

## ***Hisab and Ru'yah in Islamic Law (Syara')***

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### **Abstract**

*This article is study about Hisab and Ru'yah utilized by Moslem (Muslims) in religious practice especially salat, fasting and religious service of Haji. It includes of the fundamental solution of science execution in determining early time of salat, instructing Kiblat, and early month; for Qamariyah moon precisely. Thereby, the writers elaborate them for theoretically and practically in this article, about how the these sciences used in determining early time of salat, instruct kiblat, and early month of Qamariyah at one particular place. Their validity and correctness can be proved pursuant to specified formula by pertinent science. Specially time awal of salat, instruct kiblat. In term of determination of early month; the moon of Ramadan and early month of Syawal, for the fasting day of Ramadan, Idul Fitri, result of Ru'yah and hisab that can be earn and justified scientifically.*

**Keywords:** Hisab; Ru'yah; Islamic View of Hisab and Ru'yah (Syara')

### **1. Introduction**

*Hisab* is famously known as arithmetic. It means a science that discusses the ins and outs of the calculation, since "*hisab*" itself refers to "count" Reference [9]. Therefore, *hisab* is arithmetical. Here, among moslems, astronomy and Islamic inheritance jurisprudence call it as arithmetical, as for the most prominent in both the science, it is related to the calculation, which studied and used by Muslims in religious daily practices. In Indonesia, people only know that "*falak*" that so called-astronomy is also meant by the term *hisab*. Even in this article, *hisab* which is intended by the author as the science of astronomy that frequently used by Muslims in religious practices.

Reference [12] Astronomy is a science that studies celestial objects, such as the sun, moon and earth, about their physical, motion and everything connected with it. Celestial objects (the sun, moon and earth) have benefit of religious practices. In order of worship, time and manner of implementation, then it is strongly associated with celestial bodies. In modern era, arithmetic more uses science in its practice which is no doubt is true. In this case, it refers to the science of Triangle Ball measurement. For this reason, many people say that this arithmetic provides *qath'i* (definite) and empiric results.

In addition, *hisab* only offers the calculation results in a matter of time and the position of beginning new moon. The arithmetic does not provide *hilal* (moon) in a certain position or impossible visible. Visible or not will depend upon the results *ru'yah* at that time. *Ru'yah* is seeing as the new moon when the sun sets at 29th of *Qamariyah* month. If the moon is successfully seen, since the sunset is already calculated the new moon, if it is appeared, then that night and the next day is still an ongoing month, and the month will be calculated 30 days (*istikmal*).

Whether it is seen or not, it depends on the conditions of the new moon in the west side. *Hisab* and *ru'yah* are two things that help each other and the complement deficiencies and weaknesses which cover one another.

## 2. *Hisab and Ru'yah in Worship*

In this paper, *hisab* discussion, is limited to the matters of implementation of worship, they include prayer and istimes, basic Islamic law of prayer and its time,

### *Prayer and its Time*

#### a. Understanding of Prayer and Time

Reference [11] *Salat* is derived from Sala, yaşilu, Salatan, which means prayers, as contained in the Qur'an in *Sura at-Tawbah* 9 verse 103 as follows:

لِيُذَكِّرَهُمْ إِنَّ صَلَاتِكُمْ سِدْقٌ وَلَهُمْ وَاللَّهُ سَمِيعٌ عَلِيمٌ ١٠٣

#### Translation:

"And pray on their behalf. Verily your prayers are a source of security for them: And Allah is One Who hears and knows." Reference [10] Prayer also defines as grace, and pleading. As artifacts in the *Qur'an Sura al-Ahzab* 33 verse 56

يُصَلِّ عَلَى النَّبِيِّ يَا أَيُّهَا الَّذِينَ ءَامَنُوا صَلُّوا عَلَيْهِ وَسَلِّمُوا تَسْلِيمًا ٥٦

#### Translation:

"Allah and His Angels, send blessings on the Prophet: O you that believe! Send your blessings on him, and salute him with all respect."

According to the terms, prayer means a worship containing words and actions that starts with takbiratul Ihram and ends with the greeting by certain conditions, Reference [10]. In Islamic Shari'ah, prayer has a special place and fundamental, since prayer is one of the Islamic pillars, that must be upheld, as what mentioned in Qur'an *Suraan-Nisa* verse, 4 verse 103 and in *Sura al-Baqara*, 2 verse 43. The second verse describes the suggestion to perform prayers in accordance with the time.

