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## Prayer Times from the Equator to the Poles

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People who are submissive to God and stand up to all difficulties for His cause are named “Muslim”. Another pertinent characteristic of those who are “Muslim” is that they implement the rulings of the religion into their own lives without any additions to it from their own desires. *“Who speaks in a finer way than the one who invokes God, does righteous deeds and says: ‘I am of those who submit themselves to God (i.e. a Muslim)’?”* (Fussilat 41:33)

The aim of this article is to shed light on the times of prayers (salah/namaz) and fasting (sawm/siyam) in accordance with relevant verses from the Quran and narrations (hadith) from Prophet Muhammad (pbuh). Some of the terms and definitions presented in this article would be new concepts for the reader, while others would be correcting common misconceptions. We anticipate that Muslim readers who consider God’s word as the authority, rather than any governing bodies or institutions, would recognize them as a manifestation of facts because they have been extracted from the Quran.

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The universality of The Grand Quran is its prominent quality. God’s religion is one; there is continuity from one book of God to another, from one Prophet to another, and all His books are previous links of revelation chain while the Quran is the final link. The Grand Quran is a complete manual about all topics of life, for all times to come and for all its people wherever they are. There are no gaps and missing information in his messages. The Quran, being the final message, constitutes a universal set of guidelines for all eras and regions of the world covering the topic of prayers (salah/namaz) comprehensively without leaving out any necessary information.

In the Quran, there are two verses which begin with the command “establish the prayer” <sup>1</sup>:

وَأَقِمِ الصَّلَاةَ طَرَفَيْ النَّهَارِ وَزُلْفًا مِنَ اللَّيْلِ إِنَّ الْحَسَنَاتِ يُذْهِبْنَ السَّيِّئَاتِ ذَلِكَ ذِكْرَى لِلذَّاكِرِينَ

*“Establish the prayer in two parts of the daytime and at the **zulaf** of the night. Surely, good deeds eradicate bad deeds. This is sound information<sup>2</sup> for those who use their knowledge.”*  
(Hud, 11:114)

أَقِمِ الصَّلَاةَ لِذُلُوكِ الشَّمْسِ إِلَى غَسَقِ اللَّيْلِ وَقُرْآنَ الْفَجْرِ إِنَّ قُرْآنَ الْفَجْرِ كَانَ مَشْهُودًا

“Establish the prayer from the **dolook** of the sun till the **ghasaq** of the night, and at **quran**<sup>[4]</sup> of the fajr. **Quran** of the fajr is visible to the eye <sup>[4]</sup>.” (Isra 17:78)

The above mentioned two verses explain each other. Other verses which help us understand the topic further are as follows:

وَمِنَ اللَّيْلِ فَتَهَجَّدْ بِهِ نَافِلَةً لَكَ عَسَىٰ أَنْ يَبْعَثَكَ رَبُّكَ مَقَامًا مَّحْمُودًا

“Wake up for prayer in some part of the night as an additional obligation for you: It may be that your Master will raise you to a station of praise and glory!” (Al-Isra 17:79)

وَاذْكُرْ اسْمَ رَبِّكَ بُكْرَةً وَأَصِيلًا . وَمِنَ اللَّيْلِ فَاسْجُدْ لَهُ وَسَبِّحْهُ لَيْلًا طَوِيلًا

“Keep the name of your Master on your mind through day and night. And during a part of the night prostrate to Him, and exalt Him (offer tahajjud prayer) during the long part of the night<sup>[4]</sup>.” (al-Insan 76:25-26)

وَمِنَ اللَّيْلِ فَسَبِّحْهُ وَإِدْبَارَ النُّجُومِ

“Glorify Him at a part of the night and as the stars fade away.” (at-Tur 52:49)

We will understand the relevant terms, times of prayer and fasting in the light of these verses and other verses which include the details of these verses.

