

**Determining the Beginning of Zulhijjah  
1445H/2024**

**Office of the Mufti**

**June 2024**

*Office* OF  
THE *Mufti*

## بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ

الحمد لله رب العالمين والصلاة والسلام على رسول الله وعلى آله وصحبه ومن والاه

Astronomers have determined several parameters and criteria for the *Imkanur Ru'yah* method. The current criteria of the *Imkanur Ru'yah* method stipulate that (i) the minimum altitude of the crescent must be 3 degrees, and (ii) the minimum angular separation (elongation) between the sun and the moon must be 6.4 degrees during sunset.

Based on the new crescent moon data on 29 Zulkaedah 1445H / 7 June 2024, they meet the *imkanur ru'yah* criteria set by the MABIMS (Menteri Agama Brunei Darussalam, Indonesia, Malaysia, and Singapore) countries. This means that **the new crescent moon of Zulhijjah 1445H can potentially be seen** above the horizon of Singapore during sunset.

The new crescent moon data on 29 Zulkaedah 1445H are as follows:

<b>Location</b>	Tuas, Singapore. 1.2949° N, 103.6305° E
<b>Date</b>	7 June 2024 / 29 Zulkaedah 1445H
<b>Time of Maghrib</b>	1910h
<b>Conjunction</b>	06/06/2024, 2037h
<b>Altitude</b>	9.7°
<b>Elongation</b>	12°

Thus, the first day of Zulhijjah for the year 1445H falls on 8th June 2024, as officially announced by the Mufti.

**Office of the Mufti**

# **Explanatory Note**

**Office of the Mufti, Singapore**  
**June 2024**

*Office* OF  
THE *Mufti*

## Topics

1. The Accepted Approaches in Determining the Beginning of the *Hijri* Islamic Calendar
2. Astronomical Calculations in Matters of Worship
3. Determining the Beginning of The *Hijri* Month Through *Hisāb* Calculations
4. Understanding the Context of Adopting *Ru'yah* (Sighting) in Determining the Beginning of Ramadan
5. Utilizing Astronomical Calculations in the Context of Singapore
6. The Method of *Imkanur Ru'yah* & Its Criteria
7. The Conflict Between Astronomical Calculation and Claims of the Sighting of the New Crescent Moon
8. Conclusion

## The Accepted Approaches in Determining the Beginning of the *Hijri* Month

There are two ways to determine the beginning of Islamic months: (1) *Ru'yah*, that is to sight the new crescent moon using naked eye or through aided vision such as telescopes or binoculars; (2) *Hisāb*, or by making astronomical calculations.

Generally, *ru'yah* or the sighting of the new crescent moon (*hilāl*) is the approach adopted by a large segment of the Muslim community. This approach is based on the hadith of the Prophet (p.b.u.h.):

صُومُوا لِرُؤْيَيْتِهِ وَأَفْطِرُوا لِرُؤْيَيْتِهِ فَإِنْ غَمَّ عَلَيْكُمْ فَأَكْمِلُوا الْعِدَّةَ ثَلَاثِينَ

Meaning: “Observe fast upon sighting it (the new crescent moon) and break fast upon sighting it. If it is concealed from you, complete the days of fasting with the thirtieth (day of Sya’ban).”<sup>1</sup>

The second approach that is also accepted by Islamic scholars is the use of *hisāb* calculations. The method of *imkanur ru'yah* is among the methods that adopt the *hisāb* calculation. This is based on the hadith of the Prophet (p.b.u.h.):

لَا تَصُومُوا حَتَّى تَرَوْا الْهِلَالَ وَلَا تُفْطِرُوا حَتَّى تَرَوْهُ فَإِنْ غَمَّ عَلَيْكُمْ فَأَقْدِرُوا لَهُ

Meaning: “Do not fast until you see the new moon, and do not stop fasting until you see it (the new crescent moon). For if the new crescent moon is concealed from you, make an estimation for it.”<sup>2</sup>

The difference in narration and interpretation of texts, such as Al-Quran and Hadith, as well as the differences among the community in a branch issue (*Furū'*) is a form of mercy for the people of Prophet Muhammad (p.b.u.h.).<sup>3</sup> The differences in opinion and interpretation give rise to solutions for certain conditions. This is highlighted by Imam Asy-Sya'rani in *Al-Mīzān al-Kubrā*.<sup>4</sup> For instance, the method that considers new moon sighting as a requirement for

<sup>1</sup> An-Nasa'i, *Sunan an-Nasa'i*, hadith 2124.

