

# Al-Fajr As-Sadiq: A New Perspective

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*In the name of Allah*

## 1. Introduction

The daily prayers are an integral part of a Muslim's life. In order to fulfill their religious obligation, it is important for all Muslims to know the timings of the daily prayers. To know the timings of *zuhr* and *maghrib* prayers has never been a problem; but to know the timing of *subh* prayer has not been easy.

Previously, Muslims used to rely on the *mu'azzin* of their neighbourhood mosques who would mostly use visual senses to determine the time of *subh* prayer. Even now, the Muslims living in the Muslim countries do the same.

However, the Muslims in the West are deprived of the benefits of neighbourhood mosques and their *azan*. Therefore, they have come up with a time-table which can be used by all Muslims in their homes.

In preparing a prayer time-table, it is easy to find the timings of *zuhr* and *maghrib* prayers from any observatory or astronomical institution: one can easily ask the scientific institution for the times of “noon” and “sunset” because the definitions of “noon” and “sunset” are common knowledge.

The difficult arises in determining the time for *subh* (dawn) prayer. How do you define “*subh*” or “*fajr*” for the Western astronomer or scientist? How do you explain the difference between the “false” dawn and the “true” dawn?

In this article, with the help of Allah *subhanahu wa ta'ala*, I intend to discuss the definition of dawn and see how can we relate it to the existing scientific classifications of twilights and daybreak.

## 2. The Problem

My task will become much easier if I pin-point the problem at the very beginning of this discussion. I will do this by separating the points of agreement from the point of disagreement.

It should be known to the reader that there is absolutely no disagreement among the Muslims on the fact that *al-fajr as-sadiq* (the true dawn) is the time for *subh* prayer and for the beginning of *sawm*, fasting.

Neither is there any disagreement among the Shi`ah scholars about the classical definitions of *al-fajr as-sadiq* (the true dawn) and *al-fajr al-kazib* (the false dawn). By “classical”, I mean the definitions which are based on the *ahadith* of the Imams of Ahlu 'l-bayt (a.s.). For example, Ayatullah Sayyid Muhammad Kazim al-Yazdi, writes:

The rising of *fajr* is known by the appearance on the horizon of a light which ascends towards the sky and resembles a tail of the fox--this is known as *al-fajr al-kazib* (the false dawn). Then the light spreads on the horizon (and becomes like a white cotton and like the river of Sura<sup>1</sup>) in such a way that whenever you look towards it, it will convince you of its increasing beauty. In other words it [*al-fajr as-sadiq*, is known by] the spreading of the light on the horizon after it had been ascending towards the sky. <sup>1</sup>

All the contemporary scholars agree with this definition of the false and true dawns; the difference is only in the style and clarity. For example, Ayatullah al-Khu'i writes:

The *al-fajr as-sadiq* is the light which spreads horizontally on the horizon and it increases in visibility and clarity. Before this is *al-fajr al-kazib*: a light which appears vertically on the horizon, ascending towards the sky like a pillar, and it decreases and weakens till it disappears.<sup>2</sup>

The last sentence that *al-fajr al-kazib* “decreases and weakens till it disappears” needs some explanation. It apparently means that after the false dawn, the horizon becomes dark and then a new light appears which is the true dawn. This is not a correct understanding of the natural phenomenon of twilight.

“Disappearing” means that when the light starts to spread horizontally at the time of *al-fajr as-sadiq*, the “pillar” becomes indistinguishable and merges into the broader light. So the “weakening and disappearance” is related to the “pillar” and not to *al-fajr al-kazib* itself.

My interpretation is supported even by the way Ayatullah al-Yazdi has described the two dawns: “the spreading of the light on the horizon after it had been ascending towards the sky;” he describes them as a continuous process, and not as two dawns with an intervening darkness. Similarly, the description of the two dawns by Ayatullah Sayyid Baqir as-Sadr in his *al-Fatawa al-Wazihah* (p. 266) supports my

interpretation.

So the disagreement is not in the religious definitions of the true dawn, it is in applying the phenomenon of *al-fajr as-sadiq* on a particular time of dawn.

### **What time of dawn is *al-fajr as-sadiq*?**

As Ayatullah al-Khu'i says, "There is no dispute or difference among Muslims in the fact that the beginning time for *subh* prayer is the true dawn. However, there is a dispute concerning the time-frame in which it materializes, and this is a discussion related to the minor premises of this issue."<sup>3</sup>

In other words, the problem is not in finding the religious commandment about the timing of *subh* prayer, rather it is in the application of that religious view.

## **3. Methodology of Defining Things in Fiqh**

Before we proceed further, it is necessary to clarify one important issue about the methodology of defining various things and issues in *fiqh*. Are we allowed to follow the scientific definitions of things or not? If yes, when?

