Journal of Astronomy and Sharia Applications (JASA)
Vol. 01, No. 01, January-July 2026

The Dynamics of the Isbat Session and Differences in Determining the Beginning of Ramadan 1447 H in Indonesia

Sudarmadi Putra[1] M. Stains[2]

[1]Faculty of Sharia, Sekolah Tinggi Islam Al-Mukmin Surakarta, Jawa Tengah, Indonesia
[2]Department of Chemistry, University of Virginia, Charlottesville, United States

Article Info

Article history:

Received: 03-01-2026
Revised: 20-03-2026
Accepted: 25-03-2026

***Keywords*:**

Hilal;
Hisab;
Rukyat;
Ramadan.

ABSTRACT

The isbat session is an official mechanism in determining the beginning of the Hijri month in Indonesia that integrates the methods of hisab and rukyat. Differences in the early determination of Ramadan 1447 H among Muslims still often occur due to differences in the visibility criteria of the hilal and the methodological approach used by each group. This study aims to examine the dynamics of the isbat session and analyze the factors that cause the difference in the initial determination of Ramadan 1447 H. This research uses a qualitative approach with a literature study method through a study of the results of the isbat session, hilal astronomy data, and previous research related to hisab and rukyat. The results of the study show that astronomical data provides a strong scientific basis in predicting the possibility of moon visibility, but differences in the criteria used and the results of field observations affect the decisions taken. The integration of hisab and rukyat in the isbat session reflects an attempt to compromise between scientific and normative approaches, although it has not been able to completely eliminate differences in society. This research provides a theoretical contribution to the study of Islamic astronomy and offers a perspective in strengthening a methodology for determining the beginning of the Hijri month that is more integrative and accurate.

ABSTRAK

Sidang isbat merupakan mekanisme resmi dalam penentuan awal bulan Hijriyah di Indonesia yang mengintegrasikan metode hisab dan rukyat. Perbedaan dalam penetapan awal Ramadan 1447 H di kalangan umat Islam masih sering terjadi akibat perbedaan kriteria visibilitas hilal dan pendekatan metodologis yang digunakan oleh masing-masing kelompok. Penelitian ini bertujuan untuk mengkaji dinamika sidang isbat serta menganalisis faktor-faktor yang menyebabkan perbedaan penetapan awal Ramadan 1447 H. Penelitian ini menggunakan pendekatan kualitatif dengan metode studi literatur melalui kajian terhadap hasil sidang isbat, data astronomi hilal, serta penelitian terdahulu yang berkaitan dengan hisab dan rukyat. Hasil penelitian menunjukkan bahwa data astronomi memberikan dasar ilmiah yang kuat dalam memprediksi kemungkinan visibilitas hilal, namun perbedaan dalam kriteria yang digunakan serta hasil observasi lapangan mempengaruhi keputusan yang diambil. Integrasi antara hisab dan rukyat dalam sidang isbat mencerminkan upaya kompromi antara pendekatan ilmiah dan normatif, meskipun belum sepenuhnya mampu menghilangkan perbedaan di masyarakat. Penelitian ini memberikan kontribusi teoritis dalam kajian astronomi Islam serta menawarkan perspektif dalam penguatan metodologi penentuan awal bulan Hijriyah yang lebih integratif dan akurat.

This is an open access article under the CC BY-SA license.

Corresponding Author:

Sudarmadi Putra
Faculty of Sharia, Sekolah Tinggi Islam Al-Mukmin Surakarta, Jawa Tengah, Indonesia.
Jl. Parangkesit, Ngruki, Cemani, Grogol, Sukoharjo - Surakarta, Jawa Tengah 57552, Indonesia.
Email: sudarmadiputra@stimsurakarta.ac.id

INTRODUCTION

The determination of the beginning of Ramadan is a socio-religious phenomenon that has always been a widespread concern among Indonesian society. Every year, the determination of the beginning of the Hijri month, especially Ramadan, is not only a matter of worship, but also develops into a public discourse involving various community groups (Rofiuddin, 2019) Differences in the initial determination of Ramadan often occur, including in Ramadan 1447 H, where some Muslims start fasting at different times. This condition reflects the existence of social dynamics influenced by differences in religious understanding, methods, and authorities followed by each group. In the Indonesian context, the determination of the beginning of Ramadan is carried out through an isbat session organized by the Ministry of Religion of the Republic of Indonesia as the official state authority. However, the decision of the isbat session is not always uniformly followed by the entire community, so it has the potential to cause confusion among the general public. On the other hand, the Indonesian people are relatively able to respond to these differences with a fairly good tolerance attitude. This phenomenon shows that the determination of the beginning of Ramadan is not only related to scientific aspects, but also has complex social, cultural, and institutional dimensions.

