

THE BEGINNING OF THE NEW HICRÎ QAMERÎ MONTH IS NOT BY CALCULATION BUT BY SIGHTING WITH THE “NAKED EYE”

In the Qur’ân, Allahü te’âlâ orders our Beloved Prophet:

“They are asking you about the new moon crescents, tell them, that they are the signs for the times of mankind and the hajj” (The sûrat-ul Baqara 189th âyat-i-kerîma). Sheykh-ul Islâm Mustafâ Sabrî Efendi cited the 189th âyat-i-kerîma as the evidence in this context.

- In a hadîth-i-sherîf quoted in Marâqil-falâh, it is declared: “**When you see the Moon start fasting! When you see her again, stop fasting.**” According to this command, the month of Ramadân begins when the waxing moon (the new crescent) is first sighted. It is wâjib-el-kifâyet to look for the hilâl [waxing new crescent] after sunset on the thirtieth night of the month Sha’bân and to go to the qâdhî to inform about sighting. Taqiy-üd-dîn ibn-ul-Daqîq notes, The hilâl cannot be sighted at all before the passage of one or two days after the (ijtimâ’-el-neyyirayn).
- “**Start sawm only upon sighting the qamer and and make ‘iyd only upon sighting it. Complete Sha’bân up to thirty if the weather turns cloudy**” (Bukhârî, Müslim, Tirmidhî, Nesâî, Dârimî, Müsned-e Ahmed ben Hanbel).
- “**Do not keep sawm unless you sight the hilâl: nor make ‘iyd unless you sight it. Make taqdîr (estimate) if your horizon becomes cloudy**” (Bukhârî, Müslim, Nesâî, Dârimî, Muwattâ’-e Imâm-I Mâlik, Müsned-e Ahmed ben Hanbel). In the other ahâdîth-el-sherîfeh, of the same meaning, instead of “make taqdîr (estimate)” the clauses, “**Keep sawm for 30 days**”, “**Complete Sha’bân to thirty**”, “**complete it up to thirty days**” take place.

There is no information in any book by any Islam ‘âlim contrary to these ahâdîth-el-sherîfeh. That is, the ‘ulamâ-el-Islâm, conjointly, unanimously and **without any comment**, with absolute certainty, declared that the issue is the naked eye sighting of the hilâl.

According to the orders by the above-mentioned “**Nass**” (*âyat-i-kerîmas and hadîth-i sherîfs*), the month of Ramadhân begins with sighting of the hilâl [waxing new crescent] of the moon. It has been stated by (ibn-e ‘Âbidîn) that it is not jâ’iz to start according to the calculation or the calendar prepared beforehand, in the section on qibleh, and, also by the authors of the books (Eshî’at-ül-leme’ât) and (Ni’met-i islâm). **There is no legal permissibility for ijtihâd where there is nass.**

It is seen that it is also proved by the statement in clause 14 of the Majelleh, that there is no legal permissibility for ijtihâd in the presence of such clarity of the Âyât-el Kerîme and the Ahâdîth-el-sherîfeh. Because, this clause declares that, “**There is no legal permissibility for ijtihâd where there is nass**”.

Additionally, (In the book (Tebyîn-ül-haqâiq) written by Osmân bin Zeylâ’î as a commentary to the book (Kenz) and in (î’ânet-ut-tâlibîn) by Abû Bekr Shatâ that there is **ijmâ’** for the ramadhân being realized is to be based either on the ru’yet [naked eye sighting] of the hilâl or by completing the sha’bân up to thirty.

It is stated as follows on the two hundred and eighty-ninth page of the first volume of **Ibni ‘Âbidîn**, during the discourse on how to find the direction of qibla: “Scholars said that we should not trust calendars in learning the first day of Ramadân-i-sherîf. For, the fast becomes fard after the new moon is seen in the sky. Our Prophet ‘sall-Allâhu ‘alaihi wa sallam’ stated: ‘**Begin to fast when you see the new moon!**’ On the other hand, the appearing of the new moon depends on calculation, not on seeing it; calculation is valid, and the new moon appears on the night indicated by calculation. Yet it may be seen on the following night instead of that night, and it is necessary to begin the fast on the night it is seen, not on the night it must appear (according to the calculation). Such is the commandment of Islam.” It is an act of worship to look for the new moon in the sky. As is seen, announcing the beginning of Ramadân-i-sherîf beforehand is an indication of not knowing Islam. Likewise, the first day of the ‘lyd of Qurbân is determined by observing the new moon for the (beginning of the) month of Dhu’lhijja. The ninth day of the month of Dhu’lhijja, the ‘Arafa Day, is the day found by calculation or calendar, or the following day. The hajj performed by those who climb the ‘Arafât a day earlier is not valid. So none of them can be a hadji.

