

Why Astronomical Calculations Cannot Be Used To Determine Ramadan Or Eid

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There is a discussion that has been going on for decades now, and it keeps coming back every Ramadan season. Should Muslims rely on astronomical calculations to determine the start of Ramadan and Eid, or must they physically sight the crescent moon? Some people present this as a minor technical matter, a question of science versus tradition. But when you look at it honestly, through the lens of what the Prophet ﷺ taught us and what the scholars of this Ummah have agreed upon for over a thousand years, you realize this is not a minor question at all. It is a question about whether we follow the method of our Prophet ﷺ or whether we replace it with something else.

He ﷺ Is Our Example, And That Is Not Optional

Before we even get into the legal discussion, we need to establish something foundational. Who is the Prophet Muhammad ﷺ to us, and what does it mean to follow him?

Allah says in Surah al-Ahzab:

لَقَدْ كَانَ لَكُمْ فِي رَسُولِ اللَّهِ أُسْوَةٌ حَسَنَةٌ لِمَنْ كَانَ يَرْجُوا اللَّهَ وَالْيَوْمَ الْآخِرَ وَذَكَرَ اللَّهَ كَثِيرًا

"Indeed in the Messenger of Allah you have an excellent example for whoever hopes in Allah and the Last Day and remembers Allah often."[1]

Uswa Hasana. The most beautiful example. Not a suggestion. Not one option among many. The example. Allah is telling every believer who hopes to meet Him on the Day of Judgment that the way of the Prophet ﷺ is the standard to measure your life against.

And then Allah says in Surah al-Hashr:

مِنكُمْ ۚ وَمَآ ءَاتَىٰكُمُ ٱلرَّسُولُ فَخُذُوهُ وَمَا نَهَىٰكُمْ عَنْهُ فَٱنتَهُوا۟ ۚ وَٱتَّقُوا۟ ٱللَّهَ ۖ إِنَّ ٱللَّهَ شَدِيدُ ٱلْعِقَابِ

"Whatever the Messenger gives you, take it. And whatever he forbids you, refrain from it."[2]

This ayah is comprehensive. It does not say take his rulings when they are convenient. It does not say follow him when his method aligns with modern science. It says take whatever he gives you. Full stop.

So when the Prophet ﷺ gives us a method of worship, it is a method that comes from the most trustworthy, most merciful, most complete human being who ever walked this earth. Our starting point must always be trust in that method, not suspicion of it.

The Prophet ﷺ Told Us Exactly What to Do

The matter of moon sighting is actually not complicated. The Prophet ﷺ left us with clear, direct, and repeated instructions on this. He said, as recorded in both Sahih al-Bukhari and Sahih Muslim:

"Fast when you see it, and break your fast when you see it. If it is obscured from you, then complete thirty days."[3]

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[1] Al-Qur'ān Al-Ḥakīm, Surah Al-Aḥzāb 33:21
[2] Al-Qur'ān Al-Ḥakīm, Surah Al-Ḥashr 59:7
[3] Sahih al-Bukhari 1909; Sahih Muslim 1081

This is not a vague statement open to interpretation. The Prophet ﷺ gave us two things: a primary instruction and a backup for when conditions make sighting impossible. The primary instruction is to sight the crescent. The backup, when clouds block the sky, is to complete thirty days. Notice what is not in that hadith. He did not say: "And if it is cloudy, then ask the astronomers." He did not say: "Consult those who calculate." He said complete thirty days.

Ibn Hajar al-Asqalani, one of the greatest hadith scholars this Ummah has ever produced said:

"The Messenger of Allah ﷺ said: 'When it is obstructed then complete 30 days' whereas he could have said, 'then ask the people of calculation,' but he did not."[4]

That silence is itself a ruling. The Prophet ﷺ knew calculation existed. The people around him knew mathematics. He chose not to direct us there, and that choice is part of the Sunnah.

We Are an Unlettered Nation and That Is a Legal Statement

There is another hadith that people sometimes overlook or misread. The Prophet ﷺ said:

"We are an unlettered people, we neither write nor calculate. The month is such and such and such and such."