## I. THE TERMINOLOGY FOR UNDERSTANDING THE CONCEPT OF PRAYER TIMES FOR A MUSLIM

According to the Qur’anic descriptions of both the day and night, they are distinguished from each other by their certain attributes, such as the former being time for spreading around and searching for God’s favor, and the latter being time for repose. There are also other distinctive attributes of nighttime and daytime which set the boundaries between these two time periods. By using these, we can say that both night and day occur every day and everywhere on the earth. If we use the Quranic criteria to determine the prayer times, they show the universality of prayers for the whole globe not only in places where sunrise and sunset follow a regular course, unlike polar regions. If these right Quranic criteria are used, prayers and fasting can be observed without any hardship on human bodies both in the winters and summers. In short, Quranic guidelines for the prayer times align with human nature (**fitrah**)<sup>[4]</sup> for all regions of the globe. In order to understand the Quranic criteria for the prayers, let us look at essential terms used in this regard:

### A- THE SUN

The Sun is the celestial body which produces “**dhiya**“. The Almighty God decrees:

هُوَ الَّذِي جَعَلَ الشَّمْسُ ضِيَاءً

“It is He Who has made the sun **dhiya**...” (Jonah 10:5)

We do not see the Sun itself but its **dhiya**, that is, its rays, and we call those rays as “the Sun”.



The Sun, where **dhiya** aggregates<sup>[2]</sup>

**Dhiya** is a type of sun ray which enables us to make the calculation of prayer times. The first **dhiya** of the Sun appears over the eastern horizon at the time of **sahar**, and then it wraps the horizon, and thereafter covers all around. In the evening it declines westwards, and in the middle of the night, it disappears completely. God, the Almighty has decreed:

قُلْ أَرَأَيْتُمْ إِنْ جَعَلَ اللَّهُ عَلَيْكُمُ اللَّيْلَ سَرْمَدًا إِلَى يَوْمِ الْقِيَامَةِ مَنْ إِلَهٌ غَيْرُ اللَّهِ يَأْتِيكُم بِضِيَاءٍ أَفَلَا تَسْمَعُونَ. قُلْ أَرَأَيْتُمْ إِنْ جَعَلَ اللَّهُ عَلَيْكُمُ النَّهَارَ سَرْمَدًا إِلَى يَوْمِ الْقِيَامَةِ مَنْ إِلَهٌ غَيْرُ اللَّهِ يَأْتِيكُم بِلَيْلٍ تَسْكُنُونَ فِيهِ أَفَلَا تُبْصِرُونَ

*“Say: ‘Have you considered, if God should lay perpetual night over you until the Day of Rising, what deity besides God would bring you any **dhiya**? Do you not listen?’ Say: ‘Have you considered, if God should extend the daytime until the Day of Rising, what deity besides God would bring you **the night wherein you might repose**? Do you not listen?’ “ (al-Qasas 28:71-72)*

During twilights of morning and evening, night and daytime are merged into each other. The night wherein we repose is right in the midst of the nighttime because the midst of the night is the time when all living creatures rest.

Dhiya can be observed in every region of the earth every day but along different durations. In polar regions, even on the days when the sun does not rise above the horizon, we calculate the prayer times according to the dhiya coming from it.

During white nights<sup>[8]</sup>, the light observed between the isha and **sahar** times is not **dhiya** but rather **noor**. The **noor** will be described under the section "The Moon".

The sun emits another type of ray as well, which is called “duha”. **Duha** is a type of sun rays which emits heat. It emerges only during the daytime. The verses relevant to **duha** are as follows:

والشمس وضحاها . والقمر إذا تلاها . والنهار إذا جلاها . والليل إذا يغشاها .

“By the Sun and its **duha**<sup>[9]</sup>; by the Moon when it follows it (either the Sun or its duha); by the daytime when it displays it (either the Sun or its duha); by the night when it veils it (either the Sun or its duha)” (al-Shams 91:1-4)

In the verse below, the word “**duha**” is used in the meaning “daytime”:

أَوَأَمِنَ أَهْلُ الْقُرَىٰ أَن يَأْتِيَهُمْ بَأْسُنَا ضُحَىٰ وَهُمْ يُلْعَبُونَ

“Or do the people of those towns feel safe from Us striking upon them misery during duha (daytime) while they are playing around?” (al-A’raf 7:98)

These verses show that daytime is described in relation to “duha” and night veils over the **duha**. From the definitions of sun and **dhiya**, we, therefore obtain the following fundamental understandings and definitions which are universally applicable to the whole globe and for all times to come:

**Daytime:** The period between the emergence and disappearance of **duha**

**Nighttime:** The period between the disappearance and emergence of **duha**

According to this, the fundamental distinctive sign of daytime is **duha**.

In polar regions, when the sun does not rise or appear over the horizon only for a short while, it is as if the sun rises and sets behind a mountain. The **duha** of the sun, however, exists throughout the daytime. When the sun does not set at all or sets only for a short while, we can still define the daytime in correspondence to **duha**.

