

# ISLAMIC LAW AND SCIENCE IN NU-MUHAMMADIYAH'S LUNAR CALENDAR DETERMINATION

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## Abstract

This article examines the paradigm shift in determining the start of the Islamic month, driven by advancements in science and technology. Initially, Muslims relied on moon sighting (*rukyat al-hilāl*), but the mastery of mathematics and astronomy led some to adopt calculations (*ḥisāb*). The study focuses on the differing approaches of the Nahdlatul Ulama (NU) *Baḥsul Masāil* and the Muhammadiyah Tarjih forum. With the advent of computers and the internet, Muhammadiyah embraced *ḥisāb* and the global Islamic calendar. Meanwhile, NU integrates traditional *rukyat* with modern tools like mathematics, computers, and photographic technology while maintaining a regional calendar. These differences highlight Muhammadiyah's modernist paradigm and NU's eclectic approach, blending tradition with modernity.

**Keywords:** Muhammadiyah; Nahdlatul Ulama; Islamic months; science and technology

## Abstrak

Artikel ini mengkaji pergeseran paradigma dalam menentukan awal bulan Islam, yang didorong oleh kemajuan ilmu pengetahuan dan teknologi. Awalnya, umat Islam mengandalkan pengamatan bulan (*rukyat al-hilāl*), tetapi penguasaan matematika dan astronomi membuat sebagian umat Islam mengadopsi perhitungan (*ḥisāb*). Studi ini berfokus pada pendekatan yang berbeda dari *Baḥsul Masāil* Nahdlatul Ulama (NU) dan forum Tarjih Muhammadiyah. Dengan munculnya komputer dan internet, Muhammadiyah merangkul *ḥisāb* dan kalender Islam global. Sementara itu, NU memadukan rukyat tradisional dengan perangkat modern seperti matematika, komputer, dan teknologi fotografi sambil mempertahankan kalender regional. Perbedaan ini menyoroti paradigma modernis Muhammadiyah dan pendekatan eklektik NU, yang memadukan tradisi dengan modernitas.

**Kata kunci:** Muhammadiyah; Nahdlatul Ulama; kalender Islam; sains dan teknologi

## A. Introduction

The difference between the Muhammadiyah and Nahdlatul Ulama in determining the beginning of the Islamic month is often reported in the Indonesian mass media almost every year. This is because both organizations have a very large membership base and represent the majority of the Muslim population in Indonesia. The difference is even sharper because Muhammadiyah usually makes an early decision about the beginning of Ramadan and the two holidays of Eid al-Fitr and Eid al-Adha.<sup>1</sup> Muhammadiyah uses the *hisāb* method so that it can predict these times early. The Nahdlatul Ulama usually waits for the results of moon observations. The difference between the two may be even greater because Muhammadiyah uses the criteria of *hilāl*, the position of the moon above the horizon regardless of its height. Nahdlatul Ulama employs the *rukyat al-hilāl* method and the *imkān al-rukyat* criteria. In these circumstances, the moon's position of 2–3 degrees may be seen as normal. Because of these different ways and standards, it is possible to guess that the difference in figuring out the start of the Islamic month will happen if the *hilāl* is below the standards of *imkān al-rukyat* and the sky is cloudy.<sup>2</sup>

Research related to the views of Muhammadiyah and Nahdlatul Ulama on the Islamic calendar includes: Susiknan Azhari talked about the relationship between NU and Muhammadiyah using *hisāb* and *rukyat* from the point of view of Ian G. Barbour's Theory, which is made up of three parts: independence, dialogue, and integration.<sup>3</sup> Wiwik Triulan discussed the prospects of Nahdlatul Ulama and Muhammadiyah in the unified Islamic calendar in Indonesia. The research suggests the establishment of a mutually agreed-upon national or international calendar standard to foster togetherness and unity. Marwadi talked about how Muhammadiyah, Nahdlatul Ulama, and the Islamic Union are renewing the Hijri calendar and what that means for the national Hijri calendar. The study's findings show that Muhammadiyah, NU, and the Islamic Union have changed how they think about the Hijri calendar in terms of methods and criteria, algorithm references, and the range of situations in which it can be used. This makes the idea of the right calendar more appropriate from a scientific and normative point of view. The renewal of thinking causes mass organisations to face problems with the method and criteria for determining the beginning of a month in the Hijri calendar. The

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<sup>1</sup> Ridwan, *Kontestasi Mazhab Hisāb dan Rukyat di Indonesia* (Pustaka Ilmu, 2022).

<sup>2</sup> Bashori Alwi, 'Konsep Hilāl Mar'i (Analisis terhadap Pandangan Anggota Tim Hisāb Rukyat Kementerian Agama RI)', *Hakam: Jurnal Hukum Islam dan Hukum Ekonomi Islam*, 6.2 (2022), pp. 89–107.

<sup>3</sup> Wiwik Triulan, Kurniati, and Marilang, 'Prospek Nahdlatul Ulama dan Muhammadiyah menuju Penyatuan Kalender Islam di Indonesia', *ELFALAKY*, 8.1 (2024), pp. 138–52, doi:10.24252/ifk.v8i1.46899.

renewal of thinking is also influenced by the progress of science and technology. However, because this renewal has not been supported by the same epistemology for determining the beginning of the month and the identity politics of mass organisations, the opportunity to realise the national Hijri calendar is still very unlikely.<sup>4</sup> Ahmad Adib Rofiuddin and Ahmad Luqman Hakim discussed the contestation of Nahdatul Ulama and Muhammadiyah as the two largest Islamic NGOs related to the Islamic calendar. This research shows that Nahdatul Ulama and Muhammadiyah's power struggle strengthens their identities and demonstrates their power in Indonesia's Islamic Calendar discourse.<sup>5</sup> Muhammadiyah and Nahdlatul Ulama. This study found that the two organisations can unite in the unification of the Islamic calendar, which can be realised if one *madzhab* becomes the authority and can be carried out through astronomers in Indonesia under the authority of the Ministry of Religious Affairs of the Republic of Indonesia to solve this problem.<sup>6</sup>

The research focuses on the legal paradigms of Nahdlatul Ulama, which uses *rukyat al- hilāl* as a method of determining the beginning of the Islamic month, and Muhammadiyah, which enacts *hisāb*. This research also looks at how the beliefs of the two religious groups change over time, along with the progress of science and technology, and how the way these groups accept these changes affects the start of the Islamic month.

## B. Method

This study looks at literature to find out about how Muhammadiyah and Nahdlatul Ulama applied science and technology to figuring out the Islamic calendar. The information comes from books, articles, and news stories on the internet. After the data was gathered, it was analysed by using typology to show how Muhammadiyah and Nahdlatul Ulama accepted and used science and technology. The study also looked at the religious ideas behind Muhammadiyah and Nahdlatul Ulama and how they affected the choice of both in Islamic law. This is important to do because the group paradigm is very influential on the group's decision-making.

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<sup>4</sup> Marwadi Marwadi, 'Renewing the Thoughts of the Hijri Calendar of Muhammadiyah, Nahdlatul Ulama and Persatuan Islam and Its Implications for Realization of National Hijri Calendar', *Al-Manahij: Jurnal Kajian Hukum Islam*, 15.1 (2021), pp. 19–36, doi:10.24090/mnh.v15i1.4870.

<sup>5</sup> Ahmad Adib Rofiuddin and Ahmad Luqman Hakim, 'NGOs Contestation on Islamic Hijri Calendar in Urban Muslim Society in Indonesia: From Authority to Identity', *Akademika: Jurnal Pemikiran Islam*, 27.2 (2022), p. 171, doi:10.32332/akademika.v27i2.5357.

<sup>6</sup> Amirah Himayah Husna, 'Unifikasi Kalender Hijriah Nasional Menurut Perspektif Muhammadiyah Dan Nahdlatul Ulama', *AL-AFAQ: Jurnal Ilmu Falak dan Astronomi*, 4.1 (2022), pp. 1–19, doi:10.20414/afaq.v4i1.4169.

