P-ISSN: 2355-5173
E-ISSN: 2656-9477

Tanthawi Jauhari's Interpretation of Celestial Movements and Its Fiqh Implications for Hijri Month Determination

Imam Labib Hibaurrohman
Universitas Nahdlatul Ulama Purwokerto
imamlabib04@gmail.com

Farah Nuril Izza
Universitas Islam Negeri saifudin Zuhri Purwokerto
farahizza@uinsaizu.ac.id

Al Furqon
Universitas Tilburg Belanda
A.DonoHariyanto@tilburguniversity.edu

Received: 01-07-2024 | *Revised: 02-09-2024* | *Accepted: 5-10-2024* | *Published On: 30-10-2024*

Abstract: This article explores the concept of the movements of the Earth, Moon, and Sun as described in the exegesis Al-Jawahir Fi Tafsir Alquran Al-Karim, and its implications for determining the beginning of the Hijri months. The study aims to describe the views of Tanthawi Jauhari, a scholar and exegete, on understanding Qur'anic texts related to the celestial movements of the Earth, Moon, and Sun. Additionally, the paper discusses the contemporary relevance of his views in resolving debates between rukyah (moon-sighting) and hisab (astronomical calculations) within Islamic jurisprudence. Data collection was conducted through a documentation method, gathering both primary and secondary data. The primary data source was Tanthawi Jauhari's interpretation in Al-Jawahir Fi Tafsir Alquran Al-Karim, while secondary data were drawn from relevant literature to support the analysis. The collected data were analyzed using content analysis methods. This study concludes that Tanthawi Jauhari's concept of the Earth, Moon, and Sun emphasizes the Moon's revolution around the Earth, while the Earth revolves around the Sun. He explains that the Earth's rotation causes the alternation between day and night. However, his interpretation focuses solely on the synodic cycle of the Moon, without addressing the sidereal cycle. The variations in these celestial movements impact the visibility of the crescent moon (hilal), which may result in discrepancies in determining the beginning of the Hijri months. The article also highlights how Tanthawi Jauhari's scientific approach could contribute to modern astronomical discussions regarding Islamic calendar calculations..

Keywords: *Celestial Movements, Tanthawi Jauhari, Hijri Calendar*

Abstrak: Artikel ini mengeksplorasi konsep pergerakan Bumi, Bulan, dan Matahari sebagaimana dijelaskan dalam tafsir Al-Jawahir Fi Tafsir Alquran Al-Karim serta implikasinya terhadap penentuan awal bulan Hijriyah. Studi ini bertujuan untuk mendeskripsikan pandangan Tanthawi Jauhari, seorang ulama dan mufassir, dalam memahami teks-teks Al-Qur'an terkait pergerakan benda-benda langit seperti Bumi, Bulan, dan Matahari. Selain itu, artikel ini juga membahas relevansi pandangannya dalam menyelesaikan perdebatan kontemporer antara rukyah (pengamatan hilal) dan hisab (perhitungan astronomi) dalam hukum Islam. Pengumpulan data dilakukan melalui metode dokumentasi, dengan mengumpulkan data primer dan sekunder. Sumber data primer berasal dari penafsiran Tanthawi Jauhari dalam Al-Jawahir Fi Tafsir Alquran Al-Karim, sedangkan data sekunder diperoleh dari literatur yang relevan untuk mendukung analisis. Data yang terkumpul kemudian dianalisis menggunakan metode analisis isi. Studi ini menyimpulkan bahwa konsep pergerakan Bumi, Bulan, dan Matahari menurut Tanthawi Jauhari menekankan bahwa Bulan berevolusi mengelilingi Bumi, sementara Bumi berevolusi mengelilingi Matahari. Dia menjelaskan bahwa rotasi Bumi menyebabkan pergantian siang dan malam. Namun, tafsirnya hanya berfokus pada siklus sinodik Bulan tanpa membahas siklus sideris. Variasi dalam pergerakan benda-benda langit ini mempengaruhi penampakan hilal, yang dapat mengakibatkan perbedaan dalam penentuan awal bulan Hijriyah. Artikel ini juga menyoroti bagaimana pendekatan ilmiah Tanthawi Jauhari dapat berkontribusi pada diskusi astronomi modern terkait perhitungan kalender Islam.

Keywords: *Pergerakan Benda Langit, Tanthawi Jauhari, Kalender Hijriyah*

How to cite this article:
Imam Labib Hibaurrohman and others, Tanthawi Jauhari's Interpretation of Celestial Movements and Its Fiqh Implications for Hijri Month Determination, *Jurnal Ilmiah Mizani: Wacana Hukum, Ekonomi Dan Keagamaan*, 11.2 (2024), 1-11.

