

## Legal Method for Determining the Beginning of the Month of *Ramadhan* and Other Months According to the Rules of *Hisab* and *Ru'yatul Hilal* in Islamic Astronomy

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**Abstract.** *Determining the start of the months of Ramadhan and Shawwal in the Hijriyah calendar is similar to determining the start of other months, such as Sha'ban and others. However, determining the start of the months of Ramadhan and Shawwal is of great concern to Muslims because these two months have very special practices for Muslims. Obligatory fasting, which is observed once a year, is observed during the month of Ramadhan. Meanwhile, the Eid al-Fitr holiday, which falls at the beginning of the month of Shawwal, is also an important moment for Muslims. This research aims to determine the general method for determining the beginning of the months of Ramadhan and Shawwal, namely reckoning and Ru'yatul Hilal or ru'yah. The reckoning method is a method used to determine the start of fasting using mathematical and astronomical calculations. Meanwhile, ru'yah is a method of determining the start of Ramadhan and Shawwal based on observations of the moon. With this method, the crescent moon will be observed at sunset with the naked eye or optical aids such as a telescope. This type of research is empirical research and the research specifications in writing this thesis are descriptive which aims to explain the legal determination of the beginning of the month of Ramadhan and other months according to the Hisab & Ru'yatul Hilal method in Islamic Astronomy (Falak). The main data sources used in this research are secondary data in the form of; Primary Legal Materials; Secondary Legal Materials; and Non-Legal Materials (Tertiary). The results of the research show that there is a close relationship and complementary interrelationship in the hisab and Ru'yatul Hilal or ru'yah methods used in each of the major Islamic organizations which are the reference for the Ministry of Religion of the Republic of Indonesia in deciding laws which are an option for the community when there are differences. Because difference is a blessing.*

**Keywords:** *Astronomy; Fiqh; Hisab; Law; Ru'yatul Hilal.*

### 1. Introduction

Basically, in determining 1 (one) Ramadhan and 1 (one) *Shawwal* every year in Indonesia until now and perhaps in the future they will never be unified, there are always differences that arise which may be due to differences in fundamental principles in understanding the texts. which results in differences in how to apply

it, some refer to the opinion of the form of *Hilal* on the basis of *Hisab*<sup>1</sup>(the moon is above the *ufuq*) and there are also those who refer to the opinion of *Ru'yatul Hilal* (the moon is above the *ufuq* with the provisions of *Imkanu ar-ru'yah*), from the two basic methods in determining the start of *Ramadhan* and the beginning of the month of *Shawwal* every year In Indonesia in particular, when it happens that the results of the *Ijtihad* fall on the same day, it does not cause problems among the community, but if it turns out the results fall on different days, whether it is acknowledged or not, it can certainly cause problems among the community, especially ordinary people. at least a little confusion, therefore we have to wait for the Government's decision, in this case the Minister of Religion of the Republic of Indonesia.

This article does not intend to override the results of the government's decision, but is based on the experience of 1 (one) *Shawwal* years ago, especially for our Muslim brothers and sisters in the eastern and central regions of Indonesia, where the time difference between one and two hours with those in western Indonesia. Where when the results of the *Itsbat* trial were read out at eight o'clock in the evening, in the central and eastern regions of Indonesia it was already nine or ten o'clock in the evening. Meanwhile, the *Isha'* prayer congregation is usually followed by *taraweh* prayers, because they are waiting for a decision from the central government, in this case the Minister of Religion and it is already ten o'clock at night local time, it is possible that the *Isha'* prayer congregation has already dispersed.

These things, among others, as mentioned above, encourage the author to try to find a way to solve the problems that are always found at least once every year or several in this country. The question is whether *ru'yah* is a necessity or at least *Imkanu ar-ru'yah* which must be prioritized when the *Hilal* is present.<sup>2</sup>in the theory of *Hisab* throughout Indonesia it has shown a positive number above *ufuq*, but from the theory of *Imkanu ar-ru'yah* it is not and/or not yet possible to be in *ru'yah* because of Indonesia's natural conditions which almost all of the

