



(RESEARCH ARTICLE)



The glimpse of astrological predictions through optimization techniques

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Abstract

Astrology is an advanced and glamorous science, which plays a major role in predicting different events that happen in human life. It consists of scientific and analytical computations that depend on various phases of the orbital movements in the form of degrees; the précised level of planet movements can predict the cosmic energy and also articulate the accurate interpretations of horoscope information on the basis of a constellation of a given birth chart. Way back in 200 BC, an astronomer has adopted Mathematical interventions to measure the distance of planets from the sun and predicted various astrological manifestations. Nowadays, at the global platform, a very few numbers of research articles described the Mathematical and Pragmatic approach of astrological predictions. In this paradigm, we have formulated an advanced Stochastic Probability Convergence predictive model to describe the practical interventions and different features of horoscope and advancement of cosmic energy on the basis of comprehensive phenomena. This formulated model will be highly useful for astrologers to forecast the cosmic energy and different malafacies of human life on a day-to-day basis. Our formulated predictive model is handy and also capable to produce the accurate predictions of horoscopes. Based on the model convergence outputs, the Astronomers drew the real astrological interpretations scientifically without any Jargon and personal assumptions.

Keywords: Astrological Predictions; Movement planets; Horoscope; Celestial bodies; Constellation

1. Introduction

Astrology observes the movement of celestial bodies' influence on earth in accordance with salient principles of cosmology; the driven hypothesis was derived by the Penny-seater, 2008 [1,9,5]. In fact, astrology derived mathematical calculations of the movement of the celestial bodies and their effect on the living beings on Earth [1,3,5,6]. Hence, the astrological calculations never go wrong and in case of wrong, it is just the person have not adopted suitable Mathematical derivations [6, 7, 8,9]. The entire universe is ever-expanding and all the celestial bodies are in continuous motion and at the same time, they exert some gravitational force on one another (kind of pushing and pulling force) [12, 15]. So when these forces of the celestial bodies slightly affect the other celestial bodies on which the force is being exerted then naturally the living creatures on the particular heavenly body, this creature likely to be affected by the gravitational force of other heavenly bodies [10, 11]. The gravitational forces will be used for the interpretation of horoscopes in ancient India, (Khagolshastra by Aryabhata) [16,17]. In the historical evidence, the interpretation of astrological predictions has a strong correlation with human life and natural creations [18]. It is ascience that involves an analytical approach and scientific postulates as well which can provide some prophecies to a person or place or any such things [1,2]. Importantly, astrology is neither a myth nor a superstition [3,4]. The prediction of astrology is the pinnacle of the Indian Vedic science and has bonafide evidence to have an experimental test to confirm oneself (Baudhayan) [5,6]. Astrological findings have no scientific backing because they would be correlated with the position

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to interpret its effect on human beings or another incidence on earth [7,10]. These interpretations have no accurate theoretical postulates only we have been correlated the position of the planets like gravitational pull and push [13,14], the prediction is more or less like palmistry, it looks strange how a person's fate can be predicted through astrology by knowing the celestial positions at the time of birth without any mathematical derivations [11,12]. Still, worldwide a large number of people believe in and as a consequence treat it as science [15]. Science only speaks about the gravitational attractions between heavenly bodies while astrology speaks on the effect of the positions of heavenly bodies on human life actions [16, 17]. Due to the paucity of literature on astrological predictions through mathematical intervention worldwide, mathematicians should build and explore newer analytical models for the prediction of astrological findings for accurate interpretation of human life on the birth chart; these derivations can give accurate results on celestial movements and predictions [18, 19]. Nowadays, many astrologers have drawn astrological inferences on presumed hypotheses [13,15]. Scientifically, it is yet to be proven, and fewer applications of mathematical and statistical derivations have been used for the interpretation of an important issue, viz., to discuss the movement of celestial bodies or Saturn's effect on different Zodiac signs as prime factors in order to mitigate the influence on cosmic energy correlation and explore a newer perspective of horoscopes on human life based on the house numbers of different Zodiac signs [15, 20]. In this regard, the astrologer has failed to adopt the newer simulation modeling techniques to explore the accurate movement of celestial bodies with respect to deriving astrological inference about the earth [12]. Very meaningful and advanced simulation techniques will be necessary to describe the intervention of cosmological predictions and explore the probable chance of horoscopes [1,5, 9]. In this analytical research gap, the present study formulated a new stochastic convergence probability predictive model to describe the various features of astrological predictions on the basis of comprehensive phenomena [3, 6, 15]. These formulated models will explore the unscalable cosmic events that have been occurred in galaxies.

2. Model formulation -Weibull distribution model

The model was formulated based on the Saturn settings with the different time periods ($t_i = 2.5, 5 \& 7.5$ years). As per the literature, the average duration of Saturn movement 2.50 years was assumed as the shape parameter and the scale parameter was house number on different Zodiac signs ($b=1,2,3\dots 12$), the location parameter was fixed as zero. The nine planets were assigned by different ranks based on the inferior and superior planets and also all the planets were grouped by ascendant order in accordance with the revolution around the sun in the earth (days). Each of the planet's movements and its cosmological significance was simulated by 'Thompson iteration techniques' with a lag period of 3 years. Further, the model was optimized based on planet positions by rotating the iteration of different angles on Solar and azimuth elevations. The Weibull continuous probability convergence distribution model was used to optimize the significance of planetary movements, the failure and hazard risks at different time intervals were estimated. Cosmic energy significance was predicted based on the Saturn movement by using shape and scale parameters (average onset of Saturn settings = 2.5 years) (and the location parameter was assumed to be zero. The diameter at the equator in miles, sonified time in minutes was substituted parameters to smoothen the model. The formulated model was smoothened by different smoothening techniques and finally, the model was diagnostically tested based on the coefficient of determination (R^2 -value).