Vol. 11, Issue 02, October, 2024
P-ISSN: 2355-5173 E-ISSN: 2656-9477

Introduction

Since the era of Prophet Muhammad (peace be upon him), the interpretation of the Qur'an has undergone numerous changes, influenced by shifting societal contexts, as exegesis is inherently tied to human perspectives (*taghayyur wa tathawwur at-tafsir bi taghayyuri wa tathawwuri an-nuzum al-ma'rifi*). The accuracy of an interpretation often depends on how the exegete understands the Qur'anic texts.

The Qur'an, as a divine revelation and guidance for humanity, contains both explicit and implicit meanings. Therefore, the reconstruction of its interpretation is essential as part of an effort to engage in *ijtihad* (independent reasoning) and recontextualize earlier scholarly traditions to address contemporary challenges. Tanthawi Jauhari, a prominent scholar of his time, sought to open new avenues of Qur'anic interpretation through a scientific approach. His work, *Al-Jawahir Fi Tafsir Alquran Al-Karim*, has become a key reference for academics. By employing a scientific lens, Tanthawi Jauhari interpreted many Qur'anic verses related to the natural world, particularly the movements of the Earth, Moon, and Sun. For instance, he described these celestial movements as universal and constant until the Day of Judgment, forming the cycles of changing seasons—from winter to spring, summer to autumn—in harmony and order.

Tanthawi Jauhari's approach to celestial movements warrants deeper exploration, particularly regarding its implications for determining the beginning of the Hijri months. This subject is significant within Islamic scholarship as it intersects with issues of religious observance, astronomical accuracy, and differing interpretations among scholars.

The determination of the Hijri calendar, which is essential for the timing of Islamic rituals such as Ramadan and Eid, relies heavily on the visibility of the crescent moon (*hilal*). However, this determination is not without controversy. Scholars have long debated the methods of moon sighting, particularly whether to rely on direct visual observation or astronomical calculations. This debate highlights the intersection of traditional practices with modern scientific approaches.

In this context, the article delves into Tanthawi Jauhari's interpretation of the movements of celestial bodies, specifically the Earth, Moon, and Sun, as presented in his work *Al-Jawahir Fi Tafsir Alquran Al-Karim*. His insights provide a framework for understanding how these movements impact the sighting of the crescent moon and the subsequent declaration of the new month.

By analyzing Jauhari's interpretations, the article aims to clarify the mechanisms he describes regarding the cyclical nature of these celestial movements. It seeks to elucidate how his scientific observations can inform contemporary discussions surrounding the determination of the Hijri months.

Moreover, exploring Jauhari's approach offers a valuable opportunity to assess the broader implications of his views on modern Islamic jurisprudence. Understanding his perspective can help reconcile traditional practices of moon sighting with contemporary astronomical techniques, fostering a dialogue between classical Islamic scholarship and current scientific understanding.

Ultimately, this article emphasizes the need to engage with Tanthawi Jauhari's work to better comprehend the ongoing debates within the Islamic scholarly community regarding the Hijri calendar, thereby contributing to a more nuanced

understanding of how celestial movements play a role in religious observance.

Literature Review

The determination of the Hijri calendar is a multifaceted issue that has garnered significant attention from scholars across various disciplines, including astronomy, Islamic jurisprudence, and religious studies. Historically, the practice of determining the beginning of the Hijri months relied heavily on visual moon sightings. Scholars have emphasized the importance of direct observation, arguing that the Prophet Muhammad (peace be upon him) instructed his followers to observe the moon to establish the start of Ramadan and the timing of Eid celebrations. This reliance on *rukyah* (moon sighting) underscores the traditional approach to Islamic timekeeping, which is deeply rooted in the Sunnah.

In contrast, contemporary scholars have increasingly advocated for the use of *hisab* (astronomical calculations) to determine the lunar calendar. Works by astronomers have laid the groundwork for understanding celestial movements through mathematical precision, emphasizing that modern techniques can complement traditional practices. This shift in methodology reflects a growing recognition of the potential for integrating science with religious observance, as some researchers argue for a balanced approach that respects both traditional and modern methodologies.

Tanthawi Jauhari's *Al-Jawahir Fi Tafsir Alquran Al-Karim* represents a significant contribution to the discourse on celestial movements within Islamic thought. His interpretations provide a scientific framework for understanding the movements of the Earth, Moon, and Sun, offering insights that resonate with contemporary astronomical principles. Scholars have noted that Jauhari's integration of scientific observations into his exegesis represents a pioneering effort to bridge the gap between Islamic theology and natural sciences. This innovative approach is particularly relevant today as debates continue over the methodologies for determining the Hijri calendar.

The contemporary discourse surrounding moon sighting and calendar calculations remains contentious, with various *madhhabs* (schools of thought) advocating different positions. Scholars have explored the implications of these differing interpretations on communal practices and religious observance, highlighting the necessity of understanding historical contexts and the evolving nature of jurisprudence, which influences how communities approach the determination of Islamic months.