### *Islamic Law of Prayer (Salat) and Its Time*

In Islamic view, obligatory prayers are required to have a predetermined time. Although the time is not explained in detail, but al-Qur'an has done it. In addition, the explanation of prayer times detailed described in the Prophet traditions. From the traditions, about times of prayer, the scholars of fiqh provide prayer time restrictions in various ways or methods that were conducted to determine the times of prayer. There is assumption about how to determine the times of prayer, that is, by looking directly at the signs of nature as textually mentioned in the Prophet traditions, such as the use of stick that so-called *miqyas* as tools, Reference [8]. Besides, there is contextually understanding according to the intent of the texts, the beginning and the end of prayer time are determined by the position of the sun visible from somewhere on Earth, or the method used is the right way to reckoning (*hisab*). By this rationale, it is used as an initial determination of prayer time, so the time of prayers by the scholars' Fiqh called *Riyadhy* time Reference [3]. The legal basic for the time of prayer, among others:

- From the Koran (Qur'an, 4 verse 103) Reference [6]

إِنَّ كَذَاتٍ عَلَى الْمُؤْمِنِينَ كَذَاتٍ بِأَمْوَالِهِمْ قَوْلًا ١٠٣

#### Translation:

Indeed prayers (*salat*) are enjoined on Believers at stated times..

What is meant by the verse above is a suggestion to perform prayers in accordance with the time, it means that it is not accomplish to pray before the time has come. As contained in the Qur'an and *Sunnah*.

- From the Hadith of the Prophet, Reference [2]:

عن عبد الله بن عمر رضي الله عنه قال ان النبي صلى الله عليه وسلم قال وقت الظهر اذا زالت الشمس وكان ظل كل الرجل كظوله ما لم يحضر العصر ووقت العصر ما لم تصفر الشمس ووقت الصلاة المغرب ما لم يغب الشفق ووقت صلاة العشاء الى نصف الليل الا وسط ووقت صلاة الصبح من طلوع الفجر ما لم تطلع الشمس رواه مسلم

**This means:**

From Abdullah bin Amar r.a, he says, that Prophet says; *duhur* time is when the sun slipped until someone's shadow equal to his/her height, that is, before *asar* prayer comes. And when the sun has not yellowed when *Asar* and then *Maghrib* time during *Syafaq* is not immersed (mega red), and the time of evening (*isyā'*) prayer is until midnight. And the dawn time or for (*subuh*) prayer is at dawn until the sun has not yet risen.

- **Duhur Time**

*Duhur* time is when the sun begins to slip, that is, after the sun reaches its culminating point in its daily circulation, or until the time of *Asar* prayer. In addition, it is when the shadows of the same length along with it.

- **Asar Prayer**

In the above hadith, it was mentioned that the Prophet performed afternoon (*Asar*) prayer when the long shadows of itself covers, or in another word, it is mentioned when long shadows longer twice than its length.

From above explanation, it can be concluded that, *Asar* prayer begins when the long shadows of an object is equal to the length of the shadows when the sun culminates until the time of sunset.

- **Magrib Prayer**

*Magrib* Prayer (Sunset time) starts from sunset until a time of *Isha* prayer.

- **Isha' Prayer**

Time of *Isha* prayer starts since mega misses its mega (red) up half the night. Reference [10] Moreover, there also argues up a third, and there is also the opinion which mentioned the time is late evening prayer is when it is dawning.

- **Dawn Prayer**

The *dawn* time starts from the true dawn, a dawn phenomenon beam of light towards morning which stretched from the eastern horizon, from north to south. The verse and the hadith above, explain the prayers from the time *Duhur* until the dawn time, not in great detail, but in signals. If *hisab* is not used, it will raise some problems and difficulties in performing prayers. In addition, Muslims should go out from their house with a stick to measure the height of the sun shadow. In fact, Muslims have already agreed on the permissibility of the use of the calculation results of *hisab*.

**Qiblah Direction**

There is no disagreement among Muslims, that facing the Qibla direction is a condition for the validity of prayer, as Allah SWT says in *sura Al-Baqarah* verse 144 "... Turn then your face in its direction (Sacred Mosque), wherever you are, turn your face in that direction...". Allah SWT, sets towards the Haram Mosque as expected by the Prophet. Liabilities facing the Haram (Ka'ba), applies to pray in any places.; That is, wherever Muslims are performing the obligatory prayers, they should face the the Qiblah. With this verse, the Lord confirms that the obligations for facing the Qibla direction, is not of the Prophet's personal argument, but it comes from the will and the provisions of Allah SWT. Based on the above verse, Muslims are required to study geography and other sciences to determine the direction of the Haram Mosque, for those who are far away from it. Paragraph in the words of Allah who mentions "Haram" is not the Ka'ba, it is to provide an understanding of the obligations for Qiblah direction on behalf of people who are far from the shrine. It would be enough to drive to the Grand Mosque, while those who were in the Haram Mosque, their direction of qibla is Ka'ba. Reference [3] This information based on a history of the Prophet SAW.