2.1. Model construction

The model was considered the random state variable $(x_1, x_2, x_3, x_4 \dots x_t)$ of the movement of planets at the time 't'. We assumed the normalcy for formulating the model, the random state variable $X_1, X_2 \dots X_t$ is normally distributed with mean ' μ ' and common variance ' σ^2 ' and errors associated with an i^{th} planet and j^{th} Zodiac sign at different time intervals ' t_i ' is always equal to zero. The model becomes

$$y_{ijt} = \mu_k + \alpha_i + \gamma_j + (\alpha\gamma)_{ij} + (\theta_{ijk}) \epsilon_{ijt} \quad (1.1)$$

Were,

y_{ijt} = Observed value of i^{th} planet and j^{th} Zodiac sign at different time intervals 't';

μ = Overall mean distance of orbit movement at different time intervals;

α_i = Effect of i^{th} planet in different Zodiac sign;

γ_{ij} = Effect of j^{th} Zodiac sign;

$(\alpha\gamma)_{ij}$ = Implies the interaction effect of i^{th} planet and j^{th} Zodiac sign;

ϵ_{ijt} = Errors associated with i^{th} planet and j^{th} Zodiac sign at different time intervals ‘t’

$$\begin{bmatrix} y_{11} \\ y_{12} \\ y_{13} \\ \vdots \\ y_i \end{bmatrix} = \begin{bmatrix} \mu_1 \\ \mu_2 \\ \mu_3 \\ \vdots \\ \mu_k \end{bmatrix} + \begin{bmatrix} x_{11} & x_{12} & x_{13} \\ x_{21} & x_{22} & x_{23} \\ x_{31} & x_{32} & x_{33} \\ \vdots & \vdots & \vdots \\ x_{t1} & x_{t2} & x_{t3} \end{bmatrix} + \begin{bmatrix} \alpha_{11} \\ \alpha_{12} \\ \alpha_{13} \\ \vdots \\ \alpha_i \end{bmatrix} + \begin{bmatrix} \gamma_{11} \\ \gamma_{12} \\ \gamma_{13} \\ \vdots \\ \gamma_{14} \end{bmatrix} + \begin{bmatrix} \alpha_{11} \\ \alpha_{12} \\ \alpha_{13} \\ \vdots \\ \alpha_i \end{bmatrix} \begin{bmatrix} \gamma_{11} \\ \gamma_{12} \\ \gamma_{13} \\ \vdots \\ \gamma_{14} \end{bmatrix} + \begin{bmatrix} \theta_1 \\ \theta_2 \\ \theta_3 \\ \vdots \\ \theta_k \end{bmatrix} + \begin{bmatrix} \epsilon_{12} \\ \epsilon_{13} \\ \epsilon_{14} \\ \vdots \\ \epsilon_{ijt} \end{bmatrix} \quad (1.2)$$

Were,

θ_{ijk} = Effect of substitution factor of i^{th} zodiac sign at j^{th} planet with k^{th} ruling god of the Zodiac.

$$\begin{bmatrix} \widehat{y}_{11} \\ \widehat{y}_{12} \\ \widehat{y}_{13} \\ \vdots \\ \widehat{y}_i \end{bmatrix} = \begin{bmatrix} \widehat{\mu}_1 \\ \widehat{\mu}_2 \\ \widehat{\mu}_3 \\ \vdots \\ \widehat{\mu}_k \end{bmatrix} + \begin{bmatrix} \widehat{x}_{11} & \widehat{x}_{12} & \widehat{x}_{13} \\ \widehat{x}_{21} & \widehat{x}_{22} & \widehat{x}_{23} \\ \widehat{x}_{31} & \widehat{x}_{32} & \widehat{x}_{33} \\ \vdots & \vdots & \vdots \\ \widehat{x}_{t1} & \widehat{x}_{t2} & \widehat{x}_{t3} \end{bmatrix} + \begin{bmatrix} \widehat{\alpha}_{11} \\ \widehat{\alpha}_{12} \\ \widehat{\alpha}_{13} \\ \vdots \\ \widehat{\alpha}_i \end{bmatrix} + \begin{bmatrix} \widehat{\gamma}_{11} \\ \widehat{\gamma}_{12} \\ \widehat{\gamma}_{13} \\ \vdots \\ \widehat{\gamma}_{14} \end{bmatrix} + \begin{bmatrix} \widehat{\alpha}_{11} \\ \widehat{\alpha}_{12} \\ \widehat{\alpha}_{13} \\ \vdots \\ \widehat{\alpha}_i \end{bmatrix} \begin{bmatrix} \widehat{\gamma}_{11} \\ \widehat{\gamma}_{12} \\ \widehat{\gamma}_{13} \\ \vdots \\ \widehat{\gamma}_{14} \end{bmatrix} + \begin{bmatrix} \widehat{\theta}_1 \\ \widehat{\theta}_2 \\ \widehat{\theta}_3 \\ \vdots \\ \widehat{\theta}_k \end{bmatrix} + \begin{bmatrix} \widehat{\epsilon}_{12} \\ \widehat{\epsilon}_{13} \\ \widehat{\epsilon}_{14} \\ \vdots \\ \widehat{\epsilon}_{ijt} \end{bmatrix} \quad (1.3)$$

Prediction of different parameters by using equation (1.1), the model becomes

$$\widehat{y}_{ijt} = \widehat{\mu}_k + \widehat{\alpha}_i + \widehat{\gamma}_j + (\widehat{\alpha\gamma})_{ij} + (\widehat{\theta}_{ijk}) + \widehat{\epsilon}_{ijt} \quad (1.4)$$

