

Are Astronomical Calculations and the Lunar Calendar a Substitute for the Sighting of the Hilaal Moon Crescent?

Scientific advancements and innovations have revealed such secrets of astronomy to humanity that were considered unknowable in the past. Due to such developments, humanity is able to make highly precise estimations regarding not only the current but also the future orbital movements and positions of the sun, the moon and other planets and stars. A recent example of this is the successful landing of a number of robots sent by the US space agency NASA to the surface of Mars. These robots were launched from Earth aiming towards a specific location on the surface of Mars, the ensuing journey taking several months. Today, due to the science of astronomy, humanity is able to confidently ascertain the time and place of the next solar or lunar eclipse, or the time and place of the birth of the moon of any lunar month, as well as the probability of its sighting.

Intimidated by the progress made in science, the Muslim World has been stimulated to debate that as science is able to determine the birth of a crescent (new moon), or probability of its sighting, hence, scientific calculations can be used as an alternate to the sighting the crescent. Furthermore, it is stipulated that Muslims no longer require the sighting of the moon to begin the lunar month because science can provide sufficiently reliable information regarding the birth of the crescent, thus, the beginning of the month of Ramadan and the day of Eid can be decisively determined on this basis and disputes can be resolved. The following arguments are presented in this regard:

1. As science can determine the birth of the crescent with reliable confidence, which previously could only be achieved by sighting, thus today, scientific calculations, which have almost no possibility of error, can be used instead of sighting to determine the birth of the crescent.

2. As it is permissible in Islam to use the calendar of prayer times for the observance of prayers, and as these calendars are based on calculations related to the sun, it means that it is permissible to use calculations regarding timings and days in matter of worship, and thus, calculating the birth of crescent for start of lunar months, probability of its sighting and starting the month based on this estimation.

Let us examine these arguments in light of the Shar'i evidences:

Bukhari, Muslim, and Nisai mention that Abu Hurairah (ra) narrated that the Messenger of Allah (saw) said: «صُومُوا لِرُؤْيَيْهِ وَأَفْطِرُوا لِرُؤْيَيْهِ، فَإِنْ غَبِيَ عَلَيْكُمْ فَأَكْمَلُوا عِدَّةَ شَعْبَانَ ثَلَاثِينَ» meaning **“Fast on sighting of the crescent (of Ramadan), and give up fasting on sighting of the crescent (of Shawwal), and if the sky is overcast (and you cannot see it), complete thirty days of Sha'ban.”** Bukhari and Muslim further narrate that the Messenger of Allah (saw) said: «إِذَا رَأَيْتُمُوهُ فَصُومُوا، وَإِذَا رَأَيْتُمُوهُ فَأَفْطِرُوا، فَإِنْ غَمَّ عَلَيْكُمْ فَأَقْدُرُوا لَهُ» meaning **“When you see the crescent (of the month of Ramadan), start fasting, and when you see the crescent (of the month of Shawwal), stop fasting; and if the sky is overcast (and you can't see it) then regard the month of Ramadan as of 30 days.”** It is evident from these ahadeeth that the hukum (command) for صوموا (all of you fast) is linked to the condition of رَأَيْتُمُوهُ (you have seen) i.e. the hukum (command) for the beginning/ending of the month of Ramadan will be applied when the sighting of the crescent occurs. The hukum (command) for the beginning/ending of the month of Ramadan will not apply in the event of any action other than sighting, except if a Sharii' evidence is available that indicates this i.e. the evidence allows for the application of the hukum for the beginning/ending of the month of Ramadan in

the case of any action other than sighting. Imam Malik, Bukhari, Muslim and Nisai mention that Abdullah ibn Umar (ra) narrates that Messenger of Allah (saw) mentioned Ramadan and said: « لَا تَصُومُوا حَتَّى تَرَوْا الْهَيْلَانَ وَلَا تَفْطَرُوا حَتَّى تَرَوْهُ، فَإِنْ غَمَّ عَلَيْكُمْ فَأَقْدُرُوا لَهُ » meaning **“Do not fast unless you see the crescent (of Ramadan), and do not give up fasting till you see the crescent (of Shawwal), but if the sky is overcast (if you cannot see it), then act on estimation (i.e. count Sha’ban as 30 days).”** This hadeeth of Messenger of Allah (saw) clearly prohibits the application of the hukum for the beginning/ending of Ramadan until the sighting of the crescent occurs. These evidences clearly indicate that the Messenger of Allah (saw) made the sighting of the crescent, after the 29th day, a condition for the beginning/ending of the month of Ramadan, and in the absence of the sighting of the crescent ordered thirty days to be completed before the start of the next month. Further in these ahadeeth, Messenger of Allah (saw) clearly prohibited the use of any other action in determining the start of lunar months.

Accordingly, it is necessary to understand that the Shariah determined a sabab (cause) for the application of each Shar’i hukum, so that when the sabab (cause) appears then the Shar’i hukum is acted upon. This means that the sabab is the characteristic that is based on Shar’i evidence, and its presence necessitates the application of the Shar’i hukum, for example, for the observance of the Maghreb prayer, the sabab is sunset, and for the observance of the Zuhr prayer the sabab is sun crossing zenith. Bayhaqi narrated from the Messenger of Allah (saw): « إِذَا زَالَتِ الشَّمْسُ فَصَلُّوا » meaning **“Pray when the sun descends from zenith.”** In the case of the Islamic Khilafah undertaking offensive jihad, the presence of a Kufr state and its systems is the sabab for the offensive jihad. Similarly, from the words of the hadeeth « صَوْمُوا لِرُؤْيَيْهِ » it is clear that the sabab determined by the Shariah for the beginning/ending of all lunar months, including Ramadan, is the sighting of the crescent (i.e. seeing it with the naked eye).