Overall, the literature indicates a dynamic interplay between traditional practices and modern scientific insights in the determination of the Hijri calendar. Tanthawi Jauhari's work stands as a crucial point of reference, encouraging further exploration into how his interpretations can inform ongoing discussions in Islamic jurisprudence. By bridging classical and contemporary perspectives, scholars can foster a more comprehensive understanding of celestial movements and their implications for religious observance.

Methods

The data collection method employed in this paper is **documentation**, with both primary and secondary data gathered to support the analysis. The primary data come from Tanthawi Jauhari's interpretations in *Al-Jawahir Fi Tafsir Alquran Al-Karim*, where key verses and concepts related to the movements of the Earth, Moon, and Sun were identified. Secondary data were drawn from complementary sources that provide

Vol. 11, Issue 02, October, 2024
P-ISSN: 2355-5173 E-ISSN: 2656-9477

both historical and contemporary perspectives on Islamic cosmology and jurisprudence.

The data were then analyzed using **content analysis methods**, focusing on identifying patterns, themes, and keywords that Jauhari emphasized in his discussion of celestial movements. Thematic coding was employed to categorize the data based on the type of celestial phenomena described (e.g., Earth's rotation, Moon's revolution, the appearance of the crescent moon). This coding allowed for a detailed comparison of his views with modern astronomical findings and Islamic legal rulings on the Hijri calendar.

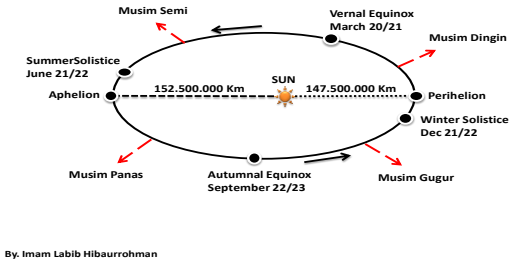
Additionally, a **comparative analysis** was conducted by referencing other tafsir works that address astronomical topics, allowing for a broader understanding of how different Islamic scholars interpret the relationship between the cosmos and Islamic law.

Results and Discussion

The Concept of the Movements of the Earth, Moon, and Sun in Tanthawi Jauhari's Exegesis

The movement of the Earth in the universe or cosmos is described as continuously orbiting the Sun along an elliptical path, with an average distance between the Earth and the Sun of approximately 149,597,871 km, commonly referred to as an Astronomical Unit. The elliptical trajectory of the Earth during its orbit results in a variation in distance between the Earth and the Sun, characterized by the farthest point known as aphelion and the closest point known as perihelion. This difference is approximately 5 million km, or about 3.3% of the total distance.

Fig. 1: Aphelion and Perihelion during the Earth's Revolution]



(Source: Hibaurrohman, 2014:77)

Tanthawi Jauhari explains that the movements of the universe are universal and can be understood by various groups of people. This is because celestial bodies possess a consistent nature of movement, which parallels human life in daily activities. Jauhari states that every planet orbiting its path is closely related to gravitational forces. He describes this attractive force as similar to a magnet and refers to it as *al-harakah al-jadabiyah*, which results in circular and rotational movements according to the proportions set by Allah in each of its motions. Each movement yields a fixed value. The movements of these celestial bodies are akin to living organisms that remain alive and develop according to the rules that have been established. The attractive force mentioned refers to the same type of attraction that occurs with magnets.

Muhammad Ali as-Shobuni asserts that the universe moves in a harmonious and synchronized manner. According to Kepler's laws, when the Earth and other planets revolve around the Sun, they traverse elliptical paths. They also move together with the Sun around one of the focal points of their axes. The movements caused by planets or celestial bodies as they orbit their focal points are due to the gravitational attraction (universal gravitation) present

among all objects.

In the framework of Newtonian mechanics, as cited by Rahmat Abdullah, gravity is the force that causes the Earth to revolve around the Sun because, according to Newton, gravitational force is the interaction of attraction between objects in the universe. He further explains that the gravitational attraction between the Sun and Earth occurs because the magnitude of gravitational force is proportional to the product of their masses and inversely proportional to the square of their distance, resulting in the Earth revolving around the Sun in a fixed elliptical orbit.

John D. Fix comments on Newton's law of gravitation: "The law of gravitation says that every pair of particles of matter, no matter how far apart, exert a gravitational force on each other. The strength of the force is proportional to the product of their masses and inversely proportional to the square of the distance between the particles. A spherical body attracts other bodies as though its mass were concentrated at a point at its center."

Naterismi Abd Hanan explains in detail Newton's law to provide a comprehensive understanding of the concept of cosmic movement during its evolution, indicating that there is an attractive force between any two objects in the universe. Newton attempted to formulate this with the equation known as the universal law of gravitation, which remains constant regardless of time and place.