Scientifically, the determination of the beginning of the Hijri month is part of the study of Islamic astronomy or astronomy that has developed since classical times. This science studies the movement of celestial bodies such as the sun and moon which are directly related to the implementation of Muslim worship (Marwadi, 2009) The Hijri calendar itself is based on the circulation of the moon around the earth, where the beginning of each month is marked by the appearance of the new moon after the occurrence of the ijtimak conjunction (Sakirman, 2022) In the astronomical literature, there are two main methods in determining the beginning of the month, namely hisab which is based on astronomical calculations and rukyat which is based on direct observation of the new moon (Sakirman, 2011) The development of modern astronomy has made a significant contribution in predicting the visibility of the moon through parameters such as the height of the moon, elongation, and age of the moon. However, various studies show that differences in the visibility criteria of the moon are still the main factor in the difference in the determination of the beginning of the month in various Muslim countries (Shikhovtsev, 2026). In addition, the aspect of fiqh also affects the interpretation of the methods used, resulting in a variety of approaches in practice. Some studies tend to discuss hisab and rukyat separately or focus more on astronomical aspects, so that they have not fully integrated the scientific and normative dimensions in a complete analytical framework.

Based on social reality and literature review, this study aims to analyze the dynamics of the isbat session in determining the beginning of Ramadan 1447 H in Indonesia. This study seeks to examine how the integration process between the hisab and rukyat methods is carried out in the isbat session forum and how astronomical data is used as a basis for consideration in decision-making. In addition, this study also

aims to identify the factors that cause differences in the early determination of Ramadan among the public, both from methodological aspects, astronomical conditions, as well as considerations of fiqh and religious authority. Thus, this study not only focuses on the results of the early determination of Ramadan, but also on the process and dynamics behind it. Through this approach, it is hoped that a more comprehensive understanding of the interaction between science, religion, and policy in the practice of isbat sessions in Indonesia can be obtained.

This research has a novelty in the analytical approach used, namely by examining the dynamics of the isbat session in an integrative manner between astronomical, fiqh, and social institutional aspects in the context of the initial determination of Ramadan 1447 H. Unlike previous research that tended to focus on the technical aspects of hisab or rukyat separately, this study places the isbat session as a space of interaction between various scientific approaches and religious authorities. In addition, the use of the actual case of Ramadan 1447 H provides a more contextual empirical contribution to the study of astronomy. Another novelty lies in the multidimensional analysis of the factors that affect the differences in the early determination of Ramadan, not only from an astronomical perspective, but also from a social and normative perspective. Thus, this research is expected to contribute to the development of a more comprehensive study of Islamic astronomy and encourage efforts to integrate hisab and rukyat in determining the Hijri calendar that is more accurate and widely accepted.