The nights with midnight sun are like the shade mentioned in the verse below:

وَإِذْ قُلْنَا لِلْمَلَائِكَةِ اسْجُدُوا لِآدَمَ فَسَجَدُوا إِلَّا إِبْلِيسَ أَبَىٰ. فَقُلْنَا يَا آدَمُ إِنَّ هَذَا عَدُوٌّ لَكَ وَلِزَوْجِكَ فَلَا يُخْرِجَنَّكَ مِنَ الْجَنَّةِ فَتَشْقَى. إِنَّ لَكَ أَلَّا تَجُوعَ فِيهَا وَلَا تَعْرَىٰ. وَأَنَّكَ لَا تَظْمَأُ فِيهَا وَلَا تَصْحَىٰ

“When We said to the angels, ‘Prostrate to Adam,’ they prostrated, except Iblees; he resisted. Then we said: ‘O Adam! Verily, this is an enemy to you and to your wife; so let him not get you both out of that garden, so that you are landed in misery. Therein you neither suffer from hunger nor go naked. Nor suffer from thirst, nor from the **duha**’.” (Ta-Ha 20:116-119)

What protected Adam (pbuh) from the heating -even burning- effect of duha was the shades in the garden. During the midnight sun, the night serves as a shade that protects creatures from the negative effect of duha.

According to the following verse, the cause of the temperature difference between night and day is caused by **duha** which is radiated only during the daytime:

ولا الظلمات ولا النور . ولا الظل ولا الحرور .

*“Neither darkness and light are equal, nor shade and heat.”* (Fatir 35:20-21)

The word “al-haroor = الحرور” in the verse also means “the Sun” [\[10\]](#). Therefore, we can call ‘haroor’ as daytime and ‘dhill = الظل = shade’ as night. The meaning of the verse, then, becomes:

*“Neither darkness and light are equal, nor night and day.”*

The sun rays that reach the earth during twilights radiate some heat, but the effects of the sun rays radiated during twilights are not like the effects of **duha** that is radiated during the daytime. According to the verses below, duha causes the daytime to wave like a sea:

والضحى . والليل إذا سجى

*“By the duha; and by the night when it becomes still.”* (Duha 93:1-2)

The verb ‘saja = سَجَى’, means ‘to become still’. It is used to express the becoming still of a wavy sea [\[11\]](#). This verb is the criterion to determine the beginning of night during the white nights.

Note that the English word “night” **may** refer to “the period of darkness between sunset and sunrise” or to “the earlier part of this period” [\[12\]](#). In this context, it is essential to notice that the word “layl = لَيْل” in Arabic, which is translated as “night” throughout the article, **unexceptionally** covers both earlier and later periods of nighttime.

If stillness/tranquility and coolness are felt although the sun is above the horizon, we can say that the earlier period of the night has begun. As we shall see further in the article, the coldness of the night, rather than coolness, is the sign of another period of the night.

White nights veil over the duha of the sun just like a shade, thus causing human beings and animals to repose. Indeed, while on a visit to Tromsø in Norway, in the last week of June, we didn’t need to draw the curtains at night to be able to sleep because the sunlight filling in the room at night did not have an awakening effect on bodies.

## **B- THE MOON**

The Moon is a celestial body which reflects the light arriving at it to the earth. Below is a relevant verse:

هُوَ الَّذِي جَعَلَ الشَّمْسُ ضِيَاءً وَالْقَمَرَ نُورًا

*“It is He Who has made the sun a dhiya and the moon a noor...”* (Jonah 10:5)

**Noor** is a type of diffusing light that helps to see [\[13\]](#). The light reflected by the Moon is called **noor**. The sunlight whose duha is eliminated and is radiated during white nights is also **noor**. The Almighty God decrees:

وجعل القمر فيهن نورًا وجعل الشمس سراجًا

*“God has made the moon a noor within the heavens and the sun a candle.”* (Noah 71:16)

The sun is likened to a candle because a candle is a source of light. The **dhiya** from the sun, which is the source of light, reaches the moon as a **noor**. We see the moon in correspondence with the **noor** reflected by it, thus we call it crescent, half-moon or full moon.

## C- THE EARTH

The earth follows a cradle-like motion during its yearly course. It tilts rightward until 20th June, and leftward until 20th December. On 22nd September and 20th March, it takes a vertical position. 21st March is the first day of spring, 21st June is the first day of summer, 23rd September is the first day of autumn, and 21st December is the first day of winter.