<sup>2</sup> An-Nasa'i, *Sunan an-Nasa'i*, hadith 2118.

<sup>3</sup> Al-Uthmāni, *Raḥmat al-Ummah fi Ikhtilāf al-A'immah*, 4.

<sup>4</sup> Al-Sha'rāni, *Al-Mīzān al-Kubrā*, (Mesir: Matba'ah Mustafa al-Halabi), 3.

determining the beginning of a new month may not be applicable in certain locations due to factors like atmospheric conditions and other variables.

### **Astronomical Calculations (*Hisāb*) in Matters of Worship**

Generally, the religion accepts the *hisāb* method as one of the accepted sources of knowledge. This is due to the fact that scholars concluded that there is no contradiction between the interpretation of religious texts and other sciences such as the science of calculation.<sup>5</sup> For instance, *hisāb* has been a main source of deliberation in determining some core matters in the religion, such as the calculation of daily prayer times based on the solar movement.

The same goes for determining the beginning of the *hijri* month through calculation. The ex-mufti of Egypt, Dr Ali Gomaa, has made an analogy (*Qiyās*) between determining the beginning of Ramadan through *hisāb* and determining the start of prayer times.<sup>6</sup>

### **Understanding The Context of Adopting *Ru'yah***

Some people are of the view that the adoption of the *hisāb* method in determining the beginning of the *hijri* month is an unacceptable method based on the following hadith of the Prophet:

صُومُوا لِرُؤْيَيْهِ وَأَفْطِرُوا لِرُؤْيَيْهِ فَإِنْ غَمَّ عَلَيْكُمْ فَأَكْمِلُوا الْعِدَّةَ ثَلَاثِينَ

Meaning: “Observe fast upon sighting it (the new crescent moon) and break fast upon sighting it. If it is concealed from you, complete the days (of fasting) with thirty (days of Sya’ban).<sup>7</sup>

However, to interpret this hadith accurately, it is necessary to consider other hadiths that demonstrate how the science of *hisāb* calculations was not commonly known or widespread

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<sup>5</sup> Al-Mutī'ie, *Taufīq al-Rahmān li al-Taufīq Baina Mā Qālahu Ulamā' al-Hai'ah wa Baina Mā Jā'a fi al-Aḥādīth al-Saḥīḥah wa Āyāt al-Qur'an*, (Egypt: Matba'ah al-Sa'adah), 28.

<sup>6</sup> Ali Gomaa, <https://www.dar-alifta.org/ar/fatawa/13817/%D8%A7%D9%84%D8%AD%D8%B3%D8%A7%D8%A8-%D8%A7%D9%84%D9%81%D9%84%D9%83%D9%8A-%D9%88%D8%A7%D9%84%D9%88%D8%B3%D8%A7%D9%8A%D9%84-%D8%A7%D9%84%D8%B9%D9%84%D9%85%D9%8A%D8%A9-%D8%A7%D9%84%D8%AD%D8%AF%D9%8A%D8%AB%D8%A9-%D9%81%D9%8A-%D8%B1%D9%88%D9%8A%D8%A9-%D8%A7%D9%84%D9%87%D9%84%D8%A7%D9%84>

<sup>7</sup> An-Nasā'i, *Sunan an-Nasā'i*, hadith 2124.

during the time of the Prophet (p.b.u.h.). In fact, most Arab communities at that time were illiterate and did not have the foundations for the science of *hisāb* calculations. This matter was emphasised by Imam Al-Syātibī in al-Muwāfaqāt<sup>8</sup>. The Prophet (p.b.u.h.) said:

إِنَّا أُمَّةٌ أُمِّيَّةٌ، لَا نَكْتُبُ وَلَا نَحْسِبُ الشَّهْرَ هَكَذَا وَهَكَذَا . يَعْني مَرَّةً تِسْعَةً وَعِشْرِينَ، وَمَرَّةً

ثَلَاثِينَ

Meaning: “We are an illiterate people; we do not write and we do not count the months in this or that way. Meaning: sometimes 29 (days) and sometimes 30 (days).<sup>9</sup>

Based on this hadith, the reason the Prophet (p.b.u.h.) made the new crescent moon as a sign of the beginning of the *hijri* month is that the sighting (or *ru'yah*) of the new crescent moon was a practice that could be done by all members of the community, whether they were illiterate or otherwise.