An optimization of the model becomes

$$f(y_i) = \frac{\gamma}{\alpha} \left(\frac{x_t - \mu}{\alpha} \right) \exp\left(-\left(\frac{x_t - \mu}{\alpha}\right)^\gamma\right); x_t \geq \mu; \gamma, \alpha > 0 \quad (1.5)$$

$$f(y_i) = \gamma x_t^{\gamma-1} \exp(-x)^\gamma, x_t > 0; \gamma > 0 \quad (1.6)$$

$$f(y_i) = \frac{\gamma}{\alpha} \left(\frac{x_t}{\alpha} \right)^{\gamma-1} \exp\left(-\left(\frac{x_t}{\alpha}\right)^\gamma\right) x_t \geq 0 \quad (1.7)$$

The failure rate was determined by using shape parameter γ , equation (1.3) ‘ μ ’ is not included. If $\gamma < 1$, then the failure rate decreases with time; If $\gamma = 1$, then the failure rate is constant and if $\gamma > 1$, the failure rate increases with time. The model was optimized by using ‘Range and Kutta method’ iteration techniques.

$$y' = F(x_i, y_i) = y_i = f(x_1, x_2, \dots, x_i) \Rightarrow y_i = f(x_i) \quad (1.8)$$

$$y_{n+1} = y_n + \theta_{ijk} + 0 (\alpha^3) \quad (1.9)$$

$$y_{n+1-1} = y_{n+1} + \theta_{ijk} + 0 (\gamma^3) \quad (1.10)$$

Likelihoods of different zodiac signs on the effect of the planet were determined by using

$$\widehat{y}_{n+1} = \widehat{y}_n + \widehat{\theta}_{ijk} + 0 (\widehat{\alpha}^3) \quad (1.11)$$

$$\widehat{y}_{n+1-1} = \widehat{y}_{n+1} + \widehat{\theta}_{ijk} + 0 (\widehat{\gamma}^3) \quad (1.12)$$

The following eqn (1.14) shows the Convergent of Saturn latent period for the movement of planet is determined by

$$y_i = \frac{\alpha}{\gamma} \sqrt{(x_i^2 - \alpha_i^2)} \quad (1.13)$$

$$S = abcosh^{-1}\left(\frac{x}{a}\right)$$

$$e = \frac{\sqrt{\alpha^2 + \gamma^2}}{\alpha}; k = \frac{1}{e} z = \frac{\sqrt{x^2 - \alpha^2}}{\sqrt{x^2 - (k\alpha)^2}}$$

$$L = \frac{1}{k} \{a(1 - k^2)F(z, k) - aE(z, k) + xz\} \tag{1.14}$$

The convergence distribution of CDF X_n to X_i , when $n \rightarrow \infty$

$X_n \rightarrow X$, A sequence of 'r.v' $X_1, X_2, X_3, \dots, X_n$ has converged distribution to the set of random variables 'X' shown by

$X_n \rightarrow X$ if

$$\lim_{n \rightarrow \infty} FX_n(x) = F_x(x) \text{ for all } F_x(x) \text{ is continuous} \tag{1.15}$$

$$FX_n(x) = \begin{cases} 1 - \left(1 - \frac{1}{n}\right)^{nx} & x > 0 \\ 0 & \text{Otherwise} \end{cases} \tag{1.16}$$

Eqn (1.16) Show that X_n converges in distribution to exponential

Theorem1:- Consider the sequence $X_1, X_2, X_3, \dots, X_n$ and 'rv' of X assume that X and X_n (for all n) are non-negative and integer values that are

$$R_x \subset \{1, 2, 3, \dots\} \text{ for } n=1, 2, 3, \dots$$

$$R_{X_n} \subset \{1, 2, 3, \dots\}$$

Then $X_n \rightarrow X_i$ if and only if $FX_n(x) = F_x(x)$ for all

$$\lim_{n \rightarrow \infty} PX_n(k) = P_{X_i}(k) \text{ for } k = 0, 1, 2, \dots \tag{1.17}$$

Proof: Since 'X' is integer values on CDF $F_x(x)$ will be continuous at all $x \in \mathbb{R} - \{0, 1, 2, \dots\}$, if $X_n \rightarrow X_i$ then

$$\lim_{n \rightarrow \infty} FX_n(x_i) = F_x(x_i) \text{ for all } x_i \in \mathbb{R} - \{0, 1, 2, \dots\} \text{ Thus, for } k = 0, 1, 2. \text{ We have}$$

$$\lim_{n \rightarrow \infty} P_{X_n}(k) = \lim_{n \rightarrow \infty} \left[FX_n\left(k + \frac{1}{2}\right) - FX_n\left(k - \frac{1}{2}\right) \right]; X_n \text{ are integer values} \tag{1.18}$$

$$= \lim_{n \rightarrow \infty} FX_n\left(k + \frac{1}{2}\right) - \lim_{n \rightarrow \infty} FX_n\left(k - \frac{1}{2}\right) \tag{1.19}$$

$$= F_x\left(k + \frac{1}{2}\right) - F_x\left(k - \frac{1}{2}\right) \text{ Since } X_n \rightarrow X \tag{1.20}$$

$$= P_x(k) \text{ (since 'X' is integer values)}$$

We proved the converse theorem

$$\lim_{n \rightarrow \infty} FX_n(k) = P_x(k) \text{ } k = 0, 1, 2, \dots \text{ then for all } x \in \mathbb{R}$$

$$\lim_{n \rightarrow \infty} FX_n(x) = \lim_{n \rightarrow \infty} P(X_n \leq x) \tag{1.21}$$

$$= \lim_{n \rightarrow \infty} \sum_{k=0}^{[x]} P_{X_n}(k) * S_{it} * t_i \tag{1.22}$$