The Almighty God decrees:

الذي جعل لكم الأرض مهداً

*It is He Who has made the earth like a cradle for you. (Taha 20:53)*

الذي جعل لكم الأرض مهداً وجعل لكم فيها سبلاً لعلكم تهتدون

*“It is He Who has made the earth like a cradle for you and made ways for you therein, so that you may reach your destination.” (Zuhkruf 43:10)*

ألم نجعل الأرض مهداً. والجبال أوتاداً

*“Have We not made the earth as a cradle and the mountains as pegs?” (Naba’ 78:6-7)*

The earth’s cradle-like motion requires the sunset and sunrise positions and the direction of shadow to change constantly. Verses relevant to shadows will be mentioned further below. Another relevant verse is the following:

فلا أقسمُ بربِّ المشارقِ والمغاربِ إنا لقادرون

*“No need to swear by the Master of easts and wests (this is obviously important)! He establishes criteria.” (Maa’rij 70:40)*

The expression ‘east and west’ point towards multiple points where sunrise and sunset are observed. The sun rises from the due east and sets from the due west only on 20th March and 22nd September. It reaches the farthest sunrise and sunset positions on 20th December and 20th June and returns thereafter. The verse expressing this fact is the following:

رَبُّ الْمَشْرِقَيْنِ وَرَبُّ الْمَغْرِبَيْنِ . فَبِأَيِّ آلَاءِ رَبِّكُمَا تُكَذِّبَانِ

*“He is Master of the two easts and Master of the two wests. Then, which of the favors of your Master will you deny?” (Ar-Rahman 55:17-18)*

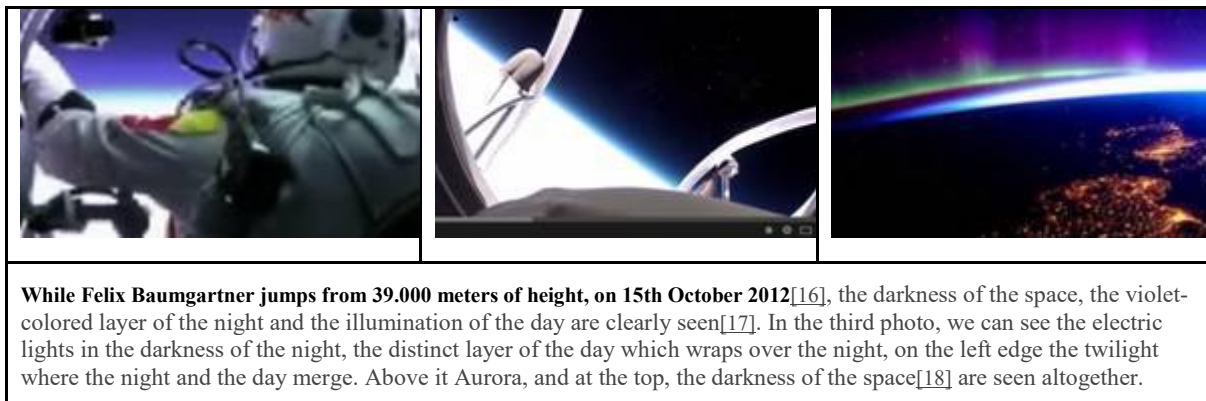
## D- THE NIGHTTIME AND THE DAYTIME

As we have seen above, daytime is the period between the emergence and disappearance of duha, and nighttime is the period between the disappearance and emergence of duha.

In a large area on the earth, duha is observed along with the sun and disappears along with it. In other areas where the sun does not rise above or does not set below the horizon or rises and sets in a short time, however, duha is not observed along with the sun. **Indeed, day -thus its indicator duha- and night are independent and discrete entities according to the Qur'an, just like the Sun and the Moon are.** They move independently from each other. The verse stating this fact is the following:

وَهُوَ الَّذِي خَلَقَ اللَّيْلَ وَالنَّهَارَ وَالشَّمْسَ وَالْقَمَرَ كُلٌّ فِي فَلَكٍ يَسْبَحُونَ

*“It is He Who created the night and the day and the sun and the moon; all are floating in an orbit.”* (Anbiya 21:33)



As seen in the photos, night and day, which never vanish, only swap places within the 24-hour period. During some part of the 24-hour period, the day comes to the front and covers over the night, and during the rest of the period, the night veils over the day. This fact is expressed in the following Quranic verse:

يُغْشِي اللَّيْلَ النَّهَارَ يَطْلُبُهُ حَثِيثًا...

