

The Method of Determining the Hijri Calendar at Al-Falah Islamic Boarding School, Kediri: An Astronomical and Phenomenological Analysis

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Abstract: This study examines the distinctive approach to determining the Hijri calendar (particularly for Ramadan, Shawwal, and Dhu al-Hijjah) practiced by Al-Falah Ploso Kediri Islamic Boarding School, which frequently differs from both government rulings and Nahdlatul Ulama's positions. Employing empirical research methods through structured interviews with key informants, the investigation pursues two primary objectives: first, to analyze the methodological framework employed by Al-Falah in establishing the Hijri calendar; and second, to evaluate this practice through astronomical and phenomenological lenses. The findings reveal that while Al-Falah utilizes multiple calculation methods, its primary reference is the *Sullam al-Nayyirain* system, employing a lunar altitude criterion of 2 degrees. Astronomically, this approach falls under the category of *hisāb taqrībī* (approximate calculation), which demonstrates limited accuracy in light of contemporary astronomical advancements. Phenomenologically, the boarding school's adherence to this traditional method serves to preserve the institutional *sanad* (chain of transmission) established by its founders, maintaining both scholarly continuity and practical application. This practice holds particular significance for the school's students, alumni, and affiliated communities, while other segments of the population follow government determinations due to limited understanding of the technical considerations. The study highlights the complex interplay between traditional Islamic scholarship, astronomical precision, and community dynamics in contemporary Hijri calendar determination, offering insights into the ongoing discourse surrounding Islamic timekeeping methodologies.

Keywords: Methods, Al-Falah Islamic Boarding School, Falak, and phenomenological Analysis

Abstrak: Artikel ini membahas penentuan awal kalender Hijriah, khususnya Ramadan, Syawal, dan Dhu al-Hijjah, yang dipraktikkan di Pondok Pesantren Al-Falah Ploso Kediri, yang sering berbeda dengan pemerintah dan Nahdlatul Ulama. Penelitian ini bertujuan: pertama, untuk menganalisis metode yang digunakan oleh Pondok Pesantren Al-Falah dalam menentukan awal kalender Hijriyah. Kedua, untuk menganalisis implementasi awal kalender Hijriyah dari perspektif ilmu falak dan fenomenologi. Artikel ini menggunakan jenis penelitian kualitatif dengan teknik wawancara untuk mengumpulkan

datanya. Hasil penelitian menunjukkan bahwa Pondok Pesantren Al-Falah menentukan awal kalender Hijriyah menggunakan berbagai metode perhitungan. Namun, referensi utamanya adalah *hisāb Sullam al-Nayyiroin*, yang menggunakan kriteria ketinggian bulan sebesar 2 derajat. Implementasi metode yang digunakan oleh Al-Falah, ketika dilihat dari perspektif ilmu falak, masuk dalam kategori *hisāb taqrībi* (perhitungan yang mendekati kebenaran/perkiraan). Mengingat perkembangan signifikan dalam bidang astronomi, jenis perhitungan ini memiliki akurasi rendah. Dari sudut pandang fenomenologi, penentuan awal kalender Hijriyah yang dilakukan oleh Pondok Pesantren Al-Falah, bertujuan untuk menjaga kelangsungan rantai transmisi (*sanad*) yang diajarkan oleh *muassis* yang sudah diwariskan turun temurun. Fenomena ini terjadi khususnya bagi para siswa dan alumni yang belajar dan mengabdikan diri di Pondok Pesantren Al-Falah dan bagi masyarakat sekitar yang mempercayainya. Selain itu, sebagian masyarakat tetap mengikuti keputusan pemerintah karena kurang memahami latar belakang masalah ini

Kata Kunci: Metode, pondok pesantren al-Falah, Falak, dan Analisis fenomenologi



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INTRODUCTION

The initial determination of the Hijri calendar often varies from year to year.¹ This difference is a treasure of Indonesian Islamic culture, but on the one hand, the difference causes unrest in the implementation of worship related to the months of worship.² The determination of the beginning of the moon in the Hijri calendar is based on the moon's observation around the Earth. Then, when the moon is in circulation, there is a time when the moon is in a position parallel to the sun. The event is known as the new moon phase. The new moon phase is an event used by Islamic mass organizations to carry out *rukyyatulhilāl*.³ In addition, several other Islamic organizations determined the beginning of the Hijri calendar without doing *rukyyatulhilāl* but by calculating the height of the hilāl, called the *hisāb* method.

Some kinds of *hisāb* methods include: First, *hisāb urf*. Second, *hisāb hakiki*. Third, contemporary true *hisāb*, and so on.⁴ Each of these methods has its own criteria when used for the initial establishment of the Islamic calendar. The *hisāb* method is a method that is identical to one of the religious organizations in Indonesia, namely

¹ Deni "Penentuan Awal Ramadhan Syawal dan Dzulhijjah Perspektif Tareqat Naqshabandiyah Al-Khalidiyah Al-Jalaliyah," *Al-Marshad: Jurnal Astronomi Islam dan Ilmu-Ilmu Berkaitan* 7, no. 1 (June 2, 2021): 93–102, <https://doi.org/10.30596/jam.v7i1.5858>.

² Miftahul Ulum, "Fatwa Ulama Nu (Nahdlatul Ulama) Dan Muhammadiyah Jawa Timur Tentang Hisab Rukyah," *Jurnal Keislaman* 1, no. 2 (September 1, 2018): 246, <https://doi.org/10.54298/jk.v1i2.3369>.

³ *Rukyyatulhilāl* is a method used to determine the beginning of an Islamic month by observing the *hilāl* (crescent moon) either with the naked eye or using astronomical instruments such as telescopes, theodolites, and others. Alimuddin, "Hisab Hakiki: Metode Ilmiah Penentuan Awal Bulan Kamariyah," *Al-Risalah Jurnal Ilmu Syariah Dan Hukum*, 2020, 227–35.

⁴ Syaugi Mubarak Seff, "Hisab-Rukyah Sebagai Metode Penetapan Awal bulan Qomariyah," *Al-Banjari: Jurnal Ilmiah Ilmu-Ilmu Kelslaman* 6, no. 1 (17 Mei 2007), <https://doi.org/10.18592/al-banjari.v6i1.967>.