METHOD

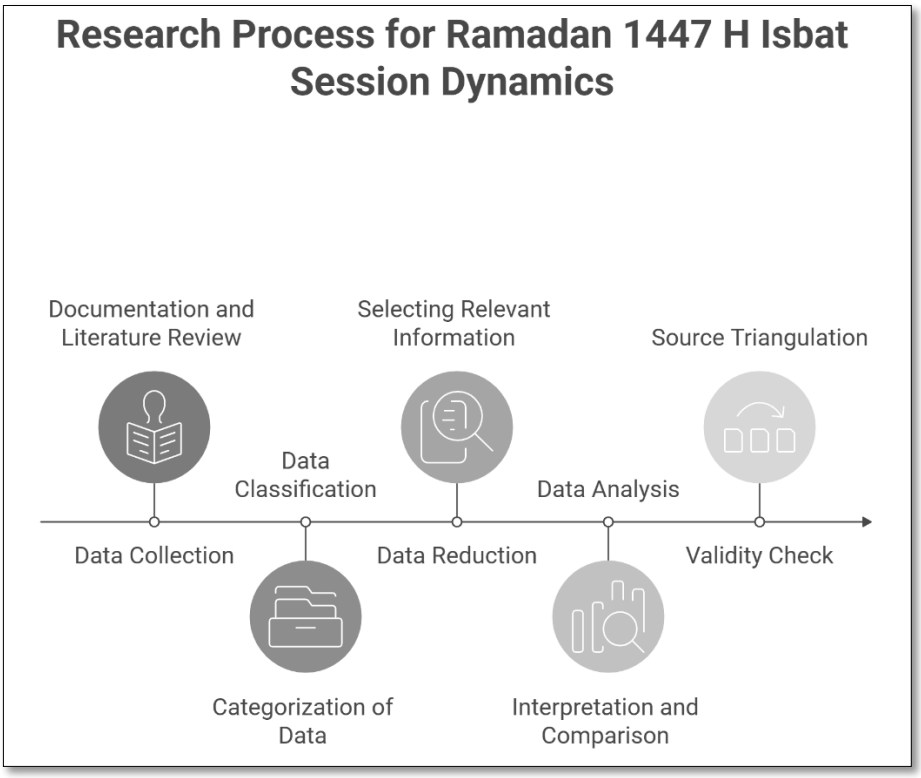
This research focuses on the dynamics of the isbat session in determining the beginning of Ramadan 1447 H in Indonesia as the main object of study. The cases analyzed are the differences in the early determination of Ramadan that occur in the community as a result of variations in the methods and criteria used in determining the visibility of the new moon. This research not only places the isbat session as an administrative event, but also as a complex and multidimensional socio-religious phenomenon. The research area covers the territory of Indonesia in general by considering data from various hilal observation points spread across several regions. The events that became the focus of the analysis were the process of implementing the isbat session, the submission of hisab data, the verification of rukyat results, and the official decision-making related to the beginning of Ramadan 1447 H. In addition, this study also pays attention to the dynamics that occur outside the isbat session, such as the response of religious organizations and the community to the results of the decision. Thus, the object of this research includes aspects of the process, outcomes, and social implications of the early establishment of Ramadan in Indonesia.

This study uses a qualitative descriptive research type that aims to describe in depth the phenomena that occur without manipulating the variables studied (Leech & Onwuegbuzie, 2009) This approach was chosen because it is able to comprehensively explain the dynamics of the isbat session by considering scientific and normative

aspects at the same time. The type of data used in this study consists of primary data and secondary data (Atkinson, 2016) Primary data is in the form of official documents on the results of the isbat session organized by the Ministry of Religion of the Republic of Indonesia regarding the early determination of Ramadan 1447 H. In addition, primary data also includes reports on rukyat results from various hilal observation locations in Indonesia. Meanwhile, secondary data was obtained from scientific literature, astronomy books, academic journals, and the results of previous research that discussed the methods of hisab, rukyat, and hilal visibility. The combination of these two types of data is used to obtain a complete understanding of the phenomenon being studied.

Participants in this study act as sources of information relevant to the study conducted. These participants include astrologers, rukyat practitioners, and parties involved in the isbat trial process, both directly and indirectly. In addition, this study also considers the role of religious organizations as an important actor in determining attitudes towards the results of isbat sessions. In this context, participants are not always interpreted as respondents in field research, but also as sources of data through official documents, reports, and publications issued by relevant institutions. The information obtained from these participants was used to understand the different perspectives in determining the beginning of Ramadan. Thus, the diversity of information sources is one of the strengths in this study to describe the dynamics that occur more comprehensively.

The research process is carried out through several systematic stages, starting from data collection to data analysis (González-Solar & Fernández-Marcial, 2021) The data collection technique was carried out through documentation studies and literature studies. The documentation study was used to examine the official documents of the isbat session, reports on the results of rukyat, and astronomical data related to the position of the hilal in Ramadan 1447 H. Meanwhile, a literature study was conducted to examine theoretical concepts related to hisab, rukyat, and the visibility of the hilal in the perspective of Islamic astronomy and modern astronomy. In addition, this study also searches various scientific publications and previous research results that are relevant to the topic being studied. All the data obtained is then classified based on certain categories to facilitate the analysis process. This stage is carried out systematically so that the data used has a clear relationship with the focus of the research.