Again in (**Ibn-e ‘Âbidîn**), (...As for realizing the beginning of Ramadhân, astronomical calculations are not to be taken as basis. It is because, it is with sighting the hilâl in the sky. Our Prophet ‘sall-Allâhu ‘alaihi wa sallam’ stated: **‘Begin to fast when you see the new moon!’** The birth of the hilâl is understood by calculation and not by sighting. The result revealed by calculation is exactly correct. However, the hilâl may be sighted in the night it is born, or may be sighted the second night as well, not being sighted on the night it is born. **It has been ordered that the commencement of the Ramadhân should be based on sighting of the hilâl, and not by its birth.**) However, because the calendars quote the time of birth of the new crescent and not the time of hilâl sighting, the beginning of the month of Ramadhân cannot be understood by calendar. The month of Ramadhân begins with the naked eye sighting of the hilâl in every century, at every place. The hilâl is close to the sunset horizon and sets after the Sun. Its convex side is on its western edge.

It is written in **Fatâwâ-i-Hindiyya** as well that it is not permissible to begin (fasting in) Ramadhân or (to stop fasting in order to celebrate the) ‘Iyd by (taking the) calendar or calculation (as a guide). When the new moon is seen in a city on the thirtieth night of Sha’bân, it is necessary to begin the fast all over the world. The new moon seen during the day is the new moon of the following evening.

- It is wâjib-i-kifâya for every Muslim to look for the new crescent on the thirtieth of the month of Sha’bân at the time of sunset and to go to the Qâdî and inform him as soon as they see the new moon. Taqiy-y-ud-dîn Muhammad ibni Daqîq states that the new moon can never be sighted before one or two days after the **ijtimâ’i neyyireyn = conjunction**.
- It is written in the book **Majmû’a-i Zuhdiyya**: “A person who sees the new moon of the month of Shawwâl cannot break his fast. For, in cloudy weather, it is necessary for two men or one man and two women to give the testimony of having seen the new moon of Shawwâl. If the sky is clear, it is necessary for many people to witness the moons of Ramadhân and Shawwâl.”
- It is stated in **Qâdî-Khân**: “If the new moon sets after the Shafaq, (night prayer,) it belongs to the second night (of the new month); if it sets before the Shafâq it belongs to the first night.

Elmalılı Hamdi Efendi, in his article, published in the periodical (**Sebîl-ür-rashâd**) volume 22, notes that “Because the shar-e sharîf (honorable Islâmîc law) has based the wujûb-us-siyâm (incumbency of sawm) not on the astronomical rules, but on the necessity of ru’yet [naked eye sighting], it has not esteemed calculations as such.”

In short, in Islâm, not the calculations, but the naked eye sighting of the crescent has been considered as basis for the beginning of the month of Ramadhân.

The Director of the Observatory and professor of astronomy at the Faculty of Sciences, Fatin Gökmen Efendi, in his article published in the periodical (**Sebîl-ür-rashâd**) volume 22 notes “The people in charge of Islamic law have limited the hilâl of ramadhân and the hilâl of fitr to ru’yet (naked eye sighting), and, in case of impossibility, to completing to thirty. The evidence they take as basis in this context is the hadîth-i sherîf, **“Keep sawm if you sight the hilâl (waxing new crescent), make ‘eyd if (when) you sight it again, and make taqdîr (estimate) if the hilâl is veiled by cloud and the like”**. The majority of those in charge of Islamic law have interpreted the word “taqdîr” as completing to 30 days. The reason which directed them to this interpretation is that in the other ahâdîth-el-sherîfeh of the same meaning, instead of the term **“make taqdîr”**, the clauses **“Keep sawm for 30 days”**, **“Complete Sha’bân to thirty”**, **“complete up to thirty days”** take place.

“Although I do not deem the sole astronomical judgement (based on calculations) concerning the ru’yet-hilâl to be adopted as lawful evidence for legal validation, I see more legal not to be satisfied with the testimony of two witnesses contradictory to the astronomical judgement.” That is, the testimony of two witnesses who say they saw the hilâl ,before the astronomically calculated time, is not to be taken into consideration. It is because the calculation (of the time of conjunction) is precise; it is not possible to sight the new waxing crescent before the calculated conjunction time.