البيت قبة لأهل المسجد والمسجد قبة لأهل الحرم والحرم قبة لأهل الأرض في مشارقها ومغاربها من امتي

**This means:**

Baitullah is a mecca for people in the Haram. Masjidl Haram is a mecca for those indigenous people of the Haram (Mecca). And the Land of Haram is the Qiblah for all my people on earth, both in the West and in the East.

Based on the verse and the hadith above, for Muslims outside Mecca, the direction of qibla is located in the direction of Mecca. With the advancement of technology today, it is very easy to quickly determine the direction of a particular place on earth. By utilizing of reckoning (*hisab*), the issue of *qibla* direction is not as such difficulties, since the earth is relatively round, then the direction of the Qiblah of all the earth's surface can be calculated as precisely as possible with the help of Measurement tools of triangle ball, Reference [9].

### **The beginning of QamariyahMonth**

The initial month of Qomariyah calendar in its determination is regardly important for Muslims. This is as setting the days of Islam, as well as to set the start and end of Ramadan and Zul Hijjah months, because they are classified as worship of "Mandatory Ain" for every Muslim, to do "fasting and haj worship ". A system of early *Qamariyah* can not be separated by *hisab* and *ru'yah*. Therefore, to receive an explanation and a perfect understanding, the following description will elaborate briefly about *hisab*, *ru'yah*, and the beginning of the month in *Qamariyah* calendar.

#### • **Hisab**

Etymologically, the word reckoning (*hisab*) is from Arabic (al-hasb) which means the number or count, Reference [13]. *Hisab* can also mean *al-katshir* (lots) and *al-kafa* (enough), as contained in the Qur'an with the expression '*atha'an hisāban*' which means ' *atha'an katsiran kafiyan* (or many gifts that insufficient) Reference [12]. Reference [5] In terminology, the term reckoning is often associated with arithmetic, which defines as a science that discusses the ins and outs of calculation. Reference [4] In classical literature, arithmetic is similarly with astronomy, which is a science that studies celestial objects, such as the sun, moon, earth and stars. In the view of Islam, astronomy and Islamic inheritance jurisprudence (science of inheritance) refer to arithmetic, because the most prominent activity in both the science is doing the calculations. At first, reckoning used as a tool to determine the position of the new moon, in the implementation of *ru'kyah al-Hilal* (seeing the month). However, in subsequent developments, the reckoning is used to estimate the position of new moon at the time of *ru'yah* in the west side during sunset. Hence, reckoning regarded as systematic initial determination months in a year.

#### • **Ru'yah**

Reference [1] In etymology (language), *ru'yah* derived from the Arabic, that is *al-ra'a* which means to see with eyes. The intention is to see directly (naked eyes). Reference [13] Whereas, the word means the crescent of the new moon, which dates from the beginning of the month in 2 until 3 nights, while Ibn Manzur explains that, the new moon is in the night of 1,2 and 3 at the beginning of the *Qamariyah* month, Reference [12]. This is so called a *ru'yah al-hilal* which means looking at 1, 2, and 3 months of the date in the beginning of the *Qamariyah* calendar. Then, the terms of *ru'yah al-Hilal* in the context of determining the beginning of the *Qamariyah* month is to see the new moon by naked eye, or by using a tool that is conducted every end of the month, or on the 29<sup>th</sup> of the *Qamariyah* month at sunset. If the *hilal* (moon) seen in *ru'yah*, since then It will have been calculated or entered the first of the new month. In contrary, if it does not succeed to be seen in *ru'yah*. Then, that night and the next day are still in the current month. Therefore, the age of the moon enhanced to be 30-days in a month. This is known as *istikmal* (completeness), Reference [14].

*Ru'yah* activity in this case is the attention to the new moon in the western sky before the entry of the new moon. This activity is carried out to observe the moon. Hence, before *ru'yah*, it initially needs to localize the position of the moon by careful calculations. They are as follows:

- Determining the high of the moon
- Determining the azimuth
- Determining the inclination of moon *falak* (orbit) from the ecliptic

The first step to do is calculating how high the sun is in equal to the height months when it is on *ru'yah* (when we see it), and how about its azimuth. After that, the time is counted, meaning that at what time the sunset and how well its azimuth. Next, working paper is prepared by the Secretariat of sun movement for each second through the path designated by the azimuth of the sun at the time of sinking. Then, it is also determined azimuth of the moon at sunset.