Since fasting is an act of worship it must be carried out according to the method prescribed by the Shariah that Allah (swt) has revealed to us. As for the timings of the prayers, to which the sighting of the crescent is linked, Allah (swt) has determined the sabab for the observance of prayers as the positions of the Sun, just as He (swt) has determined the sabab for other acts of worship. Thus, the difference between the sabab determined by the Shariah for the observance of prayers and for the observance of Ramadan is clear i.e. for the observance of prayers the sabab is the positions of the Sun, while for the beginning and ending of lunar months the sabab is the sighting of the crescent.

Another difference that must be considered here is that in determining the sabab of prayers, the Shariah did not place limitations as to the method by which knowledge of the positions of the sun is ascertained. Thus, to ascertain the position of the sun, the shade produced by the sun may be observed, clocks may be used, the sun may be directly observed, or any other method may be used because the limitation placed is regarding the occurrence of a specific position of the sun (Shar’i sabab), and not regarding the method through which knowledge of the occurrence of the sabab (cause of prayer) is achieved.

On the contrary, for the start of the lunar month, the sabab is sighting the crescent with the eye, thus the sighting of the crescent directly with the eye is in fact the only sabab that has been determined by the Shariah for the start of the lunar months. Thus, for the sighting of the crescent it is permissible to sight it while remaining on the ground, or sight it by climbing a mountain, or sight it from the roof a tall building, or sight it individually, or sight it in crowds. However, if an action other than the sighting of the crescent is performed, such as using astronomy to perform calculations that ascertain the existence of the crescent, then this act is not the sighting of the crescent in its reality, nor does the word ‘sighting’ (ru’yah) apply to it. Since it is possible to use the literal meaning of ‘sighting’ (ru’yah) here, so it is not

correct to use any metaphorical meanings. As the difference is clear in these two Shar'i commands (sabab for prayer and sabab for lunar months), thus, it is incorrect to analogize calculations related to the birth of the crescent on the calculations related to the positions of the Sun. The Sharii' sabab (cause) for the beginning of lunar months is the sighting of the crescent with the eye, and not the knowledge of its birth or existence.

Imam Bukhari included a chapter «لَا نَكْتُبُ وَلَا نَحْسِبُ» meaning **“Neither do we write, nor do we calculate”** in the Book of Fasting, and narrated from Abdullah ibn Umar (ra) that the Messenger of Allah (saw) said: «إِنَّا أُمَّةٌ أُمِّيَّةٌ، لَا نَكْتُبُ وَلَا نَحْسِبُ الشَّهْرَ هَكَذَا، وَهَكَذَا يَعْني مَرَّةً تِسْعَةً وَعِشْرِينَ، وَمَرَّةً ثَلَاثِينَ» meaning **"We are an illiterate nation; we neither write, nor know accounts. The month is like this and this, i.e. sometimes of 29 days and sometimes of thirty days."** In this hadeeth, the word 'unlettered' (ummiyah) does not mean that the Muslims are to be illiterate, i.e. are not to have the knowledge of calculations, because the Muslims were obligated to follow commands, such as Zakat, Ushr and the distribution of inheritance, which could not be fulfilled without the knowledge of calculations.

Rather the purpose of referring to the Ummah as unlettered is to make it evident that if the crescent is not sighted on the 29th day, the month should simply be completed after thirty days, instead of subjecting this process to the complexities of calculations and trying to determine whether the crescent would have appeared or not. So these words of the Messenger of Allah (saw) «إِنَّا أُمَّةٌ أُمِّيَّةٌ، لَا نَكْتُبُ وَلَا نَحْسِبُ» are actually a style of rhetoric to emphasize that calculations should not be used in determining the start of the lunar months. Thus, the matter in which calculations must not be used is the specific issue of the sighting of the crescent. Hence, on the one hand an explicit command has been given to use the sighting of the crescent to determine the start of the lunar month, and on the other hand it has also been forbidden to use calculations for this matter.

In a nutshell, the Shar'i evidences clearly determine that the Shar'i sabab (cause) for the start of the month of Ramadan is the sighting of the crescent with the eye, and not the knowledge of its birth or age. This matter is considerably different from the Shar'i sabab for prayers, where the sabab is a specific position or condition of the sun, and not the sighting of the sun or its shadow with the eye. Therefore, although increased knowledge of astronomy has allowed humanity to comprehend many hidden secrets of the universe, but it cannot in any way lead to a change in the rules of the Shariah. Fasting is an act of worship, the details of which, including the time of its beginning and ending, have reached us through the Revelation of Allah (swt) and the acts of worship acceptable to Allah (swt) are those which are performed entirely according to commands and prohibitions of Allah (swt). We pray to Allah (swt) that He enables us to perform all our acts of worship according to His (swt) commands and that He (swt) keeps our understanding of our Deen free from all un-Islamic influences and beliefs. Ameen.

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