He then gestured with his hands to indicate twenty-nine or thirty days. Now some people read this and think it just means the early Muslims were uneducated, and that now that we have advanced science we should move on. That reading completely misses the point. The Prophet ﷺ was not describing a deficiency. He was laying down a legal methodology. He was telling the Ummah that your worship is not tied to calculations and specialized knowledge. It is tied to something every person with eyes can participate in.

Al-Qadi Iyad, in his commentary on Sahih Muslim called Ikmal al-Mu'ilm, explained this beautifully. He said:

"The Prophet did not mean that they were ignorant of which day was the twenty-ninth and which was the thirtieth, nor did he deny their knowledge of such calculations. Rather, he gave them a rule about observing the moon to begin fasting and to

[4] Fath al-Bari

end fasting. By doing so, the Prophet did not allow them to adopt the methodology of calculation relied upon by the non-Muslims."[5]

And Ibn Hajar al-Asqalani elaborated further in Fath al-Bari:

"The ruling for fasting and other than it is connected to sighting the moon, to remove any difficulty from them, so they do not have to go to pains to calculate astronomical movements. And this ruling for fasting continues even if there appears after them people who know that. Indeed what is apparent from the context indicates a denial that the ruling is to be connected to astronomical calculations at all."[6]

What the Quran Says

The Quran is clear on this as well. Allah says in Surah al-Baqarah:

۞ يَسْـَٔلُونَكَ عَنِ ٱلْأَهِلَّةِ ۖ قُلْ هِىَ مَوَٰقِيتُ لِلنَّاسِ وَٱلْحَجِّ ۗ وَلَيْسَ ٱلْبِرُّ بِأَن تَأْتُوا۟ ٱلْبُيُوتَ مِن ظُهُورِهَا وَلَٰكِنَّ ٱلْبِرَّ مَنِ ٱتَّقَىٰ ۗ وَأْتُوا۟ ٱلْبُيُوتَ مِنْ أَبْوَٰبِهَا ۚ وَٱتَّقُوا۟ ٱللَّهَ لَعَلَّكُمْ تُفْلِحُونَ ١٨٩

"They ask you ˹O Prophet˺ about the phases of the moon. Say, "They are a means for people to determine time and pilgrimage." Righteousness is not in entering your houses from the back doors.1 Rather, righteousness is to be mindful ˹of Allah˺. So enter your homes through their ˹proper˺ doors, and be mindful of Allah so you may be successful."[7]

The crescent, the Hilal, is appointed as the marker. It is a visible sign in the sky that marks the beginning of the month. Abu Bakr al-Jassas explained in Ahkam al-Quran:

"The Muslims are in complete agreement that the meaning of the verse and narration is in regards to the sighting of the crescent in obligating the fast of Ramadan. This indicates that sighting the crescent is in fact the witnessing of the month."[8]

And then in the same surah, Allah says:

شَهْرُ رَمَضَانَ ٱلَّذِىٓ أُنزِلَ فِيهِ ٱلْقُرْءَانُ هُدًى لِّلنَّاسِ وَبَيِّنَٰتٍ مِّنَ ٱلْهُدَىٰ وَٱلْفُرْقَانِ ۚ فَمَن **شَهِدَ مِنكُمُ ٱلشَّهْرَ** فَلْيَصُمْهُ ۖ وَمَن كَانَ مَرِيضًا أَوْ عَلَىٰ سَفَرٍ فَعِدَّةٌ مِّنْ أَيَّامٍ أُخَرَ ۗ يُرِيدُ ٱللَّهُ بِكُمُ ٱلْيُسْرَ وَلَا يُرِيدُ بِكُمُ ٱلْعُسْرَ وَلِتُكْمِلُوا۟ ٱلْعِدَّةَ وَلِتُكَبِّرُوا۟ ٱللَّهَ عَلَىٰ مَا هَدَىٰكُمْ وَلَعَلَّكُمْ تَشْكُرُونَ

"Ramaḍân is the month in which the Quran was revealed as a guide for humanity with clear proofs of guidance and the decisive authority. ***So whoever is present this month, let them fast.*** *But whoever is ill or on a journey, then ˹let them fast˺ an equal number of days ˹after Ramaḍân˺. Allah intends ease for you, not hardship, so that you may complete*

