

CHAPTER 6

ARGUMENTS FOR ASTRONOMICAL CALCULATIONS

This group of scholars argues that calculations are a definitive way of knowing the movements of celestial bodies and are more accurate than just naked-eye sighting. Neither the Qur'an nor the Sunnah bans the use of calculations in matters of religion, as elaborated above. In fact, the Qur'an clearly states that the sun and the moon have precisely calculated orbits and follow them meticulously to the second: "The sun and the moon follow courses [exactly] computed" (الشمس والقمر بحسبان (الرحمن: 5)).

THE MOON: THE DIVINE SOURCE OF PRECISE CALCULATIONS

The Qur'an states:

(والقمر قدرناه منازل حتى عاد كالعرجون القديم لا الشمس ينبغي لها أن تدرك القمر ولا الليل سابق النهار وكل في فلك يسبحون.) (يس: 39-40)

And the moon: We have measured for it mansions [to traverse] till it returns like the old [and withered] lower part of a date-stalk. It is not permitted for the sun to catch up with the moon, nor can the night outstrip the day: each [just] swims along in [its own] orbit [according to the law]. (36:39-40)

It also reveals that Allah created specified orbits for both of them so that people can know the number of years and the calculations.

(هو الذي جعل الشمس ضياء والقمر نورا وقدره منازل لتعلموا عدد السنين والحساب.) (يونس: 5)

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 calculation [of time]. (10:5)

The theme "you may know the number of the years and the calculation [of time]" occurs in 17:12 as well.

In addition, they argue that the Prophet prescribed naked-eye sighting to confirm Ramadan, for it was the only available method that ensured

certainty. Sighting the new moon is not *ibādah* in itself, but only a means to achieve the goal of certainty. If this goal could be achieved through a different and more accurate method, then following it would be just as Islamic as naked-eye sighting. They believe that calculations are currently more precise than naked-eye sighting. Therefore, the Islamic months should be confirmed by the former method, not the latter.

Those who permit the use of calculations cite the following prophetic narrations to prove this point:

حَدَّثَنَا عبيدُ اللَّهِ بنُ عبدِ المجيد، ثنا مالكٌ عن نافعٍ، عن ابنِ عمرَ، أنَّ رسولَ اللَّهِ صلى الله عليه وسلم ذَكَرَ رمضانَ فقال: (لَا تصوموا حتَّى تَرَوْا الهلالَ ولا تَفتَروا حتَّى تَرُوهُ، فإن غَمَّ عليكم فأقدروا له).¹

The Prophet mentioned Ramadan and said, “Do not fast until you see the moon and do not break fast until you see it. If it is cloudy, then estimate it.”

حَدَّثَنَا سليمانُ بنُ حربٍ، ثنا حمادُ بنُ زيدٍ، عن أيوبَ عن نافعٍ، عن ابنِ عمرَ، قال: قالَ رسولُ اللَّهِ صلى الله عليه وسلم: (إنما الشهرُ تسعٌ وعشرونَ فلا تصوموا حتَّى تَرُوهُ ولا تَفتَروا حتَّى تَرُوهُ، فإن غَمَّ عليكم فأقدروا له).²

The month [sometimes] consists of twenty-nine days. Therefore, do not fast until you see it and do not break the fast until you see it. Calculate it if it is cloudy.

حَدَّثَنَا إسماعيلُ بنُ جعفرٍ، قال: وأخبرني عبدُ اللَّهِ بنُ دينارٍ أَنَّهُ سَمِعَ ابنَ عمرَ قال: قالَ رسولُ اللَّهِ: (لا تُصوموا حتَّى تَرَوْا الهلالَ ولا تُفتَروا حتَّى تَرُوهُ إلا أن يُعمَّ عليكم فإن غَمَّ عليكم فأقدروا له).³

Do not fast until you see it and do not break the fast until you see it, unless it [the sky] is cloudy. Calculate it if it is cloudy.

THE THREE ACCEPTED INTERPRETATIONS OF THESE HADITHS

Al-Nawawi states that jurists have given the following three interpretations:

وَاخْتَلَفَ العُلَمَاءُ فِي مَعْنَى قَوْلِهِ صلى الله عليه وسلم: (فَإِنْ غَمَّ عَلَيْكُمْ فَأَقْدُرُوا لَهُ) فَقَالَ أَحْمَدُ بنُ حَنْبَلٍ وَطَائِفَةٌ قَلِيلَةٌ: مَعْنَاهُ صَبَّحُوا لَهُ وَقَدَّرُوهُ تَحْتَ السَّحَابِ، وَأَوْجَبَ هُوَ لِإِصْنَامِ اللَّيْلَةِ العَنِيمِ.

The scholars differed about the prophetic report’s meanings “estimate it if it is obscured from you.” Ahmad ibn Hanbal and a minority group maintained that it meant restricting it and considering it under the clouds. This group mandated fasting of the day whose night was cloudy.

Imam Ahmad interprets this hadith as a command to start Ramadan on the twenty-ninth day when it is cloudy, as discussed above.

وَقَالَ مُطَرِّفُ بْنُ عَبْدِ اللَّهِ وَأَبُو الْعَبَّاسِ بْنُ سُرَيْجٍ وَابْنُ قُتَيْبَةَ وَآخَرُونَ: مَعْنَاهُ قَدَّرُوهُ بِحِسَابِ الْمَنَازِلِ.

Mutarraf ibn ‘Abd Allah, Ibn Surayj, Ibn Qutaybah, and others said that it meant “Calculate it in accordance with moon phase calculations.”

وَقَالَ مَالِكٌ وَأَبُو حَنِيفَةَ وَالشَّافِعِيُّ وَجُمْهُورُ السَّلَفِ وَالْخَلْفِ: مَعْنَاهُ قَدَّرُوا لَهُ تَمَامَ الْعَدَدِ ثَلَاثِينَ يَوْمًا.⁴

Malik, Abu Hanifah, Shafi‘i, and earlier and later *jumhūr* maintained that it meant completing thirty days.

Al-Mawsu‘ah al-Fiqhiyyah states:

تَضَمَّنَ هَذَا الرَّأْيُ الْقَوْلَ بِتَقْدِيرِ الْهِلَالِ بِالْحِسَابِ الْفَلَكَيِّ وَنُسِبَ إِلَى مُطَرِّفِ بْنِ عَبْدِ اللَّهِ بْنِ الشَّخِيرِ مِنَ التَّابِعِينَ وَأَبِي الْعَبَّاسِ بْنِ سُرَيْجٍ مِنَ الشَّافِعِيَّةِ وَابْنِ قُتَيْبَةَ مِنَ الْمُحَدِّثِينَ. وَقَالَ ابْنُ عَبْدِ الْبَرِّ: لَا يَصِحُّ عَنْ مُطَرِّفٍ، وَنَفَى نَسْبَهُ مَا عُرِفَ عَنْ ابْنِ سُرَيْجٍ إِلَى الشَّافِعِيِّ لِأَنَّ الْمَعْرُوفَ عَنْهُ مَا عَلَيْهِ الْجُمْهُورُ. وَنَقَلَ ابْنُ رُشْدٍ عَنْ مُطَرِّفٍ قَوْلَهُ: يُعْتَبَرُ الْهِلَالُ إِذَا غَمَّ بِالنُّجُومِ وَمَنَازِلِ الْقَمَرِ وَطَرِيقِ الْحِسَابِ، قَالَ: وَرَوَى مِثْلَ ذَلِكَ عَنِ الشَّافِعِيِّ فِي رِوَايَةٍ، وَالْمَعْرُوفُ لَهُ الْمَشْهُورُ عَنْهُ أَنَّهُ لَا يُصَامُ إِلَّا بِرُؤْيَا فَايِسَةٍ أَوْ شَهَادَةِ عَادِلَةٍ كَالَّذِي عَلَيْهِ الْجُمْهُورُ.⁵

This opinion holds astronomical calculations to be a sound method of estimating the moon’s phases. It has been attributed to Mutarraf ibn ‘Abd Allah ibn al-Shikhir (a Successor), Abu al-‘Abbas ibn Sarayj (a Shafi‘i), and Ibn Qutaybah (a hadith scholar). Ibn ‘Abd al-Barr denied that Mutarraf espoused that view and rejected what Ibn Sarayj attributed to Shafi‘i because it was known that the latter maintained the majority (*jumhūr*) opinion. Ibn Rushd narrated Mutarraf’s statement that astronomical calculations can determine the new moon in the case of obscurities and narrated that this view is attributed to Shafi‘i in one of the reports. Shafi‘i’s known opinion is that fasting may be observed only with naked-eye sighting or by the witness of a trustworthy Muslim, as the majority of jurists contend.

Linguistically and contextually, the word in this hadith leads to the meaning of *التقدير*, as Abu Sulayman Ahmad ibn Muhammad ibn Ibrahim al-Khattabi prefers, that is, it gives the sense of counting and calculation in the case of cloudy weather or the lack of visibility. That is why scholars like al-Khattabi, al-Dawudi, and many others take it to mean that if it happens to be cloudy on 29 Sha‘ban, then relying on the calculations is not only permitted, but is actually required, by the Sunnah.⁶

Al-Baji reports that Abu ‘Abd Allah Muhammad ibn Sa‘id al-Dawudi al-Zahiri has interpreted the hadith in this way:

وَذَكَرَ الدَّوْدِيُّ أَنَّهُ قِيلَ فِي مَعْنَى قَوْلِهِ فَأَقْدُرُوا لَهُ أَيَّ قَدَّرُوا الْمَنَازِلَ.⁷

Al-Dawudi stated that the prophetic statement “estimate (calculate) it” has been interpreted to mean “calculating the moon’s phases.”

Ibn Daqiq al-Id reports that some Maliki scholars from Baghdad and some leading Shafi'i authorities adopted this position, especially in regard to the astronomer himself, who is required to start fasting on the day his calculations determine it to be the first day of Ramadan.⁸ He also reports that Mutarrif ibn Shikhir maintained that the astronomer must follow his calculations in confirming Ramadan. Abu al-Abbas ibn Surayj, a Shafi'i, states that the meaning of “calculate” is addressed to people who have the knowledge of calculation, whereas “sighting” is a method for ordinary Muslims.⁹

Al-Qarrafī narrates that the Malikis permit the use of calculation to determine Ramadan.