## C. Results and Discussion

### 1. Islamic Calendar on Muhammadiyah's Perspective

Kiai Ahmad Dahlan, a scholar and Yogyakarta palace employee, founded Muhammadiyah. In terms of the Islamic calendar, Kiai Ahmad Dahlan and a few Muhammadiyah *hisāb* teams used to look at the crescent moon (*rukyat bi al-'aini*) and figure out that the first Shawwal fell one day before the Grebeg Shawwal (traditional celebrations for Eid). To hold the Eid al-Fitr prayer, Kiai Ahmad Dahlan told Sultan Hamengku Buwana VII that he wanted to hold Eid prayers the day before Grebeg. The Sultan accepted this intention, but Grebeg Syawal proceeded as usual, following the calculations of the Javanese calendar.<sup>7</sup> From this story, it appears that Ahmad Kiai Dahlan used the method of seeing the crescent moon (*rukyat al-hilāl*) in the beginning of the Islamic month.

Although Kiai Ahmad Dahlan used *rukyat al-hilāl*, in fact he mastered the *hisāb* (calculation method). Kiai Ahmad Dahlan once studied with Kyai Dahlan (Termas), who used the book *Tadhkīr al-Ikhwān*, which is geocentric and tends to be *Taqribī* (approximately). Then he studied with Shaikh Taher Djalaluddin and studied *Maṭla' al-Sa'id*, which is heliocentric and tends to be *taḥqīqī* (more accurate because it is equipped with corrections). Kiai Ahmad Dahlan's son and student, Siraj Dahlan, wrote a book entitled "Cosmography of Astronomy," which refers to the book *Maṭla' al-Sa'id*. Siraj Dahlan has a student, Wardan Diponingrat, who is the initiator of *wujud al-hilāl*, one of the essential methods of determining the beginning of the lunar month used by Muhammadiyah until now.<sup>8</sup> In the early days, Muhammadiyah organizations tended to use *rukyat al-hilāl*; this can be seen in the decision of the 20th Muhammadiyah Tarjih Council (1930) in Jogjakarta, where in the decision the assembly stated that the way of fasting is: "If you witness the month of Ramadan with: 1. *Rukyat al-hilāl*, 2. or with the testimony of a just person. 3. Scatter the number of Sha'ban for thirty days when it is cloudy. 4. Or by *hisāb*."<sup>9</sup> This statement shows that the issue of *rukyat* and *hisāb* in Muhammadiyah is very dynamic.

In the Muhammadiyah Tarjih Decision Association, fasting and Eid al-Fitr are *rukyat* and not hindered by *hisāb*. According to Djarnawi Hadikusuma, the above text is the result of the Tarjih decision on May 1-7, 1932, in Makassar. This means that Muhammadiyah implicitly recognises *rukyat* and *hisāb* in the sense of positioning in the middle (using the *rukyat* and *hisāb* system). In the Tarjih Decision Association, it is explained that "if the *hisāb* expert determines that the moon has not yet been seen

<sup>7</sup> Adaby Darban, *Sejarah Kauman: Menguak Identitas Kampung Muhammadiyah* (Suara Muhammadiyah, 2000).

<sup>8</sup> Imroatul Munfaridah, 'Studi Kritik Terhadap Penentuan Arah Kiblat Dan Awal Bulan Qomariyah Pemikiran KH Ahmad Dahlan', *JURISDIKTIE*, 2.2 (2012), pp. 107–8, doi:10.18860/j.v0i0.2167.

<sup>9</sup> HAMKA, *Saya Kembali Ke Rukyat: Menjelang 1 Ramadhan 1392 H* (Firma Islamiyah, 1972).

or has already existed but is not visible, when in fact there are people who see it that night, which is *mu'tabār*? (considered) the Tarjih council decided that *rukyat* is *mu'tabar*."<sup>10</sup>

Despite using *rukyat*, Muhammadiyah has incorporated the *ḥisāb* paradigm since its early days. This can be seen from the calendar compiled by the Tarjih and Tajdid Council of the Central Executive of Muhammadiyah, which was started by Kiai Ahmad Dahlan in 1915. Kiai Siradj Dahlan and Kiai Ahmad Badawi carried out the calculations in the early period.<sup>11</sup> The *ḥisāb* model used by Muhammadiyah is not unique, as understood so far. The first *ḥisāb* used by Muhammadiyah was the *ḥisāb ḥaqīqī* with the criteria of *imkān al-rukyat* (visibility of the crescent). Furthermore, Muhammadiyah uses *ḥisāb ḥaqīqī* with the criteria of *ijtimā' qobla al-ghurūb* (conjunction before sunset). This means that if *ijtimā'* occurs before *ghurūb* (sunset), then that night and the next day are considered the first day of the new Hijri month. However, if the *ijtimā'* occurs after *ghurūb*, then that night and the next day are not considered the new month of the Hijri calendar. In other words, the concept of *ijtimā' qobla al-ghurūb* does not consider the position of the *hilāl* above the horizon at sunset. Muhammadiyah used this theory until 1937 AD/1356 H.<sup>12</sup>

In 1938 AD/1357 H, Muhammadiyah began to use the theory of the manifestation of the *hilāl*. This step is taken as a "middle way" between the *ḥisāb* system, *ijtimā' qobla al-ghurūb*, and the *imkān al-rukyat* system, or the middle way between pure *ḥisāb* and pure *rukyat*. For the system of manifesting the *hilāl*, the methodology starts on the first of the new month on the Hijri calendar and considers the *hilāl*'s position at sunset. It had been many years since Muhammadiyah used the theory of the manifestation of *hilāl*. To make sure it was in line with the Qur'an, as-Sunnah, and the needs of the time, he reviewed it through seminars and national deliberations. These included the Seminar on Falak *ḥisāb* Muhammadiyah in 1970 AD/1390 H in Yogyakarta, the 25th National Congress of Tarjih in 2000 AD/1421 H in Jakarta, the National Workshop on the Methodology of the Early Determination of the Lunar Month of the Muhammadiyah Model in 2002 AD/1423 H in Yogyakarta, and the 26th National Congress of Tarjih in 2003 AD/1424 in Padang.<sup>13</sup>

The Muhammadiyah *Ḥisāb* Seminar took place on 24-26 Jumad al-Akhir 1390 H, which corresponded with August 26-28, 1970.<sup>14</sup> The activity was the first falak/*ḥisāb* seminar in Indonesia. Present as resource persons were experts in their

<sup>10</sup> Rahmadi Wibowo Suwarno, 'Menelusik Metodologi *Ḥisāb*-Falak Muhammadiyah: Studi Historis-Komparatif, in *Revitalisasi Ilmu Falak dalam Penentuan Awal Bulan Hijriyah* (PCIM Cairo, 2007), p. 8.

<sup>11</sup> Susiknan Azhari, 'Gagasan Menyatukan Umat Islam Indonesia', *Ahkam*, 15.2 (2015).

<sup>12</sup> Rohmat, 'Penentuan Awal Bulan Qamariyah Menurut Muhammadiyah', *Ijtima'iyya: Jurnal Pengembangan Masyarakat Islam*, 7.1 (2014), pp. 127-45.

<sup>13</sup> Susiknan Azhari, *Ensiklopedi Ḥisāb Rukyat* (Pustaka Pelajar, 2008).