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<sup>1</sup>Ardianto, Joko Satria, "Teknik Observasi dan Pencitraan Hilal dengan Kamera Digital-SLR "Suatu pengalaman di Baitul Hilal Telok Kemang, Port Dikson, N9, Malaysia", makalah Seminar pada "Peran Rekayasa Teknologi dalam Pelaksanaan Rukyatul Hilal di Malaysia, Semarang, 25 December 2013. See Azhari, Susiknan, *Sejarah Perkembangan Ilmu Falak di Dunia Melayu (Kasus Indonesia)*, in Koleksi Kertas Kerja Seminar Persatuan Falak Syar'i Malaysia 1406 H/1986 AD-1425 H/2004 AD, Kuala Lumpur: Persatuan Falak Syar'i Malaysia, see Zainuddin, Zambri, et.al, "Pensabitan Hilal Menerusi Teknik Pengimejan" in Saadan Man and Mohd Saiful Nawawi (eds), *Dimensi Penyelidikan Astronomi Islam*" Kuala Lumpur: Jabatan Fiqh dan Usul Akademi Pengajian Islam, Universiti Malaya, 2013.

<sup>2</sup>Sakirman, Menelisik Metodologi Hisab-Rukyat di Indonesia, *Jurnal Studia Islamika*, Vol, 8, No. 2, December 2011

terrain is *ru'yah*<sup>3</sup> covered by layers of clouds? For this reason, the author tries to explain briefly in the following article.

## 2. Research Methods

This type of research is empirical research and the research specifications in writing this thesis are descriptive which aims to provide an overview of something that applies to a phenomenon in society or a description of a symptom or between two or more symptoms.<sup>4</sup> Furthermore, this research seeks to explain the legal determination of the beginning of the month of *Ramadhan* and other months according to the *Hisab & Ru'yatul Hilal* method in Islamic Astronomy (*Falak*). The main data source used in this research is secondary data<sup>5</sup>. Secondary data is an indirect source that is able to provide additions and reinforcement to research data. Secondary data sources were obtained through documentation and literature study with the help of print and electronic media. In addition, secondary data sources can include archives and various appropriate additional data sources. Sources of secondary data are in the form of; Primary Legal Materials; Secondary Legal Materials; and Non-Legal Materials (Tertiary).

## 3. Results and Discussion

### 3.1. Reckoning

In the Muhammadiyah *Hisab* Manual, it is stated that *hisab* comes from Arabic, namely al *hisab*, which means calculation or examination. Meanwhile, in the field of jurisprudence, reckoning concerns determining times of worship. *Hisab* is used in the sense of calculating time and direction of place for the purposes of carrying out worship, such as determining prayer times, fasting times, Eid al-Fitr times, Hajj times, and eclipse times for performing eclipse prayers.<sup>6</sup>

The basis for using reckoning for the beginning of the *Hijriyah* month is in Surah Ar Rahman verse 5, namely: "The sun and moon (circulate) according to calculation".

Surah Yunus verse 5: "It is He who makes the sun shine and the moon shine and He appoints manzilahs (places) for the journey of the month, so that you know the number of years of reckoning (time)."

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<sup>3</sup>Zainuddin, Mohd Zambri and Mohd Saiful Anwar Mohd Nawawi, "Analisa Kriteria Kenampakkan Hilal bagi Data 1972 Hingga 2011 di Malaysia" a presented paper in international workshop Penyatuan Kalender Hijriyah: Sebuah Upaya Pencarian Kriteria Hilal yang Objektif Ilmiah, Semarang To Wards Hijriah's Calender Unification; an effort for seeking crescent's criteria, scientifically and objectively, Desember, 12th 2012, see Zainuddin, Zambri, et al, *Moon's Width For Crescent Visibility*" in Saadan Man and Mohd Saiful Nawawi (eds), *Dimensi Penyelidikan Astronomi Islam*" Kuala Lumpur: Jabatan

<sup>4</sup>Faisal, (2010), *Menerobos Positivisme Hukum*, Rangkang Education, Yogyakarta, p. 70

<sup>5</sup>L. Moleong, (2002), *Metode Penelitian Kualitatif*, PT Remaja Rosdakarya, Bandung, p. 34-35

<sup>6</sup>A. Fatah, Munawwir, dan Adib Bisri, (1999), *Kamus (Indonesia-Arab) al-Bisri*, Surabaya: Pustaka Progressif, see Abu Daud, (2004). *Sunan Abi Daud*, Beirut: Dar al Kutub al-ilmiyah

Hadith of Bukhari and Muslim: "When you see the new moon, fast, and when you see it, celebrate Eid. If the moon is blocked by clouds for you, then estimate it."