Finally, the motion of the moon from minute to minute can be traced by observing the daily trajectory in parallel to the sun orbit. The *ru'yah* expected to be successful. Keep in mind that the science of *hisab* only provides the calculation results in a single matter of time and position. In terms of moon position, in the beginning of the month, Science of *hisab* does not mention that the new moon at a particular position is definitely visible or impossible visible. Visible or not will depend on the outcome of *ru'yah* in its time, so that the Muslims are no longer polarize between *hisab* and *ru'yah*. People will believe that *hisab* and *ru'yah* are two things that help each other, become the complement deficiencies and cover weaknesses each other.

### ***The beginning of Month in Qamariyah (Calendar)***

The term of “month” in Arabic is identical to *al-Shahr* also means *al-qamar*. In English, it is called lunar, a celestial bodies like the Earth. *Al-Shahr* called *al-qamar* since it seems obvious in nature. According to Ibn Sayyid, *al-shahr* (month) is a unit of time that has been known from a few days, which was popularized by the moon (*al-qamar*) because *qamar* is as a sign to start and end a month, Reference [12]. *Qamariyah* month also means calculation based on the lunar month of the circulatory system around the earth. Reference [6] As we know that journey times on this earth is characterized by the circulation of the heavenly bodies, especially the sun, moon and earth as mentioned in Qur'an surah Yunus 10, verse 5 which means: “It is He, Who made the sun to be a shining glory and the moon to be a light (of beauty), and measured out stages for it, that you might know the number of years and the count (of time). Nowise did Allah create this but in truth makes the sunshine and righteousness. (Thus) does He explain His signs in detail, for those who know?”

Among the celestial objects, the most considered important by scholars of *falak* (Astronomy), are the sun, moon and earth. Circulation of the three heavenly bodies is important to determine the guidelines of initial month, the number of years, times of prayer, and so on. Circulation moon around the earth becomes the rule of preparation in *Qamariyah* month, while the circulation of the earth around the sun develops into the basis for determining *Syamsiah* months and times of prayer. According to *hisab* experts, initial month in *Qamariyah* is the moon above *ufuq* (horizon) of sunset. Meanwhile, the *ru'yah* experts give their provisions that *ufuq* moon is above sunset and it can be seen. Further, astronomy experts declare that the beginning of the month occurred since the conjunction (*ijtima* 'al-hilal) line is between the sun and the moon. Reference [15] In line with this, the beginning of the *Qamariyah* month determined by several indicators. They are: *ijtima*' of hilal (agreement of occurred moon) have already happened, the moon is above *ufuq* when the sun sets, and the moon is visible to those who use the *ru'yah* system.

The beginning of *Qamariyah* month, especially for the moon which relates to worship such as fasting and haj, has always been a sensitive issue, and greatly feared by the government, since there is often a dispute appeared among the people merely as the different days of the starting and ending of Ramadan fasting. Disagreement is due to the legal basis used by *hisab* experts is not accepted by *ru'yah* experts, and the legal basis proposed by the *ru'yah* experts is considered by *ru'yah* experts not as the only legal basis that allows the way in determining the beginning of the *Qamariyah* month. The legal basis based on the *ru'yah* experts is Hadith of Bukhari and Muslim from Abi Hurairah: "Fast when you see the new moon, and eat when you see the new moon, If there is cloudiness then refine number of the months of Sha'ban till 30 days." Furthermore, the legal basis proposed by *hisab* experts, among others, is the Qur'an Sura Yunus, verse 5, which means “It is He Who made the sun to be a shining glory and the moon to be a light (of beauty), and measured out stages for it, that you might know the number of years and the count (of time). *Ru'yah* and *hisab* actually have advantages and disadvantages of each, and they can be used for helping each other.