Muhammadiyah.⁵ Initially, Muhammadiyah used the true *hisāb* method with *imkānurukyah* criteria (a method that prioritizes the appearance of *hilāl*, not just the form of *hilāl*). Furthermore, Muhammadiyah once used the true *hisāb* with the criteria of *ijtimā' qobla al-ghurūb*, namely *ijtimā'* occurs before sunset, then at night, and tomorrow is considered to have entered the new month of Hijri. However, if *ijtimā'* occurs after sunset, then the evening and tomorrow are not considered as new moons. In other words, the theory of *ijtimā' qobla al-ghurūb* does not consider the location of the moon above the horizon at sunset. The concept was used by Muhammadiyah until 1937. Then, in 1938, Muhammadiyah used the concept of *wunama hilāl* as a middle ground between the *hisāb ijtimā qobla al-ghurūb* and the *imkānurukyah* System.⁶

When Muhammadiyah uses the *hilāl* wutitle method, another Islamic organization, namely Nahdlatul Ulama, determines the beginning of the hijri calendar using the *rukyatulhilāl* approach, which is a method used to determine the beginning of the hijri calendar by looking at the *hilāl* using a telescope or done directly at the end of the hijri month (the 29th) when the sun sets. If the *rukyat* carried out is successful, then tomorrow will be the new moon. Meanwhile, if the implementation of the *rukyat* is unsuccessful, then the number of days in the month is reduced to 30 days (*istikmāl*).⁷

Istikmāl is a derivative of the *rukyatulhilāl* method, which is implemented cannot see the *hilāl*. The success of *rukyat* in the initial determination of the Hijri Calendar can be due to several factors. The first is internal factors, namely something directly related to the *hilāl*, such as the height of the *hilāl* when it is above the horizon, the azimuth of the *hilāl*, and the difference between the azimuth of the sun and the *hilāl*. Second, external factors, namely, external factors, affect the success of *rukyat*. This kind of situation can include the location of the *rukyat*, weather conditions, and the person performing the *rukyat*.⁸

Muhammadiyah, with its *hisāb* and *wujūdulhilāl* methods, can determine the beginning of the Hijri calendar in the next few years. While Nahdlatul Ulama uses the *rukyatulhilāl* method in the initial determination of the hijri calendar. In practice, not all nahdliyyin residents follow the *rukyatulhilāl* method as applied by the Nahdlatul Ulama Executive Board (PBNU). Some scholars personally differ from PBNU in determining the beginning of the Hijri calendar, one of which is KH. Noor Ahmad. He is an advisor to the Falakiah Institute of Nahdlatul Ulama (LF PBNU).⁹ The difference is due to the different methods of determining the beginning of the Hijri calendar, the cleric from Jepara uses the *hisāb taqrībi* method in determining the beginning of the

⁵ Amirah Himayah Husna, Shirley Ardini, dan Siti Tatmainul Qulub, "Penyatuan Kalender Hijriah Nasional Dalam Perspektif Ormas Muhammadiyah Dan Nahdlatul Ulama (NU)," *AL - AFAQ : Jurnal Ilmu Falak Dan Astronomi* 3, no. 2 (2021): 171–88, <https://doi.org/10.20414/afaq.v3i2.4772>.

⁶ H Rohmat, "Penentuan Awal KalenderQamariyah Menurut Muhammadiyah," *Jurnal Pengembangan Masyarakat*, 1, 7 (February 2014): 128–45.

⁷ Jaenal Arifin, "Fiqih Hisab Rukyah Di Indonesia (Telaah Sistem Penetapan Awal KalenderQamariyyah)," *YUDISIA: Jurnal Pemikiran Hukum Dan Hukum Islam* 5, no. 2 (2016).

⁸ Machzumy, "Kriteria Ideal Lokasi Rukyah," *Syarah: Jurnal Hukum Islam Dan Ekonomi* 7, no. 2 (2018). 198-89

⁹ Mughits, "Kajian Ilmu Falak di Pesantren Salaf di Jawa Tengah dan Jawa Timur," *Asy-Syir'ah: Jurnal Ilmu Syari'ah dan Hukum* 50, no. 2 (2016): 379–98.

hijri calendar, a method that is different from PBNU in determining the beginning of the hijri calendar.¹⁰ Then there are several Islamic boarding schools that are different from PBNU in determining the beginning of the Hijri calendar. Even though the Islamic Boarding School is an embryo of PBNU, one of the Islamic boarding schools is the Al-Falah Ploso Islamic boarding school.

Al-Falah is a boarding school founded by a prominent scholar, namely KH. Ahmad Djazuli Utsman in 1924. Al-Falah Ploso Boarding School is an educational institution based on Nahdlatul Ulama and adheres to amaliyah *Ahlusunnah wal Jamā'ah an-Nahdliyyah*. Some of the classics studied include *Fathul Qorib*, *Fathul Mu'in*, *Fathul Wahhāb*, and so on. These books of jurisprudence are Shafi'i madhhabs that are often used by Nahdlatul Ulama. Some other amaliyah and identical to Nahdlatul Ulama are the recitation of *sholawāt dibā'*, *sholawāt burdah*, *bahtsul masā'il*, and others.¹¹

Al-Falah Islamic Boarding School's commitment to upholding the principles of Ahlusunnah wal Jama'ah an-Nahdliyah is reinforced by the active involvement of its caretakers (*asātīdz*) and the *dzurriyah* (descendants) of the *pesantren* in the leadership of Nahdlatul Ulama (NU), both at the East Java regional level (PWNU) and the national level (PBNU). Notably, the founder and caretaker of Al-Falah, KH. Zainuddin Djazuli once served as a *Mustasyar* (Advisory Council member) of PBNU. Additionally, KH. Muhammad Abdurrahman al-Kautsar (Gus Kautsar), a key figure in the *pesantren*, held the position of Deputy Katib Syuriah in the PWNU East Java leadership structure.¹²

These various facts confirm the commitment of al-Falah Boarding School to Nahdlatul Ulama should not be doubted, but some interesting facts deserve to be studied, namely the frequent differences in determining the beginning of the Hijri calendar, especially Ramadan, Shawwal, and Dhu al-Hijjah between Al-Falah Boarding School and Nahdlatul Ulama. This phenomenon is interesting to analyze further because this condition makes the community around the *pesantren* worried about whom to follow regarding the initial determination of the Hijri calendar.¹³ Conditions are further complicated if associated with the beginning of Ramadan or the beginning of holidays. One clear evidence of differences in the initial determination of the Hijri

¹⁰ Jayusman, "Pemikiran Ilmu Falak Kyai Noor Ahmad Ss," *Jurnal Ahkam* 2, no. 1 (1 Juli 2014): 20–49.