<sup>14</sup> Susiknan Azhari, *Studi Astronomi Islam* (Pintu Publishing, 2017).

fields, such as Saadoe'ddin Djambek from Jakarta, Anwar Katsir from Malang, East Java, and Santoso Nitisastro from the Jakarta Planetarium. The Central Executive of Muhammadiyah who were present included Djindar Tamimy, Junus Anis, Kasman Singodimedjo, Sanusi, and Ahmad Azhar Basyir. At that time, the opening speech was delivered by Wardan Diponingrat as the Chairman of the Central Executive of the Tarjih Council and acted as moderator for Kasman Singodimedjo, Mawardi, and A. Basuni. The results of the seminar strengthened the use of the criteria for the manifestation of the new moon in Muhammadiyah in determining the beginning of the lunar month. One of the decisions made at the seminar was that the first of the new month was marked by the appearance of the *hilāl* above the *ufuk mar'ī* (visible horizon) after *ijtimā'*<sup>15</sup>

The discussion about the global Islamic calendar in Muhammadiyah began at the Tarjih Meeting and the Central Executive of Muhammadiyah at the Muhammadiyah Central Executive Building, Cik Ditiro Street, Yogyakarta, on 2 Zulhijja 1427/23 December 2006. The meeting was attended by elements of the Central Executive of Muhammadiyah and the Tarjih and Tajdid Council, including Din Syamsuddin, A. Rosyad Saleh, Dahlan Rais, Mukhlas Abror, Kamal Muchtar, Ismail Thaib, and Syamsul Anwar. The main agenda discussed Eid al-Adha 1427 H. Din Syamsuddin directly chaired the meeting. The topic of discussion in the meeting was about whether the day of Arafah follows the event of *wuqf* in Arafah, Saudi Arabia, or is based on the local date of local time. Because of this, Muhammadiyah thinks it is important to look at arguments from both religious and scientific points of view about *maṭla' wilāyah al-ḥukmī* (enforcing the law in a country) and the global *maṭla'* (enforcing the law around the world). Based on the recommendation of the meeting, Muhammadiyah held an international meeting on 22-24 Sha'ban 1428/6 September 2007 at the Sahid Hotel, Jakarta. The speakers who attended included Mohammad Ilyas (Malaysia), Jamaluddin Abdur Raziq (Morocco), Mohammed Syawkat Audah (UAE), Mohammad Ahmad Sulaiman (Egypt), and Moedji Raharto (Indonesia). Representatives of Islamic organisations in Indonesia and the Ministry of Religious Affairs attended this international meeting, which Vice President Jusuf Kalla opened.<sup>16</sup>

In 1429/2008, Syamsul Anwar attended the conference The Second Experts Meeting for the Study of the Islamic Calendar held by the Moroccan Rabat on 15-16 Shawwal 1429 H / 15-16 October 2008 AD,<sup>17</sup> and in 1431/2010 the writer attended

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<sup>15</sup> Susiknan Azhari, 'Historisitas Kalender Hijriah Global', <https://mediaindonesia.com/opini/694380/Historisitas-Kalender-Hijriah-Global-Tunggal>, 2024.

<sup>16</sup> Susiknan Azhari, 'Gagasan Menyatukan Umat Islam Indonesia Melalui Kalender Islam', *Ahkam : Jurnal Ilmu Syariah*, 2015, doi:10.15408/ajis.v15i2.2869.

<sup>17</sup> Hamdun, 'Upaya Penyatuan Kalender Islam Internasional oleh Organisasi Kerjasama Islam (OKI)', *Jurnal Bimas Islam*, 10.3 (2017), pp. 473–516.

the 2nd Astronomy Congress in Abu Dhabi, United Arab Emirates. One of the themes discussed at the congress was the issue of the global Islamic calendar with speakers Nidhal Guessoum, Mohammad Syawkat Audah, Jamaluddin Abdur Raziq, and Khalid Syawkat. At the peak, according to Tono Saksono's confession at the 47th Muhammadiyah Congress in Makassar in 1436/2015, he received an invitation to participate in the congress as a reviewer. At that time he proposed the need for a global Islamic calendar for the sake of worship and *muamalah*. The congress accepted his proposal and included it in one of its decisions. The results of the Makassar Congress decision became a foothold for Majelis Tarjih dan Tajdid Pimpinan Pusat Muhammadiyah to find a formula for the global Islamic calendar.<sup>18</sup>

In 1437/2016, the International Conference on the Unification of the Islamic Calendar was held in Istanbul, Turkey, and decided to use the global Islamic calendar with the principle of one day and one date for the whole world.<sup>19</sup> This decision was welcomed and followed up with an in-depth study accompanied by calculations for 10 years to be compared with other criteria that have developed in Indonesia. We reevaluated the results through widespread socialisation throughout Indonesia.

On Wednesday, 27 Syakban 1443/30 March 2022, the Tarjih and Tajdid Council of the Central Executive of Muhammadiyah held a focused group discussion (FGD) entitled Muhammadiyah Hijri Calendar and Global Hijri Calendar 1444 to 1450 H) at Ahmad Dahlan University, Yogyakarta. The FGD took place in a hybrid format. One of the main agendas is to look at the results of the 10-year *hisāb* and equalise the perception of principles, conditions, and parameters (PSPs) according to the Turkish global Islamic calendar. At this meeting, the term 'Single Global Hijri Calendar' also began to appear. Others propose an 'Integrated Global Hijri Calendar'. It was decided to send the calendar extension to *hisāb* and the Science and Technology Division for consideration. Simultaneously, they presented it to the 32nd National Congress of Tarjih in Pekalongan in 1445/2024.

The Single Global Hijri Calendar has been established on 7 Muharam 1446/13 July 2024, a sign that Muhammadiyah has officially used it for the determination of the beginning of the month of Kamariah from Muharam to Zulhijah. The adoption of Turkish decision 1437/2016 resulted in the creation of the Single Global Hijri Calendar, which now belongs to all Muslims worldwide, not just Muhammadiyah. 'We need to shift our awareness from a textual mindset to a contextual one. The shift from the national Islamic calendar to the global Islamic calendar is necessary to

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<sup>18</sup> Rahmadi Wibowo Suwarno, 'Kalender Hijriah Global Tunggal (KHGT) dalam Muktamar Muhammadiyah Ke-47, Muktamar Muhammadiyah Ke-48 dan Muktamar Turki 2016', in Seminar dan Sosialisasi Kalender Hijriah Global Tunggal (KHGT) (Universitas Muhammadiyah Sumatera Utara, 2023).

<sup>19</sup> Syamsul Anwar, 'Tindak Lanjut Kalender Hijriah Global Turki 2016: Tinjauan Usul Fikih', *Jurnal Tarjih*, 13.2 (2016), pp. 99-123.

foster peace and promote Islamic brotherhood, thereby unifying the national Hijri calendar.<sup>20</sup>

A workshop and socialisation of Muhammadiyah's *ḥisāb* understanding was held by the Tarjih and Tajdid Council of the Central Executive of Muhammadiyah on May 9, 2014, at the Auditorium of the Central Executive Office of Muhammadiyah Cik Ditiro Yogyakarta Paradigm Muhammadiyah. Several Muhammadiyah figures gave papers explaining why Muhammadiyah should use *ḥisāb*. According to Syamsul Anwar, confessing to *ḥisāb* is both impossible and a valid choice. Oman Fathurohman SW wrote *Ḥisāb Haqīqī* and *Wujūd al-Hilāl*. And Muhammad Rofiq Muzakkir wrote seven reasons for pre-modern Ulama to reject *ḥisāb* and answer him.<sup>21</sup> According to Syamsul Anwar, sociologically, the use of the *rukyyat* method can cause differences in the worship time of Muslims. Because the new moon cannot be seen everywhere, especially since Muslims have spread to all corners of the world. In addition, the tradition in Indonesia where a person needs to prepare to do an open house—the use of *rukyyat* that produces uncertainty—can interfere with the implementation of the event. If *rukyyat* determines the beginning of the month, then the formation of the unification calendar cannot proceed.