Source: Napkin

The data analysis technique in this study was carried out through several stages, namely data reduction, categorization, and interpretation (Kalu et al., 2021) Data reduction is carried out by selecting and simplifying data that is relevant to the focus of the research, so that more targeted information is obtained. Furthermore, the data that has been reduced is categorized based on certain themes, such as the dynamics of the isbat session, the hisab and rukyat methods, as well as the factors causing the difference in the determination of the beginning of Ramadan. The next stage is data interpretation to find emerging patterns and relationships between the variables studied. In addition, a comparative analysis was also carried out between the results of the hisab calculation and the results of rukyat observations to see the level of compatibility of the two. To ensure the validity of the data, this study uses a source triangulation technique, which is comparing data from various relevant references and documents. Thus, the results of the research are expected to be able to provide a comprehensive, valid, and scientifically accountable picture.

RESULTS AND DISCUSSION

Dynamics of the Implementation of the Ramadan 1447 H Isbat Session

The results of the study show that the implementation of the Ramadan 1447 H isbat session in Indonesia takes place through a structured mechanism and involves various stakeholders, such as the government, scholars, astrologers, and representatives of Islamic community organizations. This session is organized by the Ministry of Religion of the Republic of Indonesia as the official authority in determining

the beginning of the Hijri month. The trial process began with the presentation of hisab data which included the position of the new moon at sunset, including the height of the moon, elongation, and the age of the moon. Furthermore, verification of rukyat reports from various observation points in Indonesia was carried out. After all the data was reviewed, the session continued with deliberation to produce a collective decision on the initial determination of Ramadan. These results show that the isbat session is not only administrative, but also a scientific and religious forum that combines various approaches in a single decision-making process.



Source: kemenag.go.id

Analytically, these dynamics show that the isbat session functions as a space for integration between scientific and normative approaches in the Islamic scientific tradition. However, the results of the study also show that the resulting decisions are not always followed uniformly by all community groups. This indicates that there are limitations in the effectiveness of the isbat session as a unification mechanism for determining the beginning of the Hijri month. The difference is not solely due to technical aspects, but also to differences in religious authority and methodological interpretation.



Source: kemenag.go.id

The isbat session can be understood not only as a forum for determination, but also as an arena for negotiation between various scientific and religious interests. This condition emphasizes the importance of strengthening legitimacy and transparency in the isbat session process in order to increase public acceptance more broadly.

Astronomical Data and Visibility of Hilal Ramadan 1447 H

The results of the study show that astronomical data at the beginning of Ramadan 1447 H shows variations in the position of the hilal in various regions of Indonesia. The main parameters used in the analysis are the height of the hilal, elongation, and the age of the moon at sunset. In some areas, the position of the hilal is within the minimum limit range of the visibility criteria used, thus causing differences in the assessment of the likelihood of seeing the hilal. This data shows that the condition of the new moon at that time was marginal, that is, it was between the visible and empirically invisible possibilities. The results of the rukyat observation also show that there are variations in reports, where some locations report the invisibility of the new moon, while in other locations there are claims of visibility that are still debated. This assumption can cause differences in the initial determination of Ramadan 1447 H between Muhammadiyah, Nahdlatul Ulama and the government.

Table 1. The Beginning of Ramadan Muhammadiyah Vs. Government & NU

Year	Muhammadiyah	Government & NU
2012	20 Juli	21 Juli
2013	9 Juli	10 Juli
2014	28 Juni	29 Juni
2015	18 Juni	18 Juni
2016	6 Juni	6 Juni
2017	27 Mei	27 Mei
2018	15 Juni	15 Juni
2019	6 Mei	6 Mei
2020	24-Apr	24-Apr
2021	13-Apr	13-Apr
2022	02-Apr	03-Apr
2023	23 Maret	23 Maret
2024	11 Maret	12 Maret
2025	18 Februari	19 Februari

The table shows a comparison of the early determination of Ramadan between Muhammadiyah and the Government & NU during the period 2012–2025. In general, it can be seen that in some years there are differences in the determination of dates, while in other years there are similarities.

At the beginning of the period, from 2012 to 2014, there was a one-day difference between Muhammadiyah and the Government & NU. Muhammadiyah tends to set the beginning of Ramadan earlier than the Government and NU. However, from 2015 to 2021, there was consistency in the similarity of the early determination of Ramadan between the two parties, which showed that there was harmony in the method or calculation results in that period.

The difference reappeared in 2022, where Muhammadiyah set April 2, while the Government & NU set April 3. The year 2023 again shows the same, namely on March 23. Furthermore, in 2024 and 2025, there was another one-day difference, with Muhammadiyah setting it earlier than the Government and NU.