¹¹ Faridah Hanum, "Mengukuhkan Pesantren Sebagai Basis Pembelajaran Kitab Kuning: Pp. Salafiyah Al-Falah Ploso Kediri Jawa Timur," *Al-Qalam* 19, no. 1 (9 Januari 2016): 97–106, <https://doi.org/10.31969/alq.v19i1.221>.

¹² Muhammad Syakir NF, "Atas Petunjuk Kiai, Gus Salam Dan Gus Kautsar Pilih Berkhidmat Di PWNU Jawa Timur," *nu.or.id*, diakses 28 November 2022, <https://www.nu.or.id/daerah/atas-petunjuk-kiai-gus-salam-dan-gus-kautsar-pilih-berkhidmat-di-pwnu-jawa-timur-QzWRN>.

¹³ Pesantren memiliki peran yang strategis dalam membentuk karakter agama masyarakat setkitar. Lihat, Hanun Asrohah, "The Dynamics of Pesantren: Responses toward Modernity and Mechanism in Organizing Transformation," *JOURNAL OF INDONESIAN ISLAM* 5, no. 1 (June 1, 2011): 66–90, <https://doi.org/10.15642/JIIS.2011.5.1.66-90>. Beberapa daerah tertentu, seperti di Madura atau daerah tapal kuda, Pesantren dan Kiai merupakan itentitas yang wajib ditaati sebagai salah satu perantara untuk memperoleh keberkahan hidup. Lihat Yanwar Pribadi, "Religious Networks in Madura: Pesantren, Nahdlatul Ulama, and Kiai as the Core of Santri Culture," *Al-Jami'ah: Journal of Islamic Studies* 51, no. 1 (15 Juni 2013): 1–32, <https://doi.org/10.14421/ajis.2013.511.1-32>.

calendar is supported by the statement of the Chairman of the Fatwa Commission of the Indonesian Ulema Council East Java KH. Makruf Khozin, one of the alumni of Al-Falah, stated:

During my time as a student in Ploso, Kediri, East Java, between 1994 and 2002, approximately 2 to 3 holidays were not the same as the provisions of the government at that time. I once celebrated Eid al-Fitr in 1999 in Pondok Ploso, after Salat Id immediately went back by train to Malang, my family was still fasting.

One clear evidence of the difference in determining the beginning of the Islamic month occurred during the determination of the beginning of Ramadan 1443 H al-Falah stated that the beginning of Ramadan falls on April 2, 2022. Meanwhile, Nahdlatul Ulama announced that the month of Ramadan 1443 H falls on April 3, 2022.¹⁴ In addition, this Islamic boarding school is also different again in 2023 that the beginning of the month of Shawwal in 1445 will fall on April 20, 2023, while Nahdlatul Ulama announced the beginning of the month of Shawwal to fall on April 21, 2023.¹⁵

Existing studies have explored the determination of the Hijri month from ideological, normative, or methodological perspectives (e.g., Wildani Hefni's work on political contestation,¹⁶ Muhammad Hafiz Antassalam's comparison of Muhammadiyah and NU approaches,¹⁷ Qomarus Zaman's analysis of the Aboge method,¹⁸ and Susiknan Azhari's study of Saadod'din Djambek's calculations.¹⁹ This research offers an empirical investigation into the unique practices of Al-Falah Islamic Boarding School in Kediri. Unlike normative studies, it employs phenomenological and astronomical (falak) approaches to analyze why Al-Falah's determinations often diverge from NU's, despite shared Ahlussunnah traditions. The research fills a gap by combining field observation with methodological analysis, focusing specifically on Al-Falah's distinctive use of classical texts like *Sullam an-Nayyirain* and its socio-religious implications. Previous works either addressed different communities (e.g., Ngliman's Aboge system) or theoretical frameworks (e.g., Dedi Djamaludin's study of Al-Biruni's

¹⁴ Naufal Firdaus Nurdiansyah, "Berbeda dengan Pemerintah dan PBNU Ponpes Al-Falah Ploso, Kediri Tetapkan Ramadan Sabtu 2 April 2022 -," Lumajang Network, 2022, <https://lumajang.jatimnetwork.com/regional/pr-1803123942/berbeda-dengan-pemerintah-dan-pbnu-ponpes-al-falah-ploso-kediri-tetapkan-ramadhan-sabtu-2-april-2022>.

¹⁵ Antara/ARH, "Beda dengan PBNU, Ponpes Al Falah Kediri Lebaran Besok," CNN Indonesia, 20 April 2023, <https://www.cnnindonesia.com/nasional/20230420203017-20-940372/beda-dengan-pbnu-ponpes-al-falah-kediri-lebaran-besok>.

¹⁶ Wildani Hefni, "Komodifikasi Agama Dalam Polemik Penentuan Awal Bulan Qamariah Di Indonesia," *Al-Marshad: Jurnal Astronomi Islam Dan Ilmu-Ilmu Berkaitan* 6, no. 1 (29 Mei 2020): 75–117, <https://doi.org/10.30596/jam.v6i1.4505>.

¹⁷ Dhiauddin Tanjung dan Muhammad Hafiz Antassalam, "Penetapan Kalender Hijriah Menurut Ulama Muhammadiyah Dan Nahdatul Ulama Di Indonesia," *Jurnal Edukasi Nonformal* 3, no. 2 (2022): 357–66.