Where $[x]$ shows the largest integer, less than or equal to x , since for any fixed X the set $\{0, 1, 2, \dots, [x]\}$ is the finite set, we can change the order of the limit and the sum, so we obtained

$$\lim_{n \rightarrow \infty} FX_n(x) = \sum_{k=0}^{[x]} \lim_{n \rightarrow \infty} P_{X_n}(k) * S_{it} * t_i \tag{1.23}$$

$$I = S_{it} * t_i$$

$$= \sum_{k=0}^{[x]} P_{X_n}(k) \text{ by assumptions} \tag{1.24}$$

$$= P(X \leq x_i) = F_x(x_i) * I \tag{1.25}$$

Table 1 Substitution factor for model demonstration

Western Astrology Signs ($P_{X_n}(k)$)	Ascendant order	Birth Time t_i	Personality Traits (S_{it})
Aries	12	Mar 21 - April 19	Energetic, candid and wilful
Taurus	11	April 20 - May 20	Reliable, diligent and conservative
Gemini	10	May 21 - June 21	Quick-witted, capricious and cheerful
Cancer	9	June 22 - July 22	Considerate, imaginative and sensitive
Leo	8	July 23 - Aug 22	Enthusiastic, proud and arrogant
Virgo	7	Aug 23 - Sept 22	Elegant, perfectionist and picky
Libra	6	Sept 23 - Oct 23	Equitable, charming and hesitant
Scorpio	5	Oct 24 - Nov 22	Insightful, mysterious and suspicious
Sagittarius	4	Nov 23 - Dec 21	Unconstrained, lively and rash
Capricorn	3	Dec 22 - Jan 19	Perseverant, practical and lonely
Aquarius	2	Jan 20 - Feb 18	Smart, liberalistic and changeful
Pisces	1	Feb 19 - Mar 20	Romantic, kind and sentimental

$$= P(X \leq x_i) = F_x(x_i) * I^R \tag{1.25}$$

I^R = Score and ranks of random state variables

Table 2 Score and ranks distribution of state variable

Random state variable	Score	Rank
X ₁ : Cardinal = Aries + Cancer + Libra + Capricorn	100	7
X ₂ : Fixed = Taurus + Leo + Scorpio + Aquarius	90	6
X ₃ : Mutable = Gemini + Virgo + Sagittarius + Pisces	80	5
X ₄ : Fire = Aries + Leo + Sagittarius	70	4
X ₅ : Earth = Taurus + Virgo + Capricorn	60	3
X ₆ : Air = Gemini + Libra + Aquarius	50	2
X ₇ : Water = Cancer + Scorpio + Pisces	40	1

$$P(X \leq x_i) = P(X \leq x_i) = F_x(x_i)^{t_i} * I^R \tag{1.26}$$

Table 3 Physical Charectistics of different planets

Planet	Average distance from the sun in miles (Approximate)	Revolution around the sun in earth days (Approximate)	Diameter @ equator in miles	Sonified time in minutes	Actual orbits in earth days/months/years	Solar flux 10^{16} erg/cm ² /s	Albedo	T _{eff} (°K)
Mercury	36,000,000	88	3032	0.075	88 days	9.2	0.06	442
Venus	67,000,000	225	7521	0.10	224.7 days	2.6	0.71	44
Earth	93,000,000	365	7926	0.15	365 days	1.4	0.38	253
Mars	141,000,000	687	4221	0.22	1 year 11 months	0.6	0.17	216
Jupiter	484,000,000	4331	88,846	0.43	11.90 years	0.05	0.73	87
Saturn	891,000,000	10747	74,897	1.05	29.70 years	0.010	0.76	63
Uranus	1,784,000,000	30589	31,763	1.53	84.30 years	0.004	0.93	33
Neptune	2,793,000,000	59800	30,775	2.55	164.80 years	0.001	0.84	32

