9	19	25	39	17	10	6	13	16	25	6	5	18		
22 35	7	11	20	26	32	18	10	7	14	17	25	40	6	18		
22 39	8	12	21	27	25	19	11	8	16	18	26	14	6	19		
22 42	9	13	22	28	17	20	12	9	17	19	26	48	7	20		
22 46	10	14	23	29	8	21	13	10	19	20	27	21	7	21		
22 50	11	15	24	29	59	21	14	11	20	21	27	54	8	21		
22 54	12	16	25	0Ω	50	22	15	12	22	22	8	26	9	22		
22 57	13	17	26	1	41	23	16	13	23	23	28	58	9	23		
23 01	14	18	27	2	32	24	17	14	25	24	29	30	10	24		
23 05	15	19	28	3	22	25	17	15	26	25	0Ω	2	11	25		
23 08	16	20	29	4	12	2	18	16	28	26	0	34	11	25		
23 12	17	22	II	5	1	26	19	17	29	27	1	6	12	26		
23 16	18	23	1	5	50	27	20	18	8	27	1	38	12	27		
23 20	19	24	2	6	39	28	21	19	1	28	2	10	13	28		
23 23	20	25	3	7	2	29	22	20	3	29	2	42	14	28		
23 27	21	26	4	8	17	29	23	21	4	Ω	3	14	14	29		
23 31	22	27	5	9	5	Ω	23	22	6	1	3	46	15	吸		
23 34	23	28	6	9	53	1	24	23	7	2	4	18	16	0		
23 38	24	29	7	10	41	2	25	24	9	3	4	50	16	1		
23 42	25	8	8	11	39	3	26	25	10	3	5	21	17	2		
23 45	26	1	9	12	16	3	27	26	11	4	5	53	17	3		
23 49	27	2	10	13	3	4	28	27	12	5	6	25	18	3		
23 53	28	3	11	13	50	5	29	28	14	6	6	56	18	4		
23 56	29	4	12	14	37	6	π	29	15	6	7	27	19	5		
24 00	30	6	13	15	24	7	1	30	16	7	7	58	20	6		

26 TABLES OF HOUSES.

R. A. or S. T.	H. at Birth.	JACKSON, MISS.						SAN FRISCO, CAL.					
		LAT. 32° 22' N.					LAT. 37° 46' N.						
		10	11	12	1	2	3	10	11	12	1	2	3
		°	°	°	,	°	°	°	°	°	,	°	°
H. M.	♀	8	II	⌚	⌚	⌚	⌚	♀	8	II	⌚	⌚	⌚
0 04	1	6	12	14	57	7	1	1	7	15	17	54	8
0 07	2	7	13	15	44	7	2	2	8	16	18	40	9
0 11	3	8	14	16	31	8	3	3	9	17	19	26	10
0 15	4	9	15	17	18	9	4	4	10	18	20	11	11
0 18	5	10	16	18	5	10	5	5	11	19	20	57	12
0 22	6	11	17	18	52	11	6	6	12	20	21	42	12
0 26	7	12	18	19	39	12	7	7	13	20	22	27	13
0 29	8	13	19	20	26	12	7	8	14	21	23	12	14
0 33	9	14	20	21	13	13	8	9	15	22	23	58	15
0 37	10	15	21	22	0	14	9	10	16	23	24	43	16
0 40	11	16	22	22	47	15	10	11	17	24	25	28	16
0 44	12	17	22	23	34	16	11	12	18	25	26	13	17
0 48	13	18	23	24	21	16	12	13	19	26	26	58	18
0 52	14	19	24	25	8	17	13	14	20	27	27	43	19
0 55	15	20	25	25	55	18	14	15	21	27	28	29	20
0 59	16	21	26	26	42	19	15	16	22	28	29	14	20
1 03	17	22	27	27	29	20	16	17	23	29	29	59	21
1 06	18	23	27	28	16	21	17	18	24	⌚	⌚	45	22
1 10	19	24	28	29	3	21	18	19	25	1	1	30	23
1 14	20	25	29	29	50	22	19	20	26	2	2	15	24
1 18	21	26	⌚	0 ⌚	37	23	19	21	27	3	3	0	24
1 21	22	27	1	1	24	24	20	22	28	3	3	46	25
1 25	23	28	2	2	11	25	21	23	29	4	4	31	21
1 29	24	29	3	2	53	25	22	24	II	5	5	17	27
1 33	25	II	3	3	45	26	23	25	1	6	6	2	28
1 36	26	1	4	4	32	27	24	26	2	7	6	48	2
1 40	27	2	5	5	19	28	25	27	3	8	7	33	24
1 44	28	3	6	6	6	29	26	28	4	8	8	19	25
1 48	29	4	7	6	53	⌚	27	29	5	9	9	4	1
1 52	30	5	8	7	40	1	28	30	6	10	9	50	27

Tables of Proportionals.

These Tables are very valuable in calculating Tables of Houses from Tables of Oblique Ascension. Or, in calculating Directions when one desires to find, from Tables of Declination, or Right Ascension, the longitude of a given Declination or given Right Ascension.

EXAMPLE.

The Dec. is in Libra and south, being $5^{\circ} 50'$, without latitude. Required, the longitude. Look in Tables of Dec. for a Dec. next smaller than $5^{\circ} 50'$; it is $5^{\circ} 32'$ and in the column on the left headed "Libra," see 14. This means that $5^{\circ} 32'$ of Dec. are equal to 14° longitude of Libra. But there are $18'$ more of Dec. for which the longitude must be found. We look at the next larger Dec. than $5^{\circ} 32'$ and see that it is $5^{\circ} 55'$, or $23'$ more, and that $5^{\circ} 55'$ Dec. give 15° of longitude; therefore $23'$ Dec. are equal to $60'$ of longitude. Then we say:

As $23'$ Dec. is to $60'$ longitude, so is $18'$ Dec. to the longitude required. Multiply the 2d and 3d terms together, divide by the 1st and we have the answer. But referring to these Tables, we look for 23 in the line of figures of 1st terms, which runs across the page directly over the line of 60 each; having found 23 , run down that column, till opposite the 18 in the 1st column headed "3d terms" and at the point of intersection see 47 , showing that $18'$ of Dec. are equal to $47'$ longitude at that place in the Table. Further explanations hereafter.

Tables of Proportionals.

60 ALWAYS THE SECOND TERM.

3d Terms,	10	11	12	13	14	15	16	17	18	19	20	21
	60	60	60	60	60	60	60	60	60	60	60	60
1	6	6	5	5	4	4	4	3	3	3	3	3
2	12	11	10	9	9	8	7	7	7	6	6	6
3	18	16	15	14	13	12	11	11	10	9	9	9
4	24	22	20	18	17	16	15	14	13	13	12	11
5	30	27	25	23	21	20	19	18	17	16	15	14
6	36	33	30	28	26	24	22	21	20	19	18	17
7	42	38	35	33	30	28	26	25	23	22	21	20
8	48	44	40	37	34	32	30	28	27	25	24	23
9	54	49	45	42	39	36	34	32	30	29	27	26
10	60	55	50	46	43	40	37	35	33	32	30	29
11	66	60	55	51	47	44	41	39	37	35	33	31
12	72	65	60	55	51	48	45	42	40	38	36	34
13	78	71	65	60	56	52	49	46	43	41	39	37
14	84	76	70	65	60	56	52	49	47	44	42	40
15	90	82	75	69	64	60	56	53	50	47	45	43
16	96	87	80	74	69	64	60	56	53	51	48	46
17	102	93	85	78	73	68	64	60	57	54	51	48
18	108	98	90	83	77	72	67	64	60	57	54	51
19	114	104	95	88	81	76	71	67	63	60	57	54
20	120	109	100	92	86	80	75	71	67	63	60	57
21	126	115	105	97	90	84	79	74	70	66	63	60
22	132	120	110	102	94	88	82	78	73	69	66	63
23	138	125	115	106	99	92	86	81	77	73	69	66
24	144	131	120	111	103	96	90	85	80	76	72	68
25	150	136	125	115	107	100	94	88	83	79	75	71
26	156	142	130	120	111	104	97	92	87	82	78	74
27	162	147	135	125	116	108	101	95	90	85	81	77
28	168	153	140	129	120	112	105	99	93	88	84	80
29	174	158	145	134	124	116	109	102	97	92	87	83
30	180	164	150	138	129	120	112	106	100	95	90	86

Tables of Proportionals.

60 ALWAYS THE SECOND TERM.

3d Terms.	10	11	12	13	14	15	16	17	18	19	20	21
	60	60	60	60	60	60	60	60	60	60	60	60
31	186	166	155	143	133	124	116	109	103	98	93	89
32	192	175	160	148	137	128	120	113	107	101	96	91
33	198	180	165	152	141	132	124	116	110	104	99	94
34	204	186	170	157	146	136	127	120	113	107	102	97
35	210	191	175	162	150	140	131	124	117	111	105	100
36	216	196	180	166	154	144	135	127	120	114	108	103
37	222	202	185	171	159	148	139	131	123	117	111	106
38	228	207	190	175	163	152	142	134	127	120	114	108
39	234	213	195	180	167	156	146	138	130	123	117	111
40	240	218	200	185	171	160	150	141	133	126	120	114
41	246	224	205	189	176	164	154	145	137	129	123	117
42	252	229	210	194	180	168	157	148	140	133	126	120
43	258	235	215	198	184	172	161	152	143	136	129	123
44	264	240	220	203	189	176	165	155	147	139	132	126
45	270	245	225	208	193	180	169	159	150	142	135	129
46	276	251	230	212	197	184	172	162	153	145	138	131
47	282	256	235	217	201	188	176	166	157	148	141	134
48	288	262	240	222	206	192	180	169	160	152	144	137
49	294	267	245	226	210	196	184	173	163	155	147	140
50	300	273	250	231	214	200	187	176	167	158	150	143
51	306	278	255	235	219	204	191	180	170	161	153	146
52	312	284	260	240	223	208	195	183	173	164	156	149
53	318	289	265	245	227	212	199	187	177	167	159	151
54	324	295	270	249	231	216	202	191	180	171	162	154
55	330	300	275	254	236	220	206	194	183	174	165	157
56	336	305	280	258	240	224	210	198	187	177	168	160
57	342	311	285	263	244	228	214	201	190	180	171	163
58	348	316	290	268	249	232	217	205	193	183	174	166
59	354	322	295	272	253	236	221	208	197	186	177	168
60	360	327	300	277	257	240	225	212	200	189	180	171

Tables of Proportionals.

60 ALWAYS THE SECOND TERM.

3d Terms.	22	23	24	25	26	27	28	29	30	31	32	33
	60	60	60	60	60	60	60	60	60	60	60	60
1	3	3	2	2	2	2	2	2	2	2	2	2
2	5	5	5	5	5	4	4	4	4	4	4	4
3	8	8	7	7	7	6	6	6	6	6	6	6
4	11	10	10	10	9	9	8	8	8	8	8	7
5	14	13	12	12	11	11	10	10	10	9	9	9
6	17	16	15	15	14	13	13	12	12	11	11	11
7	19	18	17	17	16	16	15	14	14	13	13	13
8	22	21	20	19	19	18	17	17	16	16	15	15
9	25	24	22	22	21	20	19	19	18	18	17	16
10	27	26	25	24	23	22	21	21	20	19	18	18
11	30	28	27	26	25	24	24	23	22	21	20	20
12	33	31	30	29	28	27	26	25	24	23	22	21
13	35	33	32	31	30	29	28	27	26	25	24	23
14	38	36	35	34	33	31	30	29	28	27	26	25
15	41	39	37	36	35	33	32	31	30	29	28	27
16	44	42	40	38	37	36	34	33	32	31	30	29
17	46	44	42	41	39	38	36	35	34	33	32	31
18	49	47	45	43	42	40	39	37	36	35	34	33
19	52	49	47	46	44	42	41	39	38	37	36	35
20	55	52	50	48	46	44	43	41	40	39	38	37
21	57	55	52	50	49	47	45	43	42	41	39	38
22	60	57	55	53	51	49	47	46	44	43	41	40
23	63	60	57	55	53	51	49	48	46	45	43	42
24	65	63	60	58	56	53	51	50	48	46	45	44
25	68	65	62	60	58	56	53	52	50	48	47	46
26	71	67	65	62	60	58	56	54	52	50	49	48
27	74	70	67	65	62	60	58	56	54	52	51	49
28	76	73	70	67	65	62	60	58	56	54	53	51
29	79	76	72	70	67	64	62	60	58	56	55	53
30	82	79	75	72	69	67	64	62	60	58	56	55

Tables of Proportionals.

60 ALWAYS THE SECOND TERM.

3d Terms.	22	23	24	25	26	27	28	29	30	31	32	33
	60	60	60	60	60	60	60	60	60	60	60	60
31	85	81	77	75	72	69	66	64	62	60	58	56
32	87	84	80	77	74	71	69	66	64	62	60	58
33	90	86	82	79	76	73	71	68	66	64	62	60
34	92	88	85	82	78	76	73	70	68	66	64	62
35	95	91	87	84	81	78	75	72	70	68	66	64
36	98	93	90	86	83	80	77	74	72	70	68	66
37	101	96	92	89	85	82	79	76	74	72	70	68
38	104	99	95	91	88	84	81	78	76	74	71	69
39	106	102	97	94	90	87	83	80	78	75	73	71
40	109	104	100	96	92	89	86	82	80	77	75	73
41	112	107	102	98	95	91	88	85	82	79	77	75
42	115	110	105	101	197	93	90	87	84	81	79	77
43	117	112	107	103	199	96	92	89	86	83	81	79
44	120	115	110	106	101	98	94	91	88	85	83	80
45	123	117	112	108	104	100	96	93	90	87	84	82
46	126	120	115	111	106	102	99	95	92	89	86	84
47	128	123	117	113	109	104	101	97	94	91	88	85
48	131	125	120	115	111	107	103	99	96	93	90	87
49	134	128	122	118	113	109	105	101	98	95	92	89
50	136	130	125	120	116	111	107	103	100	97	94	91
51	139	133	127	122	118	113	110	106	102	99	96	93
52	142	136	130	125	120	116	112	108	104	101	98	95
53	145	138	132	127	123	118	114	110	106	103	99	97
54	147	141	135	130	125	120	116	112	108	105	101	98
55	150	143	137	132	127	122	118	114	110	106	103	100
56	153	146	140	134	129	124	120	116	112	108	105	102
57	155	149	142	137	132	127	122	118	114	110	107	104
58	158	151	145	139	134	129	124	120	116	112	109	106
59	161	154	147	142	136	131	126	122	118	114	111	107
60	164	157	150	144	138	133	129	124	120	116	112	109

Tables of Proportionals.

60 ALWAYS THE SECOND TERM.

3d Terms.	34	35	36	37	38	39	40	41	42	43	44	45
	60	60	60	60	60	60	60	60	60	60	60	60
1	2	2	2	2	2	2	1	1	1	1	1	1
2	4	3	3	3	3	3	3	3	3	3	3	3
3	5	5	5	5	5	5	4	4	4	4	4	4
4	7	7	7	7	7	6	6	6	6	6	6	5
5	9	9	8	8	8	8	7	7	7	7	7	7
6	11	10	10	10	9	9	9	9	8	8	8	8
7	12	12	12	11	11	11	10	10	10	10	10	9
8	14	14	13	13	13	12	12	12	11	11	11	11
9	16	15	15	14	14	14	13	13	13	13	12	12
10	18	17	17	16	16	15	15	15	14	14	13	13
11	19	19	18	18	17	17	16	16	16	15	15	15
12	21	20	20	19	19	18	18	18	17	17	16	16
13	23	22	22	21	21	20	19	19	19	18	18	17
14	24	24	23	23	22	22	21	20	20	20	19	19
15	26	25	25	24	23	23	22	22	21	21	20	20
16	28	27	26	26	25	24	24	23	23	22	22	21
17	30	29	28	27	27	26	25	25	24	24	23	23
18	32	31	30	29	28	28	27	26	26	25	25	24
19	34	33	32	31	30	29	28	28	27	27	26	26
20	36	35	34	33	32	31	30	29	29	28	28	27
21	37	36	35	34	33	32	31	31	30	30	29	28
22	39	38	37	36	35	34	33	32	32	31	30	29
23	41	39	38	37	36	35	34	34	33	32	31	31
24	42	41	40	39	38	37	36	35	35	34	33	32
25	44	43	42	41	39	38	37	37	36	35	34	33
26	46	45	43	43	41	40	39	38	37	36	35	35
27	48	47	45	44	43	41	40	40	39	38	37	36
28	50	49	47	46	44	43	42	41	40	39	38	37
29	51	50	48	47	46	44	43	42	41	40	40	39
30	53	51	50	49	47	46	45	44	43	42	41	40

Tables of Proportionals.

60 ALWAYS THE SECOND TERM.

3d Terms.	34	35	36	37	38	39	40	41	42	43	44	45
	60	60	60	60	60	60	60	60	60	60	60	60
31	55	53	51	50	49	48	46	45	44	43	42	41
32	56	55	53	52	51	49	48	47	46	45	44	43
33	58	57	55	54	52	51	49	48	47	46	45	44
34	60	58	57	55	54	52	51	50	49	48	47	46
35	62	60	58	57	55	54	52	51	50	49	48	47
36	64	62	60	58	57	55	54	53	51	50	49	48
37	66	64	62	60	58	57	55	55	53	52	50	49
38	67	65	64	62	60	58	57	56	54	53	52	51
39	69	67	65	64	62	60	58	58	56	54	53	52
40	71	69	67	65	63	62	60	59	57	55	54	53
41	72	70	68	66	65	63	61	60	59	57	56	55
42	74	72	70	68	66	65	63	61	60	58	57	56
43	76	74	72	70	68	66	64	63	61	59	58	57
44	78	76	74	72	70	68	66	64	63	61	60	59
45	79	77	75	73	71	69	67	66	64	63	61	60
46	81	79	77	75	73	71	69	67	66	64	63	61
47	83	81	78	76	74	72	70	69	67	65	64	63
48	84	82	80	78	76	74	72	70	69	67	65	64
49	86	84	82	79	77	75	73	71	70	68	67	65
50	88	85	83	81	79	77	75	73	71	69	68	67
51	90	87	85	83	81	78	76	75	73	71	69	68
52	92	89	87	84	82	80	78	76	74	72	71	69
53	94	91	88	86	84	82	79	78	76	74	72	71
54	96	93	90	88	85	83	81	79	77	75	73	72
55	97	95	92	89	87	85	82	80	79	77	75	73
56	99	96	94	91	89	86	84	82	80	78	76	74
57	101	98	95	93	90	88	85	83	81	79	77	75
58	102	99	97	94	92	89	87	85	83	81	79	77
59	104	101	98	96	93	91	88	86	84	83	81	78
60	106	103	100	97	94	92	90	88	86	84	82	80

Tables of Proportionals.

60 ALWAYS THE SECOND TERM.

3d Terms.	46	47	48	49	50	51	52	53	54	55	56	57	58	59
	60	60	60	60	60	60	60	60	60	60	60	60	60	60
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	3	3	2	2	2	2	2	2	2	2	2	2	2	2
3	4	4	4	4	4	4	4	3	3	3	3	3	3	3
4	5	5	5	5	5	5	5	4	4	4	4	4	4	4
5	7	6	6	6	6	6	6	6	5	5	5	5	5	5
6	8	8	7	7	7	7	7	7	7	6	6	6	6	6
7	9	9	9	9	8	8	8	8	8	7	7	7	7	7
8	10	10	10	10	9	9	9	9	9	9	8	8	8	8
9	12	12	11	11	11	11	10	10	10	10	9	9	9	9
10	13	13	12	12	12	12	11	11	11	11	11	10	10	10
11	14	14	14	13	13	13	12	12	12	12	11	11	11	11
12	16	16	15	15	14	14	14	13	13	13	12	12	12	12
13	17	17	16	16	16	15	15	15	14	14	13	13	13	13
14	18	18	18	17	17	16	16	16	15	15	14	14	14	14
15	19	19	19	18	18	18	17	17	16	16	16	16	16	15
16	21	20	20	20	19	19	18	18	18	17	17	17	17	16
17	22	22	21	21	20	20	20	19	19	19	18	18	18	17
18	24	23	22	22	22	21	21	20	20	20	19	19	19	18
19	25	25	24	24	23	22	22	22	21	21	20	20	20	19
20	26	26	25	25	24	24	23	23	22	22	21	21	21	20
21	27	27	26	26	25	25	24	24	23	23	22	22	22	21
22	29	28	27	27	26	26	25	25	25	24	24	23	23	22
23	30	29	29	28	28	27	27	26	26	25	25	24	24	23
24	31	31	30	29	29	28	28	27	27	26	26	25	25	24
25	33	32	31	30	30	30	29	28	28	27	27	26	26	25
26	34	33	32	32	31	31	30	29	29	28	28	27	27	26
27	35	34	34	33	32	32	31	31	30	29	29	28	28	27
28	37	36	35	34	34	33	32	32	31	31	30	29	29	28
29	38	37	36	36	35	34	33	33	32	32	31	30	31	29
30	39	38	37	37	36	35	35	34	33	33	32	31	32	31

Tables of Proportionals.

60 ALWAYS THE SECOND TERM.

3d Terms.	46	47	48	49	50	51	52	53	54	55	56	57	58	59
	60	60	60	60	60	60	60	60	60	60	60	60	60	60
31	40	40	39	38	37	37	36	35	34	34	33	33	32	32
32	42	41	40	39	38	38	37	36	36	35	34	34	33	33
33	43	42	41	40	40	39	38	37	37	36	35	35	34	34
34	45	44	43	42	41	40	39	38	38	37	36	36	35	35
35	46	45	44	43	42	41	40	40	39	38	38	37	36	36
36	47	46	45	44	43	42	42	41	40	39	39	38	37	37
37	48	47	46	45	44	43	43	42	41	40	40	39	38	38
38	50	49	47	46	46	45	44	43	42	41	41	40	39	39
39	51	50	49	48	47	46	45	44	43	43	42	41	40	40
40	52	51	50	49	48	47	46	45	44	44	43	42	41	41
41	53	52	51	50	49	48	47	46	46	45	44	43	42	42
42	55	54	53	52	50	49	48	48	47	46	45	44	43	43
43	56	55	54	53	52	51	50	49	48	47	46	45	44	44
44	58	56	55	54	53	52	51	50	49	48	47	46	45	45
45	59	58	56	55	54	53	52	51	50	49	48	47	46	46
46	60	59	58	56	55	54	53	52	51	50	49	48	47	47
47	61	60	59	58	56	55	54	53	52	51	50	49	48	48
48	63	61	60	59	58	56	55	54	53	52	51	51	49	49
49	64	63	61	60	59	58	56	55	55	54	52	52	50	50
50	65	64	63	61	60	59	58	57	56	55	54	53	52	51
51	67	65	64	63	61	60	59	58	57	56	55	54	53	52
52	68	67	65	64	62	61	60	59	58	57	56	55	54	53
53	69	68	66	65	64	62	61	60	59	58	57	56	55	54
54	70	69	67	66	65	64	62	61	60	59	58	57	56	55
55	72	70	69	67	66	65	63	62	61	60	59	58	57	56
56	73	71	70	69	67	66	65	63	62	61	60	59	58	57
57	74	73	71	70	68	67	66	65	63	62	61	60	59	58
58	76	74	72	71	70	68	67	66	65	63	62	61	60	59
59	77	75	74	72	71	69	68	67	66	64	63	62	61	60
60	78	77	75	73	72	71	69	68	67	65	64	63	62	61

Tables of Proportionals.

60 ALWAYS THE SECOND TERM.

3d Terms.	60	61	62	63	64	65	66	67	68	69	70	71	72	73
1	60	60	60	60	60	60	60	60	60	60	60	60	60	60
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3	3	3	2
4	4	4	4	4	4	4	4	4	4	4	4	3	3	3
5	5	5	5	5	5	5	5	4	4	4	4	4	4	4
6	6	6	6	6	6	6	5	5	5	5	5	5	5	5
7	7	7	7	7	7	6	6	6	6	6	6	6	6	6
8	8	8	8	8	7	7	7	7	7	7	7	7	7	7
9	9	9	9	9	8	8	8	8	8	8	8	8	8	7
10	10	10	10	10	9	9	9	9	9	9	9	8	8	8
11	11	11	11	10	10	10	10	10	10	9	9	9	9	9
12	12	12	12	11	11	11	11	11	10	10	10	10	10	10
13	13	13	13	12	12	12	12	12	12	11	11	11	11	11
14	14	14	14	13	13	13	13	13	12	12	12	12	12	12
15	15	15	15	14	14	14	13	13	13	13	13	13	13	12
16	16	16	16	15	15	15	15	14	14	14	14	14	13	13
17	17	17	17	16	16	16	15	15	15	15	15	14	14	14
18	18	18	17	17	17	17	16	16	16	16	15	15	15	15
19	19	19	18	18	18	18	17	17	17	17	16	16	16	16
20	20	20	19	19	19	18	18	18	18	17	17	17	17	16
21	21	21	20	20	20	19	19	19	19	18	18	18	17	17
22	22	22	21	21	21	20	20	20	19	19	19	18	18	18
23	23	23	22	22	22	21	21	21	20	20	20	19	19	19
24	24	24	23	23	22	22	21	21	21	21	21	20	20	20
25	25	25	24	24	23	23	23	22	22	22	21	21	21	21
26	26	26	25	25	24	24	24	23	23	23	22	22	22	21
27	27	27	26	26	25	25	25	24	24	24	23	23	22	22
28	28	28	27	27	26	26	25	25	25	25	24	24	23	23
29	29	29	28	28	27	27	26	26	26	25	25	25	24	24
30	30	30	29	29	28	28	27	27	26	26	26	25	25	25

Tables of Proportionals.

60 ALWAYS THE SECOND TERM.

3d Terms.	60	61	62	63	64	65	66	67	68	69	70	71	72	73
	60	60	60	60	60	60	60	60	60	60	60	60	60	60
31	31	30	30	30	29	29	28	28	27	27	27	26	26	25
32	32	31	31	30	30	30	29	29	28	28	28	27	27	26
33	33	32	32	31	31	31	30	30	29	29	28	28	27	27
34	34	33	33	32	32	31	31	30	30	29	29	29	28	28
35	35	34	34	33	33	32	32	31	31	30	30	30	29	29
36	36	35	35	34	34	33	33	32	32	31	31	31	30	30
37	37	36	36	35	35	34	34	33	33	32	32	31	31	30
38	38	37	37	36	36	35	35	34	34	33	33	32	32	31
39	39	38	38	37	37	36	35	35	34	34	34	33	33	32
40	40	39	39	38	37	37	36	36	35	35	34	34	34	33
41	41	40	40	39	38	38	37	37	36	36	35	35	34	34
42	42	41	41	40	39	39	38	38	37	37	36	36	35	35
43	43	42	42	41	40	40	39	38	38	37	37	36	36	35
44	44	43	43	42	41	41	40	39	39	38	38	37	37	36
45	45	44	44	43	42	42	41	40	40	39	39	38	38	37
46	46	45	45	44	43	42	42	41	41	40	39	39	39	38
47	47	46	46	45	44	43	43	42	41	41	40	40	39	39
48	48	47	46	46	45	44	44	43	42	42	41	41	40	39
49	49	48	47	47	46	45	45	44	43	43	42	41	41	40
50	50	49	48	48	47	46	46	45	44	43	43	42	42	41
51	51	50	49	49	48	47	47	46	45	44	44	43	43	42
52	52	51	50	50	49	48	47	47	46	45	45	44	44	43
53	53	52	51	50	50	49	48	47	47	46	45	45	44	44
54	54	53	52	51	51	50	49	48	47	47	46	46	45	44
55	55	54	53	52	52	51	50	49	48	48	47	46	46	45
56	56	55	54	53	52	52	51	50	49	49	48	47	47	46
57	57	56	55	54	53	53	52	51	50	50	49	48	47	47
58	58	57	56	55	54	54	53	52	51	51	50	49	48	48
59	59	58	57	56	55	54	54	53	52	52	51	50	49	49
60	60	59	58	57	56	55	55	54	53	52	51	50	49	49

Tables of Proportionals.

60 ALWAYS THE SECOND TERM.

3d Terms.	74	75	76	77	78	79	80	81	82	83	84	85	86	87
	60	60	60	60	60	60	60	60	60	60	60	60	60	60
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	1	1	1	1	1	1	1
3	2	2	2	2	2	2	2	2	2	2	2	2	2	2
4	3	3	3	3	3	3	3	3	3	3	3	3	3	3
5	4	4	4	4	4	4	4	4	4	4	4	4	3	3
6	5	5	5	5	5	5	4	4	4	4	4	4	4	4
7	6	6	6	5	5	5	5	5	5	5	5	5	5	5
8	6	6	6	6	6	6	6	6	6	6	6	6	6	6
9	7	7	7	7	7	7	7	7	7	7	6	6	6	6
10	8	8	8	8	8	8	7	7	7	7	7	7	7	7
11	9	9	9	9	8	8	8	8	8	8	8	8	8	8
12	10	10	9	9	9	9	9	9	9	9	9	9	8	8
13	11	10	10	10	10	10	10	10	10	9	9	9	9	9
14	11	11	11	11	11	10	10	10	10	10	10	10	10	10
15	12	12	12	12	11	11	11	11	11	11	11	11	10	10
16	13	13	13	12	12	12	12	12	12	11	11	11	11	11
17	14	13	13	13	13	13	13	13	13	12	12	12	12	12
18	14	14	14	14	14	13	13	13	13	13	13	13	13	12
19	15	15	15	15	14	14	14	14	14	14	13	13	13	13
20	16	16	16	15	15	15	15	15	14	14	14	14	14	14
21	17	17	16	16	16	16	16	15	15	15	15	15	15	14
22	18	17	17	17	17	17	16	16	16	16	16	16	15	15
23	19	18	18	18	18	18	17	17	17	16	16	16	16	16
24	19	19	19	19	18	18	18	18	18	17	17	17	17	17
25	20	20	20	19	19	19	19	18	18	18	18	17	17	17
26	21	21	21	20	20	20	19	19	19	19	19	18	18	18
27	22	22	21	21	21	21	20	20	20	19	19	19	19	19
28	23	22	22	22	22	22	21	21	20	20	20	20	20	19
29	24	23	23	23	22	22	22	22	21	21	21	20	20	20
30	24	24	24	23	23	23	22	22	22	22	21	21	21	21

Tables of Proportionals.

60 ALWAYS THE SECOND TERM.

3d Terms.	74	75	76	77	78	79	80	81	82	83	84	85	86	87
	60	60	60	60	60	60	60	60	60	60	60	60	60	60
31	25	25	24	24	24	24	23	23	23	22	22	22	22	21
32	26	26	25	25	25	24	24	24	24	23	23	23	22	22
33	27	26	26	25	25	25	25	24	24	24	24	23	23	23
34	28	27	27	26	26	26	25	25	25	24	24	24	24	23
35	28	28	28	27	27	27	26	26	26	25	25	25	25	24
36	27	29	29	28	28	27	27	27	27	26	26	26	25	25
37	30	29	29	29	28	28	28	27	27	27	26	26	26	26
38	31	30	30	30	29	29	28	28	28	27	27	27	27	26
39	32	31	31	30	30	29	29	29	28	28	28	27	27	27
40	33	32	32	31	31	30	30	30	29	29	28	28	28	28
41	33	33	33	32	32	31	31	30	30	30	29	29	29	28
42	34	34	33	33	32	32	32	31	31	30	30	30	29	29
43	35	34	34	34	33	33	32	32	31	31	30	30	30	30
44	36	35	35	34	34	33	33	33	32	32	31	31	31	30
45	37	36	36	35	35	34	34	33	33	33	32	32	32	31
46	37	37	36	36	35	35	35	34	34	33	33	33	32	32
47	38	38	37	37	36	36	35	35	34	34	33	33	33	32
48	39	38	38	37	37	36	36	36	35	35	34	34	34	33
49	40	39	39	38	38	37	37	36	36	36	35	35	34	34
50	41	40	39	39	38	38	37	37	37	36	36	35	35	34
51	41	41	40	40	39	39	38	38	37	37	36	36	36	35
52	42	42	41	41	40	39	39	38	38	38	37	37	36	36
53	43	42	42	41	41	40	40	39	39	39	38	37	37	37
54	44	43	43	42	42	41	40	40	39	39	39	38	38	37
55	45	44	43	43	42	42	41	41	40	40	39	39	38	38
56	45	45	44	44	43	43	42	41	41	40	40	39	39	39
57	46	46	45	44	44	43	43	42	42	41	41	40	40	39
58	47	46	46	45	45	44	43	43	42	42	41	41	41	40
59	48	47	46	46	45	45	44	44	43	43	42	42	41	41
60	49	48	47	47	46	46	45	44	44	43	43	42	42	41

Tables of Proportionals.

60 ALWAYS THE SECOND TERM.

3d Terms.	88	89	90	91	92	93	94	95	96	97	98	99	100
	60	60	60	60	60	60	60	60	60	60	60	60	60
1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1	1	1	1
3	2	2	2	2	2	2	2	2	2	2	2	2	2
4	3	3	3	3	3	3	3	3	3	3	3	3	3
5	3	3	3	3	3	3	3	3	3	3	3	3	3
6	4	4	4	4	4	4	4	4	4	4	4	3	3
7	5	5	5	5	5	4	4	4	4	4	4	4	4
8	5	5	5	5	5	5	5	5	5	5	5	5	5
9	6	6	6	6	6	6	6	6	6	6	5	5	5
10	7	7	7	7	7	6	6	6	6	6	6	6	6
11	7	7	7	7	7	7	7	7	7	7	7	7	6
12	8	8	8	8	8	8	8	7	7	7	7	7	7
13	9	9	9	9	8	8	8	8	8	8	8	8	8
14	10	9	9	9	9	9	9	9	9	9	9	9	8
15	10	10	10	10	10	10	10	9	9	9	9	9	9
16	11	11	11	11	10	10	10	10	10	10	10	10	9
17	12	11	11	11	11	11	11	11	11	11	10	10	10
18	12	12	12	12	12	12	11	11	11	11	11	11	11
19	13	13	13	13	12	12	12	12	12	12	12	12	11
20	14	13	13	13	13	13	13	13	13	12	12	12	12
21	14	14	14	14	14	13	13	13	13	13	13	13	12
22	15	15	15	15	14	14	14	14	14	14	13	13	13
23	16	15	15	15	15	15	15	15	15	14	14	14	14
24	16	16	16	16	16	15	15	15	15	15	15	15	14
25	17	17	17	17	16	16	16	16	16	16	15	15	15
26	18	18	17	17	17	16	17	17	16	16	16	15	
27	18	18	18	18	18	17	17	17	17	17	17	17	16
28	19	19	18	18	18	18	18	18	18	18	17	17	17
29	20	20	19	19	19	19	18	19	18	18	18	18	17
30	20	20	20	20	20	19	19	19	19	19	18	18	18

Tables of Proportionals.

60 ALWAYS THE SECOND TERM.

3d Terms,	88	89	90	91	92	93	94	95	96	97	98	99	100
	60	60	60	60	60	60	60	60	60	60	60	60	60
31	21	21	21	20	20	20	20	20	19	19	19	19	18
32	22	22	21	21	21	21	21	20	20	20	20	19	19
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TABLES OF 4th TERMS.

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TABLES OF 4th TERMS.

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TABLES OF 4th TERMS.

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TABLES OF 4th TERMS.

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TABLES OF 4th TERMS.

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TABLES OF 4th TERMS.

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TABLES OF 4th TERMS.

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30	23	23	24	24	25	25	26	26	27	27	28	28	29	29	

TABLES OF 4th TERMS.

60 ALWAYS THE FIRST TERM.

3d Terms.	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
	46	47	48	49	50	51	52	53	54	55	56	57	58	59	
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32	25	25	26	26	27	27	28	28	29	29	30	30	31	31	
33	25	26	26	27	27	28	29	29	30	30	30	31	31	32	32
34	26	27	27	28	28	29	29	30	31	31	31	32	32	33	33
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36	28	28	29	29	30	31	31	32	32	33	34	34	35	35	35
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38	29	30	30	31	32	32	33	34	34	35	35	36	37	37	37
39	30	31	31	32	32	33	34	34	35	36	36	37	38	38	38
40	31	31	32	33	33	34	35	35	36	37	37	38	39	39	39
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58	44	45	46	47	48	49	50	51	52	53	54	55	56	57	
59	45	46	47	48	49	50	51	52	53	54	55	56	57	58	
60	46	47	48	49	50	51	52	53	54	55	56	57	58	59	

TABLES OF 4th TERMS.

60 ALWAYS THE FIRST TERM.

3d Terms.	60	60	60	60	60	60	60	60	60	60	60	60	60	60
	60	61	62	63	64	65	66	67	68	69	70	71	72	73
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4	4	4	4	4	4	4	4	4	5	5	5	5	5	5
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14	14	14	14	15	15	15	15	16	16	16	16	17	17	17
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22	22	22	23	23	23	24	24	25	25	25	26	26	26	27
23	23	23	24	24	25	25	25	26	26	26	27	27	28	28
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25	25	25	26	26	27	27	27	28	28	29	29	30	30	30
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27	27	27	28	28	29	29	30	30	31	31	31	32	32	33
28	28	28	29	29	30	30	31	31	32	32	33	33	34	34
29	29	29	30	30	31	31	32	32	33	33	34	34	35	35
30	30	30	31	31	32	32	33	33	34	34	35	35	36	36

TABLES OF 4th TERMS.

60 ALWAYS THE FIRST TERM.

3d Terms.	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
	60	61	62	63	64	65	66	67	68	69	70	71	72	73	
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33	33	34	34	35	35	36	36	37	37	38	38	39	40	40	40
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35	35	36	36	37	37	38	38	39	40	40	41	41	42	42	43
36	36	37	37	38	38	39	39	40	40	41	41	42	43	43	44
37	37	38	38	39	39	40	41	41	42	43	43	44	44	45	45
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44	44	45	45	46	47	48	48	49	50	51	51	52	53	54	54
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57	57	58	59	60	61	62	63	64	65	66	66	67	68	69	69
58	58	59	60	61	62	63	64	65	66	67	68	69	70	71	71
59	59	60	61	62	63	64	65	66	67	68	69	70	71	72	72
60	60	61	62	63	64	65	66	67	68	69	70	71	72	73	

TABLES OF 4th TERMS.

60 ALWAYS THE FIRST TERM.

3d Terms.	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
	74	75	76	77	78	79	80	81	82	83	84	85	86	87	
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3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
4	5	5	5	5	5	5	5	5	5	5	6	6	6	6	6
5	6	6	6	6	6	7	7	7	7	7	7	7	7	7	7
6	7	7	8	8	8	8	8	8	8	8	8	8	9	9	9
7	9	9	9	9	9	9	9	9	9	10	10	10	10	10	10
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9	11	11	11	12	12	12	12	12	12	12	12	12	13	13	13
10	12	12	13	13	13	13	13	13	14	14	14	14	14	14	14
11	14	14	14	14	14	14	15	15	15	15	15	16	16	16	16
12	15	15	15	15	16	16	16	16	16	17	17	17	17	17	17
13	16	16	16	17	17	17	17	18	18	18	18	18	18	19	19
14	17	17	18	18	18	18	19	19	19	19	19	20	20	20	20
15	18	19	19	19	19	20	20	20	20	20	21	21	21	21	22
16	20	20	20	21	21	21	21	22	22	22	22	23	23	23	23
17	21	21	22	22	22	22	23	23	23	24	24	24	24	25	
18	22	22	23	23	23	24	24	24	25	25	25	25	26	26	
19	23	24	24	24	25	25	25	26	26	26	27	27	27	28	
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22	27	27	28	28	29	29	29	30	30	30	31	31	31	32	
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24	30	30	30	31	31	32	32	32	33	33	34	34	34	35	
25	31	31	32	32	32	33	33	34	34	35	35	35	36	36	
26	32	32	33	33	34	34	35	35	36	36	36	37	37	38	
27	33	34	34	35	35	36	36	36	37	37	38	38	39	39	
28	35	35	35	36	36	37	37	38	38	38	39	40	40	41	
29	36	36	37	37	38	38	39	39	39	40	40	41	41	42	
30	37	37	38	38	39	39	40	40	41	41	42	42	43	43	

TABLES OF 4th TERMS.

60 ALWAYS THE FIRST TERM.

3d Terms.	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
	74	75	76	77	78	79	80	81	82	83	84	85	86	87	
31	38	39	39	40	40	41	41	42	42	43	43	44	44	45	
32	39	40	41	41	42	42	43	43	44	44	45	45	46	46	
33	41	41	42	42	43	43	44	45	45	46	46	47	47	48	
34	42	42	43	44	44	45	45	46	46	47	48	48	49	49	
35	43	44	44	45	45	46	47	47	48	48	49	50	50	50	
36	44	45	46	46	47	47	48	49	49	50	50	51	52	52	
37	46	46	47	47	48	49	49	50	51	51	52	52	53	54	
38	47	47	48	49	49	50	51	51	52	53	53	55	54	55	
39	48	49	49	50	51	51	52	53	53	54	55	56	56	57	
40	49	50	51	51	52	53	53	54	55	55	56	57	57	58	
41	51	51	52	53	53	54	55	55	56	57	57	59	59	59	
42	52	52	53	54	55	55	56	57	57	58	59	59	60	61	
43	53	54	54	55	56	57	57	58	59	59	60	61	62	62	
44	54	55	56	56	57	58	59	59	60	61	62	62	63	64	
45	55	56	57	58	58	59	60	60	61	62	63	64	64	65	
46	57	57	58	59	60	61	61	62	63	64	64	65	66	67	
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48	59	60	61	62	62	63	64	65	66	66	67	68	69	70	
49	60	61	62	63	64	65	65	66	67	68	69	69	70	71	
50	62	62	63	64	65	66	67	67	68	69	70	71	72	72	
51	63	64	65	65	66	67	68	69	70	71	71	72	73	74	
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53	65	66	67	68	69	70	71	72	72	73	74	75	76	77	
54	67	67	68	69	70	71	72	73	74	75	76	76	77	78	
55	68	69	70	71	71	72	73	74	75	76	77	78	79	80	
56	69	70	71	72	73	74	75	76	77	77	78	79	80	81	
57	70	71	72	73	74	75	76	77	78	79	80	81	82	83	
58	72	72	73	74	75	76	77	78	79	80	81	82	83	84	
59	73	74	75	76	77	78	79	80	81	82	83	84	85	86	
60	74	75	76	77	78	79	80	81	82	83	84	85	86	87	

TABLES OF 4th TERMS.

60 ALWAYS THE FIRST TERM.

3d Terms.	60	60	60	60	60	60	60	60	60	60	60	60	60	60
	88	89	90	91	92	93	94	95	96	97	98	99	100	
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2	3	3	3	3	3	3	3	3	3	3	3	3	4	3
3	4	4	4	5	5	5	5	5	5	5	5	5	5	5
4	6	6	6	6	6	6	6	6	6	6	7	7	7	7
5	7	7	7	8	8	8	8	8	8	8	8	8	8	8
6	9	9	9	9	9	9	9	9	9	10	10	10	10	
7	10	10	10	11	11	11	11	11	11	11	11	11	12	12
8	12	12	12	12	12	12	13	13	13	13	13	13	13	13
9	13	13	13	14	14	14	14	14	14	15	15	15	15	15
10	15	15	15	15	15	15	16	16	16	16	16	17	17	17
11	16	16	16	17	17	17	17	18	18	18	18	18	18	
12	18	18	18	18	18	19	19	19	19	19	20	20	20	
13	19	19	19	20	20	20	20	21	21	21	21	21	21	22
14	21	21	21	21	22	22	22	22	23	23	23	23	23	23
15	22	22	22	23	23	23	23	24	24	24	24	25	25	25
16	23	24	24	24	25	25	25	25	26	26	26	26	26	27
17	25	25	25	26	26	26	27	27	27	27	28	28	28	
18	26	27	27	27	28	28	28	28	29	29	29	30	30	
19	28	28	28	29	29	29	30	30	30	31	31	31	32	
20	29	30	30	30	31	31	31	32	32	32	33	33	33	
21	31	31	31	32	32	33	33	33	34	34	34	35	35	
22	32	33	33	33	34	34	34	35	35	36	36	36	37	
23	34	34	35	35	35	35	36	36	37	37	38	38	38	
24	35	36	36	36	37	37	38	38	38	39	39	40	40	
25	37	37	38	38	38	39	39	40	40	40	41	41	42	
26	38	39	39	39	40	40	41	41	42	42	42	43	43	
27	40	40	41	41	41	42	42	43	43	44	44	45	45	
28	41	42	42	42	43	43	44	44	45	45	46	46	47	
29	43	43	44	44	44	45	45	46	46	47	47	48	48	
30	44	44	45	45	46	46	47	47	47	48	49	49	50	

TABLES OF 4th TERMS.

60 ALWAYS THE FIRST TERM.

3d Terms.	60	60	60	60	60	60	60	60	60	60	60	60	60
31	45	46	46	47	48	48	49	49	50	50	51	51	52
32	47	47	48	49	49	50	50	50	51	52	52	53	53
33	48	49	49	50	51	51	52	52	53	53	54	54	55
34	50	50	51	52	52	53	53	54	54	55	56	56	57
35	51	52	52	53	54	54	55	55	56	57	57	58	58
36	53	53	54	55	55	56	56	57	57	58	59	59	60
37	54	55	55	56	57	57	58	59	59	60	60	61	62
38	56	56	57	58	58	59	60	60	61	61	62	63	63
39	57	58	58	59	60	60	61	62	62	63	64	64	65
40	59	59	60	61	61	62	63	63	64	65	65	66	67
41	60	61	61	62	63	64	64	65	66	66	67	67	68
42	62	62	63	64	64	65	66	66	67	68	69	69	70
43	63	64	64	65	66	67	67	68	69	70	70	71	72
44	65	65	66	67	68	68	69	70	70	71	72	73	73
45	66	67	67	68	69	70	70	71	72	73	73	74	75
46	67	68	69	70	71	71	72	73	74	74	75	76	77
47	69	70	70	71	72	73	74	74	75	76	77	78	78
48	70	71	72	73	74	74	75	76	77	78	78	79	80
49	72	73	73	74	75	76	77	78	78	79	80	81	82
50	73	74	75	76	77	77	78	79	80	81	82	83	83
51	75	76	76	77	78	79	80	81	82	82	83	84	85
52	76	77	78	79	80	80	81	82	83	84	85	86	87
53	78	79	79	80	81	82	83	84	85	86	87	87	88
54	79	80	81	82	83	84	85	85	86	87	88	89	90
55	81	82	82	83	84	85	86	87	88	89	90	91	92
56	82	83	84	85	86	87	88	88	90	90	91	92	93
57	84	85	85	86	87	88	89	90	91	92	93	94	95
58	85	86	87	88	89	90	91	92	92	94	95	96	97
59	87	88	88	89	90	91	92	93	94	95	96	97	98
60	88	89	90	91	92	93	94	95	96	97	98	99	100

TABLES OF 4th TERMS.

The foregoing Tables, in which 60 is the 1st term, are just as much Tables of Proportionals as those preceding them and are so called. I computed both Tables and now give them to the public. Nearly six thousand calculations were necessary to do the work. Should any one discover an error in any of my Tables, I shall be thankful to be informed.

As the Tables are useful only to persons who make astronomical calculations, such persons will understand their use at a glance, it is unnecessary to enter upon any labored explanations. I have placed 60 at the head of each column to show that 60 is the 1st term. Under each 60 is a number as a second term while the 3d terms are in the first column, from 1 to 30 on the left hand page and from 31 to 60 on the right hand page. The fourth term, or answer, is at the point of intersection between the 2d and 3d terms, the same as finding R. A., or Dec. from the Tables of such.

Tables of Oblique Ascension.

R. A. [Right Ascension,] does not mean either moving to the right nor rising, as it seems to imply. Right is used in the sense understood when we say right angle, meaning an angle of 90° or the fourth of a circle. An "oblique" angle is one that contains either more, or less, than 90° . We say "the sun rises" but it does not; it only appears to rise; if the sun rose exactly in the east, culminated in the zenith and set in the west, this would be R. A. because its path would be at a right angle with the plane of the horizon. But we never witness this phenomenon. Those who live in the northern hemisphere see the sun rise north of the east, culminate south of the zenith at noon, and set north of the west, during summer. In the winter we see it rise south of east and set south of the west. Hence, we always find the sun's path oblique to the line of the horizon, differing more or less from a right angle. This difference is called A. D. [Ascensional Difference.] We first find the R. A.; next the A. D.; then either add the A. D. to the R. A., or subtract it from the R. A. to find the O. A., according to the rules elsewhere given. To make Tables of Houses, we first find the R.A. of the M. C. [Medium Cœli, meaning Midheaven,] and add to it 30° which gives the O. A. of the 11th house; add to it 60° for the O. A. of the 12th, and so on. Having found the O. A. of each cusp, from the 10th to the 3rd inclusive, we must then convert that O. A. into longitude, which may be done by trigonometry, or by these Tables.

HOW TO USE THE TABLES.

Suppose we desire to make a horoscope for 6° N. Lat. We must first find what are called "poles of the houses" for that latitude, which means the latitude of each cusp. Looking in a "Table of the Poles of the Houses," we see that the pole of the 11th is 2° ; the pole of the 12th is 4° and we know that "the latitude of the country," that is, the place for which we desire to compute the horoscope, namely 6° , is the pole of the 1st, or Ascendant. The pole of the 2d is the same as the pole of the 12th because the cusp is the same distance from the lower meridian that the 12th is from the upper meridian, or M. C. For the same reason the pole of the 3d is the same as the pole of the 11th. The 10th, or M. C., has no pole, or latitude, because that is the place we begin to measure the latitude, which steadily increases to the 1st after which it as steadily decreases and runs out on reaching the lower merideian,

Suppose 1° of π is on the cusp of the 10th house. We look in the Table of R. A. See that the R. A. is $208^{\circ} 51'$; add 30° to it, we have $238^{\circ} 51'$ as the O. A. of the 11th. The pole of the 11th being 2° we turn to Tables of O. A., at 2° latitude and look for an O. A., nearest; at the top of 9th column we see $238^{\circ} 55'$ which is the nearest. At the head of that column we see $\frac{1}{2}$, showing that the longitude is in some part of $\frac{1}{2}$; we look to the extreme left in the column headed Lougitude and see 0. Then we must place " $\frac{1}{2} 0$ " on the cusp of the 11th

Next add 60° to the $208^{\circ} 51'$, (or add 30° to the O. A. of the 11th) and we have $268^{\circ} 51'$ for the O. A. of the 12th.