¹⁸ Qomarus Zaman, "Penentuan Awal Bulan Qamariyah Dengan Hisab Aboge: Studi Kasus Di Desa Ngliman Kecamatan Sawahan Kabupaten Nganjuk," *Empirisma: Jurnal Pemikiran Dan Kebudayaan Islam* 31, no. 2 (2022): 149–64.

¹⁹ Susiknan Azhari, "Saadod'din Djambek Dan Pemikirannya Tentang Hisab," *Al-Jami'ah: Journal of Islamic Studies* 36, no. 61 (1998): 159–80.

concepts)²⁰, whereas this study grounds its analysis in lived institutional practices, bridging the divide between normative scholarship and on-the-ground religious observance.

RESEARCH METHOD

This type of research is an empirical law by observes phenomena contained in people's social lives.²¹ Researchers present data in a descriptive way by describing facts and phenomena found during the study. The methods used in collecting data are interviews and documentation.²² The approach used in this study is the Science of Falak approach, which serves to analyze the method of determining the beginning of the Hijri calendar month at Al-Falah Ploso Kediri. This study also uses the phenomenological approach proposed by Stevick, Colaizzi, and Keen, which is carried out by preparing draft questions related to the phenomenon that is happening and then describing the results of the life experience of the research subject. This approach aims to find out how the implementation and response of falak teachers, students, and alumni of Al-Falah Islamic Boarding School, and the local community to this phenomenon.²³

RESULT AND DISCUSSION

Method of Determining the Beginning of the Hijri Month of Al-Falah Ploso Kediri Islamic Boarding School

Al-Falah Islamic Boarding School is an Islamic boarding school founded by a prominent scholar, KH. Ahmad Djazuli Uthman in 1924, which was located in Ploso village, Mojo district, Kediri regency, and until now still maintains it as a *salaf* Islamic boarding school. Basically, an Islamic boarding school is a non-formal educational institution that stands alone. Islamic boarding schools also have several traditions that have become hereditary over time to time which are always firmly held by the kyai and their students. These traditions are about the education system taught, the social activities applied, and the attitude of consistency always taught by their predecessors. This extraordinary attitude of consistency or obedience makes Islamic boarding schools become non-formal educational institutions that still exist today, which with its existence, does not exclude dynamic changes following the development of time.²⁴ One of the consistent attitudes applied by this Islamic boarding school is learning *falak*. Talking about learning science in this Islamic boarding school, there is a distinctive characteristic, namely having an institution that discusses studies about science, and

²⁰ Dedi Jamaludin, "Penetapan Awal Bulan Kamariah Dan Permasalahannya Di Indonesia," *Al-Marshad: Jurnal Astronomi Islam dan Ilmu-Ilmu Berkaitan* 4, no. 2 (20 Desember 2018): 156–71, <https://doi.org/10.30596/jam.v4i2.2441>.

²¹ Bogdan, *Qualitative Research for Education: An Introduction to Theory and Methods* (Boston: Allyn and Bacon, 1992), 76.

²² John W. Creswell, *Research Design: Qualitative and Quantitative* (London: Steven & Son, 1994), 117.

²³ Creswell, *Research Design: Qualitative and Quantitative*. 194-195

²⁴ Irfan Setia Permana Wiantamiharja, "Implementasi Toleransi Beragama Di Pondok Pesantren (studi Kasus Di Pondok Pesantren Universal Bandung)," *Hanifiya: Jurnal Studi Agama-Agama* 2, no. 1 (2019): 1–15.

this institution is usually used to determine the beginning of the Hijri month. The institution is called *Lajnah Falakiyah* Al-Falah.

With regard to *Lajnah Falakiyah* in this Islamic boarding school, this institution cannot carry out its authority and duties properly and correctly if it does not have a clear organizational structure. However, it should be underlined that *Lajnah Falakiyah* is not a stand-alone organization, but it has a management structure. The chairman of the *Lajnah* is Mohammad Makhsus, the deputy chairman of the *Lajnah* is Ali Mustofa, and the secretary of the *Lajnah* is Syarifuddin Amin. Basically, the task and authority of this institution is to compile the Hijri calendar that has been calculated for one year and determine the beginning of the Hijri month, especially Ramadan, Shawwal, and Dhu al-Hijjah, from these three months.²⁵

In determining the initial Hijri calendar, basically, the Al-Falah Kediri Islamic boarding school uses various hisāb methods such as *the Fath Al Rauf Al Manan method*, *Risalatul Qamarain*, *Durrul Aniq*, *Ephemeris*, *Sullam al-Nayyiroin*, *Nurul Anwar*, and so on. However, the guidelines for making the Hijri calendar and determining the beginning of Ramadan, Shawwal, and Dhu al-Hijjah are the methods of *Sullam al-Nayyiroin*. With regard to this method, it is not known exactly when it was used, but based on the results of interviews obtained stated that the science of falak and the hisāb method had been taught since the time of KH Djazuli Uthman in the 1960s. In addition, the science of falak taught in this Islamic boarding school has a scientific sanad from previous scholars who pursued the field of falak in the Kediri city area, such as Mbah Yai Dahlan, Mbah Yai Ihsan Jampes, Mbah Yai Yunus, and so on.²⁶

Learning falak at the Al-Falah Islamic boarding school is specifically for students at the 3rd grade level of Ulya Madrasah Islamiyah Salafiyah Riyadlotul 'Uqul (MISRIU). Then, regarding the mechanism for determining the beginning of the Islamic month and making calendars in Islamic boarding schools, it is carried out by students who are at the 3rd-grade *ulya* level with the *Lajnah Falakiyah* team of the Al-Falah Islamic Boarding School through one week are required to calculate for the next year using different book methods. The existence of different book methods is common in this Islamic boarding school, but in essence, the guidelines in determining the beginning of the Islamic month or the 1st of Hijri, especially Ramadan, Shawwal, and Dhu al-Hijjah, are based on the *hisāb* method of *Sullam al-Nayyiroin*.²⁷

Then, after finishing calculating the next step, namely in Tahsih (evaluation), together with the board of cottage caregivers and *falak* teachers in this Islamic boarding school to prove its validity besides if there is a difference when calculating the beginning of the month for the next year, it will also be corrected together. Regarding the science of *falak* in this Islamic boarding school, there are several

²⁵ Interview with Syarifuddin Amin, Secretary of the Lajnah Falakiyah (Astronomical Committee) at Al-Falah Islamic Boarding School, conducted on 15 December 2023.