Furthermore, to clarify the concept of cosmic movement, Newton illustrated his point through an experiment, simulating the firing of a cannonball from a mountain. If the cannonball is fired at a normal speed, it will fall to the Earth's surface due to the gravitational force acting upon it. If the cannonball is fired again at a higher velocity, it will land farther than the previous shot. If the velocity is increased further, the cannonball will travel an even greater distance until it eventually falls to Earth. From this experiment, Newton deduces that if the cannonball is fired at the correct velocity, it will traverse and orbit the Earth in a complete circle, as the path of the cannonball is continually attracted by Earth's gravitational force yet does not fall due to the acceleration caused by gravity.

Tanthawi Jauhari states that the Earth requires one year to orbit the Sun, which is referred to as a solar year. One Julian calendar year takes about 365 days and 6 hours for the Earth to complete its revolution around the Sun, but current calculations indicate that the Earth actually requires approximately 365 days, 5 hours, 48 minutes, and 50 seconds to complete this revolution. If calculated, this results in an excess of about 11 minutes per year. By counting from the beginning of the Common Era until 1852, this leads to a delay of 10 days, which is known as the Gregorian calendar.

According to the ancient Persian and Egyptian perspectives, the Earth's revolution around the Sun requires 365 days, divided into 12 months, each consisting of 30 days, with an additional 5 days referred to as *nasa'i* or festive days. In contrast, the Arab community believed that the Earth takes approximately 12 months to revolve, with each month comprising 29 or 30 days. During leap years, an additional day is added. The Arab community considers that within one cycle (30 years), there are 11 leap years and 19 normal years.

In addition to its revolution around the Sun, the Earth also rotates on its axis. Tanthawi Jauhari explains this phenomenon when interpreting Surah An-Naml, verse 88, which discusses the natural phenomena resulting from the Earth's rotation. He describes it as a movement that causes the alternation of day and night, characterized

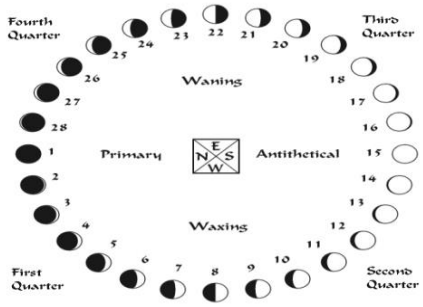
Vol. 11, Issue 02, October, 2024
P-ISSN: 2355-5173 E-ISSN: 2656-9477

by the apparent motion of the Sun moving from the east to the west each day. Other exegeses, such as those of Ibn Abbas, Ibn Kathir, and Al-Qurtubi, refer to this as the phenomenon of the changing times from light to darkness.

Tanthawi Jauhari further explains the movement of the Moon, stating that without the Moon, there would be no calculation of the number of months in a year, nor days in a week, or weeks in a month. The differences in time measurement would complicate humanity's ability to determine days, dates, months, or years. The lunar cycle serves as a reference for the change of days and dates, thus facilitating the determination of times and the differences needed by people in various aspects, including worship times.

In his exegesis, Tanthawi Jauhari mentions that in one complete revolution, the Moon orbits the Earth, taking time to create several positions or phases known as the lunar mansions, comprising 28 phases or days, which are specified as follows: (1) Syaratin, (2) Butain, (3) Suraya, (4) Al-debaran, (5) Haq'ah, (6) Han'ah, (7) Zira', (8) Nasrah, (9) Tarf, (10) Jabhah, (11) Zabrah, (12) Garfah, (13) Awa', (14) Samak, (15) Gafr, (16) Zubana, (17) Iklil, (18) Qalb, (19) Syulah, (20) Na'aim, (21) Bal adah, (22) Sa'du zabih, (23) Sa'du Bal'a, (24) Sa'du Su'ud, (25) Sa'dul Akhbiyah, (26) Dalwu Muqadam, (27) Dalwu Mu'akhar, (28) Batnu Hut.

Fig. 2: Phases of the Moon in 28 Mansions]



(Source: *Kitab Tafsir Al-Jawahir Fi Tafsir Alquran Al-Karim*)

The lunar mansions, as the Moon revolves around the Earth, are divided into 28 mansions, as mentioned above. When the Moon follows the Earth in its revolution, it will be positioned in one of the 12 *buruj* (zodiac signs), with each *buruj* spaced 30 degrees apart. From this 30-degree division within a year, Tanthawi further explains that four seasons will occur, namely: winter, spring, summer, and autumn, with each season changing every three months. He notes that during its revolution, the Moon takes about 29 days, 12 hours, and 44 minutes.