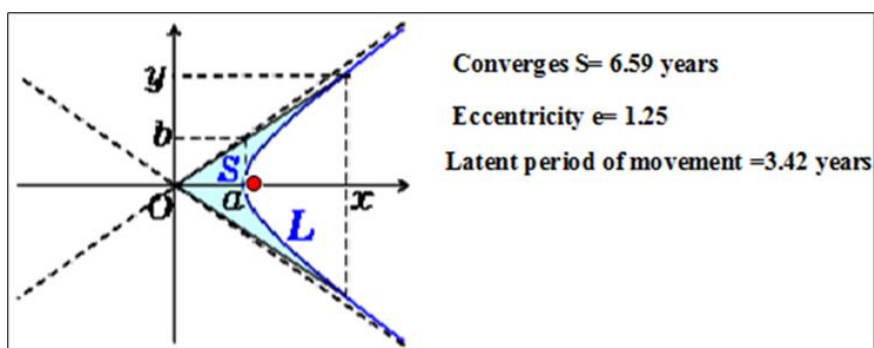


Figure1 Saturn convercelatent periodfor themovementofotherplanet

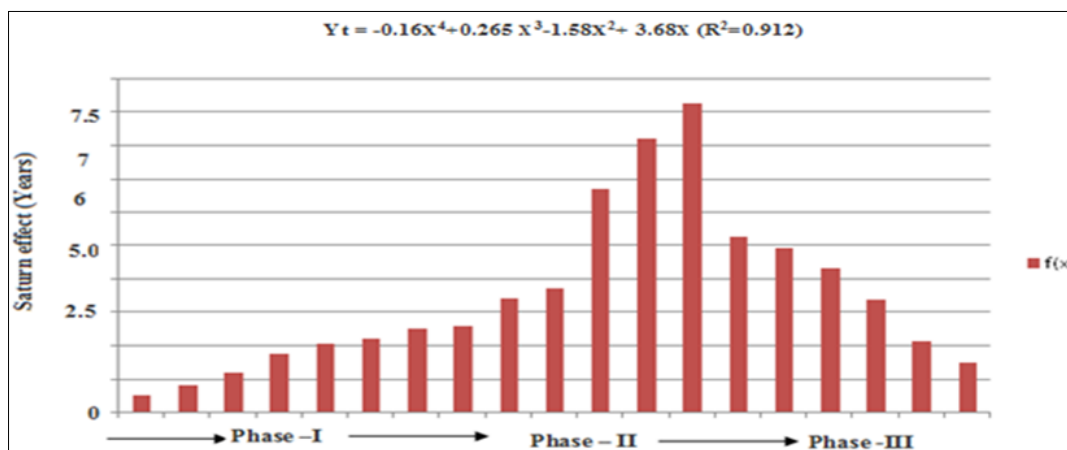


Figure 2 Distribution of Saturn effect in different Phases (Range and Kutta method used for ModelOptimization)

The model output (Figure 1) shows that the mean convergence of Saturn planet in different Zodiac signs was 6.59 years with eccentricity (e = 1.25 years). The latent period of planet movement was 3.42 years. The formulated model was

optimized by using Eqn (1.16) and it was diagnostically tested by co-efficient of variation, it was found to be strongly associated with various Zodiac signs. The Percentage expression of the correlation of the Saturn’s setting was 91.20% (R²). (Figure 2) shows that different iterative values of Saturn are set in various phases (Phase I, II, and III). In the case of phase I, the average period of Saturn inception was 2.50 years with SE 0.22; Phase II average was 5.47 years with SE 0.98 and phase III mean Saturn setting in different Zodiac signs was 7.58 years with SE 0.30. Results were found to be statistically significant at a 5% level of significance with a Coefficient of variation was 91.22 % (R²). Normal distribution was observed in the movement of the planet.

Table 4 Azimuth, elevation angle and distance of the planets from Earth

Planet	Azimuth	Elevation	Distance (AU)	P-value
Mercury	267.00	-35.82	0.8781	≤0.05
Venus	267.64	-38.96	1.6228	≤0.05
Mars	129.91	74.11	0.6087	≤0.05
Jupiter	245.97	28.16	4.9235	≤0.05
Saturn	257.42	-8.94	10.4784	≤0.05
Uranus	211.31	67.77	19.0166	≤0.05
Neptune	248.73	20.81	30.0988	≤0.05
Pluto	263.74	-32.58	35.5644	≤0.05

Longitude 139.74, Latitudes: 35.65; Azimuth angle: North=0, East=90, South=180, West=270 degree

The distance of the planet was extrapolated by using convergence modeling techniques. Asper the model output, the eight planets’ elevation and azimuth angle was determined (Table 2). Mercury, Venus, Saturn, and Pluto show negative elevation with an average AU distance was 12.13. The case of Mars, Uranus, and Neptune show positive elevation with an average distance AU was 16.56. The marginal mean AU distance difference on negative and positive elevated planets was 4.43. Mean distance and elevation were found to be statistically significant at a 5% level (p≤ 0.05).

Earth centre is the celestial sphere, and the sphere pole and equatorial plan are coincident with those of the earth. Celestial body depends on a great circle on sphere obtained by intersecting the sphere with a plane that passes through the centre of the sphere. There are certain important great circles on the celestial sphere. We can specify precise the location of objects on the celestial sphere by giving the celestial equivalent of their latitudes and longitudes. The Point of the celestial sphere directly overhead for an observer is the Zenith. An imaginary arc passing through the celestial poles and through the Zenith is called the observer’s meridian. The nadir is the direction opposite the zenith for example straight down a spacecraft to the centre of the planet. Declination (DEC) is the celestial sphere’s equivalent of latitude and it is expressed in degree, as is latitude. For DEC, +Ve and -Ve refers to north and south respectively. The celestial equator is degree DEC and the poles are +900 and -900. The right ascension describes celestial of longitude. RA can be expressed in degrees, but is more common to specify it in hours, minutes, and seconds of time; the sky appears to turn 3600 in 24 hours, or 150in one hour. So an hour of RA equals 150 of sky rotation. Another important feature intersecting the celestial sphere is the ecliptic plane. This is the plane in which the earth orbits the sun, 23.40 from the celestial equator. The great circle marking the intersection of the ecliptic plane on the celestial sphere is where the sun and planets appear to travel, and it’s where the sun and moon converge during their eclipses. The zero point of RA is one of the points where the ecliptic circle intersects the celestial equator circle. It’s defined to be the point where the sun crosses into northern hemisphere beginning spring; the Vernal equinox, also known as the first point of Aries, often identified by the symbol of ram. Whereas equinoxes are times at which centre of the sun is directly above the equator, marking the beginning of spring and autumn, the day and night would be of equal length at that time, if the Sun were a point and not a disc, and if were no atmospheric refraction (Figure 1.4). Given the apparent disc of the Sun, and the refraction, day and night actually become equal at a point within a few days of each equinox. The RA and DEC of an object specify its position uniquely on the celestial sphere just as the latitude and longitude do for an object on the Earth’s surface. In case very bright Sirius has celestial coordinates 6 hours’ 45 min RA ns -160 43’ DEC. Ecliptic longitude and latitude, right ascension is presented (Table 4 and Figure 3).