وَذَكَرَ الْقَرَّافِيُّ قَوْلًا آخَرَ لِلْمَالِكِيَّةِ بِحَوَازِ اعْتِمَادِ الْحَسَابِ فِي إِثْبَاتِ الْأَهْلِيَّةِ.¹⁰

Al-Qarrafī has reported another ruling of Maliki jurists that accepts astronomical calculations as a valid method of confirming new moons (months).

THE HADITH OF THE DAJJAL

Although interpreting the hadith discussed above as “estimation” conflicts with the classical majority opinion, it is in line with the linguistic meaning of “فَأَقْدُرُوا لَهُ.” The same phrase is used in the famous hadith of the Dajjal, in which the Prophet informed his Companions that at the time of the Dajjal, real time would seem to expand so much that a day would be equal to a year, a month, or even a week. The Companions asked how they should perform the five daily prayers in such a situation. In response, the Prophet replied, “فَأَقْدُرُوا لَهُ,” meaning “Calculate it.” There is no way to interpret the phrase as twenty-nine or thirty days or completion. It definitely means estimation. The hadith is as follows:

حَدَّثَنَا صَفْوَانُ بْنُ صَالِحٍ الدَّمَشَقِيُّ الْمُؤَدَّنُ أَحْبَرْنَا الْوَلِيدُ أَحْبَرْنَا ابْنَ حَابِرٍ حَدَّثَنِي يَحْيَى بْنُ حَابِرٍ الطَّائِيُّ عَنْ عَبْدِ الرَّحْمَنِ عَنْ بِنِ مُجَبِّرِ بْنِ نُفَيْرٍ عَنْ أَبِيهِ عَنِ النَّوَّاسِ بْنِ سَمْعَانَ الْكَلَابِيِّ، قَالَ: (ذَكَرَ رَسُولُ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ الدَّجَالَ فَقَالَ: إِنَّ يَخْرُجُ وَأَنَا فِيكُمْ حَجِيجُهُ دُونَكُمْ وَإِنَّ يَخْرُجُ وَلَسْتُ فِيكُمْ فَاْمُرُّوا حَجِيجَ نَفْسِهِ، وَاللَّهِ تَخْلِفَتِي عَلَى كُلِّ مُسْلِمٍ، فَمَنْ أَدْرَكَهُ مِنْكُمْ فَلْيَقْرَأْ عَلَيْهِ بِفَوَاتِحِ سُورَةِ الْكَهْفِ فَإِنَّهَا حَوَازِكُمْ مِنْ فَتْنَتِهِ. قُلْنَا: وَمَا لَيْتُهُ فِي الْأَرْضِ. قَالَ: أُرْبِعُونَ يَوْمًا، يَوْمٌ

كَسَنَةً، وَيَوْمٌ كَشْهَرٍ، وَيَوْمٌ كَجُمُعَةٍ، وَسَائِرُ أَيَامِهِ كَأَيَّامِكُمْ. فَقُلْنَا: يَا رَسُولَ اللَّهِ هَذَا الْيَوْمُ الَّذِي كَسَنَةً أَتَكْفِينَا فِيهِ صَلَاةَ يَوْمٍ وَلَيْلَةٍ؟ قَالَ: لَا، أَقْدُرُوا لَهُ قَدْرَهُ.¹¹

Al-Nawwas ibn Sam‘an narrated: “The Prophet mentioned the Dajjal and said: ‘If he comes forth while I am among you, I shall contend with him on your behalf; but if he comes forth while I am not among you, a man must contend on his own behalf, and Allah will take care of every Muslim on my behalf [and safeguard him against his evil]. Those of you who will survive to see him should recite over him the opening verses of *Surat al-Kahf*, for that will protect him from his trial.’” We asked, ‘[O Prophet of Allah], how long will he stay on earth?’ He said, ‘For forty days; one day like a year, one day like a month, one day like a week, and the rest of the days will be like your days.’ We asked, ‘O Prophet of Allah, will one day’s prayer suffice for the prayers of the day equal to one year?’ Thereupon he said, ‘No, but you must estimate the time [and then observe prayer].’”

ذكر رسول الله صلى الله عليه وسلم الدجال ذات غداة، فحفض فيه ورفع، حتى ظنناه في طائفة النخل، فلما رحنا إليه عرف ذلك في وجوهنا، فسألناه، فقلنا: يا رسول الله ذكرت الدجال الغداة فحفضت فيه ورفعت حتى ظنناه في طائفة النخل؟ قال: غير الدجال أخوف مني عليكم، فإن يخرج وأنا فيكم فأنا حجيجه دونكم، وإن يخرج ولست فيكم فامرؤ حجيج نفسه، والله خليفتي على كل مسلم، إنه شاب جعد، قلط، عينه طافية، وأنه يخرج خلة بين الشام والعراق، فعات يميناً وشمالاً، يا عباد الله اثبتوا، قلنا: يا رسول الله ما لبثه في الأرض؟ قال: أربعين يوماً، يوم كسنة ويوم كشهر ويوم كجمعة وسائر أيامه كأيامكم، قلنا: يا رسول الله فذلك اليوم الذي هو كسنة أيكفينا فيه صلاة يوم وليلة؟ قال: لا، أقدروا له قدره.¹²

Al-Nawwas ibn Sam‘an narrated: “The Prophet mentioned the Dajjal one day in the morning. He sometimes described him to be insignificant and sometimes described [his turmoil] as very significant [and we felt] as if he were in the clump of date palms. When we went to him [the Prophet] in the evening and he read [the signs of fear] on our faces, he asked, ‘What is the matter with you?’ We said, ‘O Prophet of Allah, you mentioned the Dajjal this morning [sometimes describing him] to be insignificant and sometimes very important until we began to feel that he were present in the clump of date palms nearby.’ Thereupon he said, ‘I harbor fear in regard to you in so many other things besides the Dajjal. If he comes forth while I am among you, I shall contend with him on your behalf, but if he comes forth while I am not among you, a man must contend on his own behalf and Allah will take care of every Muslim on my behalf [and safeguard him against his turmoil]. He [the Dajjal] will be a young man with wavy, cropped hair, and a blind eye. He will appear on the road between Syria and Iraq and will spread mischief right and left. O servant of Allah, Adhere [to the path of Truth].’ We asked, ‘O Prophet of Allah, how long will he stay on earth?’ He said, ‘For forty days; one day like a year and one

day like a month and one day like a week and the rest of the days will be like your days.' We asked, 'O Prophet of Allah, would one day's prayer suffice for the prayers of a day equal to one year?' Thereupon he said, 'No, but you must make an estimate of time [and then observe prayer].'"

THE "ESTIMATION" INTERPRETATION OF
THE HADITH IS MORE ACCURATE

In view of these prophetic reports, the interpretation of "أقدروا له" as calculating the month or the phases of the moon is perhaps more appropriate than the other two interpretations. That is why some authorities in the Hanafi, Maliki, and Shafi'i have no problem in accepting calculations for this purpose. There is a single report from Hammad that Ibn 'Umar narrated from the Prophet:

حدثنا سليمان بن داود العتكي أخبرنا حماد أخبرنا أيوب عن نافع عن ابن عمر، قال قال رسول الله صلى الله عليه وسلم: الشهرُ تسعٌ وعشرونَ فلا تصوموا حتى تروه ولا تفطروا حتى تروه. فإن عمَّ عليكم فأقدروا له ثلاثين.¹³

Ibn Umar reports that the Prophet said, "The month is twenty-nine days. Therefore do not fast until you see it and do not break the fast until you see it. Complete thirty days if it is obscured from you."

This narration is the only report that includes "estimate for it thirty days" instead of "estimate it." It is an oddly detached report, coming as it does through only one narrator, and thus cannot be accepted against such a variety of reports from Ibn 'Umar through Nafi', what the scholars call "the golden chain." Ibn Qudamah observes:

ورواية ابن عمر: "فأقدروا له ثلاثين" مخالفة للرواية الصحيحة المتفق عليها، ولمذهب ابن عمر ورأيه.¹⁴

The report from Ibn 'Umar that [says] "count it thirty" opposes the other agreed authentic narration from him. It also contradicts his opinion and *madhhab*.

Al-Subki, a Shafi'i who has discussed the question of calculation in great detail, rejects even a trustworthy witnesses if the calculations negate the possibility of sighting the moon:

وههنا صورة أخرى وهو أن يدل الحساب على عدم إمكان رؤيته ويدرك ذلك بمقدمات قطعية ويكون في غاية القرب من الشمس ففي هذه الحالة لا يمكن فرض رؤيتنا له حسا لأنه يستحيل فلو أخبرنا به مخبر واحد أو أكثر ممن يحتمل خبره الكذب أو الغلط فالذي يتجه قبول هذا

الْخَبِيرَ وَحَمْلَهُ عَلَى الْكَذِبِ أَوْ الْعَلْطِ وَلَوْ شَهِدَ بِهِ شَاهِدَانِ لَمْ تُقْبَلْ شَهَادَتُهُمَا لِأَنَّ الْحِسَابَ قَطْعِيٌّ وَالشَّهَادَةَ وَالْخَبِيرَ ظَنِّيَّانِ وَالظَّنُّ لَا يُعَارِضُ الْقَطْعَ فَضِلًّا عَنْ أَنْ يَقْدَمَ عَلَيْهِ وَالْبَيِّنَةُ شَرْطُهَا أَنْ يَكُونَ مَا شَهِدَتْ بِهِ مُمَكِّنًا جَسًّا وَعَقْلًا وَشَرْعًا فَإِذَا فُرِضَ دَلَالَةُ الْحِسَابِ قَطْعًا عَلَى عَدَمِ الْإِمْكَانِ اسْتَحَالَ الْقَبُولُ شَرْعًا لِاسْتِحَالَةِ الْمَشْهُودِ بِهِ وَالشَّرْعُ لَا يَأْتِي بِالْمُسْتَحِيلَاتِ.¹⁵

There is another scenario: if the astronomical calculations prove that a sighting is impossible and this is known from categorical inferences, such as the moon being too close to the sun at the time of sunset, then it is not possible to see it with our human senses because such a sighting is impossible. Now, if one person or two or a group of untrustworthy individuals produce a witness [claiming to have] sighted it, their witness must be rejected. [This is] because the astronomical calculations are precise, whereas the human witness and news are hypothetical, and the hypothetical cannot be accepted against something categorical, let alone given priority over it. For a witness to be accepted, it is required that what is being witnessed is possible Islamically [lawfully], logically, and sensually. Therefore, if the astronomical calculations prove that a sighting is impossible, it would be impossible to accept any claim of that Islamically, because what is being witnessed is not there and the Shari'ah does not create something self-contradictory and impossible in itself.