The pole of the 12th is 4° ; so we turn in the Table to 4° lat., and find the nearest O. A. is $268^{\circ} 28'$. That column is headed $\frac{1}{2}$ and at the left, in the column of Longitudes, we see 27, showing that we must place " $\frac{1}{2} 27$ "

on the cusp of the 12th; add 30° more and we have $298^\circ 51'$ as the O. A. of the 1st.

The pole of the 1st is the latitude of the country for which we are making the horoscope, namely, 6° . We turn to the Table and see $298^\circ 15'$ as the next smaller O. A. At the head of the column is $\sqrt{3}$ and at the left 24° . As this is the Ascendant we must figure for minutes thus:

We see that $298^\circ 15'$ is $23'$ less than our O. A., showing that we must find how much longitude $23'$ of O. A. will make. The O.A. next larger than $298^\circ 15'$ is $299^\circ 17'$ showing that it requires $62'$ of O. A. to make $60'$ of longitude.

Then we say: If 62 be 60 what will 23 be? On page 10 of "Proportionals" we find the answer to be 22 . Then the longitude of the cusp of the 1st house is $24^\circ 22'$ of $\sqrt{3}$.

Add 30° to the O. A. of the 1st and we have $328^\circ 51'$ as the O. A. of the 2d. Then in 4° lat. $328^\circ 15'$ is the nearest O. A. which gives ≈ 25 for cusp of 2d.

Add 30° to the O. A. of the 2d and we have $358^\circ 51'$ as the O. A. of the 3d. Then in 2° lat. $359^\circ 6'$ is the nearest O. A. which gives ≈ 29 for the cusp of the 3d.

After rectifying a Nativity for the purpose of computing Directions, then the cusps are all calculated to minutes, just as the cusp of the 1st was calculated herein.

Explanations will hereafter be given for computing Tables of Houses for any given latitude, from 1° to 60° , working by these Tables of O. A. Also full directions for computing Tables of O. A. for any given degree and minute, or to make a horoscope for any latitude of degrees and minutes.

TABLES

OF

OBlique ASCENSIONS.

1° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈		♉		♊		♋		♌		♍	
	°	'	°	'	°	'	°	'	°	'	°	'
1	0	55	28	38	58	28	90	39	122	52	152	52
2	1	49	29	36	59	30	91	45	123	54	153	49
3	2	44	30	32	60	33	92	50	124	56	154	47
4	3	38	31	30	61	36	93	56	125	58	155	44
5	4	33	32	28	62	40	95	1	127	1	156	41
6	5	28	33	25	63	43	96	6	128	3	157	39
7	6	22	34	23	64	46	97	12	129	4	158	35
8	7	18	35	22	65	49	98	18	130	6	159	31
9	8	12	36	20	66	53	99	23	131	8	160	28
10	9	7	37	18	67	57	100	28	132	9	161	25
11	10	2	38	17	69	1	101	33	133	10	162	22
12	10	57	39	16	70	5	102	38	134	11	163	18
13	11	52	40	15	71	9	103	43	135	11	164	14
14	12	47	41	14	72	13	104	48	136	11	165	10
15	13	42	42	14	73	18	105	52	137	12	166	6
16	14	38	43	13	74	22	106	56	138	12	167	2
17	15	33	44	13	75	27	108	1	139	12	167	58
18	16	28	45	13	76	32	109	7	140	12	168	53
19	17	24	46	13	77	37	110	11	141	11	169	50
20	18	19	47	13	78	42	111	15	142	10	170	45
21	19	15	48	14	79	47	112	19	143	9	171	40
22	20	11	49	15	80	52	113	23	144	8	172	36
23	21	7	50	15	81	57	114	27	145	7	173	32
24	22	3	51	16	83	2	115	31	146	6	174	28
25	23	58	52	17	84	8	116	34	147	4	175	23
26	23	55	53	19	85	13	117	38	148	2	176	18
27	24	51	54	21	86	19	118	41	149	0	177	14
28	25	47	55	22	87	24	119	44	149	58	178	9
29	26	45	56	24	88	29	120	47	150	56	179	5
30	27	42	57	26	89	34	121	50	151	54	180	0

TABLES

OF

OBlique ASCENSIONS.

1° NORTH LATITUDE—SOUTHERN SIGNS.

No.	A		M		F		O		W		X	
	°	'	°	'	°	'	°	'	°	'	°	'
1	180	55	203	4	239	13	271	31	303	36	333	16
2	181	51	210	2	240	16	272	37	304	38	334	13
3	182	46	211	0	241	19	273	42	305	40	335	9
4	183	41	211	58	242	22	274	48	306	41	336	6
5	184	37	212	56	243	26	275	53	307	43	337	2
6	185	32	213	55	244	29	276	58	308	44	337	58
7	186	28	214	53	245	33	278	4	309	45	338	53
8	187	24	215	52	246	37	279	9	310	45	339	49
9	188	20	216	51	247	41	280	13	311	46	340	45
10	189	15	217	50	248	45	281	18	312	47	341	41
11	190	10	218	49	249	49	282	23	313	47	342	36
12	191	7	219	49	250	53	283	28	314	47	343	32
13	192	2	220	49	251	58	284	33	315	47	344	27
14	192	59	221	48	253	3	285	38	316	47	345	22
15	193	54	222	48	254	8	286	42	317	47	346	18
16	194	50	223	49	255	12	287	46	318	46	347	13
17	195	47	224	49	256	17	288	50	319	45	348	8
18	196	42	225	49	257	22	289	55	320	44	349	3
19	197	38	226	50	258	27	290	59	321	43	349	58
20	198	35	227	51	259	32	292	3	322	42	350	53
21	199	31	228	52	260	37	293	7	323	40	351	48
22	200	28	229	53	261	42	294	11	324	38	352	42
23	201	25	230	55	262	48	295	14	325	37	353	38
24	202	22	231	56	263	54	296	17	326	35	354	33
25	203	19	232	59	264	59	297	20	327	32	355	27
26	204	17	234	1	266	4	298	24	328	30	356	22
27	205	13	235	3	267	10	299	27	329	27	357	16
28	206	11	236	5	268	15	300	30	330	24	358	11
29	207	9	237	8	269	21	301	32	331	22	359	5
30	208	6	238	10	270	26	302	34	332	19	360	0

TABLES
OF
OBLIQUE ASCENSIONS.

2° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈		♉		♊		♋		♌		♍	
	°	,	°	,	°	,	°	,	°	,	°	,
1	0	54	28	26	58	6	90	13	122	30	152	41
2	1	49	29	23	59	8	91	19	123	33	153	38
3	2	43	30	19	60	11	92	24	124	35	154	36
4	3	37	31	16	61	13	93	30	125	38	155	33
5	4	31	32	14	62	16	94	35	126	41	156	30
6	5	25	33	11	63	19	95	40	127	44	157	28
7	6	19	34	9	64	21	96	46	128	45	158	25
8	7	15	35	7	65	25	97	52	129	46	159	22
9	8	9	36	5	66	29	98	57	130	48	160	20
10	9	3	37	2	67	33	100	2	131	49	161	16
11	9	57	38	1	68	36	101	7	132	50	162	13
12	10	53	39	0	69	39	102	12	133	52	163	10
13	11	47	39	53	70	44	103	17	134	52	164	6
14	12	41	40	57	71	48	104	22	135	53	165	2
15	13	36	41	56	72	53	105	27	136	54	165	59
16	14	30	42	55	73	57	106	32	137	55	166	55
17	15	26	43	54	75	1	107	36	138	55	167	53
18	16	20	44	54	76	6	108	41	139	55	168	49
19	17	15	45	54	77	11	109	46	140	55	169	45
20	18	10	46	54	78	16	110	50	141	54	170	41
21	19	7	47	54	79	21	111	55	142	54	171	37
22	20	2	48	54	80	26	112	59	143	53	172	33
23	20	57	49	55	81	31	114	3	144	52	173	29
24	21	52	50	56	82	36	115	7	145	51	174	25
25	22	49	51	57	83	41	116	11	146	50	175	21
26	23	45	52	58	84	46	117	15	147	48	176	17
27	24	40	53	59	85	52	118	19	148	47	177	13
28	25	37	55	1	86	57	119	22	149	45	178	8
29	26	34	56	2	88	3	120	24	150	44	179	4
30	27	30	57	4	89	8	121	28	151	42	180	0

TABLES
OF
OBLIQUE ASCENSIONS.

2° NORTH LATITUDE—SOUTHERN SIGNS.

Long	△	π	φ	ψ	ω	λ	⌘					
	°	,	°	,	°	,	°					
1	180	56	209	16	239	35	271	57	303	58	333	27
2	181	51	210	15	240	38	273	3	304	59	334	24
3	182	47	211	13	241	41	274	8	306	1	335	20
4	183	43	212	11	242	45	275	14	307	2	336	15
5	184	39	213	10	243	49	276	19	308	3	337	12
6	185	35	214	9	244	53	277	24	309	4	338	8
7	186	31	215	8	245	57	278	30	310	5	339	3
8	187	27	216	7	247	1	279	34	311	6	339	58
9	188	23	217	6	248	5	280	39	312	6	340	54
10	i89	19	218	6	249	11	281	44	313	7	341	50
11	190	15	219	5	250	14	282	49	314	7	342	45
12	191	11	220	5	251	19	283	54	315	6	343	40
13	192	7	221	5	252	24	284	59	316	6	344	34
14	193	4	222	6	253	28	286	4	317	5	345	30
15	194	0	223	6	254	33	287	7	318	4	346	25
16	194	58	224	7	255	37	288	12	319	3	347	19
17	195	54	225	8	256	42	289	16	320	1	348	13
18	196	50	226	9	257	48	290	21	321	1	349	7
19	197	47	227	10	258	53	291	24	321	59	350	3
20	198	44	228	11	259	58	292	28	322	58	350	57
21	199	40	229	12	261	3	293	31	323	56	351	51
22	200	38	220	14	262	8	294	35	324	53	352	45
23	201	35	231	15	263	13	295	39	325	52	353	41
24	202	32	232	17	264	19	296	41	326	49	354	35
25	203	29	233	19	265	25	297	43	327	46	355	29
26	204	27	234	22	266	30	298	47	328	44	356	23
27	205	24	235	25	267	36	299	49	329	41	357	17
28	206	21	236	27	268	41	300	52	330	37	358	12
29	207	20	237	30	269	47	301	54	331	34	359	6
30	208	18	238	32	270	52	302	56	332	30	360	0

TABLES

OF

OBlique ASCENSIONS.

3° NORTH LATITUDE—NORTHERN SIGNS.

Long it.	♈		♉		♊		♋		♌		♍	
	°	,	°	,	°	,	°	,	°	,	°	,
1	0	54	28	14	57	44	89	47	122	8	152	29
2	1	48	29	10	58	45	90	53	123	11	153	27
3	2	41	30	6	59	48	91	58	124	14	154	25
4	3	35	31	3	60	50	93	4	125	17	155	22
5	4	29	31	59	61	53	94	9	126	20	156	20
6	5	23	32	56	62	56	95	14	127	23	157	18
7	6	17	33	53	63	58	96	20	128	25	158	15
8	7	11	34	51	65	1	97	25	129	26	159	13
9	8	5	35	49	66	5	98	30	130	28	160	11
10	8	58	36	47	67	8	99	36	131	30	161	8
11	9	52	37	44	68	12	100	41	132	31	162	6
12	10	47	38	43	69	15	101	46	133	33	163	3
13	11	41	39	41	70	19	102	51	134	34	163	59
14	12	35	40	39	71	23	103	57	135	35	164	56
15	13	29	41	38	72	27	105	2	136	36	165	53
16	14	24	42	37	73	31	106	7	137	37	166	49
17	15	19	43	36	74	36	107	11	138	37	167	47
18	16	13	44	35	75	40	108	17	139	38	168	43
19	17	8	45	35	76	43	109	22	140	38	169	40
20	18	3	46	34	77	50	110	26	141	38	170	36
21	18	57	47	34	78	55	111	31	142	38	171	33
22	19	53	48	34	79	59	112	35	143	37	172	29
23	20	47	49	34	81	4	113	40	144	37	173	27
24	21	42	50	35	82	10	114	44	145	36	174	23
25	22	38	51	36	83	15	115	48	146	35	175	19
26	23	34	52	37	84	20	116	52	147	34	176	15
27	24	29	53	38	85	26	117	56	148	33	177	11
28	25	25	54	39	86	31	118	59	149	32	178	8
29	26	22	55	40	87	37	120	2	150	31	179	4
30	27	18	56	42	88	42	121	5	151	30	180	0

TABLES
OF
OBLIQUE ASCENSIONS.

3° NORTH LATITUDE—SOUTHERN SIGNS.

Long	△	Ⅲ	‡	○	■	▲	×
1	180 56	209 28	239 58	272 23	304 20	333 39	
2	181 52	210 27	241 1	273 29	305 21	334 35	
3	182 49	211 26	242 4	274 34	306 22	335 31	
4	183 45	212 25	243 8	275 40	307 23	336 26	
5	184 41	213 25	244 13	276 45	308 24	337 22	
6	185 37	214 24	245 16	277 50	309 25	338 18	
7	186 33	215 23	246 20	278 56	310 25	339 13	
8	187 31	216 23	247 25	280 1	311 26	340 7	
9	188 27	217 23	248 29	281 6	312 26	341 3	
10	189 24	218 22	249 34	282 10	313 26	341 58	
11	190 20	219 23	250 38	283 15	314 25	342 52	
12	191 17	220 23	251 43	284 20	315 25	343 47	
13	192 13	221 23	252 49	285 25	316 24	344 41	
14	193 11	222 23	253 53	286 29	317 23	345 36	
15	194 7	223 24	254 59	287 32	318 22	346 31	
16	195 4	224 25	256 3	288 37	319 22	347 25	
17	196 1	225 26	257 8	289 41	320 20	348 19	
18	196 57	226 27	258 14	290 45	321 18	349 13	
19	197 54	227 29	259 19	291 48	322 16	350 8	
20	198 51	228 30	260 24	292 52	323 14	351 2	
21	199 49	229 32	261 29	293 55	324 12	351 55	
22	200 47	230 34	262 35	294 59	325 9	352 49	
23	201 45	231 36	263 40	296 2	326 7	353 43	
24	202 40	232 37	264 46	297 4	327 4	354 37	
25	203 38	233 40	265 51	298 6	328 1	355 31	
26	204 37	234 43	266 56	299 9	328 58	356 25	
27	205 35	235 46	268 2	300 12	329 54	357 19	
28	206 33	236 49	269 7	301 15	330 50	358 12	
29	207 32	237 52	270 13	302 17	331 47	359 6	
30	208 30	238 55	271 18	303 19	332 42	360 0	

TABLES

OF

OBlique ASCENSIONS.

4° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈	♉	♊	♋	♌	♍	♎
1	0 53	28 1	57 22	89 21	121 47	152 16	
2	1 47	28 57	58 23	90 27	122 50	153 15	
3	2 40	29 52	59 25	91 32	123 53	154 14	
4	3 34	30 49	60 27	92 38	124 56	155 12	
5	4 27	31 45	61 30	93 43	125 59	156 10	
6	5 20	32 42	62 32	94 48	127 2	157 9	
7	6 13	33 39	63 35	95 54	128 4	158 6	
8	7 7	34 36	64 38	97 0	129 7	159 4	
9	8 1	35 34	65 41	98 5	130 9	160 2	
10	8 54	36 31	66 44	99 11	131 11	161 0	
11	9 48	37 28	67 47	100 16	132 12	161 57	
12	10 42	38 27	68 51	101 21	133 14	162 55	
13	11 35	39 24	69 55	102 27	134 15	163 52	
14	12 30	40 22	70 59	103 32	135 17	164 50	
15	13 23	41 20	72 3	104 37	136 18	165 47	
16	14 18	42 19	73 6	105 42	137 20	166 44	
17	15 12	43 17	74 11	106 47	138 21	167 41	
18	16 5	44 16	75 15	107 53	139 22	168 38	
19	16 59	45 16	76 20	108 57	140 22	169 35	
20	17 54	46 15	77 25	110 2	141 23	170 32	
21	18 48	47 15	78 30	111 7	142 23	171 29	
22	19 44	48 15	79 34	112 12	143 23	172 25	
23	20 38	49 14	80 39	113 17	144 22	173 23	
24	21 33	50 14	81 44	114 20	145 22	174 20	
25	22 28	51 15	82 49	115 24	146 21	175 17	
26	23 24	52 16	83 54	116 29	147 21	176 14	
27	24 18	53 17	85 0	117 33	148 20	177 10	
28	25 13	54 18	86 5	118 37	149 19	178 7	
29	26 9	55 19	87 11	119 40	150 19	179 3	
30	27 5	56 20	88 16	120 44	151 17	180 0	

TABLES
OF
OBLIQUE ASCENSIONS.

4° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	△	π	‡	β	ω	ℳ	ℳ
° ,	° ,	° ,	° ,	° ,	° ,	° ,	° ,
1	180 57	209 41	240 20	272 49	304 41	333 52	
2	181 53	210 41	241 28	273 55	305 42	334 47	
3	182 50	211 40	242 27	275 0	306 43	335 42	
4	183 46	212 39	243 31	276 6	307 44	336 36	
5	184 43	213 39	244 36	277 11	308 45	337 32	
6	185 40	214 38	245 40	278 16	309 46	338 27	
7	186 37	215 38	246 44	279 22	310 46	339 22	
8	187 35	216 38	247 48	280 26	311 45	340 16	
9	188 31	217 38	248 53	281 31	312 45	341 12	
10	189 28	218 38	249 58	282 35	313 45	342 6	
11	190 24	219 38	251 3	283 40	314 44	343 1	
12	191 22	220 39	252 8	284 45	315 44	343 55	
13	192 19	221 40	253 13	285 49	316 43	344 48	
14	193 16	222 41	254 17	286 54	317 41	345 42	
15	194 13	223 42	255 23	287 57	318 40	346 37	
16	195 10	224 43	256 28	289 2	319 38	347 30	
17	196 8	225 45	257 33	290 5	320 36	348 25	
18	197 5	226 46	258 39	291 9	321 34	349 18	
19	198 3	227 48	259 44	292 13	322 32	350 13	
20	199 0	228 49	260 49	293 16	323 29	351 6	
21	199 58	229 51	261 54	294 19	324 27	351 59	
22	200 56	230 53	263 0	295 22	325 24	352 53	
23	201 54	231 56	264 6	296 25	326 21	353 47	
24	202 52	232 58	265 12	297 28	327 18	354 40	
25	203 50	234 1	266 17	298 30	328 15	355 33	
26	204 48	235 4	267 22	299 33	329 11	356 26	
27	205 46	236 7	268 28	300 35	330 8	357 20	
28	206 45	237 10	269 33	301 37	331 3	358 13	
29	207 44	238 13	270 39	302 38	331 59	359 7	
30	208 43	239 16	271 44	303 40	332 55	360 0	

TABLES

OF

OBLIQUE ASCENSIONS.

5° NORTH LATITUDE—NORTHERN SIGNS.

Long	♀	♂	□	♂	♀	吸
	°	'	°	'	°	'
1	0	53	27	48	57	0
2	1	46	28	44	58	1
3	2	39	29	39	59	2
4	3	32	30	36	60	4
5	4	25	31	32	61	7
6	5	18	32	28	62	9
7	6	10	33	24	63	11
8	7	4	34	21	64	18
9	7	57	35	18	65	16
10	8	50	36	14	66	19
11	9	43	37	11	67	22
12	10	37	38	10	68	25
13	11	30	39	7	69	29
14	12	24	40	5	70	33
15	13	17	41	3	71	37
16	14	11	42	1	72	41
17	15	5	43	0	73	45
18	15	58	43	58	74	49
19	16	52	44	57	75	54
20	17	46	45	55	76	59
21	18	40	46	55	78	3
22	19	35	47	54	79	8
23	20	28	48	54	80	12
24	21	22	49	54	81	18
25	22	18	50	54	82	23
26	23	13	51	55	83	28
27	24	7	52	56	84	33
28	25	2	53	56	85	38
29	25	58	54	57	86	44
30	26	53	55	58	87	49
					116	6
					117	10
					118	15
					119	18
					120	22
					121	25
					122	28
					123	31
					124	35
					125	38
					126	41
					127	44
					128	46
					129	49
					130	51
					131	53
					132	56
					133	57
					134	59
					135	1
					136	165
					137	3
					138	4
					139	5
					140	5
					141	6
					142	7
					143	7
					144	8
					145	8
					146	8
					147	8
					148	7
					149	6
					150	6
					151	5
					152	5
					153	4
					154	3
					155	1
					156	0

TABLES
OF
OBLIQUE ASCENSIONS.

5° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	△	Ⅲ	‡	▽	₩	₩	₩
1	180 57	209 54	240 42	273 16	305 3	334 8	
2	181 54	210 54	241 45	274 22	306 4	334 58	
3	182 51	211 53	242 50	275 27	307 5	335 53	
4	183 48	212 52	243 54	276 33	308 5	336 47	
5	184 45	213 52	244 59	277 37	309 6	337 42	
6	185 42	214 52	246 3	278 42	310 7	338 37	
7	186 40	215 52	247 8	279 48	311 6	339 32	
8	187 38	216 53	248 13	280 52	312 6	340 26	
9	188 35	217 54	249 18	281 57	313 5	341 20	
10	189 32	218 54	250 23	283 1	314 5	342 14	
11	190 29	219 55	251 28	284 6	315 3	343 8	
12	191 27	220 56	252 33	285 11	316 2	344 2	
13	192 24	221 57	253 38	286 15	317 1	344 55	
14	193 22	222 57	254 43	287 19	317 59	345 49	
15	194 19	223 59	255 49	288 23	318 57	346 44	
16	195 17	225 1	256 53	289 27	319 55	347 37	
17	196 15	226 2	257 59	290 30	320 53	348 30	
18	197 12	227 4	269 5	291 34	321 51	349 23	
19	198 10	228 7	260 10	292 38	322 49	350 17	
20	199 8	229 9	261 15	293 41	323 46	351 10	
21	200 6	230 11	262 21	294 44	324 43	352 3	
22	201 5	231 14	263 26	295 47	325 39	352 56	
23	202 4	232 16	264 32	296 50	326 36	353 50	
24	203 2	233 19	265 38	297 51	327 33	354 42	
25	204 0	234 22	266 43	298 53	328 28	355 35	
26	204 59	235 25	267 48	299 56	329 24	356 28	
27	205 57	236 28	268 54	300 58	330 20	357 21	
28	206 56	237 32	270 0	301 59	331 16	358 14	
29	207 56	238 35	271 6	303 0	332 12	359 7	
30	208 55	239 38	272 11	304 2	333 7	360 0	

TABLES

OF

OBlique ASCENSIONS.

6° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈	♉	♊	♋	♌	♍	♎
1	0 52	27 35	56 36	88 28	121 2	151 53	
2	1 45	28 31	57 37	89 34	122 6	152 52	
3	2 38	29 26	58 39	90 40	123 10	153 51	
4	3 30	30 22	59 40	91 46	124 14	154 50	
5	4 22	31 18	60 43	92 51	125 18	155 49	
6	5 15	32 14	61 45	93 56	126 21	156 48	
7	6 7	33 9	62 47	95 2	127 24	157 47	
8	7 1	34 6	63 49	96 8	128 27	158 46	
9	7 53	35 2	64 52	97 14	129 30	159 45	
10	8 46	35 58	65 55	98 19	130 33	160 43	
11	9 29	36 55	66 58	99 25	131 35	161 42	
12	10 32	37 53	68 1	100 30	132 38	162 40	
13	11 24	38 50	69 5	101 36	133 39	163 38	
14	12 18	39 47	70 9	102 42	134 41	164 36	
15	13 11	40 45	71 13	103 47	135 43	165 34	
16	14 4	41 43	72 16	104 53	136 45	166 32	
17	14 58	42 41	73 20	105 57	137 46	167 30	
18	15 50	43 40	74 24	107 3	138 48	168 28	
19	16 44	44 39	75 29	108 8	139 49	169 26	
20	17 37	45 37	76 33	109 13	140 50	170 24	
21	18 31	46 36	77 38	110 18	141 51	171 21	
22	19 26	47 35	78 42	111 23	142 52	172 19	
23	20 19	48 34	79 47	112 28	143 53	173 17	
24	21 13	49 33	80 52	113 33	144 54	174 15	
25	22 7	50 34	81 57	114 37	145 54	175 12	
26	23 2	51 34	83 2	115 42	146 54	176 10	
27	23 56	52 33	84 8	116 47	147 54	177 8	
28	24 50	53 34	85 13	117 51	148 53	178 5	
29	25 46	54 34	86 18	118 54	149 53	179 3	
30	26 41	55 35	87 23	119 59	150 53	180 0	

TABLES

OF

OBlique ASCENSIONS.

6° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	△		π		+/-		V3		WW		X	
	°	,	°	,	°	,	°	,	°	,	°	,
1	180	57	210	7	241	6	273	42	305	26	334	15
2	181	55	211	7	242	9	274	48	306	26	335	10
3	182	52	212	6	243	13	275	53	307	26	336	4
4	183	50	213	6	244	18	276	58	308	26	336	58
5	184	48	214	6	245	23	278	3	309	26	337	53
6	185	45	215	6	246	27	279	8	310	26	338	47
7	186	43	216	7	247	31	280	13	311	26	339	41
8	187	41	217	8	248	37	281	18	312	25	340	35
9	188	39	218	10	249	42	282	22	313	24	341	29
10	189	36	219	10	250	47	283	27	314	23	342	23
11	190	34	220	11	251	52	284	31	315	21	343	17
12	191	32	221	13	252	57	285	36	316	20	344	10
13	192	30	222	14	254	3	286	40	317	19	345	3
14	193	28	223	15	255	7	287	44	318	17	345	56
15	194	26	224	17	256	12	288	47	319	15	346	49
16	195	24	225	19	257	18	289	51	320	13	347	42
17	196	22	226	21	258	24	290	55	321	10	348	35
18	197	20	227	23	269	30	291	59	322	8	349	28
19	198	18	228	25	260	35	293	2	323	5	350	21
20	199	17	229	27	261	41	294	5	324	2	351	14
21	200	15	230	30	262	46	295	8	324	59	352	7
22	201	14	231	33	263	52	296	11	325	54	352	59
23	202	13	232	36	264	58	297	13	326	51	353	53
24	203	12	233	39	266	4	298	15	327	46	354	45
25	204	11	234	42	267	9	299	17	328	42	355	38
26	205	10	235	46	268	14	300	19	329	38	356	30
27	206	9	236	49	269	20	301	21	330	34	357	22
28	207	8	237	54	270	25	302	23	331	29	358	15
29	208	8	238	58	271	31	303	24	332	25	359	7
30	209	7	240	1	272	37	304	25	333	20	360	0

TABLES
OF
OBLIQUE ASCENSIONS.

7° NORTH LATITUDE—NORTHERN SIGNS.

Long	♀		♂		☿		♃		♄		♅	
	°	'	°	'	°	'	°	'	°	'	°	'
1	0	52	27	22	56	14	88	1	120	40	151	41
2	1	44	28	18	57	15	89	7	121	44	152	41
3	2	36	29	12	58	17	90	13	122	48	153	41
4	3	28	30	8	59	18	91	19	123	52	154	40
5	4	20	31	3	60	21	92	24	124	57	155	39
6	5	12	31	59	61	22	93	30	126	1	156	39
7	6	5	32	54	62	24	94	36	127	4	157	37
8	6	57	33	51	63	26	95	42	128	7	158	36
9	7	49	34	47	64	29	96	47	129	10	159	36
10	8	41	35	42	65	31	97	53	130	13	160	35
11	9	34	36	39	66	34	98	59	131	15	161	34
12	10	27	37	36	67	37	100	5	132	18	162	33
13	11	19	38	33	68	41	101	11	133	21	163	31
14	12	12	39	30	69	44	102	17	134	23	164	30
15	13	5	40	27	70	48	103	22	135	25	165	29
16	13	58	41	25	71	51	104	28	136	28	166	26
17	14	51	42	23	72	55	105	33	137	29	167	25
18	15	43	43	20	73	59	106	39	138	31	168	23
19	16	36	44	19	75	3	107	44	139	33	169	22
20	17	29	45	17	76	7	108	49	140	34	170	19
21	18	22	46	16	77	11	109	55	141	36	171	17
22	19	16	47	15	78	16	111	0	142	37	172	16
23	20	9	48	14	79	20	112	6	143	38	173	15
24	21	3	49	13	80	26	113	10	144	39	174	12
25	21	57	50	13	81	30	114	15	145	39	175	10
26	22	52	51	12	82	35	115	20	146	40	176	8
27	23	45	52	12	83	41	116	25	147	40	177	6
28	24	39	53	12	84	46	117	29	148	40	178	4
29	25	34	54	12	85	51	118	32	149	40	179	2
30	26	28	55	13	86	56	119	37	150	40	180	0

TABLES
OF
OBLIQUE ASCENSIONS.

7° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	△		III		IV		V		VI		VII		VIII	
	°	'	°	'	°	'	°	'	°	'	°	'	°	'
1	180	58	210	20	241	28	274	9	305	48	334	27		
2	181	56	211	20	242	31	275	15	306	48	335	21		
3	182	54	212	20	243	35	276	19	307	48	336	15		
4	183	52	213	20	244	40	277	25	308	48	337	8		
5	184	50	214	21	245	45	278	30	309	47	338	3		
6	185	48	215	21	246	50	279	34	310	47	338	57		
7	186	45	216	22	247	54	280	40	311	46	339	51		
8	187	44	217	23	249	0	281	44	312	45	340	44		
9	188	43	218	25	250	5	282	49	313	44	341	39		
10	189	41	219	26	251	11	283	53	314	43	342	31		
11	190	38	220	27	252	16	284	57	315	41	343	24		
12	191	37	221	30	253	21	286	1	316	40	344	17		
13	192	35	222	31	254	27	287	5	317	37	345	9		
14	193	34	223	32	255	32	288	9	318	35	346	2		
15	194	31	224	35	256	38	289	12	319	33	346	55		
16	195	30	225	37	257	43	290	16	320	30	347	48		
17	196	29	226	39	258	49	291	19	321	27	348	41		
18	197	27	227	42	259	55	292	23	322	25	349	33		
19	198	26	228	45	261	1	293	26	323	21	350	26		
20	199	25	229	47	262	7	294	29	324	18	351	19		
21	200	24	230	50	263	13	295	31	325	14	352	11		
22	201	24	231	53	264	18	296	34	326	9	353	2		
23	202	23	232	56	265	24	297	36	327	6	353	55		
24	203	21	233	59	266	30	298	38	328	1	354	48		
25	204	21	235	3	267	36	299	39	328	57	355	40		
26	205	20	236	8	268	41	300	42	329	52	356	32		
27	206	19	237	12	269	47	301	43	330	48	357	24		
28	207	19	238	16	270	52	302	45	331	42	358	16		
29	208	20	239	20	271	59	303	46	332	38	359	8		
30	209	20	240	23	273	4	304	47	333	32	360	0		

TABLES

OF

OBlique ASCENSIONS.

8° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈	♉	♊	♋	♌	♍	♎					
	°	,	°	,	°	,	°	,	°	,	°	,
1	0	52	27	9	55	51	87	35	120	18	151	29
2	1	44	28	4	56	51	88	41	121	23	152	29
3	2	35	28	58	57	52	89	47	122	27	153	29
4	3	27	29	53	58	53	90	53	123	31	154	29
5	4	18	30	48	59	56	91	58	124	36	155	29
6	5	10	31	43	60	57	93	4	125	40	156	29
7	6	2	32	38	61	59	94	10	126	43	157	28
8	6	54	33	34	63	1	95	16	127	46	158	27
9	7	46	34	30	64	4	96	21	128	50	159	27
10	8	37	35	26	65	6	97	27	129	53	160	27
11	9	29	36	22	66	9	98	33	130	56	161	26
12	10	22	37	19	67	12	99	39	131	59	162	25
13	11	14	38	15	68	15	100	45	133	2	163	24
14	12	6	39	12	69	18	101	51	134	4	164	23
15	12	58	40	9	70	22	102	56	135	7	165	22
16	13	51	41	6	71	25	104	2	136	10	166	20
17	14	44	42	4	72	29	105	7	137	11	167	20
18	15	35	43	1	73	33	106	14	138	14	168	18
19	16	28	44	0	74	37	107	19	139	16	169	17
20	17	21	44	57	75	41	108	24	140	18	170	15
21	18	13	45	56	76	45	109	30	141	19	171	14
22	19	7	46	54	77	50	110	35	142	20	172	12
23	20	0	47	53	78	54	111	41	143	22	173	12
24	20	53	48	52	80	0	112	45	144	23	174	10
25	21	47	49	52	81	4	113	50	145	24	175	8
26	22	41	50	51	82	9	114	55	146	25	176	7
27	23	33	51	51	83	15	116	0	147	26	177	5
28	24	27	52	51	84	20	117	5	148	26	178	4
29	25	23	53	50	85	25	118	9	149	27	179	2
30	26	16	54	50	86	30	119	14	150	28	180	0

TABLES

OF

OBlique ASCENSIONS.

8° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	△	Ⅲ	‡	▽	₩	₩	₩					
°	,	°	,	°	,	°	,					
1	180	58	210	33	241	51	274	35	306	10	334	39
2	181	56	211	34	242	55	275	41	307	9	335	33
3	182	55	212	34	244	0	276	45	308	9	336	27
4	183	53	213	35	245	4	277	51	309	9	337	19
5	184	52	214	36	246	10	278	56	310	8	338	13
6	185	50	215	37	247	15	280	0	311	8	339	7
7	186	48	216	38	248	19	281	6	312	7	340	0
8	187	48	217	40	249	25	282	10	313	6	340	53
9	188	46	218	42	250	30	283	15	314	4	341	47
10	189	45	219	42	251	36	284	19	315	3	342	39
11	190	43	220	44	252	41	285	23	316	0	343	32
12	191	42	221	47	253	46	286	27	316	59	344	25
13	192	40	222	49	254	53	287	31	317	56	345	16
14	193	40	223	50	255	58	288	35	318	54	346	9
15	194	38	224	53	257	4	289	38	319	51	347	2
16	195	37	225	56	258	9	290	42	320	48	347	54
17	196	36	226	58	259	15	291	45	321	45	348	46
18	197	35	228	1	260	21	292	48	322	42	349	38
19	198	34	229	4	261	27	293	51	323	38	350	31
20	199	33	230	7	263	33	294	54	324	34	351	23
21	200	33	231	10	263	39	295	56	325	31	352	14
22	201	33	232	14	264	44	296	59	326	26	353	6
23	202	32	233	17	265	50	298	1	327	22	353	58
24	203	31	234	20	266	56	299	3	328	17	354	50
25	204	31	235	24	268	2	300	4	329	12	355	42
26	205	31	236	29	269	7	301	7	330	7	356	33
27	206	31	237	33	270	13	302	8	331	2	357	25
28	207	31	238	37	271	18	303	9	331	56	358	16
29	208	32	239	42	272	25	304	9	332	51	359	8
30	209	32	240	46	273	30	305	10	333	44	360	0

TABLES

OF

OBlique ASCENSIONS.

9° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈		♉		♊		♋		♌		♍	
	°	'	°	'	°	'	°	'	°	'	°	'
1	0	51	26	57	55	29	87	8	119	56	151	17
2	1	43	27	51	56	29	88	15	121	1	152	17
3	2	34	28	45	57	29	89	20	122	5	153	18
4	3	25	29	39	58	30	90	26	123	9	154	18
5	4	16	20	34	59	52	91	32	124	14	155	18
6	5	7	31	29	60	33	92	37	125	18	156	19
7	5	58	32	23	61	35	93	44	126	22	157	19
8	6	50	33	19	62	37	94	49	127	26	158	18
9	7	42	34	15	63	39	95	55	128	30	159	19
10	8	33	35	10	64	41	97	1	129	33	160	19
11	9	25	36	6	65	44	98	7	130	36	161	18
12	10	17	37	3	66	46	99	18	131	40	162	17
13	11	8	37	59	67	50	100	19	132	43	163	16
14	12	0	38	54	68	53	101	25	133	46	164	16
15	12	52	39	51	69	56	102	30	134	49	165	16
16	13	44	40	48	70	59	103	37	135	52	166	14
17	14	36	41	45	72	3	104	42	136	55	167	14
18	15	27	42	42	73	7	105	48	137	58	168	13
19	16	20	43	40	74	11	106	54	139	0	169	13
20	17	13	44	37	75	15	107	59	140	2	170	11
21	18	5	45	36	76	19	109	5	141	4	171	10
22	18	58	46	34	77	23	110	11	142	5	172	8
23	19	51	47	32	78	28	111	17	143	7	173	8
24	20	43	48	30	79	33	112	21	144	9	174	7
25	21	36	49	30	80	38	113	26	145	10	175	6
26	22	30	50	29	81	42	114	32	146	11	176	5
27	23	22	51	29	82	48	115	37	147	12	177	4
28	24	15	52	29	83	53	116	43	148	13	178	3
29	25	10	53	28	84	58	117	47	149	15	179	1
30	26	3	54	28	86	3	118	52	150	15	180	0

TABLES

OF

OBlique ASCENSIONS.

9° NORTH LATITUDE—SOUTHERN SIGNS.

Long	△		Ⅲ		‡		Ⅴ		₩		₩	
	°	'	°	'	°	'	°	'	°	'	°	'
1 180	59	210	46	242	13	275	2	306	32	334	51	
2 181	57	211	47	243	17	276	7	307	31	335	45	
3 182	56	212	47	244	23	277	12	308	31	336	38	
4 183	55	213	49	245	28	278	18	309	31	337	30	
5 184	54	214	50	246	34	279	22	310	30	338	24	
6 185	53	215	51	247	39	280	27	311	30	339	17	
7 186	52	216	53	248	43	281	32	312	28	340	9	
8 187	52	217	55	249	49	282	37	313	26	341	2	
9 188	50	218	57	250	55	283	41	314	24	341	55	
10 189	49	219	58	252	1	284	45	315	23	342	47	
11 190	47	221	0	253	5	285	49	316	20	343	40	
12 191	47	222	3	254	11	286	53	317	18	344	33	
13 192	46	223	5	255	18	287	57	318	15	345	24	
14 193	46	224	8	256	23	289	1	319	12	346	16	
15 194	44	225	11	257	30	290	4	320	9	347	8	
16 195	44	226	14	258	35	291	7	321	6	348	0	
17 196	44	227	17	259	41	292	10	322	2	348	52	
18 197	43	228	20	260	47	293	14	322	58	349	43	
19 198	42	229	24	261	53	294	16	323	54	350	35	
20 199	41	230	27	262	59	295	19	324	50	351	27	
21 200	41	231	30	264	5	296	21	325	46	352	18	
22 201	41	232	34	265	11	297	23	326	41	353	10	
23 202	41	233	38	266	16	298	25	327	37	354	2	
24 203	41	234	42	267	23	299	27	328	31	354	53	
25 204	42	235	46	268	28	300	28	329	26	355	44	
26 205	42	236	51	269	34	301	30	330	21	356	35	
27 206	42	237	55	270	40	302	31	331	15	357	26	
28 207	43	238	59	271	45	303	31	332	9	358	17	
29 208	44	240	4	272	52	304	31	333	3	359	9	
30 209	45	241	8	273	57	305	32	333	57	360	0	

TABLES

OF

OBlique ASCENSIONS.

10° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈	♉	♊	♋	♌	♍	♎	♏
1	0 51	26 44	55 5	86 41	119 34	151 5		
2	1 41	27 38	56 5	87 48	120 38	152 6		
3	2 32	28 31	57 6	88 53	121 43	153 6		
4	3 23	29 25	58 6	89 59	122 48	154 6		
5	4 14	30 20	59 8	91 5	123 53	155 7		
6	5 5	31 14	60 9	92 10	124 57	156 9		
7	5 55	32 8	61 10	93 16	126 1	157 9		
8	6 47	33 4	62 12	94 22	127 6	158 9		
9	7 38	33 59	63 14	95 28	128 10	159 10		
10	8 29	34 54	64 16	96 34	129 14	160 10		
11	9 20	35 49	65 18	97 40	130 17	161 10		
12	10 12	36 46	66 21	98 46	131 21	162 10		
13	11 3	37 41	67 24	99 52	132 25	163 9		
14	11 54	38 36	68 27	100 58	133 28	164 9		
15	12 45	39 33	69 30	102 4	134 31	165 9		
16	13 37	40 30	70 32	103 11	135 34	166 8		
17	14 29	41 27	71 36	104 16	136 37	167 9		
18	15 20	42 23	72 40	105 23	137 41	168 8		
19	16 12	43 21	73 44	106 28	138 43	169 8		
20	17 4	44 18	74 48	107 34	139 46	170 7		
21	17 56	45 16	75 52	108 40	140 48	171 7		
22	18 49	46 14	76 56	109 46	141 50	172 5		
23	19 41	47 11	78 1	110 52	142 52	173 5		
24	20 33	48 9	79 6	111 57	143 54	174 5		
25	21 25	49 9	80 11	113 2	144 56	175 4		
26	22 18	50 8	81 15	114 8	145 57	176 3		
27	23 10	51 7	82 21	115 14	146 59	177 2		
28	24 4	52 6	83 26	116 19	148 0	178 1		
29	24 58	53 6	84 31	117 23	149 2	179 1		
30	25 51	54 5	85 36	118 29	150 3	180 0		

TABLES

OF

OBlique ASCENSIONS.

10° NORTH LATITUDE—SOUTHERN SIGNS.

Long. °	Δ		Ⅲ		‡		Ⅴ		Ⅵ		VV		X	
	°	,	°	,	°	,	°	,	°	,	°	,	°	,
1 180	59		210	58	242	37	275	29	306	54	335	3		
2 181	59		212	0	243	41	276	34	307	54	335	56		
3 182	58		213	1	244	46	277	39	308	53	336	50		
4 183	57		214	3	245	52	278	45	309	52	337	42		
5 184	56		215	4	246	58	279	49	310	51	338	35		
6 185	55		216	6	248	3	280	54	311	51	339	27		
7 186	55		217	8	249	8	281	59	312	49	340	19		
8 187	55		218	10	250	14	283	4	313	46	341	11		
9 188	54		219	13	251	20	284	8	314	44	342	4		
10 189	53		220	14	252	26	285	12	315	42	342	56		
11 190	52		221	17	253	32	286	16	316	39	343	48		
12 191	52		222	20	254	37	287	20	317	37	344	40		
13 192	51		223	23	255	44	288	24	318	33	345	31		
14 193	52		224	26	256	49	289	28	319	30	346	23		
15 194	51		225	29	257	56	290	31	320	27	347	15		
16 195	51		226	32	259	2	291	33	321	24	348	6		
17 196	51		227	35	260	8	292	36	322	19	348	57		
18 197	50		228	39	261	14	293	39	323	15	349	48		
19 198	50		229	43	262	20	294	42	324	11	350	40		
20 199	50		230	46	263	26	295	44	325	6	351	31		
21 200	50		231	50	264	32	296	46	326	2	352	23		
22 201	51		232	54	265	38	297	48	326	56	353	13		
23 202	51		233	59	266	43	298	50	327	52	354	5		
24 203	51		235	3	267	50	299	51	328	46	354	55		
25 204	53		236	7	268	55	300	52	329	40	355	46		
26 205	54		237	12	270	1	301	54	330	35	356	37		
27 206	54		238	17	271	7	302	54	331	29	357	28		
28 207	54		239	22	272	12	303	55	332	22	358	19		
29 208	56		240	26	273	19	304	55	333	16	359	9		
30 209	57		241	31	274	24	305	55	334	9	360	0		

TABLES
OF
OBLIQUE ASCENSIONS.
11° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈	♉	♊	♋	♌	♍	♎	♏
0	°	,	°	,	°	,	°	,
1	0	50	26	31	54	43	86	14
2	1	40	27	25	55	42	87	20
3	2	31	28	18	56	42	88	26
4	3	21	29	12	57	42	89	32
5	4	12	20	5	58	44	90	38
6	5	2	30	59	59	45	91	43
7	5	53	31	53	60	46	92	50
8	6	44	32	48	61	47	93	56
9	7	34	33	43	62	49	95	2
10	8	24	34	37	63	51	96	8
11	9	15	35	32	64	53	97	13
12	10	7	36	28	65	56	98	19
13	10	57	37	23	66	59	99	26
14	11	49	38	18	68	1	100	33
15	12	39	39	15	69	4	101	38
16	13	30	40	11	70	7	102	45
17	14	22	41	8	71	10	103	51
18	15	12	42	4	72	14	104	58
19	16	3	43	2	73	17	106	3
20	16	54	43	58	74	22	107	9
21	17	46	44	56	75	26	108	15
22	18	39	45	53	76	30	109	21
23	19	31	46	51	77	34	110	28
24	20	22	47	49	78	39	111	33
25	21	15	48	48	79	44	112	38
26	22	7	49	46	80	48	113	44
27	22	59	50	45	81	54	114	50
28	23	52	51	44	82	59	115	56
29	24	45	52	44	84	4	117	1
30	25	38	53	43	85	9	118	7

TABLES
OF
OBLIQUE ASCENSIONS.

11° NORTH LATITUDE— SOUTHERN SIGNS.

Long	Δ		π		φ		ψ		ω		η	
	°	'	°	'	°	'	°	'	°	'	°	'
1	181	0	211	11	242	59	275	56	307	16	335	16
2	182	0	212	13	244	4	277	1	308	16	336	8
3	182	59	213	14	245	10	278	6	309	15	337	1
4	183	59	214	16	246	16	279	12	310	14	337	53
5	184	58	215	19	247	23	280	16	311	12	338	45
6	185	58	216	21	248	27	281	21	312	11	339	38
7	186	57	217	23	249	32	282	26	313	9	340	29
8	187	58	218	26	250	39	283	30	314	7	341	21
9	188	58	219	29	251	45	284	34	315	4	342	14
10	189	58	220	41	252	51	285	38	316	2	343	6
11	190	57	221	34	253	57	286	43	316	58	343	57
12	191	58	222	38	255	2	287	47	317	56	344	43
13	192	57	223	41	256	9	288	50	318	22	345	38
14	193	57	224	44	257	15	289	53	319	49	346	30
15	194	57	225	47	258	22	290	56	320	45	347	21
16	195	58	226	51	259	27	291	59	321	42	348	11
17	196	58	227	54	260	34	293	1	322	37	349	3
18	197	58	228	58	261	40	294	4	323	33	349	53
19	198	59	230	2	262	47	295	7	324	28	350	45
20	200	0	231	6	263	52	296	9	325	23	351	36
21	201	0	232	10	264	58	297	11	326	18	352	26
22	202	1	233	15	266	4	298	13	327	12	353	16
23	203	1	234	19	267	10	299	14	328	7	354	7
24	204	2	235	23	268	17	300	15	329	1	354	58
25	205	3	236	28	269	22	301	16	329	55	355	48
26	206	4	237	34	270	28	302	18	330	48	356	39
27	207	5	238	39	271	34	303	18	331	42	357	29
28	208	6	239	44	272	39	304	18	332	35	358	20
29	209	9	240	48	273	46	305	17	333	29	359	10
30	210	10	241	53	274	51	306	17	334	22	360	0

TABLES

OF

OBlique ASCENSIONS.

12° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈		♉		♊		♋		♌		♍	
	°	'	°	'	°	'	°	'	°	'	°	'
1	0	50	26	18	54	19	85	47	118	49	150	40
2	1	40	27	11	55	18	86	53	119	54	151	42
3	2	30	28	4	56	18	87	59	120	59	152	44
4	3	20	28	57	57	19	89	5	122	4	153	44
5	4	10	29	50	58	20	90	11	123	10	154	46
6	5	0	30	44	59	20	91	16	124	15	155	48
7	5	50	31	38	60	21	92	23	125	19	156	49
8	6	41	32	32	61	22	93	29	126	24	157	49
9	7	31	33	27	62	24	94	35	127	29	158	51
10	8	20	34	20	63	26	95	41	128	33	159	52
11	9	10	35	15	64	27	96	47	129	37	160	53
12	10	1	36	11	65	29	97	53	130	42	161	54
13	10	51	37	6	66	32	99	6	131	46	162	54
14	11	42	38	0	67	35	100	0	132	50	163	55
15	12	32	38	56	68	38	101	12	133	54	164	56
16	13	23	39	52	69	40	102	19	134	58	165	56
17	14	14	40	48	70	43	103	24	136	2	166	57
18	15	4	41	44	71	47	104	31	137	6	167	57
19	15	55	42	41	72	51	105	37	138	9	168	58
20	16	46	43	37	73	55	106	44	139	12	169	58
21	17	37	44	35	74	59	107	50	140	16	170	59
22	18	29	45	32	76	3	108	56	141	19	171	59
23	19	21	46	29	77	7	110	3	142	22	173	0
24	20	12	47	27	78	12	111	8	143	24	174	0
25	21	4	48	26	79	17	112	14	144	26	175	0
26	21	56	49	24	80	21	113	21	145	29	176	0
27	22	48	50	23	81	27	114	26	146	32	177	0
28	23	40	51	22	82	31	115	32	147	33	178	0
29	24	33	52	21	83	37	116	37	148	36	179	0
30	25	26	53	20	84	42	117	44	149	38	180	0

TABLES
OF
OBLIQUE ASCENSIONS.