In *fiqh*, there are three possible sources for definitions of things and concepts: the *shari`ah*; the common people; the experts (of science or the relevant field of knowledge).

1. If the *shari`ah* sources clearly define something, then it is known as "*al-urfu 'sh-shari'*--the *shari`i* definition."
2. If the common people (or layman) define something without any *shari`i* or scientific precision, then it is known as "*al-urfu 'l-'amm*--the common definition."
3. If the experts (of science or other fields of knowledge) define something, then it is known as "*al-urfu 'l-khass*--the experts' definition or the scientific definition."

If the *shari`ah* defines something, then there is no doubt that we must follow the *shari`i* definition.

But if the *shari`ah* is silent on definition of certain things, then should we follow the common (*'amm*) definition or the scientific (*khass*) definition? Anyone who is familiar with the *shari`ah* will agree with me that in absence of a *shari`i* definition, one has to follow the common definition.

One has to go by the common perception of things, not the perception of the experts of science or other area. One can follow the scientific (*khass*) definition only in the cases where the *shari`ah* is silent and the common people have no way of defining the issue.<sup>4</sup>

Moreover, in many issues, even the *shari`ah* definition is tied with the perception of common people. For

example, the *shari`ah* says that the water for ritual ablution must be “pure” (*mutlaq*). Does it mean scientifically pure?

Certainly not!

Otherwise, the running water in this part of the world is not scientifically pure, it has some purifying chemicals in it, for example, fluoride. The *shari`ah* says that such water will still be classified as pure unless the colour, taste, or smell of the water changes—that is, the changes which can be sensed by the common people without the help of a scientific lab.

## 4. Science & The Twilights

From the scientific point of view, the light which appears before sunrise and remains after sunset is known as “twilight”. Twilight literally means “the light between the two,” i.e., between night and day or between day and night. In Arabic, “twilight” is known as “*ash-shafaq*.”

It is obvious that the light of morning twilight gradually increases in brightness; to distinguish the various stages of twilight, the scientists have divided it into three types of twilights:

1. the Astronomical Twilight: this begins when the Sun's center is 18 degrees below the horizon.
2. the Nautical Twilight: this occurs when the Sun's center is at 12 degrees below the horizon.
3. the Civil Twilight: this occurs when the Sun's center is at 6 degrees below the horizon.

The third twilight known as the Civil Twilight is of no use for us as it is mostly used by civil authorities to decide when the street lights and car head-lights are no longer needed. Some scientists have given it the name of “head-lights twilight.”

According to the astronomers, the morning Astronomical Twilight is the end of night and beginning of day; and the evening Astronomical Twilight is the beginning of night.

Muslims who are concerned with preparing the prayer time-tables have always held different views about relating the true dawn to the twilight: the difference range from those who say the *al-fajr as-sadiq* occurs when the Sun is at 21 degrees below the horizon to those who say that it occurs when the Sun is at 16 degrees.<sup>5</sup>

Most of the present day Muslims have accepted the Astronomical Twilight (when the Sun is at an angle of 18 degrees below the horizon) as the time of *al-fajr as-sadiq*.<sup>6</sup>

There are others who say that *al-fajr as-sadiq* occurs when the Sun is almost halfway between the Astronomical and Nautical Twilights—at 16 degrees below the horizon. (Some Shi`a communities in England, see the circular of al-Khoei foundation<sup>7</sup>).

What you will read now is an attempt to see the validity or otherwise of these prevalent views, and to find the correct time-frame in the morning twilight for *al-fajr as-sadiq*. In reading the following pages, the reader is advised to keep in mind what we said earlier about the methods of definition in *fiqh*.

## 5. Twilights & Al-Fajr As-Sadiq

When we look at the *shari`ah*, we see that it has clearly defined the true dawn for us. Therefore, we cannot just follow the scientific definition of “dawn” or “daybreak”. But the problem is in determining when does the true dawn materialize: at the time of Astronomical Twilight or the Nautical Twilight or somewhere between the two?

However, since the *shari`ah* has clearly defined the phenomenon known as the true dawn, we can always seek the help of science in pin-pointing the time when *al-fajr as-sadiq* occurs. This can be done by looking at the definitions of the twilights to find which of them exactly or closely correspond to the description of true dawn as given by the *shari`ah*.

### 1. Does the description of al-fajr as-sadiq fit the description of the Astronomical Twilight?

My contention is that the Astronomical Twilight does not fit the description of *al-fajr as-sadiq*. Why?