Anwar also stated normatively that in the hadith about the determination of the beginning of the Islamic month, there is an order to estimate (*uqdurū lah*) if the sky is cloudy. This word estimate has multiple interpretations. Some interpret by completing the moon to 30 days, some interpret by filling the moon to 29 days, and some interpret by doing calculations (*ḥisāb*). According to Anwar, among the scholars who support the use of *ḥisāb* in determining the beginning of the Islamic month are Mutarrif ibn Abdullah and Ibn Suraij. Al-Shirazi also explained that it is permissible for people who master *ḥisāb* to fast based on *ḥisāb* if the sky conditions are cloudy. Among the modern scholars who support the use of *ḥisāb* is Sharaf al-Qudah from Jordan who states that the sentence "estimate" in the hadith determining the beginning of the Islamic month is the same as "estimate" in the hadith related to the coming of the *dajjāl* where the length of a day is equal to a year, a month, and a week. So Syamsul Anwar says that *ḥisāb* does not contradict the Prophet's hadith because it is only a Tarjih (choosing) of one interpretation.<sup>22</sup>

Anwar went on to say that *Uṣūl al-Fiqh* (Islamic Law Methodology) says that Muslims are in a state of *ummī*, which means they can't write or count, so *rukyyat* is used to figure out the start of the Islamic month. When Muslims can write and count,

<sup>20</sup> Azhari, 'Historisitas Kalender Hijriah Global'.

<sup>21</sup> Syamsul Anwar, 'Peralihan Kepada Ḥisāb adalah Pilihan yang Tidak Mungkin Ditawar Lagi dan Sah Adanya', in *Argumentasi Ḥisāb Muhammadiyah*, ed. by Rahmadi Wibowo (MTT PP Muhammadiyah, 2014), pp. 5–30.

<sup>22</sup> Anwar, 'Peralihan Kepada Ḥisāb adalah Pilihan yang Tidak Mungkin Ditawar Lagi dan Sah Adanya'.



then the law of *rukyyat* no longer exists. Then at that time, *ḥisāb* can be used. Regarding this legal law, Anwar quoted Ahmad Muhammad Shakir and Mustafa al-Zarqa who were of the view that there was a *rukyyat* order because it was the most likely thing that could be done by the *ummī* community. Other reasons to switch from *rukyyat* to *ḥisāb* are that *rukyyat* is not a worship but a way to find the right time to worship; the command of *rukyyat* is not *qat'ī* (certainly) because it comes from the hadith Ahad (not popular); some verses in the Qur'an, like Surah al-Rahman (55:5) and Surah Jonah (10:5), show that the movement of the sun and moon can be tracked (*ḥisāb*); this is a sign to use the science of *ḥisāb* to find the right time.<sup>23</sup>

Oman Fathurohman SW explained that Muhammadiyah uses the criteria of the *hilāl* form rather than other criteria. The criteria for the form of *hilāl* are the determination of the beginning of the month by using the position of the moon above the horizon with any degree above 0 degrees. This is different from the *imkān al-rukyyat* criteria, which set a certain height; for example, 2 degrees based on the MABIMS (Ministers of Religious Affairs of Brunei Darussalam, Indonesia, Malaysia, and Singapore) criterion and 3 degrees based on the neo-MABIMS criteria.<sup>24</sup> Oman Fathurohman SW explained that Muhammadiyah uses the *wujūd al-hilāl* criteria rather than other criteria. The criteria for *wujūd al-hilāl* are the determination of the beginning of the month by using the position of the moon above the horizon with any degree above 0 degrees. This is different from the *imkān al-rukyyat* criteria, which set a certain height, for example, 2 degrees as the MABIMS criterion and 3 degrees based on the neo MABIMS criteria.<sup>25</sup>

Muhamad Rofiq Muzakkir presents the views of classical scholars who reject *ḥisāb* and explains the answer to this view. Classical scholars don't accept *ḥisāb* for a number of reasons, including the fact that *rukyyat* is the reason for the required fast, the Prophet forbids using *ḥisāb*, *ḥisāb* goes against *ijma'*, it has links to magic and astrology, astronomy is wrong, using *ḥisāb* makes people look like Jews, and it's difficult and time-consuming to learn. Muhamad Rofiq Muzakkir conveyed the answer to this; according to him, *rukyyat* is because if so, then when the sky was cloudy, the Prophet did not order the completion of the previous month to 30 days but performed *rukyyat* on the next day. In addition, according to Ibn Daqiq al-id, a scholar of the Shafi'i school, if someone is in a bunker and he knows that he has already celebrated the month of Ramadan, then he is obliged to fast even though he does not see the *hilāl*. The word *shahida* in the Qur'an surah al-Baqarah 185 does not mean to witness with the eyes but to be present in the month of Ramadan. The

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<sup>23</sup> Anwar, 'Peralihan Kepada Ḥisāb adalah Pilihan yang Tidak Mungkin Ditawar Lagi dan Sah Adanya'.

<sup>24</sup> Oman Fathurohman SW, 'Ḥisāb Hakiki dan Wujudul Hilāl', in *Argumentasi Ḥisāb Muhammadiyah*, ed. by Wibowo Rahmadi (MTT PP Muhammadiyah, 2014), pp. 31–50.

<sup>25</sup> Fathurohman SW, 'Ḥisāb Hakiki dan Wujudul Hilāl'.

hadith about ummi Muslims who cannot write and count (*ḥisāb*) does not indicate a prohibition (*nāhi*), but rather that Muslims at that time could not. If the prohibition on hijab is consistent, then the prohibition on writing should follow suit.

According to Muhammadiyah, there is no *ijmā'* (ulama agreement) for using *rukyyat* alone to start the Islamic month. Because there are scholars who allow the use of *ḥisāb*, namely Mutarrif ibn Abdillah, ibn Suraij, and al-Subki, among the modern scholars who agree with the use of *ḥisāb* are Rashid Rida, Mustafa al-Maraghi, Ahmad Shakir, Mustafa al-Zarqa, Taha Jabir Ilwani, Faisal Maulawi, Sharaf al-Qudah, and others. Indeed, in the past, astrology and divination were synonymous with its use. However, nowadays astronomy is purely a guess at the movement of celestial bodies and has nothing to do with prophecy. Some classical scholars think that astronomy is inaccurate (*ẓann*), but other scholars, such as al-Subki, say that astronomy is accurate. In addition, the development of science and technology also improves astronomical accuracy. According to Ibn Taymiyyah, *ḥisāb* is synonymous with Jews; using *ḥisāb* means imitating Jews. The science of *ḥisāb* is a universal science that anyone can learn; moreover, there is no statement from the Prophet that *ḥisāb* belongs to the Jews.<sup>26</sup> Syamsul Anwar says that the use of *rukyyat* in Islamic law, which is also known as *maqāsid al-Sharīah*, is meant to make it easier to fast during the month of Ramadan. The unification of the Islamic calendar is also known as the Single Hijri Global Calendar in Muhammadiyah. *Rukyyat* is a means, and the purpose of *rukyyat* is to know the entry of the month of Ramadan. Other means can replace them as long as they contribute to achieving the goal; therefore, *ḥisāb* can replace *rukyyat* in determining the beginning of the Hijri month. The unification of the calendar follows *maqāsid al-Sharīah*, which unites Muslims by fasting and celebrating together.<sup>27</sup>

As explained earlier, Kiai Ahmad Dahlan initially used *rukyyat al-hilāl*, even though at that time Muhammadiyah made an Islamic calendar based on *ḥisāb*. The use of *ḥisāb* in Muhammadiyah was very intense after the time of Kiai Ahmad Dahlan. Organizationally, Muhammadiyah uses *ḥisāb* in the form of *hilāl*. However, there are also several elements of Muhammadiyah that tend to use *rukyyat*, including Haji Abdul Malik Karim Amrullah, who is known as HAMKA. In his article "I Return to *rukyyat*: Ahead of 1 Ramadan 1392 H," HAMKA wrote the beginning of why he chose to use *rukyyat*, even though Muhammadiyah, the organisation he joined, used *ḥisāb*. In his answer to the question of Hasan Basri Sulthan d/a Muallimin Muhammadiyah" Kubang, Payakumbuh (West Sumatra), HAMKA stated that he initially supported

<sup>26</sup> Muhammad Rofiq Muzakkir, 'Tujuh Alasan Ulama Pra Modern Menolak *Hisab* dan Jawaban Terhadapnya', in *Argumentasi Hisāb Muhammadiyah*, ed. by Rahmadi Wibowo (MTT PP Muhammadiyah, 2014), pp. 51–73.