It is crucial to observe how the hadith that considers the sighting of the new crescent moon as a sign of the beginning of the month does not forbid the use of *hisāb* as a means of determining the beginning of the month.

Regarding the hadith of the Prophet (p.b.u.h.) that permits the use of *hisāb* calculations to determine the start of Ramadan, the following hadith is relevant:

لَا تَصُومُوا حَتَّى تَرَوْا الْهَيْلَالَ وَلَا تُفْطِرُوا حَتَّى تَرَوْهُ فَإِنْ غَمَّ عَلَيْكُمْ فَأَقْدُرُوا لَهُ

<sup>8</sup> Al-Shātibī, *Al-Muwāfaqāt*, (Cairo: Dār Ibn Affān, 1997), 2:144. The Arabic text is as follows:

أما العمليات فمن مراعاة الأمانة فيها، أن وقع تكليفهم بالجلال في الأعمال والتقريبات في الأمور، بحيث يدرها الجمهور كما عزف أوقات الصلوات بالأمور المشاهدة لهم، كتعريفها بالظلال وطلوع الفجر والشمس وغروب الشفق وكذلك في الصيام.. وقال: (لا تصوموا حتى تروا الهلال ولا تفطروا حتى تروه فإن غم عليكم فأكلوا العدة ثلاثين) ولم يطلبنا بحساب مسير الشمس مع القمر في المنازل، لأن ذلك لم يكن من معهود العرب ولا من علومها، وإدقة الأمر فيه، وصعوبة الطريق إليه

Which means: “As for the command related to acts of worship, part of facilitating the affairs for illiterate people is to command them with (the observation of) big things in acts of worship and estimations in other affairs, such that these things can be seen by the majority, such as determining prayer times through things they can witness, such as shadows, the rise of the dawn, sunrise, sunset, the setting of twilight as well as in fasting. He (the Prophet p.b.u.h.) said: “Do not fast until you sight the new crescent moon, and do not stop fasting until you sight it. If it is concealed from you, then complete thirty days (of fasting).” Because it was not customary among the Arabs nor within their sciences, and due to the intricacy of the matter and the difficulty in reaching it.”

<sup>9</sup> Al-Bukhārī, *Saḥīḥ al-Bukhārī*, Hadīth 1913.

Meaning: “Do not fast until you sight the new crescent moon, and do not stop fasting until you sight it. If it is concealed from you, then make an estimation for it.”

The word "فاقدروا له" means “to make an estimation for it” if the new moon is concealed, due to factors like atmospheric conditions or other variables.

Ibn Surayj (d. 306h), a scholar of the Shafi'i school, provided an interpretation of the hadith by approximating the movement of the moon to identify the appearance of the new crescent moon.<sup>10</sup> In this era, the lunar movement can be accurately determined with precision through meticulous calculation by experts in astronomy/*falak*.

Ibn Surayj is also of the view that the hadith that makes new crescent moon sighting as a sign for the beginning of Ramadan is for those who do not have the expertise in making *hisāb* calculations. As for the narration that commands us to use estimation (that is, through *hisāb*), that is for those who have the expertise in the science of *hisāb* calculations in determining the presence of the new crescent moon.

### **Utilising Astronomical Calculation in the Context of Singapore**

In the context of Singapore, the Fatwa Committee of Singapore in 1974 had concluded that the beginning of Ramadan and Syawal can be determined through astronomical calculations.

This conclusion was based on verses of the Quran — namely, Surah Yunus verse 5 and Surah Ar-Rahman verse 5 — that highlight how the orbit of the moon, the sun, and other celestial bodies all adhere to the divine order set by Allah (s.w.t.). The Fatwa Committee at that time observed how some scholars in the past had reservations toward the science of astronomy due to the unavailability of sophisticated tools during their time and because the science had yet to develop. In addition, the mathematical calculations during that period were not as precise as they are today.

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<sup>10</sup> An-Nawāwi, *Al-Majmū' Sharḥ al-Muhazzab*, (Beirut: Dār al-Fikr), 6:222.



With the aid of advanced tools to verify the precision of astronomical calculations, the *hisāb* method has evolved into a scientific approach that is widely accepted for its accuracy in modern times.

### **The Method of *Imkanur Ru'yah* & Its Criteria**

The method of *imkanur ru'yah* aims to ascertain whether the new crescent moon can be sighted above the Western horizon at sunset.