12° NORTH LATITUDE— SOUTHERN SIGNS.

Long.	△		π		‡		β		ω		κ	
	°	'	°	'	°	'	°	'	°	'	°	'
1	181	0	211	24	243	23	276	23	307	39	335	28
2	182	0	212	27	244	28	277	29	308	38	336	20
3	183	0	213	28	245	34	278	33	309	37	337	12
4	184	0	214	31	246	39	279	39	310	36	338	4
5	185	0	215	34	247	46	280	43	311	34	338	56
6	186	0	216	36	248	52	281	48	312	33	339	43
7	187	0	217	38	249	57	282	53	313	31	340	39
8	188	1	218	41	251	4	283	57	314	28	341	31
9	189	1	219	45	252	10	285	1	315	25	342	23
10	190	2	220	48	253	16	286	5	316	23	343	14
11	191	2	221	51	254	23	287	9	317	19	344	5
12	192	3	222	55	255	29	288	13	318	16	344	56
13	193	3	223	58	256	36	289	16	319	12	345	46
14	194	4	225	2	257	41	290	20	320	8	346	37
15	195	4	226	6	258	48	291	22	321	4	347	28
16	196	5	227	10	259	54	292	25	322	0	348	18
17	197	6	228	14	261	0	293	28	322	55	349	9
18	198	6	229	18	262	7	294	31	323	50	349	59
19	199	7	230	23	263	13	295	33	324	45	350	50
20	200	8	231	27	264	19	296	34	325	40	351	40
21	201	9	232	31	265	25	297	36	326	34	352	29
22	202	10	233	36	266	31	298	33	327	28	353	19
23	203	11	234	41	267	37	299	39	328	22	354	10
24	204	12	235	45	268	44	300	40	329	16	355	0
25	205	14	236	50	269	49	301	40	330	10	355	50
26	206	15	237	56	270	55	302	41	331	3	356	40
27	207	16	239	1	272	1	303	42	331	56	357	30
28	208	18	240	6	273	7	304	42	332	49	358	20
29	209	20	241	11	274	13	305	41	333	42	359	10
30	210	22	242	16	275	18	306	40	334	34	360	0

TABLES

OF

OBlique ASCENSIONS.

13° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈	♉	♊	♋	♌	♍	♎	♏
1	0 49	26 4	53 56	85 20	118 26	150 28		
2	1 39	26 57	54 55	86 26	119 31	151 30		
3	2 28	27 50	55 54	87 32	120 36	152 32		
4	3 18	28 43	56 55	88 38	121 42	153 33		
5	4 7	29 36	57 56	89 44	122 48	154 35		
6	4 57	30 29	58 56	90 49	123 53	155 38		
7	5 46	31 22	59 56	91 55	124 58	156 39		
8	6 36	32 16	60 57	93 2	126 3	157 40		
9	7 26	33 10	61 59	94 8	127 8	158 42		
01	8 15	34 4	63 1	95 15	128 14	159 44		
11	9 5	34 58	64 2	96 21	129 18	160 45		
12	9 56	35 53	65 4	97 27	130 23	161 47		
13	10 46	36 48	66 7	98 34	131 27	162 47		
14	11 37	37 42	67 9	99 40	132 31	163 49		
15	12 26	38 38	68 12	100 46	133 36	164 50		
16	13 17	39 33	69 14	101 53	134 40	165 51		
17	14 7	40 29	70 18	102 59	135 44	166 52		
18	14 57	41 25	71 21	104 6	136 48	167 52		
19	15 47	42 22	72 25	105 12	137 52	168 53		
20	16 38	43 18	73 29	106 19	138 56	169 53		
21	17 28	44 14	74 32	107 25	139 59	170 54		
22	18 20	45 11	75 36	108 31	141 2	171 54		
23	19 11	46 8	76 40	109 38	142 6	172 56		
24	20 2	47 5	77 45	110 44	143 9	173 57		
25	20 53	48 4	78 50	111 50	144 12	174 57		
26	21 45	49 2	79 54	112 57	145 15	175 58		
27	22 36	50 0	81 0	114 2	146 18	176 58		
28	23 28	50 59	82 4	115 9	147 19	177 59		
29	24 21	51 58	83 9	116 14	148 22	178 59		
30	25 13	52 56	84 15	117 20	149 25	180 0		

TABLES

OF

OBlique ASCENSIONS.

13° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	△	卯	午	酉	戌	亥	午	未
1	181 1	211 38	243 46	276 50	308 2	335 40		
2	182 1	212 41	244 51	277 56	309 1	336 32		
3	183 2	213 42	245 58	279 0	310 0	337 24		
4	184 2	214 45	247 3	280 6	310 58	338 15		
5	185 3	215 48	248 10	281 10	311 56	339 7		
6	186 3	216 51	249 16	282 15	312 55	339 58		
7	187 4	217 54	250 22	283 20	313 52	340 49		
8	188 6	218 53	251 29	284 24	314 49	341 40		
9	189 6	220 2	252 35	285 28	315 46	342 32		
10	190 7	221 4	253 41	286 31	316 42	343 23		
11	191 7	222 8	254 48	287 35	317 38	344 18		
12	192 8	223 13	255 54	288 39	318 35	345 3		
13	193 8	224 16	257 1	289 42	319 31	345 53		
14	194 9	225 20	258 7	290 46	320 27	346 43		
15	195 10	226 24	259 14	291 48	321 22	347 34		
16	196 11	227 29	260 20	292 51	322 18	348 23		
17	197 13	228 33	261 26	293 53	323 12	349 14		
18	198 13	229 37	262 32	294 56	324 8	350 4		
19	199 15	230 42	263 39	295 58	325 2	350 55		
20	200 16	231 46	264 45	296 59	325 56	351 45		
21	201 18	232 51	265 52	298 1	326 51	352 34		
22	202 20	233 57	266 58	299 3	327 45	353 24		
23	203 21	235 2	268 4	300 4	328 38	354 14		
24	204 22	236 7	269 11	301 4	329 31	355 3		
25	205 25	237 12	270 16	302 4	330 24	355 53		
26	206 27	238 18	271 22	303 5	331 17	356 42		
27	207 28	239 24	272 28	304 6	332 10	357 32		
28	208 30	240 29	273 34	305 5	333 3	358 21		
29	209 33	241 34	274 40	306 4	333 56	359 11		
30	210 35	242 40	275 45	307 4	334 47	360 0		

TABLES

OF

OBlique ASCENSIONS.

14° NORTH LATITUDE—NORTHERN SIGNS.

Long	♀		♂		口		♂		♀		吸	
	°	'	°	'	°	'	°	'	°	'	°	'
1	0	49	25	52	53	32	84	52	118	3	150	15
2	1	38	26	44	54	31	85	58	119	9	151	18
3	2	27	27	35	55	30	87	3	120	14	152	20
4	3	16	28	28	56	30	88	10	121	20	153	22
5	4	5	29	21	57	30	89	15	122	26	154	25
6	4	54	30	13	58	30	90	21	123	32	155	27
7	5	43	31	6	59	31	91	28	124	37	156	29
8	6	33	32	0	60	32	92	34	125	42	157	31
9	7	23	32	54	61	33	93	40	126	47	158	34
10	8	12	33	47	62	35	94	46	127	53	159	36
11	9	1	34	41	63	36	95	53	128	58	160	37
12	9	51	35	26	64	37	96	59	130	3	161	39
13	10	40	36	30	65	40	98	6	131	8	162	40
14	11	30	37	24	66	42	99	13	132	13	163	42
15	12	19	38	19	67	45	100	19	133	17	164	43
16	13	10	39	15	68	47	101	26	134	22	165	44
17	14	0	40	10	69	50	102	32	135	26	166	46
18	14	49	41	5	70	53	103	39	136	31	167	47
19	15	39	42	2	71	57	104	46	137	35	168	49
20	16	30	42	57	73	0	105	53	138	39	169	50
21	17	20	43	53	74	4	106	59	139	43	170	50
22	18	11	44	50	75	8	108	6	140	46	171	51
23	19	1	45	47	76	12	109	13	141	50	172	53
24	19	51	46	44	77	17	110	18	142	53	173	54
25	20	43	47	42	78	21	111	24	143	57	174	55
26	21	34	48	40	79	26	112	32	145	0	175	56
27	22	24	49	38	80	31	113	38	146	3	176	57
28	23	16	50	37	81	36	114	45	147	6	177	58
29	24	8	51	35	82	42	115	50	148	10	178	59
30	25	0	52	33	83	47	116	57	149	12	180	0

TABLES

OF

OBLIQUE ASCENSIONS.

14° NORTH LATITUDE— SOUTHERN SIGNS.

Long.	Δ		μ		¶		σ		π		κ	
	°	'	°	'	°	'	°	'	°	'	°	'
1	181	1	211	50	244	10	277	18	308	25	335	53
2	182	2	212	54	245	15	278	24	309	23	336	44
3	183	3	213	57	246	21	279	29	310	22	337	36
4	184	4	215	0	247	28	280	34	311	20	338	26
5	185	5	216	3	248	36	281	39	312	18	339	17
6	186	6	217	7	249	42	282	43	313	16	340	9
7	187	7	218	10	250	47	283	48	314	13	340	59
8	188	9	219	14	251	54	284	52	315	10	341	49
9	189	9	220	18	253	1	285	56	316	7	342	40
10	190	10	221	21	254	7	287	0	317	3	343	30
11	191	11	222	25	255	14	288	3	317	58	344	21
12	192	13	223	30	256	21	289	7	318	55	345	11
13	193	14	224	34	257	28	290	10	319	50	346	0
14	194	16	225	38	258	34	291	13	320	45	346	50
15	195	17	226	43	259	41	292	15	321	41	347	41
16	196	18	227	47	260	47	293	18	322	36	348	30
17	197	20	228	52	261	54	294	20	323	30	349	20
18	198	21	229	57	263	1	295	23	324	25	350	9
19	199	23	231	2	264	7	296	24	325	19	350	59
20	200	24	232	7	265	14	297	25	326	13	351	48
21	201	26	233	13	266	20	298	27	327	7	352	37
22	202	29	234	18	267	26	299	28	328	0	353	27
23	203	31	235	23	268	32	300	29	328	54	354	17
24	204	33	236	28	269	39	301	30	329	47	355	6
25	205	35	237	34	270	45	302	30	330	39	355	55
26	206	38	238	40	271	50	303	30	331	32	356	44
27	207	40	239	46	272	57	304	30	332	25	357	33
28	208	42	240	51	274	2	305	29	333	16	358	22
29	209	45	241	57	275	8	306	28	334	8	359	11
30	210	48	243	3	276	13	207	27	335	0	360	0

TABLES

QH

OBlique ASCENSIONS.

15° NORTH LATITUDE—NORTHERN SIGNS.

Long	♀		♂		口		♂		♀		吸	
	°	'	°	'	°	'	°	'	°	'	°	'
1	0	49	25	38	53	8	84	24	117	39	150	3
2	1	37	26	30	54	7	85	30	118	45	151	6
3	2	26	27	21	55	6	86	36	119	51	152	9
4	3	14	28	13	56	6	87	42	120	57	153	11
5	4	3	29	6	57	6	88	48	122	3	154	14
6	4	51	29	58	58	6	89	54	123	10	155	17
7	5	40	30	50	59	6	91	1	124	15	156	19
8	6	30	31	44	60	6	92	7	125	21	157	21
9	7	19	32	37	61	7	93	13	126	26	158	25
10	8	8	33	30	62	9	94	19	127	32	159	27
11	8	56	34	23	63	10	95	26	128	37	160	29
12	9	45	35	18	64	11	96	32	129	43	161	31
13	10	34	36	12	65	14	97	39	130	48	162	32
14	11	23	37	6	66	16	98	46	131	53	163	34
15	12	12	38	1	67	18	99	52	132	59	164	36
16	13	2	38	55	68	20	101	0	134	4	165	37
17	13	52	39	50	69	23	102	6	135	8	166	40
18	14	41	40	45	70	26	103	13	136	13	167	41
19	15	31	41	41	71	30	104	20	137	17	168	44
20	16	21	42	36	72	33	105	27	138	22	169	46
21	17	11	43	32	73	37	106	33	139	26	170	47
22	18	1	44	29	74	41	107	40	140	30	171	48
23	18	51	45	25	75	45	108	48	141	34	172	50
24	19	41	46	22	76	50	109	54	142	38	173	51
25	20	32	47	19	77	54	111	0	143	42	174	53
26	21	23	48	17	78	58	112	8	144	45	175	54
27	22	13	49	15	80	3	113	14	145	49	176	56
28	23	4	50	13	81	8	114	21	146	52	177	57
29	23	56	51	11	82	14	115	26	147	56	178	59
30	24	47	52	9	83	19	116	33	148	59	180	0

TABLES

OF

OBLIQUE ASCENSIONS.

15° NORTH LATITUDE—SOUTHERN SIGNS.

Long	△	Ⅲ	+	▽	₩	₩	⌘					
	°	'	°	'	°	'	°					
1	181	1	212	4	244	34	277	46	308	49	336	5
2	182	3	213	8	245	39	278	52	309	47	336	56
3	183	4	214	11	246	46	279	56	310	45	337	47
4	184	6	215	15	247	52	281	2	311	43	338	37
5	185	7	216	18	248	59	282	6	312	41	339	28
6	186	9	217	22	250	6	283	10	313	38	340	19
7	187	10	218	26	251	12	284	15	314	35	341	9
8	188	12	219	30	252	19	285	19	315	31	341	59
9	189	13	220	35	253	27	286	23	316	28	342	49
10	190	14	221	38	254	83	287	27	317	24	343	39
11	191	16	222	43	255	40	288	30	318	19	344	29
12	192	19	223	48	256	47	289	34	319	15	345	19
13	193	20	224	52	257	54	290	37	320	10	346	8
14	194	23	225	56	259	0	291	40	321	5	346	58
15	195	24	227	1	260	8	292	42	321	59	347	48
16	196	26	228	7	261	14	293	44	322	54	348	87
17	197	28	229	12	262	21	294	46	323	48	349	26
18	198	29	230	17	263	28	295	49	324	43	350	15
19	199	31	231	23	264	34	296	50	325	37	351	4
20	200	33	232	28	265	41	297	51	326	30	351	53
21	201	35	233	34	266	47	298	53	327	24	352	41
22	202	38	234	39	267	53	299	54	328	16	353	30
23	203	41	235	45	268	59	300	54	329	10	354	20
24	204	43	236	50	270	6	301	54	330	2	355	9
25	205	56	237	56	271	12	302	54	330	54	355	57
26	206	49	239	3	272	18	303	54	331	47	356	46
27	207	51	240	9	273	24	304	54	332	39	357	34
28	208	54	241	15	274	30	305	53	333	30	358	23
29	209	58	242	21	275	36	306	52	334	22	359	11
30	211	1	243	27	276	41	307	51	335	13	360	0

TABLES

OF

OBlique ASCENSIONS.

16° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈	♉	♊	♋	♌	♍	♎	♏
1	0 48	25 24	52 44	83 56	117 16	149 50		
2	1 36	26 16	53 42	85 3	118 22	150 53		
3	2 25	27 6	54 41	86 8	119 28	151 57		
4	3 13	27 58	55 41	87 15	120 35	152 59		
5	4 1	28 50	56 41	88 20	121 41	154 3		
6	4 49	29 42	57 40	89 26	122 48	155 6		
7	5 37	30 34	58 40	90 33	123 54	156 9		
8	6 26	31 28	59 41	91 39	125 0	157 11		
9	7 14	32 21	60 42	92 45	126 5	158 15		
10	8 3	33 13	61 43	93 52	127 11	159 17		
11	8 51	34 6	62 44	94 59	128 17	160 20		
12	9 40	35 0	63 45	96 5	129 23	161 23		
13	10 29	35 54	64 47	97 12	130 28	162 24		
14	11 17	36 47	65 49	98 19	131 34	163 27		
15	12 6	37 41	66 51	99 25	132 39	164 30		
16	12 55	38 36	67 53	100 33	133 45	165 31		
17	13 44	39 30	68 56	101 39	134 50	166 24		
18	14 33	40 25	69 59	102 47	135 55	167 36		
19	15 22	41 21	71 3	103 54	137 0	168 39		
20	16 11	42 15	72 6	105 1	138 5	169 41		
21	17 1	43 11	73 9	106 8	139 10	170 42		
22	17 51	44 8	74 13	107 15	140 14	171 44		
23	18 41	45 4	75 17	108 22	141 18	172 47		
24	19 30	46 0	76 22	109 28	142 22	173 49		
25	20 21	46 57	77 26	110 35	143 26	174 51		
26	21 11	47 55	78 31	111 43	144 30	175 53		
27	22 1	48 52	79 36	112 49	145 34	176 55		
28	22 51	49 50	80 41	113 56	146 38	177 56		
29	23 43	50 48	81 46	115 3	147 42	178 58		
30	24 33	51 46	82 51	116 10	148 45	180 0		

TABLES
OF
OBLIQUE ASCENSIONS.

16° NORTH LATITUDE— SOUTHERN SIGNS.

Long.	Δ		π		♀		♂		ℳ		ℳ	
	°	'	°	'	°	'	°	'	°	'	°	'
1	181	2	212	18	244	57	278	14	309	12	336	18
2	182	4	213	22	246	4	279	19	310	10	337	9
3	183	5	214	26	247	11	280	24	311	8	337	59
4	184	7	215	30	248	17	281	29	312	5	338	49
5	185	9	216	34	249	25	282	34	313	3	339	39
6	186	11	217	38	250	32	283	38	314	0	340	30
7	187	13	218	42	251	38	284	43	314	56	341	19
8	188	16	219	46	252	45	285	47	315	52	342	9
9	189	18	220	51	253	52	286	51	316	49	342	59
10	190	19	221	55	254	59	287	54	317	45	343	49
11	191	21	223	0	256	6	288	57	318	39	344	38
12	192	24	224	6	257	13	290	1	319	35	345	27
13	193	26	225	10	258	21	291	4	320	30	346	16
14	194	29	226	15	259	27	292	7	321	24	347	5
15	195	30	227	21	260	35	293	9	322	19	347	54
16	196	33	228	26	261	41	294	11	323	13	348	43
17	197	36	229	32	262	48	295	13	324	6	349	31
18	198	37	230	37	263	55	296	15	325	1	350	20
19	199	40	231	43	265	1	297	16	325	54	351	9
20	200	43	232	49	266	8	298	17	326	47	351	57
21	201	45	233	55	267	15	299	18	327	40	352	46
22	202	49	235	0	268	21	300	19	328	32	353	34
23	203	51	236	6	269	27	301	20	329	26	354	23
24	204	54	237	12	270	34	302	20	330	18	355	11
25	205	57	238	19	271	40	303	19	331	10	355	59
26	207	1	239	25	272	45	304	19	332	2	356	47
27	208	3	240	32	273	51	305	19	332	54	357	35
28	209	7	241	38	274	57	306	18	333	44	358	24
29	210	11	242	44	276	4	307	16	334	36	359	12
30	211	15	243	50	277	9	308	14	335	27	360	0

TABLES

OF

OBlique ASCENSIONS.

17° NORTH LATITUDE—NORTHERN SIGNS.

Long	♀		♂		Π		♉		♌		♏	
	°	'	°	'	°	'	°	'	°	'	°	'
1	0	48	25	10	52	19	83	28	116	51	149	37
2	1	36	26	2	53	17	84	34	117	58	150	41
3	2	23	26	52	54	16	85	39	119	4	151	45
4	3	11	27	44	55	15	86	46	120	11	152	48
5	3	58	28	35	56	15	87	52	121	18	153	52
6	4	47	29	27	57	14	88	58	122	25	154	55
7	5	35	30	19	58	14	90	5	123	31	155	58
8	6	23	31	11	59	14	91	11	124	38	157	1
9	7	11	32	4	60	15	92	17	125	44	158	5
10	7	58	32	55	61	16	93	24	126	51	159	8
11	8	46	33	48	62	17	94	31	127	56	160	11
12	9	35	34	42	63	18	95	37	129	3	161	14
13	10	23	35	35	64	20	96	44	130	8	162	17
14	11	11	36	28	65	22	97	52	131	14	163	20
15	11	59	37	22	66	24	98	58	132	20	164	23
16	12	48	38	16	67	26	100	6	133	26	165	25
17	13	37	39	10	68	29	101	12	134	31	166	29
18	14	24	40	5	69	31	102	20	135	37	167	31
19	15	13	41	0	70	35	103	27	136	42	168	34
20	16	2	41	55	71	38	104	34	137	47	169	36
21	16	51	42	50	72	41	105	41	138	53	170	39
22	17	41	43	46	73	45	106	48	139	57	171	41
23	18	30	44	41	74	49	107	56	141	3	172	45
24	19	19	45	37	75	54	109	2	142	7	173	47
25	20	10	46	34	76	58	110	9	143	11	174	48
26	21	0	47	31	78	2	111	17	144	16	175	51
27	21	49	48	28	79	7	112	24	145	20	176	53
28	22	39	49	26	80	12	113	31	146	24	177	56
29	23	30	50	23	81	18	114	37	147	28	178	58
30	24	20	51	21	82	23	115	45	148	32	180	0

TABLES
OF
OBLIQUE ASCENSIONS.

17° NORTH LATITUDE— SOUTHERN SIGNS.

Long. °	Δ		η		φ		ψ		ω		κ	
	°	'	°	'	°	'	°	'	°	'	°	'
1	181	2	212	32	245	22	278	42	309	37	336	31
2	182	4	213	26	246	29	279	48	310	34	337	21
3	183	7	214	40	247	36	280	53	311	32	338	11
4	184	9	215	44	248	43	281	58	312	29	339	0
5	185	12	216	49	249	51	283	2	313	26	339	50
6	186	14	217	53	250	58	284	6	314	23	340	41
7	187	15	218	57	252	4	285	11	315	19	341	30
8	188	18	220	3	253	12	286	15	316	14	342	19
9	189	21	221	8	254	19	287	19	317	10	343	9
10	190	24	222	13	255	26	288	22	318	5	343	58
11	191	26	223	18	256	33	289	25	319	0	344	47
12	192	29	224	24	257	40	290	29	319	55	345	36
13	193	31	225	29	258	48	291	31	320	50	346	23
14	194	35	226	34	259	54	292	34	321	44	347	12
15	195	37	227	40	261	2	293	36	322	38	348	1
16	196	40	228	46	262	8	294	38	323	32	348	49
17	197	43	229	52	263	15	295	40	324	25	349	37
18	198	46	230	57	264	23	296	42	325	19	350	25
19	199	49	232	4	265	29	297	43	326	12	351	14
20	200	52	233	9	266	36	298	44	327	5	352	2
21	201	55	234	16	267	43	299	45	327	57	352	49
22	202	59	235	22	268	49	300	46	328	49	353	37
23	204	2	236	29	269	55	301	46	329	41	354	25
24	205	5	237	35	271	2	302	46	330	33	355	13
25	206	8	238	42	272	8	303	45	331	25	356	2
26	207	12	239	49	273	14	304	45	332	16	356	49
27	208	15	240	56	274	21	305	44	333	8	357	37
28	209	19	242	2	275	26	306	43	333	58	358	24
29	210	24	243	9	276	32	307	41	334	50	359	12
30	211	28	244	15	277	37	308	39	335	40	360	0

TABLES

OF

OBlique ASCENSIONS.

18° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈	♉	♊	♋	♌	♍	♎
1	0 47	24 57	51 55	82 58	116 27	149 24	
2	1 35	25 47	52 52	84 5	117 34	150 29	
3	2 22	26 37	53 51	85 10	118 41	151 33	
4	3 9	27 29	54 50	86 17	119 48	152 36	
5	3 56	28 20	55 50	87 23	120 55	153 40	
6	4 43	29 11	56 48	88 28	122 2	154 45	
7	5 30	30 2	57 48	88 35	123 9	155 48	
8	6 19	30 54	58 48	90 42	124 16	156 51	
9	7 6	31 46	59 48	91 48	125 22	157 56	
10	7 54	32 38	60 49	92 55	126 29	158 59	
11	8 41	33 30	61 49	94 2	127 35	160 3	
12	9 29	34 24	62 50	95 9	128 42	161 6	
13	10 16	35 16	63 52	96 16	129 48	162 9	
14	11 5	36 9	64 54	97 23	130 54	163 13	
15	11 53	37 3	65 56	98 30	132 1	164 17	
16	12 41	37 56	66 57	99 38	133 7	165 19	
17	13 29	38 50	68 0	100 44	134 12	166 22	
18	14 16	39 44	69 3	101 52	135 18	167 25	
19	15 5	40 39	70 6	102 59	136 24	168 29	
20	15 53	41 33	71 9	104 7	137 30	169 32	
21	16 42	42 28	72 12	105 14	138 34	170 34	
22	17 31	43 24	73 16	106 22	139 40	171 37	
23	18 20	44 19	74 19	107 30	140 46	172 40	
24	19 9	45 14	75 24	108 36	141 51	173 43	
25	20 58	46 11	76 29	109 44	142 56	174 46	
26	21 48	47 8	77 33	110 52	144 1	175 49	
27	22 37	48 5	78 38	111 59	145 5	176 52	
28	23 27	49 2	79 43	113 6	146 9	177 55	
29	22 17	49 59	80 48	114 13	147 15	178 57	
30	24 7	50 56	81 53	115 20	148 19	180 0	

TABLES
OF
OBLIQUE ASCENSIONS.

18° NORTH LATITUDE—SOUTHERN SIGNS.

Lo	♈	♉	♊	♋	♌	♍	♎	♏
1	181	3	212	45	245	47	279	12
2	182	5	213	51	246	54	280	17
3	183	8	214	55	248	1	281	22
4	184	11	215	59	249	8	282	27
5	185	14	217	4	250	16	283	31
6	186	17	218	9	251	24	284	36
7	187	20	219	14	252	30	285	41
8	188	23	220	20	253	38	286	44
9	189	26	221	26	254	46	287	48
10	190	28	223	30	255	53	288	51
11	191	31	223	36	257	1	289	54
12	192	35	224	42	258	8	290	57
13	193	38	225	48	259	16	292	0
14	194	41	226	53	260	22	293	3
15	195	43	227	59	261	30	294	4
16	196	47	229	6	262	37	295	6
17	197	51	230	12	263	44	296	8
18	198	54	231	18	264	51	297	10
19	199	57	232	25	265	58	298	11
20	201	1	233	31	267	5	299	11
21	202	4	224	38	268	12	300	11
22	203	9	235	44	269	18	301	12
23	204	12	236	51	270	25	302	12
24	206	15	237	58	271	32	303	12
25	205	20	239	5	272	37	304	10
26	207	24	240	12	273	43	305	10
27	208	27	241	19	274	50	306	9
28	209	31	242	26	275	55	307	8
29	210	36	243	33	277	2	308	5
30	211	41	244	40	278	7	309	4

TABLES

OF

OBLIQUE ASCENSIONS.

19° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈		♉		♊		♋		♌		♍	
	°	'	°	'	°	'	°	'	°	'	°	'
1	0	47	24	43	51	30	82	29	116	3	149	10
2	1	33	25	33	52	27	83	36	117	10	150	16
3	2	20	26	22	53	25	84	41	118	17	151	20
4	3	6	27	13	54	24	85	48	119	24	152	23
5	3	53	28	4	55	23	86	54	120	32	153	28
6	4	40	28	54	56	22	88	0	121	40	154	33
7	5	27	29	45	57	21	89	7	122	47	155	37
8	6	15	30	37	58	21	90	14	123	54	156	41
9	7	2	31	29	59	21	91	20	125	1	157	47
10	7	49	32	20	60	22	92	27	126	8	158	51
11	8	36	33	12	61	22	93	34	127	15	159	55
12	9	23	34	5	62	23	94	41	128	22	160	58
13	10	10	34	58	63	25	95	48	129	28	162	2
14	10	58	35	50	64	26	96	55	130	35	163	6
15	11	46	36	43	65	28	98	2	131	41	164	10
16	12	34	37	37	66	29	99	10	132	48	165	12
17	13	22	38	30	67	32	100	17	133	54	166	16
18	14	8	39	24	68	35	101	25	134	59	167	20
19	14	57	40	19	69	38	102	32	136	6	168	24
20	15	45	41	12	70	41	103	40	137	12	169	27
21	16	33	42	7	71	44	104	47	138	17	170	30
22	17	21	43	2	72	48	105	55	139	23	171	33
23	18	9	43	57	73	51	107	3	140	29	172	37
24	18	57	44	52	74	56	108	10	141	34	173	40
25	19	46	45	48	76	0	109	18	142	40	174	43
26	20	35	46	44	77	4	110	26	143	45	175	46
27	21	24	47	41	78	9	111	33	144	50	176	50
28	22	14	48	38	79	14	112	41	145	55	177	53
29	23	4	49	35	80	19	113	48	147	1	178	57
30	23	53	50	32	81	24	114	56	148	5	180	0

TABLES

OF

OBLIQUE ASCENSIONS.

19° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	♈	♉	♊	♋	♌	♍	♎	♏
1	181 3	212 59	246 12	279 41	310 25	336 56		
2	182 7	214 5	247 19	280 46	311 22	337 46		
3	183 10	215 10	248 27	281 51	312 19	338 36		
4	184 14	216 15	249 34	282 56	313 16	339 25		
5	185 17	217 20	250 42	284 0	314 12	340 14		
6	186 20	218 26	251 50	285 4	315 8	341 3		
7	187 23	219 31	252 57	286 9	316 3	341 51		
8	188 27	220 37	254 5	287 12	316 58	342 39		
9	189 30	221 43	255 13	288 16	317 53	343 27		
10	190 33	222 48	256 20	289 19	318 48	344 15		
11	191 36	223 54	257 28	290 22	319 41	345 3		
12	192 40	225 1	258 35	291 25	320 36	345 52		
13	193 44	226 6	259 43	292 28	321 30	346 39		
14	194 48	227 12	260 50	293 31	322 23	347 26		
15	195 50	228 19	261 58	294 32	323 17	348 14		
16	196 54	229 25	263 5	295 34	324 10	349 2		
17	197 58	230 32	264 12	296 35	325 2	349 50		
18	199 2	231 38	265 19	297 37	325 55	350 37		
19	200 5	232 45	266 26	298 38	326 48	351 24		
20	201 9	233 52	267 33	299 38	327 40	352 11		
21	202 13	234 59	268 40	300 39	328 31	352 58		
22	203 19	236 6	269 46	301 39	329 23	353 45		
23	204 23	237 13	270 53	302 39	330 15	354 33		
24	205 27	238 20	272 0	303 38	331 6	355 20		
25	206 32	239 28	273 6	304 37	331 56	356 7		
26	207 37	240 36	274 12	305 36	332 47	356 54		
27	208 40	241 43	275 19	306 35	333 38	357 40		
28	209 34	242 50	276 24	307 33	334 27	358 27		
29	210 50	243 57	277 31	308 30	335 17	359 13		
30	211 55	245 4	278 36	309 28	336 7	360 0		

TABLES
OF
OBLIQUE ASCENSIONS.
20° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈	♉	♊	♋	♌	♍	♎
1	0 46	24 29	51 4	82 0	115 39	148 58	
2	1 22	25 19	52 1	83 6	116 46	150 3	
3	2 19	26 8	52 59	84 12	117 53	151 8	
4	3 5	26 58	53 57	85 19	119 1	152 12	
5	3 51	27 48	54 57	86 24	120 9	153 17	
6	4 38	28 39	55 56	87 30	121 17	154 23	
7	5 24	29 29	56 55	88 38	122 24	155 27	
8	6 11	30 21	57 54	89 44	123 32	156 31	
9	6 58	31 12	58 55	90 51	124 39	157 37	
10	7 45	32 2	59 54	91 58	125 47	158 41	
11	8 31	32 54	60 55	93 5	126 53	159 45	
12	9 19	33 47	61 56	94 12	128 1	160 49	
13	10 5	34 39	62 57	95 19	129 8	161 53	
14	10 52	35 31	63 58	96 27	130 14	162 57	
15	11 38	36 24	65 0	97 34	131 22	164 2	
16	12 25	37 16	66 1	98 42	132 29	165 6	
17	13 13	38 10	67 3	99 49	133 35	166 11	
18	13 59	39 3	68 6	100 58	134 42	167 15	
19	14 47	39 57	69 9	102 5	135 48	168 19	
20	15 35	40 51	70 12	103 12	136 54	169 23	
21	16 23	41 45	71 15	104 21	138 1	170 26	
22	17 11	42 40	72 18	105 28	139 7	171 29	
23	17 59	43 34	73 22	106 37	140 13	172 34	
24	18 47	44 29	74 26	107 44	141 19	173 38	
25	19 25	45 25	75 30	108 51	142 24	174 41	
26	20 24	46 21	76 35	109 59	143 30	175 45	
27	21 12	47 17	77 40	111 7	144 36	176 49	
28	22 1	48 14	78 44	112 15	145 41	177 52	
29	22 51	49 10	79 50	113 22	146 47	178 56	
30	23 40	50 7	80 55	114 30	147 52	180 0	

TABLES

OF

OBlique ASCENSIONS.

20° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	△	Ⅲ	‡	○	■	▲	◆
1	181 4	213 13	246 38	280 10	310 50	337 10	
2	182 8	214 19	247 45	281 16	311 46	337 59	
3	183 11	215 24	248 53	282 20	312 43	338 48	
4	184 15	216 30	250 1	283 25	313 39	339 36	
5	185 19	217 36	251 9	284 30	314 35	340 25	
6	186 22	218 41	252 16	285 34	315 31	341 13	
7	187 26	219 47	253 23	286 38	316 26	342 1	
8	188 30	220 53	254 32	287 42	317 20	342 49	
9	189 34	222 0	255 39	288 45	318 15	343 37	
10	190 37	223 6	256 48	289 48	319 9	344 25	
11	191 41	224 12	257 55	290 51	320 3	345 13	
12	192 45	225 19	259 2	291 54	320 57	346 1	
13	193 49	226 25	260 11	292 57	321 50	346 47	
14	194 54	227 31	261 18	293 59	322 44	347 35	
15	195 58	228 38	262 26	295 0	323 36	348 22	
16	197 3	229 46	263 33	296 2	324 29	349 8	
17	198 7	230 52	264 41	297 3	325 21	349 55	
18	199 11	231 59	265 48	298 4	326 14	350 41	
19	200 15	233 7	266 55	299 5	327 6	351 29	
20	201 19	234 13	268 2	300 6	327 58	352 15	
21	202 24	235 21	269 9	301 5	328 49	353 2	
22	203 29	236 28	270 16	302 5	329 39	353 49	
23	204 33	237 36	271 22	303 5	330 31	354 36	
24	205 38	238 43	272 30	304 4	331 21	355 22	
25	206 43	239 51	273 36	305 3	332 12	356 9	
26	207 48	240 59	274 41	306 3	333 2	356 55	
27	208 52	242 7	275 48	307 1	333 52	357 41	
28	209 57	243 14	276 54	307 59	334 41	358 28	
29	211 3	244 22	278 0	308 56	335 31	359 14	
30	212 8	245 29	279 5	309 53	336 20	360 0	

TABLES
OF
OBLIQUE ASCENSIONS.

21° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈	♉	♊	♋	♌	♍	♎
1	0 46	24 14	50 39	81 30	115 13	148 44	
2	1 32	25 4	51 36	82 36	116 21	149 50	
3	2 17	25 52	52 34	83 42	117 29	150 55	
4	3 3	26 42	53 32	84 49	118 37	152 0	
5	3 49	27 32	54 31	85 55	119 45	153 6	
6	4 35	28 22	55 29	87 1	120 53	154 11	
7	5 21	29 11	56 27	88 8	122 1	155 16	
8	6 8	30 3	57 27	89 15	123 9	156 21	
9	6 54	30 54	58 27	90 21	124 16	157 26	
10	7 40	31 44	59 27	91 28	125 24	158 31	
11	8 26	32 35	60 27	92 36	126 31	159 36	
12	9 13	33 28	61 28	93 43	127 39	160 41	
13	9 59	34 20	62 29	94 51	128 47	161 45	
14	10 45	35 11	63 29	95 58	129 54	162 50	
15	11 31	36 3	64 31	97 5	131 1	163 55	
16	12 18	36 56	65 32	98 13	132 9	164 59	
17	13 5	37 49	66 34	99 21	133 15	166 5	
18	13 51	38 41	67 37	100 29	134 23	167 9	
19	14 38	39 35	68 40	101 37	135 29	168 14	
20	15 25	40 28	69 43	102 45	136 36	169 18	
21	16 12	41 22	70 45	103 53	137 43	170 23	
22	17 0	42 17	71 49	105 1	138 49	171 26	
23	17 48	43 11	72 52	106 9	139 55	172 31	
24	18 35	44 5	73 57	107 17	141 2	173 35	
25	19 24	45 1	75 1	108 25	142 8	174 39	
26	20 12	45 57	76 5	109 34	143 14	175 43	
27	20 59	46 53	77 10	110 42	144 20	176 47	
28	21 48	47 49	78 14	111 50	145 26	177 52	
29	22 37	48 45	79 20	112 57	146 32	178 56	
30	23 25	49 42	80 25	114 6	147 37	180 0	

TABLES

29

OBlique ASCENSIONS.

21° NORTH LATITUDE—SOUTHERN SIGNS.

Longitude	N		W		E		S		SW		SE	
	°	'	°	'	°	'	°	'	°	'	°	'
1 181	4	213	28	247	3	280	40	311	15	337	24	
2 182	8	214	34	248	10	281	46	312	11	338	12	
3 183	13	215	40	249	18	282	50	313	7	339	1	
4 184	17	216	46	250	26	283	55	314	3	339	48	
5 185	21	217	52	251	35	284	59	314	59	340	36	
6 186	25	218	58	252	43	286	4	315	55	341	25	
7 187	29	220	5	253	51	287	8	316	49	342	12	
8 188	34	221	11	254	59	288	11	317	43	342	59	
9 189	38	222	18	256	7	289	15	318	38	343	48	
10 190	42	223	24	257	15	290	18	319	32	344	35	
11 191	45	224	31	258	23	291	20	320	25	345	22	
12 192	51	225	38	259	31	292	23	321	19	346	9	
13 193	55	226	46	260	39	293	25	322	11	346	55	
14 195	0	227	52	261	47	294	28	323	4	347	42	
15 196	5	228	59	262	55	295	29	323	57	348	29	
16 197	10	230	6	264	2	296	31	324	49	349	15	
17 198	15	231	13	265	10	297	31	325	41	350	1	
18 199	19	232	21	266	17	298	33	326	33	350	47	
19 200	24	233	29	267	24	299	33	327	25	351	34	
20 201	29	234	36	268	31	300	33	328	16	352	20	
21 202	34	235	44	269	39	301	33	329	7	353	6	
22 203	39	236	51	270	45	302	33	329	57	353	52	
23 204	44	237	59	271	52	303	33	330	49	354	39	
24 205	49	239	7	272	59	304	31	331	38	355	25	
25 206	54	240	15	274	5	305	29	332	28	356	11	
26 208	0	241	23	275	11	306	28	333	18	356	57	
27 209	5	242	31	276	18	307	26	334	8	357	43	
28 210	11	243	39	277	24	308	24	334	56	358	28	
29 211	17	244	47	278	30	309	21	335	46	359	14	
30 212	23	245	54	279	35	310	18	336	35	360	0	

TABLES
OF
OBLIQUE ASCENSIONS.

22° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈	♉	♊	♋	♌	♍	♎	♏
1	0 45	23 59	50 13	80 58	114 48	148 31		
2	1 31	24 48	51 10	82 5	115 56	149 37		
3	2 16	25 37	52 7	83 10	117 4	150 43		
4	3 1	26 26	53 5	84 17	118 12	151 48		
5	3 46	27 16	54 4	85 23	119 21	152 54		
6	4 32	28 5	55 1	86 29	120 29	154 0		
7	5 17	28 54	56 0	87 37	121 37	155 5		
8	6 4	29 45	56 59	88 44	122 45	156 11		
9	6 49	30 36	57 58	89 50	123 53	157 17		
10	7 35	31 25	58 58	90 58	125 1	158 22		
11	8 20	32 16	59 58	92 5	126 9	159 27		
12	9 6	33 8	60 58	93 12	127 17	160 32		
13	9 52	34 0	61 59	94 20	128 25	161 37		
14	10 38	34 51	63 0	95 28	129 32	162 43		
15	11 24	35 43	64 1	96 35	130 41	163 48		
16	12 11	36 34	65 2	97 44	131 49	164 52		
17	12 57	37 27	66 4	98 51	132 56	165 58		
18	13 42	38 19	67 6	100 0	134 3	167 2		
19	14 29	39 12	68 9	101 8	135 10	168 8		
20	15 16	40 5	69 12	102 16	136 17	169 13		
21	16 3	40 59	70 14	103 24	137 25	170 17		
22	16 50	41 53	71 18	104 33	138 31	171 22		
23	17 37	42 47	72 21	105 42	139 38	172 27		
24	18 24	43 41	73 25	106 49	140 45	173 32		
25	19 12	44 37	74 29	107 58	141 52	174 36		
26	20 0	45 32	75 33	109 7	142 58	175 41		
27	20 47	46 28	76 38	110 15	144 5	176 46		
28	21 35	47 24	77 43	111 24	145 10	177 51		
29	22 24	48 20	78 48	112 31	146 17	178 55		
30	23 11	49 16	79 53	113 40	147 23	180 0		

TABLES

OF

OBLIQUE ASCENSIONS.

22° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	Δ	Ⅲ	Ⅳ	Ⅴ	Ⅵ	Ⅶ	Ⅷ	Ⅸ
1	181 5	213 43	247 29	281 12	311 40	337 37		
2	182 9	214 50	248 36	282 17	312 36	338 25		
3	183 14	215 55	249 45	283 22	313 32	339 13		
4	184 19	217 2	250 13	284 27	314 28	340 0		
5	185 24	218 8	252 2	285 31	315 23	340 48		
6	186 28	219 15	253 11	286 35	316 19	341 36		
7	187 33	220 22	254 18	287 39	317 13	342 23		
8	188 38	221 29	255 27	288 42	318 7	343 10		
9	189 43	222 36	256 36	289 46	319 1	343 57		
10	190 47	223 43	257 44	290 48	319 55	344 44		
11	191 52	224 50	258 52	291 51	320 47	345 31		
12	192 58	225 58	260 0	292 54	321 41	346 18		
13	194 2	227 4	261 9	293 56	322 33	347 3		
14	195 8	228 11	262 16	294 58	323 26	347 49		
15	196 12	229 19	263 25	295 59	324 17	348 36		
16	197 17	230 28	264 32	297 0	325 9	349 22		
17	198 23	231 35	265 40	298 1	326 0	350 8		
18	199 28	232 43	266 48	299 2	326 53	350 54		
19	200 33	233 51	267 55	300 2	327 44	351 40		
20	201 38	234 59	269 2	301 2	328 35	352 25		
21	202 43	236 7	270 10	302 2	329 25	353 11		
22	203 49	237 15	271 16	303 1	330 15	353 56		
23	204 55	238 23	272 23	304 0	331 6	354 43		
24	206 0	239 31	273 31	304 59	331 55	355 28		
25	207 6	240 39	274 37	305 57	332 44	356 14		
26	208 12	241 48	275 43	306 55	333 34	356 59		
27	209 17	242 56	276 50	307 53	334 23	357 44		
28	210 23	244 4	277 55	308 50	335 12	358 29		
29	211 30	245 12	279 2	309 47	336 1	359 15		
30	212 37	246 20	280 7	310 44	336 49	360 0		

TABLES

OF

OBlique ASCENSIONS.

23° NORTH LATITUDE—NORTHERN SIGNS.

Long	♀	♂	Π	Ω	♌	♏	♑
1	0 45	23 45	49 47	80 28	114 22	148 16	
2	1 30	24 33	50 43	81 34	115 31	149 23	
3	2 15	25 21	51 40	82 40	116 39	150 29	
4	2 59	26 10	52 58	83 47	117 48	151 35	
5	3 44	26 59	53 36	84 53	118 57	152 42	
6	4 29	27 48	54 33	85 59	120 6	158 48	
7	5 14	28 37	55 31	87 6	121 14	154 54	
8	5 59	29 27	56 30	88 13	122 22	156 0	
9	6 45	30 17	57 30	89 20	123 30	157 6	
10	7 30	31 7	58 29	90 27	124 39	158 12	
11	8 15	31 57	59 29	91 34	125 47	159 18	
12	9 1	32 49	60 29	92 42	126 56	160 24	
13	9 46	33 40	61 30	93 50	128 4	161 29	
14	10 32	34 31	62 30	94 58	129 12	162 35	
15	11 17	35 22	63 31	96 6	130 20	163 41	
16	12 3	36 14	64 32	97 14	131 28	164 46	
17	12 49	37 6	65 34	98 22	132 36	165 52	
18	13 34	37 58	66 36	99 31	133 43	166 57	
19	14 20	38 51	67 38	100 39	134 51	168 3	
20	15 6	39 43	68 41	101 47	135 59	169 8	
21	15 53	40 36	69 44	102 56	137 6	170 13	
22	16 40	41 30	70 47	104 4	138 13	171 18	
23	17 26	42 24	71 50	105 13	139 21	172 24	
24	18 12	43 18	72 54	106 21	140 28	173 29	
25	19 0	44 13	73 59	107 30	141 35	174 34	
26	19 47	45 8	75 3	108 39	142 42	175 39	
27	20 33	46 3	76 8	109 48	143 49	176 45	
28	21 21	46 59	77 12	110 57	144 56	177 50	
29	22 9	47 54	78 18	112 5	146 3	178 55	
30	22 57	48 50	79 23	113 14	147 9	180 0	

TABLES

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OBITUARY ASGENSIONS.

23 NORTH LATITUDE—SOUTHERN SIGNS.

TABLES

OF

OBlique ASCENSIONS.

24° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈	♉	♊	♋	♌	♍	♎	♏	♑	♒
1	0 44	23 30	49 20	79 56	113 57	148 2				
2	1 28	24 18	50 16	81 2	115 5	149 10				
3	2 13	25 5	51 13	82 8	116 14	150 16				
4	2 57	25 54	52 10	83 15	117 23	151 23				
5	3 42	26 42	53 8	84 21	118 32	152 30				
6	4 27	27 31	54 5	85 27	119 41	153 36				
7	5 11	28 20	55 3	86 35	120 50	154 42				
8	5 56	29 10	56 2	87 42	121 59	155 49				
9	6 41	29 59	57 1	88 49	123 7	156 56				
10	7 25	30 48	58 0	89 56	124 16	158 3				
11	8 10	31 38	58 59	91 3	125 25	159 9				
12	8 55	32 29	59 59	92 11	126 34	160 15				
13	9 39	33 19	61 0	93 19	127 42	161 21				
14	10 25	34 10	62 0	94 28	128 50	162 27				
15	11 9	35 1	63 1	95 35	129 59	163 33				
16	11 55	35 52	64 2	96 44	131 8	164 39				
17	12 41	36 44	65 3	97 52	132 15	165 45				
18	13 25	37 36	66 5	99 1	133 24	166 51				
19	14 11	38 29	67 7	100 9	134 32	167 58				
20	14 57	39 20	68 10	101 18	135 40	169 3				
21	15 42	40 13	69 13	102 27	136 48	170 9				
22	16 29	41 7	70 16	103 36	137 56	171 14				
23	17 14	42 0	71 19	104 45	139 4	172 21				
24	18 0	42 53	72 23	105 53	140 11	173 27				
25	18 48	43 48	73 27	107 2	141 18	174 32				
26	19 30	44 43	74 31	108 11	142 26	175 37				
27	20 25	45 38	75 36	109 21	143 33	176 43				
28	21 8	46 33	76 40	110 30	144 40	177 48				
29	21 55	47 29	77 46	111 39	145 48	178 54				
30	22 42	48 24	78 51	112 48	146 54	180 0				

TABLES

OF

OBLIQUE ASCENSIONS.

24° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	△	Ⅲ	‡	▽	☰	☷	☷
1	181 6	214 12	248 21	282 14	312 31	338 6	
2	182 12	215 20	249 30	283 20	313 27	338 52	
3	183 17	216 27	250 39	284 24	314 22	339 40	
4	184 23	217 34	251 48	285 29	315 17	340 25	
5	185 28	218 42	252 58	286 33	316 12	341 12	
6	186 33	219 49	254 7	287 37	317 7	342 0	
7	187 39	220 56	255 15	288 41	318 0	342 46	
8	188 46	222 4	256 24	289 44	318 53	343 31	
9	189 51	223 13	257 33	290 47	319 47	344 18	
10	190 57	224 20	258 42	291 50	320 40	345 3	
11	192 2	225 28	259 51	292 53	321 31	345 49	
12	193 9	226 37	260 59	293 55	322 24	346 35	
13	194 15	227 45	262 8	294 57	323 16	347 19	
14	195 21	229 52	263 16	295 58	324 8	348 5	
15	196 27	230 1	264 25	296 59	324 59	348 51	
16	197 33	231 10	265 32	298 0	325 50	349 35	
17	198 39	232 18	266 41	299 0	326 41	350 21	
18	199 45	233 26	267 49	300 1	327 32	351 5	
19	200 51	234 35	268 57	301 1	328 22	351 50	
20	201 57	235 44	270 4	302 0	329 12	352 35	
21	203 4	236 53	271 11	302 59	330 2	353 19	
22	204 11	238 1	272 18	303 58	330 50	354 4	
23	205 18	239 10	273 25	304 57	331 40	354 49	
24	206 24	240 19	274 33	305 55	332 29	355 33	
25	207 30	241 28	275 39	306 52	333 18	356 18	
26	208 37	242 37	276 45	307 50	334 6	357 3	
27	209 44	243 46	277 52	308 47	334 55	357 47	
28	210 50	244 55	278 58	309 44	335 42	358 32	
29	211 59	246 3	280 4	310 40	336 30	359 16	
30	213 6	247 12	281 9	311 36	337 18	360 0	

TABLES

OF

OBlique ASCENSIONS.

25° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈	♉	♊	♋	♌	♍	♎	♏	♑			
1	0	44	23	15	48	52	79	24	113	30	147	48
2	1	28	24	2	49	48	80	30	114	39	148	56
3	2	11	24	49	50	44	81	36	115	47	150	3
4	2	55	25	37	51	41	82	43	116	57	151	10
5	3	39	26	25	52	39	83	50	118	7	152	17
6	4	23	27	13	53	36	84	56	119	6	153	24
7	5	7	28	1	54	34	86	3	120	25	154	31
8	5	52	28	51	55	32	87	11	121	84	155	38
9	6	36	29	40	56	31	88	17	122	43	156	46
10	7	20	30	28	57	30	89	25	123	52	157	53
11	8	4	31	18	58	29	90	32	125	1	158	59
12	8	49	32	9	59	29	91	40	126	10	160	6
13	9	33	32	59	60	29	92	49	127	19	161	12
14	10	18	33	48	61	30	93	57	128	28	162	19
15	11	2	34	39	62	31	95	5	129	37	163	25
16	11	47	35	30	63	31	96	14	130	46	164	32
17	12	32	36	21	64	35	97	22	131	55	165	39
18	13	16	37	13	65	34	98	31	133	4	166	45
19	14	1	38	5	66	36	99	39	134	12	167	52
20	14	47	38	56	67	39	100	48	135	20	168	58
21	15	32	39	49	68	41	101	57	136	29	170	4
22	16	18	40	42	69	45	103	6	137	37	171	10
23	17	3	41	35	70	47	104	15	138	45	172	17
24	17	49	42	28	71	52	105	24	139	53	173	23
25	18	35	43	23	72	56	106	33	141	1	174	29
26	19	22	44	17	73	59	107	43	142	9	175	35
27	20	7	45	11	75	4	108	52	143	17	176	41
28	20	54	46	7	76	9	110	2	144	24	177	48
29	21	41	47	2	77	14	111	11	145	33	178	54
30	22	28	47	56	78	19	112	20	146	40	180	0

TABLES
OF
OBLIQUE ASCENSIONS.

25° NORTH LATITUDE—SOUTHERN SIGNS.

55°	△	π	‡	○	■	▲	◆	
1	181	6	214	27	248	50	282	46
2	182	12	215	36	249	58	283	51
3	183	19	216	43	251	8	284	56
4	184	25	217	51	252	17	286	0
5	185	31	218	59	253	27	287	4
6	186	37	220	7	254	36	288	8
7	187	43	221	15	255	44	289	12
8	188	50	222	23	256	54	290	15
9	189	56	223	32	258	3	291	19
10	191	2	224	40	259	12	292	21
11	192	8	225	48	260	21	293	24
12	193	15	226	57	261	29	294	26
13	194	21	228	5	262	39	295	27
14	195	28	229	14	263	46	296	29
15	196	35	230	23	264	55	297	29
16	197	41	231	32	266	3	298	30
17	198	48	232	41	267	11	299	31
18	199	54	233	50	268	20	300	31
19	201	1	234	59	269	28	301	31
20	202	7	236	8	270	35	302	30
21	203	14	237	17	271	43	303	29
22	204	22	238	26	272	50	304	28
23	205	29	239	35	273	57	305	26
24	206	35	240	44	275	4	306	24
25	207	43	241	53	276	10	307	21
26	208	50	243	3	277	17	308	19
27	209	57	244	13	278	24	309	16
28	211	4	245	21	279	30	310	12
29	212	12	246	30	280	36	311	8
30	213	20	247	40	281	41	312	4

TABLES

OH

OBLIQUE ASCENSIONS.

26° NORTH LATITUDE—NORTHERN SIGNS.

Long	♀		♂		II		♂		♀		观	
	°	'	°	'	°	'	°	'	°	'	°	'
1	0	43	22	59	48	24	78	51	113	2	147	34
2	1	27	23	46	49	19	79	58	114	11	148	42
3	2	10	24	32	50	16	81	3	115	20	149	50
4	2	53	25	20	51	13	82	11	116	30	150	57
5	3	36	26	8	52	11	83	17	117	41	152	5
6	4	20	26	55	53	7	84	23	118	51	153	13
7	5	3	27	43	54	5	85	31	120	0	154	20
8	5	48	28	32	55	3	86	38	121	10	155	27
9	6	32	29	20	56	1	87	45	122	19	156	35
10	7	15	30	8	57	0	88	53	123	28	157	42
11	7	59	30	57	57	59	90	0	124	38	158	50
12	8	43	31	48	58	58	91	8	125	47	159	57
13	9	26	32	37	59	59	92	17	126	56	161	4
14	10	11	33	26	60	59	93	25	128	5	162	11
15	10	54	34	17	61	59	94	33	129	15	163	18
16	11	39	35	7	62	59	95	42	130	24	164	25
17	12	24	35	58	64	1	96	51	131	33	165	32
18	13	7	36	49	65	2	98	0	132	43	166	39
19	13	52	37	42	66	4	99	9	133	51	167	46
20	14	36	38	32	67	7	100	18	135	0	168	53
21	15	21	39	25	68	9	101	27	136	9	170	0
22	16	7	40	18	69	12	102	37	137	18	171	6
23	16	52	41	10	70	15	103	46	138	27	172	13
24	17	37	42	3	71	19	104	55	139	35	173	20
25	18	23	42	57	72	23	106	5	140	44	174	26
26	19	9	43	50	73	27	107	15	141	52	175	33
27	19	54	44	44	74	31	108	24	143	0	176	40
28	20	40	45	39	75	36	109	33	144	8	177	47
29	21	27	46	34	76	41	110	42	145	17	178	53
30	22	13	47	28	77	46	111	52	146	25	180	0

TABLES

OF

OBlique ASCENSIONS.

26° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	△	Ⅲ	♀	♂	☽	☿
	°	'	°	'	°	'
1	181	7	214	43	249	18
2	182	13	215	52	250	27
3	183	20	217	0	251	36
4	184	27	218	8	252	45
5	185	34	219	16	253	55
6	186	40	220	25	255	4
7	187	47	221	33	256	13
8	188	54	222	42	257	23
9	190	0	223	52	258	33
10	191	7	225	0	259	42
11	192	14	226	9	260	51
12	193	21	227	18	262	0
13	194	28	228	27	263	9
14	195	35	229	36	264	18
15	196	42	230	45	265	27
16	197	49	231	55	266	35
17	198	56	233	4	267	43
18	200	3	234	13	268	52
19	201	10	235	22	270	0
20	202	18	236	32	271	7
21	203	25	237	41	272	15
22	204	33	238	50	273	22
23	205	40	240	0	274	29
24	206	47	241	9	275	37
25	207	55	242	19	276	43
26	209	3	243	29	277	49
27	210	10	244	40	278	57
28	211	18	245	49	280	2
29	212	27	246	58	281	9
30	213	35	248	8	282	14

TABLES

OF

OBlique ASCENSIONS.

27° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈	♉	♊	♋	♌	♍	♎	
	°	,	°	,	°	,	°	,
1	0	43	22	43	47	56	78	18
2	1	25	23	30	48	51	79	25
3	2	8	24	16	49	47	80	31
4	2	51	25	3	50	43	81	38
5	3	34	25	50	51	41	82	44
6	4	17	26	37	52	37	83	50
7	5	0	27	24	53	34	84	58
8	5	43	28	13	54	32	86	6
9	6	26	29	1	55	31	87	13
10	7	9	29	49	56	29	88	21
11	7	53	30	37	57	28	89	28
12	8	37	31	27	58	27	90	36
13	9	20	32	16	59	27	91	45
14	10	3	33	5	60	27	92	54
15	10	47	33	55	61	28	94	2
16	11	31	34	45	62	28	95	11
17	12	15	35	35	63	29	96	19
18	12	57	36	26	64	30	97	29
19	13	42	37	18	65	32	98	38
20	14	26	38	8	66	35	99	47
21	15	11	39	0	67	37	100	57
22	15	55	39	52	68	40	102	6
23	16	40	40	44	69	42	103	16
24	17	24	41	37	70	46	104	25
25	18	10	42	31	71	50	105	35
26	18	55	43	24	72	54	106	45
27	19	39	44	18	73	59	107	55
28	20	25	45	12	75	3	109	5
29	21	12	46	7	76	8	110	14
30	21	58	47	1	77	13	111	25

TABLES
OF
OBLIQUE ASCENSIONS.

27° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	Δ	π	‡	β	ℳ	ℳ	ℳ
1	181 7	214 59	249 46	283 52	313 53	338 48	
2	182 15	216 8	250 55	284 57	314 48	339 35	
3	183 22	217 16	252 5	286 1	315 42	340 21	
4	184 32	218 25	253 15	287 6	316 36	341 5	
5	185 36	219 34	254 25	288 10	317 29	341 50	
6	186 43	220 43	255 35	289 14	318 23	342 36	
7	187 50	221 52	256 44	290 18	319 16	343 20	
8	188 59	223 1	257 54	291 20	320 8	344 5	
9	190 6	224 11	259 3	292 23	321 0	344 49	
10	191 13	225 19	260 13	293 25	321 52	345 34	
11	192 19	226 29	261 22	294 28	322 42	346 18	
12	193 27	227 39	262 31	295 30	323 34	347 3	
13	194 34	228 48	263 41	296 31	324 25	347 45	
14	195 43	229 57	264 49	297 32	325 15	348 29	
15	196 49	231 7	265 58	298 32	326 5	349 13	
16	197 57	232 17	267 6	299 33	326 55	349 57	
17	199 5	233 27	268 15	300 33	327 44	350 40	
18	200 13	234 36	269 24	301 33	328 33	351 23	
19	201 20	235 46	270 32	302 32	329 23	352 7	
20	202 28	236 56	271 39	303 31	330 11	352 51	
21	203 35	238 6	272 47	304 29	330 59	353 34	
22	204 44	239 16	273 54	305 28	331 47	354 17	
23	205 52	240 26	275 2	306 26	332 36	355 0	
24	207 0	241 35	276 10	307 23	333 23	355 43	
25	208 8	242 45	277 16	308 19	334 10	356 26	
26	209 17	243 55	278 22	309 17	334 57	357 9	
27	210 25	245 6	279 29	310 13	335 44	357 52	
28	211 33	246 16	280 35	311 9	336 30	358 35	
29	212 42	247 25	281 42	312 4	337 17	359 17	
30	213 50	248 35	282 47	312 59	338 2	360 0	

TABLES

OF

OBLIQUE ASCENSIONS.

28° NORTH LATITUDE—NORTHERN SIGNS.

Long	午		酉		午		酉		卯		辰	
	°	'	°	'	°	'	°	'	°	'	°	'
1	0	42	22	28	47	28	77	44	112	7	147	3
2	1	24	23	14	48	22	78	50	113	17	148	13
3	2	7	23	59	49	18	79	56	114	26	149	21
4	2	49	24	46	50	14	81	3	115	37	150	29
5	3	31	25	32	51	11	82	10	116	48	151	39
6	4	14	26	19	52	7	83	16	117	59	152	48
7	4	56	27	6	53	4	84	24	119	9	153	56
8	5	39	27	54	54	2	85	32	120	20	155	4
9	6	22	28	41	55	0	86	39	121	30	156	13
10	7	4	29	29	55	58	87	47	122	40	157	21
11	7	47	30	17	56	56	88	54	123	50	158	30
12	8	30	31	6	57	55	90	3	125	0	159	37
13	9	13	31	55	58	55	91	12	126	10	160	45
14	9	56	32	43	59	55	92	20	127	20	161	54
15	10	39	33	33	60	55	93	29	128	31	163	3
16	11	22	34	22	61	54	94	39	129	41	164	10
17	12	5	35	12	62	56	95	47	130	51	165	19
18	12	47	36	2	63	57	96	57	132	1	166	26
19	13	32	36	54	64	58	98	6	133	11	167	35
20	14	15	37	44	66	1	99	16	134	21	168	42
21	14	59	38	36	67	3	100	26	135	30	169	50
22	15	44	39	28	68	6	101	36	136	40	170	57
23	16	28	40	19	69	8	102	46	137	50	172	6
24	17	12	41	11	70	12	103	55	138	59	173	14
25	17	56	42	4	71	16	105	5	140	8	174	21
26	18	41	42	57	72	19	106	16	141	18	175	29
27	19	25	43	50	73	24	107	26	142	27	176	37
28	20	11	44	45	74	28	108	36	143	36	177	44
29	20	57	45	39	75	34	109	46	144	46	178	52
30	21	42	46	33	76	39	110	57	145	54	180	0

TABLES
OF
OBLIQUE ASCENSIONS.

28° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	△		π		‡		β		ω		κ	
	°	'	°	'	°	'	°	'	°	'	°	'
1	181	8	215	14	250	14	284	26	314	21	339	3
2	182	16	216	24	251	24	285	32	315	15	339	49
3	183	23	217	33	252	34	286	36	316	10	340	35
4	184	31	218	42	253	44	287	41	317	3	341	19
5	185	39	219	52	254	55	288	44	317	56	342	4
6	186	46	221	1	256	5	289	48	318	49	342	48
7	187	54	222	10	257	14	290	52	319	41	343	32
8	189	3	223	20	258	24	291	54	320	32	344	16
9	190	10	224	30	259	34	292	57	321	24	345	1
10	191	18	225	39	260	44	293	59	322	16	345	45
11	192	25	226	49	261	54	295	2	323	6	346	28
12	193	34	227	59	263	3	296	3	323	58	347	13
13	194	41	229	9	264	13	297	4	324	48	347	55
14	195	50	230	19	265	21	298	6	325	38	348	38
15	196	57	231	29	266	31	299	5	326	27	349	21
16	198	6	232	40	267	40	300	5	327	17	350	4
17	199	15	233	50	268	48	301	5	328	5	350	47
18	200	23	235	0	269	57	302	5	328	54	351	30
19	201	30	236	10	271	6	303	4	329	43	352	13
20	102	39	237	20	272	13	304	2	330	31	352	56
21	203	47	238	30	273	21	305	0	331	19	353	38
22	204	56	239	40	274	28	305	58	332	6	354	21
23	206	4	240	51	275	36	306	56	332	54	355	4
24	207	12	242	1	276	44	307	53	333	41	355	46
25	208	21	243	12	277	50	308	49	334	28	356	29
26	209	31	244	23	278	57	309	46	335	14	357	11
27	210	39	245	34	280	4	310	42	336	1	357	53
28	211	47	246	43	281	10	311	38	336	46	358	36
29	112	57	247	53	282	16	312	32	337	32	359	18
30	214	6	249	3	283	21	313	27	338	18	360	0

TABLES

OF

OBlique ASCENSIONS.

29° NORTH LATITUDE—NORTHERN SINGS.

Long	♈	♉	♊	♋	♌	♍	♎					
	°	,	°	,	°	,	°	,	°	,		
1	0	42	22	11	46	58	77	9	111	38	146	47
2	1	24	22	57	47	52	78	16	112	48	147	58
3	2	5	23	41	48	47	79	22	113	58	149	6
4	2	47	24	28	49	43	80	29	115	10	150	14
5	3	28	25	14	50	40	81	35	116	21	151	24
6	4	10	26	0	51	36	82	42	117	31	152	35
7	4	52	26	47	52	33	83	50	118	42	153	44
8	5	35	27	34	53	30	84	57	119	53	154	52
9	6	17	28	21	54	28	86	4	121	3	156	2
10	6	59	29	8	55	26	87	13	122	14	157	11
11	7	41	29	56	56	24	88	20	123	25	158	20
12	8	24	30	45	57	23	89	29	124	36	159	28
13	9	6	31	33	58	22	90	38	125	46	160	37
14	9	48	32	21	59	22	91	47	126	57	161	44
15	10	31	33	10	60	22	92	56	128	8	162	55
16	11	14	33	59	61	21	94	6	129	19	164	2
17	11	57	34	48	62	22	95	14	130	29	165	12
18	12	38	35	38	63	23	96	25	131	39	166	20
19	13	22	36	29	64	24	97	34	132	50	167	29
20	14	5	37	18	65	27	98	44	134	0	168	37
21	14	48	38	9	66	28	99	54	135	9	169	45
22	15	32	39	1	67	31	101	4	136	20	170	53
23	16	16	39	52	68	34	102	14	137	31	172	2
24	16	59	40	43	69	38	103	24	138	40	173	10
25	17	42	41	37	70	41	104	34	139	50	174	18
26	18	26	42	29	71	45	105	45	141	0	175	27
27	19	10	43	22	72	50	106	55	142	9	176	35
28	19	56	44	16	73	54	108	6	143	19	177	44
29	20	41	45	10	74	59	109	17	144	29	178	52
30	21	26	46	4	76	4	110	28	145	38	180	0

TABLES

OF

OBLIQUE ASCENSIONS.

29° NORTH LATITUDE—SOUTHERN SIGNS.

Long	△	卯	午	酉	戌	亥	巳	午	未	酉	戌	亥
	°	,	°	,	°	,	°	,	°	,	°	,
1	181	8	215	31	250	43	285	1	314	50	339	19
2	182	16	216	41	251	54	286	6	315	44	340	4
3	183	25	217	51	253	5	287	10	316	38	340	50
4	184	33	219	0	254	15	288	15	317	31	341	34
5	185	42	220	10	255	26	289	19	318	23	342	18
6	186	50	221	20	256	36	290	22	319	17	343	1
7	187	58	222	29	257	46	291	26	320	8	343	44
8	189	7	223	40	258	56	292	29	320	59	344	28
9	190	15	224	51	260	6	293	32	321	51	345	12
10	191	23	226	0	261	16	294	33	322	42	345	55
11	192	31	227	10	262	26	295	36	323	31	346	38
12	193	40	228	21	263	35	296	37	324	23	347	22
13	194	48	229	31	264	46	297	38	325	12	348	3
14	195	58	230	41	265	54	298	39	326	1	348	46
15	197	5	231	52	267	4	299	38	326	50	349	29
16	198	14	233	3	268	13	300	38	327	39	350	12
17	199	23	234	14	269	22	301	38	328	27	350	54
18	200	32	235	24	270	31	302	37	329	15	351	36
19	201	40	236	35	271	40	303	36	330	4	352	19
20	202	49	237	46	272	47	304	34	330	52	353	1
21	203	58	238	57	273	56	305	32	331	39	353	43
22	205	8	240	7	275	3	306	30	332	26	354	25
23	206	16	241	18	276	10	307	27	333	13	355	8
24	207	25	242	29	277	18	308	24	334	0	355	50
25	208	36	243	39	278	25	309	20	334	46	356	32
26	209	46	244	50	279	31	310	17	335	32	357	13
27	210	54	246	2	280	38	311	13	336	19	357	55
28	212	2	247	12	281	44	312	8	337	3	358	36
29	213	13	248	22	282	51	313	2	337	49	359	18
30	214	22	249	32	283	56	313	56	338	34	360	0

TABLES

OF

OBlique ASCENSIONS.

30° NORTH LATITUDE—NORTHERN SIGNS.

Long	♀	♂	II	⌚	♌	♏	♑
1	0 41	21 54	46 28	76 34	111 8	146 31	
2	1 22	22 39	47 22	77 41	112 19	147 42	
3	2 3	23 23	48 17	78 46	113 29	148 52	
4	2 45	24 9	49 12	79 54	114 41	150 1	
5	3 26	24 55	50 9	81 0	115 53	151 11	
6	4 8	25 40	51 4	82 7	117 4	152 22	
7	4 49	26 26	52 0	83 15	118 15	153 31	
8	5 31	27 13	52 58	84 23	119 26	154 40	
9	6 12	28 0	53 56	85 30	120 37	155 51	
10	6 53	28 46	54 53	86 38	121 48	157 0	
11	7 35	29 33	55 51	87 46	122 59	158 9	
12	8 17	30 22	56 50	88 55	124 11	159 18	
13	8 58	31 10	57 49	90 4	125 22	160 27	
14	9 40	31 57	58 48	91 13	126 32	161 37	
15	10 22	32 46	59 48	92 22	127 44	162 46	
16	11 5	33 34	60 47	93 32	128 55	163 54	
17	11 47	34 24	61 48	94 41	130 6	165 4	
18	12 28	35 13	62 49	95 52	131 16	166 13	
19	13 11	36 3	63 50	97 1	132 27	167 23	
20	13 54	36 52	64 52	98 11	133 38	168 31	
21	14 37	37 43	65 54	99 22	134 48	169 40	
22	15 20	38 34	66 57	100 32	135 59	170 49	
23	16 3	39 25	67 59	101 42	137 10	171 59	
24	16 46	40 16	69 3	102 52	138 20	173 8	
25	17 29	41 9	70 6	104 3	139 31	174 16	
26	18 13	42 1	71 10	105 14	140 41	175 25	
27	18 56	42 53	72 14	106 25	141 51	176 33	
28	19 40	43 47	73 19	107 36	143 1	177 42	
29	20 25	44 40	74 24	108 46	144 12	178 51	
30	21 10	45 33	75 29	109 57	145 22	180 0	

TABLES

OF

OBlique ASCENSIONS.

30° NORTH LATITUDE—SOUTHERN SIGNS.

Long	△	Ⅲ	‡	○	⊖	⊖	⊗	⊗
1	181	9	215	48	251	14	285	26
2	182	18	216	59	252	24	286	41
3	183	27	218	9	253	35	287	46
4	184	36	219	19	254	46	288	50
5	185	44	220	29	255	57	289	54
6	186	53	221	40	257	8	290	57
7	188	2	222	50	258	18	292	1
8	189	11	224	1	259	28	293	3
9	190	20	225	12	260	38	294	6
10	191	29	226	22	261	49	295	8
11	192	37	227	33	262	59	296	10
12	193	47	228	44	264	8	297	11
13	194	56	229	54	265	19	298	12
14	196	6	231	5	266	28	299	13
15	197	14	232	16	267	38	300	12
16	198	23	233	28	268	47	301	12
17	199	33	234	38	269	56	302	11
18	200	42	235	49	271	5	303	10
19	201	51	237	1	273	14	304	9
20	103	0	238	12	273	22	305	7
21	204	9	239	23	274	30	306	4
22	205	20	240	34	275	37	307	2
23	206	29	241	45	276	45	308	0
24	207	28	242	56	277	53	308	56
25	208	49	244	7	279	0	309	51
26	209	59	245	19	280	7	310	48
27	211	8	246	31	281	14	311	43
28	212	18	247	41	282	19	312	38
29	213	29	248	52	283	26	313	32
30	214	38	250	3	284	31	314	27

TABLES

OF

OBlique ASCENSIONS.

31° NORTH LATITUDE—NORTHERN SIGNS.

Long	午	酉	午	酉	卯	戌	辰	巳
1	0 40	21 37	45 57	75 57	110 38	146 17		
2	1 21	22 22	46 51	77 4	111 49	147 28		
3	2 2	23 6	47 45	78 10	113 0	148 38		
4	2 42	23 51	48 40	79 17	114 12	149 47		
5	3 23	24 36	49 37	80 23	115 25	150 58		
6	4 4	25 21	50 32	81 30	116 36	152 8		
7	4 45	26 6	51 28	82 39	117 47	153 18		
8	5 26	26 53	52 24	83 46	118 59	154 27		
9	6 7	27 39	53 22	84 54	120 10	155 38		
10	6 48	28 25	54 19	86 2	121 22	156 48		
11	7 29	29 11	55 17	87 10	122 33	157 58		
12	8 10	29 59	56 15	88 19	123 45	159 8		
13	8 51	30 47	57 14	89 28	124 57	160 18		
14	9 33	31 34	58 13	90 38	126 8	161 28		
15	10 14	32 22	59 13	91 47	127 20	162 38		
16	10 56	33 10	60 12	92 57	128 32	163 47		
17	11 38	33 59	61 12	94 6	129 43	164 57		
18	12 18	34 47	62 13	95 17	130 53	166 7		
19	13 0	35 37	63 14	96 27	132 5	167 17		
20	13 42	36 26	64 16	97 37	133 17	168 26		
21	14 25	37 16	65 18	98 48	134 27	169 35		
22	15 7	38 7	66 20	99 58	135 39	170 44		
23	15 50	38 57	67 23	101 10	136 50	171 55		
24	16 32	39 48	68 26	102 20	138 1	173 4		
25	17 16	40 41	69 30	103 31	139 12	174 13		
26	17 59	41 32	70 33	104 42	140 23	175 22		
27	18 42	42 24	71 38	105 53	141 34	176 32		
28	19 26	43 17	72 42	107 5	142 44	177 41		
29	20 10	44 10	73 47	108 15	143 55	178 50		
30	20 54	45 3	74 52	109 27	145 6	180 0		

TABLES
OF
OBLIQUE ASCENSIONS.

31° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	△	Ⅲ	‡	⊕	⊖	⊖	⊗
1	181 10	216 5	251 45	286 13	315 50	339 50	
2	182 19	217 16	252 55	287 18	316 43	340 34	
3	183 28	218 26	254 7	288 22	317 36	341 18	
4	184 38	219 37	255 18	289 27	318 28	342 1	
5	185 47	220 48	256 29	290 30	319 19	342 44	
6	186 56	221 59	257 40	291 34	320 12	343 28	
7	188 5	223 10	258 50	292 37	321 3	344 10	
8	189 16	224 21	260 2	293 40	321 53	344 53	
9	190 25	225 33	261 12	294 42	322 44	345 35	
10	191 34	226 43	262 23	295 44	323 34	346 18	
11	192 43	227 55	263 33	296 46	324 23	347 0	
12	193 53	229 7	264 43	297 47	325 13	347 42	
13	195 3	230 17	265 54	298 48	326 1	348 22	
14	196 13	231 28	267 3	299 48	326 50	349 4	
15	197 22	232 40	268 13	300 47	327 38	349 46	
16	198 32	23 52	269 22	301 47	328 26	350 7	
17	199 42	235 3	270 32	302 46	329 13	351 29	
18	200 52	236 15	271 41	303 45	330 1	351 50	
19	202 2	237 27	272 50	304 43	330 49	352 31	
20	203 12	238 38	273 58	305 41	331 35	353 12	
21	204 22	239 50	275 6	306 38	332 21	353 53	
22	205 33	241 1	276 14	307 36	333 7	354 34	
23	206 42	242 13	277 21	308 32	333 54	355 15	
24	207 52	243 24	278 30	309 28	334 39	355 56	
25	209 2	244 35	279 37	310 23	335 24	356 37	
26	210 13	245 43	280 43	311 20	336 9	357 18	
27	211 22	247 0	281 50	312 15	336 54	357 58	
28	212 32	248 11	282 56	313 9	337 38	358 39	
29	213 43	249 22	284 3	314 3	338 23	359 20	
30	214 54	250 33	285 8	314 57	339 6	360 0	

TABLES

OF

OBlique ASCENSIONS.

32° NORTH LATITUDE — NORTHERN SIGNS.

Long	♈	♉	♊	♋	♌	♍	♎	♏
	° ,'	° ,'	° ,'	° ,'	° ,'	° ,'	° ,'	° ,'
1	0 40	21 20	45 25	75 21	110 7	145	59	
2	1 20	22 4	46 18	76 27	111 18	147	11	
3	2 0	22 47	47 13	77 33	112 30	148	22	
4	2 40	23 31	48 7	78 41	113 42	149	32	
5	3 20	24 16	49 3	79 47	114 55	150	43	
6	4 0	25 1	49 58	80 54	116 7	151	55	
7	4 40	25 45	50 54	82 2	117 18	153	5	
8	5 21	26 32	51 51	83 10	118 31	154	15	
9	6 2	27 17	52 48	84 17	119 43	155	27	
10	6 42	28 3	53 45	85 26	120 55	156	37	
11	7 23	28 49	54 43	86 34	122 7	157	48	
12	8 4	29 37	55 41	87 43	123 19	158	58	
13	8 44	30 23	56 39	88 53	124 31	160	10	
14	9 25	31 10	57 38	90 2	125 43	161	19	
15	10 5	31 57	58 38	91 12	126 55	162	29	
16	10 47	32 45	59 38	92 22	128 8	163	39	
17	11 28	33 32	60 37	93 32	129 19	164	50	
18	12 8	34 21	61 37	94 43	130 31	166	0	
19	12 50	35 11	62 38	95 53	131 43	167	11	
20	13 31	35 59	63 40	97 3	132 55	168	20	
21	14 13	36 49	64 41	98 14	134 5	169	30	
22	14 55	37 39	65 44	99 25	135 18	170	39	
23	15 37	38 28	66 46	100 36	136 29	171	50	
24	16 19	39 19	67 50	101 46	137 41	173	0	
25	17 1	40 11	68 53	102 57	138 52	174	10	
26	17 44	41 2	69 57	104 9	140 3	175	20	
27	18 26	41 54	71 1	105 21	141 15	176	30	
28	19 9	42 46	72 5	106 32	142 26	177	40	
29	19 53	43 39	73 11	107 43	143 38	178	50	
30	20 36	44 32	74 16	108 56	144 48	180	0	

TABLES

OF

OBlique ASCENSIONS.

32° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	♈	♉	♊	♋	♌	♍	♎	♏
1	181 10	216 22	252 17	286 49	316 21	340 7		
2	182 20	217 34	253 28	287 55	317 14	340 51		
3	183 30	218 45	254 39	288 59	318 6	341 34		
4	184 40	219 57	255 51	290 3	318 58	342 16		
5	185 50	221 8	257 3	291 7	319 49	342 59		
6	187 0	222 19	258 14	292 10	320 41	343 41		
7	188 10	223 31	259 24	293 14	321 32	344 23		
8	189 21	224 42	260 35	294 16	322 21	345 5		
9	190 30	225 55	261 46	295 19	323 11	345 47		
10	191 40	227 5	262 57	296 20	324 1	346 29		
11	192 49	228 17	264 7	297 22	324 49	347 10		
12	194 0	229 29	265 17	298 23	325 39	347 52		
13	195 10	230 41	266 28	299 23	326 27	348 32		
14	196 21	231 52	267 38	300 24	327 15	349 13		
15	197 31	233 5	268 48	301 22	328 3	349 55		
16	198 41	234 17	269 58	302 22	328 50	350 35		
17	199 52	235 29	271 7	303 21	329 37	351 16		
18	201 2	236 41	272 17	304 19	330 23	351 56		
19	202 12	237 53	273 26	305 17	331 11	352 37		
20	203 23	239 5	274 34	306 15	331 57	353 18		
21	204 33	240 17	275 43	307 12	332 43	353 58		
22	205 45	241 29	276 50	308 9	333 28	354 39		
23	206 55	242 42	277 58	309 6	334 15	355 20		
24	208 5	243 53	279 6	310 2	334 59	356 0		
25	209 17	245 5	280 13	310 57	335 44	356 40		
26	210 28	246 18	281 19	311 53	336 29	357 20		
27	211 38	247 30	282 27	312 47	337 13	358 0		
28	212 49	248 42	283 33	313 42	337 56	358 40		
29	214 1	249 53	284 39	314 35	338 40	359 20		
30	215 12	251 4	285 44	315 28	339 24	360 0		

TABLES

OF

OBLIQUE ASCENSIONS.

33° NORTH LATITUDE—NORTHERN SIGNS.

Long	♀		♂		II		♂		♀		吸	
	°	,	°	,	°	,	°	,	°	,	°	,
1	0	39	21	2	44	53	74	43	109	36	145	43
2	1	19	21	45	45	46	75	49	110	48	146	55
3	1	58	22	28	46	40	76	55	112	0	148	6
4	2	38	23	12	47	35	78	3	113	12	149	17
5	3	17	23	57	48	30	79	9	114	25	150	29
6	3	57	24	41	49	24	80	16	115	38	151	40
7	4	36	25	25	50	19	81	25	116	50	152	52
8	5	17	26	10	51	16	82	33	118	3	154	3
9	5	57	26	55	52	13	83	40	119	15	155	15
10	6	36	27	40	53	10	84	49	120	27	156	26
11	7	16	28	26	54	7	85	57	121	40	157	37
12	7	57	29	13	55	4	87	6	122	52	158	48
13	8	37	29	59	56	3	88	16	124	5	159	58
14	9	17	30	45	57	2	89	26	125	17	161	9
15	9	56	31	32	58	1	90	35	126	30	162	20
16	10	37	32	19	59	0	91	45	127	43	163	31
17	11	18	33	7	60	0	92	55	128	55	164	43
18	11	58	33	54	61	0	94	6	130	7	165	58
19	12	39	34	43	62	1	95	17	131	20	167	4
20	13	20	35	31	63	3	96	28	132	32	168	14
21	14	1	36	21	64	4	97	39	133	43	169	25
22	14	43	37	11	65	7	98	50	134	56	170	35
23	15	24	38	0	66	9	100	1	136	9	171	46
24	16	5	38	50	67	12	101	12	137	21	172	57
25	16	47	39	41	68	15	102	24	138	33	174	7
26	17	29	40	32	69	19	103	37	139	44	175	18
27	18	10	41	24	70	23	104	48	140	56	176	28
28	18	53	42	16	71	27	106	0	142	7	177	39
29	19	37	43	8	72	33	107	11	143	20	178	49
30	20	19	44	0	73	38	108	24	144	31	180	0

TABLES

OF

OBlique ASCENSIONS.

33° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	Δ		III		IV		V		VI		VII	
	°	'	°	'	°	'	°	'	°	'	°	'
1	181	11	216	40	252	49	287	27	316	52	340	23
2	182	21	217	53	254	0	288	33	317	44	341	7
3	183	32	219	4	255	12	289	37	318	36	341	50
4	184	42	220	16	256	23	290	41	319	28	342	31
5	185	53	221	27	257	36	291	45	320	19	343	13
6	187	3	222	39	258	48	292	48	321	10	343	55
7	188	14	223	51	259	59	293	51	322	0	344	36
8	189	25	225	4	261	10	294	53	322	49	345	17
9	190	35	226	17	262	21	295	56	323	39	345	59
10	191	46	227	28	263	32	296	57	324	29	346	40
11	192	56	228	40	264	43	297	59	325	4	347	21
12	194	7	229	53	265	54	299	0	326	6	348	2
13	195	17	231	5	267	5	300	0	326	53	348	42
14	196	29	232	17	268	15	301	0	327	41	349	23
15	197	40	233	30	269	25	301	59	328	28	350	4
16	198	51	234	43	270	34	302	58	329	15	350	43
17	200	2	235	55	271	44	303	57	330	1	351	23
18	201	12	237	8	272	54	304	56	330	47	352	3
19	202	23	238	20	274	3	305	53	331	34	352	44
20	203	34	239	33	275	11	306	50	332	20	353	24
21	204	45	240	45	276	20	307	47	333	5	354	3
22	205	57	241	57	277	27	308	44	333	50	354	43
23	207	8	243	10	278	35	309	41	334	35	355	24
24	208	20	244	22	279	44	310	36	335	19	356	3
25	209	31	245	35	280	51	311	30	336	3	356	43
26	210	43	246	48	281	57	312	25	336	48	357	22
27	211	54	248	0	283	5	313	20	337	32	358	2
28	213	5	249	12	284	11	314	14	338	15	358	41
29	214	17	250	24	285	17	315	7	338	58	359	21
30	215	29	251	36	286	22	316	0	339	41	360	0

TABLES
OF
OBLIQUE ASCENSIONS.

34° NORTH LATITUDE—NORTHERN SIGNS.

Long	♀		♂		Π		Ω		Ω		吸	
	°	,	°	,	°	,	°	,	°	,	°	,
1	0	39	20	43	44	20	74	3	109	3	145	26
2	1	18	21	26	45	13	75	10	110	16	146	39
3	1	57	22	8	46	6	76	16	111	28	147	51
4	2	35	23	52	47	0	77	24	112	41	149	2
5	3	14	23	35	47	56	78	30	113	54	150	14
6	3	53	24	19	48	50	79	37	115	7	151	27
7	4	32	25	3	49	45	80	46	116	20	152	38
8	5	12	25	48	50	40	81	54	117	33	153	50
9	5	51	26	32	51	37	83	2	118	45	155	3
10	6	30	27	16	52	34	84	11	119	59	156	14
11	7	10	28	1	53	30	85	19	121	12	157	26
12	7	49	28	48	54	28	86	28	122	25	158	37
13	8	29	29	34	55	26	87	38	123	38	159	48
14	9	9	30	20	56	25	88	48	124	51	161	0
15	9	48	31	6	57	24	89	58	126	5	162	12
16	10	28	31	53	58	22	91	8	127	18	163	23
17	11	8	32	40	59	22	92	18	128	30	164	35
18	11	47	33	27	60	22	93	30	129	42	165	45
19	12	28	34	16	61	23	94	40	130	55	166	53
20	13	8	35	3	62	25	95	52	132	8	168	8
21	13	49	35	51	63	26	97	3	133	20	169	19
22	14	30	36	41	64	28	98	14	134	34	170	30
23	15	10	37	20	65	30	99	27	135	47	171	42
24	15	51	38	19	66	33	100	38	136	59	172	53
25	16	32	39	10	67	36	101	50	138	11	174	4
26	17	14	40	1	68	40	103	2	139	24	175	15
27	17	55	40	52	69	44	104	14	140	36	176	27
28	18	37	41	44	70	48	105	27	141	48	177	38
29	19	19	42	35	71	53	106	38	143	1	178	49
30	20	1	43	27	72	58	107	51	144	13	180	0

TABLES

OF

OBlique ASCENSIONS.

34° NORTH LATITUDE—SOUTHERN SIGNS.

Long	Δ		Ⅲ		Ⅳ		Ⅴ		Ⅵ		Ⅶ	
	°	'	°	'	°	'	°	'	°	'	°	'
1	181	11	216	59	253	22	288	7	317	25	340	41
2	182	22	218	12	254	33	289	12	318	16	341	23
3	183	33	219	24	255	46	290	16	319	8	342	5
4	184	45	220	36	256	58	291	20	319	59	342	46
5	185	56	221	49	258	10	292	24	320	50	343	28
6	187	7	223	1	259	22	293	27	321	41	344	9
7	188	18	224	13	260	33	294	30	322	30	344	50
8	189	20	225	26	261	46	295	32	323	19	345	30
9	190	41	226	40	262	57	296	34	324	9	346	11
10	191	52	227	52	264	8	297	35	324	57	346	52
11	193	2	229	5	265	20	298	37	325	44	347	32
12	194	15	230	18	266	30	299	38	326	33	348	13
13	195	25	231	30	267	42	300	38	327	20	348	52
14	196	37	232	42	268	52	301	38	328	7	349	32
15	197	48	233	55	270	2	302	36	328	54	350	12
16	199	0	235	9	271	12	303	35	329	40	350	51
17	200	12	236	22	272	22	304	34	330	26	351	31
18	201	23	237	35	273	32	305	32	331	12	352	11
19	202	34	238	48	274	41	306	30	331	59	352	50
20	203	46	240	1	275	49	307	26	332	44	353	30
21	204	57	241	15	276	58	308	23	333	28	354	9
22	206	10	242	27	278	6	309	20	334	12	354	48
23	207	22	243	40	279	14	310	15	334	57	355	28
24	208	33	244	53	280	23	311	10	335	41	356	7
25	209	46	246	6	281	30	312	4	336	25	356	46
26	210	58	247	19	282	36	313	0	337	8	357	25
27	212	9	248	32	283	44	313	54	337	52	358	3
28	213	21	249	44	284	50	314	47	338	34	358	42
29	214	34	250	57	285	57	315	40	339	17	359	21
30	215	47	252	9	287	2	316	33	339	59	360	0

TABLES

OF

OBlique ASCENSIONS.

35° NORTH LATITUDE—NORTHERN SIGNS.

Long. ��	♈		♉		♊		♋		♌		♍	
	°	'	°	'	°	'	°	'	°	'	°	'
1	0	38	20	25	43	46	73	23	108	30	145	8
2	1	16	21	7	44	38	74	30	109	43	146	22
3	1	55	21	49	45	31	75	36	110	56	147	34
4	2	33	22	32	46	25	76	44	112	9	148	46
5	3	11	23	15	47	19	77	51	113	23	149	59
6	3	50	23	58	48	13	78	57	114	37	151	12
7	4	28	24	41	49	8	80	6	115	50	152	24
8	5	7	25	26	50	3	81	15	117	3	153	36
9	5	46	26	9	50	59	82	23	118	16	154	49
10	6	24	26	53	51	56	83	32	119	80	156	1
11	7	3	27	37	52	52	84	40	120	43	157	13
12	7	42	28	23	53	50	85	49	121	57	158	25
13	8	20	29	9	54	48	86	59	123	10	159	38
14	9	0	29	54	55	46	88	9	124	23	160	50
15	9	39	30	40	56	45	89	19	125	38	162	8
16	10	18	31	25	57	43	90	30	126	52	163	14
17	10	58	32	12	58	43	91	40	128	5	164	26
18	11	35	32	59	59	43	92	51	129	17	165	38
19	12	15	33	47	60	44	94	2	130	31	166	51
20	12	55	34	34	61	46	95	14	131	45	168	2
21	13	35	35	22	62	47	96	25	132	58	169	14
22	14	16	36	11	63	49	97	37	134	12	170	25
23	14	56	37	0	64	50	98	50	135	25	171	38
24	15	36	37	49	65	53	100	1	136	38	172	50
25	16	17	38	39	66	57	101	14	137	51	174	1
26	16	58	39	29	68	0	102	27	139	4	175	13
27	17	38	40	20	69	4	103	39	140	17	176	25
28	18	20	41	11	70	8	104	52	141	30	177	36
29	19	2	42	2	71	13	106	4	142	43	178	48
30	19	43	42	54	72	18	107	18	143	55	180	0

TABLES

OF

OBlique ASCENSIONS.

35° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	△	Ⅲ	‡	○	₩	₩	₩	₩
1	181	12	217	17	253	56	288	47
2	182	24	218	30	255	8	289	52
3	183	35	219	43	256	21	290	56
4	184	47	220	56	257	33	292	0
5	185	59	222	9	258	46	293	3
6	187	10	223	22	259	59	294	7
7	188	22	224	35	261	10	295	10
8	189	35	225	48	262	23	296	11
9	190	46	227	2	263	35	297	13
10	191	58	228	15	264	46	298	14
11	193	9	229	29	265	58	299	16
12	194	22	230	43	267	9	300	17
13	195	34	231	55	268	20	301	17
14	196	46	233	8	269	30	302	17
15	197	57	234	22	270	41	303	15
16	199	10	235	37	271	51	304	14
17	200	22	236	50	273	1	305	12
18	201	35	238	3	274	11	306	10
19	202	47	239	17	275	20	307	8
20	203	59	240	30	276	28	308	4
21	205	11	241	44	277	37	309	1
22	206	24	242	57	278	45	309	57
23	207	36	244	10	279	54	310	52
24	208	48	245	23	281	3	311	47
25	210	1	246	37	282	9	312	41
26	211	14	247	51	283	16	313	35
27	212	26	249	4	284	24	314	29
28	213	38	250	17	285	30	315	22
29	214	52	251	30	286	37	316	14
30	216	5	252	42	287	42	317	6

TABLES
OF
OBLIQUE ASCENSIONS.

36° NORTH LATITUDE—NORTHERN SIGNS.

Long	♀		♂		Π		⊙		Ω		♃	
	°	'	°	'	°	'	°	'	°	'	°	'
1	0	37	20	6	43	11	72	42	107	57	144	50
2	1	15	20	48	44	3	73	49	109	10	146	4
3	1	52	21	28	44	55	74	55	110	23	147	17
4	2	30	22	11	45	49	76	2	111	37	148	30
5	3	8	22	54	46	43	77	9	112	51	149	43
6	3	46	23	36	47	36	78	16	114	5	150	57
7	4	24	24	18	48	31	79	25	115	19	152	9
8	5	2	25	2	49	26	80	33	116	33	153	22
9	5	40	25	45	50	22	81	41	117	46	154	36
10	6	17	26	28	51	18	82	51	119	0	155	49
11	6	56	27	12	52	14	83	59	120	14	157	2
12	7	34	27	57	53	11	85	9	121	28	158	14
13	8	12	28	42	54	9	86	19	122	41	159	27
14	8	51	29	27	55	7	87	29	123	55	160	40
15	9	29	30	12	56	5	88	40	125	10	161	53
16	10	8	30	57	57	3	89	51	126	25	163	5
17	10	47	31	43	58	3	91	1	127	38	164	18
18	11	24	32	30	59	3	92	13	128	51	165	30
19	12	4	33	18	60	3	93	24	130	6	166	44
20	12	43	34	4	61	5	94	36	131	20	167	55
21	13	22	34	52	62	5	95	48	132	33	169	8
22	14	2	35	41	63	7	97	0	133	48	170	20
23	14	41	36	29	64	9	98	13	135	2	171	34
24	15	21	37	17	65	12	99	24	136	16	172	46
25	16	1	38	7	66	15	100	37	137	30	173	58
26	16	42	38	57	67	18	101	51	138	43	175	10
27	17	21	39	47	68	23	103	3	139	56	176	22
28	18	2	40	38	69	27	104	17	141	10	177	35
29	18	44	41	29	70	32	105	29	142	24	178	47
30	19	25	42	19	71	37	106	43	143	37	180	0

TABLES

OF

OBlique ASCENSIONS.

36° NORTH LATITUDE—SOUTHERN SIGNS.

Long	Δ		II		IV		V		VI		VII	
	°	'	°	'	°	'	°	'	°	'	°	'
1	181	13	217	36	254	31	289	28	318	31	341	16
2	182	25	218	50	255	43	290	33	319	22	341	58
3	183	38	220	4	256	57	291	37	320	13	342	39
4	184	50	221	17	258	9	292	42	321	3	343	18
5	186	2	222	30	259	23	293	45	321	53	343	59
6	187	14	223	44	260	36	294	48	322	43	344	39
7	188	26	224	58	261	47	295	51	323	31	345	19
8	189	40	226	12	263	0	296	53	324	19	345	58
9	190	52	227	27	264	12	297	55	325	8	346	38
10	192	5	228	40	265	24	298	55	325	56	347	17
11	193	16	229	54	266	36	299	57	326	42	347	56
12	194	30	231	9	267	47	300	57	327	30	348	36
13	195	42	232	22	268	59	301	57	328	17	349	13
14	196	55	233	35	270	9	302	57	329	3	349	52
15	198	7	234	50	271	20	303	55	329	48	350	31
16	199	20	236	5	272	31	304	53	330	33	351	9
17	200	33	237	19	273	41	305	51	331	18	351	48
18	201	46	238	32	274	51	306	49	332	3	352	26
19	202	58	239	46	276	1	307	46	332	48	353	4
20	204	11	241	0	277	9	308	42	333	32	353	43
21	205	24	242	14	278	19	309	38	334	15	354	20
22	206	38	243	27	279	27	310	34	334	58	354	58
23	207	51	244	41	280	35	311	29	335	42	355	36
24	209	3	245	55	281	44	312	24	336	24	356	14
25	210	17	247	9	282	51	313	17	337	6	356	52
26	211	30	248	23	283	58	314	11	337	49	357	30
27	212	43	249	37	285	5	315	5	338	32	358	8
28	213	56	250	50	286	11	315	57	339	12	358	45
29	215	10	252	3	287	18	316	49	339	54	359	23
30	216	23	253	17	288	23	317	41	340	85	360	0

TABLES

OF

OBlique ASCENSIONS.

37° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈	♉	♊	♋	♌	♍	♎	
	°	,	°	,	°	,	°	,
1	0	37	19	46	42	35	71	59
2	1	14	20	27	43	27	73	6
3	1	51	21	7	44	19	74	12
4	2	27	21	49	45	12	75	20
5	3	4	22	31	46	6	76	26
6	3	42	23	13	46	59	77	34
7	4	19	23	55	47	53	78	43
8	4	57	24	38	48	47	79	52
9	5	35	25	21	49	43	81	0
10	6	11	26	3	50	39	82	9
11	6	49	26	47	51	35	83	18
12	7	27	27	32	52	31	84	28
13	8	4	28	16	53	29	85	38
14	8	41	29	0	54	27	86	49
15	9	19	29	45	55	25	87	59
16	9	57	30	30	56	23	89	11
17	10	36	31	15	57	22	90	21
18	11	12	32	1	58	22	91	33
19	11	51	32	48	59	23	92	45
20	12	30	33	34	60	23	93	57
21	13	9	34	21	61	24	95	9
22	13	48	35	9	62	26	96	21
23	14	27	35	56	63	27	97	35
24	15	6	36	44	64	30	98	47
25	15	46	37	34	65	33	100	0
26	16	25	38	23	66	36	101	14
27	17	4	39	13	67	40	102	27
28	17	45	40	3	68	44	103	41
29	18	26	40	54	69	49	104	54
30	19	6	41	44	70	54	106	8

TABLES
OF
OBLIQUE ASCENSIONS.

37° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	Δ	III	IV	V	VI	VV	羯	
	°	'	°	'	°	'	°	'
1	181	13	217	56	255	6	290	11
2	182	26	219	11	256	19	291	16
3	183	39	220	25	257	33	292	20
4	184	53	221	39	258	46	293	24
5	186	6	222	53	260	0	294	27
6	187	18	224	7	261	13	295	30
7	188	31	225	21	262	25	296	33
8	189	45	226	36	263	39	297	34
9	190	57	227	51	264	51	298	36
10	192	11	229	5	266	3	299	37
11	193	23	230	19	267	15	300	38
12	194	37	231	34	268	27	301	38
13	195	50	232	48	269	39	302	38
14	197	4	234	2	270	49	303	37
15	198	17	235	17	272	1	304	35
16	199	31	236	32	273	11	305	33
17	200	44	237	47	274	22	306	31
18	201	58	239	1	275	32	307	29
19	203	11	240	16	276	42	308	28
20	204	24	241	30	277	51	309	21
21	205	37	242	45	279	0	310	17
22	206	52	243	59	280	8	311	13
23	208	5	245	14	281	17	312	7
24	209	18	246	28	282	26	313	1
25	210	32	247	42	283	34	313	54
26	211	46	248	57	284	40	314	48
27	213	0	250	11	285	48	315	41
28	214	13	251	25	286	54	316	33
29	215	28	252	38	288	1	317	25
30	216	42	253	52	289	6	318	16

TABLES

OF

OBlique ASCENSIONS.

