



Connected Graph-Based Horoscope Analysis Without Astrological Expertise

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Abstract

Horoscopes are traditionally interpreted using astrological principles that require extensive domain knowledge and expert judgment. This paper presents a novel graph-theoretic framework for horoscope analysis by transforming a horoscope chart into a connected graph, where planets, zodiac signs, or houses are represented as vertices and their astrological relationships are modeled as edges. The resulting graph preserves the structural dependencies among the horoscope elements while enabling mathematical analysis independent of conventional astrological interpretation. The proposed methodology focuses on two fundamental graph-theoretic concepts: **eccentricity** and the **center** of a connected graph. The eccentricity of each vertex is computed to determine its structural influence within the horoscope graph, while the graph center identifies the most central and influential vertices that govern the overall configuration. By analyzing these parameters, the framework identifies dominant planetary or house influences and derives horoscope characteristics without requiring prior knowledge of astrology. This approach transforms qualitative astrological reasoning into a quantitative and algorithmic process, providing an objective basis for horoscope interpretation. The study demonstrates that graph-theoretic measures can effectively capture the intrinsic structure of horoscope charts and reveal significant patterns corresponding to traditional astrological outcomes.

Key words:

Connected graphs, Digraphs, Vertices, Edges, Degree of a vertex, Isolated vertex, Eccentricity, Center, Horoscope, Planets, Zodiac Signs, Houses, Aspects.

1. Introduction:

While erecting a Horoscope and offering prediction, our ancient Astrology [3] gives importance to signs, houses, and the Navamsa chart, planetary divisions, systems like Dasha (planetary periods) for prediction, Nirayana (sidereal) positions of planets, but Western astrology [4] does not use Navamsa charts or Dasha systems, uses Sayana (tropical) positions, often based on the Sun. Astrology becomes more scientific when these differences are explained clearly and there is a need for structured study and research to improve prediction accuracy. When we convert the Horoscope into a connected graph and connected digraph (directed graph), we can use properties [1] of these graphs, especially the center of the graph, to find the results of the Horoscope. By comparing the results predicted by Graph Theory and the results predicted by the rules of Astrology [2],[3] we get clear evaluation of Horoscope.

2. Definitions:

2.1. A **graph** G is defined as: $G = (V, E)$ where V is a **set of vertices** (also called nodes or points), E is a **set of edges**, where each edge connects two vertices.

2.2. A vertex v_i is represented by a point and an edge by a line segment between the vertices v_i and v_j in a **graph**.

2.3. A Graph G is said to be **connected** if there is at least one path between every pair of vertices in G . Otherwise G is **disconnected**.

2.4. A disconnected graph consists of two or more connected graphs. Each of these connected subgraphs is called **component**.

2.5. A **directed graph** (or a digraph) G consists of a set of vertices $V = \{v_1, v_2, \dots\}$, a set of edges $E = \{e_1, e_2, \dots\}$, and a mapping Ψ that maps every edge onto some ordered pair of vertices (v_i, v_j) .

2.6. The number of edges incident on a vertex v_i , with self loops counted twice, is called the **degree of the vertex** v_i , denoted by $d(v_i)$.

2.7. A vertex having no incident edge is called **isolated vertex**. In other words, isolated vertices are vertices with zero degree.

2.8. The **Eccentricity** $E(v)$ of a vertex v in a graph G is the distance from v to the vertex farthest from v in G , that is $E(v) = \max d(v, v_i)$ where $v_i \in G$.

2.9. A vertex with minimum eccentricity in a graph G is called a **center** of G .

2.10. A **zodiac sign** is one of the twelve sections of the sky along the **zodiac**, which is the path the Sun appears to travel through, over the course of a year. In astrology, a person's zodiac sign is determined by the position of the Sun at the time of his/her birth.