Al-Subki's main argument is that calculations are accurate, whereas there is the possibility of confusion or mistake in naked-eye sighting. Therefore, the Shari'ah would not prefer a probable method to a reliable and accurate one. He further argues that the Shari'ah did not require us to accept the news of a naked-eye sighting without verification. We cannot base our fasting solely on the claims of witnesses, for the Shari'ah does not ask for that. Verification of the news is essential. How often have we seen people giving false witness, either unintentionally or intentionally, for some hidden motive?¹⁶ Thus he advises the authorities to take the calculations into consideration, especially in negating the claimed naked-eye sighting when calculations prove that such cannot be the case. He also advises them not to pay too much attention to the views that prohibit the use of calculation in matters of religion, for the Shari'ah does not forbid it.

فَيَجِبُ عَلَى الْحَاكِمِ إِذَا جَرَّبَ مِثْلَ ذَلِكَ وَعَرَفَ مِنْ نَفْسِهِ أَوْ بِخَبَرٍ مَنْ يَنْبَغُ بِهِ أَنَّ دَلَالََةَ الْحِسَابِ عَلَى عَدَمِ إِمْكَانِ الرُّؤْيَا أَنْ لَا يَقْبَلَ هَذِهِ الشَّهَادَةَ وَلَا يُنْبِتَ بِهَا وَلَا يَحْكُمَ بِهَا، وَيُسْتَصْحَبُ الْأَصْلُ فِي بَقَاءِ الشُّهُورِ فَإِنَّهُ لَدَلِيلٌ شَرْعِيٌّ مُحَقَّقٌ حَتَّى يَتَحَقَّقَ خِلَافُهُ، وَلَا نَقُولُ الشَّرْعُ أَلْعَى قَوْلَ الْحِسَابِ مُطْلَقًا.¹⁷

It is obligatory upon the ruler to reject the witness of such people if he knows himself or from a trustworthy person that the calculations have proved that a physical sighting is impossible. He should neither accept that witness nor give any

ruling based upon such a claim. The month should be considered as continuing until it is proven otherwise, as the Shari'ah requires. And we do not say that the Shari'ah has banned the use of astronomical calculations at all.

Al-Subki is careful to differentiate between precise calculations and those based upon anticipation or probability. He asks the judges to use their sense of judgment when the calculations are probable.

وَمَرَاتِبُ مَا يَقُولُهُ الْحِسَابُ فِي ذَلِكَ مُتَفَاوِتَةٌ مِنْهَا مَا يَقْطَعُونَ بِعَدَمِ إِمْكَانِ الرُّؤْيَةِ فِيهِ فَهَذَا لَا رَيْبَ عِنْدَنَا فِي رَدِّ الشَّهَادَةِ بِهِ وَمِنْهَا مَا لَا يَقْطَعُونَ فِيهِ بِعَدَمِ الْإِمْكَانِ وَلَكِنْ يُسْتَعْدُونَ فِيهِ هَذَا مَحَلُّ النَّظَرِ فِي حَالِ الشُّهُودِ وَجِدَّةِ بَصَرِهِمْ وَيَرَى أَنَّهُمْ مِنْ أَحْتِمَالِ الْعَلْطِ وَالْكَذِبِ يَفَاوَتْ ذَلِكَ تَفَاوُتًا كَبِيرًا وَمَرَاتِبُ كَثِيرَةٌ فَلِهَذَا يَجِبُ عَلَى الْقَاضِيِ الْأَجْتِهَادُ وَسِعَ الطَّاقَةَ.¹⁸

There are many types of calculation. We have no doubt in our minds that a human witness cannot be accepted against accurately precise calculations. However, when the calculations are not certain but probable, then weight should be given to the human witness and his capability of sighting, such as strength of vision etc. ... In that case, the judge must use his judgment to the best of his ability.

He concludes that calculations are more certain than naked-eye sighting and that the probability of error is greater in the second case than in the first case:

إِذَا شَهِدَ عِنْدَنَا اثْنَانِ أَوْ أَكْثَرُ مِمَّنْ يَجُوزُ كَذِبُهُمَا أَوْ غَلَطُهُمَا بِرُؤْيَةِ الْهِلَالِ وَقَدْ دَلَّ حِسَابُ تَسْيِيرِ مَنَازِلِ الْقَمَرِ عَلَى عَدَمِ إِمْكَانِ رُؤْيَتِهِ فِي ذَلِكَ الَّذِي قَالَا: إِنَّهُمَا رَأَيَاهُ فِيهِ تَرُدُّ شَهَادَتُهُمَا لِأَنَّ الْإِمْكَانَ شَرْطٌ فِي الْمَشْهُورِ بِهِ وَتَجْوِيزُ الْكَذِبِ وَالْعَلْطِ عَلَى الشَّاهِدَيْنِ الْمَذْكُورَيْنِ أَوْلَى مِنْ تَجْوِيزِ أَنْحِرَامِ الْعَادَةِ فَالْمُسْتَحِيلُ الْعَادِيُّ وَالْمُسْتَحِيلُ الْعَقْلِيُّ لَا يُقْبَلُ الْأَفْرَازُ بِهِ وَلَا الشَّهَادَةُ فَكَذَلِكَ الْمُسْتَحِيلُ الْعَادِيُّ.¹⁹

If two or more untrustworthy people claim to have sighted the new moon and the astronomical calculations indicate that the sighting is not possible, then their witness is rejected because possibility is a condition for acceptability. It is more possibility that these witnesses are wrong rather than the nature [natural phenomenon i.e., calculations] being wrong. It is not accepted to approve of or accept witnesses about something which is a natural or intellectual impossibility.

Al-Subki knew that this question had not been discussed in such detail in his *madhhab* or before his time. Therefore, he felt comfortable in forcefully expressing his conclusions based upon his deep understanding of the subject.²⁰ In fact, he seems to have been quite ahead of his time and to have generated a heated debate over this question with some scholars. Considered a

mujtahid (an authority in his school of thought), he concludes the discussion with the following interesting comments:

قَدْ يَحْصُلُ لِبَعْضِ الْأَعْمَارِ وَالْجَهَالِ تَوَقُّفٌ فِيمَا قُلْنَاهُ وَيَسْتَنْكِرُ الرُّجُوعَ إِلَى الْحِسَابِ جُمْلَةً وَتَفْصِيلاً وَيَحْمَدُ عَلَى أَنَّ كُلَّ مَا شَهِدَ بِهِ شَاهِدَانِ يَثْبُتُ، وَمَنْ كَانَ كَذَلِكَ لَا يَخْطَابَ مَعَهُ وَنَحْنُ إِنَّمَا نَتَكَلَّمُ مَعَ مَنْ لَهُ أَدْنَى تَبَصُّرٍ وَالْجَاهِلُ لَا كَلَامَ مَعَهُ.²¹

Some recklessly ignorant [person] may hesitate to accept what we have stated. He might regard it as abhorrent to resort to calculation in part or in whole and may be stuck with the idea that whatever is witnessed by two persons is proven. No conversation can take place with such a rigid person. We are talking to those who at least enjoy the [knowledge of] basic logic. We cannot talk to the ignorant.

Al-Qaradawi ponders what how al-Subki would have viewed calculations and their authenticity, in regard even to acts of worship, if he had seen the scientific revolution of our time.

فكيف لو عاش السبكي إلى عصرنا هذا ورأى من تقدم علم الفلك ... كما أشرنا إلى بعضه؟²²

What would have been the response of al-Subki had he lived during our times and witnessed all this progress in the science of astronomy ... as we have just briefly mentioned?

Other scholars such al-^cAbbadi and Ibn Daqiq are reported to have agreed with him on this issue. Zakariyya ibn Muhammad al-Ansari reports:

لَكِنْ نَقَلَ الْقَابُورِيُّ عَلَى الْجَلالِ عَنِ الْعَبَّادِيِّ أَنَّهُ قَالَ إِذَا دَلَّ الْحِسَابُ الْقَطْعِيَّ عَلَى عَدَمِ رُؤْيَيْهِ لَمْ يَقْبَلْ قَوْلُ الشُّهُودِ الْعُدُولِ بِرُؤْيَيْهِ وَتَرَدُّ شَهَادَتُهُمْ بِهَا وَلَا يَجُوزُ الصُّومُ حِينَئِذٍ وَمُخَالَفَةُ ذَلِكَ مُعَانَدَةٌ وَمُكَابَرَةٌ.²³

Al-^cAbbadi said that the witness of even a trustworthy [person] would not be accepted if accurate astronomical calculations refute the possibility of a sighting. Their witnesses must be rejected owing to the calculations and fasting would not be allowed in such a case. Opposing this would be nothing short of stubbornness and haughtiness.