38° NORTH LATITUDE—NORTHERN SIGNS.

Long	♀	♂	□	♂	♀	♀	♂	
	°	,	°	,	°	,	°	
1	0	36	19	25	41	59	71	15
2	1	12	20	6	42	49	72	22
3	1	49	20	45	43	41	73	28
4	2	25	21	27	44	34	74	36
5	3	1	23	8	45	27	75	43
6	3	38	23	49	46	20	76	50
7	4	14	23	31	47	14	77	59
8	4	51	24	14	48	8	79	8
9	5	28	24	56	49	3	80	16
10	6	5	25	38	49	59	81	26
11	6	42	26	20	50	54	82	35
12	7	19	27	4	51	50	83	45
13	7	56	27	48	52	48	84	56
14	8	32	28	31	53	45	86	6
15	9	9	29	16	54	43	87	17
16	9	47	30	0	55	40	88	29
17	10	25	30	45	56	40	89	40
18	11	1	31	31	57	39	90	52
19	11	39	32	17	58	39	92	4
20	12	17	33	2	59	40	93	17
21	12	55	33	49	60	40	94	29
22	13	34	34	87	61	42	95	42
23	14	12	35	23	62	43	96	56
24	14	50	36	11	63	46	98	8
25	15	30	37	0	64	49	99	21
26	16	9	37	48	65	52	100	36
27	16	47	38	38	66	56	101	49
28	17	26	39	28	68	0	103	3
29	18	6	40	18	69	5	104	17
30	18	46	41	8	70	10	105	32

TABLES

OF

OBLIQUE ASCENSIONS.

38° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	△		¶		†		×		■		⌘	
	°	,	°	,	°	,	°	,	°	,	°	,
1	181	14	218	17	255	43	200	55	319	42	341	54
2	182	28	219	32	256	57	292	0	320	32	342	34
3	183	41	220	47	258	11	293	4	321	22	343	13
4	184	55	222	1	259	24	294	8	322	12	343	51
5	186	9	223	16	260	39	295	11	323	0	344	30
6	187	22	224	31	261	52	296	14	323	49	345	10
7	188	36	225	45	263	4	297	17	324	37	345	48
8	189	51	227	0	264	18	298	18	325	23	346	26
9	191	4	228	16	265	31	299	20	326	11	347	5
10	192	17	229	30	266	43	300	20	326	58	347	43
11	193	30	230	46	267	56	301	21	327	43	348	21
12	194	45	232	1	269	8	302	21	328	29	348	59
13	195	.59	233	16	270	20	303	20	329	15	349	85
14	197	14	234	31	271	31	304	20	330	0	350	13
15	198	27	235	46	272	43	305	17	330	44	350	51
16	199	41	237	2	273	54	306	15	331	29	351	28
17	200	55	238	17	275	4	307	12	332	12	352	4
18	202	9	239	31	276	15	308	10	332	56	352	41
19	203	23	240	47	277	25	309	6	333	40	353	18
20	204	37	242	2	278	34	310	1	334	23	353	55
21	205	51	243	17	279	44	310	57	335	4	354	32
22	207	6	244	31	280	52	311	52	335	46	355	9
23	208	20	245	47	282	1	312	46	336	29	355	46
24	209	.34	247	1	283	10	313	40	337	11	356	22
25	210	48	248	16	284	17	314	33	337	52	356	59
26	212	3	249	32	285	24	315	26	338	33	357	35
27	213	17	250	46	286	32	316	19	339	15	358	11
28	214	.32	252	0	287	38	317	11	339	54	358	48
29	215	48	253	14	288	45	318	1	340	35	359	24
30	217	2	254	28	289	50	318	52	341	14	360	0

TABLES

OF

OBlique ASCENSIONS.

39° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈	♉	♊	♋	♌	♍	♎	♏
1	0 35	19 5	41 20	70 30	106 9	143 54		
2	1 11	19 45	42 11	71 37	107 23	145 10		
3	1 46	20 24	43 2	72 43	108 38	146 24		
4	2 22	21 5	43 54	73 51	109 53	147 38		
5	2 58	21 45	44 47	74 58	111 9	148 54		
6	3 34	22 26	45 39	76 5	112 24	150 10		
7	4 10	23 6	46 32	77 14	113 39	151 25		
8	4 46	23 48	47 27	78 23	114 55	152 39		
9	5 22	24 30	48 22	79 32	116 10	153 55		
10	5 58	25 11	49 17	80 42	117 26	155 9		
11	6 34	25 53	50 12	81 51	118 41	156 24		
12	7 11	26 37	51 8	83 1	119 57	157 39		
13	7 46	27 20	52 5	84 12	121 13	158 54		
14	8 23	28 2	53 2	85 23	122 28	160 8		
15	8 59	28 46	54 0	86 34	123 44	161 23		
16	9 36	29 30	54 57	87 46	125 0	162 37		
17	10 14	30 15	55 56	88 57	126 16	163 52		
18	10 49	30 59	56 55	90 10	127 31	165 8		
19	11 26	31 45	57 55	91 22	128 47	166 22		
20	12 3	32 30	58 56	92 35	130 3	167 36		
21	12 41	33 16	59 56	93 48	131 18	168 50		
22	13 19	34 3	60 57	95 1	132 34	170 4		
23	13 57	34 49	61 58	96 14	133 50	171 20		
24	14 34	35 36	63 1	97 27	135 6	172 34		
25	15 12	36 25	64 4	98 41	136 21	173 48		
26	15 50	37 13	65 7	99 56	137 37	175 2		
27	16 28	38 2	66 11	101 10	138 52	176 16		
28	17 8	38 51	67 15	102 24	140 7	177 31		
29	17 47	39 41	68 20	103 38	141 23	178 45		
30	18 26	40 30	69 25	104 54	142 38	180 0		

TABLES

OF

OBlique ASCENSIONS.

39° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	△	π	+	β	ω	ℳ	ℳ	
	°	'	°	'	°	'	°	'
1	181	15	218	37	256	22	291	40
2	182	29	219	53	257	36	292	45
3	183	44	221	8	258	50	293	49
4	184	58	222	23	260	4	294	53
5	186	12	223	39	261	19	295	56
6	187	26	224	54	262	33	296	59
7	188	40	226	10	263	46	298	2
8	189	56	227	26	264	59	299	3
9	191	10	228	42	266	12	300	4
10	192	24	229	57	267	25	301	4
11	193	38	231	13	268	38	302	5
12	194	52	232	29	269	50	303	5
13	196	8	233	44	271	3	304	4
14	197	23	235	0	272	14	305	3
15	198	37	236	16	273	26	306	0
16	199	52	237	32	274	37	306	58
17	201	6	238	47	275	48	307	55
18	202	21	240	3	276	59	308	52
19	203	36	241	19	278	9	309	48
20	204	51	242	34	279	18	310	43
21	206	5	243	50	280	28	311	38
22	207	21	245	5	281	37	312	33
23	208	35	246	21	282	46	313	28
24	209	50	247	36	283	55	314	21
25	211	6	248	51	285	2	315	13
26	212	22	250	7	286	9	316	6
27	213	36	251	22	287	17	316	58
28	214	50	252	37	288	23	317	49
29	216	6	253	51	289	30	318	40
30	217	22	255	6	290	35	319	30

TABLES

OF

OBlique ASCENSIONS.

40° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈	♉	♊	♋	♌	♍	♎
0	,	,	,	,	,	,	,
1	0 35	18 44	40 41	69 43	105 30	143 38	
2	1 10	19 23	41 31	70 50	106 45	144 50	
3	1 45	20 1	42 22	71 56	108 0	146 6	
4	2 19	20 41	43 14	73 4	109 15	147 21	
5	2 54	21 21	44 7	74 12	110 32	148 37	
6	3 30	22 1	44 58	75 19	111 48	149 54	
7	4 5	22 41	45 51	76 28	113 4	151 9	
8	4 41	23 28	46 45	77 37	114 20	152 24	
9	5 16	24 3	47 39	78 45	115 36	153 41	
10	5 51	24 43	48 34	79 56	116 52	154 56	
11	6 26	25 25	49 29	81 5	118 8	156 11	
12	7 2	26 8	50 24	82 15	119 25	157 26	
13	7 37	26 51	51 21	83 27	120 41	158 41	
14	8 13	27 33	52 18	84 38	121 57	159 57	
15	8 48	28 16	53 15	85 49	123 14	161 12	
16	9 25	28 59	54 12	87 2	124 31	162 27	
17	10 1	29 43	55 11	88 13	125 47	163 43	
18	10 36	30 27	56 9	89 26	127 2	164 58	
19	11 13	31 11	57 9	90 39	128 19	166 14	
20	11 50	31 56	58 10	91 52	129 35	167 29	
21	12 27	32 42	59 10	93 5	130 51	168 44	
22	13 4	33 28	60 11	94 19	132 9	169 59	
23	13 41	34 14	61 12	95 33	133 25	171 15	
24	14 18	35 0	62 15	96 46	134 41	172 80	
25	14 55	35 48	63 18	98 1	135 57	173 44	
26	15 33	36 35	64 20	99 16	137 13	174 59	
27	16 10	37 24	65 24	100 30	138 29	176 15	
28	16 48	38 13	66 28	101 45	139 45	177 30	
29	17 27	39 2	67 33	102 59	141 2	178 45	
30	18 5	39 51	68 38	104 15	142 16	180 0	

TABLES
OF
OBLIQUE ASCENSIONS.
40° NORTH LATITUDE—SOUTHERN SIGNS.

Long. °	△		Ⅲ		♀		♂		₩		⌘	
	°	'	°	'	°	'	°	'	°	'	°	'
1	181	15	218	58	257	1	292	27	320	58	342	33
2	182	30	220	15	258	15	293	32	321	47	343	12
3	183	45	221	31	259	30	294	36	322	36	343	50
4	185	1	223	47	260	44	295	40	323	25	344	27
5	186	16	224	3	261	59	296	35	324	12	345	5
6	187	30	225	19	263	14	297	45	325	0	345	42
7	188	45	226	35	264	27	298	48	325	46	346	19
8	190	1	227	51	265	41	299	49	326	32	346	56
9	191	16	229	9	266	55	300	50	327	18	347	33
10	192	31	230	25	268	8	301	50	328	4	348	10
11	193	46	231	41	269	21	302	51	328	49	348	47
12	195	2	232	58	270	34	303	51	329	33	349	24
13	196	17	234	13	271	47	304	49	330	17	349	59
14	197	33	235	29	272	58	305	48	331	1	350	35
15	198	48	236	46	274	11	306	45	331	44	351	12
16	200	3	238	3	275	22	307	42	332	27	351	47
17	201	19	239	19	276	33	308	39	333	9	352	23
18	202	34	240	35	277	45	309	36	333	52	352	58
19	203	49	241	52	278	55	310	31	334	35	353	34
20	205	4	243	8	280	4	311	26	335	17	354	9
21	206	19	244	24	281	15	312	21	335	57	354	44
22	207	36	245	40	282	23	313	15	336	37	355	19
23	208	51	246	56	283	32	314	9	337	19	355	55
24	210	6	248	12	284	41	315	2	337	59	356	30
25	211	23	249	28	285	48	315	53	338	39	357	6
26	212	39	250	45	286	56	316	46	339	19	357	41
27	213	54	252	0	288	4	317	38	339	59	358	15
28	215	10	253	15	289	10	318	29	340	37	358	50
29	216	27	254	30	290	17	319	19	341	16	359	25
30	217	44	255	45	291	22	320	9	341	55	360	0

TABLES

OF

OBLIQUE ASCENSIONS.

41° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈	♉	♊	♋	♌	♍	♎
1	0 34	18 21	40 0	68 55	104 50	143 12	
2	1 8	19 0	40 50	70 2	106 6	144 30	
3	1 42	19 37	41 40	71 8	107 21	145 46	
4	2 16	20 17	42 31	72 16	108 38	147 2	
5	2 51	20 56	43 24	73 24	109 55	148 19	
6	3 26	21 35	44 15	74 31	111 11	149 36	
7	4 0	22 15	45 7	75 40	112 28	150 52	
8	4 35	22 56	46 1	76 49	113 45	152 8	
9	5 10	23 36	46 55	77 58	115 1	158 25	
10	5 44	24 15	47 49	79 8	116 18	154 41	
11	6 18	24 56	48 44	80 18	117 35	155 57	
12	6 53	25 39	49 39	81 28	118 51	157 13	
13	7 28	26 21	50 35	82 40	120 8	158 29	
14	8 3	27 2	51 32	83 52	121 25	159 45	
15	8 38	27 45	52 29	85 3	122 43	161 2	
16	9 13	28 27	53 26	86 15	124 0	162 17	
17	9 49	29 10	54 24	87 27	125 17	163 34	
18	10 23	29 53	55 22	88 41	126 33	164 49	
19	10 59	30 37	56 22	89 54	127 50	166 6	
20	11 35	31 22	57 22	91 7	129 7	167 22	
21	12 11	32 7	58 22	92 21	130 24	168 38	
22	12 48	32 53	59 23	93 35	131 42	169 53	
23	13 24	33 38	60 24	94 49	132 59	171 10	
24	14 0	34 23	61 27	96 3	134 15	172 26	
25	14 37	35 11	62 30	97 18	135 32	173 41	
26	15 14	35 58	63 32	98 33	136 49	174 56	
27	15 50	36 45	64 36	99 48	138 5	176 12	
28	16 28	37 34	65 40	101 3	139 22	177 28	
29	17 6	38 22	66 45	102 18	140 39	178 44	
30	17 44	39 11	67 50	103 35	141 56	180 0	

TABLES
OF
OBLIQUE ASCENSIONS.

41° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	△		π		†		φ		π		‡	
	°	'	°	'	°	'	°	'	°	'	°	'
1	181	16	219	21	257	42	293	15	321	38	342	54
2	182	32	220	38	258	57	294	20	322	26	343	32
3	183	48	221	55	260	12	295	24	323	15	344	10
4	185	4	223	11	261	27	296	28	324	2	344	46
5	186	19	224	28	262	42	297	30	324	49	345	23
6	187	34	225	45	263	57	298	33	325	37	346	0
7	188	50	227	1	265	11	299	36	326	22	346	36
8	190	7	228	18	266	25	300	37	327	7	347	12
9	191	22	229	36	267	39	301	38	327	53	347	49
10	192	38	230	53	268	53	302	38	328	38	348	25
11	193	54	232	10	270	6	303	38	329	23	349	1
12	195	11	233	27	271	19	304	38	330	7	349	37
13	196	26	234	43	272	33	305	36	330	50	350	11
14	197	43	236	0	273	45	306	34	331	33	350	47
15	198	58	237	17	274	57	307	31	332	15	351	22
16	200	15	238	35	276	8	308	28	332	58	351	57
17	201	31	239	52	277	20	309	25	333	39	352	32
18	202	47	241	9	278	32	310	21	334	21	353	7
19	204	3	242	25	279	42	311	16	335	4	353	43
20	205	19	243	42	280	52	312	11	335	45	354	16
21	206	35	244	59	282	2	313	5	336	24	354	50
22	207	52	246	15	283	11	313	59	337	4	355	25
23	209	8	247	32	284	20	314	53	337	45	356	0
24	210	24	248	49	285	29	315	45	338	25	356	34
25	211	41	250	5	286	36	316	36	339	4	357	9
26	212	58	251	22	287	44	317	29	339	43	357	44
27	214	14	252	39	288	52	318	20	340	23	358	18
28	215	30	253	54	289	58	319	10	341	0	358	52
29	216	48	255	10	291	5	320	0	341	39	359	26
30	218	4	256	25	292	10	320	49	342	16	360	0

TABLES

OF

OBlique ASCENSIONS.

42° NORTH LATITUDE—NORTHERN SIGNS.

Long.	♀		♂		Π		☿		Ω		吸	
	°	'	°	'	°	'	°	'	°	'	°	'
1	0	33	17	59	39	18	68	5	104	9	142	51
2	1	6	18	36	40	7	69	12	105	25	144	10
3	1	39	19	13	40	57	70	18	106	41	145	27
4	2	14	19	52	41	48	71	26	107	58	146	43
5	2	47	20	31	42	40	72	33	109	16	148	1
6	3	21	21	9	43	31	73	41	110	33	149	18
7	3	54	21	48	44	22	74	51	111	50	150	35
8	4	29	22	28	45	15	76	0	113	7	151	51
9	5	3	23	7	46	9	77	9	114	24	153	9
10	5	36	23	46	47	3	78	19	115	42	154	26
11	6	10	24	26	47	57	79	29	116	59	155	43
12	6	44	25	8	48	52	80	40	118	17	157	0
13	7	19	25	49	49	48	81	51	119	34	158	17
14	7	53	26	30	50	44	83	3	120	52	159	34
15	8	26	27	12	51	41	84	15	122	10	160	50
16	9	2	27	54	52	37	85	28	123	28	162	7
17	9	37	28	36	53	35	86	40	124	45	163	25
18	10	10	29	19	54	34	87	54	126	2	164	40
19	10	45	30	3	55	33	89	7	127	20	165	58
20	11	20	30	46	56	33	90	21	128	38	167	14
21	11	55	31	30	57	33	91	35	129	55	168	31
22	12	31	32	15	58	34	92	49	131	14	169	47
23	13	7	33	0	59	35	94	4	132	32	171	4
24	13	42	33	45	60	37	95	19	133	49	172	21
25	14	19	34	33	61	39	96	34	135	7	173	37
26	14	55	35	18	62	42	97	50	136	24	174	54
27	15	31	36	5	63	46	99	5	137	41	176	10
28	16	8	36	53	64	50	100	21	138	58	177	26
29	16	45	37	41	65	55	101	36	140	17	178	43
30	17	22	38	29	67	0	102	53	141	34	180	0

TABLES
OF
OBLIQUE ASCENSIONS.

42° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	S		II		IV		VI		VIII		X	
	°	'	°	'	°	'	°	'	°	'	°	'
1	181	17	219	43	258	24	294	5	322	19	343	15
2	182	34	221	2	259	39	295	10	323	7	343	52
3	183	50	222	19	260	55	296	14	323	55	344	29
4	185	6	223	36	262	10	297	18	324	42	345	5
5	186	23	224	53	263	26	298	21	325	27	345	41
6	187	39	226	11	264	41	299	23	326	15	346	18
7	188	56	227	28	265	56	300	25	327	0	346	53
8	190	13	228	46	267	11	301	26	327	45	347	29
9	191	29	230	5	268	25	302	27	328	30	348	5
10	192	46	231	22	269	39	303	27	329	14	348	40
11	194	2	232	40	270	53	304	27	329	57	349	15
12	195	20	233	58	272	6	305	26	330	41	349	50
13	196	35	235	15	273	20	306	25	331	24	350	23
14	197	53	236	32	274	32	307	23	332	6	350	58
15	199	10	237	50	275	45	308	19	332	48	351	34
16	200	26	239	8	276	57	309	16	333	30	352	7
17	201	43	240	26	278	9	310	12	334	11	352	41
18	203	0	241	43	279	20	311	8	334	52	353	16
19	204	17	243	1	280	31	312	3	335	34	353	50
20	205	34	244	18	281	41	312	57	336	14	354	24
21	206	51	245	26	282	51	313	51	336	53	354	57
22	208	9	246	53	284	0	314	45	337	32	355	31
23	209	25	248	10	285	9	315	38	338	12	356	6
24	210	42	249	27	286	19	316	29	338	51	356	39
25	211	59	250	44	287	27	317	20	339	29	357	13
26	213	17	252	2	288	34	318	12	340	8	357	46
27	214	33	253	19	289	42	319	3	340	47	358	21
28	215	50	254	35	290	48	319	53	341	24	358	54
29	217	9	255	51	291	55	320	42	342	1	359	27
30	218	26	257	7	293	0	321	31	342	38	360	0

TABLES

OF

OBlique ASCENSIONS.

43° NORTH LATITUDE—NORTHERN SIGNS.

Long.	♈	♉	♊	♋	♌	♍	♎	♏
1	0 33	17 35	38 34	67 12	103 26	142 29		
2	1 5	18 12	39 22	68 18	104 43	143 48		
3	1 33	18 48	40 12	69 25	105 59	145 5		
4	2 10	19 26	41 2	70 34	107 17	146 23		
5	2 43	20 4	41 54	71 41	108 35	147 41		
6	3 17	20 41	42 44	72 49	109 53	149 0		
7	3 49	21 19	43 35	73 58	111 11	150 17		
8	4 23	21 59	44 28	75 8	112 29	151 34		
9	4 56	22 37	45 22	76 17	113 47	152 53		
10	5 29	23 16	46 15	77 28	115 5	154 11		
11	6 2	23 56	47 9	78 38	116 23	155 29		
12	6 35	24 37	48 3	79 49	117 41	155 46		
13	7 9	25 17	48 59	81 1	118 59	158 4		
14	7 42	25 57	49 54	82 13	120 17	159 22		
15	8 16	26 38	50 51	83 25	121 36	160 40		
16	8 50	27 19	51 47	84 38	122 55	161 56		
17	9 24	28 1	52 45	85 51	124 13	163 15		
18	9 56	28 43	53 43	87 5	125 31	164 31		
19	10 31	29 27	54 42	88 19	126 50	165 50		
20	11 5	30 9	55 42	89 33	128 8	167 7		
21	11 39	30 53	56 42	90 48	129 26	168 24		
22	12 14	31 37	57 42	92 2	130 45	169 41		
23	12 49	32 21	58 42	93 17	132 3	170 59		
24	13 24	33 5	59 45	94 32	133 21	172 17		
25	13 59	33 51	60 47	95 48	134 40	173 33		
26	14 35	34 37	61 50	97 4	135 58	174 50		
27	15 9	35 23	62 53	98 20	137 16	176 8		
28	15 46	36 11	63 57	99 36	138 34	177 25		
29	16 22	36 58	65 2	100 52	139 53	178 43		
30	16 58	37 46	66 7	102 10	141 10	180 0		

TABLES

OF

OBlique ASCENSIONS.

43° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	△		Ⅲ		♀		♂		★★		⌘	
	°	'	°	'	°	'	°	'	°	'	°	'
1	181	17	220	7	259	8	294	58	323	2	343	38
2	182	35	221	26	260	24	296	3	323	49	344	14
3	183	52	222	44	261	40	297	7	324	37	344	51
4	185	10	224	2	262	56	298	10	325	23	345	25
5	186	27	225	20	264	12	299	13	326	9	346	1
6	187	43	226	39	265	28	300	15	326	55	346	36
7	189	1	227	57	266	43	301	18	327	39	347	11
8	190	19	229	15	267	58	302	18	328	23	347	46
9	191	36	230	34	269	12	303	18	329	7	348	21
10	192	53	231	52	270	27	304	18	329	51	348	55
11	194	10	233	10	271	41	305	18	330	33	349	29
12	195	29	234	29	272	55	306	17	331	17	350	4
13	196	45	235	47	274	9	307	15	331	59	350	36
14	198	4	237	5	275	22	308	13	332	41	351	10
15	199	20	238	24	276	35	309	9	333	22	351	44
16	200	38	239	43	277	47	310	6	334	3	352	18
17	201	56	241	1	278	59	311	1	334	43	352	51
18	203	14	242	19	280	11	311	57	335	23	353	25
19	204	31	243	37	281	22	312	51	336	4	353	58
20	205	49	244	55	282	32	313	45	336	44	354	31
21	207	7	246	13	283	43	314	38	337	23	355	4
22	208	26	247	31	284	52	315	32	338	1	355	87
23	209	43	248	49	286	2	316	25	338	41	356	11
24	211	0	250	7	287	11	317	16	339	19	356	43
25	212	19	251	25	288	19	318	6	339	56	357	17
26	213	37	252	43	289	26	318	58	340	34	357	50
27	214	55	254	1	290	35	319	48	341	12	358	22
28	216	12	255	17	291	42	320	38	341	48	358	55
29	217	31	256	34	292	48	321	26	342	25	359	27
30	218	50	257	50	293	53	322	14	343	2	360	0

TABLES

OF

OBlique ASCENSIONS.

44° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈	♉	♊	♋	♌	♍	♎					
	°	,	°	,	°	,	°	,	°	,	°	,
1	0	32	17	10	37	49	66	18	102	43	142	6
2	1	4	17	47	38	37	67	25	104	0	143	26
3	1	35	18	22	39	25	68	32	105	17	144	45
4	2	7	18	59	40	15	69	40	106	35	146	3
5	2	39	19	36	41	6	70	47	107	55	147	22
6	3	12	20	18	41	56	71	55	109	13	148	41
7	3	44	20	50	42	47	73	5	110	31	149	59
8	4	16	21	29	43	39	74	15	111	50	151	17
9	4	49	22	7	44	33	75	24	113	8	152	27
10	5	21	22	45	45	25	76	35	114	27	153	55
11	5	53	23	23	46	18	77	45	115	46	155	13
12	6	26	24	4	47	12	78	56	117	4	156	41
13	6	58	24	43	48	8	80	8	118	23	157	50
14	7	31	25	23	49	3	81	21	119	42	159	8
15	8	3	26	3	49	59	82	33	121	1	160	27
16	8	36	26	44	50	55	83	47	122	21	161	45
17	9	10	27	25	51	52	85	0	123	39	163	4
18	9	41	28	6	52	50	86	14	124	58	164	22
19	10	15	28	50	53	49	87	28	126	17	165	41
20	10	49	29	31	54	49	88	43	127	37	166	59
21	11	23	30	14	55	48	89	59	128	55	168	17
22	11	57	30	58	56	49	91	13	130	15	169	35
23	12	21	31	41	57	49	92	29	131	34	170	54
24	13	5	32	25	58	51	93	44	132	53	172	12
25	13	40	33	11	59	53	95	0	134	12	173	29
26	14	15	33	55	60	56	96	17	135	31	174	47
27	14	49	34	41	61	59	97	33	136	50	176	5
28	15	24	35	28	63	3	98	51	138	9	177	24
29	16	0	36	15	64	8	100	7	139	28	178	42
30	16	35	37	1	65	13	101	25	140	47	180	0

TABLES

OF

OBlique ASCENSIONS.

44° NORTH LATITUDE—SOUTHERN SIGNS.

Long	△	Ⅲ	‡	▢	₩	₩	₩					
	°	'	°	'	°	'	°					
1	181	18	220	32	259	53	295	52	323	45	344	0
2	182	36	221	51	261	9	296	57	324	32	344	36
3	183	55	223	10	262	27	298	1	325	19	345	11
4	185	13	224	29	263	43	299	4.	326	5	345	45
5	186	31	225	48	265	0	300	7	326	49	346	20
6	187	48	227	7	266	16	301	9	327	35	346	55
7	189	6	228	26	267	31	302	11	328	19	347	39
8	190	25	229	45	268	47	303	11	329	2	348	3
9	191	43	231	5	270	1	304	12	329	46	348	37
10	193	1	232	23	271	17	305	11	330	29	349	11
11	194	19	233	43	272	32	306	11	331	10	349	45
12	195	38	235	2	273	46	307	10	331	54	350	18
13	196	56	236	21	275	0	308	8	332	35	350	50
14	198	15	237	39	276	13	309	5	333	16	351	24
15	199	33	238	59	277	27	310	1	333	57	351	57
16	200	52	240	18	278	39	310	57	334	37	352	29
17	202	10	241	37	279	52	311	52	335	17	353	2
18	203	29	242	56	281	4	312	48	335	56	353	34
19	204	47	244	14	282	15	313	42	336	37	354	7
20	206	5	245	33	283	25	314	35	337	15	354	39
21	207	23	246	52	284	36	315	27	337	53	355	11
22	208	43	248	10	285	45	316	21	338	31	355	44
23	210	1	249	29	286	55	317	13	339	10	356	16
24	211	19	250	47	288	5	318	4	339	47	356	48
25	212	38	252	5	289	13	318	54	340	34	357	21
26	213	57	253	25	290	20	319	45	341	1	357	53
27	215	15	254	43	291	28	320	35	341	38	358	25
28	216	34	256	0	292	35	321	23	342	13	358	56
29	217	54	257	17	293	42	322	11	342	50	359	28
30	219	13	258	35	294	47	323	59	343	25	360	0

TABLES
OF
OBLIQUE ASCENSIONS.

45° NORTH LATITUDE—NORTHERN SIGNS.

Long	♀		♂		II		☿		♃		♄		♅	
	°	'	°	'	°	'	°	'	°	'	°	'	°	'
1	0	31	16	46	37	2	65	21	101	57	141	43		
2	1	2	17	21	37	49	66	28	103	14	143	4		
3	1	33	17	55	38	38	67	35	104	32	144	23		
4	2	4	18	32	39	27	68	43	105	51	145	42		
5	2	35	19	8	40	18	69	51	107	10	147	2		
6	3	7	19	44	41	7	70	59	108	29	148	21		
7	3	38	20	21	41	57	72	9	109	48	149	40		
8	4	10	20	59	42	48	73	19	111	8	151	0		
9	4	41	21	36	43	41	74	28	112	27	152	20		
10	5	12	22	13	44	34	75	39	113	46	153	38		
11	5	44	22	51	45	26	76	49	115	6	154	56		
12	6	16	23	30	46	20	78	1	116	26	156	15		
13	6	48	24	9	47	15	79	14	117	46	157	35		
14	7	19	24	48	48	10	80	27	119	5	158	55		
15	7	51	25	27	49	6	81	40	120	25	160	15		
16	8	23	26	7	50	1	82	54	121	46	161	24		
17	8	55	26	48	50	58	84	7	123	5	162	54		
18	9	26	27	28	51	55	85	22	124	24	164	13		
19	9	59	28	10	52	53	86	36	125	45	165	32		
20	10	32	28	50	53	53	87	52	127	5	166	50		
21	11	6	29	33	51	52	89	7	128	24	168	9		
22	11	39	30	16	55	53	90	22	129	45	169	28		
23	12	12	30	58	56	53	91	39	131	5	170	48		
24	12	45	31	41	57	55	92	55	132	24	172	7		
25	13	20	32	26	58	57	94	12	133	44	173	25		
26	13	54	33	11	59	59	95	29	135	4	174	44		
27	14	27	33	56	61	3	96	46	136	23	176	3		
28	15	2	34	42	62	6	98	3	137	43	177	22		
29	15	37	35	29	63	11	99	20	139	4	178	41		
30	16	11	36	15	64	16	100	39	140	23	180	0		

TABLES

OF

OBlique ASCENSIONS.

45° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	△	π	†	▽	■	‡	§
1	181 19	220 56	260 40	296 49	324 31	344 23	
2	182 38	222 17	261 57	297 54	325 18	344 58	
3	183 57	223 37	263 14	298 57	326 4	345 33	
4	185 16	224 56	264 31	300 1	326 49	346 6	
5	186 35	226 16	265 48	301 3	327 34	346 40	
6	187 53	227 36	267 5	302 5	328 19	347 15	
7	189 12	228 55	268 21	303 7	329 2	347 48	
8	190 32	230 15	269 38	304 7	329 44	348 21	
9	191 51	231 36	270 53	305 8	330 27	348 54	
10	193 10	232 55	272 8	306 7	331 10	349 28	
11	194 28	234 15	273 24	307 7	331 50	350 1	
12	195 47	235 36	274 38	308 5	332 32	350 34	
13	197 6	236 55	275 53	309 2	333 12	351 5	
14	198 26	238 14	277 6	309 59	333 53	351 37	
15	199 45	239 35	278 20	310 54	334 33	352 9	
16	201 5	240 55	279 33	311 50	335 12	352 41	
17	202 25	242 14	280 46	312 45	335 51	353 12	
18	203 45	243 34	281 59	313 40	336 30	353 44	
19	205 4	244 54	283 11	314 34	337 9	354 16	
20	206 22	246 14	284 21	315 26	337 47	354 48	
21	207 40	247 33	285 32	316 19	338 24	355 19	
22	209 0	248 52	286 41	317 12	339 1	355 50	
23	210 20	250 12	287 51	318 3	339 39	356 22	
24	211 39	251 31	289 1	318 53	340 16	356 53	
25	212 58	252 50	290 9	319 42	340 52	357 25	
26	214 18	254 9	291 17	320 33	341 28	357 56	
27	215 37	255 28	292 25	321 22	342 5	358 27	
28	216 56	256 46	293 32	322 11	342 39	358 58	
29	218 17	258 3	294 39	323 58	343 14	359 29	
30	219 37	259 21	295 44	323 45	343 49	360 0	

**TABLES
OF
OBlique ASCENSIONS.
46° NORTH LATITUDE—NORTHERN SIGNS.**

Long	♀		♂		II		♂		♀		吸	
	°	'	°	'	°	'	°	'	°	'	°	'
1	0	20	16	19	36	14	64	22	101	10	141	17
2	1	0	16	54	37	0	65	29	102	28	142	39
3	1	31	17	27	37	48	66	36	103	46	144	0
4	2	1	18	3	38	37	67	44	105	6	145	20
5	2	31	18	38	39	26	68	52	106	26	146	41
6	3	2	19	14	40	15	70	0	107	46	148	1
7	3	32	19	49	41	5	71	10	109	5	149	21
8	4	3	20	26	41	55	72	20	110	25	150	41
9	4	34	21	2	42	47	73	20	111	45	152	2
10	5	4	21	38	43	40	74	41	113	5	153	22
11	5	35	22	16	44	32	75	52	114	26	154	42
12	6	6	22	55	45	25	77	4	115	46	156	2
13	6	37	23	33	46	19	78	17	117	7	157	22
14	7	7	24	11	47	13	79	30	118	27	158	42
15	7	38	24	51	48	9	80	43	119	47	160	2
16	8	10	25	29	49	4	81	57	121	9	161	21
17	8	42	26	9	50	1	83	11	122	29	162	43
18	9	12	26	48	50	58	84	27	123	49	164	3
19	9	44	27	30	51	56	85	42	125	10	165	23
20	10	16	28	9	52	55	86	53	126	30	166	42
21	10	48	28	51	53	54	88	13	127	50	168	2
22	11	21	29	33	54	54	89	29	129	12	169	21
23	11	53	30	15	55	54	90	47	130	33	170	42
24	12	25	30	58	56	56	92	3	131	54	172	2
25	12	59	31	42	57	58	93	20	133	14	173	21
26	13	32	32	26	59	0	94	39	134	35	174	41
27	14	4	33	10	60	3	95	56	135	55	176	1
28	14	37	33	56	61	7	97	14	137	16	177	20
29	15	11	34	42	62	12	98	32	138	37	178	49
30	15	45	35	27	63	17	99	51	139	57	180	0

TABLES

OF

OBlique ASCENSIONS.

46° NORTH LATITUDE—SOUTHERN SIGNS.

Long. °	△		II		‡		IV		III		X	
	°	'	°	'	°	'	°	'	°	'	°	'
1	181	20	221	23	261	28	297	48	325	18	344	49
2	182	40	222	44	262	46	298	53	326	4	345	23
3	183	59	224	5	264	4	299	57	326	50	345	56
4	185	19	225	25	265	21	301	0	327	34	346	28
5	186	39	226	46	266	40	302	2	328	18	347	1
6	187	58	228	6	267	57	303	4	329	2	347	35
7	189	18	229	27	269	13	304	6	329	45	348	7
8	190	39	230	48	270	31	305	6	330	27	348	39
9	191	58	232	10	271	47	306	6	331	9	349	12
10	193	18	233	30	273	2	307	5	331	51	349	44
11	194	37	234	50	274	18	308	4	332	20	350	16
12	195	57	236	11	275	33	309	2	333	12	350	48
13	197	17	237	31	276	49	309	59	333	51	351	18
14	198	39	238	51	278	3	310	56	334	31	351	50
15	199	58	240	13	279	17	311	51	335	9	352	22
16	201	18	241	33	280	30	312	47	335	49	352	53
17	202	38	242	53	281	43	313	41	336	27	353	28
18	203	58	244	14	282	56	314	35	337	5	353	54
19	205	18	245	34	284	8	315	28	337	44	354	25
20	206	38	246	55	285	19	316	20	338	22	354	56
21	207	58	248	15	286	30	317	13	338	58	355	26
22	209	19	249	35	287	40	318	5	339	34	355	57
23	210	39	250	55	288	50	318	55	340	11	356	28
24	211	59	252	14	290	0	319	45	340	46	356	58
25	213	19	253	34	291	8	320	34	341	22	357	29
26	214	40	254	54	292	16	321	23	341	57	357	59
27	216	0	256	14	293	24	322	12	342	33	358	29
28	217	21	257	32	294	31	323	0	343	6	359	0
29	218	48	258	50	295	38	323	46	343	41	359	30
30	220	3	260	9	296	43	324	33	344	15	360	0

TABLES
OF
OBLIQUE ASCENSIONS.

47° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈		♉		♊		♋		♌		♍	
	°	'	°	'	°	'	°	'	°	'	°	'
1	0	29	15	52	35	22	63	20	100	20	140	53
2	0	59	16	25	36	7	64	27	101	39	142	15
3	1	28	16	58	36	54	65	34	102	58	143	26
4	1	57	17	33	37	42	66	43	104	18	144	57
5	2	26	18	8	38	31	67	50	105	39	146	18
6	2	56	18	43	39	19	68	58	106	59	147	40
7	3	26	19	17	40	9	70	9	108	20	149	0
8	3	56	19	54	41	0	71	19	109	41	150	21
9	4	26	20	29	41	52	72	29	111	1	151	43
10	4	55	21	4	42	44	73	41	112	23	153	4
11	5	23	21	40	43	35	74	52	113	44	154	25
12	5	55	22	18	44	28	76	4	115	5	155	46
13	6	25	22	56	45	21	77	17	116	26	157	7
14	6	55	23	33	46	15	78	31	117	47	158	28
15	7	25	24	11	47	11	79	45	119	9	159	49
16	7	56	24	49	48	5	80	59	120	31	161	9
17	8	27	25	28	49	1	82	13	121	52	162	31
18	8	56	26	7	49	58	83	30	123	12	163	51
19	9	27	26	48	50	56	84	45	124	34	165	13
20	9	58	27	27	51	55	86	2	125	56	166	33
21	10	30	28	7	52	53	87	18	127	17	167	54
22	11	1	28	49	53	53	88	34	128	40	169	14
23	11	32	29	30	54	53	89	51	130	1	170	36
24	12	4	30	11	55	54	91	7	131	23	171	56
25	12	36	30	55	56	56	92	25	132	44	173	16
26	13	9	31	38	57	59	93	44	134	5	174	37
27	13	40	32	22	59	2	95	2	135	26	175	58
28	14	13	33	7	60	5	96	21	136	47	177	19
29	14	47	33	52	61	10	97	40	138	10	178	39
30	15	19	34	36	62	15	99	0	139	31	180	0

TABLES

OF

OBLIQUE ASCENSIONS.

47° NORTH LATITUDE—SOUTHERN SIGNS.

Long	♈	♉	♊	♋	♌	♍	♎	♏	♐	♑	♒	
	°	,	°	,	°	,	°	,	°	,	°	
1	181	21	221	50	262	20	298	50	326	8	345	13
2	182	41	223	13	263	39	299	55	326	53	345	47
3	184	2	224	34	264	58	300	58	327	38	346	20
4	185	23	225	55	266	16	302	1	328	22	346	51
5	186	44	227	16	267	35	303	4	329	5	347	24
6	188	4	228	37	268	53	304	6	329	49	347	56
7	189	24	229	59	270	9	305	7	330	30	348	28
8	190	46	231	20	271	26	306	7	331	11	348	59
9	192	6	232	43	272	42	307	7	331	53	349	30
10	193	27	234	4	273	58	308	5	332	33	350	2
11	194	47	235	26	275	15	309	4	333	12	350	33
12	196	9	236	48	276	30	310	2	333	53	351	4
13	197	29	238	8	277	47	310	59	334	32	351	33
14	198	51	239	29	279	1	311	55	335	11	352	4
15	200	11	240	51	280	15	312	49	335	49	352	35
16	201	32	242	13	281	29	313	45	336	27	353	5
17	202	53	243	34	282	43	314	39	337	4	353	35
18	204	14	244	55	283	56	315	32	337	42	354	5
19	205	35	246	16	285	8	316	25	338	20	354	35
20	206	56	247	37	286	19	317	16	338	56	355	5
21	208	17	248	59	287	31	318	8	339	31	355	34
22	209	39	250	19	288	41	319	0	340	6	356	4
23	211	0	251	40	289	51	319	51	340	43	356	34
24	212	20	253	1	291	2	320	41	341	17	357	4
25	213	42	254	21	292	10	321	29	341	52	357	34
26	215	3	255	42	293	17	322	18	342	27	358	3
27	216	24	257	2	294	26	323	6	343	2	358	32
28	217	45	258	21	295	33	323	53	343	35	359	1
29	219	7	259	40	296	40	324	38	344	8	359	31
30	220	29	261	0	297	45	325	24	344	41	360	0

TABLES
OF
OBLIQUE ASCENSIONS.

48° NORTH LATITUDE—NORTHERN SIGNS.

Long	♀		♂		π		☿		☿		♃		♄	
	°	'	°	'	°	'	°	'	°	'	°	'	°	'
1	0	28	15	24	34	28	62	15	99	27	140	26		
2	0	56	15	57	35	14	63	22	100	47	141	49		
3	1	25	16	29	36	0	64	29	102	7	143	11		
4	1	53	17	3	36	48	65	38	103	28	144	32		
5	2	22	17	36	37	36	66	46	104	50	145	55		
6	2	51	18	10	38	23	67	54	106	11	147	18		
7	3	20	18	43	39	12	69	5	107	32	148	39		
8	3	49	19	18	40	2	70	15	108	54	150	1		
9	4	18	19	53	40	53	71	25	110	15	151	24		
10	4	46	20	27	41	44	72	37	111	37	152	46		
11	5	15	21	3	42	35	73	48	112	59	154	8		
12	5	44	21	40	43	27	75	1	114	21	155	29		
13	6	13	22	17	44	20	76	15	115	43	156	52		
14	6	42	22	53	45	14	77	29	117	5	158	14		
15	7	12	23	30	46	9	78	43	118	28	159	36		
16	7	42	24	7	47	3	79	58	119	51	160	56		
17	8	12	24	45	47	59	81	12	121	13	162	19		
18	8	39	25	23	48	55	82	29	122	34	163	40		
19	9	10	26	3	49	52	83	45	123	57	165	3		
20	9	40	26	41	50	51	85	2	125	19	166	24		
21	10	10	27	21	51	49	86	19	126	41	167	46		
22	10	41	28	2	52	49	87	36	128	4	169	7		
23	11	11	28	42	53	49	88	54	129	27	170	30		
24	11	42	29	23	54	50	90	11	130	50	171	51		
25	12	13	30	6	55	52	91	30	132	12	173	12		
26	12	44	30	48	56	54	92	50	133	35	174	33		
27	13	15	31	31	57	57	94	8	134	57	175	55		
28	13	47	32	15	59	0	95	27	136	19	177	16		
29	14	20	32	59	60	5	96	46	137	42	178	38		
30	14	52	33	43	61	10	98	7	139	4	180	0		

TABLES
OF
OBLIQUE ASCENSIONS.

48° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	△	Ⅲ	Ⅳ	Ⅴ	Ⅵ	Ⅶ	Ⅷ	Ⅸ	Ⅹ
1	181 22	222 18	263 14	299 55	327 1	345 40			
2	182 44	223 41	264 33	301 0	327 45	346 13			
3	184 5	225 3	265 52	302 3	328 29	346 45			
4	185 27	226 25	267 10	303 6	329 12	347 16			
5	186 48	227 48	268 30	304 8	329 54	347 47			
6	188 9	229 10	269 49	305 10	330 37	348 18			
7	189 30	230 33	271 6	306 11	331 18	348 49			
8	190 53	231 56	272 24	307 11	331 58	349 19			
9	192 14	233 19	273 41	308 11	332 39	349 50			
10	193 36	234 41	274 58	309 9	333 19	350 20			
11	194 57	236 3	276 15	310 8	333 57	350 50			
12	196 20	237 26	277 31	311 5	334 37	351 21			
13	197 41	238 47	278 48	312 1	335 15	351 48			
14	199 4	240 9	280 2	312 57	335 53	352 18			
15	200 24	241 32	281 17	313 51	336 30	352 48			
16	201 46	242 55	282 31	314 46	337 7	353 18			
17	203 8	244 17	283 45	315 40	337 43	353 47			
18	204 31	245 39	284 59	316 33	338 20	354 16			
19	205 52	247 1	286 12	317 25	338 57	354 45			
20	207 14	248 23	287 23	318 16	339 33	355 14			
21	208 36	249 45	288 35	319 7	340 7	355 42			
22	209 59	251 6	289 45	319 58	340 42	356 11			
23	211 21	252 28	290 55	320 48	341 17	356 40			
24	212 42	253 49	292 6	321 37	341 50	357 9			
25	214 5	255 10	293 14	322 24	342 24	357 38			
26	215 28	256 32	294 22	323 12	342 57	358 7			
27	216 49	257 53	295 31	324 0	343 31	358 35			
28	218 11	259 13	296 38	324 46	344 4	359 4			
29	219 34	260 33	297 45	325 32	344 36	359 32			
30	220 56	261 53	298 50	326 17	345 8	360 0			

TABLES

QF

OBLIQUE ASCENSIONS.

49° NORTH LATITUDE—NORTHERN SIGNS.

Long	♀		♂		II		♂		♀		吸	
	°	'	°	'	°	'	°	'	°	'	°	'
1	0	27	14	54	33	33	61	7	98	33	139	58
2	0	55	15	26	34	19	62	15	99	53	141	23
3	1	22	15	57	35	3	63	22	101	14	142	46
4	1	50	16	30	35	50	64	31	102	36	144	8
5	2	17	17	3	36	37	65	39	103	59	145	32
6	2	45	17	36	37	24	66	47	105	21	146	55
7	3	13	18	8	38	12	67	58	106	42	148	18
8	3	41	18	43	39	1	69	8	108	5	149	40
9	4	9	19	16	39	52	70	19	109	27	151	4
10	4	36	19	50	40	42	71	31	110	50	152	26
11	5	4	20	24	41	33	72	42	112	13	153	50
12	5	33	21	0	42	24	73	55	113	35	155	12
13	6	1	21	36	43	17	75	10	114	58	156	35
14	6	29	22	11	44	10	76	24	116	21	157	58
15	6	57	23	47	45	5	77	39	117	45	159	21
16	7	26	23	23	45	58	78	54	119	9	160	43
17	7	55	24	0	46	54	80	9	120	32	162	7
18	8	22	24	37	47	49	81	26	121	54	163	29
19	8	52	25	17	48	46	82	43	123	18	164	52
20	9	20	25	54	49	45	84	0	124	42	166	14
21	9	50	26	33	50	43	85	18	126	4	167	37
22	10	20	27	13	51	42	86	35	127	29	168	59
23	10	50	27	52	52	42	87	54	128	52	170	23
24	11	19	28	33	53	43	89	12	130	16	171	45
25	11	50	29	15	54	45	90	31	131	39	173	7
26	12	20	29	56	55	47	91	52	133	2	174	30
27	12	50	30	38	56	50	93	11	134	25	175	52
28	13	21	31	21	57	53	94	31	135	48	177	15
29	13	52	32	5	58	57	95	51	137	12	178	37
30	14	23	32	48	60	2	97	12	138	35	180	0

TABLES

OF

OBLIQUE ASCENSIONS.

49° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	△	Ⅲ	‡	○	₩	₩	₩	₩
1	181	23	222	48	264	9	301	3
2	182	45	224	12	265	29	302	7
3	184	8	225	35	266	49	303	10
4	185	30	226	58	268	8	304	13
5	186	53	228	21	269	29	305	15
6	188	15	229	44	270	48	306	17
7	189	37	231	8	272	6	307	18
8	191	1	232	31	273	25	308	18
9	192	23	233	56	274	42	309	17
10	193	46	235	18	276	0	310	15
11	195	8	236	42	277	17	311	14
12	196	31	238	6	278	34	312	11
13	197	53	239	28	279	51	313	6
14	199	17	240	51	281	6	314	2
15	200	39	242	15	282	21	314	55
16	202	2	243	39	283	36	315	50
17	203	25	245	2	284	50	316	43
18	204	48	246	25	286	5	317	36
19	206	10	247	47	287	18	318	27
20	207	34	249	10	288	29	319	18
21	208	56	250	33	289	41	320	8
22	210	20	251	55	290	52	320	59
23	211	42	253	18	292	2	321	48
24	213	5	254	39	293	13	322	36
25	214	28	256	1	294	21	323	23
26	215	52	257	24	295	29	324	10
27	217	14	258	46	296	38	324	57
28	218	37	260	7	297	45	325	41
29	220	2	261	27	298	53	326	27
30	221	25	262	48	299	58	327	12

TABLES

OF

OBlique ASCENSIONS.

50° NORTH LATITUDE—NORTHERN SIGNS.