<sup>27</sup> Syamsul Anwar, 'Unified Islamic Calendar in the Perspective of Islamic Legal Philosophy', *Al-Jami'ah*, 2016, doi:10.14421/ajis.2016.541.203-247.

*ḥisāb*. However, after he attended the International Islamic Conference on April 21–27, 1969, in Kuala Lumpur, Malaysia, and had many discussions with several scholars from various countries, he concluded that *rukyyat* is more by the Sunnah of the Prophet because many hadiths command it.

Hamka also mentioned the variant of *ḥisāb* in Muhammadiyah. He explained that in Muhammadiyah, there are criteria for the *ḥaqīqī* horizon, which is now known as the form of *hilāl*, and the *mar'ī* horizon, which is now known as *imkān al-rukyyat*. Sa'aduddin Jambek employed the latter criterion, and HAMKA also adhered to this concept. As a result, HAMKA's decision to determine the beginning of the Islamic month was different from Muhammadiyah's and turned out to be the same as the government's decision. Because of this, HAMKA received criticism from his colleagues in Muhammadiyah. Despite this, HAMKA remains steadfast in his beliefs and refuses to submit to the decisions made by the Muhammadiyah central management.<sup>28</sup>

## 2. Islamic Calendar on Nahdlatul Ulama's Views

To see the views of NU about the determination of the beginning of the Islamic month, it is necessary to present the chronological and historical views of NU scholars from the early days of the establishment of this religious organisation. Among the main figures and founders of NU were *Rāis Akbar* and *Kiai Hasyim Asy'ari*, who greatly colored the thinking of the religious organisation. *Kiai Hasyim Asy'ari* was known as a scholar who was very expert in the field of hadith and had a sanad (narrative chain) of hadiths from both Sahih al-Bukhari and Muslims from *Kiai Mahfudz Termas*. Because of this expertise in the field of Hadith, *Kiai Muhammad Kholil Bangkalan*, who is one of his teachers, taught Hadith to *Kiai Hasyim Asyari*. *Kiai Hasyim's* expertise in Hadith has an influence on his thinking in determining the beginning of the Islamic month. This can be deduced from the incident when *Kiai Hasyim Asy'ari* reprimanded his son-in-law, *Kiai Maksum Ali*, Seblak, and Jombang, who is an astronomy expert, to determine the beginning of the Islamic month using *ḥisāb* and earlier than the government. *Kiai Hasyim* believes the government controls the Islamic month's start, hence the reprimand.<sup>29</sup>

It was *Kiai Hasyim Asy'ari's* right to scold *Kiai Maksum Ali* because he was empowered to announce the start of the Islamic month. It was also because *Kiai Hasyim Asy'ari* has a preference for using *rukyyat al-hilāl* to find the start of the Islamic month. This is because the results of *ḥisāb* are usually preceded by the results of *rukyyat al-hilāl*. In addition, *Kiai Abdurrahman Wahid (Gus Dur)* received

<sup>28</sup> HAMKA, *Saya Kembali ke Rukyyat: Menjelang 1 Ramadhan 1392 H*.

<sup>29</sup> Abdul Mun'im DZ, 'Cara Mbah Hasyim Menegur Menantu Soal Hari Raya', <https://jatim.nu.or.id/Rehat/Cara-Mbah-Hasyim-Menegur-Menantu-Soal-Hari-Raya-NhbCX>, 2020.

information from *Kiai* Bisri Syamsuri that *Kiai* Hasyim Asy'ari and *Kiai* Bisri Syamsuri had carried out *rukyat al-hilāl* activities on Tunggorono Mount in the west of Jombang Town.<sup>30</sup> The view of *Kiai* Hasyim was most likely influenced by his expertise in hadith; in many hadiths, it is clearly stated that the Prophet Muhammad set the beginning of the Islamic month by using *rukyat al-hilāl* and never used *hisāb*. This suggests that in NU's early days, there were two schools of thought at the beginning of the Islamic month: the *rukyat* and the *hisāb* groups.

The author's research shows that the 20th Nahdlatul Ulama Congress, which took place in Surabaya from September 10th to September 15th, 1954, is where NU's general view on how to determine the start of the Islamic month can be traced back. The talk about deciding the start of the Islamic month among NU members is in response to a question from people in the Banyuwangi Branch about the law of announcing the start of the Islamic month (in this case, Ramadan, Shawwal, and Zulhijjah) with *hisāb*, or the law of the person who believes in it, before the government makes a decision. In the 20th Nahdlatul Ulama congress in Surabaya, it was decided that the law of announcing the results of the beginning of the Islamic month with *hisāb* is not permissible because it is not in the Prophet and *Khulafā' al-Rāsyidūn* (the Prophet's Companions). In addition, the announcement could cause disputes among Muslims. The congress advised the government to prohibit this. The decision of the congress refers to the book of *al-Bughyah* and the book of *al-Fatāwā al-Kubrā*. From this decision, it can be concluded that NU is guided by *rukyat al-hilāl*, and the authority to determine the beginning of the Islamic month is held by the government.<sup>31</sup> Related to NU's view of government authority, it seems to be a follow-up to NU's view of the 1954 National Scholars Conference in Cipanas.<sup>32</sup>

It was decided at the National Conference of Nahdlatul Ulama scholars in Situbondo on October 21, 1983, that if the government decides that *hisāb* marks the start of the Islamic month, then it is not necessary to follow. The majority of Salaf (classic) scholars hold the view that the commencement of Ramadan and the start of Shawwal are merely *rukyat al-hilāl* and *isti'māl*, signifying the completion of the month by 30 days.<sup>33</sup> The decision of the National Assembly seems to have been triggered by a situation where the Minister of Religious Affairs Munawir Sjadzali,

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<sup>30</sup> Yusuf Suharto, 'Laporan Rukyat KH Bisri Syamsuri Kepada KH Hasyim Asy'ari', <https://www.nu.or.id/Fragmen/Laporan-Rukyat-Kh-Bisri-Syamsuri-Kepada-Kh-Hasyim-Asy-Ari-X1TT4>, 2022.

<sup>31</sup> Ahmad Izzuddin, *Fiqh Hisab Rukyat* (Erlangga, 2007).

<sup>32</sup> A. Khoirul Anam, 'Waliyul Amri 1954: Penyerahan Kedaulatan Itsbat Ramadhan Kepada Pemerintah', <https://www.nu.or.id/Fragmen/Waliyul-Amri-1954-Penyerahan-Kedaulatan-Itsbat-Ramadhan-Kepada-Pemerintah-5RTBT>, 2017.