In *Kitab Tafsir al-Kasyaf 'An Haqaiq Gawamid at-Tanzil Wa 'Uyuni al-Aqawil*, Az-Zamakhsyari states that the meaning of *Qaddarnahu Manazilah* refers to the Moon's orbit according to its positions among the zodiac signs, totaling 28 mansions. Each mansion can be identified daily. Every night, the Moon remains visible and does not increase or decrease in size, indicating that its motion is stable and constant. The Moon maintains a consistent trajectory, ensuring it does not deviate from what has been determined. If the crescent moon could speak, Ahmad Izzudin noted that it would honestly describe its daily actions, allowing humanity to understand the Moon's movements with certainty. Az-Zamakhsyari further explains the crescent moon as a faint, delicate light resembling a thread, which grows larger until it becomes a full moon over time.

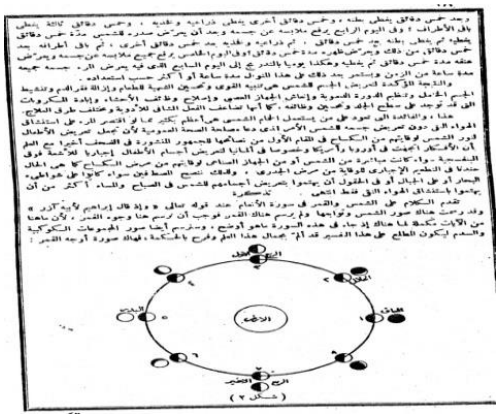
Ahmad Sulaiman classifies the lunar mansions or the lunar cycle into eight phases as the Moon progresses through its 28 mansions, including:

1. **New Moon (Muhaq)**: This occurs when the Moon is positioned between the Earth and the Sun or during conjunction. Tanthawi

Jauhari refers to this as the Moon being at the tip of the horn or the end of its monthly orbit at the zero point (Hawla Sifr).

2. **Crescent Moon (Hilal)**: This phase occurs when the Moon appears above the horizon after conjunction, at a time when the Sun has already set. The age of the crescent moon at this initial phase is approximately 6 days, 16 hours, and 11 minutes.
3. **First Quarter (Tarbi' al-Awwal)**: This occurs after the Moon leaves the Sun at the first quarter, which takes place on the 7th day.
4. **Waxing Gibbous (Al-Ahdab al-Awwal)**: In this phase, the Moon appears brighter and clearer after sunset and is positioned close to the eastern horizon. During this phase, the Moon is visibly large, occurring between the 8th and the 11th.
5. **Full Moon (Al-Badr)**: This event occurs when the entire surface of the Moon faces the Sun, reflecting its light and appearing as a perfect round disc. This phase takes place on the 13th, 14th, and 15th days of the lunar month.
6. **Waning Gibbous (Al-Ahdab al-Sani)**: This phase occurs when the light of the full moon begins to diminish, and the dark portion of the Moon starts to increase. This phase lasts for 4 days after the full moon, occurring on the 17th, 18th, 19th, and 20th days.
7. **Second Quarter (Tarbi' Sani)**: This phase occurs after the Moon has left the Sun following the event of the full moon. This occurs on the 21st, 23rd, and 24th days, specifically after the conjunction on the 22nd day.
8. **Waning Crescent (Hilal al-Sani)**: This phase refers to the Moon appearing as a crescent shape (Hilal) at the end of the month, occurring between the 27th and 29th days.

Fig. 3: Phases of the Moon Classification by Tanthawi Jauhari]

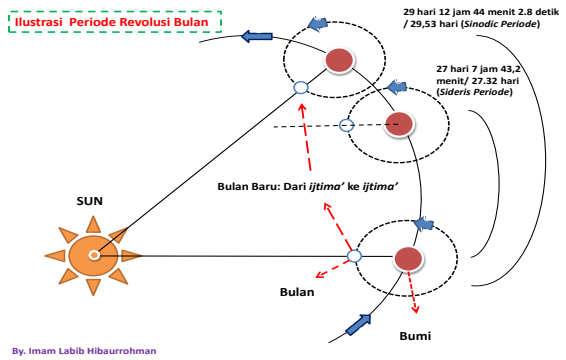


(Source: *Kitab Tafsir Al-Jawahir Fi Tafsir Alquran Al-Karim*)

The revolution of the Moon around the Earth in one complete cycle takes an average of 27 days, 7 hours, 43.2 minutes, or approximately 27.32 days. This period is referred to as the **sidereal month** or **Syahr an-Nujum**, which represents the time taken by the Moon to revolve from its starting point back to the same position, completing a circular path of 360 degrees.

The basis and guidelines for determining the beginning of the lunar month and the Qamariyah year are not based on the sidereal period but on the **synodic month** (Syahr Qamar or Syahr Iqtiran), which is the time it takes the Moon to go from a position of conjunction (Iqtiran or Ijtima') between the Sun, Moon, and Earth to the next conjunction position. The lunar phase during the synodic period requires approximately 29 days, 12 hours, 44 minutes, and 2.8 seconds, or about 29.530588 days, which can be rounded to 29.531 days. This revolution is the foundation for calculating the lunar months and the solar year (Gregorian Year).