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[5] Ikmal Al-Mu'ilm Bi-Fawa'id Muslim' vol: 4, Chapter on Fasting, p: 14-15, Darul-Wafa'

[6] Fathul-Baaree" (4/137)

[7] Al-Qur'ān Al-Ḥakīm, Surah Al-Baqarah 2:189

[8] Ahkam al -Quran, 1 /279

the prescribed period and proclaim the greatness of Allah for guiding you, and perhaps you will be grateful."[9]

The word used in Arabic is شَهِدَ "shahida," which means to witness, to be present, to see. The majority of the classical scholars of Quran understood this as referring to actual witnessing. Imam al-Qurtubi, in his famous tafsir, stated directly:

"*Whoever follows the opinion of the astronomers and leaves the ijma of the scholars has brought a proof against himself.*"[10]

The Consensus of the Scholars Is Not a Small Thing

Now let us talk about Ijma, scholarly consensus, because this is where the discussion becomes very serious. Ijma is not just a preference. In the principles of Islamic law, Usul al-Fiqh, a documented scholarly consensus is binding. And on the matter of astronomical calculation, there is a documented consensus that it is not valid as a Shari'i evidence for worship.

Ibn al-Mundhir, who lived in the third century after Hijra, was among the first to document this consensus. Ibn Taymiyyah stated it plainly and forcefully centuries later:

"*It is common knowledge in the religion of Islam that following the verdict of a Hasib (someone who follows Astronomical Calculations) on whether the Crescent is sightable or not sightable is not permitted in establishing the sighting of the crescent of fasting, pilgrimage, Idda (waiting period for a divorce or a widow), Iylaa'(form of divorce) or any other Islamic rulings dependent on the Crescent, and the wide spread legal texts from the Prophet (PBUH) supporting this are numerous, and Muslims have agreed on this and there is no old or new difference of opinion on the matter, except that some Scholars after the third century claimed that if the Crescent is obscured, then the Hasib (himself only) is permitted to follow his own Astronomical Calculations, so if his calculations lead to the sightability he fasts and if not he doesn't fast, and this opinion, although restricted with obscurity of the Crescent and specifically allowed for the Hasib himself, is a rogue opinion preceded by Scholarly Consensus (i.e: the scholarly agreement that calculations are invalid in all cases). As for following Astronomical Calculations when the crescent is not obscured, or making*"[11]

Ibn Abidin, the great Hanafi scholar, quoted from the book Al-Mi'raj:

"*(His saying: There is no significance to the statements of almowakkiteen {those who calculate astronomically}) meaning in the obligation of fasting. In fact, in the book*

[9] Al-Qur'ān Al-Ḥakīm, Surah Al-Baqarah 2:185
[10] Al-Jāmi' li-Ahkām al-Quran, 1/363
[11] Ibn Taymiya Al Harrani, Majmoo' Al Fatawa, V25, p.132

AlMi'raj it is mentioned that there is scholarly consensus that there is no value to their statements. And the Munajjim (the person who calculates astronomically) is not allowed to fast depending on his own calculations."[12]

He also said:

"The Imams of the four schools stated that the correct opinion is that there is no significance to the sighting of the crescent in the morning and that the sighting is only significant at night, and that there is no significance in the statements of the munajjimeen (those who calculate astronomically)."[13]

And Imam al-Qurtubi added on the matter of what to do when the crescent cannot be seen:

"It is compulsory upon us, when the crescent cannot be seen, to complete thirty days of Sha'ban and thirty days of Ramadan, so that we can enter into the worship with full certainty and come out of it with full certainty."[14]

He also said:

"And we don't know any scholar who said this before (that we can depend on those who follow astronomical calculations) except some followers of the Shafie School, and the preceding scholarly consensus is a clear proof against them."[15]

The Four Schools Are United

Let us go through each school so this is fully clear.