Table 5 Ecliptic longitude and latitude, right ascension, celestial declination, and distance of the planets from Earth

Planet	Ecliptic longitude	Ecliptic latitude	Right ascension	Declination	(AU) Distance
Mercury	293°12'2"	-0°52'40"	19:40:48	-22°18'33"	0.8978
Venus	289°31'16"	-1°13'53"	19:25:17	-23°14'11"	1.6249
Mars	70°20'17"	2°44'46"	04:33:09	24°42'52"	0.6049
Jupiter	0°29'25"	-1°18'47"	00:03:53	-1°0'35"	4.9113
Saturn	321°48'40"	-1°14'44"	21:38:24	-15°24'53"	10.4690
Uranus	45°16'40"	-0°21'34"	02:51:41	16°4'22"	19.0066
Neptune	352°47'16"	-1°11'24"	23:35:24	-3°57'20"	30.0857
Pluto	297°30'29"	-2°15'35"	20:00:14	-22°52'23"	35.5586

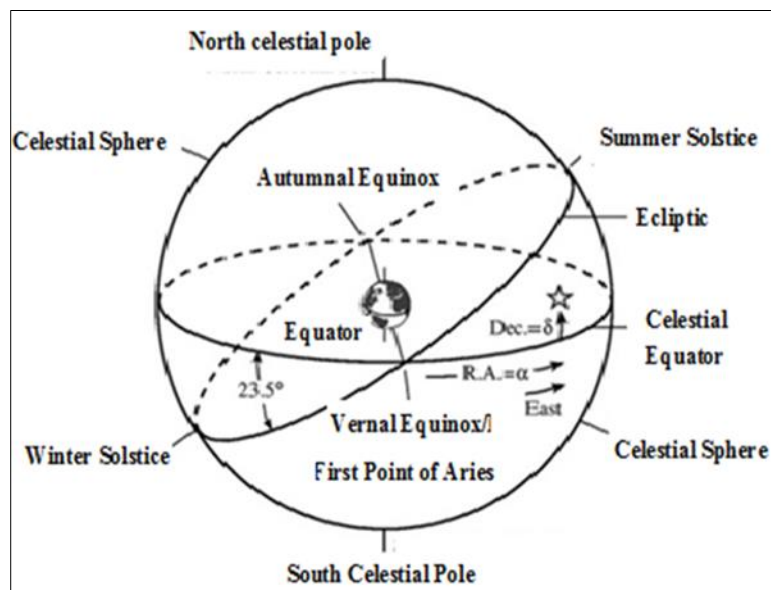


Figure 3 Equinoxes and Solstices

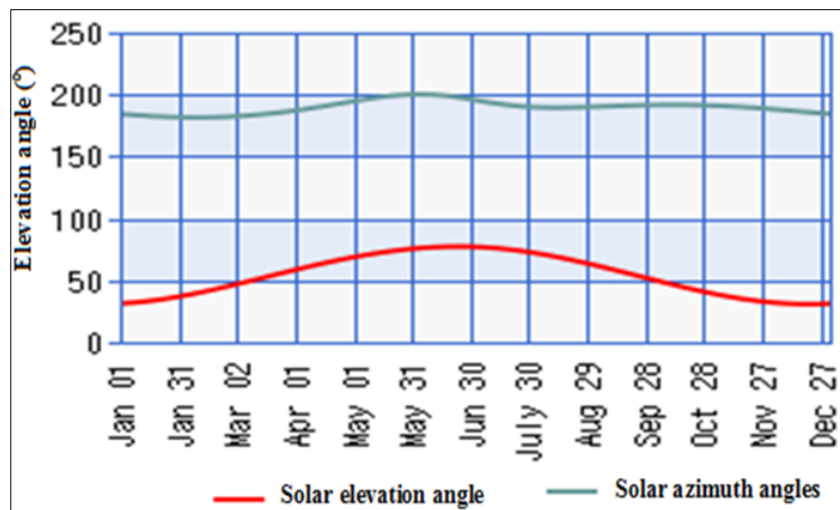


Figure 4 Distribution of Solar elevation and azimuth angles

Table 6 Saturn planet significance and its impact on different zodiac sign (Phase-I)

House Number	Ascendant	x= 2.5, Shape (a) parameter, scale parameters (b=1,2..12), location parameters =0			
		density(f)	Lower cumulative	Upper cumulative	Significance
1-Aries (Lord Mars)	Higher learning	0.009	0.998	0.001	Less impact
2-Taurus (Venus)	Carrier	0.26	0.79	0.204	Less impact
3-Gemini (Mercury)	Higher Goals	0.27	0.50	0.499	Less impact
4-Cancer (Moon)	Loss	0.21	0.32	0.676	Medium impact
5-Leo (Sun)	Self	0.15	0.22	0.772	Medium impact
6 -Virgo (Mercury)	Money	0.11	0.15	0.840	High impact
7-Libra (Venus)	Personnel interest	0.08	0.11	0.880	High impact
8-Scorpio (Mars)	Inner peace	0.07	0.09	0.906	High impact
9-Sagittarius (Jupiter)	Creativity	0.05	0.07	0.925	High impact
10 -Capricorn (Saturn)	Work place	0.04	0.060	0.939	High impact
11-Aquarius (Saturn)	Spouse /partner	0.03	0.05	0.949	High impact
12 -Pisces (Jupiter)	Sudden UP & Down	0.03	0.042	0.957	High impact

Table 7 Saturn planet significance and its impact on different zodiac sign (Phase -II)

House Number	Ascendant	x=5, Shape (a)parameter =2, scale parameters (b)=1...12, location parameters =0			
		density(f)	Lower cumulative	Upper cumulative	Significance
1-Aries	Higher learning	1.38	0.999	1.388	High impact
2-Taurus	Carrier	0.00	0.99	0.001	Less impact
3-Gemini	Higher Goals	0.06	0.93	0.06	Less impact
4-Cancer	Loss	0.13	0.79	0.20	Less impact
5-Leo	Self	0.14	0.63	0.63	Medium impact
6 -Virgo	Money	0.13	0.50	0.499	Medium impact
7-Libra	Personnel interest	0.122	0.399	0.600	Medium impact
8-Scorpio	Inner peace	0.105	0.323	0.675	Medium impact
9 -Sagittarius	Creativity	0.09	0.265	0.734	Medium impact
10 -Capricorn	Work place	0.07	0.221	0.778	High impact
11-Aquarius	Spouse /partner	0.06	0.186	0.813	High impact
12 -Pisces	Sudden UP & Down	0.05	0.159	0.840	High impact