²⁶ Interview with Mohammad Makhsus, Chairman of the Lajnah Falakiyah (Astronomical Committee) at Al-Falah Islamic Boarding School, conducted on 16 December 2023.

²⁷ Interview with Mohammad Makhsus, Chairman of the Lajnah Falakiyah (Astronomical Committee) at Al-Falah Islamic Boarding School, conducted on 16 December 2023.

teachers who teach this knowledge, both from the dzuriyah family and the administrators of this Islamic boarding school. Some of the teachers from the cottage family are KH. Muhammad Makmun son of Mrs. Nyai Hj Lailatul Badriah, KH. Abdul Hakim, son-in-law of KH. Ahmad Zainuddin Djazuli.²⁸

Concerning the *Sullam al-Nayyiroin hisāb* method used by this Islamic boarding school, especially regarding the *hilāl* height or the value of *hilāl* visibility when determining the beginning of the Islamic month, which in that method is not regulated with certainty regarding the minimum *hilāl* height that can be used for *rukyyat*, but some *falak* scholars differ in opinion about this. Some state that the *hilāl* height is at least nine degrees, seven degrees, and some argue a minimum of six degrees. The statement contained in the book, based on the results of an interview with one of the *falak* experts at this Islamic boarding school, states that the *hilāl* height or visibility value used when determining the beginning of the Islamic month is two degrees. The *hilāl* height value applies when determining the beginning of the Islamic month, not only specific months such as Ramadan, Shawwal, and Dhu al-Hijjah.²⁹

Astronomical and Phenomenological Analysis of Hijri Calendar Determination at Al-Falah Islamic Boarding School

Based on the significant development of science regarding the initial calculation method of the Hijri calendar in Indonesia, it has produced a very wide variety of *hisāb* systems.³⁰ In general, the *hisāb* method itself is basically divided into two types, namely the ultimate system and *urfi*. The meaning of the *urfi hisāb* system is a calculation based on the average circulation of the moon when it circles the Earth. This system can basically provide convenience in compiling the Hijri calendar, but the *hisāb* system cannot be used to determine the beginning of the Islamic month, especially Ramadan, Shawwal, and Dhu al-Hijjah.³¹ While the true *hisāb* system has the understanding that it is a calculation based on accurate astronomical data, with this system, the location of the *hilāl* is calculated very often when the sun sets. If the results of the calculation show that the *hilāl* is above the horizon, the new moon will certainly enter on the same night.³²

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²⁸ Interview with Syarifuddin Amin.

²⁹ Interview with Syarifuddin Amin.

³⁰ Amirah Himayah Husna, "Unifikasi Kalender Hijriah Nasional Menurut Perspektif Muhammadiyah dan Nahdlatul Ulama," *Al-Afaq: Jurnal Ilmu Falak Dan Astronomi* 4, no. 1 (2022): 1–19.

³¹ SusiknanAzhari, *Ilmu Falak Teori dan Praktik* (Yogyakarta: Lazuardi, 2001). 93-95

³² Majelis Tarjih dan Tajdid PP. Muhammadiyah, *Pedoman Hisab Muhammadiyah*, 2 ed. (Yogyakarta, 2009). 78

Shawwal, and Dhu al-Hijjah. While the true *hisāb* system has the understanding that it is a calculation based on accurate astronomical data, with this system, the location of the *hilāl* is calculated very often when the sun sets. If the results of the calculation show that the *hilāl* is above the horizon, the new moon will certainly enter on the same night.³³

Based on the explanation of the various types of *hisāb* above, the book of *Sullam al-Nayyirain* is classified as the true type of *hisāb taqrībi*. Regarding the *hisāb* method of the book of *Sullam al-Nayyirain*, there was a clarification in the *falak* science seminar held at Tugu Bogor, West Java, on April 27, 1997, stating that the *hisāb* method of the book of *Sullam al-Nayyirain* by Muhammad Manshur bin Abdul Hamid bin Muhammad Damiri, *Qawa'id al-Falakīyah* by Abdul Fatah ath-Thuhi, and *Fath ar-Rauf al-Mannan* by Abu Hamdan Abdul Jalil is classified as *hisāb haqīqi taqrībi*, whose level of accuracy is low or even inaccurate. As for this, the database used as the main parameter is the astronomical table *Zij Ulugh Beikh*, and its implementation uses geocentric theory. Where the theory is scientifically void, realistically, the results of the calculation are. Because the calculation is not supported by scientific assumptions as a means to reveal data, facts, and reality in practice in the field.³⁴ In other words, the results of the calculation of the *hisāb taqrībi* method are sometimes different from the facts found in the field when making *rukyatulhilāl* observations.

One of the *falak* experts from the city of Yogyakarta, Muhyiddin Khozin, gave an understanding that *hisāb taqrībi* is a *hisāb* used to determine the beginning of the lunar month, where the calculation process is based on the movement of the moon and sun.³⁵ So that the result of the calculation is still an estimate, or looking for the truth. Science in Indonesia does not have to have a linear nature between the growth of science and the facts that have occurred at that time. Assuming that by the middle of the 20th century, the truth of *hisāb tahqiqi* had regenerated faster to replace the old *hisāb* that had fallen out of scientific studies, and the method of *taqrībi* had slowly begun to be abandoned by Muslims. However, this is not the case. The method of *hisāb taqrībi* still has a large number of followers to this day.³⁶

For example, for example the classification carried out by the Ministry of Religious Affairs, the *hisāb* method of the book of *Sullam al-Nayyirain* is considered a method of *taqrībi* that has a low level of accuracy and often produces calculations that differ from the actual conditions empirically. Nevertheless, the Ministry of Religious Affairs still recognizes its existence, because the results of its calculations are still being considered and taken into account in the session for the determination of the beginning of the Hijri month.³⁷

³³ Fika Andriana, "Akurasi Hisab Awal Bulan Qamariah Dalam Kitab Khulashah Al-Wafiyah & Ephemeris," *Jurnal Syariah : Yurisprudensi IAIN Langsa* 9, no. 1 (2017): 70–105.