2.11. Aspects of planets in the Horoscope:

Planet	Max Orb (Omax)	Notes	T aspect
Sun	8° to 10°	Most influential body; large orb needed. Use 8° for strict calculation.	180° – 7 th Aspect
Moon	10° to 12°	Moves fastest; its influence is felt over a wider range. Use 10°.	180° – 7 th Aspect
Mercury	6° to 7°	Closely follows Sun; influence is more localized. Use 6°.	180° – 7 th Aspect
Venus	6° to 7°	Similar to Mercury, precise influence. Use 6°.	180° – 7 th Aspect
Mars	7° to 8°	Active and energetic; its orb is mid-range. Use 8° for major aspects.	90°,180°,210° (4 th , 7 th , 8 th Aspect)
Jupiter	9° to 10°	Largest planet; its beneficial influence is broad. Use 9°.	120°,180°,240° (5 th , 7 th , 9 th Aspect)
Saturn	8° to 9°	Slow-moving and powerful; long-lasting effects. Use 8°.	60°,180°,270° (3 rd , 7 th , 10 th Aspect)
Rahu/Ketu	6° to 8°	Shadow planets; their influence is often tied to the aspects of the dispositor. Use 7°.	60°,180°,300° (3 rd , 7 th , 11 th Aspect)

3. Distance and Centers in a Connected Graph:

In a connected graph G , the distance $d(v_i, v_j)$ between two of its vertices v_i and v_j is the length of the shortest path (ie. the number of edges in the shortest path) between them.

The definition of distance between any two vertices is valid for any connected graph (not necessarily a Tree).

The Eccentricity $E(v)$ of a vertex v in a graph G is the distance from v to the vertex farthest from v in G , that is $E(v) = \max d(v, v_i)$ where $v_i \in G$.

A vertex with minimum eccentricity in a graph G is called a center of G

3.1. A Metric-Definition:

A function $f(x, y)$ that satisfies the following is called the Metric

1. $f(x, y) \geq 0$ and $f(x, y) = 0$ iff $x = y$
2. $f(x, y) = f(y, x)$
3. $f(x, y) \leq f(x, z) + f(z, y)$ for any z

3.2. Theorem 1:

The distance between vertices of a connected Graph is a metric.

Proof:

The distance $d(v_i, v_j)$ satisfies

1. $d(v_i, v_j) \geq 0$ and $d(v_i, v_j) = 0$ iff $v_i = v_j$
2. $d(v_i, v_j) = d(v_j, v_i)$ immediately evident.

Since $d(v_i, v_j)$ is the length of the shortest path between vertices v_i and v_j , this path can not be longer than another path between v_i and v_j which goes through the specified vertex v_k . Hence $d(v_i, v_j) \leq d(v_i, v_k) + d(v_k, v_j)$.

3.3. Theorem 2:

Every connected graph has one or more centers.

Proof:

In a graph that just consists of a circuit, every vertex is a center. Hence the theorem.

3.4. Theorem 3:

If there are two centers of a connected graph, then they must be adjacent.

Proof:

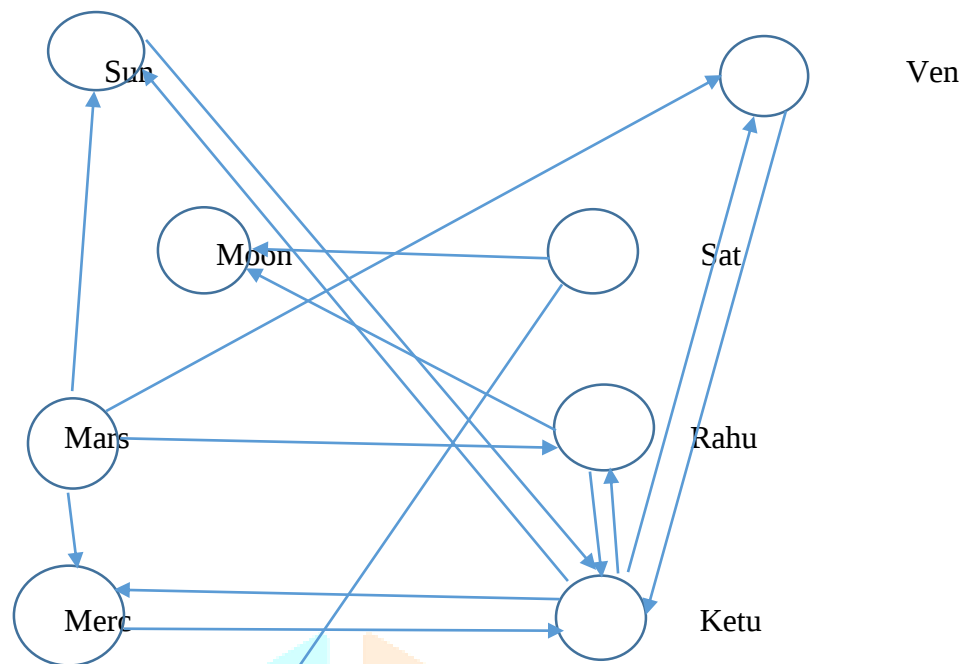
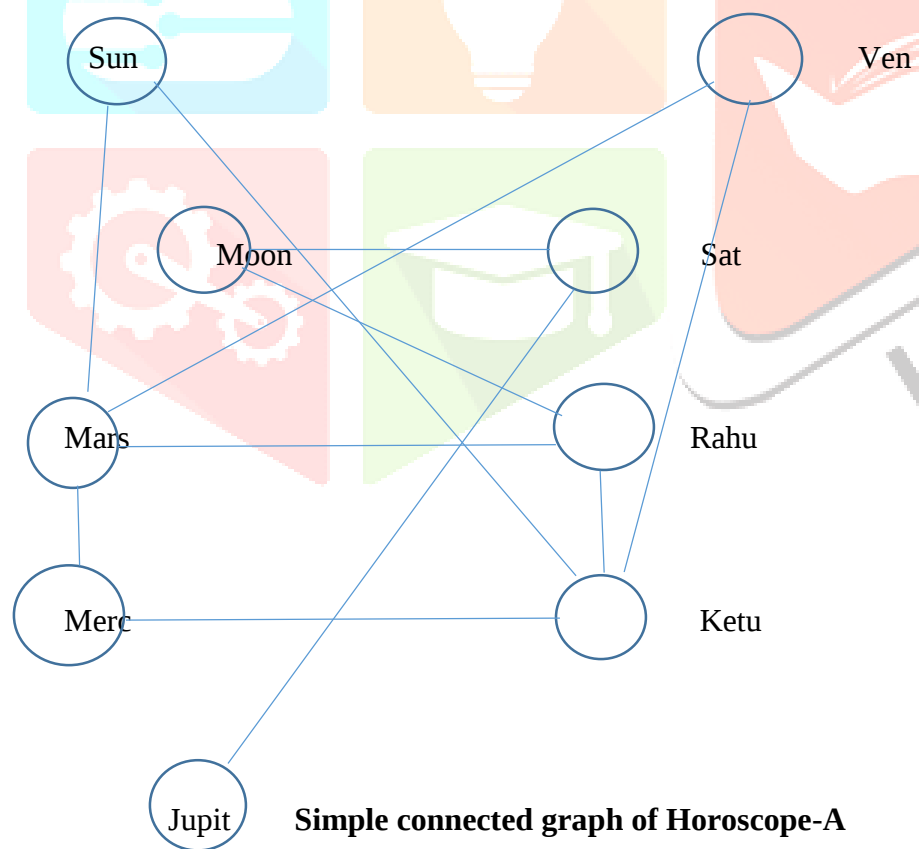
From the proof of the above theorem, it is obvious.