The Hanafi scholars were among the sharpest on this issue. Imam Ali al-Qari wrote:

"If an astronomer fasts Ramadan before its sighting, based on his knowledge, he is sinning in his fast. And if he establishes Eid al-Fitr based on his corrupt claim, he is a sinner. Expiation is obligatory upon him."[16]

That is an extremely serious ruling. And Ibn Abidin, the late Hanafi master, made it even clearer:

[12] Mohammad Ameen Ibn Aabideen, Rad Al Muhtar 'Aladduril Mukhtar, V2, p.100
[13] Mohammad Ameen Ibn Aabideen, Rad Al Muhtar 'Alad-duril Mukhtar, V2, p.104
[14] Abu Abdillah Al Qurtubi, Al Jami' L'ahkam Al Quran, V1, p.362-3.
[15] Abu Abdillah Al Qurtubi, Al Jami' L'ahkam Al Quran, V1, p.363
[16] Mirqaat al-Mafateeh

"It is not binding to act upon the opinions of astronomers when they say the crescent will be in the sky on such a night, even if they are upright, according to the sound opinion."[17]

So even if the astronomer is a righteous and trustworthy man, his calculation still carries no weight in Shari'ah.

The Maliki school, rooted in the practice of the people of Medina and the early generations, was equally firm. Al-Baji said plainly:

"The consensus of the Salaf discredits their claim of relying on astronomy."[18]

And in Al-Sharh al-Kabir by Ahmad ad-Dardir it is explicitly stated:

"The beginning of Ramadan is not to be confirmed by the saying of an astronomer, neither for himself nor for others."[19]

The Maliki scholars went so far as to say that even if a Muslim ruler commanded the people to fast based on calculations, the Muslims should not follow him, because that command contradicts the established consensus.

Shaykh Abu Abdullah Muhammad Ibn Ahmad Mayyarah al-Malikiyy quoted: "Ash-Shahab al-Qarafiyy (684 AH) related that Sanad (541 H) said: "*If an Imam (Muslim ruler) declared the beginning of fasting based on calculations, then the Muslims must not follow him, as the Salaf agreed by consensus against that*"[20]

The Shafi'i school is sometimes brought up by those who want to justify calculation, because a scholar named Imam al-Subki entertained it at some point. But his own school rejected his position. Imam an-Nawawi, one of the highest authorities in the Shafi'i school said:

"The results of the calculations made by the astronomers do not make it obligatory to fast, neither upon themselves nor upon others."[21]

And Zakariyya al-Ansari added in Asna al-Matalib:

"The calculations of the astronomer have no significance and thus cannot be used in determining the beginning of fasting. Furthermore, it is sinful to rely on them for that purpose."[22]

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[17] Radd al-Muhtaar
[18] Fath al-Bari', vol: 4, p: 127
[19] 'ash-Sharh al-Kabir', vol: 1, p: 462
[20] Ad-Durr Ath-Thamin', p: 327, Darul-Fikr
[21] Rawdat at-Talibin
[22] 'Asna Al-Matalib Fi Sharh Rawd At-Talib'

The fact that al-Subki's view was rejected even within his own school tells you how strong the position against calculation is across the tradition.

The Hanbali school is the most straightforward. Ibn Qudamah wrote in Al-Mughni:

"If one relied on calculations or the findings of the astronomers, his fast is not valid, even if their findings coincided with the birth of the crescent, because their findings are not considered valid evidence Islamically."[23]

And al-Buhutiyy added in Kashshaf al-Qina':

"Whoever fasts based on calculations and astronomy has fasted without any reliable Shari'i evidence. His fasting is invalid even if in reality these calculations often coincided with the beginning of Ramadan."[24]

Think carefully about what that last statement means. Even if the calculation turns out to be correct, the fast built upon it is still invalid, because the Shari'i condition was never fulfilled. In Islamic law, the method matters, not just the outcome.

"But We Use Calculations for Prayer Times" Addressing a Common Argument

This is one of the most frequently raised objections. People say: we use the sun to calculate prayer times, so why can we not use the moon to calculate Ramadan? It sounds logical on the surface, but it reflects a misunderstanding of how Islamic law distinguishes between different types of rulings.

Prayer times are tied to the ongoing, continuous movement of the sun. The entrance of Fajr, Dhuhr, Asr, Maghrib and Isha are constantly occurring phenomena that any reliable method can track. There is no specific command in the texts to physically go outside and look for the sun. Its position is simply a marker of time.