³⁴ Jayusman, *Ilmu Falak 2 Fiqh Hisab Rukyah Penentuan Awal Bulan Kamariah*, 1 ed. (Banten: MEDIA EDU PUSTAKA, 2021).³⁷

³⁵ Jayusman. *Ilmu Falak 2 Fiqh Hisab Rukyah Penentuan*, 38.

³⁶ Jayusman. *Ilmu Falak 2 Fiqh Hisab Rukyah Penentuan*, 39.

³⁷ Muhyiddin Khazin stated that the continued use of *Sullam an-Nayyirain* as one of the references for determining the beginning of the lunar (Qamari) months serves to accommodate a

On the other hand, this Islamic boarding school also uses the *imkanurukyat* criterion of 2 degrees. With regard to the *imkanurukyat* criteria used by the Al-Falah Islamic boarding school. Initially, in Indonesia, when determining the beginning of the Hijri calendar, especially the 1st of Ramadan, Shawwal, and Dhu al-Hijjah used several criteria were used. The criteria have different implementations, so that they often result in different determinations in the initial determination of the Hijri calendar, especially the three months.³⁸ The following is an explanation of the *imkanurukyat* criteria used by Islamic mass organizations in Indonesia:

First, the original *imkānurrukyat* criterion, established as a solution to resolve discrepancies in determining the Hijri calendar (particularly for Ramadan, Shawwal, and Dhul-Hijjah), employed three key parameters: a minimum moon altitude (*hilāl* height) of 2 degrees, elongation of 3 degrees, and moon age of 8 hours. This standard was formally institutionalized through the 1997/1998 Hisab-Rukyat Working Deliberation in Bogor, with its implementation commencing in March 1998 through the adoption of what became known as the "old MABIMS criteria" (uniting Malaysia, Brunei, Indonesia, and Singapore).³⁹ Significantly, this policy shift marked a notable transition in the Indonesian government's alignment - whereas pre-1998 determinations frequently coincided with Muhammadiyah's calculations, post-implementation saw greater synchronization with Nahdlatul Ulama's positions regarding the timing of major Islamic observances.⁴⁰

Second, the new *imkānurrukyat* criteria emerged because of an evaluation in 2016 conducted by an association of religious ministers from Malaysia, Brunei, Indonesia, and Singapore (MABIMS). In addition, the background of criteria 2, 3, and 8 is considered very low. That is, the position of the *hilāl* is at a height, and the elongation is too thin to be observed because the light cannot beat the atmosphere of dusk. In

significant portion of society who still adhere to this classical text. He further explained that he had once proposed to the inheritors of the book's authorship to revise its calculations for greater accuracy, but they rejected this suggestion. Their stance was to "*let Sullam an-Nayyirain remain as it is*. Jayusman. *Ilmu Falak 2 Fiqh Hisab Rukyah Penentuan*, 39.

³⁸ Imam Mahdi, "Analisis terhadap kriteria visibilitas hilal Rukyatul Hilal Indonesia (RHI)" (Skripsi, Semarang, Universitas Islam Negeri Walisongo, 2016), <http://eprints.walisongo.ac.id/id/eprint/5694/>.

³⁹ Ahmad Izuddin, *Fiqh Hisab Rukyah: Menyatukan Nu Dan Muhammadiyah Dalam Penentuan Awal Ramadhan, Idul Fitri, Dan Idul Adha* (Jakarta: Penerbit Erlangga, 2007). 158

⁴⁰ During the New Order era (pre-1998), the differing approaches between the Indonesian government and Islamic organizations like Muhammadiyah and Nahdlatul Ulama (NU) can be attributed to their distinct astronomical calculation (*hisāb*) methodologies. The government tended to collaborate more frequently with Muhammadiyah, while NU often took independent initiatives. This divergence stemmed from NU's reliance on the *taqrībi* (approximate) calculation method derived from the classical text *As-Sulam an-Nayrain* by Manshur al-Batawi. As explained by Taufik, this method references the time of conjunction (*ijtimā'*) using an average interval of 29 days, 12 hours, 44 minutes, and 3 seconds. While the conjunction timing calculation in this method is mathematically correct according to its original algorithm, its correction system is considered overly simplified. Consequently, the *taqrībi* method's accuracy is deemed insufficient compared to more modern astronomical calculations. This technical limitation contributed to NU's tendency to maintain its independent stance in moon sighting determinations during this period. Taufik, *Perkembangan Hisab Di Indonesia*, *Dalam Selayang Pandang Hisab Rukyah*, 1 ed. (Jakarta: Direktorat Jenderal Bimas Islam dan Penyelenggaraan Haji Direktorat Pembinaan Peradilan Agama, 2004). 11-12

general, the *hilāl* height of 2 degrees and the elongation of 3 degrees still cannot be observed, even though they have used tools such as telescopes, theodolites, and others.⁴¹ Various proposals from ministers related to changing the new criteria until finally after the ministers conducted a long deliberation together with a special team formed to improve the *imkānurukyat* criteria yielded results, namely on December 8, 2021, a new MABIMS criteria were formed with a *hilāl* height of 3 degrees and an elongation of 6.4 degrees. However, Indonesia is only starting to prepare for 2022.⁴²

Third wujūd hilāl. It is a criterion that guides Muhammadiyah in determining the beginning of the Hijri calendar, which has been used since 1938.⁴³ *Wunama hilāl* has three conditions that must be completed when you want to set the beginning of the Hijri calendar. First, there has been an *ijtimā* event. Second, the event occurs before sunset. Third, at sunset, the moon is already above the horizon. The three conditions are cumulative; if some of these conditions are still not met, the beginning of the Hijri month cannot be determined.⁴⁴ Therefore, if the event occurs at sunset and the height of the *hilāl* is above the horizon, even without seeing how big the *hilāl* angle is, then by Muhammadiyah, it has been considered to enter the beginning of the Hijri new month.