4. Application of the above results on Horoscopes:

4.1. Horoscope -A:

Consider the Horoscope of the famous Political Leader Mr.K.Annamalai, which is converted into a connected digraph and simple connected graph as given below:

VII - 15° 03	VIII - 15° 29	Mercury 00° 43 Rahu 12° 45 IX - 15° 15 Venus 17° 12 Sun 20° 21	X - 14° 19
VI - 14° 28			XI - 13° 50
V - 13° 50			Moon 19° 29 XII - 14° 28
Jupiter- 17° 33 IV - 14° 19	III - 15° 15 Ketu 12° 45	Mars 19° 48 Saturn 17° 20 II - 15° 09	I - 15° 03

**Connected digraph of Horoscope-A****Simple connected graph of Horoscope-A**

To find the center of the Horoscope we use simple connected graph. First we should find the eccentricity of each vertex.

$$\begin{aligned} E(\text{Sun}) &= \text{Max} \{ d(\text{su}, \text{mo}), d(\text{su}, \text{ma}), d(\text{su}, \text{me}), d(\text{su}, \text{ju}), d(\text{su}, \text{ve}), d(\text{su}, \text{sa}), d(\text{su}, \text{ra}), \\ &\quad d(\text{su}, \text{ke}) \} \\ &= \text{Max} \{ 3, 1, 2, 5, 2, 4, 2, 1 \} = 5 \end{aligned}$$

$$\begin{aligned} E(\text{Moon}) &= \text{Max} \{ d(\text{mo}, \text{su}), d(\text{mo}, \text{ma}), d(\text{mo}, \text{me}), d(\text{mo}, \text{ju}), d(\text{mo}, \text{ve}), d(\text{mo}, \text{sa}), d(\text{mo}, \text{ra}), \\ &\quad d(\text{mo}, \text{ke}) \} \\ &= \text{Max} \{ 3, 2, 3, 2, 3, 1, 1, 2 \} = 3 \end{aligned}$$

$$\begin{aligned} E(\text{Mars}) &= \text{Max} \{ d(\text{ma}, \text{su}), d(\text{ma}, \text{mo}), d(\text{ma}, \text{me}), d(\text{ma}, \text{ju}), d(\text{ma}, \text{ve}), d(\text{ma}, \text{sa}), \\ &\quad d(\text{ma}, \text{ra}), d(\text{ma}, \text{ke}) \} \\ &= \text{Max} \{ 1, 2, 1, 4, 1, 3, 1, 2 \} = 4 \end{aligned}$$

$$\begin{aligned} E(\text{Mercury}) &= \text{Max} \{ d(\text{me}, \text{su}), d(\text{me}, \text{mo}), d(\text{me}, \text{ma}), d(\text{me}, \text{ju}), d(\text{me}, \text{ve}), d(\text{me}, \text{sa}), d(\text{me}, \text{ra}), \\ &\quad d(\text{me}, \text{ke}) \} \\ &= \text{Max} \{ 2, 3, 1, 5, 2, 4, 2, 1 \} = 5 \end{aligned}$$

$$\begin{aligned} E(\text{Jupiter}) &= \text{Max} \{ d(\text{ju}, \text{su}), d(\text{ju}, \text{mo}), d(\text{ju}, \text{ma}), d(\text{ju}, \text{me}), d(\text{ju}, \text{ve}), d(\text{ju}, \text{sa}), d(\text{ju}, \text{ra}), \\ &\quad d(\text{ju}, \text{ke}) \} \\ &= \text{Max} \{ 5, 2, 3, 5, 5, 1, 3, 4 \} = 5 \end{aligned}$$

$$\begin{aligned} E(\text{Venus}) &= \text{Max} \{ d(\text{ve}, \text{su}), d(\text{ve}, \text{mo}), d(\text{ve}, \text{ma}), d(\text{ve}, \text{me}), d(\text{ve}, \text{ju}), d(\text{ve}, \text{sa}), d(\text{ve}, \text{ra}), \\ &\quad d(\text{ve}, \text{ke}) \} \\ &= \text{Max} \{ 2, 3, 1, 2, 5, 4, 2, 1 \} = 5 \end{aligned}$$