*“...God covers the day with the night that chases it continuously.”* (Araf 7:54)

The day, as a discrete entity, serves a purpose that is similar to the Moon's. It transforms the sun rays reaching it into illumination. Below is a relevant verse:

يَقْلِبُ اللَّهُ اللَّيْلَ وَالنَّهَارَ إِنَّ فِي ذَلِكَ لَعِبْرَةً لَأُولِي الْأَبْصَارِ

*“God alternates the night and the day. Verily in these things is a lesson for those who have vision!”* (An-Noor 24:44)

خَلَقَ السَّمَاوَاتِ وَالْأَرْضَ بِالْحَقِّ يُكَوِّرُ اللَّيْلَ عَلَى النَّهَارِ وَيُكَوِّرُ النَّهَارَ عَلَى اللَّيْلِ وَسَخَّرَ الشَّمْسَ وَالْقَمَرَ كُلٌّ يَجْرِي لِأَجَلٍ مُّسَمًّى  
أَلَا هُوَ الْعَزِيزُ الْعَفَّارُ

“God created the heavens and earth as true beings. He wraps the night over the day and wraps the day over the night. He has commissioned the sun and the moon. Each of them floats for an appointed time. Unquestionably, He is The Superior, The Forgiving.” (al-Zumar 39:5)

The expression “each of them floats for an appointed time” in the verse shows that the night, the day, the Sun and the Moon complete their orbits in certain periods.

## 1- The Indicator of the Daytime

In the regions other than polar zones, sighting the sun is assumed to be an indicator of the daytime and the darkness to be an indicator of the nighttime. The definitions of the night and day in all dictionaries correspond to these two conditions. In polar regions, though, sighting the sun or darkness are not essential indicators of the daytime or nighttime, nor are they so according to the Quran. The Almighty God decrees:

وَجَعَلْنَا اللَّيْلَ وَالنَّهَارَ آيَاتٍ لِّمَنْ آمَنَ فَامْحُوا آيَةَ اللَّيْلِ وَجَعَلْنَا آيَةَ النَّهَارِ مُبْصِرَةً لِّمَنْ يَبْتَغُوا فَضْلًا مِّن رَّبِّكُمْ وَلِتَعْلَمُوا عَدَدَ السِّنِينَ وَالْحِسَابَ  
وَكُلَّ شَيْءٍ فَصَّلْنَا تَفْصِيلًا

“We have made the night and the day two indicators (*ayah*); and then We have erased <sup>[19]</sup> the indicator of the night and made the indicator of the day to be providing sight. So, you may seek the favor of your Master and know the count of years and the calculation. We have explained everything in detail.” (Isra 17:12)

The word “ayah = الآية” means “clear sign”, that is, “indicator”<sup>[20]</sup>. The expression “We have made the night and the day two ayah” states that the night and day are themselves two indicators and that they also have indicators.

The expressions “We have erased the indicator of the night” and “made the indicator of the day to be providing sight” manifest the following:

- The night was “dark” at the beginning but then darkness was dismissed from being an indicator.
- The indicator of the daytime is not ‘sighting the Sun’ but ‘to be providing sight’.

That means the earth did not move like a cradle in the beginning. Half of the day would be illuminated and half of it would be dark then. Seasons would not occur. When it was made like a cradle, darkness ceased to be an indicator and seasons started to occur.