This scientific calculation forms the guidance for astronomers and serves as the approach adopted in Singapore since 1974.

The method of *imkanur ru'yah* relies on the observations of astronomers, who have conducted numerous attempts to sight the new crescent moon and scrutinized the results. This means that if the weather and conditions are favorable, and the location of the moon sighting is suitable (such as being in an open area of the Western horizon), the new crescent moon will be visible without a doubt.

Based on the writings of distinguished scholars on this subject, Imam Al-Qusyairī maintains that if *hisāb* calculations indicate that the new crescent moon was present on the horizon **in a way that would have been visible if not for the clouds**, fasting must be observed. This is because the actual sighting (*ru'yah*) of the moon is not mandatory.<sup>11</sup>

As such, the presence of the new crescent moon above the horizon itself is not sufficient to mandate a person to observe fasting.<sup>12</sup> but rather, the presence of the new moon above the horizon in a manner that could have been sighted in normal conditions (i.e., no obstacle such as clouds, cloudy weather or others) upon sunset.

There are variations in the criteria or parameters established by international astronomy experts to determine the specifics of the moon's appearance above the horizon for this purpose.

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<sup>11</sup> Ibn Ābidīn, *Rasā'il Ibn Ābidīn*, 1:224. The original Arabic text is as follows:

قال القشيري: "إذا دل الحساب على أن الهلال قد طلع من الأفق على وجه يرى لولا وجود المانع كالغيوم مثلا، فهذا يقتضي الوجوب لوجود السبب الشرعي وليس حقيقة الرؤية مشروطة في الزوم"  
Which means: "Al-Qushayri said: "If the *hisāb* calculation indicates that the crescent moon has risen above the horizon in a way that would have been visible if not for an obstruction such as clouds, then fasting is obligatory due to the presence of the religious cause, and the actual sighting is not a prerequisite for the obligation."

<sup>12</sup> This is notwithstanding the view that the presence of the crescent moon above the horizon is sufficient to obligate a person to fast. This approach is called *Wujud al-Hilāl* or *Hisab Hakiki*.

Divergent viewpoints on this matter are accepted in the religion, as it is a subject that is based on *ijtihād* through observation.<sup>13</sup> Moreover, it does not contradict any religious text.

### **The MABIMS Criteria**

MABIMS is an acronym that stands for the Religious Ministers of Brunei, Indonesia, Malaysia, and Singapore. It is an unofficial meeting of the ministers of the four countries who are responsible for the Muslim community in coordinating the religious affairs of the Muslim community in all four countries.<sup>14</sup>

One of the areas that were coordinated in 1992 was the establishment of criteria for determining the start of the month in cases where the new crescent moon cannot be sighted.

The criteria of MABIMS 1992 adopted three parameters. The new moon is deemed to be visible and present if there are no obstructions, provided that (i) its altitude is not less than 2 degrees above the Western horizon during sunset, (ii) the elongation (angular separation between the Sun and the Moon) is not less than 3 degrees. However, if the age of the crescent exceeds 8 hours, it is regarded as visible without considering the parameter of altitude and elongation.

The age of the new crescent moon is calculated from the time the Moon and the Sun align with the Earth (conjunction), until the moonset on the 29th day (of the month).

These criteria have been adopted by Singapore since it was officialised by MABIMS from 1992 till 2021.

There is continuous effort to refine the criteria. In 2016, astronomy experts and religious scholars from all four countries reached a consensus to revise the MABIMS criteria to a more improved version.

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<sup>13</sup> According to Ibn Rushd al-Ḥafīd, **the sighting of the new moon rests upon empirical evidence**. This means that **the parameters set out by astronomers may differ from time to time if there is stronger empirical evidence**. As such, astronomers have collated the past data on crescent moon sightings. See: Ibn Rushd al-Ḥafīd, *Bidāyah al-Mujtahid wa Nihāyah al-Muqtaṣid*, (Cairo: Maktabah Ibn Taymiyyah, 1994) 2:48

<sup>14</sup> <https://www.mabims.gov.bn/SitePages/Home.aspx>

The new MABIMS criteria only **require two parameters** during sunset on the Day 29, and they are: (i) the altitude of the crescent moon is at least 3 degrees or higher, **and** (ii) the elongation (the angular separation between the Sun and the Moon) is at least 6.4 degrees or higher. These new criteria are formed based on 737 new moon sighting data that was collected from all over the world.