The ‘Ulamâ of Islâm together with the Islâm Astronomy Specialists and Modern Astronomy Organizations and Experts stated **that Ru’yet-e Hilâl is not possible by calculation**, and that all the calculations made are not to determine the time when the new Qamerî month will start, but to understand the night the new waxing hilâl would probably be sighted. They have stated in their numerous books —openly and clearly, leaving no room for any unambiguity— that the new waxing hilâl should be sighted above the line of horizon after sunset, at the western side.

Modern Astronomy Organizations and **Experts** also **explain scientifically with evidences** that the beginnings of Hijrî Qamerî months **cannot be determined by calculation but by visual observation**. For example, the original English “note” by **USNO** is presented in **(APPENDIX)**.

The explanation in the note, word by word, is as follows:

“Although the date and time of each New Moon can be computed exactly, **the visibility of the lunar crescent as a function of the Moon's "age"—the time counted from New Moon—depends upon many factors and cannot be predicted with certainty**. During the first two days after New Moon, the young crescent Moon appears **very low** in the western sky after sunset, **must be viewed through bright twilight, and sets shortly after sunset**. The sighting of the lunar crescent within one day of New Moon is usually difficult. The crescent at this time is quite thin, has a low surface brightness, and can easily be lost in the twilight. Generally, **the lunar crescent will become visible to suitably-located, experienced observers** with good sky conditions about one day after New Moon. However, the time that the crescent actually becomes visible varies quite a bit from one month to another. **Naked-eye sightings as early as 15.5 hours after New Moon have been reliably reported** while observers with telescopes have made reliable reports as early as 12.1 hours after New Moon. **Because these observations are exceptional, crescent sightings this early in the lunar month should not be expected as the norm.**”

In a situation with so many uncertainties, it is openly and clearly contradictory to scientific facts to take occurrence of the “8 ° / 5 °” (Sun-Moon elongation / Moon’s altitude at Sunset) criterion, as if sighted, without visual observation,.

That the criterion was accepted by all expert offices and establishments, but that the topmost establishments expressed that the criteria were not absolute or unconditional, that they were variable and there were many other factors affecting the crescent Moon’s visibility, that the illumination ratio was also an important factor, that the Moon would not be probably visible from anywhere on the Earth on **03 June 2019**, that **01 Shawwal 1440** was going to coincide with **05 June 2019** had gained certainty, together with the relevant links, documents, calculations and the statements made by the relevant Offices, Establishments and Observatories— took place very clearly in our petitions presented previously. In **the Astronomical Almanac** —prepared and published jointly by **HMNAO**, **“Her Majesty’s Nautical Almanac Office”** and **USNO “The United States Naval Observatory”** (the two topmost bodies in the field), which is used as a guide by the expert offices, establishments and experts all over the world, and esteemed as the constitution of the profession and the relevant branch of science— **it is stated that 01 Shawwal 1440 coincided with 5 June 2019 (A. D.)**. In addition, it is noted in the response we received to our letter to **NASA** —the original and the Turkish translation of which was presented attached to our previous written petitions— **that the Julien date corresponding to 1 Shawwal 1440 is 5 June 2019**, precisely as stated by the abovementioned observatories.

Thus, the necessity of determination of the first days of the qamerî months by naked eye observation is proved above by both scientific and dînî (Islâmî) evidences.

It is evidenced by nass (*al-Âyât-al-kerîmeh and el-Ahâdîth-el-sherîfeh*) that it is necessary that the hilâl be sighted (with naked eye) to determine the beginnings of Ramadhân and the ‘lyd months. Ijtihâd cannot be exercised on the issues about which there is nass.

In determining the beginnings of these and all the other qamerî months, **“it has been explicitly stated also in the web page of USNO that the sighting of the hilâl cannot be calculated.”**

Since the naked eye sighting of the hilâl is taken as the basis for the beginnings of the hicrî Qamerî months, it is necessary to follow not the dates given in the calendars prepared according with the calculation of the birth (lunar conjunction) of crescent, but the dates determined by observation.

Briefly, **it is a categorical order of our Dîn that the beginnings of the Hijrî Qamerî months be determined not by calculation, but by visual observation (with naked eye)**.

Furthermore, it is evident with naqlî and ‘aqlî (traditional and scientific) documents that the related practice in the Muslim countries has been as noted above since al-‘Asr-es-se’âdah.