Ibn Hajar al-Asqalani reports that Ibn Daqiq al-^cId said that if calculations established the fact that the moon was there and could be sighted, but that cloudy weather prevented it from being sighted, then fasting would be obligatory. This constitutes a valid Islamic reason to follow the calculations.²⁴

Ibn Daqiq himself argues for this view:

وَأَمَّا إِذَا دَلَّ الْحِسَابُ عَلَى أَنَّ الْهَيْلَالَ قَدْ طَلَعَ مِنَ الْأَفَقِ عَلَى وَجْهِ يُرَى، لَوْ لَا وُجُودُ الْمَنَاعِ - كَالْعَيْمِ مِثْلًا فَهَذَا يَفْتَضِي الْوُجُوبَ، لِوُجُودِ السَّبَبِ الشَّرْعِيِّ. وَلَيْسَ حَقِيقَةُ الرُّؤْيَا بِشَرْطٍ مِنَ اللُّزُومِ؛ لِأَنَّ الْأَتْفَاقَ عَلَى أَنَّ الْمَحْجُوسَ فِي الْمَطْمُورَةِ إِذَا عَلِمَ بِإِكْمَالِ الْعِدَّةِ، أَوْ بِالِاجْتِهَادِ بِالْأَمَارَاتِ: أَنَّ الْيَوْمَ مِنْ رَمَضَانَ، وَحَبَّ عَلَيْهِ الصُّوْمُ وَإِنْ لَمْ يَرَ الْهَيْلَالَ. وَلَا أَخْبَرَهُ مَنْ رَأَاهُ.²⁵

If the calculations show that the new moon is born and can be seen over the horizon, but cannot be seen owing to obscurities such as clouds, then this makes it obligatory to fast. This constitutes an Islamic reason to confirm the month [from calculations]. The actual sighting is not a prerequisite to the fasting. There is agreement [among the jurists] that if someone was imprisoned in the basement and knew, either by completing thirty days or by diligence in following the signs, that the month of Ramadan had started, then he would be required to observe fasting even if he had neither sighted the moon himself nor had been informed by someone who actually sighted it.

Some Hanafi scholars, among them Muhammad ibn Muqatil, not only espoused the same views but even consulted astronomers and accepted their calculations regarding the lunar months.

قَالَ بَعْضُ أَصْحَابِنَا رَحِمَهُمُ اللَّهُ لَا بَأْسَ بِالْإِعْتِمَادِ عَلَى قَوْلِ الْمُنْجِمِينَ وَعَنْ مُحَمَّدِ بْنِ مُقَاتِلٍ أَنَّهُ كَانَ يَسْأَلُهُمْ وَيَعْتَمِدُ عَلَى قَوْلِهِمْ بَعْدَ أَنْ يَتَّفِقَ عَلَى ذَلِكَ جَمَاعَةٌ مِنْهُمْ.²⁶

Some of our scholars are of the opinion that there is nothing wrong in depending upon the astronomical calculations. Indeed, Muhammad ibn Muqatil used to inquire of astronomers about the calculations and depend upon them if the calculations were confirmed by a group of astronomers.

Ibn 'Abidin narrates the difference of opinion among the Hanafis.

الْجِلَافُ فِي جَوَازِ الْإِعْتِمَادِ عَلَيْهِمْ، وَقَدْ حَكَى فِي الْقُنْيَةِ الْأَقْوَالَ الثَّلَاثَةَ فَنَقَلَ أَوَّلًا عَنِ الْقَاضِي عَبْدِ الْجَبَّارِ، وَصَاحِبِ جَمْعِ الْعُلُومِ أَنَّهُ لَا بَأْسَ بِالْإِعْتِمَادِ عَلَى قَوْلِهِمْ، وَنَقَلَ عَنِ ابْنِ مُقَاتِلٍ أَنَّهُ كَانَ يَسْأَلُهُمْ وَيَعْتَمِدُ عَلَى قَوْلِهِمْ إِذَا اتَّفَقَ عَلَيْهِ جَمَاعَةٌ مِنْهُمْ.²⁷

There is a disagreement about trusting the calculations. There are three opinions narrated in al-Qunyah. Firstly, the opinion of al-Qadi 'Abd al-Jabbar and the author of *Jam' al-Ulūm* is that there is nothing wrong in accepting the calculations. It is narrated that Ibn Muqatil used to consult the astronomers and depend upon their calculations if a group of them agreed upon it.

It is clear from this discussion that well-versed Shafi'i, Maliki, and Hanafi authorities have opined that calculations can sometimes be used to determine

the beginning and end of Ramadan. It seems that most of these jurists have supported the use of calculations in negating, rather than confirming, Ramadan. Some of them allowed the use of calculations in confirmation also. However, Ibn Daqiq al-‘Id and other jurists allowed the use of calculations to attain confirmation in the case of cloudy weather only.

MODERN JURISTS AND CALCULATIONS

Life is changing rapidly in modern times. Among the contemporary scholars, M. Mustafā al-Maraghī, ‘Alī al-Tantawī, Ahmad M. Shakir, Mustafā al-Zarqā, Sharaf al-Qudā, and others argue that modern science has reached a level of authenticity and precision as regards calculation that there is no longer any need for naked-eye sighting. Given that the Shari‘ah required sighting when most of the Ummah was illiterate and ignorant of astronomy and other sciences relating to calculation, and since we have reached the level of certainty in these matters, we must use calculations to determine the Islamic months.

Ahmad Shakir contends that the command to depend solely upon naked-eye sighting came with a condition: the Muslims of that time did not know how to write or calculate. Hafiz ibn Hajr remarks:

والمراد أهل الإسلام الذين بحضرته عند تلك المقالة، وهو محمول على أكثرهم، أو المراد نفسه صلى الله عليه وسلم. وقيل للعرب اميون لأن الكتابة كانت فيهم عزيزة. قال الله تعالى (هو الذي بعث في الأميين رسولا منهم) ولا يرد على ذلك أنه كان فيهم من يكتب ويحسب لأن الكتابة كانت فيهم قليلة نادرة. والمراد بالحساب هنا حساب النجوم وتسييرها ولم يكونوا يعرفون من ذلك أيضاً إلا النزر اليسير، فعلق الحكم بالصوم وغيره بالرؤية لرفع الحرج عنهم في معاناة حساب التسيير.²⁸

The reference in the hadith is to the Muslims who were present with the Prophet when he uttered these words. It refers to the majority of them [namely, that they were illiterate] or it could be that the Prophet is referring to himself. The Arabs were called illiterate because writing skills were quite lacking among them. Allah has said, “It is He who has sent among the illiterate a messenger from among themselves.” This fact cannot be refuted by the assertion that among the Arabs there were individuals who could write or calculate because the writing skills were very rare among them. In addition, the reference to calculation in the hadith is to astronomical calculation. They did not know much about astronomical calculation except a very negligible part of it. That is why the Prophet connected the ruling of fasting with the physical sighting to avoid causing any hardship to them.

In view of this, Shakir argues that it is an established rule of Islamic jurisprudence that the cause and effect go hand in hand. So, since the Ummah has become literate and started writing/calculating, the effect must be modified.

لأن الأمر باعتماد الرؤية وحدها جاء معللا بعلة منصوصة، وهي أن الأمة (أمية لا تكتب ولا تحسب)، والعلة تدور مع المعلول وجودا وعدما، فإذا خرجت الأمة عن أميتها، و صارت تكتب وتحسب، أعني صارت في مجموعها ممن يعرف هذه العلوم، و أمكن الناس -عامتهم و خاصتهم- أن يصلوا إلى اليقين والقطع في حساب أول الشهر، و أمكن أن يتقوا بهذا الحساب ثقتهم بالرؤية أو أقوى... و جب أن يرجعوا إلى اليقين الثابت، و أن يأخذوا في إثبات الأهلة بالحساب وحده، و ألا يرجعوا إلى الرؤية إلا حين يستعصى عليهم العلم به.²⁹

The prophetic command asking [Muslims] to depend only upon physical sighting came also with the specified reason for doing so elaborated by the same text. The specified reason was that the Ummah of that time did not know how to write or calculate. In addition, the cause and effect always go hand in hand. Now, when the Ummah has abandoned its unlettered status and started writing and calculating – I mean that there exist a number of people among the Muslims who know these sciences – and it has become possible for all Muslims to know the precise calculations about the beginning of the month, once the Ummah can trust the accuracy of the calculations just like they trusted physical sighting or even more, then it has become obligatory upon them to follow only authentic calculations, not sighting, to confirm Ramadan. The only exception is if the calculations are hard to obtain.

He further argues that the new moon's birth begins the new month.

وإذا و جب الرجوع إلى الحساب وحده بزوال علة منعه، و جب أيضا الرجوع إلى الحساب الحقيقي للأهلة، وإطراح إمكان الرؤية و عدم إمكانها، فيكون أول الشهر الحقيقي الليلة التي يغيب فيها الهلال بعد غروب الشمس، و لو بلحظة واحدة.³⁰

Now, once it has become obligatory to turn to astronomical calculation only, because the reason for its prohibition is gone, then it becomes obligatory also to turn to the accurate calculations connected with the new months and the possibility or impossibility of sighting. Therefore, the precise beginning of the new month will be the evening, when the moon is setting after sunset, even if a second after sunset.

He states that starting and ending the Islamic months with calculations rather than naked-eye sighting is the most appropriate *fiqhī* position for our time and that it conforms to the true spirit of the relevant hadith.

ولقد أرى قولى هذا أعدل الأقوال، وأقربها إلى الفقه السليم، و إلى الفهم الصحيح للأحاديث الواردة في هذا الباب.³¹

I maintain that this statement of mine is the most fair of all. This (position) is the closest to the correct fiqh and to the appropriately genuine understandings of the hadiths reported in connection with this issue.

Mustafa al-Zarqa, after a detailed discussion of the question, concludes that there is nothing in the Shari‘ah’s rules that prevents contemporary Muslims from accepting such calculations.

وما دام من البديهيات أن رؤية الهلال الجديد ليست في ذاتها عبادة في الإسلام، و إنما هي وسيلة لمعرفة الوقت، وكانت الوسيلة الوحيدة الممكنة في أمة أمية لا تكتب ولا تحسب، و كانت أميتها هي العلة في الأمر بالاعتماد على العين الباصرة، وذلك بنص الحديث النبوي مصدر الحكم، فما الذي يمنع شرعا أن نعتد الحساب الفلكي اليقيني، الذي يعرفنا مسبقا بموعد حلول الشهر الجديد، ولا يمكن أن يحجب علمنا حينئذ غيم ولا ضباب إلا ضباب العقول؟³²

It is an established fact that sighting the new moon is not an act of worship in itself. It is just a means to know the timings. It was the only means available to the unlettered nation, which did not know how to write or calculate. Its unlettered status was the sole reason for dependence upon physical sighting. This is clear from the text of the prophetic tradition that is the original source of that ruling. Islamically speaking, what prevents us now from depending upon the accurate astronomical calculations that can determine for us, quite ahead of time, the beginning of the new month? No cloud or fog can obscure our knowledge of the month then, except the fog or dust of the intellect.