<sup>33</sup> Izzuddin, *Fiqh Hisab Rukyat*.

who is known to be close to Muhammadiyah<sup>34</sup> and the results of the *isbat* decision at the beginning of the Islamic month are largely based on *ḥisāb*.<sup>35</sup> The 27th NU Congress, th.1405 H/1984 AD, also affirmed this decision.<sup>36</sup>

Because Munawir Sjadzali served as Minister of Religious Affairs for two periods, namely from March 19, 1983, to March 17, 1993,<sup>37</sup> The decision of the National Conference and the Congress mentioned above was reaffirmed in the Alim Ulama National Conference in Cilacap, which was held on 23–24 Rabiul Awal 1408 H/15–16 November 1987 at the Ihya Ulumuddin Islamic Boarding School, Kesugihan, Cilacap, Central Java. The National Congress emphasised that the initial determination the government imposes on the general public can be justified if it is based on *rukyat al-hilāl* or *isti'māl*. In determining the beginning of the Islamic month, NU uses state *maṭla'*; when somewhere in Indonesia there is a testimony of the *hilāl* and reported to the government, the decision to determine the beginning of the Islamic month with the testimony applies to all people in all regions of Indonesia. The implementation of *rukyat al-hilāl* is *farḍ al-kifāyah* (communal responsibility). When the government implements *rukyat al-hilāl*, it is quite representative of all Indonesian people.<sup>38</sup>

At the National Scholars Conference in 1987, it was also told that the Falakiyyah committee of the Executive Board of Nahdlatul Ulama should help put the principle of *rukyat al-hilāl* or *isti'māl* into practice by doing *rukyat al-hilāl* activities and telling the government about the results. Any NU resident must follow the government's decision if it's based on *rukyat al-hilāl* or *isti'māl*, but not if it's based on *ḥisāb*. This is based on the opinion of the majority of Salaf (classic) scholars and is protected by the 1945 Constitution.<sup>39</sup>

In 1992, the Falakiyyah committee of Nahdlatul Ulama held a meeting in Pelabuhan Ratu. It was decided that *rukyat al-hilāl* or *isti'māl* would mark the start of the Islamic month because that is how the Prophet Muhammad and *Khulafā' al-Rāsyidūn* did it, and that is also how most scholars from the four Islamic law schools see it. The *ḥisāb* method was never practiced by the Prophet Muhammad and *Khulafā' al-Rāsyidūn*, and its validity is debated by scholars. The *isbat* (determination) of the beginning of the Islamic month with the *ḥisāb* method is not

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<sup>34</sup> M. Fuad Nasar, 'Munawir Sjadzali: Profil Diplomat, Pemikir dan Menteri Agama', <https://Fuadnasar.Wordpress.Com/2020/04/26/Munawir-Sjadzali-Profil-Diplomat-Pemikir-Dan-Menteri-Agama/>, 2020.

<sup>35</sup> Susiknan Azhari, 'Karakteristik Hubungan Muhammadiyah dan NU dalam Menggunakan Ḥisāb dan Rukyat', *Al-Jami'ah: Journal of Islamic Studies*, 2006, doi:10.14421/ajis.2006.442.453-486.

<sup>36</sup> Izzuddin, *Fiqih Hisab Rukyat*.

<sup>37</sup> Jaja Sudarno, 'Menteri Agama dari Masa ke Masa', <https://Bengkulu.Kemenag.Go.Id/Page/Menteri-Agama-Dari-Masa-Ke-Masa>, 2023.

<sup>38</sup> Izzuddin, *Fiqih Hisab Rukyat*.

<sup>39</sup> Izzuddin, *Fiqih Hisab Rukyat*.

justified in the view of the scholars of the four madhhab (Islamic law schools). Following the teachings of the Prophet Muhammad and *Khulafā' al-Rāsyidūn*, as well as the opinions of scholars from the four madhhabs, NU is a religious group that makes decisions.<sup>40</sup> During the 30th NU Congress, which took place at the Lirboyo Islamic Boarding School in Kediri, East Java, from November 21–27, 1999 (the state), the *Bahsul Masāil* (Islamic Law Discussion) team talked about the boundary line for *rukyat* (*mathla'*). They decided that the *maṭla'* used is the *maṭla' fī wilāyah al-ḥukmī* (one country). The decision was made in response to *Ḥizb al-Tahrīr*'s use of global *rukyat*, which means that if the *hilāl* is seen in one place on earth, all Muslims around the world must follow the decision.<sup>41</sup>

In the 2006 National Gathering of the Falakiyyah Institution of NU (LFNU) in Semarang (Central Java), it was decided that to determine the beginning of the Islamic month, the *rukyat al-hilāl* must be used. The decree made it clear that *rukyat al-hilāl* is not only used during the three months of Ramadan, Shawwal, and Zulhijjah. For the other nine months, NU meetings have decided to use the *ḥisāb* method. The basis for the decision in carrying out the beginning of each Islamic month refers to the scholars such as Sayyid Abdurrahman, which is enshrined in the Book of *Bughyah al-Mustarsyidīn*. The LFNU regularly determines the Hijri Nahdlatul Ulama Calendar (KHNU) using the *rukyat al-hilāl* method<sup>42</sup>

In the use of the *rukyat al-hilāl* method, NU makes *ḥisāb* as a means of support. NU sets the criteria for *imkan al-rukyat*, which is used to accept or reject the results of *rukyat al-hilāl*. The *imkān al-rukyat* criteria used by NU were initially the Cisarua 1998 and 2011 criteria. A meeting of the *Ḥisāb Rukyat Board* (BHR) took place at the USSU Cisarua hotel on March 24–26, 1998. Everyone agreed that *imkān al-rukyat* happens when there is a difference in elevation of at least 3 degrees, the Moon is at least 8 hours old, and the visible crescent is at least 2 degrees higher than where the observers are standing. The rules were changed at a meeting of the *Ḥisāb Rukyat Board* (BHR) on September 19–21, 2011, at the USSU Cisarua Hotel. Now, an *imkān al-rukyat* is present when the *hilāl mar'ī* is at least 2 degrees high, the moon is at least 8 hours old, and the elongation is at least 3 degrees.<sup>43</sup> These criteria are also the criteria used by MABIMS.<sup>44</sup>

<sup>40</sup> Izzuddin, *Fiqh Hisab Rukyat*.

<sup>41</sup> Izzuddin, *Fiqh Hisab Rukyat*.

<sup>42</sup> Muh. Ma'rufin Sudibyo, 'Batas Ketinggian pada Qathiy dan Imkanur Rukyah dalam Kajian Falakiyah' <https://www.nu.or.id/opini/batas-ketinggian-pada-qathiy-dan-imkanur-rukyah-dalam-kajian-falakiyah-21x8n>, <https://www.nu.or.id/opini/batas-ketinggian-pada-qathiy-dan-imkanur-rukyah-dalam-kajian-falakiyah-21x8n>, 2022.

<sup>43</sup> Rupi'i Amri, 'Upaya Penyatuan Kalender Islam di Indonesia :Studi Atas Pemikiran Thomas Djamaluddin', *Ishraqi*, 10.1 (2012), pp. 9–10.

<sup>44</sup> Susiknan Azhari, 'Visibilitas Hilāl MABIMS dan Implementasinya', <http://MuseumAstronomi.Com/Visibilitas-Hilāl-Mabims-Dan-Implementasinya/>, 2023.

At the 34th Congress of Nahdlatul Ulama in 2021 in Lampung, the Diniyah Waqi'iyah (Contemporary Religious Issues) commission produced three decisions related to the position of astronomy in determining the beginning of the Islamic month. To begin, the *imkān al-rukyat* criteria can be a requirement for the *rukyat al-hilāl* report to be accepted if it comes from at least five different types of *ḥisāb*, all of which are considered to be accurate astronomical calculations. These include *ḥisāb ḥaqīqī*, *taḥqīqī*, and contemporary. The second rule is that *rukyat al-hilāl* doesn't have to be done if, according to at least five accurate astronomical calculations, *hilāl* is below the horizon on the 29th of the lunar month. Third, we can discard the *ikmāl* (the lunar month that exceeds 30 days) if it reduces the next lunar month to only 28 days. This happens if the *hilāl* is already very high on the 29th of the lunar month according to at least five styles of falak *qaṭ'ī* but can't be seen at the time of *rukyat al-hilāl*. We refer to this concept as *nāfī al-isti'māl*, which eliminates the month's fulfilment, or *qaṭ'ī al-rukyat*, which confirms the sighting of the new moon.<sup>45</sup>