Table 8 Saturn planet significance and its impact on different zodiac sign (Phase- III)

House Number	Ascendant	x= 7.5, Shape (a)parameter =2, scale parameters (b)=1..12, location parameters =0			
		density(f)	Lower cumulative	Upper cumulative	Significance
1-Aries	Higher learning	5.58	1.0	3.72	High impact
2-Taurus	Carrier	2.92	0.99	7.81	High impact
3-Gemini	Higher Goals	0.003	0.998	0.001	Less impact
4-Cancer	Loss	0.027	0.970	0.029	Less impact
5-Leo	Self	0.06	0.894	0.105	Medium impact
6 -Virgo	Money	0.08	0.790	0.209	Medium impact
7-Libra	Personnel interest	0.09	0.682	0.317	Medium impact
8-Scorpio	Inner peace	0.09	0.584	0.415	Medium impact
9-Sagittarius	Creativity	0.09	0.500	0.499	Medium impact
10 -Capricorn	Work place	0.085	0.432	0.569	Medium impact
11-Aquarius	Spouse /partner	0.07	0.371	0.628	Medium impact
12 -Pisces	Sudden UP & Down	0.07	0.322	0.692	Medium impact

Table 9 Revolution around the sun in earth day's v/s Diameter at equator in miles

Time or Index	Actual	Interpolation Forecast	Prediction days of Saturn converges
Mercury	88	1386	1474
Venus	225	1120	1345
Earth	365	51.57	313.4
Mars	687	2010	1323
Jupiter	4331	754	3577
Saturn	1.07x10 ⁴	1.669 +10 ⁴	5946
Uranus	3.05x 10 ⁴	3.38e+10 ⁴	3215
Neptune	5.98+10 ⁴	5.603e+10 ⁴	3773

R² (%) = 0.98, p<0.001

Table 10 House set for Saturn and its Significance

House set for Saturn	Significance	Planet in different Houses
1	Self	If the sun is in 6 th , the native is highlylibidinous , havepowerfuldigestivefire , be strongaffluent, famous forvirtuesandbeeitherakingor and Bureaucrats
2	Wealth	If the Moon be in 6 th , thenativewill sufferstomachdisease .if it be theweak Moon , hewill be short lived
3	Courage and siblings	If the sun is in 6 th , the native is highlylibidinous , havepowerfuldigestivefire , be strongaffluent, great amonghis relatives
4	Home and mother	If Mercury occupies the 6 th , the nativewill alwaysbe successful in litigationsanddisputes, will contract disease , beindolent,not givento anger, be harshin speechandmuchinsulted

5	Progeny and competition	If Jupiter is in the 6 th , the native will lackdigestivefireand masculinevirile , behumiliated, weak, indolent, will becomefamouson accountoffemales, will destroy hisenemiesandbewidely famous
6	Enemy and disease	If Venus occupies the 6 th , the native will greatly dislikehiswife, will have manyfoes, bedevoidofwealth , bevery muchstartledandthemean
7	Marriage and partnership	If Saturn occupies the 5 th , the nativewill be verylicentious, be beautiful, courageous, will eatabundantly, becrookedandwill conquermany ofhisenemies
8	Accident and death	Saturn -House of everything dark, occult, death and even rebirth, burden on finance , taxes and resources of others on the native etc.
9	House of fortune	Saturn- Religion, spirituality, law are represented .The native is well educated .placement may also hinder higher education etc.
10	Profession	Saturn- Considered as House of father , It indicates the achievement of the native ,fame and professional status in the working place, Saturn in the 10 th house is generally considered a desirable arrangement etc.
11	Wishes and Gains	Saturn- The 11 th House is strong originality indicator , eccentricity, surprises, invention ,love , sudden wealth and profit etc.
12	Expenses and travel	Saturn- 12 th house is ruler of completion or ending, secretes, fears , subconscious mind after life and old age .it also detachment from the material thing in life ,spiritual orientation