After much elaboration of the subject, al-Qaradawi concludes that Islam, which prescribes naked-eye sighting as a valid method to confirm Ramadan, would definitely prefer to accept calculations as the more valid method, because there could be doubt about or mistakes in human sighting, but not in the accuracy of calculations. Therefore, accepting these calculations conforms exactly to the true spirit of the Shari‘ah. The Ummah can be spared confusion and problems by following calculations.

إن الأخذ بالحساب القطعي اليوم وسيلة لإثبات الشهر، يجب أن يقبل من باب “قياس الأولى” بمعنى أن السنة التي شرعت لنا الأخذ بوسيلة أدنى، لما يحيط بها من الشك والاحتمال -وهي الرؤية- لا ترفض وسيلة أعلى وأكمل وأوفى بتحقيق المقصود، والخروج بالأمة من الاختلاف الشديد في تحديد بداية صيامها و فطرها وأضحها... وهي وسيلة الحساب القطعي.³³

Currently, astronomical calculations are a better means to establish the months. They must be accepted, for they are a better choice. The Sunnah, which prescribed for us the lesser method of actual sighting with all possibilities of doubt and probabilities, would never reject a perfectly superior method (calculations) that better realizes the original objective (of certainty) and will bring the Ummah out of this serious controversy, which takes place at the times of confirming the month of Ramadan, ‘Id al-Fitr, and ‘Id al-Adha. The precise astronomical calculations constitute that method.

Rashid Rida argues also that:

إِنَّ الَّذِينَ لَمْ يُبَيِّحُوا الْعَمَلَ بِالْحِسَابِ قَدْ عَلَّلُوهُ بِأَنَّهُ ظَنٌّ وَتَخْمِينٌ لَا يُفِيدُ عِلْمًا وَلَا ظَنًّا كَمَا نَقَلْنَاهُ عَنْ شَرْحِ الْبُخَارِيِّ لِلْحَافِظِ ابْنِ حَجْرٍ أَنفَاءً ، وَالْحِسَابُ الْمَعْرُوفُ فِي عَصْرِنَا هَذَا يُفِيدُ الْعِلْمَ الْقَطْعِيَّ ... وَيُمْكِنُ لِأُمَّةِ الْمُسْلِمِينَ وَأَمْرَائِهِمُ الَّذِينَ ثَبَتَ ذَلِكَ عِنْدَهُمْ أَنْ يُصْدِرُوا حُكْمًا بِالْعَمَلِ بِهِ فَيَصِيرُ حُجَّةً عَلَى الْجُمْهُورِ.³⁴

Those who did not permit use of calculations did so because calculations [at their times] were mere guesswork and estimation serving neither factual knowledge nor proper guesswork, as we have just quoted Hafiz ibn Hajr stating that in explaining al-Bukhari. But the calculations of our times are categorical and precise in their implication. It is very much possible for Muslim leaders and rulers who confirm these categorically precise calculations to issue an edict about their application [in determining Ramadan]. This way it will become a rule/proof also for common Muslims [to follow].

Sharaf al-Quda argues that the texts permitting the use of calculations as a valid method of determining the Islamic months do not differentiate between negation and confirmation. They are generic in nature and hence good for both negation and confirmation of the months. Indeed, in his view, the hadith allowing this use proves confirmation rather than just negation.

فالنصوص الشرعية لم تفرق بين النفي و الإثبات في الأخذ بالحساب والتقدير، و بخاصة حديث (فإن غم عليكم فاقدروا له) ففي الحديث أمر بالتقدير لإثبات الشهر، و ليس لنفي الشهادة، و أما علميا فلا فرق في دقة الحساب وقطعيته بين حساب إثبات دخول الشهر، و حساب نفي دخوله. و هكذا فإن الراجح في عصرنا أن اعتماد التقدير والحساب يكون للنفي والإثبات سواء بسواء.³⁵

The Islamic texts did not differentiate between confirming and negating the months by calculations. In particular, the hadith “if it is cloudy, then calculate it” commands the confirmation of the month by calculations, rather than its negation. Scientifically, it does not matter whether we use them for confirmation or negation, for they are precise and accurate anyway. Therefore, it is preferable in our time to depend equally upon calculations for confirming and negating the months.

Mustafa ‘Abd al-Basit concludes that following calculations was the original intention of the Shari‘ah. Naked-eye sighting was prescribed at a time when the Ummah did not have the knowledge of precise calculations. This rule must give way to the original rule, now that the Ummah has acquired authentic knowledge of calculations. The Islamic months must be confirmed by calculation to avoid the problems connected with naked-eye sighting.³⁶

The European Fiqh Council, whose president is Yusuf al-Qaradawi, includes such internationally respected jurists and scholars as Faysal Mowlawi, ‘Abd Allah ibn al-Juday^c, and Bin Bayyah. In May 2007, it issued a fatwa that calculations for the new moon’s birth are universally accepted by all scientists. Therefore, it constitutes a valid Islamic reason to confirm the lunar Islamic month the next day if the conjunction takes place and the moon sets even one second after sunset, as Mahmud Shakir said in 1939. The council established Makkah as the convention. Here is the text of its fatwa:

وأعطى المجلس فقرة خاصة للاعتناء بموضوع (الأهلة)، وذلك من أجل إصدار صيغة مناسبة تدفع عن المسلمين في أوروبا العنت وتحد من الاختلاف الذي يتكرر وروده كل عام، خصوصاً في بدء شهري رمضان وشوال، وتم تناول ذلك بأبحاث خاصة في الموضوع، وهي حسب ما يلي:

- 1 - تعيين أوائل الشهور القمرية بين الرؤية والحساب. للدكتور محمد الهواري.
- 2 - ثلاث مسائل حول الهلال. للشيخ عبدالله الجديع.
- 3 - السبب الشرعي لوجوب صيام رمضان: هل هو دخول الشهر أم رؤية الهلال؟ للشيخ فيصل مولوي.
- 4 - رؤية علمية وتربوية حول رؤية الأهلة. للدكتور صلاح سلطان

قرار 17/4

إثبات دخول الشهور القمرية

استعرض المجلس مجموعة من الأبحاث بخصوص هذا الموضوع، وقرر بعد المناقشات المستفيضة ما يلي:

أن الحساب الفلكي أصبح أحد العلوم المعاصرة التي وصلت إلى درجة عالية من الدقة بكل ما يتعلق بحركة الكواكب السيارة وبخاصة حركة القمر والأرض ومعرفة مواضعها بالنسبة للقبية السماوية، وحساب مواضعها بالنسبة لبعضها البعض في كل لحظة من لحظات الزمن بصورة قطعية لا تقبل الشك.

أن لحظة اجتماع الشمس والأرض والقمر أو ما يعبر عنها بالاقتران أو الاستسرار أو المخاق لحظة كونية تحصل في لحظة واحدة، ويستطيع علم الفلك أن يحسب وقتها بدقة فائقة بصورة مسبقة قبل وقوعها لعدد من السنين، وهي تعني انتهاء الشهر المنصرم وابتداء الشهر الجديد فلكياً. والاقتران يمكن أن يحدث في أي لحظة من لحظات الليل والنهار.

يثبت دخول الشهر الجديد شرعياً إذا توافر ما يلي:

أولاً: أن يكون الاقتران قد حدث فعلاً.

ثانياً: أن يتأخر غروب القمر عن غروب الشمس ولو بلحظة واحدة مما يعني دخول الشهر الجديد، وهو قول قال به علماء معتبرون ويتوافق مع الظواهر الفلكية المعتبرة.

ثالثاً: اختيار موقع مكة المكرمة الجغرافي أساساً للشريطين المذكورين.

على البلاد الأوروبية أن تأخذ بهذه القاعدة في دخول الشهور القمرية والخروج منها وبخاصة شهرا رمضان وشوال وتحديد مواعيد هذه الشهور بصورة مسبقة، مما يساعد على تأدية المسلمين عباداتهم وما يتعلق بها من أعياد ومناسبات وتنظيم ذلك مع ارتباطهما في المجتمع الذي تعيش فيه.

يوصي المجلس أعضائه وأئمة المساجد وعلماء الشريعة في المجتمعات الإسلامية وغيرها بالعمل على ترسيخ ثقافة احترام ما انتهى إليه القطعي من علوم الحساب الفلكي عندما يقرر عدم إمكانية الرؤية، بسبب عدم حدوث الاقتران، أن لا يُدعى إلى ترائي الهلال، ولا يقبل ادعاء رؤيته.

سيصدر المجلس – إن شاء الله – تقوياً سنوياً يحدد بداية الشهور القمرية وهمايتها استناداً إلى هذا القرار.

The translation of this document is as follows:

The council designated a special session for the question of *hilāl* so as to issue a suitable statement that would remove the hardships faced by Muslims in Europe and limit the differences that are repeated every year, especially concerning the beginning of the months of Ramadan and Shawwal. This was achieved with research papers focusing on this question, which dealt with the following:

1. Determination of the beginning of the lunar months between sighting and calculation – Dr. Muhammad al-Hawwari.
2. Three questions concerning the *hilāl* – Shaykh ʿAbd Allah al-Judayʿ.
3. The *sharʿī* reason for the mandatory fasting of Ramadan: Is it the beginning of the month or the sighting of the crescent? – Shaykh Faysal Mowlawi.
4. A scientific and educational view of *hilāl* sighting – Dr. Salah Sultan.

Based on what was presented and discussed at this conference, the council issued the following:

Decision No. 17/4**Ascertaining the beginning of the lunar months**

The council reviewed a number of research papers concerning this question and, after detailed discussions, decided the following:

1. Astronomical calculations have become one of the contemporary sciences that attained a high degree of accuracy concerning all that relates to the movements of planets, especially the movements of the moon and the earth, also their positions in relation to the celestial sphere and to one another at any time in a way that leaves no room for doubt.
2. That the moment of the lining up of the sun, moon, and earth – or what is referred to as the conjunction – is a cosmic point that occurs in one moment. It is possible for the science of astronomy to calculate that moment with extreme accuracy several years before it occurs. It [the conjunction] means the end of the previous astronomical month and the beginning of the following month. Conjunction may occur at any moment, day or night.