So it can be concluded that when viewed from the point of view of science, the method of *hisāb Sullam al-Nayyirain* is included in the type of true *hisāb taqrībī*, which has a low level of accuracy and is not even accurate compared to other *hisāb*. That is because the data owned by the book is still relatively static, unlike contemporary *hisāb* methods, where the data is dynamic. However, in terms of truth, it is still allowed to be used as a guideline for determining the beginning of the Hijri calendar because this method still uses the existence of *ijtimā'* as a consideration and the position of *hilāl* as the main parameter in determining the beginning of the Hijri month.

In addition, the book of *Sullam al-Nayyirain* was very accurate and good when it was in its time. However, when viewed from the current conditions where science has developed rapidly compared with the new method, it will cause a significant difference in the results obtained. So that the use of the *Sullam al-Nayyirain* method for the present context needs to be considered again, because the calculation data obtained is approximate. Although basically the results of the calculations of all *hisāb* methods are predictive, from this will also be obtained various calculation results based on the value of alignment and compatibility with the facts in the field. So that

⁴¹ Dwi Sukmawati, "Analisis Penentuan Awal Bulan Hijriah Dengan Kriteria Baru Mabims Dan Kalender Islam Global" (PhD Thesis, Universitas Gadjah Mada, 2023), <https://etd.repository.ugm.ac.id/penelitian/detail/225049>.

⁴² Thomas Djamaluddin, "Bismillah, Indonesia Menerapkan Kriteria Baru MABIMS," 23 Februari 2022, <https://tdjamaluddin.wordpress.com/2022/02/23/bismillah-indonesia-menerapkan-kriteria-baru-mabims/>.

⁴³ Munawir Pasaribu, "Pembelajaran Ilmu Falak Di Fakultas Agama Islam Universitas Muhammadiyah Sumatera Utara," *Al-Marshad: Jurnal Astronomi Islam Dan Ilmu-Ilmu Berkaitan* 6, no. 2 (2020): 207–22.

⁴⁴ Restu Trisna Wardani dan Ahmad Izzuddin, "A Relevance Between Matla'wilayatul Hukmi Towards the Implementation Result of Rukyatul Hilal and Wujudul Hilal," *Al-Hilal: Journal of Islamic Astronomy* 2, no. 1 (2020), <https://journal.walisongo.ac.id/index.php/al-hilal/article/view/5719>.

observation here is needed to check the level of accuracy and validity of the many existing *hisāb* methods.

With regard to the use of the 2-degree *imkānurukyat* criterion by the Al-Falah Islamic boarding school, this is the main point of debate with Nahdlatul Ulama and the government. Based on the explanation of some of the concepts of *imkānurukyat* criteria above, Nahdlatul Ulama and the government initially both used the same criteria as the Al-Falah Boarding School, but later it was felt that these criteria needed to be evaluated.⁴⁵ For several scientific reasons that in the end Nahdlatul Ulama and the government used the *imkānurukyat* criterion with a *hilāl* height of 3 degrees and an elongation of 6.4 degrees.⁴⁶ In addition, according to the assumption of researchers, the use of *imkānurukyat* criteria by Al-Falah Islamic boarding schools aims to prevent perceptions of similarities between Al-Falah Islamic boarding schools and Muhammadiyah. Muhammadiyah Islamic organization also uses *hisāb*, but the *hisāb* used is a contemporary *hisāb* using the criteria of *wujūdulhilāl*.⁴⁷

Please note, the *hisāb* method that is used as a guideline by the Al-Falah Islamic boarding school when viewed from a phenomenological perspective will be oriented to real experience, which aims to understand, explore and curiosity and interpret the life experiences of the teachers of science in the Al-Falah Ploso Islamic boarding school. However, in this case, the researcher not only describes the life experiences of science teachers but also some of the life experiences of students, alumni, and communities who live side by side with this Islamic boarding school. Furthermore, when describing this Phenomenological approach more deeply, it has a basic meaning, namely, life experience.⁴⁸ Researchers collect data on how the interviewees feel about the events they experienced, especially those related to differences that have occurred.⁴⁹

About the analysis of data in the phenomenological approach to obtain life experience from predetermined research subjects, it is carried out by adapting from the thoughts of Stevick, Colaizzi, and Keen as follows: first, determine the scope of the phenomenon to be studied, in this case discussing how someone (*falak* teachers and local communities) experiences a phenomenon, namely differences in the determination of the beginning of the Hijri month in particular Ramadan, Shawwal, and Dhu al-Hijjah. Second, compiles a list of questions which, in this case, are used to reveal more deeply the meanings of experience for the research subjects (teachers of science and some local communities). Third, data collection, where researchers get the life experience of research subjects from the results of interviews and observations. Fourth, the cluster of meaning stage, where in this stage researchers classify several

⁴⁵ Dwi Sukmawati, "Analisis Penentuan Awal Bulan Hijriah Dengan Kriteria Baru Mabims Dan Kalender Islam Global."

⁴⁶ Thomas Djamaluddin, "Bismillah, Indonesia Menerapkan Kriteria Baru MABIMS."

⁴⁷ Munawir Pasaribu, "Pembelajaran Ilmu Falak Di Fakultas Agama Islam Universitas Muhammadiyah Sumatera Utara," *Al-Marshad: Jurnal Astronomi Islam Dan Ilmu-Ilmu Berkaitan* 6, no. 2 (2020): 207–22.

⁴⁸ Moh Nadhir Muâ, "Analisis Fenomenologi Terhadap Makna dan Realita," *Jurnal Studi Agama Dan Masyarakat* 13, no. 1 (2017): 120–35.