The idea behind *qaṭ'ī al-rukyat* comes from the fact that the Islamic calendar has both important material rules and formal rules that are about how things should be done. Based on the material rules of the Islamic calendar, the number of days in an Islamic month is 29 or 30. Meanwhile, the formal rule determines the beginning of the Islamic month using *rukyat al-hilāl*. Like when the number of days in the lunar month goes from 30 to 28, following formal rules doesn't mean anything if it means breaking material rules. We refer to this practice as *rukyat al-hilāl*. This is due to the need for material rules to take precedence.<sup>46</sup> This is similar to the case of *Gharawain* in Islamic inheritance. Based on the material rules of Islamic inheritance, the male part is twice as much as the female part. However, in cases where the heirs consist of the wife/husband, mother, and father, a mother based on formal procedural rules gets a third of the entire inheritance, and the father deposits the rest. This causes the mother to get more wealth than the father. Caliph Umar ibn al-Khattab established the *ijtihād* to allocate the mother's share, along with one-third of the remaining amount, following the determination of the wife's or husband's share. This ensures that the father's share surpasses the mother's.<sup>47</sup>

Through a letter with the number B-79/DJ. III/HM. 00/02/2022, the government of the Republic of Indonesia put in place a new *imkān al-rukyat* standard on February 25, 2022. It is called the Neo-MABIMS standard and has a

<sup>45</sup> Muh. Ma'rufin Sudiby, 'Akankah NU Terapkan Kriteria Baru Imkan Rukyah?', <https://www.nu.or.id/opini/akankah-nu-terapkan-kriteria-baru-imkan-rukayah-koaff>, 2022.

<sup>46</sup> Sudiby, 'Batas Ketinggian pada Qathiy dan Imkanur Rukyah dalam Kajian Falakiyah' <https://www.nu.or.id/opini/batas-ketinggian-pada-qathiy-dan-imkanur-rukayah-dalam-kajian-falakiyah-2lx8n>.

<sup>47</sup> Yazid Muttaqin, 'Mengenal Masalah Gharawain dan Bagian Tsuluts Baqi dalam Warisan', <https://islam.nu.or.id/warisan/mengenal-masalah-gharawain-dan-bagian-tsuluts-baqi-dalam-warisan-gl3b>, 2018.

height of 3 degrees and a *hilāl* elongation of 6.4 degrees.<sup>48</sup> A group of astronomers from the NU region and branches got together in February 2022 to talk about this problem. They agreed to use the Neo-MABIMS criteria as the standards for *imkān al-rukyat* of Nahdlatul Ulama (IRNU). The governments of several countries in Southeast Asia have agreed upon this criterion. In addition, several scientific reasons are also taken into consideration. In one of them, Hendro Setyanto and Khafid simulated where the Moon and Sun would be after *ijtimā'* for 185 lunar years (183 solar years), from August 1924 to February 2103; they found that the Moon would be above the horizon at sunset when its elongation was at least 6.4 degrees.<sup>49</sup>

The Falakiyyah Institute of the Executive Board of Nahdlatul Ulama (PBNU) held its Rakernas (National Working Meeting) in Bandung, West Java, on December 10, 2022. The meeting agreed to adhere to the *qaṭ'i al-rukyat* of Nahdlatul Ulama (QRNU) criteria, which stipulates a minimum elongation of 9.9 degrees. When the *hilāl* isn't visible and the lunar month's age is set at 29 days, this criterion stops the *isti'māl* from taking place, which means that the lunar month goes full after 30 days. The formulation of the QRNU concept aimed to maintain the moon's lifespan between 29 and 30 days. This was because one month was recorded as 28 days old and another as 31 days old. The age of the 28-day moon has occurred in Saudi Arabia, namely in Ramadan 1404 H (1984). Therefore, the Saudi Arabian government mandates that its citizens observe a one-day Ramadan *qadā'* (pay off) fast after Eid al-Fitr.<sup>50</sup>

In the Rakernas (National Working Meeting) of the *Falakiyyah* Institute of the Executive Board of Nahdlatul Ulama (PBNU) in Bandung, West Java, on December 10, 2022, it was agreed to implement the *Qaṭ'i Rukyah* of Nahdlatul Ulama (QRNU) criteria, namely a minimum elongation of 9.9 degrees. This criterion causes the non-implementation of *isti'māl* (the fulfillment of the lunar month is 30 days) when the *hilāl* is not visible and the age of the lunar month is set at 29 days. The QRNU concept was formulated in order to keep the moon's lifespan between 29 or 30 days. Because there was an incident where one month was 28 days old and 31 days old. The age of the 28-day moon has occurred in Saudi Arabia, namely in Ramadan 1404 H (1984). So that the Saudi Arabian government requires its citizens to do one day of Ramadan *qadā'* (pay off) fasting after Eid al-Fitr.<sup>51</sup>

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<sup>48</sup> Rajudin, 'Kakanwil Ajak Masyarakat Saling Menghargai terhadap Perbedaan Penetapan Idul Fitri', <https://kalsel.kemenag.go.id/Berita/578082/Kakanwil-Ajak-Masyarakat-Salin>, 2023.

<sup>49</sup> Sudibyoy, 'Akankah NU Terapkan Kriteria Baru Imkan Rukyah?'

<sup>50</sup> Sudibyoy, 'Akankah NU Terapkan Kriteria Baru Imkan Rukyah?'

<sup>51</sup> Muhammad Syakir NF, 'Falakiyah PBNU Tetapkan Kriteria Qaṭ'i Rukyah dengan Elongasi Minimal 9,9 Derajat Sumber: <https://nu.or.id/Nasional/Falakiyah-Pbnu-Tetapkan-Kriteria-Qath-Iy-Rukyah-Dengan-Elongasi-Minimal-9-9-Derajat-BrEZA> ', <https://nu.or.id/Nasional/Falakiyah-Pbnu-Tetapkan-Kriteria-Qath-Iy-Rukyah-Dengan-Elongasi-Minimal-9-9-Derajat-BrEZA>, 2022.



As part of the *Bahtsul Masāil* Institute (LBM), the Executive Board of Nahdlatul Ulama (PBNU) talked about fiqh's views on the use of optical devices, cameras with astronomical filters, and image processing techniques in *rukyat al-hilāl*. This was discussed in the Islamic Law and Istinbath of *Bahtsul Masāil* Seminar on July 18, 2024, at the GreenSA Inn & Training Centre of the State Islamic University of Sunan Ampel Surabaya, East Java. The forum agreed that the *rukyat al-hilāl* can use any tool that gives confidence that it can be seen, even if it cannot be seen right away. However, the Administrator of the *Bahtsul Masāil* Institution (LBM) PBNU, Kiai Najib Bukhori, noted that the use of these tools is allowed as long as the position of the moon is in the position of *imkān al-rukyat* or may be able to be seen. *Rukyat* that is only taken based on photography or using tools is still allowed. So long as the *hilāl* is in the *imkān al-rukyat* position and done at night or after sunset, using a photographic device to increase the contrast between the sky and the *hilāl* is justified. Observation of the new moon during the day or before sunset is not allowed.<sup>52</sup>

### 3. Adopting science and technology

In its history, Muhammadiyah has used the *rukyat* method as practiced by Kiai Ahmad Dahlan in the early days of the establishment of Muhammadiyah, although the use of *rukyat* is also accompanied by the science of *ḥisāb* because the *rukyat* is also carried out by Muhammadiyah *ḥisāb* experts. However, over time, Muhammadiyah began to adopt science, namely the science of *ḥisāb*, as the only method of determining the beginning of the Islamic month. Muhammadiyah uses *ḥisāb* with the criteria of *wujūd al-hilāl*, where the position of the *hilāl* is above zero degrees above the western horizon. However, the use of science, or *ḥisāb*, as the only method of determining the beginning of the Islamic month was also rejected by one of the Muhammadiyah figures, namely Haji Abdul Malik Karim Amrullah, known as HAMKA. He considers that the use of *ḥisāb* with the criteria of the *hilāl* form is not in accordance with the sunnah. Therefore, Hamka is more likely to follow the *rukyat* method than *ḥisāb*.