The beginning of the *sharʿī* new month is ascertained if the following conditions are satisfied:

- (a) **First:** The conjunction must have actually occurred.
 - (b) **Second:** The moonset follows sunset even by one moment, which marks the beginning of the month. This view was expressed by credible scholars and is consistent with the credible astronomical phenomena.
 - (c) **Third:** The choice of the geographic position of Makkah as the basis of the two above conditions.
4. [Muslims in] the European countries should adopt this rule to determine the beginning and end of lunar months, especially the months of Ramadan and Shawwal, and to determine these dates in advance so as to help Muslims to perform their acts of worship and their related festivals and occasions, also to regulate their connection with the communities in which they live.
 5. The council exhorts its members, imams of mosques, and Shariʿah scholars in Muslim societies and other societies to inculcate the culture of respect of what has been concluded by the definitive aspects of astro-

nomical calculation when it is determined that the sighting [of the new *hilāl*] is impossible, since the conjunction had not yet occurred. No call for attempting to sight the *hilāl* should be made and any claim of sighting should not be accepted.³⁷

CONCLUSIONS

1. The assertion that there exists a juristic consensus banning the use of precise astronomical calculations in confirming or negating Ramadan is unfounded. However, the majority of *jumhūr* adopted that opinion due to the uncertain nature of calculations during their time and also because of the possible negative ramifications of that in areas related to faith and *‘aqīdah*.
2. A group of well-known authorities in three Sunni legal schools, with the exception of the Hanbalis, has from early times argued in favor of accepting calculations in part or in totality.
3. Modern science has attained such a level of authenticity in calculation that achieving certainty about the birth, presence, and absence of the moon on the horizon and so on is not difficult at all. This scientific method is definitely more trustworthy than naked-eye sighting.
4. The number of scholars inclining toward the partial or total acceptance of calculation to confirm Ramadan is increasing daily, mostly owing to the certainty and ease of this method. This method also results in many communal, financial, and social benefits, the preservation of which is an integral part of the Shari‘ah’s objectives.
5. Some very conservative modern Salafi/Hanbali scholars, such as Mahmud Shakir, have also accepted this point of view. Indeed, scholars like Mahmud Shakir and Rashid Rida advocate calculation as the only authentic and lawful method currently available to Muslims vis-à-vis following the Sunnah’s true essence regarding the fast of Ramadan. Mahmud Shakir has done this since 1939.
6. The new moon is just a sign of sacred timings. The moon has a beginning and a clear end in its orbit around the earth. The beginning is its birth and is the most certain point that can be determined, even months and years ahead of its occurrence, with the help of calculations. Thus there is nothing wrong in accepting the new moon’s birth as the con-

vention to start the new month. In fact, this is the only authentic and certain convention to determine the new month. The criteria of visibility are not agreed upon even by Muslim astronomers and scholars. Once it has been established that certainty about Ramadan and the fasting during that month, and not the actual sighting of its moon, is the intended cause of fasting as well as the objective of the Shari‘ah, then disputing the question of visibility and non-visibility will become a fruitless endeavor. We should take the birth as the accepted norm and announce the Islamic calendar long ahead of time, as has been done by the *fiqh* councils in North America and Europe.

7. Greenwich Mean Time is an arbitrary convention accepted by the international community to facilitate times and dates. It has no Islamic value whatsoever. On the other hand Makkah, being the sanctuary of all Muslims, enjoys greater significance than GMT. Therefore, Muslims should take Makkah as the Islamic convention to determine the Islamic lunar months. The new month will start when the new moon is born before sunset in Makkah and stays in the horizon after sunset, even this event only lasts for a short time. The whole Muslim world would then have the beginning of the new month within twenty-four hours of the new moon’s birth in Makkah.

Given all of the above, accepting calculations to both confirm and negate Ramadan conforms to the true essence of the Sunnah and does not constitute any deviation from the spirit of the Shari‘ah. In contrast, it is perhaps the only available method that, if applied in spirit, can realize the Islamic objectives of authenticity, certainty, and unity. وَاللَّهُ أَعْلَمُ.

ENDNOTES

PREFACE

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73. See details of their philosophical positions in Seyyed Hossein Nasr and Oliver Leaman, eds., *History of Islamic Philosophy* (New York: Routledge, 1996), vol.1, pp.178–97, 231–51, and 330–34.
74. See Azim Nanji, “Ismaʿili Philosophy,” in *ibid.*, vol.1, pp.144–45.
75. See Hamid al-Din al-Kirmani, *Rāḥat al-ʿAql* (Cairo: Dar al-Fikr al-ʿArabi, 1952), p.46; also Arif Tamir, *Khams Rasāʾil Ismāʿīliyah* (Damascus: Dar al-Insaf, 1956); and *Ḥaqīqat Ikhwān al-Ṣafāʾ wa Khalān al-Wafāʾ* (Beirut:

- Catholic Press, 1957); Adil al-Awa, *Muntakhabāt Ismā‘īliyah* (Damascus: Matb‘ah al-Jami‘ah al-Suriyyah, 1957).
76. Netton, *Allah Transcendent*, p.203.
 77. Abu Hanifah al-Nu‘man, *Al-Fiqh al-Akbar*, ed. Mulla ‘Ali al-Qari (Cairo: Al-Babi, 1955). For the English translation and commentary, see A. J. Wensick, *The Muslim Creed* (London: Frank Cass & Co. Ltd., 1965), pp.102-247. Some scholars like Watt attribute this book to some later (between 900-950 AC) Hanafi sources.
 78. See Ahmad ibn Hanbal, *Al-Radd ‘alā al-Zandīqah wa al-Jahmīyah* (Cairo: Maktabah al-Salafiyyah, 1393 AC).
 79. Majid Fakhry, *A History of Islamic Philosophy* (New York: Columbia University Press, 1970), p.3; also see Muhammad ibn ‘Ali al-Shawkani, *Al-Tuhaf fī Madhāhib al-Salaf* (Cairo: Matba‘ah al-Imam, n.d.).
 80. E. Sell, “God” (Muslim) in *Encyclopaedia of Religion and Ethics*, ed. James Hastings (New York: T. & T Clark Publishers, 1995) p.30.
 81. ‘Abd al-Karim al-Shahrastānī, *Al-Milal wa al-Niḥal* (London: Cureton’s edition, 1842), p.76.
 82. W. M. Watt, *Islamic Philosophy and Theology* (Edinburgh; Edinburgh University Press, 1967), p.8.
 83. *Ibid.*, p.8.
 84. Karen Armstrong, *A History of God* (New York: A. A. Knopf, 1994), p.16.
 85. A. K. Kazi and J. G. Flynn, “Muslim Sects and Divisions,” *Kitāb al-Milal wa al-Niḥal by Shahrastānī*, trans. A. K. Kazi and J. G. Flynn (London: Kegan Paul International, 1984), p.8.
 86. See details in Ibn Taymiyyah, *Majmū‘ Fatāwā*, ed. ‘Abd al-Rahman ibn Muhammad ibn Qasim (Ribat: Maktabah al-Ma‘arif, n.d.), vol.5, p.323ff.
 87. Nasr and Leaman, eds., *Islamic Philisophy*, pp.113-15.
 88. See Ibn Taymiyyah, *Minhāj al-Sunnah fī Naqdī Kalām al-Shī‘ah wa al-Qadariyah* (Beirut: Dar al-Fikr, n.d.); *Naqd al-Manṭaq*, 1st edn. (Cairo: Matba‘ah al-Sunnah al-Muhammadiyyah, 1951); *Al-Risālah al-Tadummuriyah* (Beirut: al-Maktab al-Islami, n.d.); *Mawafaqah Ṣarīḥ al-Ma‘qūl li Ṣaḥīḥ al-Manqūl* (Cairo: 1321 AH); *Al-Rasā’il wa al-Masā’il* (Beirut: al-Maktab al-Islami, n.d.); and *Kitāb al-Nubuwwat* (Cairo: al-Maktabah al-Salafiyyah, 1382 AH).
 89. M. Nasir al-Din al-Albanī, *Mukhtaṣar al-‘Ulūw* (Beirut: al-Maktab al-Islami, 1412 AH) 2007, vol.1, p.36.
 90. Al-Qarrafī, *Anwār al-Burūq*, vol.2, p.229.

CHAPTER 2

1. Abu al-Thana’ Muhammad Shihab al-Din Al-Alusi, *Rūḥ al-Ma‘ānī fī Tafsīr al-Qur’ān al-‘Aẓīm wa al-Sab‘ al-Mathānī* (Beirut: Dar Ihya’ al-Turath al-‘Arabi, n.d.), vol.2, p.129.