Secara keseluruhan, dapat disimpulkan bahwa meskipun terdapat beberapa perbedaan dalam penetapan awal Ramadan, mayoritas perbedaan tersebut hanya berselisih satu hari. Selain itu, terdapat periode cukup panjang (2015–2021) di mana penetapan awal Ramadan berlangsung seragam antara Muhammadiyah dan Pemerintah & NU, mencerminkan adanya titik temu dalam praktik penentuan kalender hijriah di Indonesia (Azhari, 2006).

Analytically, the condition of the hilal which is at the limit of visibility is the main factor that triggers differences in interpretation among astrologers and rukyat practitioners. This difference shows that the astronomical parameters used are not fully able to provide absolute certainty about the visibility of the new moon (Sakirman, 2017) In addition, geographical variations and atmospheric conditions also affect the results of observations in the field. This confirms that the visibility of the hilal does not

only depend on mathematical calculations, but also on dynamic empirical factors (Utama & Simatupang, 2019) Therefore, it is necessary to develop criteria for hilal visibility that are more comprehensive and adaptive to local conditions. These findings strengthen the argument that the integration between astronomical data and empirical observations is still the main challenge in determining the beginning of the Hijri month.

The Difference Between Hisab and Rukyat Methods

The results of the study show that the difference in the initial determination of Ramadan 1447 H in Indonesia is greatly influenced by the use of different methods, namely hisab and rukyat. The hisab method uses astronomical calculations to determine the position of the new moon mathematically, while the rukyat method relies on direct observation of the new moon in the field. In practice, some groups use the hisab approach with the principle of the manifestation of the hilal, which is to set the beginning of the month when the hilal is above the horizon without considering its visibility (Marwadi, 2013) On the other hand, the isbat session uses a rukyat approach supported by certain hilal visibility criteria as the basis for empirical verification. This difference in approach results in different decisions, especially when the condition of the hilal is in a marginal position.

Analytically, these differences in methods reflect epistemological differences in understanding the concept of the beginning of the Hijri month. The hisab approach emphasizes mathematical certainty and predictability, while rukyat emphasizes empirical experience and conformity with religious texts (Sakirman, 2011) This difference is not only technical, but also related to the scientific paradigm used by each group. In this context, differences in methods are one of the main factors that reinforce the difference in the determination of the beginning of Ramadan. Therefore, efforts to integrate hisab and rukyat need to be carried out with a more dialogical and inclusive approach. This is important to create a broader understanding in determining the beginning of the Hijri month in the future.

Fiqh Factors and Religious Authority

The results of the study show that in addition to astronomical factors, aspects of fiqh and religious authority have a significant role in determining the beginning of Ramadan 1447 H. Interpretation of postulates related to rukyat hilal is the basis for determining the method used by each group. Some scholars emphasize the importance of rukyat as a direct implementation of religious texts, while other groups give a wider space to the use of hisab as a form of adaptation to the development of science. In addition, decisions taken by certain religious institutions also greatly affect people's attitudes in determining the beginning of Ramadan.

The hadith of the Prophet Muhammad narrated by Ibn Umar states that Muslims are commanded to start fasting when they see the new moon and end it when they see the new moon again, and to complete the month of Sha'ban to 30 days if the new moon

is not visible. This hadith is the main basis in determining the beginning of Ramadan in Islamic jurisprudence.

In practice, the understanding of this hadith gives birth to various approaches among scholars. Some interpret the command to "see the hilal" textually as direct rukyat, while others interpret it more broadly by including astronomical calculations (hisab) as a legitimate method. This difference in interpretation is part of the dynamics of fiqh that does open up the space for ijtihad.

This is where the fiqh factor plays an important role. Since the hadith text does not detail the technical methods in detail, the scholars use the ability of ijtihad to formulate the way that is considered most appropriate according to the development of science and the conditions of society. As a result, there are variations in methods in determining the beginning of Ramadan, which can ultimately result in date differences.

In addition, the aspect of religious authority also influences. In the context of state life, the government has the authority to officially determine the beginning of Ramadan in order to maintain order and unity of the people. On the other hand, religious organizations also have authority based on the manhaj (method) they follow. This difference shows that authority in Islam is not singular, but is layered and contextual.

Thus, the difference in the initial determination of Ramadan is not a form of contradiction, but a consequence of differences in the approach of fiqh and religious authority which both have a strong basis. This actually reflects the flexibility of Islamic law, as well as emphasizing the importance of mutual respect in responding to this diversity.