Singapore has agreed to adopt this new and more precise criteria. This modification aligns with the religious principle that the sighting of the new moon is based on empirical evidence. In this case, the 737 sighting data collected by Shauket Oudeh serves as empirical evidence.<sup>15</sup>

### **The Conflict Between the *Hisāb* Calculation Method and the Claim of Sighting the New Crescent Moon**

The establishment of the aforementioned criteria is based on data and meticulous calculation. It is achieved at a confidence level close to certainty. If the crescent moon data did not fulfil the criteria set by astronomers, specifically the new MABIMS criteria, then based on calculations, the new crescent moon cannot possibly be sighted. This implies that, under typical circumstances (without any obstructions such as clouds), sighting the new crescent moon is not possible.

Past scholars have in fact discussed this matter. For instance, astronomers have determined through *hisāb* calculations that the new moon cannot be sighted at a particular time, yet some individuals have claimed to have seen it. Imam As-Subki (d. 756H) is of the view that the sighting of the new crescent moon at that time cannot be accepted because the sighting is considered to be probable. On the other hand, *hisāb* calculations are certain in nature, or are close to certainty (*qarīb min al-yaqīn*). Thus, something that is close to certainty (i.e. *hisāb* calculations) is given precedence over something that has no certainty and is probable in nature (i.e. sighting with the eye).

Imam Al-Subki in his book *Al-'Ilm al-Manshūr fī Ithbāt al-Shuhūr* asserts:<sup>16</sup>

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<sup>15</sup> Shaukat Oudeh, 2001, *Al-Taqwīm al-Hijrī al-'Ālami*, Al-Mashrū' al-Islāmiy Li Raṣd al-Ahillah, 3.

<sup>16</sup> Al-Subki, *Al-'Ilm al-Manshūr fī Ithbāt al-Shuhūr*, 25.

(فإن أحلناها - أي كون الرؤية مستحيلة - بدليل قام عندنا، لم تقبل تلك الشهادة وحملناها على الغلط أو الكذب ولم نكن بذلك خارجين عن القانون الشرعي، لأن دلالة الحساب القطعي أو القريب من القطعي على عدم الإمكان، أقوى من الريبة، والريبة موجبة لرد الشهادة)

Meaning: “When we conclude that the sighting of a person is impossible based on the existing evidence, his testimony (of the sighting) is invalid. In fact, we consider his testimony a mistake or a lie. And (in this matter) we are not deviating from the law of the syari’ah (through this conclusion). This is because the hisāb calculations based on certainty or close to certainty that show the new moon cannot be sighted is stronger than uncertainty. And uncertainty is a reason to reject a person’s testimony.”

This principle is accepted by the international fatwa council as well as contemporary scholars. Among the bodies and contemporary scholars are: Dar Ifta’ al-Misriyyah<sup>17</sup>, Majma’ Al-Fiqh Ad-Duwali<sup>18</sup>, European Council for Fatwa and Research<sup>19</sup>, Shaykh Abdullah bin Bayyah<sup>20</sup>, dan Shaykh Ali Gomaa<sup>21</sup>.

<sup>17</sup> <https://www.dar-alifta.org/ar/fatawa/13817/%D8%A7%D9%84%D8%AD%D8%B3%D8%A7%D8%A8-%D8%A7%D9%84%D9%81%D9%84%D9%83%D9%8A-%D9%88%D8%A7%D9%84%D9%88%D8%B3%D8%A7%D9%8A%D9%84-%D8%A7%D9%84%D8%B9%D9%84%D9%85%D9%8A%D8%A9-%D8%A7%D9%84%D8%AD%D8%AF%D9%8A%D8%AB%D8%A9-%D9%81%D9%8A-%D8%B1%D9%88%D9%8A%D8%A9-%D8%A7%D9%84%D9%87%D9%84%D8%A7%D9%84>

<sup>18</sup> <https://iifa-aifi.org/ar/3475.html>

<sup>19</sup> European Council for Fatwa and Research, *Al-Qarārāt wa al-Fatāwā al-Şādirah ‘An al-Majlis al-Urubbi li al-Iftā’ wa al-Buhūth*, 17.

<sup>20</sup> Ibn Bayyah, *Şinā’at al-Fatwā wa Fiqh al-Aqalliyyāt*, (Dubai: Markaz Al-Muwatta’, 2018), 484.

<sup>21</sup> <https://www.draligomaa.com/index.php/الفتاوى/item/1997-المعرفة-أوائل-الشهور>