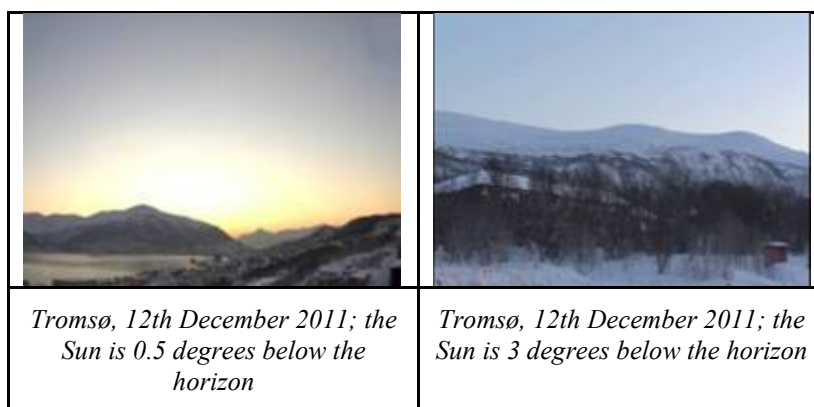
The word translated as ‘erase’ in the verse is ‘mahw = المحو’. The verse states that the indicator of the night has been erased. Although a denotation of the word ‘erase’ is ‘to remove, eliminate’, we know that the night has still got the indicator, ‘being dark’, in conventional regions while it can be partially dark or completely illuminated in polar regions. Then, we must define ‘mahw’ as ‘to erase partially or completely’. This is of high importance because the indicator of the night, which is conventionally known to be ‘darkness’, is not erased completely and suddenly at a certain latitude, but it ceases being an indicator beginning with 45-degrees latitude. From 45-degrees latitude toward the Pole, the darkness of the night keeps on disappearing gradually. The illuminated durations of the nights extend as we approach the



Pole. It is essential to take this gradualism into consideration while creating a calendar. Further details and examples of this balance will be given in the section “The Balance (Mizan)”.

The word ‘mubsir = مبصر’, translated as “to be providing sight”, is of the root ‘basar = بصر= seeing with the eye’. ‘Mubsir’ means “that which provides sight”. Therefore, the daytime must either be sighted itself or provide that its surroundings are seen.

Since the indicator of the day is presumed to be the sun traditionally, people think that daytime does not occur where the sun does not rise above the horizon. In fact, there can be daytimes without sunrise because the indicator of the day is not sighting the sun but to be providing sight. As seen in the photo below, a daytime where the sun does not rise is like an ordinary cloudy winter day:



Where the sun does not rise or rises and sets in a short while, the daytime begins when the daylight in the east reaches the west<sup>[2]</sup>.

Below are photos of the horizon taken at relevant prayer times in Norwegian city Tromsø, during the second week of January 2011, on a day when the sun did not rise:



It is not the Sun but the day as a discrete entity which provides us with sight. The Almighty God decrees about this:

هُوَ الَّذِي جَعَلَ لَكُمْ اللَّيْلَ لِتَسْكُنُوا فِيهِ وَالنَّهَارَ مُبْصِرًا إِنَّ فِي ذَلِكَ لَآيَاتٍ لِّقَوْمٍ يَسْمَعُونَ

“He is the One who made for you the night that you may rest therein and has made the day to be providing sight. Verily in this are signs for those who listen.” (Jonah 10:67)

The day as a discrete entity transforms the sun rays into illumination which provides creatures with sight. This transformation does take place during the daytime even in regions where the sun does not rise above the horizon. No matter how many degrees below the horizon the sun may be, the effects of duha can be observed as if it is daytime. The two photos below facilitate understanding the matter:



In Istanbul, at 42-degrees latitude, the horizon would be so dark that it would not be distinguished from the sky when the sun is 12° below the horizon<sup>[22]</sup>. In Svalbard, however, the horizon is illuminated in winter. This signifies that daytime can occur and be observed everywhere up to the Pole.

## 2- The Indicator of the Night

Since the indicator of the night is presumed to be sunset and the darkness following the sunset in conventional regions, people think that daytime does not occur in polar regions when the sun does not rise above the horizon. Darkness, however, is not the indicator of the night at all latitudes on the earth. In this regard, let us bring to mind the relevant expression from the verse mentioned above:

وَجَعَلْنَا اللَّيْلَ وَالنَّهَارَ آيَاتَيْنِ فَمَحَوْنَا آيَةَ اللَّيْلِ

*“We have made the night and the day two indicators (ayah); and then We have erased the indicator of the night....”* (Isra 17:12)

The expression *“We have made the night and the day two ayah<sup>[23]</sup>”* states that night and day are themselves two indicators. The expression *“and then We have erased the indicator of the night”* states that day and night also had indicators, but the indicator of the night has been erased. Then, darkness, which most people presume to be the indicator of the night, is in fact not essential for the occurrence of night. In traditional Islamic scholarship, the above-mentioned verse is not grasped in its true sense and thus is misinterpreted<sup>[24]</sup> because the darkness was presumed to be the indicator of the night in the regions where Muslim scholars mostly lived. Due to traditional and cultural understandings, darkness was presumed to be the most prominent indicator of the night. This was because most Muslim scholars lived in the non-polar regions where sunrise and sunset follow a regular course. These scholars had little or no information about the countries near the polar regions where the sun disappears for days or the daylight period can stretch to 21 hours, e.g. in Sweden and Norway.