"Indeed, we are an Ummi community; we can't write and can't do calculations. That month was like that. What he means is sometimes twenty-nine days, and sometimes thirty days."

This reckoning method is used by Muhammadiyah to determine the beginning of the month in the *Hijriyah* calendar. The reckoning used is the true reckoning of the form of the new moon with three criteria, namely:

1. The *ijtima'* (conjunction) has been fulfilled
2. The *ijtima'* occurs before sunset
3. When the sun sets, the moon is above the horizon.

If these three criteria are met, then the day is considered to be validly included in the beginning of the *Hijriyah* month<sup>7</sup>.

### 3.2. *Ru'yatul Hilal*

The use of *Ru'yatul Hilal* as a method for determining the beginning of the month in the *Hijriyah* calendar in the archipelago has been believed since Islam first entered the archipelago. At that time, the implementation of *Ru'yatul Hilal* was only done with the naked eye, without using any tools. After human culture became more advanced, with spontaneity the implementation of *Ru'yatul Hilal* gradually began to use supporting facilities and infrastructure in accordance with developments in science and technology.<sup>8</sup>

Reporting from nu.or.id, *Ru'yatul Hilal* is the observation or observation of the *Hilal*. The *Hilal* is the thinnest curve of the crescent moon which is located at a low altitude above the western horizon after sunset (*ghurub*) and can be observed. The observation methods are divided into three, starting from relying on the naked eye, the eye assisted by an optical instrument (generally a telescope)<sup>9</sup>Up to the latest optical devices (generally telescopes) are connected to sensors/cameras<sup>10</sup>. Of these three methods, the visibility of the *Hilal* is also divided into three, starting from the naked eye (*bil fi'li*), the telescope view, and the visible image.

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<sup>7</sup>Ahmad, Abi Bakr bin Husain bin, Ali al-Baihaqi, (1994), *al-Sunan al-Kubra*, Beirut: Dar al-Kutub al-Ilmiah, see Al-Mandzur, Ibnu, (1119), *Lisan al-'Arab*, Kairo: Dar al-Ma'arif

<sup>8</sup>Supriatna, Encup, (2007), *Hisab Rukyat dan Aplikasinya*, Bandung: Refika Aditama, see Syams, Yahya, (1997), *Ilmu Falak*, Beirut: Dar al-Fikr Arabi

<sup>9</sup>E. Schneider, Stephen and Thomas T, (1957), *Pathways to Astronomy*, ed. 1 New York: McGraw-Hill

<sup>10</sup>Musonnif, Ahmad, (2011), *Ilmu Falak*, Yogyakarta: Teras, see Ridha, Syaikh Rasyid, (2009). *Hisab Awal Bulan Kamariyah*, Yogyakarta: Suara Muhammadiyah

The religious organization that uses this method is Nahdlatul Ulama (NU). Even though it uses *Ru'yatul Hilal*, NU does not necessarily abandon reckoning or astronomy. NU positions the reckoning method as a tool in implementing *Ru'yatul Hilal*. *Ru'yatul Hilal* cannot be held without good reckoning. For this reason, NU has a *jama'i* reckoning system, which takes into account all methods of reckoning that have developed within NU.

### 3.3. Basics of Thought

1. Among the basics in the *Ru'yatul Hilal* method that may be a point of emphasis in determining the start of Ramadhan and the start of *Shawwal*, the Hadith History of Bukhari from Abdullah ibn Umar RA which states that the Prophet SAW said: "*Ash Syahru Tis'un wa 'Isyruuna Lailatan Falaah Tashuumu Hatta Tarauhu Fain qhumma 'Alaikum Fa Akmilul 'Iddata Tsalaatsiina*" and the Hadith History of Bukhari from Abi Hurairah RA which states that the Prophet SAW said: "*Shuumuu Li Ru'yahihi wa Afthiruu Li Ru'yahihi, Fain Qhubbiya 'Alaikum Fa Akmiluu 'Iddata Sya'baana Tsalaatsiina*" ( vide Shaheh Bukhari, Juz III, pp. 478 – 479)<sup>11</sup>.

2. Medium between the basics in the *Wujudul Hilal* method, it may be a point of emphasis in determining the beginning of Ramadhan and the beginning of *Shawwal*, Hadith History of Bukhari from Abdullah ibn Umar RA that the Prophet SAW once warned about Ramadhan, he said: "*Laa Tashuumu Hatta Tarau al Hilaal wa Laa Tufthiruu Hatta Tarauhu, Fa In Qhumma 'Alaikum Faqdiruu Lahu*" (vide Sahih Bukhari, Juz III, page 478).