All the *ahadith* on this issue describe the true dawn as a phenomenon or an occurrence which can be observed and seen by the common people, and as a light which spreads over the horizon and makes it distinct. The Imams of Ahlu l-Bayt (a.s.) have used the words like “seeing it” and “observing it.” See the *ahadith* narrated by `Ali bin Mahazyar, Hisham bin Huzayl, Zurarah bin A`yan, `Ali bin `Atiyyah and Abu Basir.<sup>8</sup>

This can even be seen in the Qur'anic verse about the beginning of fasting which says that you can eat and drink

**“until the white thread becomes distinct unto you from the black thread at dawn.” (2:187)**

The words “unto you” emphasize that the people in general (not just the astronomers and scientists) should be able to observe the true dawn. This is also supported by the fatwa of Ayatullah al-Imam Khumayni when he says, “...the occurrence of *fajr*...is a *hissi* (commonly perceptible) occurrence, not *ilmi* (scientific) occurrence...”!<sup>9</sup>

In this backdrop, when you look at the descriptions of the Astronomical Twilight, it will dawn upon you that it is extremely difficult to observe its light with your eyes. The sky must be very dark to enable you to see the Astronomical Twilight. What I have said about the Astronomical Twilight can be confirmed by the following quotation from *Mariner's Celestial Navigation*:

“Astronomical twilight...the period while the Sun's center is between 18 degrees and 12 degrees below the horizon. To both navigators and the civil population it is then 'night-time,' with little discernible sunlight diffusing the sky. The horizon would be too indistinct for sight-taking, so the *Nautical Almanac* carries no listing of the event.”<sup>10</sup>

Since the Astronomical Twilight is “too indistinct for sight-taking” by civil population, it cannot qualify as the true dawn. How can the *shari`ah* expect its followers to say prayers or begin fasting by a natural phenomenon which cannot be seen by common people?

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Then on what ground have the majority accepted the Astronomical Twilight as *al-fajr as-sadiq*? Usually two bases are mentioned in support of this view:

1. “Since the true dawn occurs when the Sun reaches 18 degrees, all existing time-tables in Muslim countries rely on the 18 degree formula as the basis for dawn and this is according to their visual observations of many years. 'Allamah at-Tabataba'i has clearly mentioned this in his *Tafsir al-Mizan* (vol. 2 [Beirut] p. 48).<sup>11</sup>

Firstly, the practice of the Muslims by itself does not become a proof that what they are doing is right. This general practice at best can be used only as a secondary evidence provided the matter is first proved by other concrete proofs.

Secondly, the writing of 'Allamah at-Tabataba'i in *al-Mizan* actually proves the opposite of what has been claimed above. The 'Allamah, who also had great interest in astronomy, writes:

“There are two dawns: the first is called the 'false' dawn because it vanishes in a short time. It is also called the 'tail of the wolf' because it looks as if a tail is raised. This false dawn is a beam of light like a vertical column; it appears at the end of the night on the eastern horizon when the sun reaches an angle of 18 degrees below the horizon. Then it gives way to a horizontal line of light which looks as if a white thread has been stretched on the horizon. This is the second dawn. It is called 'true' dawn because it truthfully announces the arrival of day-time and is connected with sunrise.”<sup>12</sup>

Therefore, the practice of the Muslims in general does not automatically give validity to this view. The second basis for this view is the scientific definition of dawn. For example, the circular published by al-Khoei Foundation says:

2. “The Science Research Council [of England] considers the 18 degree as the end of night and the beginning of day.”

This is true as far as the scientists and astronomers are concerned; but, as mentioned above, the Astronomical Twilight does not fit the descriptions of *al-fajr as-sadiq*. Since the scientific definition differs from the *shar'i* definition, we cannot accept the Astronomical Twilight as *al-fajr as-sadiq*.

## 2. Does the description of al-fajr as-sadiq fit the description of the Nautical Twilight?

The description of the Nautical Twilight makes it the most probable candidate for *al-fajr as-sadiq*. As mentioned above, the true dawn had two attributes: it is a light which can be observed by people in general; and it is a light which spreads over horizon making it distinct and visible. The Nautical Twilight has both these attributes as can be seen from the following:

1. The *Dictionary of Astronomy, Space and Atmospheric Phenomena* defines the Nautical Twilight as “that period when the upper limb of the Sun is below the visible horizon and the center of the Sun is not more than 12 degrees below the celestial horizon.”<sup>13</sup>
2. G.V. Rozenburn, in his *Twilight: a study in Atmospheric Optics*, says: “Next comes nautical (or navigational) twilight, during which small details are lost in darkness, but outlines of large objects such as shorelines are fairly distinct.”<sup>14</sup>
3. The name of this twilight itself is also significant. “Nautical” means something which is related to ships, seamen, and navigation. It means the twilight by which the seaman is able to see the horizon with his naked eyes. This can be inferred from W.P. Crawford, the writer of *Mariner's Celestial Navigation*, when he explains why the *Nautical Almanac* has no listing for the Astronomical Twilight “the horizon would be too indistinct for sight-taking, so the *Nautical Almanac* carries no listing of the event.”<sup>15</sup>
4. We have said above that it is very difficult for common people to observe the Astronomical Twilight, and that the true dawn, on the contrary, is a phenomenon which can be observed by the people in general. For the scientists, the beginning of the day time is the Astronomical Twilight; but the beginning of the day time for the civil population is the Nautical Twilight. While counting the twilights for seamen and navigators, Mr. Crawford writes, “In the morning, nautical twilight is the first to begin.”<sup>16</sup>