In the early days, Muhammadiyah used *Maṭla' wilāyatul Ḥukmi* (Enforcement of the law for a single country), where the state boundary was the area of *ḥisāb* enforcement. However, along with the development of information and communication technology such as the internet and others, Muhammadiyah began to adopt *Global Maṭla'*, where the whole world uses the calendar at the same time. Muhammadiyah is of the view that the availability of computers and the internet

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<sup>52</sup> Nuriel Shiami Indiraphasa, 'Rukyatul Hilāl Boleh Gunakan Alat Asal Posisi Bulan Sudah Imkanur Rukyah', <https://Nu.or.Id/Nasional/Rukyatul-Hilāl-Boleh-Gunakan-Alat-Asal-Posisi-Bulan-Sudah-Imkanur-Rukyah-MvQFK>, 2024.

makes it easier to calculate the position of the new moon around the world. With the existence of global communication and confirmation tools, the unification of the Islamic calendar around the world can be carried out.

In contrast to Muhammadiyah, in the early days of the establishment of Nahdlatul Ulama, there was a difference in determining the beginning of the Islamic month. In NU, there are people who use *rukyat*, and there are also those who use *hisāb*. The difference between Kiai Hasyim Asyari, who uses *rukyat*, and Kiai Maksum Ali, who prefers to use *hisāb*, demonstrates this. This suggests that there was initially a difference in NU's acceptance of science when it came to determining the beginning of the Islamic month. In the later period, Nahdlatul Ulama officially established *rukyat* as a method for determining the beginning of the Islamic month. In the later period, NU adopted *hisāb* as a means to support *rukyat*. According to the system, it appears that NU, as an organisation, has begun to adopt science, even though it is not completely like Muhammadiyah.

Even so, there are also NU residents who only use *rukyat* and reject *hisāb*. This can be seen in the difference between the NU Regional Management of East Java and the NU Executive Board in the determination of Eid al-Fitr 1427 H. The establishment of the East Java Regional Manager of NU (PWNU) coincided with the inauguration of Muhammadiyah on October 23, 2006. Meanwhile, PBNU, together with the government, set Eid on October 24 because it is based on the criteria of *hisāb imkān al-rukyat* (visibility of the *hilāl*). Ali Maschan Moesa, who was Chairman of PWNU East Java at the time, heard a testimony of the *hilāl* at Gebang Beach, Bangkalan. This was because many Islamic boarding schools in East Java, including Tremas Pacitan Boarding School and the Boarding Schools of Sukorejo Situbondo, Sidogiri, Genggong Pasuruan, Lirboyo, and Ploso Kediri, celebrated Eid al-Fitr as decided by PWNU East Java.<sup>53</sup>

There are also NU residents who use *hisāb* only. For example, the Salafiyah Al-Falah Ploso Islamic Boarding School (*Ponpes*), Kediri, East Java, which uses the pure *hisāb* method with the criteria of *imkān al-rukyat* 2 degrees. The references used are the book *Sullam al-Nayyrain, al-Durr al-Aniq*, and the Ephemeris method.<sup>54</sup> Even though *rukyat* is the official method of Nahdlatul Ulama, NU will only use *hisāb* in certain situations. These include when the *hilāl* is at the position of *Qaṭī al-rukyat* and the position of the *hilāl* is at least 9.9 degrees off-center. However, in the later period, the Executive Board of Nahdlatul Ulama (PBNU) through the *Bahtsul Masā'il* Institute (LBM) discussed the views of *fiqh* related to the use of optical tools and

<sup>53</sup> 'Warga NU Jatim Ikut Berlebaran', <https://News.Detik.Com/Berita/d-699758/Warga-Nu-Jatim-Ikut-Berlebaran>, 2006.

<sup>54</sup> "Pesantren Al Falah Ploso Kediri Putuskan Hari Raya Idul Fitri 1 Syawal 1444 H Jumat 21 April 2023", <https://mediabrantas.id/ponpes-al-falah-ploso-rayakan-idul-fitri-1444-h-hari-jumat/>,

cameras equipped with astronomical filters and image processing techniques in the *rukyat al-hilāl*.<sup>55</sup>

The selection of these methods and criteria reflects the differences in their paradigms for understanding religious texts related to determining the beginning of the Islamic month. Muhammadiyah holds the belief that these religious texts are *ta'aqqulī* (reasonable), allowing for their interpretation in accordance with changes in time and conditions.<sup>56</sup> Meanwhile, Nahdlatul Ulama views these texts as *ta'abbudī* (worship), necessitating their acceptance without questioning their origin. Any new material due to circumstances is only a supplement, not a change in meaning. For the latter, it is based on the principle of *ta'aqqulī*. This shows why Muhammadiyah uses *ḥisāb*, even though Hadith texts say to use *rukyat al-hilāl*. It also shows why Nahdlatul Ulama continue to wear *rukyat al-hilāl* and use *ḥisāb* as a support even though it is possible to wear only *ḥisāb* right now.

In a broader sense, the perspectives of these two organisations pertain to modernity. Muhammadiyah seems to take a larger portion in adopting modern products in religious practice, while Nahdlatul Ulama emphasises more on maintaining tradition and maintaining the literal meaning of the text rather than interpreting it in the context of the modern world. This, of course, will affect the second adaptation to the development of science and technology in the application of Islamic law, especially matters related to worship.

Other religious activities also highlight the differences between Nahdlatul Ulama, which is traditionalist, and Muhammadiyah, which has a modernist character. Nahdlatul Ulama is more accommodating to local culture by integrating with Islamic values, while Muhammadiyah tends to reject this. This is shown in Indonesia's model of commemorating Islamic holidays like the Prophet's Birthday, praying for the deceased, and using the event's car to start the Islamic month.<sup>57</sup>

#### D. Conclusion

At first, Muhammadiyah used *rukyat al-hilāl* to figure out when the first day of the Islamic month was. But as science and technology improved, Muhammadiyah switched to using *ḥisāb* based on *Wujud al-Hilāl*. Eventually, they switched to using the global *maṭla'* to make the Islamic calendar more unified. Unlike Muhammadiyah Nahdlatul Ulama, who utilise science solely as a tool to support *rukyat*, they believe

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<sup>55</sup> Nuriel Shiami Indiraphasa, "Rukyatul Hilāl Boleh Gunakan Alat Asal Posisi Bulan Sudah Imkanur Rukyat", <https://nu.or.id/nasional/rukkyatul-hilal-boleh-gunakan-alat-asal-posisi-bulan-sudah-imkanur-rukayat-mvQFK>, accessed October 21, 2024.

<sup>56</sup> Yunahar Ilyas, Fiqh Ulil Amri: Perspektif Muhammadiyah, <https://Tarjih.or.id/wp-content/uploads/2020/08/Fiqh-Ulil-Amri-Perspektif-Muhammadiyah.pdf>, accessed 23/ January 2025

<sup>57</sup> Anisha Nurul Fatimah dan Muh. Nur Rochim Maksum, 'Perayaan Hari Besar Muhammadiyah dan Nahdlatul Ulama' *Jurnal Budi Pekerti Agama Islam*, Vol. 2, No. 5 Oktober 2024, 207-219.

that *rukyat* is the most reliable method, supported by the evidence of sharia. Only certain conditions, such as the position of the *hilāl* in *Qat'ī al-Rukyat*, allow for the use of science as the exclusive method. Some of these things show that Muhammad has a pure modernist character, while Nahdlatul Ulama tends to be traditionalist, even though it also adopts modern things such as the *ḥisāb* method and photography as a support for *rukyat al-hilāl* activities. This shows that Nahdaltul Ulama has an eclectic character.

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