From the hadith text above, the author sees the following things:

1. From the two *Matan* hadith texts as mentioned in number 1 (one) above, the first is the sentence "*Fain qhumma 'Alaikum Fa Akmilul al 'Iddata Tsalaatsiina*" when connected to the previous sentence which states "*Falaah Tashuumu Hatta Tarauhu*."

Likewise, in the sentence "*Fain qhubbiya 'Alaikum Fa Akmiluu Iddata Sya'baana Tsalaatsiina*", the impression that the author sees from the text of the hadith is that it speaks specifically about the start of *Ramadhan* only, not inclusively determining the start of *Shawwal*. However, to find out further, in what terms and to whom the context of this statement by the Prophet SAW was conveyed at that time, the author did not go that far into looking at it, considering the limited time to carry out further research.<sup>12</sup>

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<sup>11</sup>Azhari, Susiknan, (2007), *Ilmu Falak Perjumpaan Khazanah Sains Islam dan Modern*, Yogyakarta: Suara Muhammadiyah, see Azhari, Susiknan, (2012), *Kalender Islam; Ke Arah Integrasi Muhammadiyah-NU*, ed. 1 Yogyakarta: Museum Astronomi Islam

<sup>12</sup>Direktorat Jenderal Bimas Islam, (2010). *Almanak Hisab Rukyat*, Jakarta: KEMENAG, see Ditjen Bimas Islam dan Penyelenggaraan Haji, (2004). *Selayang Pandang Hisab Rukyat*, Jakarta: KEMENAG



2. Meanwhile, from the text of the *Matan* hadith as mentioned in number 2 (two) above, namely in the sentences "*Laa Tasuumuu*" and "*walaa Tufthiruu*" when connected with the last sentence of the hadith "*Fa Aqdiruu Lahu*", then the impression that the author gets The content of the *Matan* hadith text is that it talks about the beginning of *Ramadhan* and at the same time about the beginning of *Shawwal*. Then if it is related to the sentence "*Fain qhumma 'Alaikum Fa Aqdiruu Lahu*", then it does not mention Fa Akmiluu (make it perfect), according to the author the words Fa Aqdiruu Lahu here contain the meaning of estimate, (as the birth of the science of reckoning) which is nota benne in the hadith. The above hadith was stated by the Prophet SAW of the Science of *Hisab* and all the instruments of the science of *Hisab* did not yet exist, so the practice at that time was under *Ru'yatul Hilal*, and if it was difficult to see then Sha'ban was completed in thirty days<sup>13</sup>.

For now, according to the author, thanks to Allah's grace in the form of the Science of *Hisab*, the level of accuracy of the calculations is quite precise and even if there are very small deviations, what is wrong with the results of the *Hisab* of experts in this country who state the position of the new moon for all of Indonesia from East to West? if it is clearly positive that it is above *ufuq*, say less than two degrees which even if it were to be in *Ru'yah* in Medan *Ru'yah* anywhere in Indonesia even with the help of sophisticated equipment is very difficult to see. Is it wrong that through the government we have been prioritizing the *ru'yah* method with the consequences of *ghumma* and *takmil*, we are directing our view by prioritizing the *Hisab* method if something similar happens as in the determination of the beginning of *Shawwal* 1432H.<sup>14</sup>

### 3.4. Dissent

When we talk about differences of opinion, perhaps they will never be resolved forever. But if we are tolerant and still respect the differences that exist, if together we prioritize togetherness and unity in this matter, then putting aside the differences means not sharpening them. God willing, the desired results will show positive numbers. As an illustration, it would be good for the author to explain the differences that arise with certain criteria that are used to determine the beginning of the month in the *Hijriyah* calendar as follows:

#### 1. *Ru'yatul Hilal*<sup>15</sup>

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<sup>13</sup>Ismail, Khadijah, and friends, *Moon's Width for Crescent Visibility, in Dimensi Penyelidikan Astronomi Islam*, Kuala Lumpur: Jabatan Fiqh dan Usul Universiti Malaya, see Khazin, Muhyiddin, (t.t). *Kamus Ilmu Falak*, Yogyakarta: Buana Pustaka