*Ru'yah* is the oldest scientific method and very beneficial. Reference [7] Galileo Galilei, the pioneer road to modern science, who lived in the sixteenth century, his services are very large in advancing science, he found this method of observation, as the most effective scientific methods. However, long time before the invention, in the Arab countries of the Prophet Muhammad, he has proclaimed his orders: O you who believe, fast after seeing *hilal* (moon)... and eat (break your fasting) after seeing *hilal*. The hadith clearly explained that fasting done if someone sees the *hilal* and breakfasting if the *hilal* also seen. By using *ru'yah* remotely, experts can determine the composition of Astronomy constellation or composition of the solar system, moreover, they can measure the size of stars and the distance, with a relatively small error. What importance and benefits of this method. From a legal standpoint, the hadith which states that: O you who fast after seeing the new moon, and eat (breakfasting) after seeing the moon, is clearly legitimated as the basis for using *ru'yah* as one way to determine the beginning of the month. Note that *ru'yah* and *hisab* certainly have weaknesses and advantages of each. The weakness can be overcome if they are combined both. As the following illustration can be stated that:

- When the sun sets at 29<sup>th</sup> of *Qomariyah* month, by cloudy weather conditions, so the moon is not visible, then the moment sets as *istikmal*. It can happen in a *Qamariyah* month which only 28 days or 27 days mainly for large areas latitudes at the time of the declination which is as opposite sign to the latitude of the place.
- If there is a report that someone has seen the full moon mentioned with its position, the judge may reject the testimony on the grounds that there is no corroborating of his witnesses and being contrary to the results of *hisab*/trustworthy calculation.

- When in somewhere, the position of the new moon at sunset has not happened 'ijtima' then it has already been above the horizon, and it is not impossible to be *ru'yah*. If the set date of the new moon based on the position, it is not impossible that the age of the new moon will be longer than 30 days. This position could be higher if the slope of the ecliptic pole to the larger circle of the horizon (due to the high price of Latitude place) and latitude astronomical moon are in a maximum state.
- For the abnormal areas (which has great latitudes), it was difficult to do *ru'yah*, since the sun is not like a trip to the region near the equator. In the area of gen-day, sun is sometimes above the horizon and sometimes under the horizon, depending on the direction which us similarity between latitudes and the declination of the sun. For such as these areas, *ru'yah* is more suitable to be used as a determinant initial of the new moon.
- The different initial days in determination of starting or ending fasting or feast pilgrim temporally occurred among Mecca and Indonesia or other places on this earth. Some say, in terms of the feast Haj, all places should follow Mecca, since Mekkah has Ka'bah and the field of "Arafat". Nevertheless, some say that this problem depends on the place respectively. If we understand the problem, *hisab* and *ru'yah*, this problem will not need to debate. If you hold on *mathla*, as the decision of the International Islamic Conference in Turkey in 1978 and 1980, then every place which successfully in *ru'yah*, could announce the whole world and the results can be applied to all places, including Arab countries.

### 3. Conclusion

- Based on the above discussion, it can be described how important the knowledge of *hisab*. For a science that studies celestial objects, as well as holding the calculation is based on the circulation of the earth, moon and sun, then it is clearly to implement the knowledge in accordance with what has been commanded by Allah, in the Qur'an with quite numerous verses. Among of them are: "He (Allah), He Who made the sun to be a shining glory and the moon to be a light (of beauty), and measured out stages for it, that you might know the number of years and the count (of time)"... (Yunus verse 5) And, "the sun and the moon follow courses (exactly) computed." (Ar Rahman verse 5).
- Regarding the timing of prayers, in terms of *Qibla* direction, it seems that everyone has agreed on the permissibility of the use of the calculation results on *hisab*, and people can use it as the standard use. However, in terms of determining the beginning of the month, people still disagree.
- *Hisab* and *ru'yah* are not the only as the tool to determine the beginning of the month, but also equally as the "ways" which have the strength and weaknesses of each, if both ways/method are combined, then they will reinforce each other and help each other towards perfection. Our task is to improve the quality of arithmetic in *hisab*, then we use the *ru'yah* method which obviously has a lot of benefits, in terms of both law and science.
- To overcome Muslims disagreement and not become fragmented, then let all the results of *hisab* and *ru'yah* submitted to the government (*Ulil Amri*), then processed, and discussed with the stand in the truth, and recommended to the experts not to announce the results to the public, before any announcement officially concluded from the government. It is in accordance with the demands of the Prophet, which at that time if there are people who see *hilal*, he always reported to the Prophet, and the Prophet checked, and if the Prophet had convinced then he announced to the Muslims. *Alhamdulillah*, this is a bit much has been done by the Indonesia government.
- Basically, *hisab* as well as *ru'yah* is merely as a 'tool' in determining the times of "Worship", while the decision of determination, especially the matters that related to the community lies in the decision of the government (*Ulil Amri*).

### Acknowledgements

I express my gratitude to Allah subhanahuwata'ala, my family, editor and all components who have contributed in arranging this study. Thank you so much for helps and supports.

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