Fig. 4: Sidereal and Synodic Revolution Periods of the Moon]



(Source: Hibaurrohman, Imam Labib, 2014: 103)

The phases of the Moon in its orbit around the Earth will eventually align with the Sun, which is referred to as the **new moon** phase (new moon) or the occurrence of conjunction (conjunction or Ijtimak). Conversely, when the Moon is in the opposite direction of the Sun, it is referred to as the **full moon** phase. During the new moon phase, the entire dark side of the Moon faces the Earth, while during the full moon phase, the entire illuminated side of the Moon faces the Earth.

In his explanation, Danang Endarto elaborates on Tanthawi's view that there are two distinct movements when the Sun rotates: First, the Sun rotates on its axis, taking about 26.9 days for a complete rotation. This is evidenced by the appearance of sunspots, which occasionally shift from one side of the solar disc to the other over the course of about two weeks. Second, the Sun moves among the constellations at a speed of 20 km/second. The rotation of the Sun on its axis aligns with the rotation of the Earth and the movements of the Moon or other bodies revolving around a larger mass than that of the Sun.

Implications for Determining the Beginning of the Hijri Months

A central issue in the Islamic calendar is determining the precise start of the Hijri months, which are based on lunar cycles. The movements of the Earth, Moon, and Sun play a crucial role in this determination. The sighting of the crescent moon (*hilal*), which marks the beginning of each lunar month, has been the subject of significant scholarly debate, particularly regarding whether physical sighting (*rukyah*) or astronomical calculations (*hisab*) should be relied upon.

Tanthawi Jauhari's interpretation of celestial movements sheds light on these debates, emphasizing the importance of understanding the synodic cycle of the Moon. The synodic cycle refers to the time it takes for the Moon to return to the same phase, such as from one new moon to the next, which lasts approximately 29.53 days. According to Jauhari, this understanding is essential for predicting the appearance of the *hilal*. However, he focuses primarily on the synodic cycle and does not discuss the sidereal cycle, which is slightly shorter (27.32 days) and measures the Moon's return to the same position relative to the stars. The difference between these cycles can lead to discrepancies in determining the sighting of the *hilal*, and therefore, the start of the Hijri months.

This difference is important in modern contexts, as it impacts the methods used for determining the Islamic calendar. Contemporary debates in Islamic jurisprudence center on whether the traditional method of *rukyah* (physical sighting) should continue to be the standard for marking the beginning of the lunar months, or whether *hisab* (astronomical calculations) should be more widely adopted. *Rukyah* emphasizes the necessity of physically observing the crescent moon to announce the start of a new month, which aligns with centuries of Islamic tradition. However, this method can lead to

inconsistencies, especially when cloud cover or other weather conditions obscure the Moon, causing variations in lunar month declarations across different regions.

On the other hand, *hisab* uses precise astronomical calculations to predict the appearance of the crescent moon, offering a more consistent and predictable approach. Modern proponents of *hisab* argue that it provides accuracy and eliminates the uncertainties associated with *rukyah*. Jauhari's emphasis on the synodic cycle provides scientific validation for the use of calculations, as it underscores the importance of understanding lunar phases to accurately determine when the *hilal* should be visible.

In contemporary practice, Muslim countries are divided on their reliance on *rukyah* and *hisab*. For example, some countries like Saudi Arabia adhere strictly to *rukyah*, while others, like Turkey, have adopted *hisab* to establish the Islamic calendar in advance. Jauhari's work offers a bridge between these two approaches. By providing a detailed explanation of the synodic cycle, his interpretations can inform both traditionalists and modernists. The combination of his theological insights with his scientific knowledge provides a comprehensive framework for understanding how celestial movements influence the lunar calendar.

Moreover, Jauhari's focus on the synodic cycle could contribute to contemporary Islamic jurisprudence, offering scholars a nuanced perspective that integrates scientific rigor with traditional methods of moon sighting. His explanation of the phases of the Moon, such as the *hilal* and full moon (*al-badr*), demonstrates the importance of both observing the Moon's position and understanding the astronomical basis for its movements. This dual approach could help resolve some of the tensions between *rukyah* and *hisab* by showing that physical observation can be enhanced by scientific calculations, leading to a more unified and accurate determination of the Hijri months.

Jauhari's work also has practical applications in resolving modern-day disputes that often arise in Muslim communities regarding the start of Ramadan or Eid. Discrepancies in moon sightings across different regions sometimes result in some Muslim countries beginning fasting or celebrating Eid on different days. The use of Jauhari's synodic cycle explanation, combined with modern *hisab* methods, could offer a solution to this problem by ensuring that lunar months are declared consistently, while still respecting the traditional practice of *rukyah*.