<sup>14</sup>Hester, Jeff, and friends, (2006), *21<sup>st</sup> Century Astronomy*, New York: W.W. Norton Company, see Husain Farsukh, Muhammad, al-Mausu'ah 'Abaqirah al-Islamiah fi al-Falak wa al- 'Ulum al-Bahriyah wa 'Ilm al-Nabat wa 'Ilm Mekanika, juz 5, Beirut: Dar al-Fikr al-Arabi, 1995

<sup>15</sup>Fitri, Ahmad Asrof, (2013), "*Akurasi Teleskop Vixen Sphinx Untuk Rukyat Hilal*" Skripsi Fakultas Syariah IAIN Walisongo

*Ru'yatul Hilal* is the criterion for determining the beginning of the *Hijriyah* calendar month by *meru'yah* (observing) the new moon directly. If the *Hilal* (crescent moon) is not visible (or fails to be visible), then the current month (calendar) is completed (*istikmal*) to 30 days. This criterion relies on the hadith of the Prophet Muhammad:

"Fast because you see the new moon and break your fast because you see the new moon, if it is hindered then fulfill it (*istikmal*)."

This criterion in Indonesia is used by the Nahdatul Ulama (NU), under the pretext of emulating the *sunnah* of the Prophet and his companions and following the *ijtihad* of the scholars of the four schools of thought. However, reckoning is still used, although only as a tool and not as a determinant of the start of the *Hijriyah* month.

## 2. The form of the *Hilal*<sup>16</sup>

*Wujudul Hilal* is the criterion for determining the beginning of the *Hijriyah* month (calendar) using two principles: *Ijtima'*k (conjunction) has occurred before sunset (*ijtima'* qablal qhurub), and the moon sets after sunset (moonset after sunset); then the evening of that day is declared as the beginning of the *Hijriyah* month (calendar), regardless of the angle of the moon's altitude at sunset.

This criterion in Indonesia is used by Muhammadiyah and Persis in determining the start of *Ramadhan*, 'Idul Fithri and 'Idul Adha for each year.

However, starting in 2000, PERSIS no longer uses the *Wujudul Hilal* criteria, but uses the *Imkanu ar-ru'yah* method. *Hisab Wujudul Hilal* is not to determine or estimate whether the new moon will be seen or not, but calculating the *Wujudul Hilal* can be used to determine the beginning of the *Hijriyah* month as well as whether the new (calendar) month has entered or not, the basis used is the command of the Qur'an in QS Yunus: 5. QS .Al Isra': 12, QS.Al An'am: 96, and QS. Ar Rahman: 5 as well as Astronomical interpretation<sup>17</sup> of QS. Yasin: 36 – 40

## 3. *Imkanu ar-Ru'yah*

*Imkanu ar-ru'yah* is a criterion for determining the beginning of the *Hijriyah* month (calendar) which was determined based on the Deliberation of the Ministers of Religion of Brunei Darussalam, Indonesia, Malaysia and Singapore (MABIMS), and is used officially to determine the beginning of the *Hijriyah* month on the Official Government Calendar with the principle:

The beginning of the *Hijriyah* month (calendar) occurs when:

<sup>16</sup>Hambali, Slamet, (2011). *Almanak Sepanjang Masa*, Semarang: Program Pascasarjana IAIN Walisongo

<sup>17</sup> Ong Argo Victoria, A Kelib, Kontroversi Hermeneutika Sebagai Manhaj Tafsir, *Jurnal Hukum Khaira Ummah* 12 (1), 1-8, 2017, [https://scholar.google.com/citations?view\\_op=view\\_citation&hl=en&user=9BcCVQUAAAAJ&citation\\_for\\_view=9BcCVQUAAAAJ:EkHepimYqZsC](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=9BcCVQUAAAAJ&citation_for_view=9BcCVQUAAAAJ:EkHepimYqZsC)

1. At sunset, the height (altitude) of the moon above the horizon is a minimum of 2 degrees, and the elongation angle (curvature distance) of the Moon-Sun is a minimum of 3 degrees, or
2. When the moon sets, the minimum age of the moon is 8 hours, calculated from *ijtima'*.

In terms of language, *Imkanu ar-ru'yah* is considering the possibility of seeing the new moon.