Ramadan is fundamentally different. There is a specific, explicit command: sight the crescent. The Prophet ﷺ did not say *"when the moon enters a new astronomical phase, fast."* He said *"when you see it."* The seeing itself, the Ru'yah, is the condition. It is not just a method of tracking time. It is the legal cause, the Illah, that triggers the obligation of fasting. Scholars call analogizing the two cases a false analogy, Qiyas ma'al Fariq, because the legal nature of the two rulings is fundamentally different.

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[23] Al-Mughni' by Muwaffaq ad-Din Ibn Qudamah al-Hanbaliyy (620 AH) and in ash-Sharh al-Kabir by Shams ad-Din Ibn Qudamah al-Maqdisiyy al-Hanbaliyy

[24] Kashshaf Al-Qina^', vol: 2, p: 302, Darul-Fikr

Why the Shari'ah Chose This Method

One thing worth thinking about is why Allah and His Messenger ﷺ chose this method in the first place. And when you reflect on it, the wisdom becomes clear.

Islam is for all of humanity, in every time and every place. A farmer in the mountains of Yemen, a fisherman on the coast of Senegal, a family in the forests of Indonesia, all of them can look up at the sky. None of them need a degree, a telescope, or a software application. The moon is a sign that belongs to everyone equally. There is something deeply beautiful and profoundly just about that.

Ibn Hajar al-Asqalani captured this wisdom when he wrote:

"The wisdom in this is that the number of days when it is cloudy will be something which the people are the same about, so disagreement and dispute will be avoided."[25]

Calculation, even modern calculation, still requires specialists. It requires access to software, tables, and expertise that the average Muslim does not have. If the validity of your fast depends on the correctness of a calculation made by an expert in another country, then your worship has been placed in the hands of someone other than yourself and your community. The Shari'ah specifically avoided that dependency.

Ibn Taymiyyah's Broader Warning

Ibn Taymiyyah connected this issue to something even deeper. He said that fixing religious months through calculation was the practice of other nations, such as the Romans and the Copts, and that Muslims were commanded to distinguish themselves. He said:

"Whoever uses astronomical calculations instead of moon sighting is not from this Ummah in this regard. Rather, he is acting upon something foreign to this Ummah, a path of the non-Muslims."[26]

And he challenged the reliability of the calculators of his era:

"Stargazing calculations were rejected by the Sunnah and the consensus of the Companions."[27]

While modern astronomy has improved vastly in precision, the juristic principle remains unchanged. The Shari'ah ruling was never meant to depend on mathematical precision.

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[25] Fathul-Baaree (4/137)
[26] Majmoo'atul Fataawa, Ibn Taymiyyah
[27] Majmoo'atul Fataawa for Ibn Taymiyyah, vol. 13 pg. 75-76

It was meant to depend on compliance with the sensory sign that the Creator placed in the sky for exactly this purpose.

Conclusion

The collective evidence from the Quran, the authentic Sunnah, and the documented consensus of all four schools of Islamic law leads to one conclusion: astronomical calculations are not valid Islamic evidence for establishing Ramadan and Eid.

The Quran points to the crescent as the sign. The Prophet ﷺ commanded us to sight it. He gave us a clear backup when sighting is not possible, and that backup is completing thirty days, not consulting a mathematician. This consensus was documented by the scholars of the Ummah for over a thousand years, and there is no legitimate scholarly voice from any of the four schools that successfully overturned it.

But beyond the legal discussion, there is a more personal dimension to this. We declared our love for the Prophet ﷺ. We said he is more beloved to us than our own parents and our own children. We recite the ayah that calls him the most beautiful example. If that love is real, it must express itself in following him, especially in acts of worship, especially when his method is clear.

He ﷺ said: "*Fast when you see it. Break your fast when you see it. And if it is obscured, complete thirty days.*"

That is the word of the man Allah sent as a mercy to all the worlds. That is the word of the man whose character Allah described as magnificent. That is the word of the man who told us he was sent to complete good character. His method is not a limitation. It is a mercy. It connects every Muslim on earth to the same sky, to their communities, and to fourteen centuries of believers who fasted and celebrated together while looking up at the same crescent moon.

His method is enough. It was always enough.

W'Allahu Alam - Allah knows best

Discord- iftiratarihutansin

Twitter- IftiraTarihUtansin[28]

Website- Hayatimanvecihad8[29]

Acces our website;

[28] https://x.com/iftiratarihutan

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