2. Ahmad ibn Faris Abu al-Hussayn al-Qazwini al-Razi, *Maqāyīs al-Lughah*, ed. ‘Abd al-Salam Muhammad Harun (Damascus: Ittihad al-Kuttāb al-‘Arabī, 2000).
3. Fakhr al-Din Abu ‘Abd Allah Muhammad al-Razi, *Tafsīr al-Rāzī* (Beirut: Dar al-Kutub al-‘Ilmiyyah, 1978), vol.4, p.142.
4. Jalal al-Din al-Suyuti, *Tafsīr al-Jalālayn* (Beirut: Dar Ihya’ al-Turath al-‘Arabī, n.d.).
5. Abu ‘Abd Allah al-Qurtubi, *Tafsīr al-Qurtubī* (Beirut: Dar al-Kutub al-‘Ilmiyyah, n.d.), vol.2, p.290.
6. ‘Imad al-Din Hafiz ibn Kathir, *Tafsīr al-Qur’ān al-‘Azīm* (Beirut: Dar Ihya’ al-Turath, n.d.), vol.1, p.360.
7. Al-Suyuti, *Tafsīr Jalālayn*, p.37.
8. ‘Abd Allah ibn Ahmad al-Nasafī, *Tafsīr al-Nasafī* (Beirut: Dar Ihya’ al-Turath, n.d.).
9. Al-Razi, *Tafsīr*, vol.2, p.250.
10. Al-Alusi, *Tafsīr*, vol. 2, p.250.
11. Al-Alusi, *Rūḥ al-Ma‘ānī*, vol.2, p.250.
12. Al-Alusi, *Tafsīr*, vol.2, p.250.
13. Al-Razi, *Tafsīr*, vol.4, p.142.
14. *Ibid.*, vol.3, p.103.
15. Zaheer Uddin, “A Refutation to ISNA/Fiqh Council’s Decision to Disregard the Qur’an and the Sunnah and to Follow Astronomical Calculations for Beginning an Islamic Month,” www.hilalsighting.org. Issued on Rajab 29, 1427; August 24, 2006.
16. Ibn ‘Abbas’ statement could have multiple interpretations. Al-Tabari reports in his *Tafsīr*, vol.3, p.144:
17. Quoted from Hamza Yusuf, *Caesarean Moon Births*, p.28.
18. Abu Bakr al-Jassas, *Aḥkām al-Qur’ān* (Beirut: Dar al-Fikr, n.d.), vol.1, p.117.
19. Yusuf, *Caesarean Moon Births*, vol.1, p.15.
20. *Ibid.*, vol.1, p.15.
21. Abu Bakr Muhammad ibn ‘Abd Allah ibn al-‘Arabī, *Aḥkām al-Qur’ān* (Beirut: Dar al-Kutub al-‘Ilmiyyah, n.d.), vol.1, p.152.
22. Yusuf, *Caesarean Moon Births*, pp.23–24. Note: Italics are added.
23. Faysal Mowlawi, “Al-Sabab al-Shar‘ī li Wujūb Ṣiyām Ramaḍān: Hal Huwa Dukhūl al-Shahr am Ru‘yat al-Hilāl?” an unfinished paper presented to the European Fiqh Council in May of 2007.
24. Al-Jassas, *Aḥkām al-Qur’ān*, vol.1, p.279.
25. *Ibid.*, vol.1, p.456.
26. *Ibid.*, vol.2, p.47.
27. *Ibid.*, vol.1, p.456.
28. *Ibid.*, vol.1, p.496.
29. Mowlawi, “*Al-Sabab al-Shar‘ī*,” p.24.
30. *Ibid.*, p.24.

31. Al-Qarrafi, *Anwār al-Burūq*, vol.4, pp.139–40.
32. Al-Qurtubi, *Tafsīr*, vol.1, p.1.
33. Ibid., vol.19, p.22.
34. See Ibn Manzur, *Lisān al-‘Arab* (Beirut: Dar Ihya’ al-Turath al-Islami, n.d.), vol.11, p.701.
35. Muhammad ibn Ya‘qub al-Fayruzabadi, *Qāmūs al-Muḥīṭ* (Beirut, Mu’assasat al-Risalah, n.d.), vol.3, p.183.
36. Ibn Manzur, *Lisān al-‘Arab*, vol.11, p.701.
37. Ibid.
38. Ibid.
39. Ibid.
40. Abu Hayyan al-Andalusi, *Tafsīr al-Baḥr al-Muḥīṭ* (Beirut: Dar al-Fikr, n.d.), Ayah 189, vol.2, p.215.
41. Al-Jawhari, *Al-Ṣiḥāḥ fī al-Lughah* (Beirut: Dar al-‘Ilm li al-Malayin, 1990), vol.2, p.254.
42. Abu Mansur Muhammad ibn Ahmad al-Harawi al-Azhari, *Tahdhīb al-Lughah* (Beirut: Dar Ihya’ al-Turath al-‘Arabi, n.d.), vol.2, p.225; Ibn Manzur, *Lisān al-‘Arab*, vol.11, p.701.
43. Abu al-Qasim Mahmud ibn ‘Umar Jar Allah al-Zamakhshari, *Asās al-Balāghah* (Beirut: Dar Ihya’ al-Turath al-‘Arabi, n.d.), vol.2, p.4.
44. Al-Alusi, *Rūḥ al-Ma‘ānī*, vol.2, p.142.
45. Ahmad ibn Muhammad ibn ‘Ali al-Fayyumi, *Al-Miṣbāḥ al-Munīr fī Gharīb al-Sharḥ al-Kabīr* (Cairo: Matba‘ah al-Taqaḍdum al-‘Ilmiyyah, 1323 AH), vol.10, p.169.
46. Yusuf, *Caesarean Moon Births*, p.18.
47. Ibid., p.19.
48. Ibid. Italics are added.
49. Ibid.
50. Al-Khalil ibn Ahamd al-Farahidi, *Al-‘Ayn* (Beirut: Dar al-Kutub al-‘Ilmiyyah, n.d.) vol.1, p.245.
51. Ibid., vol.1, p.246.
52. Ibid.
53. Yusuf, *Caesarean Moon Births*, p.18.
54. Ibn Taymiyyah, *Majmū‘ah Fatāwā Ibn Taymiyyah* (al-Mansurah: Dar al-Wafa’, 2005), vol.6, p.69.
55. Abu Ja‘far Muhammad ibn Jarir al-Tabari, *Jāmi‘ al-Bayān fī Ta’wīl al-Qur‘ān, Tafsīr al-Ṭabarī* (Beirut: Mu’assasat al-Risalah, 2000), vol.2, p.224.
56. Abu al-Fadal Shihab al-Din Ahmad ibn ‘Ali ibn Hajar, *Fath al-Bārī* (Beirut: Dar al-Fikr, n.d.), vol.5, p.193.
57. Shaykh Maghraoui states: “*Hilāl* traditionally referred to a crescent that is at least one or nights old...”; Here the word “traditionally” is important to notice. See Maghraoui, *An Islamic Legal Analysis*, p.7.

58. See Taqi al-Din ibn al-Najjar, *Sharḥ al-Kawkab al-Munīr* (Riyadh: Maktabat al-‘Abyakan, 1997), vol.4, p.448-49.
59. Abu Muhammad ‘Abd al-Haqq ibn Ghalib ibn ‘Atiyyah, *Al-Muḥarrar al-Wajīz* (Beirut: Dar al-Kutub al-‘Ilmiyyah, 1993), vol.3, p.139.
60. Ibn al-Najjar, *Sharḥ al-Kawkab*, vol.3, p.41.
61. Ali Hayder Khawaja Afindi, *Durar al-Ḥikām Sharḥ Majallah al-Aḥkām*, tr. Fahmi al-Hussaini (Beirut: Dar al-Kutub al-‘Ilmiyyah, n.d.), vol.1, p.70.
62. *Ibid.*, vol.1, p.70.
63. For details, see al-Tabari, *Tafsīr*; al-Alusi, *Tafsīr al-Alusi*.
64. Al-Razi, *Al-Tafsīr al-Kabīr (Tafsīr al-Rāzī)* (Beirut: Dar al-Fikr, 1978), vol.8, p.20.
65. *Ibid.*, vol.8, p.21.
66. Tracy R. Rich, “The Jewish Calendar: A Closer Look,” www.JewFAQ.org/calendar.htm.
67. Al-Razi, *Tafsīr*, vol.8, p.21.
68. Yusuf, *Caesarean Moon Births*, p.22.
69. *Ibid.*
70. Abu Dawud, *Sunan Abū Dāwūd* (Beirut: Dar al-Fikr, n.d.), vol.13, p.286.
71. Abu ‘Abd Allah Ahmad ibn Muhammad ibn Hanbal, *Musnad Aḥmad* (Cairo: Mu’assasat Qurtubah, n.d.), vol.3, p.332.
72. Abu Dawud, *Sunan Abū Dāwūd*, vol.13, p.287.
73. *Ibid.*, vol.13, p.436.
74. Ibn al-‘Arabi, *Aḥkām al-Qur’ān* (Beirut: Dar al-Fikr, 1978), vol.1, p.159.
75. See more details in Mulla ‘Ali Qari, *Mirqāt al-Mafātīḥ* (Beirut: Dar al-Fikr, n.d.), vol.5, p.282.

CHAPTER 3

1. Maghraoui, *An Islamic Legal Analysis*, p.8.
2. Rashid Rida, *Tafsīr al-Manār* (Beirut: Dar al-Kutub al-‘Ilmiyyah, 1999), vol.2, p.149-50.
3. *Ibid.*, vol.2, p.186.
4. Al-Bukhari, *Ṣaḥīḥ al-Bukhārī*, vol.6, p.481.
5. Muslim, *Ṣaḥīḥ Muslim* (Beirut: Dar Ihya’ Turath al-‘Arabi, n.d.), vol.5, p.355.
6. Al-Bukhari, *Ṣaḥīḥ*, vol.6, p.478.
7. *Musnad Aḥmad*, vol.11, p.78.
8. Yusuf, *Caesarean Moon Births*, pp.3, 4; italics are added.
9. *Ibid.*; italics added for emphasis.
10. Abu ‘Isa Muhammad al-Tirmidhi, *Sunan al-Tirmidhī* (Beirut: Dar Ihya’ Turath al-‘Arabi, n.d.), vol.3, p.113.
11. Abu Muhammad ‘Abd Allah ibn ‘Abd al-Rahman al-Darimi (Beirut: Dar al-Kitab al-‘Arabi, 1407 AH), vol.5, p.166.