In addition to enhancing the accuracy of moon sighting, Jauhari's insights could also contribute to the ongoing scholarly discussions regarding the broader implications of using scientific tools to assist in religious determinations. His work highlights the potential for a harmonious relationship between science and Islamic jurisprudence, showing that both can work together to ensure the accurate observance of religious duties. This integrative approach would not only resolve contemporary disputes but also reinforce the idea that scientific knowledge has a place in religious practice.

Finally, Jauhari's interpretation calls attention to the importance of bridging historical practices with contemporary needs. His insights into the synodic cycle serve as a reminder that understanding the movements of celestial bodies is a universal concern, one that spans both religious and scientific disciplines. By incorporating his views into modern discussions on the Islamic calendar, scholars can offer a more robust and unified approach to moon sighting that

Vol. 11, Issue 02, October, 2024
P-ISSN: 2355-5173 E-ISSN: 2656-9477

satisfies both the traditional emphasis on *rukyah* and the modern need for consistency and predictability offered by *hisab*.

Conclusion

This study concludes that, according to Tanthawi Jauhari, the Earth rotates, leading to the alternation of day and night, while the Moon revolves around the Earth, which in turn orbits the Sun. Jauhari emphasizes the significance of the synodic cycle of the Moon, which refers to the time it takes for the Moon to return to the same phase, such as from one new moon to the next. However, he does not address the sidereal cycle, which is essential for a comprehensive understanding of lunar movements.

Understanding both cycles is crucial for accurately determining the appearance of the crescent moon (*hilal*), which marks the beginning of the Hijri months. Without proper knowledge of these astronomical cycles, communities may incorrectly declare the start of the month, leading to confusion and discrepancies in religious observance.

To enhance the relevance of Jauhari's interpretations in modern contexts, it is recommended that scholars and Islamic authorities consider integrating his insights with contemporary astronomical methods. For instance, employing both traditional *rukyah* (moon-sighting) and *hisab* (astronomical calculations) could provide a more accurate and reliable approach to determining the Hijri calendar. By combining these methods, communities can reduce disagreements about the timing of important religious events such as Ramadan and Eid, fostering greater unity among Muslims.

Moreover, future research should delve deeper into how Jauhari's perspectives can impact contemporary Islamic legal rulings. Exploring the implications of his interpretations for current debates around moon sighting methodologies can offer valuable insights for scholars and practitioners alike. This exploration could address the potential for harmonizing traditional practices with modern scientific approaches, ensuring that religious observance remains relevant and accurate in a rapidly changing world.

In conclusion, Tanthawi Jauhari's scientific approach to understanding the movements of celestial bodies offers a valuable framework for bridging the gap between historical Islamic practices and contemporary astronomical methods. By acknowledging the importance of both the synodic and sidereal cycles, scholars can pave the way for a more informed and cohesive approach to determining the Hijri months, ultimately enriching the religious experience for Muslim communities worldwide.

Credit Authorship Contribution

Imam Labib Hibaurrohman: Methodology, Investigation, Writing - Original Draft, and Supervision. Farah Nuril Izza: Methodology, Resources, and Writing - Review & Editing. Al Furqon: Methodology, Formal Analysis, and Writing - Review & Editing. A. Dono Hariyanto: Methodology, Formal Analysis, and Writing - Review & Editing.

Declaration of Competing Interest

The authors declare no competing interests related to this study. No financial or personal conflicts of interest are present.

Acknowledgements

The authors thank the Universitas Nahdlatul Ulama Purwokerto, Universitas Islam Negeri Saifudin Zuhri Purwokerto, and Universitas Tilburg, Netherlands, for their support and resources in conducting this research.

References

Abd Hanan, Naterismi, 2009, *Perjalanan Kosmos Memahami Alam Semesta*, Surabaya: Selasar Publishing

Abdullah, Rahmat, 2011, *Teori Absolutivitas Matahari Mengelilingi Bumi*, Solo: Pustaka Arafah

Abdul Qadir, Jum'ah Ali, 2006, *Ad-Dakhil Fi al-Dirasah al-Manhajiyah wa al-Namadij al-Tatbiqiyah,* Kairo: al-Azhar Press

Admiranto, Gunawan, 2013, *Menjelajahi Tata Surya*, Yogyakarta: Kanisius

Azhari, Susiknan, 2007, *Ilmu Falak Perjumpaan Khazanah Islam dan Sains Modern*, Yogyakarta: Suara Muhammadiyah

Departemen Agama, 1992/1993, *Ensiklopedia Islam*, Jakarta: Departemen Agama Dirjen Pembinaan Kelembagaan Agama Islam

Endarto, Danang, 2014, *Kosmografi*, Yogyakarta: Penerbit Ombak

Fahrudin, Muhammad Fahrurrozi, 1981, *Mafatihul Ghoyb*, Beirut: Dar al -Fikri

al-Farmawi, Abd. al-Hayy, 1996, *Metode Tafsir Mawdhu'iy*, terjemahan; Suryan A Jamrah, Jakarta: Raja Grafindo Persada