Long	♀		♂		π		☿		Ω		♃	
	°	'	°	'	°	'	°	'	°	'	°	'
1	0	26	14	24	32	34	59	55	97	36	139	29
2	0	52	14	55	33	17	61	3	98	57	140	55
3	1	19	15	24	34	2	62	10	100	19	142	18
4	1	45	15	56	34	48	63	19	101	41	143	42
5	2	12	16	28	35	35	64	27	103	5	145	7
6	2	39	17	0	36	21	65	36	104	27	146	31
7	3	6	17	32	37	8	66	47	105	50	147	55
8	3	33	18	5	37	57	67	58	107	14	149	19
9	4	0	18	38	38	47	69	8	108	37	150	44
10	4	26	19	10	39	37	70	21	110	1	152	7
11	4	54	19	44	40	27	71	33	111	25	153	31
12	5	21	20	19	41	18	72	46	112	49	154	54
13	5	48	20	54	42	10	74	1	114	13	156	18
14	6	15	21	28	43	3	75	16	115	36	157	42
15	6	42	22	3	43	57	76	31	117	1	159	6
16	7	10	22	38	44	50	77	46	118	26	160	29
17	7	38	23	15	45	45	79	2	119	50	161	54
18	8	4	23	51	46	40	80	20	121	13	163	17
19	8	33	24	29	47	37	81	37	122	38	164	42
20	9	1	25	5	48	35	82	55	124	2	166	4
21	9	30	25	43	49	32	84	13	125	26	167	28
22	9	58	26	22	50	32	85	31	126	51	168	51
23	10	27	27	0	51	31	86	50	128	16	170	16
24	10	55	27	39	52	32	88	9	129	40	171	39
25	11	25	28	21	53	33	89	29	131	4	173	2
26	11	54	29	1	54	35	90	50	132	28	174	25
27	12	22	29	43	55	38	92	10	133	52	175	49
28	12	53	30	25	56	41	93	31	135	17	177	12
29	13	28	31	8	57	45	94	52	136	42	178	36
30	13	53	31	51	58	50	96	15	138	5	180	0

TABLES

OF

OBlique ASCENSIONS.

50° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	N		W		E		SE		SW		NE	
	°	'	°	'	°	'	°	'	°	'	°	'
1	181	24	223	18	265	8	302	15	328	52	346	37
2	182	48	224	43	266	29	303	19	329	35	347	7
3	184	11	226	8	267	50	304	22	330	17	347	38
4	185	35	227	32	269	10	305	25	330	59	348	6
5	186	58	228	56	270	31	306	27	331	39	348	35
6	188	21	230	20	271	51	307	28	332	21	349	5
7	189	44	231	44	273	10	308	29	333	0	349	30
8	191	9	233	9	274	29	309	28	333	28	340	2
9	192	32	234	34	275	47	310	28	334	17	350	30
10	193	56	235	58	277	5	311	25	334	55	350	59
11	195	18	237	23	278	23	312	23	335	31	351	27
12	196	43	238	47	279	40	313	20	336	9	351	56
13	198	6	240	10	280	58	314	15	336	45	352	22
14	199	31	241	34	282	14	315	10	337	22	352	50
15	200	54	242	59	283	29	316	3	337	57	353	18
16	202	18	244	24	284	44	316	57	338	32	353	45
17	203	42	245	47	285	59	317	50	339	6	354	12
18	205	6	247	11	287	14	318	42	339	41	354	39
19	206	29	248	35	288	27	319	33	340	16	355	6
20	207	53	249	59	289	39	320	23	340	50	355	34
21	209	16	251	23	290	52	321	13	341	22	356	0
22	210	41	252	46	292	2	322	3	341	55	356	27
23	212	5	254	10	293	13	322	52	342	28	356	54
24	213	29	255	33	294	24	323	39	343	0	357	21
25	214	53	256	55	295	33	324	25	343	32	357	48
26	216	18	258	19	296	41	325	12	344	4	358	15
27	217	42	259	41	297	50	325	58	344	36	358	41
28	219	5	261	3	298	57	326	43	345	5	359	8
29	220	31	262	24	300	5	327	26	345	36	359	34
30	221	55	263	45	301	10	328	9	346	7	360	0

TABLES

QH

OBlique ASCENSIONS.

51° NORTH LATITUDE—NORTHERN SIGNS.

Long	F	S	II	Sc	R	吸
1	0 25	13 51	31 32	58 40	96 36	139 0
2	0 51	14 21	32 15	59 48	97 58	140 26
3	1 16	14 50	32 59	60 55	99 21	141 51
4	1 42	15 21	33 44	62 4	100 44	143 15
5	2 7	15 52	34 31	63 12	102 9	144 42
6	2 33	16 22	35 16	64 21	103 32	146 7
7	2 58	16 53	36 2	65 32	104 56	147 31
8	3 25	17 25	36 50	66 44	106 21	148 56
9	3 51	17 57	37 39	67 54	107 45	150 22
10	4 16	18 28	38 29	69 7	109 10	151 46
11	4 42	19 1	39 18	70 19	110 34	153 11
12	5 8	19 36	40 8	71 33	111 59	154 36
13	5 35	20 9	41 0	72 48	113 24	156 1
14	6 1	20 42	41 52	74 3	114 49	157 26
15	6 27	21 16	42 45	75 19	116 14	158 51
16	6 54	21 51	43 37	76 36	117 40	160 15
17	7 21	22 26	44 32	77 52	119 5	161 41
18	7 46	23 1	45 27	79 10	120 30	163 4
19	8 13	23 38	46 23	80 28	121 55	164 30
20	8 40	24 14	47 21	81 47	123 20	165 54
21	9 8	24 51	48 18	83 5	124 45	167 19
22	9 36	25 29	49 18	84 24	126 11	168 43
23	10 3	26 6	50 16	85 44	127 37	170 8
24	10 31	26 44	51 17	87 4	129 2	171 33
25	10 59	27 25	52 18	88 25	130 28	172 57
26	11 27	28 4	53 20	89 46	131 53	174 22
27	11 55	28 45	54 23	91 7	133 18	175 46
28	12 24	29 26	55 26	92 29	134 43	177 11
29	12 53	30 8	56 30	93 50	136 9	178 35
30	13 22	30 50	57 34	95 14	137 34	180 0

TABLES

OF

OBlique ASCENSIONS.

51° NORTH LATITUDE--SOUTHERN SIGNS.

Long ^o	♈	♉	♊	♋	♌	♍	♎	♏	♐	♑	♒	
1	181	25	223	51	266	10	303	30	329	52	347	7
2	182	49	225	17	267	31	304	34	330	34	347	36
3	184	14	226	42	268	53	305	37	331	15	348	5
4	185	38	228	7	270	14	306	40	331	56	348	33
5	187	3	229	32	271	35	307	42	332	35	349	1
6	188	27	230	58	272	56	308	43	333	16	349	29
7	189	52	232	23	274	16	309	44	333	54	349	57
8	191	17	233	49	275	36	310	42	334	31	350	24
9	192	41	235	15	276	55	311	42	335	9	350	52
10	194	6	236	40	278	18	312	39	335	46	351	20
11	195	30	238	5	279	32	313	37	336	22	351	47
12	196	56	239	30	280	50	314	33	336	59	352	14
13	198	19	240	55	282	8	315	28	337	34	352	39
14	199	45	242	20	283	24	316	23	338	9	353	6
15	201	9	243	46	284	41	317	15	338	44	353	33
16	202	34	245	11	285	57	318	8	339	18	353	59
17	203	59	246	36	287	12	319	0	339	51	354	25
18	205	24	248	1	288	27	319	52	340	24	354	52
19	206	49	249	26	289	41	320	42	340	59	355	18
20	208	14	250	50	290	53	321	31	341	32	355	44
21	209	38	252	15	292	6	322	21	342	3	356	9
22	211	4	253	39	293	16	323	10	342	35	356	35
23	212	29	255	4	294	28	323	58	343	7	357	2
24	213	53	256	28	295	39	324	44	343	38	357	27
25	215	18	257	51	296	48	325	29	344	8	357	53
26	216	45	259	16	297	56	326	16	344	39	358	18
27	218	9	260	39	299	5	327	1	345	10	358	44
28	219	34	262	2	300	12	327	45	345	39	359	9
29	221	0	263	24	301	20	328	28	346	9	359	35
30	222	26	264	46	302	26	329	10	346	38	360	0

TABLES
OF
OBLIQUE ASCENSIONS.

52° NORTH LATITUDE—NORTHERN SIGNS.

Long	♀		♂		□		◎		Ω		吸	
	°	'	°	'	°	'	°	'	°	'	°	'
1	0	24	13	18	30	27	57	20	95	33	138	28
2	0	48	13	47	31	9	58	27	96	56	139	56
3	1	13	14	14	31	52	59	84	98	19	141	21
4	1	37	14	44	32	36	60	44	99	45	142	47
5	2	1	15	14	33	22	61	52	101	10	144	14
6	2	26	15	44	34	8	63	1	102	34	145	41
7	2	51	16	13	34	52	64	13	103	59	147	6
8	3	16	16	45	35	39	65	25	105	25	148	32
9	3	41	17	15	36	28	66	36	106	49	150	0
10	4	6	17	45	37	16	67	49	108	14	151	25
11	4	31	18	17	38	4	69	2	109	41	152	51
12	4	56	18	50	38	54	70	16	111	7	154	16
13	5	21	19	22	39	45	71	31	112	33	155	42
14	5	46	19	54	40	37	72	47	113	59	157	9
15	6	11	20	27	41	30	74	4	115	25	158	35
16	6	37	21	1	42	21	75	21	116	52	160	0
17	7	2	21	35	43	15	76	37	118	18	161	27
18	7	26	22	9	44	10	77	56	119	44	162	52
19	7	53	23	45	45	6	79	14	121	11	164	19
20	8	19	23	19	46	3	80	34	122	37	165	44
21	8	46	23	55	47	0	81	54	124	3	167	9
22	9	12	24	33	47	59	83	13	125	31	168	34
23	9	38	25	9	48	57	84	34	126	57	170	1
24	10	5	25	46	49	57	85	56	128	24	171	26
25	10	32	26	26	50	58	87	16	129	50	172	51
26	10	59	27	4	52	0	88	38	131	16	174	17
27	11	25	27	43	53	2	90	0	132	42	175	43
28	11	54	28	24	54	5	91	23	134	9	177	8
29	12	22	29	5	55	10	92	45	135	36	178	34
30	12	50	29	46	56	15	94	10	137	2	180	0

TABLES
OF
OBLIQUE ASCENSIONS.

52° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	△		π		†		β		ω		κ	
	°	'	°	'	°	'	°	'	°	'	°	'
1	181	26	224	24	267	15	304	50	330	55	347	38
2	182	52	225	51	268	37	305	55	331	86	348	6
3	184	17	227	18	270	0	306	58	332	17	348	85
4	185	43	228	44	271	22	308	0	332	56	349	1
5	187	9	230	10	272	44	309	2	333	84	349	28
6	188	34	231	36	274	4	310	3	334	14	349	55
7	189	59	233	3	275	26	311	3	334	51	350	22
8	191	26	234	29	276	47	312	1	335	27	350	48
9	192	51	235	57	278	6	313	0	336	5	351	14
10	194	16	237	23	279	26	313	57	336	41	351	41
11	195	41	238	49	280	46	314	54	337	15	352	7
12	197	8	240	16	282	4	315	50	337	51	352	34
13	198	33	241	42	283	23	316	45	338	25	352	58
14	200	0	243	8	284	39	317	39	338	59	353	23
15	201	25	244	35	285	56	318	80	339	33	353	49
16	202	51	246	1	287	13	319	28	340	6	354	14
17	204	18	247	27	288	29	320	15	340	38	354	39
18	205	44	248	53	289	44	321	6	341	10	355	4
19	207	9	250	19	290	58	321	56	341	43	355	29
20	208	35	251	46	292	11	322	44	342	15	355	54
21	210	0	253	11	293	24	323	32	342	45	356	19
22	211	28	254	35	294	35	324	21	343	15	356	44
23	212	54	256	1	295	47	325	8	343	47	357	9
24	214	19	257	26	296	59	325	52	344	16	357	34
25	215	46	258	50	298	8	326	38	344	46	357	59
26	217	13	260	15	299	16	327	24	345	16	358	23
27	218	39	261	41	300	26	329	8	345	46	358	47
28	220	4	263	4	301	33	328	51	346	13	359	12
29	221	32	264	27	302	40	329	33	346	42	359	36
30	222	58	265	50	303	45	330	14	347	10	360	0

TABLES

OF

OBlique ASCENSIONS.

53° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈	♉	♊	♋	♌	♍	♎
1	0 23	12 42	29 19	55 54	94 26	137 55	
2	0 46	13 10	29 59	57 2	95 50	139 24	
3	1 9	13 37	30 41	58 9	97 14	140 51	
4	1 32	14 5	31 25	59 19	98 40	142 18	
5	1 56	14 34	32 10	60 28	100 7	143 46	
6	2 20	15 2	32 53	61 37	101 32	145 14	
7	2 43	15 31	33 38	62 49	102 58	146 40	
8	3 7	16 1	34 24	64 1	104 25	148 7	
9	3 31	16 30	35 12	65 12	105 51	149 35	
10	3 54	16 59	35 59	66 26	107 18	151 2	
11	4 18	17 29	36 47	67 39	108 44	152 29	
12	4 42	18 2	37 36	68 54	110 12	153 56	
13	5 6	18 33	38 26	70 10	111 39	155 23	
14	5 30	19 4	39 17	71 26	113 6	156 51	
15	5 54	19 36	40 9	72 43	114 34	158 18	
16	6 19	20 8	41 0	74 1	116 2	159 44	
17	6 43	20 41	41 54	75 18	117 29	161 12	
18	7 6	21 14	42 48	76 38	118 56	162 38	
19	7 31	21 49	43 43	77 57	120 23	164 6	
20	7 56	22 22	44 40	79 17	121 51	165 32	
21	8 21	22 57	45 36	80 38	123 18	166 59	
22	8 47	23 33	46 35	81 58	124 47	168 25	
23	9 12	24 8	47 33	83 20	126 15	169 53	
24	9 38	24 44	48 33	84 41	127 42	171 20	
25	10 4	25 23	49 34	86 4	129 10	172 46	
26	10 30	26 0	50 35	87 27	130 37	174 12	
27	10 55	26 38	51 37	88 49	132 5	175 39	
28	11 22	27 18	52 40	90 13	133 82	177 6	
29	11 49	27 58	53 44	91 37	135 0	178 33	
30	12 15	28 38	54 49	93 2	136 27	180 0	

TABLES
OF
OBLIQUE ASCENSIONS.

53° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	△		卯		♀		♂		☴		☷	
	°	'	°	'	°	'	°	'	°	'	°	'
1	181	27	225	0	268	23	306	16	332	2	348	11
2	182	54	226	28	269	47	307	20	332	42	348	38
3	184	21	227	55	271	11	308	23	333	22	349	5
4	185	48	229	23	272	33	309	25	334	0	349	30
5	187	14	230	50	273	56	310	26	334	37	349	56
6	188	40	232	18	275	19	311	27	335	16	350	22
7	190	7	233	45	276	40	312	27	335	52	350	48
8	191	35	235	13	278	2	313	25	336	27	351	13
9	193	1	236	42	279	22	314	24	337	3	351	39
10	194	28	238	9	280	43	315	20	337	38	352	4
11	195	54	239	37	282	3	316	17	338	11	352	29
12	197	22	241	4	283	22	317	12	338	46	352	54
13	198	48	242	31	284	42	318	6	339	19	353	17
14	200	16	243	58	285	59	319	0	339	52	353	41
15	201	42	245	26	287	17	319	51	340	24	354	16
16	203	9	246	54	288	34	320	43	340	56	354	30
17	204	37	248	21	289	50	321	34	341	27	354	54
18	206	4	249	48	291	6	322	24	341	58	355	18
19	207	31	251	16	292	21	323	13	342	31	355	42
20	208	58	252	42	293	34	324	1	343	1	356	6
21	210	25	254	9	294	48	324	48	343	30	356	29
22	211	53	255	35	295	59	325	36	343	59	356	53
23	213	20	257	2	297	11	326	22	344	29	357	17
24	214	40	258	28	298	23	327	7	344	58	357	40
25	216	14	259	53	299	32	327	50	345	26	358	4
26	217	42	261	20	300	41	328	35	345	55	358	28
27	219	9	262	46	301	51	329	19	346	23	358	51
28	220	36	264	10	302	58	330	1	346	50	359	14
29	222	5	265	34	304	6	330	41	347	18	359	37
30	223	33	266	58	305	11	331	22	347	45	360	0

TABLES

OF

OBlique ASCENSIONS.

54° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈	♉	♊	♋	♌	♍	♎	♏	♐	♑
1	0 22	13 5	28 5	54 23	93 16	137 20				
2	0 44	12 31	28 45	55 31	94 41	138 51				
3	1 6	12 57	29 26	56 38	96 6	140 19				
4	1 28	13 24	30 9	57 48	97 33	141 47				
5	1 50	13 52	30 53	58 58	99 1	143 16				
6	2 13	14 19	31 35	60 7	100 27	144 45				
7	2 35	14 46	32 19	61 19	101 54	146 13				
8	2 58	15 15	33 4	62 32	103 23	147 40				
9	3 21	15 43	33 51	63 43	104 50	149 10				
10	3 43	16 11	34 38	64 58	106 18	150 38				
11	4 5	16 40	35 25	66 11	107 46	152 7				
12	4 28	17 11	36 13	67 26	109 14	153 35				
13	4 51	17 41	37 2	68 43	110 42	155 3				
14	5 14	18 11	37 52	70 0	112 10	156 31				
15	5 36	18 42	38 44	71 18	113 40	158 0				
16	5 59	19 12	39 34	72 36	115 9	159 28				
17	6 23	19 44	40 27	73 54	116 37	160 57				
18	6 45	20 16	41 20	75 15	118 5	162 24				
19	7 9	20 50	42 15	76 35	119 34	163 53				
20	7 32	21 22	43 12	77 56	121 3	165 21				
21	7 56	21 56	44 7	79 17	122 31	166 49				
22	8 20	22 31	45 6	80 38	124 1	168 16				
23	8 45	23 4	46 3	82 1	125 30	169 45				
24	9 9	23 39	47 3	83 23	126 59	171 13				
25	9 34	24 17	48 4	84 47	128 28	172 40				
26	9 59	24 53	49 4	86 11	129 56	174 3				
27	10 23	25 30	50 6	87 34	131 25	175 36				
28	10 49	26 9	51 9	88 59	132 53	177 4				
29	11 14	26 48	52 13	90 23	134 23	178 32				
30	11 40	27 26	53 18	91 50	135 52	180 0				

TABLES

OF

OBlique ASCENSIONS.

54° NORTH LATITUDE—SOUTHERN SIGNS.

Long. Lat.	△		π		‡		√S		ω		×	
	°	'	°	'	°	'	°	'	°	'	°	'
1	181	28	225	37	269	37	307	47	333	12	348	46
2	182	56	227	7	271	1	308	51	333	51	349	11
3	184	24	228	85	272	26	309	54	334	30	349	37
4	185	52	230	4	273	49	310	56	335	7	350	1
5	187	20	231	32	275	13	311	56	335	43	350	26
6	188	47	233	1	276	37	312	57	336	21	350	51
7	190	15	234	30	277	59	313	57	336	56	351	15
8	191	44	235	59	279	22	314	54	337	29	351	40
9	193	11	237	29	280	43	315	53	338	4	352	4
10	194	39	238	57	282	4	316	48	338	38	352	28
11	196	7	240	26	283	25	317	45	339	10	352	51
12	197	36	241	55	284	45	318	40	339	44	353	15
13	199	3	243	23	286	6	319	33	340	16	353	37
14	200	32	244	51	287	24	320	36	340	48	354	1
15	202	0	246	20	288	42	321	16	341	18	354	24
16	203	29	247	50	290	0	322	8	341	49	354	46
17	204	57	249	18	291	17	322	58	342	19	355	9
18	206	25	250	46	292	34	323	47	342	49	355	32
19	207	53	252	14	293	49	324	35	343	20	355	55
20	209	22	253	42	295	2	325	22	343	49	356	17
21	210	50	255	10	296	17	326	9	344	17	356	39
22	212	20	256	37	297	28	326	56	344	45	357	2
23	213	47	258	6	298	41	327	41	345	14	357	25
24	215	15	259	83	299	53	328	25	345	41	357	47
25	216	44	260	59	301	2	329	7	346	8	358	10
26	218	13	262	27	302	12	329	51	346	36	358	32
27	219	41	263	54	303	22	330	34	347	3	358	54
28	221	9	265	19	304	29	331	15	347	29	359	16
29	222	40	266	44	305	37	331	55	347	55	359	38
30	224	8	268	10	306	42	332	34	348	20	360	0

TABLES

OF

OBlique ASCENSIONS.

55° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈	♉	♊	♋	♌	♍	♎	♏	♑
1	0 21	11 26	26 48	52 46	92 1	136	44		
2	0 41	11 51	27 27	53 54	93 27	138	16		
3	1 2	12 15	28 6	55 2	94 53	139	45		
4	1 23	12 41	28 48	56 12	96 22	141	14		
5	1 44	13 7	29 31	57 21	97 51	142	45		
6	2 5	13 34	30 12	58 30	99 19	144	15		
7	2 26	13 59	30 55	59 43	100 47	145	44		
8	2 47	14 27	31 39	60 56	102 17	147	13		
9	3 9	14 54	32 25	62 8	103 44	148	44		
10	3 30	15 21	33 11	63 23	105 14	150	13		
11	3 52	15 48	33 56	64 37	106 44	151	43		
12	4 13	16 18	34 44	65 52	108 13	153	12		
13	4 35	16 47	35 32	67 10	109 42	154	42		
14	4 56	17 16	36 22	68 28	111 12	156	12		
15	5 17	17 45	37 12	69 46	112 43	157	41		
16	5 40	18 14	38 2	71 6	114 14	159	10		
17	6 2	18 44	38 54	72 24	115 43	160	41		
18	6 22	19 15	39 46	73 46	117 12	162	9		
19	6 45	19 48	40 41	75 6	118 42	163	40		
20	7 7	20 18	41 37	76 29	120 13	165	8		
21	7 30	20 50	42 32	77 51	121 42	166	37		
22	7 53	21 25	43 30	79 13	123 13	168	5		
23	8 16	21 57	44 27	80 37	124 43	169	36		
24	8 39	22 31	45 26	82 0	126 14	171	5		
25	9 3	23 7	46 27	83 25	127 43	172	34		
26	9 26	23 42	47 28	84 50	129 13	174	3		
27	9 49	24 17	48 30	86 14	130 43	175	32		
28	10 14	24 55	49 32	87 41	132 13	177	1		
29	10 38	25 33	50 36	89 6	133 44	178	31		
30	11 2	26 10	51 41	90 34	135 14	180	0		

TABLES
OF
OBLIQUE ASCENSIONS.

55° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	△		Ⅲ		‡		Ⅴ		₩		₩		⌘	
	°	'	°	'	°	'	°	'	°	'	°	'	°	'
1	181	29	226	16	270	54	309	24	334	27	349	22		
2	182	59	227	47	272	19	310	28	335	5	349	46		
3	184	28	229	17	273	46	311	30	335	43	350	11		
4	185	57	230	47	275	10	312	32	336	18	350	34		
5	187	26	232	17	276	35	313	33	336	53	350	57		
6	188	55	233	46	278	0	314	34	337	29	351	21		
7	190	24	235	17	279	23	315	33	338	3	351	44		
8	191	55	236	47	280	47	316	30	338	35	352	7		
9	193	23	238	18	282	9	317	28	339	10	352	30		
10	194	52	239	47	283	31	318	23	339	42	352	53		
11	196	20	241	18	284	54	319	19	340	12	353	15		
12	197	51	242	48	286	14	320	14	340	45	353	38		
13	199	19	244	17	287	36	321	6	341	16	353	58		
14	200	50	245	46	288	54	321	58	341	46	354	20		
15	202	19	247	17	290	14	322	48	342	15	354	43		
16	203	48	248	48	291	32	323	38	342	44	355	4		
17	205	18	250	18	292	50	324	28	343	13	355	25		
18	206	48	251	47	294	8	325	16	343	42	355	47		
19	208	17	253	16	295	23	326	4	344	12	356	8		
20	209	47	254	46	296	37	326	49	344	39	356	30		
21	211	16	256	16	297	52	327	35	345	6	356	51		
22	212	47	257	43	299	4	328	21	345	38	357	13		
23	214	16	259	13	300	17	329	5	346	1	357	34		
24	215	45	260	41	301	30	329	48	346	26	357	55		
25	217	15	262	9	302	39	330	29	346	53	358	16		
26	218	46	263	38	303	48	331	12	347	19	358	37		
27	220	15	265	7	304	58	331	54	347	45	358	58		
28	221	44	266	33	306	6	332	38	348	9	359	19		
29	223	16	267	59	307	14	333	12	348	34	359	39		
30	224	46	269	26	308	19	333	50	348	58	360	0		

TABLES

OF

OBlique ASCENSIONS.

56° NORTH LATITUDE—NORTHERN SIGNS.

Long	♀		♂		π		♂		♀		吸	
	°	'	°	'	°	'	°	'	°	'	°	'
1	0	19	10	45	25	25	51	1	90	41	136	5
2	0	39	11	9	26	3	52	10	92	8	137	38
3	0	58	11	31	26	42	53	17	93	36	139	9
4	1	18	11	56	27	22	54	28	95	5	140	40
5	1	37	12	21	28	3	55	37	96	36	142	11
6	1	57	12	46	28	43	56	46	98	5	143	43
7	2	17	13	10	29	25	57	59	99	35	145	14
8	2	37	13	36	30	8	59	13	101	6	146	44
9	2	58	14	2	30	53	60	26	102	35	148	17
10	3	17	14	27	31	37	61	41	104	6	149	47
11	3	37	14	53	32	22	62	56	105	38	151	18
12	3	58	15	21	33	8	64	12	107	8	152	48
13	4	18	15	49	33	56	65	30	108	39	154	20
14	4	38	16	16	34	45	66	49	110	10	155	51
15	4	58	16	44	35	34	68	8	111	42	157	22
16	5	19	17	12	36	23	69	29	113	14	158	52
17	5	40	17	41	37	14	70	48	114	45	160	24
18	5	58	18	10	38	6	72	10	116	15	161	54
19	6	20	18	42	39	0	73	32	117	47	163	25
20	6	41	19	10	39	55	74	55	119	19	164	55
21	7	3	19	41	40	50	76	19	120	50	166	26
22	7	24	20	14	41	47	77	42	122	22	167	55
23	7	46	20	45	42	43	79	7	123	54	169	27
24	8	7	21	17	43	42	80	31	125	26	170	57
25	8	29	21	52	44	43	81	57	126	57	172	27
26	8	52	22	25	45	44	83	24	128	28	173	58
27	9	13	23	0	46	45	84	50	129	59	175	28
28	9	36	23	36	47	48	86	17	131	31	176	59
29	9	59	24	13	48	51	87	43	133	3	178	29
30	10	23	24	49	49	56	89	13	134	34	180	0

TABLES

OF

OBlique ASCENSIONS.

56° NORTH LATITUDE—SOUTHERN SIGNS.

Long. ss	△		¶		†		‡		§		||	
	°	'	°	'	°	'	°	'	°	'	°	'
1	181	31	226	57	272	17	311	9	335	47	350	1
2	183	1	228	29	273	43	312	12	336	24	350	24
3	184	32	230	1	275	10	313	15	337	0	350	47
4	186	2	231	32	276	36	314	16	337	35	351	8
5	187	33	233	3	278	3	315	17	338	8	351	31
6	189	3	234	34	279	29	316	18	338	43	351	58
7	190	33	236	6	280	53	317	17	339	15	352	14
8	192	5	237	38	282	18	318	13	339	46	352	36
9	193	34	239	10	283	41	319	10	340	19	352	57
10	195	5	240	41	285	5	320	5	340	50	353	19
11	196	35	242	13	286	28	321	0	341	18	353	40
12	198	6	243	45	287	50	321	54	341	50	354	2
13	199	36	245	15	289	12	322	46	342	19	354	20
14	201	8	246	46	290	31	323	37	342	48	354	41
15	202	38	248	18	291	52	324	26	343	16	355	2
16	204	9	249	50	293	11	325	15	343	44	355	22
17	205	40	251	21	294	30	326	4	344	11	355	42
18	207	12	252	52	295	48	326	52	344	39	356	2
19	208	42	254	22	297	4	327	38	345	7	356	23
20	210	13	255	54	298	19	328	23	345	33	356	43
21	211	43	257	25	299	34	329	7	345	58	357	2
22	213	16	258	54	300	47	329	52	346	24	357	23
23	214	46	260	25	302	1	330	35	346	50	357	43
24	216	17	261	55	303	14	331	17	347	14	358	3
25	217	49	263	24	304	23	331	57	347	39	358	23
26	219	20	264	55	305	32	332	33	348	4	358	42
27	220	51	266	24	306	43	333	18	348	29	359	2
28	222	22	267	52	307	50	333	57	348	51	359	21
29	223	55	269	19	308	59	334	35	349	15	359	41
30	225	26	270	47	310	4	335	11	349	38	360	0

TABLES
OF
OBLIQUE ASCENSIONS.

57° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈		♉		♊		♋		♌		♍	
	°	'	°	'	°	'	°	'	°	'	°	'
1	0	18	10	2	23	57	49	8	89	15	135	25
2	0	36	10	24	24	33	50	16	90	44	136	59
3	0	54	10	45	25	10	51	24	92	13	138	22
4	1	12	11	8	25	49	52	35	93	44	140	4
5	1	30	11	32	26	29	53	44	95	17	141	37
6	1	49	11	55	27	8	54	54	96	47	143	10
7	2	7	12	18	27	48	56	8	98	18	144	42
8	2	26	12	42	28	30	57	23	99	51	146	14
9	2	45	13	6	29	14	58	35	101	22	147	48
10	3	3	13	30	29	57	59	52	102	54	149	19
11	3	22	13	55	30	40	61	7	104	27	150	52
12	3	41	14	22	31	26	62	24	105	59	152	24
13	4	0	14	48	32	13	63	43	107	31	153	56
14	4	19	15	13	33	0	65	2	109	4	155	29
15	4	37	15	40	33	49	66	23	110	38	157	1
16	4	57	16	6	34	36	67	44	112	11	158	83
17	5	16	16	33	35	27	69	5	113	44	160	6
18	5	34	17	1	36	18	70	28	115	16	161	37
19	5	54	17	31	37	11	71	50	116	49	163	10
20	6	13	17	58	38	6	73	15	118	22	164	41
21	6	34	18	28	38	59	74	40	119	54	166	13
22	6	54	18	59	39	57	76	4	121	28	167	44
23	7	14	19	28	40	52	77	30	123	2	169	17
24	7	34	19	59	41	50	78	56	124	35	170	49
25	7	55	20	33	42	50	80	23	126	8	172	20
26	8	16	21	4	43	51	81	51	127	40	173	52
27	8	36	21	37	44	52	83	18	129	13	175	24
28	8	57	22	12	45	54	84	47	130	46	176	56
29	9	19	22	47	46	58	86	15	132	20	178	28
30	9	40	23	22	48	3	87	46	133	52	180	0

TABLES

OF

OBlique ASCENSIONS.

57° NORTH LATITUDE—SOUTHERN SIGNS.

Long. ° ,'	Δ		π		♀		♂		♃		♄		♆	
	°	,	°	,	°	,	°	,	°	,	°	,	°	,
1	181	32	227	40	273	45	313	2	337	13	350	41		
2	183	4	229	14	275	13	314	6	337	48	351	3		
3	184	36	230	47	276	42	315	8	338	23	351	24		
4	186	8	232	20	278	9	316	9	338	56	351	44		
5	187	40	233	52	279	37	317	10	339	27	352	5		
6	189	11	235	25	281	4	318	10	340	1	352	26		
7	190	43	236	58	282	30	319	8	340	32	352	46		
8	192	16	238	32	283	56	320	3	341	1	353	6		
9	193	47	240	6	285	20	321	1	341	32	353	26		
10	195	19	241	38	286	45	321	54	342	2	353	47		
11	196	50	243	11	288	10	322	49	342	29	354	6		
12	198	23	244	44	289	33	323	42	342	59	354	26		
13	199	54	246	16	290	55	324	33	343	23	354	44		
14	201	27	247	49	292	16	325	24	343	54	355	3		
15	202	59	249	22	293	37	326	11	344	20	355	23		
16	204	31	250	56	294	58	327	0	344	47	355	41		
17	206	4	252	29	296	17	327	47	345	12	356	0		
18	207	36	254	1	297	36	328	34	345	38	356	19		
19	209	8	255	33	298	53	329	20	346	5	356	38		
20	210	41	257	6	300	8	330	3	346	30	356	57		
21	212	12	258	38	301	25	330	46	346	54	357	15		
22	213	46	260	9	302	37	331	80	347	18	357	34		
23	215	18	261	42	303	52	332	12	347	43	357	53		
24	216	50	263	13	305	6	332	52	348	5	358	11		
25	218	23	264	43	306	16	333	31	348	28	358	30		
26	219	56	266	16	307	25	334	11	348	52	358	48		
27	221	28	267	47	308	36	334	50	349	15	359	6		
28	223	1	269	16	309	44	335	27	349	36	359	24		
29	224	35	270	45	310	52	336	3	349	58	359	42		
30	226	8	272	14	311	57	336	88	350	20	360	0		

TABLES

OF

OBLIQUE ASCENSIONS.

58° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈	♉	♊	♋	♌	♍	♎
1	0 17	9 15	22 22	47 4	87 43	134 42	
2	0 33	9 36	22 56	48 13	89 14	136 18	
3	0 50	9 56	23 32	49 21	90 45	137 51	
4	1 6	10 18	24 9	50 32	92 17	139 25	
5	1 23	10 39	24 48	51 42	93 51	141 0	
6	1 41	11 0	25 25	52 53	95 23	142 35	
7	1 57	11 22	26 4	54 6	96 56	144 8	
8	2 15	11 45	26 44	55 22	98 30	145 41	
9	2 32	12 7	27 26	56 35	100 3	147 17	
10	2 49	12 29	28 9	57 52	101 37	148 50	
11	3 6	12 52	28 51	59 8	103 12	150 24	
12	3 24	13 18	29 35	60 26	104 45	151 57	
13	3 41	13 42	30 20	61 46	106 19	153 31	
14	3 58	14 6	31 7	63 6	107 54	155 5	
15	4 15	14 31	31 54	64 28	109 29	156 39	
16	4 33	14 56	32 40	65 51	111 4	158 12	
17	4 51	15 21	33 30	67 12	112 38	159 47	
18	5 7	15 47	34 20	68 37	114 12	161 20	
19	5 26	16 16	35 12	70 1	115 46	162 54	
20	5 44	16 41	36 6	71 27	117 21	164 27	
21	6 3	17 9	36 59	72 52	118 55	166 0	
22	6 21	17 38	37 56	74 18	120 31	167 33	
23	6 40	18 6	38 50	75 46	122 6	169 7	
24	6 59	18 35	39 49	77 13	123 40	170 41	
25	7 18	19 7	40 48	78 42	125 15	172 13	
26	7 37	19 37	41 48	80 11	126 50	173 46	
27	7 55	20 9	42 49	81 40	128 24	175 20	
28	8 16	20 42	43 51	83 10	129 58	176 53	
29	8 36	21 15	44 54	84 40	131 33	178 27	
30	8 55	21 48	45 59	86 12	133 7	180 0	

TABLES

OF

OBlique ASCENSIONS.

58° NORTH LATITUDE—SOUTHERN SIGNS.

Long ^o	Δ	Ⅳ	♀	Ⅲ	ℳ	ℳ	ℳ
1	181 33	228 27	275 20	315 6	338 45	351 24	
2	183 7	230 2	276 50	316 9	339 18	351 44	
3	184 40	231 36	278 20	317 11	339 51	352 5	
4	186 14	233 10	279 49	318 12	340 23	352 23	
5	187 47	234 45	281 18	319 12	340 53	352 42	
6	189 19	236 20	282 47	320 11	341 25	353 1	
7	190 53	237 54	284 14	321 10	341 54	353 20	
8	192 27	239 29	285 42	322 4	342 28	353 39	
9	194 0	241 5	287 8	323 1	342 51	353 57	
10	195 33	242 39	288 33	323 54	343 19	354 16	
11	197 6	244 14	289 59	324 48	343 44	354 34	
12	198 40	245 48	291 23	325 40	344 13	354 53	
13	200 13	247 22	292 48	326 30	344 39	355 9	
14	201 48	248 56	294 9	327 20	345 4	355 27	
15	203 21	250 31	295 32	328 6	345 29	355 45	
16	204 55	252 6	296 54	328 53	345 54	356 2	
17	206 29	253 41	298 14	329 40	346 18	356 19	
18	208 3	255 15	299 34	330 25	346 42	356 36	
19	209 36	256 48	300 52	331 9	347 8	356 54	
20	211 10	258 23	302 8	331 51	347 31	357 11	
21	212 43	259 57	303 25	332 34	347 53	357 28	
22	214 19	261 30	304 38	333 16	348 15	357 45	
23	215 52	263 4	305 54	333 56	348 38	358 3	
24	217 25	264 37	307 7	334 35	349 0	358 19	
25	219 0	266 9	308 18	335 13	349 21	358 37	
26	220 35	267 43	309 28	335 51	349 42	358 54	
27	222 9	269 15	310 39	336 28	350 4	359 10	
28	223 42	270 46	311 47	337 4	350 24	359 27	
29	225 18	272 17	312 56	337 38	350 45	359 43	
30	226 53	273 48	314 1	338 12	351 5	360 0	

**TABLES
OF
OBLIQUE ASCENSIONS.**

59° NORTH LATITUDE—NORTHERN SIGNS.

Longitude	Aries		Taurus		Gemini		Cancer		Leo		Virgo	
	°	'	°	'	°	'	°	'	°	'	°	'
1	0	15	8	26	20	39	44	49	86	4	133	56
2	0	30	8	45	21	12	45	58	87	37	135	34
3	0	45	9	3	21	46	47	6	89	9	137	9
4	1	0	9	23	22	21	48	18	90	43	138	45
5	1	15	9	43	22	58	49	28	92	19	140	21
6	1	31	10	3	23	34	50	39	93	53	141	57
7	1	46	10	23	24	11	51	53	95	28	143	32
8	2	2	10	45	24	49	53	10	97	4	145	7
9	2	19	11	5	25	30	54	24	98	38	146	44
10	2	33	11	25	26	14	55	42	100	15	148	19
11	2	49	11	46	26	59	56	58	101	51	149	55
12	3	5	12	10	27	34	58	17	103	26	151	30
13	3	21	12	32	28	18	59	39	105	2	153	5
14	3	36	12	54	29	3	61	0	106	38	154	41
15	3	52	13	17	29	49	62	28	108	15	156	16
16	4	9	13	40	30	34	63	47	109	52	157	50
17	4	25	14	4	31	23	65	10	111	28	159	27
18	4	40	14	28	32	11	66	36	113	4	161	1
19	4	57	14	55	33	2	68	9	114	40	162	37
20	5	13	15	19	33	56	69	32	116	17	164	11
21	5	30	15	44	34	48	70	56	117	53	165	47
22	5	47	16	12	35	44	72	23	119	31	167	20
23	6	4	16	38	36	37	73	53	121	7	168	56
24	6	21	17	5	37	35	75	22	122	43	170	31
25	6	39	17	35	38	34	76	52	124	19	172	5
26	6	57	18	3	39	34	78	23	125	55	173	40
27	7	13	18	33	40	34	79	54	127	31	175	15
28	7	32	19	5	41	36	81	26	129	7	176	50
29	7	50	19	36	42	39	82	57	130	44	178	25
30	8	8	20	7	43	44	84	31	132	20	180	0

TABLES

OF

OBLIQUE ASCENSIONS.

59° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	△		Ⅲ		Ⅳ		Ⅴ		Ⅵ		Ⅶ	
	°	'	°	'	°	'	°	'	°	'	°	'
1	181	35	229	16	277	3	317	21	340	24	352	10
2	183	10	230	53	278	34	318	24	340	55	352	28
3	184	45	232	29	280	6	319	26	341	27	352	47
4	186	20	234	5	281	37	320	26	341	57	353	3
5	187	55	235	41	283	8	321	26	342	25	353	21
6	189	29	237	17	284	38	322	25	342	55	353	39
7	191	4	238	53	286	7	323	23	343	22	353	56
8	192	40	240	29	287	37	324	16	343	48	354	13
9	194	13	242	7	289	4	325	12	344	16	354	30
10	195	49	243	43	290	28	326	4	344	41	354	47
11	197	23	245	20	291	51	326	58	345	5	355	3
12	198	59	246	56	293	24	327	49	345	32	355	20
13	200	33	248	32	294	50	328	37	345	56	355	35
14	202	10	250	8	296	13	329	26	346	20	355	51
15	203	44	251	45	297	37	330	11	346	43	356	8
16	205	19	253	22	299	0	330	57	347	6	356	24
17	206	55	254	58	300	21	331	42	347	28	356	39
18	208	30	256	34	301	43	332	26	347	50	356	55
19	210	5	258	9	303	2	333	1	348	14	357	11
20	211	41	259	45	304	18	333	46	348	35	357	27
21	213	16	261	22	305	36	334	30	348	55	357	41
22	214	53	262	56	306	50	335	11	349	15	357	58
23	216	28	264	32	308	7	335	49	349	37	358	14
24	218	3	266	7	309	21	336	26	349	57	358	29
25	219	39	267	41	310	32	337	2	350	17	358	45
26	221	15	269	17	311	42	337	39	350	37	359	0
27	222	51	270	51	312	54	338	14	350	57	359	15
28	224	26	272	23	314	2	338	48	351	15	359	30
29	226	4	273	56	315	11	339	21	351	34	359	45
30	227	40	275	29	316	16	339	53	351	52	360	0

TABLES
OF
OBLIQUE ASCENSIONS.

60° NORTH LATITUDE—NORTHERN SIGNS.

Long	♈		♉		♊		♋		♌		♍	
	°	'	°	'	°	'	°	'	°	'	°	'
1	0	13	7	34	18	48	42	20	84	17	133	7
2	0	27	7	51	19	18	43	29	85	51	134	47
3	0	40	8	7	19	50	44	37	87	25	136	24
4	0	54	8	25	20	24	45	49	89	2	138	1
5	1	7	8	44	20	59	47	0	90	40	139	39
6	1	22	9	1	21	32	48	11	92	16	141	17
7	1	35	9	19	22	8	49	27	93	53	142	54
8	1	49	9	39	22	44	50	44	95	31	144	31
9	2	4	9	57	23	23	51	59	97	7	146	10
10	2	17	10	16	24	2	53	18	98	46	147	46
11	2	31	10	35	24	40	54	35	100	24	149	23
12	2	45	10	57	25	21	55	55	102	1	151	0
13	3	0	11	18	26	4	57	17	103	39	152	37
14	3	14	11	38	26	48	58	41	105	17	154	14
15	3	28	11	59	27	32	60	6	106	57	155	52
16	3	42	12	19	28	15	61	32	108	36	157	28
17	3	57	12	41	29	2	62	56	110	14	159	6
18	4	10	13	3	29	49	64	23	111	51	160	41
19	4	25	13	28	30	39	65	50	113	29	162	19
20	4	40	13	50	31	32	67	20	115	8	163	55
21	4	56	14	13	32	23	68	49	116	45	165	32
22	5	11	14	39	33	18	70	18	118	25	167	7
23	5	26	15	3	34	11	71	50	120	3	168	45
24	5	41	15	28	35	7	73	20	121	41	170	22
25	5	57	15	56	36	6	74	53	123	20	171	57
26	6	13	16	22	37	5	76	26	124	57	173	34
27	6	28	16	49	38	5	77	58	126	35	175	10
28	6	45	17	19	39	7	79	32	128	13	176	47
29	7	1	17	49	40	10	81	6	129	52	178	23
30	7	18	18	18	41	15	82	42	131	30	180	0

TABLES

OF

OBlique ASCENSIONS.

60° NORTH LATITUDE—SOUTHERN SIGNS.

Long.	♈	♉	♊	♋	♌	♍	♎	♏	♐	♑		
1	181	37	230	8	278	54	319	50	342	11	352	59
2	183	13	231	47	280	28	320	53	342	41	353	15
3	184	50	233	25	282	2	321	55	343	11	353	32
4	186	26	235	3	283	34	322	55	343	38	353	47
5	188	3	236	40	285	7	323	54	344	4	354	3
6	189	38	238	19	286	40	324	53	344	32	354	19
7	191	15	239	57	288	10	325	49	344	57	354	34
8	192	53	241	35	289	42	326	42	345	21	354	49
9	194	28	243	15	291	11	327	37	345	47	355	4
10	196	5	244	52	292	40	328	28	346	10	355	20
11	197	41	246	31	294	10	329	21	346	32	355	35
12	199	19	248	9	295	37	330	11	346	57	355	50
13	200	54	249	46	297	4	330	58	347	19	356	3
14	202	32	251	24	298	28	331	45	347	41	356	18
15	204	8	253	3	299	54	332	28	348	1	356	33
16	205	46	254	43	301	19	333	12	348	22	356	46
17	207	23	256	21	302	43	333	56	348	42	357	0
18	209	0	257	59	304	5	334	39	349	3	357	15
19	210	37	259	36	305	25	335	20	349	25	357	29
20	212	14	261	14	606	42	335	58	349	44	357	43
21	213	50	262	53	308	1	336	37	350	3	357	56
22	215	29	264	29	309	16	337	16	350	21	358	11
23	217	6	266	7	310	33	337	52	350	41	358	25
24	218	43	267	44	311	49	338	28	350	59	358	38
25	220	21	269	20	313	0	339	1	351	16	358	53
26	221	59	270	58	314	11	339	36	351	35	359	6
27	223	36	272	35	315	23	340	10	351	53	359	20
28	225	13	274	9	316	31	340	42	352	9	359	33
29	226	53	275	43	317	40	341	12	352	26	359	47
30	228	30	277	18	318	45	341	42	352	42	360	0

TABLES OF OBLIQUE ASCENSIONS.

If desirous to make Tables of Houses for a latitude with degrees and minutes, it will first be necessary to compute a Table of Oblique Ascensions for that latitude, which will be the Pole of the Ascendant. For the other cusps it will be sufficient to turn to a latitude which is the nearest even degree to the Pole of the House. Suppose we desire to make Tables of Houses for Cincinnati, $39^{\circ} 6'$ N. lat. I proceed in this manner:

$$\begin{array}{l} \text{The Dec. of } 1^{\circ} \text{ of } \varphi \text{ is } 0.24 \tan. = 7.843944 \\ + \text{Lat. of Cincinnati} \quad \quad \quad 39.6 \tan. = 9.909918 \\ \hline = \text{Asc. Dif.} \quad \quad \quad 0.20 \sin = 7.753862 \end{array}$$

The R. A. of 1° of φ is $55'$ from which subtract the 20 A. D. $55' - 20' = 35'$ which is the O. A. of 1° of φ in $39^{\circ} 6'$ N. Lat. I subtracted the Asc. Dif. because the Dec. was north, but would have added it had the Dec. been south, to find the O. A.

Working by the same method, I find the O. A. of 5° to be $2^{\circ} 57'$, and of 10° to be $5^{\circ} 57'$.

I thus proceed to find O. A. of every 5th degree to 30° and opposite the column of longitudes, set each O. A. in its right place, in this manner:

Long.	O. A. φ	Equated.	I next equate to find the O. A. to place opposite 2, 3, 4, 6, 7, 8, 9. The difference between 1° and 5° O. A. is $2^{\circ} 22'$, or $142'$ to be divided in 4 spaces = $35+2$, showing that I must add 35 twice and 36 twice. Then between the 5th and 10th O. A. is $3^{\circ} = 180' \div 5 = 36$, showing that $36'$ must be added each time, and also showing that the difference increases down the column. So I add $35'$
1	0 53	1 10	
2		1 45	
3		2 21	
4			
5	2 57	3 33	
6		4 9	
7		4 45	
8		5 21	
9			
10	5 57		

the first and second times, but $36'$ each time afterwards, which I have set in the column headed "Equated," although they belong in the column headed φ . This method of equating shortens the work very much and may frequently be employed in other calculations, such as an Ephemeris, Tables of Houses, etc.

RIGHT ASCENSION.

° WITH N. LAT.; ▲ WITH S. LAT. FOR ▲ ADD 180°;
WHEN THE AMOUNT EXCEEDS 360° SUBTRACT 180°.

CELESTIAL LATITUDE.

Long. ° ○ ,	CELESTIAL LATITUDE.							
	0° ○ ,	1° ○ ,	2° ○ ,	3° ○ ,	4° ○ ,	5° ○ ,	6° ○ ,	7° ○ ,
1	0 55	0 30	0 8	359 44	359 20	358 58	358 32	358 8
2	1 50	1 27	1 3	0 39	0 15	359 51	359 27	359 3
3	2 45	2 22	1 58	1 34	1 10	0 46	0 22	359 58
4	3 40	3 17	2 53	2 29	2 5	1 41	1 17	0 53
5	4 35	4 12	3 48	3 24	3 0	2 36	2 12	1 48
6	5 30	5 7	4 43	4 19	3 55	3 31	3 7	2 43
7	6 25	6 2	5 38	5 14	4 50	4 26	4 2	3 38
8	7 21	6 57	6 33	6 9	5 45	5 21	4 57	4 32
9	8 16	7 52	7 28	7 4	6 40	6 16	5 52	5 28
10	9 11	8 47	8 23	7 59	7 35	7 11	6 47	6 23
11	10 6	9 42	9 18	8 55	8 31	8 7	7 43	7 19
12	11 2	10 38	10 14	9 51	9 27	9 3	8 39	8 15
13	11 57	11 33	11 9	10 46	10 22	9 58	9 34	9 10
14	12 53	12 29	12 5	11 42	11 18	10 54	10 30	10 6
15	13 48	13 25	13 1	12 38	12 14	11 50	11 26	11 2
16	14 44	14 20	13 57	13 34	13 10	12 46	12 22	11 58
17	15 40	15 16	14 58	14 30	14 6	13 42	13 18	12 54
18	16 35	16 12	15 49	15 26	15 2	14 39	14 15	13 51
19	17 31	17 8	16 45	16 22	15 58	15 35	15 11	14 47
20	18 27	18 4	17 41	17 18	16 54	16 31	16 7	15 44
21	19 23	19 0	18 37	18 14	17 51	17 28	17 4	16 41
22	20 20	19 56	19 33	19 11	18 48	18 25	18 1	17 38
23	21 16	20 53	20 30	20 8	19 45	19 22	18 58	18 35
24	22 12	21 50	21 27	21 5	20 42	20 19	19 55	19 32
25	23 9	22 47	22 24	22 2	21 39	21 16	20 52	20 29
26	24 6	23 44	23 21	22 59	22 36	22 13	21 50	21 27
27	25 2	24 41	24 19	23 57	23 34	23 11	22 48	22 25
28	25 59	25 38	25 16	24 54	24 31	24 9	23 46	23 23
29	26 57	26 35	26 13	25 51	25 29	25 7	24 44	24 21
30	27 54	27 33	27 11	26 49	26 27	26 5	25 42	25 19

RIGHT ASCENSION.