Practically, *Imkanu ar-ru'yah* is intended to bridge the *ru'yah* method and the reckoning method. There are 3 possible conditions:

- a. The height of the crescent moon is less than 0 degrees. It was confirmed that the crescent moon could not be seen so that night the new moon had not yet entered. The *ru'yah* and reckoning methods agree in this condition.
- b. The height of the crescent moon is more than 2 degrees. Most likely the crescent moon can be seen at this height. Performing *ru'yah* will most likely confirm the sighting of the new moon. So the beginning of the new month entered that night. The *Ru'yah* and *Hisab* methods are in agreement.
- c. The height of the crescent moon is between 0 and 2 degrees. Most likely the crescent moon cannot be seen in *Ru'yah*. But according to the calculation method, the new moon is already above the horizon/*ufuq*. If it turns out that the crescent moon can be seen during *ru'yah*, then the beginning of the month has entered that night. The *ru'yah* and reckoning methods agree in this condition. But if the *ru'yah* does not succeed in seeing the new moon, then the *ru'yah* method completes the month to 30 days so that night is not yet the start of the new month. In this condition *Ru'yah* and *Hisab* came to different conclusions.

However, there are also those who think that at an altitude of less than 2 degrees it is impossible to see the crescent moon. So it is certain that there is a difference in determining the start of the month in this condition. This happened during the stipulation of 1 *Shawwal* 1432 H/2011 AD

#### 4. *Ru'yah* Global

Global *Ru'yah* is a criterion for determining the beginning of the *Hijriyah* month (calendar) which adheres to the principle that: If one resident of the country sees the new moon, then the residents of the entire country fast (in the broadest sense having entered the new *Hijriyah* month) even though others may not have seen it.

As a result of differences in methods for determining these criteria, this often causes differences in determining the start of the month, which also results in differences in days of worship such as *Ramadhan* fasting and/or Eid al-Fitr.

In Indonesia, this difference has occurred several times. For example, in 1992 (1412 AH), there were people who celebrated Eid al-Fitr on Friday 3 April 1992



following Sa'udi Arabia. Some were on Saturday 4 April 1992 based on the results of NU's *ru'yah*, and some were on Sunday 5 April 1992 based on *Imkanu ar-ru'yah*.

There have also been differences of opinion regarding the initial determination of *Shawwal*, namely in 1993, 1994 and what is very interesting is the difference in the initial determination of *Shawwal* 1432 H (2011 AD), that the *Itsbat* session decided that the beginning of *Shawwal* would fall on Wednesday 31 August 2011. Meanwhile in Muhammadiyah circles remains in its position when the beginning of *Shawwal* falls on Tuesday 30 August 2011. Meanwhile, according to the *Hisab* method, the position of the *Hilal* throughout Indonesia at that time was already above *ufuq* between 0 - to 2 degrees.

As a result of these differences, apart from giving the impression that the Islamic *ummah* in this country is divided as a result of the different principles of criteria used in determining the start of the month, it has also raised various legal questions regarding the implementation of the Ramadhan worship and the 'Eid prayer itself, even though the Government is campaigning that these differences should not be made into a problem on the one hand, even though on the other hand this matter is essentially a problem that is actually waiting for a firm answer.

### 3.5. Efforts in Problem Solving

So far, since the time of the Prophet SAW, Companions, *Tabi'in* and even up to the present day, in determining the beginning of the *Hijriyah* month, the *Ru'yatul Hilal* method and the *Hisab* Method are basically used, between these two methods almost never finished being discussed, which in the end, if the *Hilal* is not visible on the *ru'yah* then the path taken is *Istikmal*, what about the results of the Reckoning? This appears to be in the second place, or just to help make the *ru'yah* easier, perhaps because this was never done by the Messenger of Allah, even though if it happened, the results of the reckoning experts showed that the *Hilal* was above the *ufuq* (say between 0/1 to 2 degrees ) while for *ru'yah* it is possible that it will fail and not succeed, do we still insist on *Istikmal* with the excuse that because that is what the Prophet saw, the *shahabt* and so on, practiced? while the results of the reckoning seem to be closed to determine the beginning of the month of the *Hijriyah* calendar. Therefore, let's see how these two things are defined in the following terms:

#### 1. Reckoning and *Ru'yah*

*HISAB* is a mathematical and astronomical calculation to determine the position of the moon to determine the start of the month in the *Hijriyah* calendar. Literally *Hisab* means calculation. In the Islamic world, the term *hisab* is often used in astronomy (*falak*) to estimate the position of the sun and moon relative to the earth.