Fix, John D, 1995, *Astronomy Journey To The Cosmic Frontier*, America : Mosby Year Book

al-Ghazali, Abu Hamid, 2003, *Ihya 'Ulum ad-Din, Kairo* : Maktabah at-Tsaqafi

Golshani, Mehdi, 2003, *Filsafat Sains Menurut Alquran*, Bandung : Mizan

Hambali, Slamet, 2011, *Almanak Sepanjang Masa Sejarah Sistem Penanggalan Masehi, Hijriyah Dan Jawa*, Semarang: Program Pasca Sarjana IAIN Walisongo

Hasan, Amir Husen, Tt, *al-adilah al-Syar'iyah Fi Itsbat al-Syuhur al-'Arabiyah Bi al-Hisabat al-Fal akiyah*, Kairo: Daar Kitab al-Dhahaby

Hibaurrohman, Imam Labib, *Sistem Pergerakan Bumi, Bulan Dan Matahari Dalam Prspektif Studi Alquran Dan Astronomi Beserta Implikasinya*, Semarang, UIN Walisongo, Thesis, 2014.

Ichwan, Muhammad Nor, 2004, *Tafsir Ilmy Memahami Alquran Melalui Pendekatan Sains Modern*, Jogjakarta: Menara Kudus Jogja

Jauhari, Tanthawi, 1350H, *Al- Jawahir Fi Tafsir Alquran Al-Karim*, Mesir: Musthafa al-Halaby

Katsir, Ibnu, 2000, *Tafsir Alquran al-Azim*, Giza: Maktabah Awlad as-Syekh Li at-Turast

Kementerian Agama & LIPI, 2012. *Al-Qur'an dan Tafsirnya*, Jakarta: Kementerian Agama RI

Khazin, Muhyiddin, 2005, *Kamus Ilmu Falak*, Jogjakarta : Buana Pustaka

Marsito, 1960, *Kosmografi Ilmu Bintang*, Jakarta : PT Pembangunan

Mustaqim, Abdul, 2010, *Epistemologi Tafsir Kontemporer*, Yogyakarta : LkiS

Murtadho, Moh, 2008, *Ilmu Falak Praktis,*Malang : UIN Malang Press

Purwanto, Agus, 2012, *Nalar Ayat-Ayat Semesta*, Bandung : Mizan Pustaka

Pusat Bahasa Departemen Pendidikan Nasional , 2007, *Kamus Besar Bahasa Indonesia*, Edisi Ketiga, Jakarta: Balai Pustaka

Sja'roni, 2003, *Konsep Ayat-ayat Kauniyah Dalam Tafsir Al-Jawahir,* Surabaya : IAIN Sunan Ampel

Ahmad Sulaiman, Muhammad, 2011, *Ma'zufat Fardiyah 'Ala Awtar Falakiyah*, Kairo: *Ma'had Qaumi Li al-Buhust al-Falakiyah Wa Al-Geofisika* Helwan

_____, 1999, *Sabahah Fadaiyah Fi Afaq 'Ilmi Al-Falak,* Kuwait: Maktabah al-'Ajiri

Syafrudin, 2009, *Paradigma Tafsir Tekstual Dan Kontekstual Usaha Memaknai Kembali Pesan Al-Qur'an*, Yogyakarta: Pustaka Pelajar (Perpustakaan Pribadi)

Thayyarah, Nadiah, 2014, *Buku Pintar Sains Dalam Al-Qur'an Mengerti Mukjizat Ilmiah Firman Allah,* Jakarta: Zaman

at-Thoi, Muhamad Basil, 2007, *Ilmu Falak Wa at-Taqawim*, Lebanon: Dar An-Nafaes

al -Qattani, Manna' Khalil, 2013, *Mabahis Fi 'Ulum Al-Qur'an (Studi Ilmu-ilmu Qur'an),* Terjemah; Mudzakir As, Bogor: Pustaka Litera Antar Nusa.

Qasim, Nazar Mahmud, 2009, *al -Ma'ayir al-*

Vol. 11, Issue 02, October, 2024
P-ISSN: 2355-5173 E-ISSN: 2656-9477

Fiqhiyyah Wa al-Falakiyah Fi> I'dadi al-Taqawim al-Hijriyah, Beirut: Daar al-Basyair al-Islamiyah

al -Qurtuby, Abdullah, 2006, *Al-Jami' Li al-Ahkam al-Qur'an*, Beirut: Al-Resal ah Publisher

az-Zamkhasyari, Abu Qasim, 1998, *al-Kasyaf 'An Haqaiq Gawamid at-Tanzil Wa 'Uyuni al-Aqawil,* Riyad: Maktabah 'Abekan