8 WITH N. LAT.; 10 WITH S. LAT. FOR 10 ADD 180°;
WHEN THE AMOUNT EXCEEDS 360° SUBTRACT 180°.

CELESTIAL LATITUDE.

Long. ° .	CELESTIAL LATITUDE.							
	0° .	1 ° .	2° .	3° .	4° .	5° .	6° .	7° .
1	28 51	28 30	28 8	27 47	27 25	27 3	26 40	26 17
2	29 49	29 27	29 6	28 45	28 23	28 1	27 38	27 16
3	30 46	30 25	30 4	29 43	29 21	28 59	28 37	28 15
4	31 44	31 23	31 2	30 41	30 19	29 58	29 36	29 14
5	32 42	32 21	32 0	31 39	31 18	30 57	30 35	30 13
6	33 40	33 20	32 59	32 38	32 17	31 56	31 34	31 12
7	34 38	34 18	33 58	33 37	33 16	32 55	32 33	32 12
8	35 37	35 17	34 57	34 36	34 15	33 54	33 33	33 12
9	36 36	36 16	35 56	35 36	35 15	34 54	34 33	34 12
10	37 34	37 15	36 55	36 35	36 15	35 54	35 33	35 12
11	38 33	38 14	37 54	37 35	37 15	36 54	36 33	36 13
12	39 33	39 14	38 54	38 35	38 15	37 55	37 34	37 14
13	40 32	40 13	39 54	39 35	39 15	38 56	38 35	38 15
14	41 31	41 13	40 54	40 35	40 16	39 57	39 36	39 16
15	42 31	42 13	41 54	41 36	41 17	40 58	40 38	40 18
16	43 31	43 13	42 54	42 36	42 18	41 59	41 39	41 19
17	44 31	44 13	43 55	43 37	43 19	43 0	42 40	42 21
18	45 31	45 14	44 56	44 38	44 20	44 1	43 42	43 23
19	46 32	46 14	45 57	45 39	45 21	45 3	44 44	44 25
20	47 32	47 15	46 58	46 40	46 23	46 5	45 46	45 28
21	48 33	48 16	47 59	47 42	47 25	47 7	46 49	46 31
22	49 34	49 17	49 0	48 44	48 27	48 9	47 52	47 34
23	50 35	50 18	50 2	49 46	49 29	49 12	48 55	48 37
24	51 36	51 20	51 4	50 48	50 32	50 15	49 58	49 41
25	52 38	52 22	52 6	51 51	51 35	51 18	51 2	50 45
26	53 40	53 24	53 9	52 54	52 38	52 22	52 6	51 49
27	54 42	54 27	54 12	53 57	53 42	53 25	53 10	52 54
28	55 44	55 29	55 15	55 0	54 45	54 30	54 14	53 58
29	56 46	56 32	56 18	56 3	55 49	55 34	55 18	55 3
30	57 48	57 35	57 21	57 7	56 53	56 38	56 23	56 8

RIGHT ASCENSION.

II WITH N. LAT.; ♫ WITH S. LAT. FOR ♫ ADD 180° ;
WHEN THE AMOUNT EXCEEDS 360° SUBTRACT 180° .

CELESTIAL LATITUDE.

RIGHT ASCENSION.

α WITH N. LAT.; β WITH S. LAT. FOR β ADD 180° ;
WHEN THE AMOUNT EXCEEDS 360° SUBTRACT 180° .

CELESTIAL LATITUDE.

Long. ° . '	0°	1°	2°	3°	4°	5°	6°	7°
	° . '	° . '	° . '	° . '	° . '	° . '	° . '	° . '
1	91 5	91 6	91 7	91 7	91 7	91 8	91 9	91 9
2	92 11	92 12	92 14	92 14	92 15	92 10	92 18	92 18
3	93 16	93 18	93 20	93 21	93 23	93 24	93 26	93 27
4	94 22	94 24	94 27	94 28	94 30	94 32	94 35	94 36
5	95 27	95 30	95 33	95 35	95 38	95 40	95 43	95 45
6	96 32	96 36	96 39	96 42	96 45	96 48	96 51	96 54
7	97 38	97 42	97 45	97 49	97 52	97 56	98 0	98 3
8	98 43	98 47	98 51	98 55	99 0	99 4	99 8	99 12
9	99 48	99 52	99 57	100 1	100 7	100 12	100 16	100 21
10	100 53	100 58	101 3	101 8	101 14	101 19	101 24	101 30
11	101 58	102 4	102 9	102 15	102 21	102 26	102 32	102 38
12	103 3	103 9	103 15	103 21	103 27	103 33	103 40	103 46
13	104 8	104 14	104 21	104 27	104 34	104 41	104 38	104 55
14	105 13	105 19	105 27	105 33	105 41	105 48	105 56	106 3
15	106 17	106 24	106 33	106 39	106 47	106 55	107 3	107 11
16	107 22	107 29	107 38	107 45	107 53	108 2	108 11	108 19
17	108 26	108 34	108 43	108 53	108 59	109 9	109 18	109 27
18	109 31	109 39	109 48	109 57	110 5	110 15	110 25	110 34
19	110 35	110 44	110 53	111 3	111 12	111 22	111 32	111 42
20	111 39	111 49	111 58	112 8	112 18	112 29	112 35	112 50
21	112 43	112 53	113 3	113 13	113 24	113 35	113 46	113 56
22	113 47	113 57	114 8	114 18	114 30	114 41	114 52	115 4
23	114 51	115 1	115 13	115 23	115 35	115 47	115 58	116 10
24	115 54	116 5	116 17	116 28	116 41	116 52	117 4	117 17
25	116 57	117 9	117 21	117 33	117 46	117 58	118 10	118 23
26	118 1	118 13	118 25	118 38	118 51	119 3	119 16	119 29
27	119 4	119 16	119 29	119 42	119 55	120 8	120 22	120 35
28	120 7	120 19	120 33	120 46	120 59	121 13	121 27	121 41
29	121 9	121 22	121 36	121 50	122 3	122 18	122 32	122 47
30	122 12	122 25	122 39	122 53	123 7	123 22	123 37	123 52

RIGHT ASCENSION.

Ω WITH N. LAT.; $\Delta\omega$ WITH S. LAT. FOR $\Delta\omega$ ADD 180°;
WHEN THE AMOUNT EXCEEDS 360° SUBTRACT 180° .

CELESTIAL LATITUDE.

Long. °	0°	1°	2°	3°	4°	5°	6°	7°
1	123 14	123 28	123 42	123 57	124 11	124 26	124 42	124 57
2	124 16	124 31	124 45	125 0	125 15	125 30	125 46	126 2
3	125 18	125 33	125 48	126 3	126 18	126 34	126 50	127 6
4	126 20	126 36	126 51	127 6	127 22	127 38	127 54	128 11
5	127 22	127 38	127 54	128 9	128 25	128 42	128 58	129 15
6	128 24	128 40	128 56	129 12	129 28	129 45	130 2	130 19
7	129 25	129 42	129 58	130 14	130 31	130 48	131 5	131 23
8	130 26	130 43	131 0	131 16	131 33	131 51	132 8	132 26
9	131 27	131 44	132 1	132 18	132 35	132 53	133 11	133 29
10	132 28	132 45	133 2	133 20	133 37	133 55	134 14	134 32
11	133 28	133 46	134 3	134 21	134 39	134 57	135 16	135 35
12	134 29	134 47	135 4	135 22	135 40	135 59	136 18	136 37
13	135 29	135 47	136 5	136 23	136 41	137 0	137 20	137 39
14	136 29	136 47	137 6	137 24	137 42	138 1	138 21	138 41
15	137 29	137 47	138 6	138 24	138 43	139 2	139 22	139 42
16	138 29	138 47	139 6	139 25	139 44	140 3	140 24	140 44
17	139 28	139 47	140 6	140 25	140 45	141 4	141 25	141 45
18	140 28	140 46	141 6	141 25	141 45	142 5	142 26	142 46
19	141 27	141 46	142 6	142 25	142 45	143 6	143 27	143 47
20	142 26	142 45	143 5	143 25	143 45	144 6	144 27	144 48
21	143 25	143 44	144 4	144 24	144 45	145 6	145 27	145 48
22	144 23	144 43	145 3	145 24	145 45	146 6	146 27	146 48
23	145 22	145 42	146 2	146 23	146 44	147 5	147 27	147 48
24	146 20	146 40	147 1	147 22	147 43	148 4	148 26	148 48
25	147 18	147 39	148 0	148 21	148 42	149 3	149 25	149 47
26	148 16	148 37	148 58	149 19	149 41	150 2	150 24	150 46
27	149 14	149 35	149 56	150 17	150 39	151 1	151 23	151 45
28	150 11	150 33	150 54	151 15	151 37	151 59	152 22	152 44
29	151 9	151 30	151 52	152 13	152 35	152 57	153 20	153 43
30	152 6	152 27	152 49	153 11	153 33	153 55	154 18	154 41

RIGHT ASCENSION.

DEGREES WITH N. LAT.; MINUTES WITH S. LAT. FOR S. LAT. ADD 180°;
WHEN THE AMOUNT EXCEEDS 360° SUBTRACT 180°.

CELESTIAL LATITUDE.

Long. °	CELESTIAL LATITUDE.							
	0°	1°	2°	3°	4°	5°	6°	7°
°	°	°	°	°	°	°	°	
1	153 4	153 25	153 47	154 9	154 31	154 53	155 16	155 39
2	154 1	154 22	154 44	155 6	155 29	155 51	156 14	156 37
3	154 58	155 19	155 41	156 3	156 26	156 49	157 12	157 35
4	155 54	156 16	156 39	157 1	157 24	157 47	158 10	158 33
5	156 51	157 13	157 36	157 58	158 21	158 44	159 8	159 31
6	157 48	158 10	158 33	158 55	159 18	159 41	160 5	160 28
7	158 44	159 7	159 30	159 51	160 15	160 38	161 2	161 25
8	159 40	160 4	160 27	160 49	161 12	161 35	161 59	162 22
9	160 37	161 0	161 23	161 46	162 9	162 32	162 56	163 19
10	161 33	161 56	162 19	162 42	163 6	163 29	163 53	164 16
11	162 29	162 52	163 15	163 38	164 2	164 25	164 49	165 13
12	163 25	163 50	164 11	164 34	164 58	165 21	165 46	166 9
13	164 20	164 44	165 7	165 30	165 54	166 18	166 42	167 6
14	165 16	165 40	166 3	166 26	166 50	167 14	167 38	168 2
15	166 12	166 35	166 59	167 22	167 46	168 10	168 34	168 58
16	167 7	167 31	167 55	168 18	168 42	169 6	169 30	169 54
17	168 3	168 27	168 51	169 14	169 38	170 2	170 26	170 50
18	168 58	169 23	169 46	170 9	170 33	170 57	171 21	171 45
19	169 54	170 18	170 42	171 5	171 29	171 53	172 17	172 41
20	170 49	171 13	171 37	172 1	172 25	172 49	173 13	173 37
21	171 44	172 8	172 32	172 56	173 20	173 44	174 8	174 32
22	172 39	173 3	173 27	173 51	174 15	174 39	175 3	175 27
23	173 35	173 58	174 22	174 46	175 10	175 34	175 58	176 22
24	174 30	174 53	175 17	175 41	176 5	176 29	176 53	177 17
25	175 25	175 48	176 12	176 36	177 0	177 24	177 48	178 12
26	176 20	176 43	177 7	177 31	177 56	178 19	178 43	179 7
27	177 15	177 38	178 2	178 26	178 50	179 14	179 38	180 2
28	178 10	178 33	178 57	179 21	179 45	180 9	180 33	180 57
29	179 5	179 28	179 52	180 16	180 40	181 4	181 28	181 52
30	180 0	180 23	180 47	181 11	181 35	181 59	182 23	182 4

RIGHT ASCENSION.

Δ WITH N. LAT.; Ψ WITH S. LAT. FOR Ψ SUBTRACT
180°, BORROWING 360° WHEN NECESSARY.

CELESTIAL LATITUDE.

Long. ° .	0° ° , ° ,	1 ° , ° ,	2° ° , ° ,	3° ° , ° ,	4° ° , ° ,	5° ° , ° ,	6° ° , ° ,	7° ° , ° ,
1	208 51	209 13	209 34	209 55	210 16	210 37	210 57	211 18
2	209 49	210 10	210 31	210 52	211 15	211 34	211 54	212 14
3	210 46	211 17	211 28	211 49	212 10	212 31	212 51	213 11
4	211 44	212 5	212 25	212 46	213 7	213 27	213 47	214 7
5	212 42	213 3	213 23	213 43	214 4	214 24	214 44	215 4
6	213 40	214 1	214 21	214 41	215 1	215 21	215 41	216 1
7	214 38	214 59	215 19	215 39	215 58	216 18	216 38	216 57
8	215 37	215 57	216 17	216 37	216 56	217 15	217 35	217 54
9	216 36	216 56	217 15	217 35	217 54	218 13	218 32	218 51
10	217 34	217 54	218 13	218 33	218 52	219 11	219 29	219 48
11	218 33	218 53	219 12	219 31	219 50	220 9	220 27	220 45
12	219 33	219 52	220 11	220 30	220 48	221 7	221 25	221 43
13	220 32	220 51	221 10	221 28	221 46	222 5	222 23	222 41
14	221 31	221 50	222 9	222 27	222 45	223 3	223 21	223 39
15	222 31	222 50	223 8	223 26	223 44	224 2	224 19	224 37
16	223 31	223 49	224 7	224 25	224 43	225 0	225 17	225 35
17	224 31	224 49	225 6	225 24	225 42	225 59	226 15	226 33
18	225 31	225 49	226 6	226 23	226 41	226 58	227 14	227 31
19	226 32	226 49	227 6	227 23	227 40	227 57	228 13	228 29
20	227 32	227 49	228 6	228 23	228 39	228 56	229 12	229 28
21	228 33	228 56	229 6	229 23	229 39	229 55	230 11	230 27
22	229 34	229 50	230 6	230 23	230 38	230 54	231 10	231 25
23	230 35	230 51	231 6	231 23	231 38	231 53	232 9	232 24
24	231 36	231 52	232 7	232 23	232 38	232 53	233 8	233 23
25	232 38	232 53	233 8	233 24	233 38	233 53	234 8	234 22
26	233 40	233 55	234 9	234 24	234 38	234 53	235 7	235 21
27	234 41	234 57	235 11	235 25	235 39	235 53	236 7	236 21
28	235 43	235 58	236 12	236 26	236 40	236 54	237 7	237 20
29	236 46	237 0	237 14	237 27	237 41	237 54	238 7	238 20
30	237 48	238 2	238 15	238 29	238 42	238 55	239 7	239 20

BRIGHT ASCENSION.

M WITH N. LAT.; S WITH S. LAT. FOR S SUBTRACT
180°, BORROWING 360° WHEN NECESSARY.

CELESTIAL LATITUDE.

Long.	0°	1°	2°	3°	4°	5°	6°	7°
	°	°	°	°	°	°	°	°
	'	'	'	'	'	'	'	'
1	180 55	181 18	181 42	182 6	182 30	182 54	183 18	183 42
2	181 50	182 13	182 37	183 1	183 25	183 49	184 13	184 37
3	182 45	183 8	183 32	183 56	184 20	184 44	185 8	185 32
4	183 40	184 3	184 27	184 51	185 15	185 39	186 3	186 27
5	184 35	184 58	185 22	185 46	186 10	186 34	186 58	187 22
6	185 30	185 54	186 18	186 42	187 6	187 30	187 53	188 17
7	186 25	186 49	187 13	187 37	188 1	188 25	188 48	189 12
8	187 21	187 44	188 8	188 32	188 56	189 20	189 43	190 7
9	188 16	188 39	189 3	189 27	189 51	190 15	190 38	191 2
10	189 11	189 34	189 58	190 22	190 46	191 10	191 33	191 57
11	190 6	190 29	190 53	191 17	191 41	192 5	192 28	192 52
12	191 2	191 25	191 48	192 13	192 36	193 0	193 23	193 47
13	191 57	192 20	192 43	193 8	193 31	193 55	194 18	194 41
14	192 53	193 16	193 39	194 3	194 26	194 50	195 13	195 36
15	193 48	194 12	194 35	194 58	195 21	195 45	196 8	196 31
16	194 44	195 7	195 30	195 53	196 16	196 40	197 3	197 26
17	195 40	196 2	196 25	196 48	197 11	197 35	197 58	198 21
18	196 35	196 58	197 21	197 44	198 7	198 30	198 53	199 16
19	197 31	197 54	198 17	198 40	199 2	199 25	199 48	200 11
20	198 27	198 50	199 13	199 36	199 58	200 21	200 43	201 7
21	199 23	199 46	200 9	200 32	200 54	201 16	201 39	202 2
22	200 20	200 42	201 5	201 28	201 50	202 12	202 34	202 57
23	201 16	201 38	202 1	202 24	202 46	203 8	203 30	203 52
24	202 12	202 35	202 57	203 20	203 42	204 4	204 26	204 48
25	203 9	203 31	203 53	204 16	204 38	205 0	205 21	205 43
26	204 6	204 29	204 50	205 12	205 34	205 56	206 17	206 39
27	205 2	205 25	205 47	206 9	206 30	206 52	207 13	207 35
28	205 59	206 22	206 43	207 5	207 26	207 48	208 9	208 30
29	206 57	207 19	207 40	208 1	208 22	208 44	209 5	209 26
30	207 54	208 16	208 37	208 58	209 19	209 40	210 1	210 22

RIGHT ASCENSION.

**¶ WITH N. LAT.; II WITH S. LAT. FOR II SUBTRACT
180°, BORROWING 360° WHEN NECESSARY.**

CELESTIAL LATITUDE.

BRIGHT ASCENSION.

✓ WITH N. LAT.; ☷ WITH S. LAT. FOR ☷ SUBTRACT
180°, BORROWING 360° WHEN NECESSARY.

CELESTIAL LATITUDE.

long.	0°	1°	2°	3°	4°	5°	6°	7°
°	°	°	°	°	°	°	°	°
1	271 5	271 5	271 5	271 4	271 4	271 3	271 3	271 2
2	272 11	272 10	272 10	272 8	272 8	272 6	272 6	272 4
3	273 16	273 15	273 14	273 12	273 11	273 9	273 8	273 6
4	274 22	274 20	274 19	274 16	274 15	274 12	274 11	274 8
5	275 27	275 25	275 23	275 20	275 18	275 15	275 13	275 10
6	276 32	276 30	276 27	276 21	276 21	276 18	276 15	276 12
7	277 38	277 35	277 31	277 28	277 25	277 21	277 18	277 14
8	278 43	278 39	278 35	278 32	278 28	278 24	278 20	278 16
9	279 48	279 43	279 39	279 35	2 9 31	279 26	279 22	279 18
10	2 0 53	280 48	280 43	280 39	280 34	280 2	280 25	280 20
11	231 58	281 53	281 47	281 42	231 37	231 32	231 27	231 22
12	238 3	282 57	282 51	282 45	232 40	232 34	232 29	232 23
13	234 8	284 2	283 55	283 49	233 43	233 37	233 31	233 25
14	235 13	285 6	281 59	284 53	284 46	284 40	234 33	234 27
15	286 17	286 10	286 3	285 56	235 49	235 42	235 35	235 28
16	237 22	287 14	287 7	236 59	236 52	236 45	236 37	236 30
17	238 26	288 18	288 11	238 2	237 55	237 47	237 39	237 32
18	239 31	289 22	289 14	239 5	238 57	238 49	238 41	238 33
19	290 35	290 26	290 17	290 8	290 0	289 51	239 43	239 34
20	291 39	291 30	291 23	291 11	291 2	290 53	290 44	230 35
21	292 43	292 33	292 23	292 13	292 4	291 55	291 45	291 36
22	293 47	293 37	293 26	293 16	293 6	292 56	292 47	292 37
23	294 51	294 40	294 29	294 19	294 8	293 58	293 48	293 38
24	295 54	295 43	295 32	295 21	295 10	294 59	294 49	294 38
25	296 57	296 46	296 35	296 23	296 12	296 1	295 50	295 39
26	298 1	297 49	297 37	297 25	297 14	297 2	296 51	296 39
27	299 4	298 51	298 39	298 27	298 15	298 3	297 51	297 39
28	300 7	299 54	299 41	299 29	299 16	299 4	298 52	298 40
29	301 9	300 56	300 43	300 30	300 17	300 5	299 53	299 40
30	302 12	301 58	301 45	301 31	301 18	301 5	300 53	300 40

BRIGHT ASCENSION.

WITH N. LAT.; S. WITH S. LAT. FOR S. SUBTRACT
180°, BORROWING 360° WHEN NECESSARY.

CELESTIAL LATITUDE.

Long. LT.	CELESTIAL LATITUDE.							
	0°	1°	2°	3°	4°	5°	6°	7°
°	°	°	°	°	°	°	°	°
1	303 14	303 0	302 47	302 33	302 19	302	301 53	301 40
2	304 16	304 2	303 48	303 34	303 20	303	302 53	302 40
3	305 18	305 3	304 50	304 35	304 21	304	303 53	303 39
4	306 20	306 5	305 51	305 36	305 22	305	304 53	304 39
5	307 22	307 7	306 52	306 36	306 22	306	305 52	305 38
6	308 24	308 8	307 53	307 37	307 22	307	306 52	306 37
7	309 25	309 9	308 54	308 37	308 22	308	307 51	307 36
8	310 26	310 10	309 54	309 37	309 22	309	308 50	308 35
9	311 27	311 10	310 54	310 37	310 21	310	309 49	309 33
10	312 28	312 11	311 54	311 37	311 21	311	310 48	310 32
11	313 28	313 11	312 54	312 37	312 20	312	311 47	311 31
12	314 29	314 11	313 54	313 37	313 19	313	312 46	312 29
13	315 29	315 11	314 54	314 36	314 18	314	313 45	313 27
14	316 29	316 11	315 53	315 25	315 17	315	314 43	314 25
15	317 29	317 10	316 52	316 34	316 16	315 58	315 41	315 23
16	318 29	318 10	317 51	317 33	317 15	316 57	316 39	316 21
17	319 28	319 9	318 50	318 32	318 14	317 55	317 37	317 19
18	320 27	320 8	319 49	319 30	319 12	318 53	318 35	318 17
19	321 27	321 7	320 48	320 29	320 10	319 51	319 33	319 15
20	322 26	322 6	321 47	321 27	321 8	320 49	320 31	320 12
21	323 25	323 4	322 45	322 25	322 6	321 47	321 28	321 9
22	324 28	324 3	323 43	323 23	323 4	322 45	322 25	322 6
23	325 22	325 1	324 41	324 21	324 1	323 42	323 22	323 3
24	326 20	325 59	325 39	325 19	324 59	324 39	324 19	323 59
25	327 18	326 57	326 37	326 17	325 56	325 36	325 16	324 56
26	328 16	327 55	327 35	327 14	326 53	326 33	326 13	325 53
27	329 14	328 53	328 32	328 11	327 50	327 30	327 10	326 49
28	330 11	329 50	329 29	329 8	328 47	328 27	328 6	327 46
29	331 9	330 47	330 26	330 5	329 44	329 25	329 3	328 42
30	332 6	331 44	331 23	331 2	330 41	330 20	329 59	329 38

BRIGHT ASCENSION.

* WITH N. LAT.; ♿ WITH S. LAT. FOR ♿ SUBTRACT
180°, BORROWING 360° WHEN NECESSARY.

CELESTIAL LATITUDE.

LAT.	0°	1°	2°	3°	4°	5°	6°	7°
	°	°	°	°	°	°	°	°
1	333 4	332 41	332 20	331 59	331 38	331 16	330 55	330 34
2	334 1	333 38	333 17	332 55	332 34	332 12	331 51	331 30
3	334 58	334 35	334 13	333 51	333 30	333 8	332 47	332 25
4	335 55	335 32	335 10	334 48	334 26	334 4	333 43	333 21
5	336 51	336 29	336 7	335 44	335 22	335 0	334 39	334 17
6	337 48	337 25	337 3	336 40	336 18	336 56	335 34	335 12
7	338 44	338 22	337 59	337 36	337 14	326 52	331 30	336 8
8	339 40	339 18	338 55	338 32	338 10	337 48	337 26	337 3
9	340 37	340 14	339 51	339 28	339 6	338 43	338 21	337 58
10	341 33	341 10	340 47	340 24	340 2	339 39	339 17	338 54
11	342 29	342 6	341 43	341 20	340 58	340 35	340 12	339 49
12	343 25	343 2	342 39	342 16	341 53	341 30	341 7	340 44
13	344 20	343 58	343 35	343 12	342 49	342 25	342 2	341 39
14	345 16	344 53	344 30	344 7	343 44	343 20	342 57	342 34
15	346 12	345 48	345 25	345 2	344 39	344 15	343 52	343 29
16	347 7	346 44	346 21	345 57	345 34	345 10	344 47	344 24
17	348 3	347 40	347 17	346 52	346 29	346 5	345 42	345 19
18	348 58	348 35	348 12	347 47	347 24	347 0	346 37	346 13
19	349 54	349 31	349 7	348 43	348 19	347 55	347 32	347 8
20	350 49	350 26	350 3	349 38	349 14	348 50	348 27	348 3
21	351 44	351 21	350 57	350 33	350 9	349 45	349 22	348 58
22	352 39	352 16	351 52	351 28	351 4	350 40	350 17	349 53
23	353 35	353 11	352 47	352 23	351 59	351 35	351 12	350 48
24	354 30	354 6	353 42	353 18	352 54	352 30	352 7	351 43
25	355 25	355 1	354 38	354 14	353 50	353 26	353 2	352 38
26	356 20	355 57	355 33	355 9	354 45	354 21	353 57	353 33
27	357 15	356 52	356 28	356 4	355 40	355 16	354 52	354 28
28	358 10	357 47	357 23	356 59	356 35	356 11	355 47	355 23
29	359 5	358 42	358 18	357 54	357 30	357 6	356 42	356 18
30	360 0	359 37	359 13	358 49	358 25	358 1	357 37	357 13

DECLINATION.

CELESTIAL N. LATITUDE.

G	0°	1°	2°	3'	4	5°	6°	7	D
°	'	°	'	°	'	°	'	°	'
1	23 28	24 28	25 28	26 28	27 28	28 28	29 28	30 28	29
2	23 27	24 27	25 27	26 27	27 27	28 27	29 27	30 27	28
3	23 26	24 26	25 26	26 26	27 26	28 26	29 26	30 26	27
4	23 24	24 24	25 24	26 24	27 24	28 24	29 24	30 24	26
5	23 22	24 22	25 22	26 22	27 22	28 22	29 22	30 22	25
6	23 20	24 19	25 19	26 19	27 19	28 19	29 19	30 19	24
7	23 17	24 16	25 16	26 16	27 16	28 16	29 16	30 16	23
8	23 13	24 13	25 13	26 13	27 13	28 13	29 13	30 13	22
9	23 10	24 9	25 9	26 9	27 9	28 9	29 9	30 9	21
10	23 5	24 5	25 5	26 5	27 5	28 5	29 5	30 5	20
11	23 1	24 1	25 1	26 1	27 0	28 0	29 0	30 0	19
12	22 56	23 56	24 56	25 56	26 56	27 56	28 56	29 55	18
13	22 50	23 50	24 50	25 50	26 50	27 50	28 50	29 48	17
14	22 44	23 44	24 43	25 43	26 43	27 42	28 42	29 41	16
15	22 37	23 37	24 36	25 36	26 36	27 35	28 35	29 34	15
16	22 30	23 30	24 29	25 29	26 29	27 28	28 28	29 27	14
17	22 23	23 23	24 22	25 22	26 21	27 20	28 19	29 18	13
18	22 15	23 15	24 14	25 14	26 13	27 12	28 11	29 10	12
19	22 7	23 7	24 6	25 6	26 5	27 4	28 3	29 2	11
20	21 58	22 58	23 57	24 56	25 55	26 54	27 53	28 52	10
21	21 49	22 49	23 48	24 47	25 46	26 45	27 44	28 43	9
22	21 40	22 40	23 39	24 38	25 37	26 36	27 35	28 35	8
23	21 30	22 30	23 29	24 28	25 27	26 26	27 25	28 25	7
24	21 20	22 19	23 18	24 17	25 16	26 15	27 14	28 13	6
25	21 9	22 8	23 7	24 6	25 5	26 4	27 3	28 2	5
26	20 58	21 56	22 55	23 54	24 53	25 52	26 51	27 50	4
27	20 47	21 44	22 43	23 42	24 41	25 40	26 39	27 38	3
28	20 35	21 32	22 31	23 30	24 29	25 28	26 26	27 25	2
29	20 23	21 30	22 19	23 18	24 17	25 16	26 14	27 13	1
30	20 10	21 8	22 6	23 5	24 4	25 2	26 0	26 59	0

DECLINATION.

CELESTIAL N. LATITUDE.

Ω	0°	1°	2°	3°	4°	5°	6°	7°	8°								
	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$								
1	19	57	20	56	21	54	22	53	23	51	24	50	25	48	26	46	29
2	19	44	20	42	21	41	22	39	23	37	24	36	25	34	26	32	28
3	19	31	20	28	21	27	22	25	23	23	24	22	25	20	26	18	27
4	19	17	20	14	21	13	22	11	23	9	24	8	25	6	26	4	26
5	19	2	20	0	20	59	21	57	22	55	23	53	24	51	25	49	25
6	18	48	19	46	20	44	21	42	22	40	23	38	24	36	25	34	24
7	18	33	19	31	20	29	21	27	22	25	23	23	24	21	25	19	23
8	18	17	19	15	20	13	21	11	22	9	23	7	24	5	25	3	22
9	18	2	18	59	19	57	20	55	21	53	22	51	23	49	24	46	21
10	17	46	18	43	19	41	20	38	21	36	22	34	23	31	24	28	20
11	17	29	18	26	19	24	20	22	21	19	22	17	23	14	24	11	19
12	17	13	18	9	19	7	20	5	21	2	22	0	22	57	23	54	18
13	16	56	17	52	18	50	19	47	20	44	21	42	22	39	23	36	17
14	16	39	17	35	18	33	19	30	20	27	21	25	22	22	23	19	16
15	16	21	17	18	18	15	19	12	20	9	21	7	22	4	23	1	15
16	16	3	17	0	17	57	18	54	19	51	20	49	21	46	22	43	14
17	15	45	16	42	17	39	18	36	19	33	20	30	21	27	22	24	13
18	15	27	16	23	17	20	18	17	19	14	20	11	21	8	22	5	12
19	15	9	16	4	17	1	17	58	18	55	19	52	20	49	21	46	11
20	14	50	15	45	16	41	17	38	18	35	19	32	20	29	21	26	10
21	14	31	15	26	16	22	17	19	18	16	19	13	20	10	21	7	9
22	14	11	15	7	16	3	17	0	17	56	18	53	19	50	20	47	8
23	13	52	14	47	15	43	16	40	17	36	18	33	19	29	20	26	7
24	13	32	14	27	15	23	16	19	17	15	18	12	19	8	20	5	6
25	13	12	14	7	15	3	16	0	16	56	17	53	18	49	19	45	5
26	12	52	13	47	14	43	15	39	16	35	17	32	18	28	19	24	4
27	12	32	13	27	14	23	15	19	16	15	17	12	18	8	19	4	3
28	12	11	13	6	14	2	14	58	15	54	16	51	17	47	18	43	2
29	11	50	12	45	13	41	14	37	15	33	16	30	17	26	18	22	1
30	11	29	12	24	13	20	14	16	15	12	16	8	17	4	18	0	0

DECLINATION.

CELESTIAL N. LATITUDE.

No.	0°		1°		2°		3'		4'		5°		6°		7'		8'	
	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'	°	'
1	11	8	12	4	13	0	13	56	14	51	15	47	16	43	17	39	29	
2	10	46	11	42	12	38	13	33	14	29	15	25	16	21	17	17	28	
3	10	25	11	21	12	17	13	12	14	8	15	4	16	0	16	56	27	
4	10	3	10	59	11	55	12	51	13	47	14	43	15	39	16	35	26	
5	9	41	10	39	11	35	12	30	13	26	14	22	15	18	16	14	25	
6	9	19	10	15	11	11	12	6	13	2	13	58	14	54	15	50	24	
7	8	57	9	53	10	49	11	44	12	40	13	35	14	31	15	26	23	
8	8	35	9	31	10	27	11	22	12	18	13	13	14	9	15	4	22	
9	8	12	9	8	10	4	10	59	11	54	12	49	13	44	14	39	21	
10	7	50	8	46	9	41	10	36	11	31	12	26	13	21	14	16	20	
11	7	27	8	22	9	17	10	12	11	7	12	2	12	57	13	52	19	
12	7	5	8	0	8	55	9	50	10	45	11	40	12	35	13	30	18	
13	6	41	7	36	8	31	9	26	10	21	11	16	12	11	13	6	17	
14	6	18	7	13	8	8	9	3	9	58	10	53	11	48	12	43	16	
15	5	55	6	51	7	46	8	41	9	36	10	31	11	26	12	21	15	
16	5	32	6	28	7	23	8	18	9	13	10	8	11	3	11	58	14	
17	5	8	6	4	6	59	7	54	8	49	9	44	10	39	11	34	13	
18	4	45	5	41	6	36	7	31	8	26	9	21	10	16	11	11	12	
19	4	21	5	17	6	12	7	7	8	2	8	57	9	52	10	47	11	
20	3	58	4	54	5	49	6	44	7	39	8	34	9	29	10	24	10	
21	3	34	4	30	5	25	6	20	7	15	8	10	9	5	10	0	9	
22	3	11	4	7	5	2	5	57	6	52	7	47	8	42	9	37	8	
23	2	47	3	43	4	38	5	33	6	28	7	23	8	18	9	13	7	
24	2	23	3	19	4	14	5	9	6	4	6	59	7	54	8	49	6	
25	2	0	2	55	3	50	4	45	5	40	6	35	7	30	8	25	5	
26	1	36	2	31	3	26	4	21	5	16	6	11	7	6	8	1	4	
27	1	12	2	7	3	2	3	57	4	52	5	47	6	42	7	37	3	
28	0	48	1	48	2	43	3	38	4	33	5	23	6	18	7	13	2	
29	0	24	1	19	2	14	3	9	4	4	4	59	5	54	6	49	1	
30	0	0	0	55	1	50	2	45	3	40	4	35	5	30	6	25	0	

DECLINATION.

CELESTIAL N. LATITUDE.

	0°	1°	2°	3°	4°	5°	6°	7°	N
	${}^{\circ} {}' {}''$								
1	0 24	0 31	1 27	2 21	3 16	4 11	5 6	6 1	29
2	0 48	0 7	1 3	1 57	2 52	3 47	4 42	5 37	28
3	1 12	0 17	0 39	1 34	2 29	3 24	4 19	5 14	27
4	1 36	0 41	0 15	1 10	2 5	3 0	3 55	4 50	26
5	2 0	1 5	0 10	0 46	1 41	2 36	3 31	4 26	25
6	2 23	1 28	0 33	0 22	1 17	2 12	3 7	4 2	24
7	2 47	1 52	0 57	0 2	0 53	1 48	2 43	3 34	23
8	3 11	2 15	1 21	0 26	0 29	1 25	2 20	3 15	22
9	3 34	2 36	1 44	0 49	0 6	1 2	1 57	2 52	21
10	3 58	3 3	2 8	1 13	0 18	0 38	1 33	2 28	20
11	4 21	3 26	2 31	1 36	0 41	0 14	1 9	2 4	19
12	4 45	3 50	2 55	2 0	1 5	0 10	0 46	1 41	18
13	5 8	4 13	3 18	2 23	1 28	0 33	0 24	1 18	17
14	5 32	4 37	3 42	2 46	1 51	0 56	0 0	0 55	16
15	5 55	5 0	4 5	3 9	2 14	1 18	0 23	0 32	15
16	6 18	5 23	4 27	3 31	2 36	1 40	0 45	0 9	14
17	6 41	5 45	4 50	3 54	2 59	2 3	1 8	0 13	13
18	7 5	6 9	5 14	4 18	3 23	2 27	1 32	0 36	12
19	7 27	6 31	5 36	4 40	3 45	2 49	1 54	0 58	11
20	7 50	6 54	5 58	5 2	4 6	3 10	2 15	1 19	10
21	8 12	7 16	6 20	5 24	4 28	3 32	2 37	1 41	9
22	8 35	7 29	6 43	5 47	4 51	3 56	3 0	2 4	8
23	8 57	8 1	7 5	6 9	5 13	4 18	3 22	2 26	7
24	9 19	8 23	7 27	6 31	5 35	4 40	3 45	2 49	6
25	9 41	8 45	7 49	6 53	5 58	5 2	4 6	3 10	5
26	10 3	9 7	8 11	7 15	6 19	5 24	4 28	3 32	4
27	10 25	9 30	8 34	7 38	6 42	5 46	4 50	3 54	3
28	10 46	9 51	8 55	8 1	7 4	6 8	5 12	4 16	2
29	11 8	10 13	9 17	8 21	7 24	6 28	5 32	4 36	1
30	11 29	10 33	9 37	8 41	7 44	6 48	5 52	4 56	0

NORTH.

SOUTH.

DECLINATION.

CELESTIAL N. LATITUDE.

m	||	0°	1°	2°	3°	4°	5°	6°	7°	||	mm
°		°	'	°	'	°	'	°	'	°	'
1	11	50	10 54	9 58	9 2	8 6	7 10	6 14	5 18	29	
2	12	11	11 15	10 18	9 22	8 26	7 29	6 32	5 36	28	
3	12	32	11 36	10 39	9 43	8 47	7 50	6 54	5 58	27	
4	12	52	11 56	10 58	10 1	9 5	8 8	7 12	6 16	26	
5	13	12	12 16	11 19	10 22	9 26	8 29	7 33	6 37	25	
6	13	32	12 36	11 39	10 42	9 46	8 49	7 52	6 55	24	
7	13	52	12 56	11 59	11 2	10 5	9 8	8 11	7 14	23	
8	14	11	13 14	12 17	11 20	10 23	9 26	8 29	7 32	22	
9	14	31	13 34	12 37	11 40	10 43	9 46	8 49	7 52	21	
10	14	50	13 53	12 56	11 59	11 2	10 5	9 8	8 11	20	
11	15	9	14 12	13 15	12 18	11 21	10 23	9 26	8 29	19	
12	15	27	14 30	13 33	12 36	11 39	10 41	9 44	8 47	18	
13	15	45	14 47	13 50	12 53	11 56	10 58	10 1	9 4	17	
14	16	3	15 5	14 8	13 11	12 14	11 16	10 19	9 22	16	
15	16	21	15 23	14 26	13 29	12 32	11 34	10 37	9 40	15	
16	16	39	15 44	14 44	13 46	12 49	11 51	10 54	9 57	14	
17	16	56	15 58	15 1	14 3	13 5	12 8	11 11	10 14	13	
18	17	13	16 15	15 18	14 20	13 22	12 24	11 27	10 30	12	
19	17	29	16 31	15 33	14 35	13 37	12 39	11 42	10 45	11	
20	17	46	16 48	15 50	14 52	13 54	12 56	11 59	11 1	10	
21	18	2	17 4	16 6	15 8	14 10	13 12	12 15	11 17	9	
22	18	17	17 19	16 21	15 23	14 25	13 26	12 28	11 30	8	
23	18	33	17 35	16 36	15 38	14 40	13 41	12 43	11 45	7	
24	18	48	17 50	16 52	15 54	14 56	13 57	12 59	12 0	6	
25	19	2	18 4	17 6	16 8	15 10	14 11	13 15	12 14	5	
26	19	17	18 19	17 20	16 22	15 24	14 25	13 27	12 29	4	
27	19	31	18 33	17 34	16 36	15 37	14 39	13 40	12 42	3	
28	19	44	18 45	17 47	16 48	15 49	14 51	13 52	12 54	2	
29	19	57	18 58	17 59	17 1	16 2	15 4	14 5	13 7	1	
30	20	10	19 11	18 12	17 14	16 15	15 16	14 17	13 18	0	

DECLINATION.

CELESTIAL N. LATITUDE.

	0°	1°	2°	3°	4°	5°	6°	7°	$\sqrt{3}$
	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$
1	20 23	19 24	18 25	17 26	16 27	15 29	14 30	13 31	29
2	20 35	19 36	18 37	17 38	16 39	15 41	14 43	13 43	28
3	20 47	19 48	18 49	17 50	16 52	15 53	14 54	13 55	27
4	20 58	19 59	19 0	18 1	17 2	16 3	15 5	14 6	26
5	21 9	20 10	19 11	18 12	17 12	16 14	15 15	14 16	25
6	21 20	20 21	19 22	18 23	17 24	16 25	15 25	14 26	24
7	21 30	20 31	19 32	18 33	17 34	16 34	15 35	14 36	23
8	21 40	20 41	19 42	18 43	17 44	16 43	15 44	14 44	22
9	21 49	20 50	19 51	18 52	17 53	16 53	15 54	14 54	21
10	21 58	20 59	20 0	19 1	18 2	17 2	16 2	15 3	20
11	22 7	21 8	20 9	19 10	18 11	17 11	16 11	15 12	19
12	22 15	21 16	20 17	19 18	18 19	17 19	16 19	15 20	18
13	22 23	21 24	20 25	19 25	18 26	17 26	16 26	15 27	17
14	22 30	21 31	20 32	19 32	18 33	17 33	16 33	15 34	16
15	22 37	21 37	20 37	19 37	18 38	17 38	16 38	15 39	15
16	22 44	21 44	20 44	19 40	18 45	17 45	16 45	15 46	14
17	22 50	21 50	20 50	19 50	18 51	17 51	16 51	15 52	13
18	22 56	21 56	20 56	19 56	18 57	17 57	16 57	15 58	12
19	23 1	22 1	21 1	20 1	19 2	18 2	17 2	16 2	11
20	23 5	22 5	21 5	20 5	19 5	18 5	17 5	16 5	10
21	23 10	22 9	21 9	20 9	19 9	18 9	17 9	16 9	9
22	23 13	22 13	21 13	20 13	19 13	18 13	17 13	16 13	8
23	23 17	22 16	21 16	20 16	19 16	18 16	17 16	16 16	7
24	23 20	22 19	21 19	20 19	19 19	18 19	17 19	16 19	6
25	23 22	22 22	21 22	20 22	19 22	18 22	17 22	16 22	5
26	23 24	22 25	21 25	20 25	19 25	18 25	17 25	16 25	4
27	23 26	22 26	21 26	20 26	19 26	18 26	17 26	16 26	3
28	23 27	22 27	21 27	20 27	19 27	18 27	17 27	16 27	2
29	23 28	22 28	21 28	20 28	19 28	18 28	17 28	16 28	1
30	23 28	22 28	21 28	20 28	19 28	18 28	17 28	16 28	0

DECLINATION.

CELESTIAL S. LATITUDE.

	0°	1°	2°	3°	4°	5°	6°	7°	
	${}^{\circ} {}' {}''$								
1	23 23	22 23	21 28	20 28	19 28	18 28	17 28	16 28	29
2	23 27	22 27	21 27	20 27	19 27	18 27	17 27	16 27	28
3	23 26	22 26	21 26	20 26	19 26	18 26	17 26	16 26	27
4	23 24	22 25	21 25	20 25	19 25	18 25	17 25	16 25	26
5	23 22	22 22	21 22	20 22	19 22	18 22	17 22	16 22	25
6	23 20	22 19	21 19	20 19	19 19	18 19	17 19	16 19	24
7	23 17	22 16	21 16	20 16	19 16	18 16	17 16	16 16	23
8	23 18	22 13	21 13	20 13	19 13	18 13	17 13	16 13	22
9	23 10	22 9	21 9	20 9	19 9	18 9	17 9	16 9	21
10	23 5	22 5	21 5	20 5	19 5	18 5	17 5	16 5	20
11	23 1	22 1	21 1	20 1	19 2	18 2	17 2	16 2	19
12	22 56	21 56	20 56	19 56	18 57	17 57	16 57	15 58	18
13	22 50	21 50	20 50	19 50	18 51	17 51	16 51	15 52	17
14	22 44	21 44	20 44	19 44	18 45	17 45	16 45	15 46	16
15	23 37	21 37	20 37	19 37	18 38	17 38	16 38	15 39	15
16	22 30	21 31	20 32	19 32	18 33	17 33	16 33	15 34	14
17	22 23	21 24	20 25	19 25	18 26	17 26	16 26	15 27	13
18	22 15	21 16	20 17	19 18	18 19	17 19	16 19	15 20	12
19	22 7	21 8	20 9	19 10	18 11	17 11	16 11	15 12	11
20	21 58	20 59	20 0	19 1	18 2	17 2	16 2	15 3	10
21	21 49	20 50	19 51	18 52	17 53	16 53	15 54	14 54	9
22	21 40	20 41	19 42	18 43	17 44	16 43	15 44	14 44	8
23	21 30	20 31	19 32	18 33	17 34	16 34	15 35	14 36	7
24	21 20	20 21	19 22	18 23	17 24	16 25	15 25	14 26	6
25	21 9	20 10	19 11	18 12	17 12	16 14	15 15	14 16	5
26	20 53	19 59	19 0	18 1	17 2	16 3	15 5	14 6	4
27	20 47	19 48	18 49	17 50	16 52	15 53	14 54	13 55	3
28	20 35	19 36	18 37	17 38	16 39	15 41	14 42	13 43	2
29	20 23	19 24	18 25	17 26	16 27	15 29	14 30	13 31	1
30	20 10	19 11	18 12	17 14	16 15	15 16	14 17	13 18	0

DECLINATION.

CELESTIAL S. LATITUDE.

α	0°	1°	2°	3°	4°	5°	6°	7°	8°
	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$	$^{\circ}$	$'$	$''$
1	19 57	18 58	17 59	17 1	16 2	15 14	14 5	13 7	29
2	19 44	18 45	17 47	16 48	15 49	14 51	13 52	12 54	28
3	19 31	18 33	17 34	16 36	15 37	14 39	13 40	12 42	27
4	19 17	18 19	17 20	16 22	15 24	14 25	13 27	12 29	26
5	19 2	18 4	17 6	16 8	15 10	14 11	13 13	12 14	25
6	18 48	17 50	16 52	15 54	14 56	13 57	12 59	12 0	24
7	18 33	17 35	16 36	15 38	14 40	13 41	12 43	11 45	23
8	18 17	17 19	16 21	15 23	14 25	13 26	12 28	11 30	22
9	18 2	17 4	16 6	15 8	14 10	13 12	12 15	11 17	21
10	17 46	16 48	15 50	14 52	13 54	12 56	11 59	11 1	20
11	17 29	16 31	15 33	14 35	13 37	12 39	11 42	10 45	19
12	17 13	16 15	15 18	14 20	13 22	12 21	11 27	10 30	18
13	16 56	15 58	15 1	14 3	13 6	12 8	11 11	10 14	17
14	16 39	15 44	14 44	13 46	12 49	11 51	10 54	9 57	16
15	16 21	15 23	14 26	13 29	12 32	11 34	10 37	9 40	15
16	16 3	15 5	14 8	13 11	12 14	11 16	10 19	9 22	14
17	15 45	14 47	13 50	12 53	11 56	10 58	10 1	9 4	13
18	15 27	14 30	13 33	12 36	11 39	10 41	9 44	8 47	12
19	15 9	14 12	13 15	12 18	11 21	10 23	9 26	8 29	11
20	14 50	13 53	12 56	11 59	11 2	10 5	9 8	8 11	10
21	14 31	13 34	12 37	11 40	10 43	9 46	8 49	7 52	9
22	14 11	13 14	12 17	11 20	10 23	9 26	8 29	7 32	8
23	13 52	12 56	11 59	11 2	10 5	9 8	8 11	7 14	7
24	13 32	12 36	11 39	10 42	9 46	8 49	7 52	6 55	6
25	13 12	12 16	11 19	10 22	9 26	8 29	7 33	6 37	5
26	12 52	11 56	10 58	10 1	9 5	8 8	7 12	6 16	4
27	12 32	11 36	10 39	9 43	8 47	7 50	6 54	5 58	3
28	12 11	11 15	10 18	9 22	8 26	7 29	6 32	5 36	2
29	11 50	10 54	9 58	9 2	8 6	7 10	6 14	5 18	1
30	11 29	10 33	9 37	8 41	7 45	6 49	5 53	4 57	0

DECLINATION.

CELESTIAL S. LATITUDE.