The position of the sun is important because it is a benchmark for Muslims in determining prayer times. Meanwhile, the position of the moon is estimated to determine the occurrence of the new moon as a marker of the entry of the new moon period in the *Hijriyah* calendar. This is especially important to determine the beginning of *Ramadhan* when fasting begins, the beginning of *Shawwal* ('Eid al-Fitr), and the beginning of *Dhul Hijjah* to determine when pilgrims perform *wuquf* on 'Arafah (9 *Dhul Hijjah*) and 'Eid al-Adha (10 *Dhul Hijjah*).

In the Qur'an, Surah Yunus (10) verse 5, it is stated that God deliberately made the sun and moon as tools for calculating years and other calculations. Also in Surah Ar Rahman (55) verse 5 it is stated that the sun and moon are distributed according to calculations.

Because worship in Islam is directly related to celestial bodies (especially the sun and moon), since the beginning of Islamic civilization, Islamic civilization has paid great attention to astronomy. Muslim astronomers who have developed the modern *Hisab* method are AL BIRUNI (973 – 1048 AD), IBNU TARIQ, AL KHAWARIZMI, AL BATANI and HABASAH. Even today, the calculation method uses computers with a high level of precision and accuracy. Various practical software also exists.

*RU'YAH* is the activity of observing the visibility of the new moon, namely the appearance of the crescent moon which appears for the first time after *Ijtima'* (conjunction). *Ru'yah* can be done with the naked eye or with optical aids such as a telescope. *Ru'yah* is performed after sunset. The *Hilal* is only visible after sunset (maqrib), because the light intensity of the *Hilal* is very dim compared to the light of the sun, and its size is very thin. If the crescent moon is visible, then in the evening (maqrib) local time the new month (calendar) of the *Hijriyah* has entered. If the *Hilal* is not visible then the start of the month is set to start at maqrib the following day.

However, from experience so far, the crescent moon cannot always be seen. In theory, if the time interval between *Ijtima'* and sunset is too short, it is scientifically impossible to see the *Hilal*, because the moonlight illumination is still too dim compared to the surrounding "sky light". The DANJON criteria (1932 – 1936) state that the crescent moon can be seen without tools if the minimum angular distance (arc of light) between the sun's moons is 7 degrees.

## 2. Alternative Solutions

Starting from experience so far, from several methods described above, it turns out that they do not produce the same views and opinions even though sometimes on the one hand there are the same days and times in determining the start of *Ramadhan* and the start of *Shawwal*, but it is certain that differences will arise again, although not every years as a result of prioritizing the concept of *ru'yah*.

The author does not intend to rule out the *Ru'yah* method at all, because he has a sharih text, namely the Hadith of the Prophet SAW above, and even if there are similarities between the *hisab* and *ru'yah* methods, according to *hisab*, the position of the new moon at the end of Sha'ban or Ramadhan is at under the *ufuq*, and with any tools it is impossible to see the *ru'yah*, so when there was an agreement for *istikmal*, the author also agreed with this. Because none of these two methods can be applied at such a time, except *istikmal*.

However, when in the *Hisab* method it turns out that the position of the *Hilal* is at the end of Sha'ban and/or at the end of Ramadhan (29<sup>th</sup> day) after qhurun throughout Indonesia, *hisab* experts agree to state that the *Hilal* is above the *ufuq* between 1 to 2 degrees, even if in *ru'yah* it is very difficult to see, so in the author's opinion at times like that it would be appropriate to prioritize the results of reckoning, so that the possibility of dualism in the implementation of the start of *Ramadhan* worship and/or the Eid al-Fitr holiday can certainly not occur, as long as this is the case has obtained legitimacy and has become the decision of the *Itsbat* session by the Government, in this case the Minister of Religion of the Republic of Indonesia.

Now the question is whether each of us, whether we come from any religious (Islamic) organization, if we have the will and readiness to orient our thoughts to open ourselves up to uphold togetherness and reduce differences, then God willing, the level of difference in the implementation of starting *Ramadhan* or 'Eid al-Fitr from year to year will not be If it happens again, at least it will disappear by itself.

#### 4. Conclusion

There is a close relationship and complementary interrelationship in the methods of reckoning and *Ru'yatul Hilal* or *ru'yah* used in each major Islamic organization which is the reference for the Ministry of Religion of the Republic of Indonesia in deciding on laws which are of the nature of options for society when there are differences. Because difference in Islam is a blessing.

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