⁴⁹ Masganti Sitorus, *Metodologi Penelitian Pendidikan Islam* (Medan: IAIN PRESS, 2011). 159

statements of resource persons, in this case (teachers and some local communities), can be in the form of opinions, feelings, and expectations of the research subject. Fifth, the description of the essence in this stage, the researcher describes the entire experience of the research subject.⁵⁰

Based on the results of interviews with *falak* lecturers, namely Mohammad Makshus and Syarifuddin Amin, about the phenomenon of differences in the initial determination of the Hijri calendar, especially Ramadan, Shawwal, and Dhu al-Hijjah, between Al-Falah and Nahdlatul Ulama Islamic boarding schools and the government. They stated that the existence of the Al-Falah Islamic boarding school using the book of *Sullam al-Nayyirain* aims to maintain the connection of the *hisāb* method and take *barokah* to the *muassis* who have for generations maintained the method.⁵¹ In addition, maintaining the *istiqomah* of learning, teaching, and practicing the knowledge of *hisāb* that has been inherited by the *muassis* of the Al-Falah Islamic boarding school.⁵²

Then, based on the results of interviews with Al-Falah Islamic boarding school students named Waris and Mugni gave responses to the phenomenon of differences in the initial determination of the hijri calendar, especially Ramadan, Shawwal, and Dhu al-Hijjah between Al-Falah Islamic boarding schools and Nahdlatul Ulama. They stated that the differences that have occurred have made them learn more about the breadth of science, so it is not easy to blame someone.⁵³

In addition, there was one student who felt quite surprised when he heard the difference because he did not understand the source of the difference that occurred.⁵⁴ Meanwhile, one of the alumni of the Al-Falah Islamic boarding school, named Nurul Ilmi Badrun Dujjah responded to the phenomenon that, in essence, Nahdlatul Ulama and Al-Falah have no significant differences because both have the same basis or understanding, namely Ahlusunnah Wal Jamaah. The difference between NU and Al-Falah lies not in the creed but only in the initial determination of the Hijri calendar. The entire community and dzurriyah of Al-Falah hut are very solemn and dedicate themselves to Nahdlatul Ulama. There is nothing wrong with the difference between the two. Both are true because they have a legal basis and a tendency that can be accounted for.⁵⁵

Concerning the explanation above, this article describes the life experiences experienced by several people named Eko Susanto, who was the resource person in this study, when looking at the phenomenon of differences between NU and the government and the Al-Falah Islamic boarding school. Based on the results of the

⁵⁰ Hasbiansyah, "Pendekatan fenomenologi: Pengantar praktik penelitian dalam Ilmu Sosial dan Komunikasi," *Mediator: Jurnal Komunikasi* 9, no. 1 (2008): 163–80.

⁵¹ Interview with Mohammad Makhsus.

⁵² Interview with Syarifuddin Amin, Secretary of the Lajnah Falakiyah (Astronomical Committee) at Al-Falah Islamic Boarding School.

⁵³ Interview with Mugni, Student (Santri) at Al-Falah Islamic Boarding School. Conducted on December 16, 2023.

⁵⁴ Waris, Student (Santri) at Al-Falah Islamic Boarding School. Conducted on December 16, 2023.

⁵⁵ Interview with Nurul Ilmi Badrun Dujjah, Alumni of Al-Falah Islamic Boarding School. Conducted on January 13, 2024.

interview with Eko Susanto, he prefers to follow the decisions issued by the government. This is due to his lack of understanding of the background that is the cause of the difference. However, one of his family members, who is a community leader in Ploso village, which is adjacent to the Al-Falah Islamic boarding school, stated that some of the villagers who recite at the cottage follow the decision of the Al-Falah Islamic boarding school. In this case, the hope of the resource person, with this research can provide a little insight into the study of science, especially on this issue so that the source is not easily prejudiced against this Islamic boarding school because the informant is not brave too and feels inappropriate if he interferes more deeply in this matter.⁵⁶

This article describes the life experiences of the surrounding communities named Sholikin, Bintoro, and Sukandar when looking at the phenomenon of differences between Al-Falah Islamic boarding school and Nahdlatul Ulama in determining the beginning of the Hijri calendar, especially Ramadan, Shawwal, and Dhu al-Hijjah. Based on interviews with the three informants, they are more inclined to follow the government than the Al-Falah Islamic boarding school because they have different reasons. Sukandar stated that he was more inclined to follow the government because he did not understand the root of the differences that occurred between the two.⁵⁷ Sholikin thinks that using calculations without being proven observationally is less accurate than the results of the calculations. Considering that the development of science is also increasingly significant from year to year.⁵⁸ Meanwhile, Bintoro thinks that along with the development of science and technology, the Al-Falah Islamic boarding school uses contemporary hisāb methods.⁵⁹ In addition, it is contrary to the two communities named Rohmat and Karso. Based on the results of the interview, they are more inclined to follow the Al-Falah Islamic boarding school because it is a form of respect and respect for the Al-Falah Kediri Islamic boarding school.⁶⁰

CONCLUSION

Al-Falah Islamic Boarding School determines the beginning of the Hijri calendar using various *hisāb* (astronomical calculation) methods, including *Fath Al Rauf Al Manan*, *Risalatul Qamarain*, *Durrul Aniq*, *Ephemeris*, *Sullam al-Nayyiroin*, *Nurul Anwar*, and others. However, the primary guideline for establishing the first day of a Hijri month is the *Sullam al-Nayyiroin* method, which applies a *hilāl* (crescent moon) visibility criterion of 2° in altitude. This criterion differs from Nahdlatul Ulama's standard, which requires a *hilāl* altitude of 3° and an elongation of 6.4°. From the perspective of Falak Science (Islamic Astronomy), the methods employed by Al-Falah fall under the category of *hisāb taqrībi* (approximate calculation). While these methods hold historical and traditional significance, their scientific accuracy is relatively

⁵⁶ Interview with Eko Susanto, Local Community Member. Conducted on December 18, 2023.

⁵⁷ Interview with Sukandar, Local Community Member. Conducted on December 18, 2023.

⁵⁸ Interview with Sholikin, Local Community Member. Conducted on December 19, 2023.

⁵⁹ Interview with Bintoro, Local Community Member. Conducted on December 19, 2023.

⁶⁰ Interview with Rohmat and Karso, Local Community Member. Conducted on December 18, 2023.

low compared to modern astronomical advancements. Phenomenologically, Al-Falah's adherence to these traditional methods reflects its commitment to preserving the intellectual *sanad* (chain of knowledge) passed down by its founders. This practice is maintained with *istiqomah* (steadfastness), particularly for determining key months like Ramadan, Shawwal, and Dhu al-Hijjah. The school's approach resonates strongly with its students, alumni, and local community, who place trust in its rulings. However, some individuals, due to limited understanding of the methodological nuances, opt to follow the government's official announcements instead.

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