$$\begin{aligned} E(\text{Saturn}) &= \text{Max} \{ d(\text{sa}, \text{su}), d(\text{sa}, \text{mo}), d(\text{sa}, \text{ma}), d(\text{sa}, \text{me}), d(\text{sa}, \text{ju}), d(\text{sa}, \text{ve}), d(\text{sa}, \text{ra}), \\ &\quad d(\text{sa}, \text{ke}) \} \\ &= \text{Max} \{ 4, 1, 3, 4, 1, 4, 2, 3 \} = 4 \end{aligned}$$

$$\begin{aligned} E(\text{Rahu}) &= \text{Max} \{ d(\text{ra}, \text{su}), d(\text{ra}, \text{mo}), d(\text{ra}, \text{ma}), d(\text{ra}, \text{me}), d(\text{ra}, \text{ju}), d(\text{ra}, \text{ve}), d(\text{ra}, \text{sa}), \\ &\quad d(\text{ra}, \text{ke}) \} \\ &= \text{Max} \{ 2, 1, 1, 2, 3, 2, 2, 1 \} = 3 \end{aligned}$$

$$\begin{aligned} E(\text{Ketu}) &= \text{Max} \{ d(\text{ke}, \text{su}), d(\text{ke}, \text{mo}), d(\text{ke}, \text{ma}), d(\text{ke}, \text{me}), d(\text{ke}, \text{ju}), d(\text{ke}, \text{ve}), d(\text{ke}, \text{sa}), \\ &\quad d(\text{ke}, \text{ra}) \} \\ &= \text{Max} \{ 1, 2, 2, 1, 4, 1, 3, 1 \} = 4 \end{aligned}$$

The minimum eccentricity occurs at the nodes 'Rahu' and 'Moon'. Therefore **the centers of the Horoscope-A are the planets 'Rahu' and 'Moon'**. From the connected digraph we note that **'Ketu' is the highest degree vertex**. From the Simple connected graph we note that **'Mars' is also the highest degree vertex**.

4.1.1. Results of Horoscope-A :

Mathematical result	Astrological result
The highest degree vertices are 'Ketu' and 'Mars'	Since 'Ketu' and 'Mars' are highest degree vertices, they are the powerful planets in the Horoscope. Since 'Mars' occurs in house II, the person will talk very bold and strict. Since 'Ketu' occurs in house II and close to house III his words are very intelligent and he has spiritual mind
The centers of the graph are the planets 'Rahu' and 'Moon'. They are adjacent also, hence Theorem 3 is proved .	Since 'Rahu' and 'Moon' are the centers of the Horoscope, they are close to all the remaining planets, which means 'Rahu' and 'Moon' lead this Horoscope. Since 'Rahu' occurs in house VIII and close to house IX and 'Moon' occurs in house XI, and they are the centers, the person will achieve his goal with lot of struggles and obstacles throughout his life. Finally Mr.K.Annamalai has the possibilities to win in Tamilnadu Government election 2031.

5. Conclusion

By integrating concepts from multiple disciplines, this research establishes graph theory as a promising mathematical framework for automating horoscope interpretation and advancing network-based approaches to symbolic and knowledge-driven systems.

Mathematical Conclusion	Astrological Conclusion
From the above Horoscope which is converted as connected digraph and simple connected graph, the theorem results are proved. That is , there exists center not only for trees and a connected graph can have one or more centers which are adjacent.	Using the center of the Horoscope we can easily identify the leading result of the Horoscope. From the above Horoscope we note that, If ‘Rahu’ is the center, then the person experience luck, fame, power, popularity in his life and the person will be very bold also.If ‘Moon’ is the center , then the person will be attractive This the leading result and happens on the whole life of the person.

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