DEG MIN SEC	CELESTIAL S. LATITUDE.									
	0°	1°	2°	3°	4°	5°	6°	7°	8°	9°
1 11 8	10 13	9 17	8 21	7 24	6 28	5 32	4 36	3 40	2 44	1 48
2 10 46	9 51	8 55	8 0	7 4	6 8	5 12	4 16	3 20	2 24	1 28
3 19 25	9 30	8 34	7 38	6 42	5 46	4 50	3 54	2 58	1 52	0 56
4 10 3	9 7	8 11	7 15	6 19	5 24	4 28	3 32	2 36	1 40	0 44
5 9 41	8 45	7 49	6 53	6 57	5 2	4 6	3 10	2 15	1 19	0 23
6 9 19	8 23	7 27	6 31	5 35	4 40	3 45	2 49	1 53	0 57	0 01
7 8 57	8 1	7 5	6 9	5 13	4 18	3 22	2 26	1 30	0 34	0 08
8 8 35	7 39	6 43	5 47	4 51	3 56	3 0	2 4	1 4	0 48	0 12
9 8 12	7 16	6 20	5 24	4 28	3 32	2 37	1 41	0 45	0 09	0 03
10 7 50	6 54	5 58	5 2	4 6	3 10	2 15	1 19	0 23	0 07	0 01
11 7 27	6 31	5 36	4 40	3 45	2 49	1 54	0 58	0 02	0 06	0 00
12 7 5	6 9	5 14	4 18	3 23	2 27	1 32	0 36	0 00	0 04	0 00
13 6 41	5 45	4 50	3 54	2 59	2 3	1 8	0 13	0 00	0 03	0 00
14 6 18	5 22	4 27	3 31	2 36	1 40	0 45	0 09	0 00	0 02	0 00
15 5 55	5 0	4 5	3 9	2 14	1 18	0 23	0 07	0 00	0 02	0 00
16 5 32	4 37	3 42	2 46	1 51	0 56	0 0	0 55	0 00	0 04	0 00
17 5 8	4 13	3 18	2 23	1 28	0 33	0 24	1 19	0 15	0 13	0 08
18 4 45	3 50	2 55	2 0	1 5	0 14	0 46	1 41	1 12	1 00	0 00
19 4 21	3 26	2 31	1 36	0 41	0 14	1 9	2 4	1 11	0 9	0 00
20 3 58	3 3	2 8	1 13	0 18	0 38	1 33	2 28	1 10	0 9	0 00
21 3 34	2 39	1 44	0 49	0 6	1 2	1 57	2 52	1 09	0 9	0 00
22 3 11	2 16	1 21	0 26	0 29	1 25	2 20	3 15	1 8	1 7	0 00
23 2 47	1 52	0 57	0 2	0 53	1 48	2 43	3 38	2 7	2 6	0 00
24 2 23	1 28	0 33	0 22	1 17	2 12	3 7	4 2	3 1	2 0	0 00
25 2 0	1 5	0 10	0 46	1 41	2 36	3 31	4 26	3 1	2 0	0 00
26 1 36	0 41	0 15	1 10	2 5	3 0	3 55	4 50	3 4	2 3	0 00
27 1 12	0 17	0 39	1 34	2 29	3 24	4 19	5 14	4 0	2 9	0 00
28 0 48	0 7	1 3	1 57	2 52	3 47	4 42	5 37	4 2	3 1	0 00
29 0 24	0 31	1 27	2 21	3 16	4 11	5 6	6 1	5 0	3 9	0 00
30 0 0	0 55	1 50	2 45	3 40	4 35	5 30	6 25	5 1	4 0	0 00

NORTH.

SOUTH.

DECLINATION.

CELESTIAL S. LATITUDE.

Δ	0°	1°	2°	3°	4°	5°	6°	7°	Σ
${}^{\circ} {}' {}''$									
1	0 24	1 19	2 14	3 9	4 4	4 59	5 55	6 49	29
2	0 48	1 43	2 43	3 38	4 33	5 23	6 18	7 13	28
3	1 12	2 7	3 2	3 57	4 52	5 47	6 42	7 37	27
4	1 36	2 31	3 26	4 21	5 16	6 11	7 6	8 1	26
5	2 0	2 55	3 50	4 45	5 40	6 35	7 30	8 25	25
6	2 23	3 19	4 14	5 9	6 4	6 59	7 54	8 49	24
7	2 47	3 43	4 38	5 33	6 28	7 23	8 18	9 13	23
8	3 11	4 7	5 2	5 57	6 52	7 47	8 42	9 37	22
9	3 34	4 30	5 25	6 20	7 15	8 10	9 5	10 0	21
10	3 58	4 54	5 49	6 44	7 39	8 34	9 29	10 24	20
11	4 21	5 17	6 12	7 7	8 2	8 57	9 52	10 47	19
12	4 45	5 41	6 36	7 31	8 26	9 21	10 16	11 11	18
13	5 8	6 4	6 59	7 54	8 49	9 44	10 39	11 34	17
14	5 32	6 28	7 23	8 18	9 13	10 8	11 3	11 58	16
15	5 55	6 51	7 46	8 41	9 30	10 31	11 26	12 21	15
16	6 18	7 13	8 8	9 3	9 55	10 53	11 48	12 43	14
17	6 41	7 36	8 31	9 26	10 21	11 16	12 11	13 6	13
18	7 5	8 0	8 55	9 50	10 45	11 40	12 35	13 30	12
19	7 27	8 22	9 17	10 12	11 7	12 2	12 57	13 52	11
20	7 50	8 46	9 41	10 36	11 31	12 26	13 21	14 16	10
21	8 12	9 8	10 4	10 59	11 54	12 49	13 44	14 39	9
22	8 35	9 31	10 27	11 22	12 18	13 13	14 9	15 4	8
23	8 57	9 53	10 49	11 44	12 40	13 35	14 31	15 26	7
24	9 19	10 15	11 11	12 6	13 2	13 58	14 54	15 50	6
25	9 41	10 39	11 35	12 30	13 26	14 22	15 18	16 14	5
26	10 3	10 59	11 55	12 51	13 47	14 43	15 39	16 35	4
27	10 25	11 21	12 17	13 12	14 8	15 4	16 0	16 56	3
28	10 46	11 42	12 38	13 33	14 29	15 25	16 21	17 17	2
29	11 8	12 4	13 0	13 56	14 51	15 47	16 43	17 39	1
30	11 29	12 24	13 20	14 16	15 12	16 8	17 4	18 0	0

DECLINATION.

CELESTIAL S. LATITUDE.

m.	0°	1°	2°	3°	4°	5°	6°	7°	8°
	${}^{\circ} {}' {}''$								
1	11 50	12 45	13 41	14 37	15 33	16 30	17 26	18 22	19 29
2	12 11	13 6	14 2	14 58	15 54	16 51	17 47	18 43	19 28
3	12 32	13 27	14 23	15 19	16 15	17 12	18 8	19 4	27
4	12 52	13 47	14 43	15 39	16 35	17 32	18 28	19 24	26
5	13 12	14 7	15 3	16 0	16 56	17 53	18 49	19 45	25
6	13 32	14 27	15 23	16 19	17 15	18 12	19 8	20 5	24
7	13 52	14 47	15 43	16 40	17 36	18 33	19 29	20 26	23
8	14 11	15 7	16 3	17 0	17 56	18 53	19 50	20 47	22
9	14 31	15 26	16 22	17 19	18 16	19 13	20 10	21 7	21
10	14 50	15 45	16 41	17 38	18 35	19 32	20 29	21 26	20
11	15 9	16 4	17 1	17 58	18 55	19 52	20 49	21 46	19
12	15 27	16 23	17 20	18 17	19 14	20 11	21 8	22 5	18
13	15 45	16 42	17 39	18 36	19 33	20 30	21 27	22 24	17
14	16 3	17 0	17 57	18 54	19 51	20 49	21 46	22 43	16
15	16 21	17 18	18 15	19 12	20 9	21 7	22 4	23 1	15
16	16 39	17 35	18 33	19 30	20 27	21 25	22 22	23 19	14
17	16 56	17 52	18 50	19 47	20 44	21 42	22 39	23 36	13
18	17 13	18 9	19 7	20 5	21 3	22 0	22 57	23 54	12
19	17 29	18 26	19 24	20 22	21 19	22 17	23 14	24 11	11
20	17 46	18 43	19 41	20 38	21 36	22 34	23 31	24 28	10
21	18 2	18 59	19 57	20 55	21 53	22 51	23 49	24 46	9
22	18 17	19 15	20 13	21 11	22 9	23 7	24 5	25 3	8
23	18 33	19 31	20 29	21 27	22 25	23 23	24 21	25 19	7
24	18 48	19 46	20 44	21 42	22 40	23 38	24 36	25 34	6
25	19 2	20 0	20 59	21 57	22 55	23 53	24 51	25 46	5
26	19 17	20 14	21 13	22 11	23 9	24 8	25 6	26 4	4
27	19 31	20 28	21 27	22 25	23 23	24 22	25 20	26 18	3
28	19 44	20 42	21 41	22 39	23 37	24 37	25 34	26 32	2
29	19 57	20 56	21 54	22 53	23 51	24 50	25 48	26 46	1
30	20 10	21 8	22 6	23 5	24 4	25 2	26 0	26 59	0

DECLINATION.

CELESTIAL S. LATITUDE.

	0°	1°	2°	3°	4°	5°	6°	7°	8°
	${}^{\circ} {}^{\prime} {}^{\prime \prime}$								
1	20 23	21 20	22 19	23 18	24 17	25 16	26 14	27 13	29
2	20 35	21 32	22 31	23 30	24 29	25 28	26 26	27 25	28
3	20 47	21 44	22 43	23 42	24 41	25 40	26 39	27 38	27
4	20 58	21 56	22 55	23 54	24 53	25 52	26 51	27 50	26
5	21 9	22 8	22 7	24 6	25 5	26 4	27 3	28 2	25
<hr/>									
6	21 20	22 19	23 18	24 17	25 16	26 15	27 14	28 13	24
7	21 30	22 30	23 29	24 28	25 27	26 26	27 25	28 25	23
8	21 40	22 40	23 39	24 38	25 57	26 36	27 35	28 35	22
9	21 49	22 49	23 48	24 47	25 46	26 45	27 44	28 43	21
10	21 58	22 58	23 57	24 56	25 55	26 54	27 53	28 52	20
<hr/>									
11	22 7	23 7	24 6	25 6	26 5	27 4	28 3	29 2	19
12	22 15	23 50	24 14	25 14	26 13	27 12	28 11	29 10	18
13	22 23	23 23	24 22	25 22	26 21	27 20	28 19	29 18	17
14	22 30	23 30	24 29	25 29	26 29	27 28	28 28	29 27	16
15	22 37	23 37	24 36	25 36	26 36	27 35	28 35	29 34	15
<hr/>									
16	22 44	23 44	24 43	25 43	26 43	27 42	28 42	29 41	14
17	22 50	23 50	24 50	25 50	26 50	27 50	28 50	29 48	13
18	22 56	23 56	24 56	25 56	26 56	27 56	28 56	29 55	12
19	23 1	24 1	25 1	26 1	27 0	28 0	29 0	30 0	11
20	23 5	24 5	25 5	26 5	27 5	28 5	29 5	30 5	10
<hr/>									
21	23 10	24 9	25 9	26 9	27 9	28 9	29 9	30 9	9
22	23 13	24 13	25 13	26 13	27 13	28 13	29 13	30 13	8
23	23 17	24 16	25 16	26 16	27 16	28 16	29 16	30 16	7
24	23 20	24 19	25 19	26 19	27 19	28 19	29 19	30 19	6
25	23 22	24 22	25 22	26 22	27 22	28 22	29 22	30 22	5
<hr/>									
26	23 24	24 24	25 24	26 24	27 24	28 24	29 24	30 24	4
27	23 26	24 26	25 26	26 26	27 26	28 26	29 26	30 26	3
28	23 27	24 27	25 27	26 27	27 27	28 27	29 27	30 27	2
29	23 28	24 28	25 28	26 28	27 28	28 28	29 28	30 28	1
30	23 28	24 28	25 28	26 28	27 28	28 28	29 28	30 28	0

TABLES

OF

Ascensional Difference.

DECLINATION.

MUNDANE LATITUDE.

	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°
D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.
1	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 11
2	0 2	0 4	0 6	0 8	0 10	0 13	0 15	0 17	0 19	0 21
3	0 3	0 6	0 9	0 13	0 16	0 19	0 22	0 25	0 29	0 32
4	0 4	0 8	0 13	0 17	0 21	0 25	0 30	0 34	0 38	0 42
5	0 5	0 10	0 16	0 21	0 26	0 32	0 37	0 42	0 48	0 53
6	0 6	0 13	0 19	0 25	0 32	0 38	0 44	0 51	0 57	1 4
7	0 7	0 15	0 22	0 30	0 37	0 44	0 52	0 59	1 7	1 14
8	0 8	0 17	0 25	0 34	0 42	0 51	0 59	1 8	1 16	1 25
9	0 9	0 19	0 29	0 38	0 48	0 57	1 7	1 16	1 26	1 36
10	0 11	0 21	0 32	0 42	0 53	1 4	1 14	1 25	1 36	1 47
11	0 12	0 23	0 35	0 47	0 58	1 10	1 22	1 34	1 46	1 58
12	0 13	0 25	0 38	0 51	1 4	1 17	1 30	1 43	1 56	2 9
13	0 14	0 28	0 42	0 56	1 9	1 23	1 37	1 52	2 6	2 20
14	0 15	0 30	0 45	1 0	1 15	1 30	1 45	2 1	2 16	2 31
15	0 16	0 32	0 48	1 4	1 21	1 37	1 53	2 10	2 26	2 42
16	0 17	0 34	0 52	1 9	1 20	1 44	2 1	2 19	2 36	2 54
17	0 18	0 37	0 55	1 14	1 32	1 50	2 9	2 28	2 47	3 5
18	0 19	0 39	0 59	1 18	1 38	1 57	2 17	2 37	2 57	3 17
19	0 21	0 41	1 2	1 23	1 44	2 4	2 25	2 46	3 8	3 29
20	0 22	0 44	1 6	1 27	1 49	2 12	2 34	2 56	3 18	3 41
21	0 23	0 46	1 9	1 32	1 55	2 19	2 41	3 6	3 29	3 53
22	0 24	0 49	1 13	1 37	2 2	2 26	2 50	3 15	3 40	4 5
23	0 25	0 51	1 17	1 42	2 8	2 33	2 59	3 25	3 51	4 18
24	0 27	0 53	1 20	1 47	2 14	2 41	3 9	3 35	4 3	4 30
25	0 28	0 56	1 24	1 52	2 20	2 49	3 17	3 45	4 14	4 43
26	0 29	0 59	1 28	1 57	2 27	2 56	3 26	3 54	4 26	4 56
27	0 31	1 1	1 32	2 3	2 33	3 4	3 35	4 6	4 38	5 9
28	0 32	1 4	1 36	2 8	2 40	3 12	3 45	4 17	4 50	5 23

TABLES

OF

Ascensional Difference.

DECLINATION.

MUNDANE LATITUDE.

	11°	12°	13°	14°	15°	16°	17°	18°	19°	20°
D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.
1	0 12	0 13	0 14	0 15	0 16	0 17	0 18	0 19	0 21	0 22
2	0 23	0 25	0 28	0 30	0 32	0 34	0 37	0 39	0 42	0 44
3	0 35	0 38	0 42	0 45	0 48	0 52	0 54	0 59	1 2	1 6
4	0 47	0 51	0 56	1 0	1 4	1 9	1 14	1 18	1 23	1 27
5	0 58	1 4	1 9	1 15	1 21	1 26	1 32	1 38	1 44	1 49
6	1 10	1 17	1 23	1 30	1 37	1 44	1 50	1 57	2 4	2 12
7	1 22	1 30	1 37	1 45	1 53	2 1	2 9	2 17	2 25	2 34
8	1 35	1 43	1 52	2 0	2 9	2 19	2 28	2 37	2 46	2 56
9	1 46	1 56	2 6	2 16	2 26	2 36	2 47	2 57	3 8	3 18
10	1 58	2 9	2 20	2 31	2 42	2 54	3 5	3 17	3 20	3 41
11	2 10	2 22	2 34	2 47	2 59	3 12	3 24	3 37	3 50	4 3
12	2 22	2 35	2 49	3 2	3 16	3 30	3 44	3 58	4 12	4 26
13	2 34	2 49	3 3	3 18	3 33	3 48	4 3	4 18	4 34	4 49
14	2 47	3 2	3 18	3 34	3 50	4 6	4 22	4 39	4 56	5 12
15	2 59	3 16	3 33	3 50	4 7	4 24	4 42	5 0	5 18	5 36
16	3 12	3 30	3 48	4 6	4 24	4 43	5 2	5 21	5 40	5 59
17	3 24	3 44	4 3	4 22	4 42	5 2	5 22	5 42	6 22	6 23
18	3 37	3 58	4 18	4 39	5 0	5 21	5 42	6 4	6 25	6 47
19	3 50	4 12	4 34	4 55	5 18	5 40	6 3	6 26	6 49	7 12
20	4 3	4 26	4 49	5 12	5 36	5 59	6 24	6 48	7 12	7 37
21	4 17	4 44	5 5	5 30	5 54	6 19	6 45	7 10	7 36	8 2
22	4 30	4 56	5 24	5 47	6 13	6 39	7 6	7 33	8 0	8 27
23	4 44	5 11	5 37	6 5	6 32	6 59	7 27	7 56	8 24	8 53
24	4 58	5 26	5 54	6 23	6 51	7 20	7 49	8 19	8 49	9 19
25	5 12	5 41	6 11	6 41	7 11	7 41	8 12	8 43	9 14	9 40
26	5 26	5 57	6 28	6 59	7 31	8 2	8 35	9 7	9 40	10 14
27	5 41	6 13	6 45	7 18	7 51	8 24	8 58	9 32	10 6	10 41
28	5 56	6 29	7 3	7 37	8 11	8 46	9 21	9 57	10 33	11 9

TABLES

OF

Ascensional Difference.

DECLINATION

MUNDANE LATITUDE.

	21°	22°	23°	24°	25°	26°	27	28°	29°	30°
D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.
1	0 23	0 24	0 25	0 27	0 28	0 29	0 31	0 32	0 33	0 35
2	0 46	0 49	0 51	0 53	0 56	0 59	1 1	1 4	1 7	1 9
3	1 9	1 13	1 17	1 20	1 24	1 28	1 32	1 36	1 40	1 44
4	1 32	1 37	1 42	1 47	1 52	1 57	2 3	2 8	2 13	2 19
5	1 55	2 2	2 8	2 14	2 20	2 27	2 33	2 40	2 47	2 54
6	2 19	2 25	2 33	2 41	2 49	2 56	3 4	3 12	3 20	3 29
7	2 42	2 51	2 59	3 8	3 17	3 26	3 35	3 45	3 54	4 4
8	3 6	3 15	3 25	3 35	3 45	3 56	4 6	4 17	4 28	4 39
9	3 29	3 40	3 51	4 3	4 14	4 26	4 38	4 50	5 2	5 15
10	3 53	3 5	4 18	4 30	4 53	4 56	5 9	5 23	5 38	5 51
11	4 17	4 30	4 44	4 58	5 12	5 26	5 41	5 56	6 11	6 27
12	4 41	4 56	5 11	5 26	5 41	5 57	6 13	6 29	6 46	7 3
13	5 55	5 21	5 38	5 54	6 11	6 28	6 45	7 3	7 21	7 40
14	5 30	5 47	6 5	6 22	6 41	6 59	7 18	7 37	7 56	8 17
15	5 54	6 13	6 32	6 51	7 11	7 31	7 51	8 11	8 32	8 54
16	6 19	6 39	6 59	7 20	7 41	8 3	8 24	8 46	9 8	9 32
17	6 44	7 6	7 27	7 49	8 12	8 35	8 58	9 21	9 45	10 10
18	7 10	7 33	7 56	8 19	8 43	9 7	9 32	9 56	10 23	10 49
19	7 36	8 0	8 24	8 49	9 14	9 49	10 6	10 53	11 0	11 28
20	8 2	8 27	8 53	9 19	9 40	10 14	10 41	11 9	11 38	12 8
21	8 28	8 55	9 23	9 50	10 19	10 47	11 17	11 46	12 17	12 48
22	8 55	9 24	9 53	10 22	10 52	11 22	11 53	12 24	12 56	13 29
23	9 22	9 53	10 23	10 54	11 25	11 57	12 29	13 3	13 37	14 11
24	9 50	10 22	10 54	11 26	11 59	12 33	13 7	13 42	14 17	14 54
25	10 19	10 52	11 25	11 59	12 34	13 9	13 45	14 21	14 59	15 37
26	10 47	11 22	11 57	12 33	13 9	13 46	14 24	15 2	15 41	16 21
27	11 17	11 53	12 26	13 7	13 45	14 23	15 3	15 43	16 24	17 6
28	11 47	12 24	13 3	13 42	14 21	15 2	15 43	16 25	17 8	17 53

TABLES

OF

Ascensional Difference.

DECLINATION.

MUNDANE LATITUDE.

	31°	32°	33°	34°	35°	36°	37°	38°	39°	40°
D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.
1	0 36	0 37	0 39	0 40	0 42	0 44	0 45	0 47	0 49	0 50
2	1 12	1 15	1 18	1 21	1 24	1 27	1 31	1 34	1 37	1 41
3	1 48	1 53	1 57	2 2	2 6	2 11	2 16	2 21	2 26	2 31
4	2 24	2 30	2 36	2 42	2 48	2 55	3 1	3 8	3 15	3 22
5	3 1	3 8	3 15	3 23	3 31	3 39	3 47	3 55	4 4	4 13
6	3 37	3 46	3 55	4 3	4 13	4 23	4 33	4 42	4 53	5 4
7	4 14	4 24	4 34	4 45	4 56	5 7	5 19	5 30	5 42	5 55
8	4 51	5 2	5 14	5 26	5 39	5 52	6 5	6 18	6 32	6 46
9	5 28	5 41	5 54	6 8	6 22	6 37	6 51	7 6	7 22	7 38
10	6 5	6 20	6 35	6 50	7 9	7 22	7 38	7 55	8 13	8 30
11	6 42	6 59	7 15	7 32	7 49	8 7	8 25	8 44	9 3	9 28
12	7 20	7 38	7 56	8 15	8 34	8 53	9 13	9 34	9 55	10 16
13	7 58	8 18	8 37	8 58	9 18	9 39	10 1	10 24	10 46	11 10
14	8 37	8 58	9 19	9 41	10 3	10 26	10 50	11 14	11 39	12 4
15	9 16	9 38	10 1	10 25	10 49	11 14	11 39	12 5	12 32	13 0
16	9 55	10 19	10 44	11 9	11 35	12 2	12 29	12 57	13 26	13 55
17	10 35	11 1	11 27	11 54	12 22	12 54	13 19	13 49	14 20	14 52
18	11 16	11 43	12 11	12 40	13 9	13 39	14 10	14 42	15 15	15 49
19	11 56	12 26	12 55	13 26	13 57	14 29	15 2	15 36	16 11	16 48
20	12 38	13 9	13 40	14 13	14 46	15 20	15 55	16 31	17 8	17 47
21	13 20	13 53	14 25	15 0	15 36	16 12	16 49	17 27	18 7	18 47
22	14 3	14 37	15 13	15 49	16 27	17 5	17 44	18 24	19 6	19 49
23	14 47	15 23	16 0	16 38	17 17	17 58	18 39	19 22	20 6	20 52
24	15 51	16. 9	16 48	17 29	18 10	18 52	19 36	20 21	21 8	21 56
25	16 16	16 56	17 38	18 20	19 3	19 48	20 34	21 21	22 11	23 1
26	17 2	17 45	18 28	19 12	19 58	20 45	21 34	22 24	23 16	24 10
27	17 50	18 34	19 19	20 6	20 54	21 44	22 35	23 28	24 22	25 19
28	18 38	19 24	20 12	21 1	21 51	22 44	23 37	24 33	25 30	26 30

TABLES

OF

Ascensional Difference.

DECLINATION.

MUNDANE LATITUDE.

	41°	42°	43°	44°	45°	46°	47	48°	49°	50°
	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.
1	0 52	0 54	0 56	0 58	1 0	1 2	1 4	1 7	1 9	1 12
2	1 44	1 48	1 52	1 56	2 0	2 4	2 9	2 13	2 18	2 23
3	2 37	2 42	2 48	2 54	3 0	3 7	3 13	3 20	3 27	3 35
4	3 29	3 37	3 44	3 52	4 1	4 9	4 18	4 27	4 37	4 47
5	4 22	4 31	4 41	4 51	5 1	5 12	5 23	5 35	5 47	5 59
6	5 15	5 26	5 37	5 50	6 2	6 15	6 28	6 42	6 57	7 12
7	6 8	6 21	6 34	6 49	7 5	7 18	7 34	7 50	8 7	8 25
8	7 1	7 16	7 32	7 48	8 5	8 22	8 40	8 59	9 18	9 38
9	7 55	8 12	8 30	8 48	9 7	9 26	9 47	10 8	10 30	10 53
10	8 49	9 8	9 28	9 48	10 9	10 31	10 54	11 18	11 42	12 8
11	9 44	10 5	10 27	10 49	11 12	11 57	12 1	12 28	12 55	13 24
12	10 39	11 2	11 26	11 51	12 16	12 43	13 11	13 39	14 9	14 40
13	11 35	12 0	12 26	12 53	13 21	13 50	14 20	14 51	15 24	15 58
14	12 31	12 58	13 27	13 56	14 26	14 58	15 30	16 5	16 40	17 17
15	13 28	13 58	14 28	14 0	15 32	16 7	16 42	17 19	17 57	18 37
16	14 26	14 58	15 31	16 5	16 40	17 16	17 54	18 34	19 16	19 59
17	15 25	15 59	16 34	17 10	17 48	18 27	19 8	19 51	20 36	21 22
18	16 24	17 1	17 38	18 17	18 58	19 40	20 23	21 9	21 57	22 47
19	17 25	18 4	18 44	19 25	20 9	20 53	21 40	22 29	23 18	24 14
20	18 27	19 8	19 51	20 35	21 21	22 8	23 58	23 51	24 45	25 42
21	19 30	20 13	20 59	21 46	22 34	23 25	24 10	25 14	26 12	27 14
22	20 34	21 20	22 8	22 58	23 50	24 44	25 40	26 40	27 42	28 47
23	21 39	22 28	23 19	24 12	25 7	26 5	27 5	28 8	29 14	30 23
24	22 46	23 38	24 32	25 28	26 26	27 27	28 31	29 38	30 48	32 3
25	23 55	24 50	25 47	26 46	27 48	28 52	29 0	31 12	32 26	33 46
26	25 5	26 3	27 3	28 6	29 11	30 20	31 32	32 48	34 0	35 32
27	26 17	27 18	28 22	29 29	30 38	31 51	33 7	34 28	35 53	37 23
28	27 31	28 38	29 44	30 54	32 7	33 25	34 46	36 12	37 43	39 19

TABLES

OF

Ascensional Difference.

DECLINATION.

MUNDANE LATITUDE.

	*1°	52°	53°	54°	55°	56°	57	58°	59°	60°
D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.	D. M.
1	1 14	1 17	1 20	1 23	1 26	1 29	1 32	1 36	1 40	1 44
2	2 28	2 34	2 39	2 45	2 52	2 58	3 5	3 12	3 20	3 28
3	3 43	3 51	3 59	4 8	4 18	4 27	4 48	4 40	5 0	5 13
4	4 57	5 8	5 19	5 31	5 44	5 57	5 11	6 25	6 41	6 57
5	6 12	6 26	6 40	6 55	7 11	7 27	7 44	8 3	8 22	8 42
6	7 27	7 44	8 1	8 19	8 38	8 58	9 19	9 4	10 4	10 28
7	8 43	9 2	9 23	9 44	10 6	10 29	10 54	11 20	11 47	12 17
8	10 0	10 22	10 45	11 1	11 35	12 2	12 30	13 0	13 31	14 5
9	11 17	11 42	12 8	12 85	13 4	13 35	14 7	14 41	15 17	15 55
10	12 35	13 2	13 32	14 3	14 35	15 9	15 45	16 23	17 4	17 47
11	13 53	14 24	14 57	15 31	16 7	16 45	17 25	18 8	18 53	19 41
12	15 13	15 49	16 23	17 0	17 40	18 22	19 6	19 53	20 43	21 36
13	16 24	17 11	17 50	18 32	19 15	20 1	20 50	21 41	22 36	23 34
14	17 56	18 37	19 19	20 4	20 52	21 42	22 35	23 3	24 31	25 35
15	19 19	20 4	20 50	21 38	22 30	23 24	24 22	25 23	26 29	27 39
16	20 44	21 32	22 22	23 15	24 10	25 9	26 12	27 19	29 30	29 47
17	22 11	23 2	23 56	24 53	25 53	26 57	28	5 29	18 30	31 59
18	23 39	24 34	25 35	26 34	27 39	28 48	30	1 31	10 32	44 34 19
19	25 10	26 9	27 11	28 17	29 27	30 41	32	1 33	26 34 58	36 37
20	26 43	27 46	28 53	30 4	31 19	32 26	34 5	35 37	37 17	39 5
21	28 18	29 26	30 37	31 54	33 15	34 41	36 14	37 54	39 42	41 40
22	29 50	31 8	32 25	33 47	35 14	36 48	38 28	40 17	42 15	44 25
23	31 43	32 54	34 17	35 45	37 19	39 0	40 49	42 47	44 57	47 20
24	33 32	34 44	36 13	37 48	39 29	41 18	43 17	45 26	47 49	50 27
25	35 21	36 39	38 14	39 59	41 45	43 48	45 54	48 16	50 54	53 52
26	37 10	38 38	40 20	42 10	44 9	46 18	48 41	51 19	54 16	57 39
27	39 0	40 42	42 33	44 32	46 41	49 4	51 41	53 38	58 1	61 57
28	41 2	42 53	44 53	47 2	49 24	52 1	54 58	56 19	62 14	67 4

TABLES OF CONSTANT LOGARITHMS.

Logarithms are a system of ratios so calculated that if the logs. of two natural numbers are added together and the natural number be found for their sum, it will be the same as if the two natural numbers had been multiplied together. Or if the log. of a less natural number be subtracted from a greater, the natural number of the remainder will be the same as though the larger natural number had been divided by the smaller. Logarithms were invented by Lord Napier expressly for calculating the arcs of direction in a Navigatory, and are now employed by navigators, surveyors, astronomers and all who have occasion to calculate the length of an arc.

I computed these Tables by the following method: In a Table of Proportional Logarithms the logarithm for 24h. is 0. 8750. If I desire a Const. log. for 16h.-10m. I find the Pro. log. for that number which is 1. 0466, from which subtract 0. 8750 and have 0. 1716. In this manner the Tables for every degree and minute have been computed, each minute requiring a separate calculation.

Looking in the Table of Const. Logs. herein, we see that the log. of 16h. 10m. is 0. 1716, which is found thus:

The first column is headed ' and may be for minutes of a degree, or of an hour; and extends from 0 to 29 on the left hand page, and from 30 to 59, inclusive, on the right hand page; the next column is headed 0° ; the next 1° and so on. As the hours are 16, I turn over to page 6, and under 16 I run down the column until opposite 10' on the left; at the point of intersection I see 0. 1716 and read it: "Index zero, 1716," which is a decimal fraction with zero for the index. Every log. must have an index, and when there is no integer, place a zero for the index, the plural of which is indices.

Further explanations at the end of the Tables.

CONSTANT LOGARITHMS.

HOURS AND DEGREES THE SAME.

	0°	1°	2°	3°	4°	5°	6°
0	4 0000	1 3802	1 0792	0 9031	0 7781	0 6812	0 6021
1	3 1584	1 3730	1 0756	0 9007	0 7763	0 6798	0 6009
2	2 8573	1 3660	1 0720	0 8983	0 7745	0 6784	0 5997
3	2 6912	1 3590	1 0685	0 8959	0 7728	0 6769	0 5985
4	2 5563	1 3522	1 0649	0 8935	0 7710	0 6755	0 5973
5	2 4594	1 3454	1 0614	0 8912	0 7692	0 6741	0 5961
6	2 3802	1 3388	1 0580	0 8888	0 7674	0 6726	0 5949
7	2 3133	1 3323	1 0546	0 8865	0 7657	0 6712	0 5937
8	2 2553	1 3258	1 0511	0 8842	0 7639	0 6698	0 5925
9	2 2041	1 3195	1 0478	0 8819	0 7622	0 6684	0 5913
10	2 1584	1 3133	1 0444	0 8796	0 7604	0 6670	0 5902
11	2 1170	1 3071	1 0411	0 8773	0 7587	0 6656	0 5890
12	2 0792	1 3010	1 0378	0 8751	0 7570	0 6642	0 5878
13	2 0444	1 2950	1 0345	0 8728	0 7552	0 6628	0 5866
14	2 0122	1 2891	1 0313	0 8706	0 7535	0 6614	0 5855
15	1 9823	1 2833	1 0280	0 8683	0 7518	0 6600	0 5843
16	1 9542	1 2775	1 0248	0 8661	0 7501	0 6587	0 5832
17	1 9279	1 2719	1 0216	0 8639	0 7484	0 6573	0 5820
18	1 9031	1 2663	1 0185	0 8617	0 7467	0 6559	0 5809
19	1 8796	1 2607	1 0153	0 8595	0 7451	0 6546	0 5797
20	1 8573	1 2553	1 0122	0 8573	0 7434	0 6532	0 5786
21	1 8361	1 2499	1 0091	0 8552	0 7417	0 6519	0 5774
22	1 8159	1 2445	1 0061	0 8530	0 7401	0 6505	0 5763
23	1 7966	1 2393	1 0030	0 8509	0 7384	0 6492	0 5752
24	1 7781	1 2341	1 0000	0 8487	0 7368	0 6478	0 5740
25	1 7604	1 2289	0 9970	0 8466	0 7351	0 6465	0 5729
26	1 7434	1 2239	0 9940	0 8445	0 7335	0 6451	0 5718
27	1 7270	1 2188	0 9910	0 8424	0 7318	0 6438	0 5706
28	1 7112	1 2139	0 9881	0 8403	0 7302	0 6425	0 5695
29	1 6960	1 2090	0 9852	0 8382	0 7286	0 6412	0 5684

CONSTANT LOGARITHMS.

HOURS AND DEGREES THE SAME.

	0°	1°	2°	3°	4°	5°	6°
39	1 6812	1 2041	0 9823	0 8851	0 7270	0 6398	0 5673
31	1 6670	1 1993	0 9794	0 8841	0 7254	0 6385	0 5662
32	1 6532	1 1946	0 9765	0 8820	0 7238	0 6372	0 5651
33	1 6398	1 1899	0 9737	0 8299	0 7222	0 6359	0 5640
34	1 6269	1 1852	0 9708	0 8279	0 7206	0 6346	0 5629
35	1 6143	1 1806	0 9680	0 8259	0 7190	0 6333	0 5618
36	1 6021	1 1761	0 9652	0 8239	0 7174	0 6320	0 5607
37	1 5902	1 1716	0 9625	0 8219	0 7159	0 6307	0 5596
38	1 5786	1 1671	0 9597	0 8199	0 7143	0 6294	0 5585
39	1 5673	1 1627	0 9570	0 8179	0 7128	0 6282	0 5574
40	1 5563	1 1584	0 9542	0 8159	0 7112	0 6269	0 5563
41	1 5456	1 1540	0 9515	0 8139	0 7097	0 6256	0 5552
42	1 5351	1 1498	0 9488	0 8120	0 7081	0 6243	0 5541
43	1 5249	1 1455	0 9462	0 8101	0 7066	0 6231	0 5531
44	1 5149	1 1413	0 9435	0 8081	0 7050	0 6218	0 5520
45	1 5051	1 1372	0 9409	0 8062	0 7035	0 6205	0 5509
46	1 4956	1 1331	0 9383	0 8043	0 7020	0 6193	0 5498
47	1 4863	1 1290	0 9356	0 8023	0 7005	0 6180	0 5488
48	1 4771	1 1249	0 9330	0 8004	0 6990	0 6168	0 5477
49	1 4682	1 1209	0 9305	0 7985	0 6975	0 6155	0 5466
50	1 4594	1 1170	0 9279	0 7966	0 6960	0 6143	0 5456
51	1 4508	1 1130	0 9254	0 7947	0 6945	0 6131	0 5445
52	1 4424	1 1091	0 9228	0 7929	0 6930	0 6118	0 5435
53	1 4341	1 1053	0 9203	0 7910	0 6915	0 6106	0 5424
54	1 4260	1 1015	0 9178	0 7891	0 6900	0 6094	0 5414
55	1 4180	1 0977	0 9153	0 7873	0 6885	0 6081	0 5403
56	1 4102	1 0939	0 9128	0 7854	0 6871	0 6039	0 5393
57	1 4025	1 0902	0 9104	0 7836	0 6856	0 6057	0 5382
58	1 3949	1 0865	0 9079	0 7818	0 6841	0 6045	0 5372
59	1 3875	1 0828	0 9055	0 7800	0 6827	0 6033	0 5361

CONSTANT LOGARITHMS.

HOURS AND DEGREES THE SAME.

	7°	8°	9°	10°	11°	12°	13°
0	0 5351	0 4771	0 4260	0 3802	0 3388	0 3010	0 2663
1	0 5341	0 4762	0 4252	0 3795	0 3382	0 3004	0 2657
2	0 5330	0 4753	0 4244	0 3788	0 3375	0 2998	0 2652
3	0 5320	0 4744	0 4236	0 3780	0 3368	0 2992	0 2646
4	0 5310	0 4735	0 4228	0 3773	0 3362	0 2986	0 2640
5	0 5300	0 4726	0 4220	0 3766	0 3355	0 2980	0 2635
6	0 5289	0 4717	0 4212	0 3759	0 3349	0 2974	0 2629
7	0 5279	0 4708	0 4204	0 3752	0 3342	0 2968	0 2624
8	0 5269	0 4699	0 4196	0 3745	0 3336	0 2962	0 2618
9	0 5259	0 4690	0 4188	0 3737	0 3329	0 2956	0 2613
10	0 5249	0 4682	0 4180	0 3730	0 3323	0 2950	0 2607
11	0 5239	0 4673	0 4172	0 3723	0 3316	0 2944	0 2602
12	0 5229	0 4664	0 4164	0 3716	0 3310	0 2938	0 2596
13	0 5219	0 4655	0 4156	0 3709	0 3303	0 2933	0 2591
14	0 5209	0 4646	0 4148	0 3702	0 3297	0 2927	0 2585
15	0 5199	0 4638	0 4141	0 3695	0 3291	0 2921	0 2580
16	0 5189	0 4629	0 4133	0 3688	0 3284	0 2915	0 2574
17	0 5179	0 4620	0 4125	0 3681	0 3278	0 2909	0 2569
18	0 5169	0 4611	0 4117	0 3674	0 3271	0 2903	0 2564
19	0 5159	0 4603	0 4109	0 3667	0 3265	0 2897	0 2558
20	0 5149	0 4594	0 4102	0 3660	0 3258	0 2891	0 2553
21	0 5139	0 4585	0 4094	0 3653	0 3252	0 2885	0 2547
22	0 5129	0 4577	0 4086	0 3646	0 3246	0 2880	0 2542
23	0 5120	0 4568	0 4079	0 3639	0 3239	0 2874	0 2536
24	0 5110	0 4559	0 4071	0 3632	0 3233	0 2868	0 2531
25	0 5100	0 4551	0 4063	0 3625	0 3227	0 2862	0 2526
26	0 5090	0 4542	0 4055	0 3618	0 3220	0 2856	0 2520
27	0 5081	0 4534	0 4048	0 3611	0 3214	0 2850	0 2515
28	0 5071	0 4525	0 4040	0 3604	0 3208	0 2845	0 2509
29	0 5061	0 4516	0 4032	0 3597	0 3201	0 2839	0 2504

CONSTANT LOGARITHMS.

HOURS AND DEGREES THE SAME.

	7°	8°	9°	10°	11°	12°	13°
30	0 5051	0 4508	0 4025	0 3590	0 3195	0 2833	0 2499
31	0 5042	0 4499	0 4017	0 3583	0 3189	0 2827	0 2493
32	0 5032	0 4491	0 4010	0 3576	0 3183	0 2821	0 2488
33	0 5023	0 4482	0 4002	0 3570	0 3176	0 2816	0 2483
34	0 5013	0 4474	0 3994	0 3563	0 3170	0 2810	0 2477
35	0 5003	0 4466	0 3987	0 3556	0 3164	0 2804	0 2472
36	0 4994	0 4457	0 3979	0 3549	0 3157	0 2798	0 2467
37	0 4984	0 4449	0 3972	0 3542	0 3151	0 2793	0 2461
38	0 4975	0 4440	0 3964	0 3535	0 3145	0 2787	0 2456
39	0 4965	0 4432	0 3957	0 3529	0 3139	0 2781	0 2450
40	0 4956	0 4424	0 3949	0 3522	0 3133	0 2775	0 2445
41	0 4947	0 4415	0 3942	0 3515	0 3126	0 2770	0 2440
42	0 4937	0 4407	0 3934	0 3508	0 3120	0 2764	0 2435
43	0 4928	0 4399	0 3927	0 3501	0 3114	0 2758	0 2430
44	0 4918	0 4390	0 3919	0 3495	0 3108	0 2753	0 2424
45	0 4909	0 4382	0 3912	0 3488	0 3102	0 2747	0 2419
46	0 4900	0 4374	0 3905	0 3481	0 3096	0 2741	0 2414
47	0 4890	0 4365	0 3897	0 3474	0 3089	0 2736	0 2409
48	0 4881	0 4357	0 3890	0 3468	0 3083	0 2730	0 2403
49	0 4872	0 4349	0 3882	0 3461	0 3077	0 2724	0 2398
50	0 4863	0 4341	0 3875	0 3454	0 3071	0 2719	0 2393
51	0 4853	0 4333	0 3868	0 3448	0 3065	0 2713	0 2388
52	0 4844	0 4324	0 3860	0 3441	0 3059	0 2707	0 2382
53	0 4835	0 4316	0 3853	0 3434	0 3053	0 2702	0 2377
54	0 4826	0 4308	0 3846	0 3428	0 3047	0 2696	0 2372
55	0 4817	0 4300	0 3838	0 3421	0 3041	0 2691	0 2367
56	0 4808	0 4292	0 3831	0 3414	0 3034	0 2685	0 2362
57	0 4798	0 4284	0 3824	0 3408	0 3028	0 2679	0 2356
58	0 4789	0 4276	0 3817	0 3401	0 3022	0 2674	0 2351
59	0 4780	0 4268	0 3809	0 3395	0 3016	0 2668	0 2346

CONSTANT LOGARITHMS.

HOURS AND DEGREES THE SAME.

	14°	15°	16°	17°	18°	19°	20°
0	0 2341	0 2041	0 1761	0 1497	0 1249	0 1014	0 0791
1	0 2336	0 2036	0 1756	0 1493	0 1245	0 1010	0 0788
2	0 2330	0 2032	0 1752	0 1489	0 1241	0 1007	0 0784
3	0 2325	0 2027	0 1747	0 1484	0 1237	0 1003	0 0781
4	0 2320	0 2022	0 1743	0 1480	0 1233	0 0999	0 0777
5	0 2315	0 2017	0 1738	0 1476	0 1229	0 0995	0 0773
6	0 2310	0 2012	0 1734	0 1472	0 1225	0 0991	0 0770
7	0 2305	0 2008	0 1729	0 1468	0 1221	0 0988	0 0766
8	0 2300	0 2003	0 1725	0 1463	0 1217	0 0984	0 0763
9	0 2295	0 1998	0 1720	0 1459	0 1213	0 0980	0 0759
10	0 2289	0 1993	0 1716	0 1455	0 1209	0 0976	0 0755
11	0 2284	0 1988	0 1711	0 1451	0 1205	0 0972	0 0752
12	0 2279	0 1984	0 1707	0 1446	0 1201	0 0969	0 0748
13	0 2274	0 1979	0 1702	0 1442	0 1197	0 0965	0 0745
14	0 2269	0 1974	0 1698	0 1438	0 1193	0 0961	0 0741
15	0 2264	0 1969	0 1694	0 1434	0 1189	0 0957	0 0737
16	0 2259	0 1965	0 1689	0 1430	0 1185	0 0954	0 0734
17	0 2254	0 1960	0 1685	0 1425	0 1181	0 0950	0 0730
18	0 2249	0 1955	0 1680	0 1421	0 1177	0 0946	0 0727
19	0 2244	0 1950	0 1676	0 1417	0 1173	0 0942	0 0723
20	0 2239	0 1946	0 1671	0 1413	0 1169	0 0939	0 0720
21	0 2234	0 1941	0 1667	0 1409	0 1165	0 0935	0 0716
22	0 2229	0 1936	0 1662	0 1405	0 1161	0 0931	0 0713
23	0 2223	0 1932	0 1658	0 1400	0 1157	0 0927	0 0709
24	0 2218	0 1927	0 1654	0 1396	0 1154	0 0924	0 0705
25	0 2213	0 1922	0 1649	0 1392	0 1150	0 0920	0 0702
26	0 2208	0 1917	0 1645	0 1388	0 1146	0 0916	0 0698
27	0 2203	0 1913	0 1640	0 1384	0 1142	0 0913	0 0695
28	0 2198	0 1908	0 1636	0 1380	0 1138	0 0909	0 0691
29	0 2193	0 1903	0 1632	0 1375	0 1134	0 0905	0 0688

CONSTANT LOGARITHMS.

HOURS AND DEGREES THE SAME.

'	14°	15°	16°	17°	18°	19°	20°
30	0 2188	0 1899	0 1627	0 1371	0 1130	0 0901	0 0684
31	0 2183	0 1894	0 1623	0 1366	0 1126	0 0898	0 0681
32	0 2178	0 1889	0 1618	0 1363	0 1122	0 0894	0 0677
33	0 2173	0 1885	0 1614	0 1359	0 1118	0 0890	0 0674
34	0 2168	0 1880	0 1610	0 1355	0 1114	0 0887	0 0670
35	0 2164	0 1875	0 1605	0 1351	0 1110	0 0883	0 0667
36	0 2159	0 1871	0 1601	0 1347	0 1107	0 0879	0 0663
37	0 2154	0 1866	0 1597	0 1342	0 1103	0 0875	0 0660
38	0 2149	0 1862	0 1592	0 1338	0 1099	0 0872	0 0656
39	0 2144	0 1857	0 1588	0 1334	0 1095	0 0868	0 0653
40	0 2139	0 1852	0 1584	0 1330	0 1091	0 0864	0 0649
41	0 2134	0 1848	0 1579	0 1326	0 1087	0 0861	0 0646
42	0 2129	0 1843	0 1575	0 1322	0 1083	0 0857	0 0642
43	0 2124	0 1838	0 1571	0 1318	0 1079	0 0853	0 0639
44	0 2119	0 1834	0 1566	0 1314	0 1076	0 0850	0 0635
45	0 2114	0 1829	0 1562	0 1310	0 1072	0 0846	0 0632
46	0 2109	0 1825	0 1558	0 1306	0 1068	0 0842	0 0628
47	0 2104	0 1820	0 1553	0 1302	0 1064	0 0839	0 0625
48	0 2099	0 1816	0 1549	0 1298	0 1060	0 0835	0 0621
49	0 2095	0 1811	0 1545	0 1293	0 1056	0 0831	0 0618
50	0 2090	0 1806	0 1540	0 1289	0 1052	0 0828	0 0614
51	0 2085	0 1802	0 1536	0 1285	0 1049	0 0824	0 0611
52	0 2080	0 1797	0 1532	0 1281	0 1045	0 0820	0 0607
53	0 2075	0 1793	0 1527	0 1276	0 1041	0 0817	0 0604
54	0 2070	0 1788	0 1523	0 1273	0 1037	0 0813	0 0600
55	0 2065	0 1784	0 1519	0 1269	0 1033	0 0810	0 0597
56	0 2061	0 1779	0 1515	0 1265	0 1029	0 0806	0 0593
57	0 2056	0 1774	0 1510	0 1261	0 1026	0 0802	0 0590
58	0 2057	0 1770	0 1506	0 1257	0 1022	0 0799	0 0586
59	0 2046	0 1765	0 1502	0 1253	0 1018	0 0795	0 0583

TABLES OF CONSTANT LOGARITHMS.

Some mathematicians designate these Tables as "Diurnal Proportional Logarithms," while Raphael miscalls them simply "Proportional Logarithms," making no distinction between them and legitimate Proportional Logarithms. I will illustrate why they should be called "Constant Logarithms."

PROBLEM.—The moon moved $13^{\circ} 39'$ in 24h. at my birth, which occurred 16h. 10m. later than the N-k; how far did it move in that 16h. 10m.? By the rule of proportion I say:

As 24h. : $13^{\circ} 39'$:: 16h. 10m. to the distance required.

~~Now~~ All questions in proportion, which are solved by logs. require that the logs. of the 2d and 3d terms be added together and the log. of the 1st term subtracted from the amount. But the result will be the same if the a. c. (Arithmetrical Complement,) of the 1st term is found and added to the logs. of 2d and 3d. The a. c. is found by subtracting the log. of the 1st term from 10. Example:

As 24h. log.....	10.0000
	0.8751
: $13^{\circ} 39'$ "	<u>=9.1249</u> (a. c.)
:: 16h. 10m. "	=1.1201
: $9^{\circ} 12'$ "	=1.0467
	<hr/>
	: $9^{\circ} 12'$ "
	=1.2917

In this example, add the 2d and 3d terms together and subtract therefrom the 0.8751, which is the log. of the 1st term, and we have the same answer. Or, I can add the the 9.1249, which is the a. c., to the 1.1201 and call the sum a Constant Logarithm for calculating any required No. h. when the moon moves $13^{\circ} 39'$ a day, and add to their sum the log. of the No. h. required. The ratio of the logs. being 10, I must reject 10 from the index, when 10, or more than 10. Thus:

$$\begin{array}{r}
 9.1249 \\
 +1.1201 \\
 \hline
 =0.2450=\text{Const. log. for } 13^{\circ} 39'.
 \end{array}$$