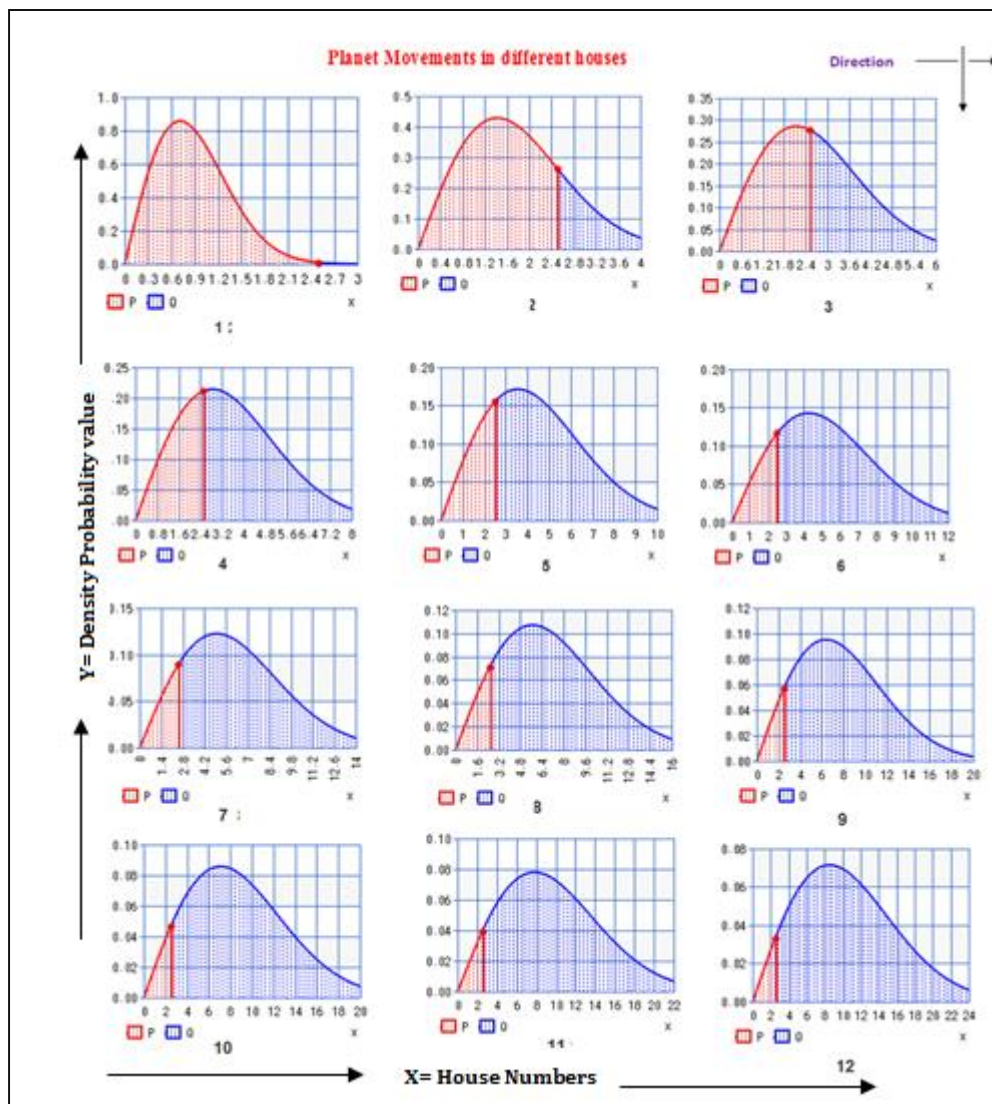


Figure 5 Density function of Planet movement in different houses

3. Discussion

The mathematical and analytical approach for the prediction of the different constellations has precluded accurate estimation of the horoscope on the birth chart [12,13]. An analytical estimation can draw the various movement of the planet and explore predicted information pertaining to the planet in the solar system. Due to the slow movement of the constellation, a horoscope drawn up during a certain time would be reliable for all people born around that standard time GMT [2,5]. Its unique character of it would be ill-defined, hence in order, we make the horoscope more personnel, and a local element was introduced in addition to the cosmic elements [3,6,9]. This local element is called house classification. Basically, the sky around an observer is divided into twelve parts, and these are termed houses, each houses Saturn planet spin 10 hours at the regular interval and he can withstand particular house around 7.50 years, during this transit period too many malafacie and good things will be happened in their life chart. As per the astrological scientific information, the horizon has divided the ecliptic, and hence the zodiac (a visible part above the horizon and an invisible part below the horizon) [10,11,12,13]. Due to the daily movement of the Earth on its axis, the sign of the zodiac rises one by one above the eastern zone. Just like the Sun, each sign rises from the Eastern Horizon, reaches its highest point, and eventually sets on the Western horizon. According to the science of astronomy, there is four signs in each horoscope that play a very important role. The point that rises at the eastern horizon is termed the Ascendant (ASC). The point that sets in the Western horizon is termed the Descendent (Desc) [14,18]. Right in between them is the medium Caeli or middle of the heavens. The Counterpart of the MC under the horizon is the ImumCaeli (IC) or the lowest part of the heavens [19]. At any moment, these four points will each reside in a sign, and the sign is given the corresponding term. In this above movement, the model has converged the meantime for action on Saturn planet phase I, the average period was 2.50 years with SE 0.22; Phase II average was 5.47 years with SE 0.98 and phase III was mean Saturn setting in different zodiac sign was 7.58 years with SE 0.30 [11,12,13]. It is interesting to note that, the model explored the connection between the houses and the signs (presented in tables 6&7) [5,6,8]. Astrological prediction is basically derived from the cosmic energy-relevant notion and it can articulate the real prediction based on the movement of planets to different constellation houses, scientific computation will depend on the various phases of Saturn planet movement, which can spin every ten hours on their orbits and formed different degree, it is composed of a set of rules that predict different aspects of the human life based on the positions of birth stars and chart [14,15]. The present model has a more reliable and highly converges accurate time for spinning of Saturn planets and withstands their houses for a long period of time, an approximately 6.90 years Saturn will remain in the Individual constellations and position was determined by orbit movement [17,18]. The major part of these models described predicted information pertaining to the various good and malafacies of human life [6,7,8,11]. Although some prediction models are generating varied types of recommendations and interpretations without user and specialist thoughts, this formulated model will be conveyed accurate information and convergent latent period of planet movement and also the probable chance of good and bad things in their human life.

4. Conclusion

The present research findings conclude that, the astrological prediction is a more laborious and wide range of interpretations covered by the assumed factors. This formulated model can give accurate horoscope information pertaining to the different constellations and plant movements among twelve houses; it is one of the vital things for astrological specifications. The current research findings describe new predictive modelling techniques to identify the beliefs, thoughts, and projections and drew the inherent opinion on the pragmatic approach of astronomy. The concept of the formulated model will help astrologists, astronmists, and researchers to explore the new practical and theoretical postulates of astrological sciences; also, we can restore the scientific information of celestial heavenly bodies.

Compliance with ethical standards

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Disclosure of conflict of interest

There is no conflict of interest between any funding agencies; the study was conducted purely on secondary data sets

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