Analytically, these findings suggest that the early determination of Ramadan is not only a scientific issue, but also closely related to religious legitimacy and social authority. Differences in the interpretation of fiqh reflect the diversity in the Islamic scientific tradition that is not easily unified in one single approach (Thomas Djamaluddin, 2005) In addition, the authority of religious institutions acts as mediators between science and religious practices in society. This shows that efforts to unify the Hijri calendar cannot be done only through an astronomical approach, but also require a theological and institutional approach (Syarif et al., 2025) Thus, dialogue between religious authorities is an important key in reducing the differences that occur.

Social Implications and Hisab-Rukyat Integration Efforts

The results of the study show that the difference in the initial determination of Ramadan 1447 H has significant social implications in society. These differences can cause confusion, especially for ordinary people in determining the beginning of fasting. However, Indonesian people in general have become accustomed to these differences and are able to respond to them with good tolerance (Sakirman, 2016) In addition, the isbat session also shows that there are efforts to integrate the hisab and rukyat methods, where hisab data is used as a predictive basis, while rukyat functions as empirical verification.

Analytically, this condition shows that although differences still occur, there are ongoing efforts to unite various approaches in determining the beginning of the month of Hijri. The integration of hisab and rukyat reflects the compromise between the scientific and normative approaches that developed in the Islamic tradition. However, differences in the visibility criteria of the hilal are still the main challenge in achieving uniformity (Irwan Muhammad Ridwan, 2020) Therefore, it is necessary to develop more comprehensive criteria and be mutually agreed upon by various parties. In addition, increasing public literacy about astronomy is also important to reduce misunderstandings that occur. Thus, integration efforts are not only technical, but also include educational and socio-religious aspects.

CONCLUSION

This study found that the initial determination of Ramadan 1447 H in Indonesia shows complex dynamics in the implementation of the isbat session as an official mechanism organized by the Ministry of Religion of the Republic of Indonesia. The isbat session has functioned as an integrative forum that combines the method of hisab and rukyat in determining the beginning of the Hijri month. However, the results of the study show that the resulting decisions are not fully able to accommodate all the differences that develop in society. These differences are influenced by several main factors, namely differences in the method of determination (hisab and rukyat), variations in the visibility criteria of the hilal used, and differences in the approach of fiqh and religious authority. In addition, the astronomical condition of the hilal in Ramadan 1447 H, which is at the limit of visibility, also strengthens the difference in interpretation among astronomers and rukyat practitioners. These findings confirm that the determination of the beginning of Ramadan is a multidimensional phenomenon that does not only depend on scientific aspects, but also involves normative and social dimensions. Thus, the isbat session not only functions as a forum for determination, but also as a space for interaction between various scientific approaches and religious authorities.

This research makes an important contribution to the development of astronomical studies, especially in understanding the dynamics of isbat sessions in an integrative manner. The added value of this research lies in a multidisciplinary approach that combines astronomical, fiqh, and social institutional aspects in one comprehensive analytical framework. In contrast to previous research that tended to focus on the technical aspects of hisab or rukyat separately, this study places the isbat session as a dialogue space between scientific and normative approaches. In addition, the use of the actual case of Ramadan 1447 H provides a contextual empirical contribution to the study of determining the beginning of the month of Hijri. This research also reinforces the importance of integration between astronomical data and empirical observations in improving the accuracy of determining the visibility of the new moon. Thus, this research not only makes a theoretical contribution, but also has practical implications in the development of more comprehensive and widely accepted

hilal visibility criteria. Another contribution is to provide a new perspective in seeing the isbat session as a mechanism that is not only administrative, but also as an epistemological process in the Islamic scientific tradition.

However, this study has several limitations that need to be considered. This study uses more secondary data in the form of documents and literature, so it does not fully describe the direct perspective of the perpetrators of the isbat session or rukyat practitioners in the field. In addition, this study is limited to the analysis of the case of Ramadan 1447 H, so it has not been able to describe the broader dynamics over a longer period of time. Therefore, further research is recommended to use a more empirical approach, such as in-depth interviews with astrologers, scholars, and policy makers, as well as direct observation in the implementation of rukyat. Further research can also examine comparisons between countries in determining the beginning of the Hijri month to obtain a more global perspective. In addition, the development of a model of hilal visibility criteria based on the integration of astronomical data and the fiqh approach is also an important research direction to be carried out. Thus, it is hoped that further research can make a broader contribution to efforts to unify the Hijri calendar at the national and international levels.