12. Abu Dawud, *Sunan*, vol.6, p.263.
13. Al-Bukhari, *Ṣaḥīḥ*, vol.6, p.478.
14. *Musnad Aḥmad*, vol.11, p.478.
15. Ibn Daqīq al-‘Id, *Iḥkām al-Aḥkām Sharḥ ‘Umdat al-Aḥkām* (Cairo: Matba‘ah al-Sunnah al-Muhammadiyah, n.d.), vol.2, p.8.
16. Yusuf, *Caesarean Moon Births*, p.44.
17. Ibid.
18. Ibn Daqīq al-‘Id, *Iḥkām al-Aḥkām*, vol.2, p.8.
19. Ibid.
20. Mas‘ud ibn ‘Umar al-Taftazani, *Sharḥ al-Talwīḥ ‘alā al-Tawḍīḥ* (Cairo: Maktabah Sabih, n.d.), vol.1, p.401.
21. Mustafa al-Zarqa, *Fatāwā Muṣṭafā al-Zarqā*, ed. Majd Ahmad Makki, 2nd edn. (Damascus: Dar al-Qalam, 1422 AH/2001 AC), pp.163-64.
22. Maghraoui, *An Islamic Legal Analysis*, p.7; italics are added.
23. *Ṣaḥīḥ al-Bukhārī*, vol.7, p.57.
24. Muslim, *Ṣaḥīḥ*, vol.5, p.395.
25. Abdur Rahman Ijaz, “Axing of Methodology,” www.hilalcommittee.com/Axing_of_Methodology_rev1_2.pdf, p.4; some words are inserted to complete the sentences and clarify the meanings.
26. Al-Tabari, *Tafsīr al-Ṭabarī*, vol.10, p.21.
27. Ibid.
28. Bin Bayyah, www.Binbayyah.net, section on “Fatāwā”; this is not to say that Shaykh Bin Bayyah endorses calculations for confirmation of Ramadan. In this fatwa he seems to be maintaining use of calculations in proving or reaffirming the sighting.
29. Zayn al-Din ibn Ibrahim Ibn Nujaym, *Al-Baḥr al-Rāqī Sharḥ Kanz al-Daqā’iq* (Beirut: Dar al-Kitāb al-Islami, n.d.), vol.2, p.284.
30. Taqī al-Din al-Subki, *Fatāwā al-Subkī* (Cairo: Dar al-Ma‘arif, n.d.), vol.1, p.211.
31. Yusuf al-Qaradawi, *Fatāwā Mu‘āṣirah* (Damascus: Dar al-Qalam, 1996), vol.2, pp.212-17.
32. *Al-Mawsū‘ah al-Fiqhīyah*, vol.14, p.53.
33. Ahmad ibn Muhammad al-Hamwī, *Ghamz ‘Awn al-Baṣā’ir* (Beirut: Dar al-Kutub al-‘Ilmiyyah, n.d.), vol.2, p.66.
34. Al-Zarqa, *Fatāwā*, pp.157-59.
35. Yusuf, *Caesarean Moon Births*, pp.31, 32.
36. Ibid., p.32.
37. Ibid., p.45.
38. Encarta, “Solar System,” http://encarta.msn.com/encyclopedia_7615-57663/solar_system.html.
39. Yusuf, *Caesarean Moon Births*, p.45.
40. Al-Qarrafī, *Anwār al-Burūq*, vol.4, pp.144-45.
41. Ibid., vol.4, pp.140-41.

42. Al-Shatibi, *Al-Muwāfaqāt*, vol.1, p.54.
43. ʿAbd al-Karim Zaydan, *Al-Wajīz fī Uṣūl al-Fiqh* (Cairo: Dar al-Tawzīʿ wa al-Nashr al-Islamiyyah, 1414 AH/1993 AC), p.55.
44. Zaydan, 26; also see Faysal Mowlawi, *Al-Sabab al-Sharʿī*, p.8.
45. Zaydan, *Al-Wajīz*, pp.26-27.
46. Al-Nawawi, *Al-Majmūʿah Sharḥ al-Muhadhdhab* (Cairo: Matbaʿat al-Muniriyyah, n.d.), vol.6, p.270.
47. Cited from Yusuf, *Caesarean Moon Births*, p.24.
48. Al-Razi, *Tafsīr al-Rāzī* (Beirut: Dar al-Fikr, 1978), vol.3, p.103.
49. Mowlawi, *Al-Sabab al-Sharʿī*, p.18.
50. See detail about *sabab* and *ʿillah* in *ibid.*, p.8ff.
51. Muhammad Abi Zahrah, *ʿIlm Uṣūl al-Fiqh* (Cairo: Dar al-Fikr al-ʿArabi, 1998), p.56.
52. ʿAbd Allah ibn Yusuf al-Judayʿ, *Taysir ʿIlm Uṣūl al-Fiqh* (Beirut: Muʿassasat al-Rayyan, 2005), p.54.
53. ʿAbd al-Karim Zaydan, *Al-Wajīz*, p.55.

CHAPTER 4

1. See W. B. Smith, *The Birth of the Gospel: A Study of the Origin and Purport of the Primitive Allegory of the Jews* (New York: Philosophical Library, 1957).
2. See Stephen Neil, *The Interpretation of the New Testament 1861-1961* (New York: Oxford University Press, 1966).
3. V. Paul Furnish, *Jesus According to Paul* (Cambridge: Cambridge University Press, 1993), p.40; also see H. Anderson, *Jesus and Christian Origins* (New York: Oxford University Press, 1964); E. P. Sanders, *The Historical Figure of Jesus* (England: Penguin, 1993).
4. John Hick, *The Metaphor of God Incarnate* (London: SCM Press, 1993), p.31.
5. Readers interested in the historical development of “Jesus Doctrine” are referred to my Ph.D. dissertation, “A Study of Anthropomorphism and Transcendence in the Bible and Qurʿan: Scripture and God in the Judeo Christian and Islamic Tradition.” Submitted to the University of Wales (Lampeter) in 1997, also available at www.hilal-discourse.net.
6. *Ibid.*, chapter 4 for details.
7. Abdulaziz Sachedina, “Warfare: The Use and Abuse of Jihad in the Muslim World,” www.uga.edu/islam/jihad; see also www.islamiclearning.org.
8. Khaled Abou El Fadl, “Speaking, Killing, and Loving in God’s Name,” *The Hedgehog Review* (spring 2004); www.scholarofthehouse.org/skiandloingo.html; Khaled Abou El Fadl, “The Rules of Killing at War: An Inquiry into Classical Sources,” *The Muslim World*, no. 89 (1999).
9. Ibn Hajar, *Fath al-Bārī*, vol.6, p.147.
10. Ibn Qudamah, *Al-Mughnī*, vol.3, p.7.

11. *Al-Mawsū'ah al-Fiqhīyah*, vol.22, p.32.
12. Al-Subki, *Fatāwā*, vol.1, p.217.
13. Al-Qaradawi, *Fatāwā Mu'āşirah*, vol.2, p.222.
14. Ahmad Muhammad Shakir, *Awā'il al-Shuhūr al-'Arabīyah* (Cairo: Maktabah Ibn Taymiyyah, 1987).
15. Abu Bakr ibn 'Ali al-Razi al-Jassass, *Aḥkām al-Qur'ān* (Beirut: Dar al-Fikr, n.d.), vol.1, p.279.
16. Ibid., vol.1, p.280.
17. Ibid.
18. Badr al-Din al-'Ayni, *Umdat al-Qārī* (Beirut: Dar al-Fikr, n.d.), vol.10, p.265.
19. Al-Jassas, *Aḥkām*, vol.1, p.117.
20. Al-Hamwī, *Ghamz 'Awn al-Başā'ir*, vol.2, p.66.
21. Muhammad ibn 'Abd Allah al-Kharshi, *Sharḥ Mukhtaşar Khalīl li al-Kharshi* (Beirut: Dar al-Fikr, n.d.), vol.2, p.237.
22. Muhammad ibn Ahmad ibn Arfah al-Dasuqī, *Hāshiyat al-Dasuqī 'alā al-Sharḥ al-Kabīr* (Cairo: Dar Ihya' al-Kutub al-'Arabīyyah, n.d.), vol.1, p.509.
23. Salman ibn Khalf al-Bajī, *Al-Muntaqā Sharḥ al-Muaṭṭā* (Beirut: Dar al-Kitab al-Islami, n.d.), vol.2, p.38.
24. Ibid.
25. Al-Bukhari, *Saḥīḥ*, vol.6, p.487.
26. Muslim, *Saḥīḥ*, vol.5, p.351.
27. Shihabuddin Ahmad ibn Ahmad al-Ramli, *Fatāwā* (Beirut: Dar al-Kutub al-'Ilmiyyah, 1424 AH), vol.2, p.59.
28. Yahya ibn Sharaf al-Nawawi, *Al-Majmū'ah Sharḥ al-Muhadhdhab* (Cairo: Matba'ah al-Muniriyyah, n.d.), vol.6, p.276.
29. Ibn Hajar, *Fath al-Bārī*, vol.4, p.623.
30. Yusuf, *Caesarean Moon Births*, pp.47, 48.
31. Ibid., p.48.
32. Al-Shatibi, *Al-Muwāfaqāt*; that does not mean that al-Shatibi permitted use of calculations. He refuted them because of their imprecision and as requiring hardship for the unlettered Ummah.
33. Yusuf, *Caesarean Moon Births*, pp.28, 29.
34. Muslim, *Saḥīḥ*, vol.5, p.362.
35. Al-Bukhari, *Saḥīḥ*, vol.6, p.483.
36. Al-Tirmidhi, *Tafsīr al-Tirmidhī*, vol.3, p.114.
37. Abu Dawud, *Sunan*, vol.6, p.254.
38. Muslim, *Saḥīḥ*, vol.5, p.345.
39. Abu 'Abd al-Rahman Ahmad ibn 'Ali al-Nasā'ī, *Sunan al-Nasā'ī* (Beirut: Dar al-Kutub al-'Ilmiyyah, 1991), vol.7, p.300.
40. Ibn Hajar, *Al-Talkhīş al-Ḥabir fī Takhrij Aḥādīth al-Rāfi'ī al-Kabīr*, 1st edn. (Beirut: Maktabah al-'Ilmiyyah, 1989), vol.2, p.360.

41. Ibn Taymiyyah, *Fatāwā*, vol.6, p.590.
42. Ibid., vol.25, p.207.
43. Ibn Taymiyyah, *Al-Fatāwā al-Kubrā* (Beirut: Dar al-Kutub al-Ilmiyyah, n.d.), vol.1, p.62.
44. Ibid.
45. Ibid., vol.1, p.63.
46. Muhammad ibn Ahmad ibn Muhammad ^{‘Alish}, *Manḥ al-Jalīl Sharḥ Mukhtaṣar Khalīl* (Beirut: Dar al-Fikr, n.d.), vol.2, pp.113-14.
47. Ibid., vol.2, p.114.
48. Al-Mubarak ibn Muhammad al-Jazri, *Al-Nihāyah fī Gharīb al-Ḥadīth wa al-Athar*, Tahir Ahmad al-Zawi and Mahmud Muhammad al-Tannakhi, eds. (Beirut: Maktabah al-Ilmiyyah, 1979), vol.2, p.205.
49. Ibn Taymiyyah, *Fatāwā*, vol.10, p.20.
50. Ibid.
51. Abu Dawud, *Sunan*, vol.10, p.412.
52. *Musnad Aḥmad*, vol.2, p.55.
523. Al-Bukhari, *Saḥīḥ*, vol.6, p.487.

CHAPTER 5

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CHAPTER 6

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