Website: <http://aa.usno.navy.mil/faq/docs/crescent.php>

CRESCENT MOON VISIBILITY

Although the **date and time of each New Moon** can be computed exactly, the visibility of the lunar crescent as a function of the Moon's "age"—the time counted from **New Moon**—depends upon many factors and cannot be predicted with certainty. During the first two days after New Moon, the young crescent Moon appears very low in the western sky after sunset, must be viewed through bright twilight, and sets shortly after sunset. The sighting of the lunar crescent within one day of New Moon is usually difficult. The crescent at this time is quite thin, has a low surface brightness, and can easily be lost in the twilight. Generally, the lunar crescent will become visible to suitably-located, experienced observers with good sky conditions about one day after New Moon. However, the time that the crescent actually becomes visible varies quite a bit from one month to another. Naked-eye sightings as early as 15.5 hours after New Moon have been reliably reported while observers with telescopes have made reliable reports as early as 12.1 hours after New Moon. Because these observations are exceptional, crescent sightings this early in the lunar month should not be expected as the norm.

The visibility of the young lunar crescent depends on sky conditions and the location, experience, and preparation of the observer. Generally, low-latitude and high-altitude observers who know exactly where and when to look will be favored. For observers at mid-northern latitudes, months near the spring equinox are also favored, because the ecliptic makes a relatively steep angle to the western horizon during these months. The steep angle means the Moon's altitude will be greater just after sunset.

Ignoring local conditions for the moment and visualizing the problem from outside the Earth's atmosphere, the size and brightness of the lunar crescent depend on only one astronomical quantity: the *elongation* of the Moon from the Sun, which is the apparent angular distance between their centers.

For this reason, the elongation has also been called the *arc of light*. If the value of the elongation at any instant is known, the width of the crescent can be computed.

The elongation as a function of the Moon's age depends on several factors:

1. **The Moon's elongation at New Moon.** The elongation of the Moon at New Moon is not necessarily 0. The Moon's center may pass directly in front of the Sun at New Moon (when a solar eclipse will occur) or it may be as much as five degrees to the north or south of the Sun. That is, the Moon can *start* the month with an elongation ranging from zero to five degrees. A minor complicating factor involves the definition of New Moon in the almanacs. Astronomical New Moon is defined to occur when the Sun and Moon have the same geocentric ecliptic longitude, which may not occur precisely when the Sun and Moon are closest together in the sky.
2. **The speed of the Moon in its orbit.** The Moon's orbit is elliptical, and its speed is greatest when it is near perigee (closest to the Earth), least near apogee (furthest from the Earth). The change in speed is caused by conservation of angular momentum; the same principle causes a spinning ice skater to speed up when she pulls her arms inward. If perigee occurs near New Moon, the Moon will appear to be moving away from the Sun in the sky at a greater than average rate.
3. **The distance of the Moon:** Because of its elliptical orbit, the distance of the Moon varies. Even if the Moon moved with a constant speed, its angular motion as viewed from the Earth would be greater when the Moon is near perigee. Similarly, a nearby automobile appears to be moving quicker than a more distant one, even if they are actually moving at the same speed.

4. **The observer's location (parallax).** If the observer is located in the tropics such that the one-day-old-Moon is observed just before it sets, its elongation as seen by the observer will be about a degree less than that seen by a fictitious observer at the center of the Earth, which is the position used for most almanac calculations. Similarly, if you look at a foreground object with one eye closed and then close that eye and open the other, the object makes an apparent jump against the background. The change in the observed elongation is less for observers at middle or high latitudes; however, other geometric factors are less favorable for these observers.

Factors (2) and (3) are linked by Kepler's second law, which predicts that the angular speed of the Moon as seen from the Earth will vary by about 22%. The combined effect of the first three factors gives geocentric elongation of the Moon from the Sun at an age of one day can vary between about 10 and 15 degrees. The last factor can subtract about a degree for an observer at the equator.

This large range of possible elongations in the one-day-old Moon is critical. At this time the width of the crescent is increasing with the square of the elongation, and the surface brightness of the crescent is also rapidly increasing. The apparent area of the crescent also increases inversely with the square of the distance to the Moon. Some of the earliest reliable sightings of the crescent occur near elongations of around 10 degrees. Simply specifying the age or elongation of the Moon cannot tell the whole story. But the elongation is a more reliable parameter to use *as a starting point* in assessing the lunar crescent visibility at any given date and time.

The prediction of the first sighting of the early crescent Moon is an interesting problem because it simultaneously involves a number of highly non-linear effects. Stated in less technical language, many things are changing very rapidly. Effects to be considered are the geometry of the Sun, Moon, and natural horizon; the width and surface brightness of the crescent; the absorption of moonlight and the scattering of sunlight in the Earth's atmosphere; and the physiology of human vision. This problem has a rich literature.