REFERENCES

Atkinson, J. (2016). Academic libraries and research support: An overview. In *Quality and the Academic Library: Reviewing, Assessing and Enhancing Service Provision*. https://doi.org/10.1016/B978-0-12-802105-7.00013-0

Azhari, S. (2006). Karakteristik Hubungan Muhammadiyah dan NU dalam Menggunakan Hisab dan Rukyat. *Al-Jami'ah: Journal of Islamic Studies*. https://www.aljamiah.or.id/index.php/AJIS/article/view/63

González-Solar, L., & Fernández-Marcial, V. (2021). Academic Library Research Support Services in the Maker Culture Era. In *Examining the Impact of Industry 4.0 on Academic Libraries*. https://doi.org/10.1108/978-1-80043-656-520201018

Irwan Muhammad Ridwan. (2020). Harmoni, Disharmoni, dan Integrasi Antara Sains dan Agama. *Jurnal Filsafat Indonesia*, *Query date: 2024-09-15 11:23:26*. https://doi.org/https://doi.org/10.23887/jfi.v3i1.22472

Kalu, C. O., Chidi-Kalu, E. I., & Mafe, T. A. (2021). Research data management in an academic library. In *Handbook of Research on Information and Records Management in the Fourth Industrial Revolution*. https://doi.org/10.4018/978-1-7998-7740-0.ch003

Leech, N. L., & Onwuegbuzie, A. J. (2009). A typology of mixed methods research designs. *Quality and Quantity*, *43*(2). https://doi.org/10.1007/s11135-007-9105-3

Marwadi, M. (2009). Konversi Kalender dari Hijriyah ke Masehi. *Al-Manahij: Jurnal Kajian Hukum Islam*, *3*(1), 37–52. https://doi.org/10.24090/mnh.v3i1.3679

Marwadi, M. (2013). Pembaruan Kriteria Visibilitas Hilal dan Peluangnya terhadap Penyatuan Kalender Hijriyah di Indonesia (Studi Pemikiran LP2IF-RHI). *Al-Manahij: Jurnal Kajian Hukum Islam*, *7*(1), 139–154.

https://doi.org/10.24090/mnh.v7i1.583

Rofiuddin, A. A. (2019). Dinamika Sosial Penentuan Awal Bulan Hijriah di Indonesia. *Istinbath: Jurnal Hukum Dan Ekonomi Islam*, *18*(2).

Sakirman. (2011). Menelisik Metodologi Hisab Rukyat di Indonesia. *HUNAFA: Jurnal Studia Islamika*, *8*(2). https://doi.org/10.24239/jsi.v8i2.368.341-362

Sakirman. (2017). Geneologi Ilmu Falak dalam Studi Hukum Islam. *Mahkamah : Jurnal Kajian Hukum Islam*, *2*(1). https://doi.org/10.24235/mahkamah.v2i1.1503

Sakirman. (2022). *Visibilitas Hilal Kajian terhadap Problematika Rukyat, Fisis Hilal, dan Cahaya Syafak*. CV. Idea Sejahtera.

Sakirman, S. (2016). *Islam Aboge dalam Tradisi Jawa Alastua. IBDA: Jurnal Kajian Islam Dan Budaya, 14 (2), 172–187*. *Query date: 2023-08-24 21:33:18*.

Shikhovtsev, A. Y. (2026). Review of Crescent Visibility: The Role of Islamic Astronomy in Determining the Hijri Calendar. *Journal of Islamic Astronomy*, *1*(1), 1–11.

Syarif, M. R., Sakirman, S., & Syarif, M. F. (2025). A Semantic Literature Review on Crescent Visibility: Trends, Models, and Implications for the Islamic Calendar. *Al-Hilal: Journal of Islamic Astronomy*, *7*(1), 67–88. https://journal.walisongo.ac.id/index.php/al-hilal/article/view/26099

Thomas Djamaluddin. (2005). *Mengagas Fiqh Astronomi*. Kaki Langit.

Utama, J. A., & Simatupang, F. M. (2019). The new hilaal visibility criterion for tropical region. *Journal of Physics: Conference Series*, *1280*(2). https://doi.org/10.1088/1742-6596/1280/2/022073