These points prove that the horizon becomes visible for the common people only at the beginning of the Nautical Twilight. In other words, the Qur'anic 'white thread' over the eastern horizon becomes visible only when the Sun has reached 12 degrees below the horizon. Therefore, we can easily consider the Nautical Twilight as the best candidate for *al-fajr as-sadiq* (the true dawn).

## 6. Conclusion

Firstly, the *shar'i* definition of *al-fajr as-sadiq* possesses two main characteristics: the horizon becomes horizontally visible (the 'white thread' on the eastern horizon); and the common people can observe the occurrence of the true dawn.

Secondly, based on the *shar'i* descriptions of *al-fajr as-sadiq*, the Astronomical Twilight has been found to lack the qualities of true dawn. Even in its later stages, the Astronomical Twilight may, at best, be

considered as *al-fajr al-kazib* (the false dawn).

This is also the view of 'Allamah at-Tabataba'i. And, therefore, we reject any view which says that the time of prayer and fasting begins before or at the Astronomical Twilight.

Thirdly, the Nautical Twilight has been found to possess the two main qualities of *al-fajr as-sadiq*. And, therefore, at the time of Nautical Twilight we are sure that the true dawn has already started.

However the time between the Astronomical Twilight and the Nautical Twilight is still unknown to us: that is, we have not been able to exactly pin-point the beginning of the true dawn. So what should be done as far as the time between the two twilights are concerned?

Following the basis of precaution,

- the Astronomical Twilight should be considered as the beginning of fasting;
- the Nautical Twilight should be considered as the beginning of the *subh* prayer time.

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1. Al-Yazdi, al-'Urwaṭu l-Wuṭḥa, p. 172.
  2. Al-Khu'i, Minhajū 's-Salihiyn, vol. 1, p, 132
  3. At-Turkamani, Q.M., Tahriru l-'Urwaṭi l-Wuṭḥa (fiqh lectures of Ayatullah al-Khu'i), vol. 1, p. 128.
  4. On 'urf, the specialist may refer to Shaykh Murtaza al-Ansari, al-Makasib, p. 193. For a comparative study on 'urf in various schools of fiqh, see Sayyid Muhsin al-Kharrazi, "Hawla l-'Urf" in the Arabic journal at-Tawhid, no. 34 [Tehran: 1988] pp. 43-60; and Muhammad Taqi al-Hakim, al-Uṣulu l-'Ammah li l-Fiqhi l-Muqarin, pp. 417-425.
  5. See 'Abdu l-Majid al-Bakri, "ash-Shafaq wa 'ilaqatuhu bi ba'z awqati 's-salat" in the monthly az-Zahra [Cairo] vol. 1 [Safar 1343 AH] p. 75-81. Also see works of Dr. Mohammad Ilyas.
  6. Most Muslim astronomers and scholars; for example, see the circular of Hujjatul Islam Sayyid Fazil Milani dated 3 Sha'ban, 1409, distributed by al-Khoei Foundation, London
  7. I should mention here that there are a few persons who say that the time from al-fajr as-sadiq to sunrise is equal to 1/7 of the day time. This view has no theoretical base nor any shari'ah proof to sustain it. It might be correct in some cities by coincidence but not as a rule to be followed all over the world. And, therefore, we do not consider it as one of the prevalent views.
  8. See Wasa'ilu 'sh-Shi'ah, vol. 3, p. 152-154. Although the sanad of the first two narrators are not flawless, but their contents can be confirmed by the authentic ahadith of the latter three narrators.
  9. See the circular distributed by al-Khoei Foundation.
  10. Crawford, W.P., Mariner's Celestial Navigation [San Francisco: Miller Freeman, 1972] p. 372.
  11. Sayyid F. Milani in al-Khoei Foundation's circular.
  12. At-Tabataba'i, S.M.H., al-Mizan, vol. 2 [Tehran: Daru l-Kutubi l-Islamiyyah, 1362 {solar} AH] p. 49; also see the English translation, vol. 3 [Tehran: WOFIS, 1973] p. 64-5.
  13. Tuer, David F., Dictionary of Astronomy, Space, & Atmospheric Phenomena [N.Y.: Van Nostrand Co; 1979] p. 153.
  14. Rozenburn, G.V., Twilight [N.Y.: Plerum Press, 1966] p. 22.
  15. Crawford, op. cit., p. 372.
  16. Crawford, op. cit., p. 371



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