Another verse about the night is as follows:

وَأَعْطَشْنَا لَيْلَهَا وَأَخْرَجَ ضُحَاهَا

“(God) caused the night (of the heavens) to be without an indicator and took out its duha.”  
(An-Nazi’at 79:29)

The root of the word ‘aghtasha = أَغْطَشَ’ which we have translated as ‘caused it to be without an indicator’ is ‘ghatash = الْغَطَشُ = dazzling of the eye’. In a dazzled eye, everything seems blurred, nothing appears in clarity. The word ‘ghatash’ is also assigned the meaning ‘sadaf = السَّدَفُ = a mixture of darkness and illumination’. ‘Mafazat-un ghatsha = مَفَاذَةُ غَطَشَى’ is the name given to a desert where all the signs pertaining to directions of pathways are lost, and ‘muteghatish = الْمُتَغَاطِشُ’ is a person who pretends not to have seen a thing<sup>[25]</sup>.

When we consider the common root meaning in these definitions, we can conclude that ‘ghatash = الْغَطَشُ’ means ‘to be without a sign, clue, or indicator’. Then, the word ‘aghtasha’, which is a transitive verb means ‘causing something to be without an indicator’. As a result, the expression ‘aghtasha laylaha = أَغْطَشْنَا لَيْلَهَا’ in the verse means, ‘caused the night (of the heavens) to be without an indicator’.

In commentaries and translations of the Qur’an, the word ‘aghtasha = أَغْطَشَ’ is assigned the meaning ‘darkened’. This is not the literal root meaning of the word in classical Arabic dictionaries but a denotation semantically derived from that root. Therefore, we should base our translation on the literal root meaning of this word. At night, the signs that determine the borders of objects and surroundings are not seen. It becomes as if they were removed, but according to the above verse, it is “the night” whose indicator was removed, not objects or surroundings. Therefore, the meaning of the sentence would be: ‘(God) has caused the night (of the heavens) to be without a sign/indicator...’. So, as opposed to the common view, darkness is not an essential sign of the night.

The following verse is commonly used as a piece of evidence from the Quran to say that the night should be dark. Let’s see what it fully means:

وَأَيُّهُ لَهُمُ اللَّيْلُ نَسَلُحٌ مِنْهُ النَّهَارَ فَإِذَا هُمْ مُظْلِمُونَ

“And a sign for them is the night: We withdraw therefrom the day and behold they are plunged in darkness.” (Ya-Sin 36:37)

‘...Plunged in darkness’ is the translation of the expression ‘fa iza hum **mudhlimoon** = فَإِذَا هُمْ مُظْلِمُونَ’. The word ‘**mudhlimoon** = مَظْلَمُونَ’ can mean ‘they will enter into darkness’ as well as ‘they will be plunged into gleaming weather’. In Arabic, the word ‘adhlama’ (أَظْلَمَ) has two opposing meanings; one is the dominance of the darkness, and the other is gleaming. For instance, the water dripping from the teeth is called ‘**dhalm** = ظَلْمٌ’ due to its pure gleaming color. The same word also means cleanliness and extreme gleaming of the teeth.

As in:

‘تَجْلُو عَوَارِضَ ذِي ظَلْمٍ إِذَا ابْتَسَمَتْ’ = *tajloo awaaredha zi dhalmin iza ‘btasamat* = *When (my sweetheart) laughs she makes her gleaming<sup>[26]</sup> rear teeth visible.*

When the front teeth gleam, the expression ‘*adhlama ath-thaghru* = أَظْلَمَ الثَّغْرُ = front teeth became **mudhlim**’ is used[27].

Since the nights are dark in the whole globe except the countries in polar regions, the word ‘adhlama = أَظْلَمَ’ was always assigned the meaning ‘plunging of the darkness’ and the second meaning ‘gleaming’ was never recalled. The word ‘mudhlim’, however, expresses that nights may both be **dark** or **gleamy without duha**[28]. The photos below were taken in the Arctic in the summer when white nights were observed:



The leftmost and the second photos were taken during the daytime, while the third photo was taken during the white night after the end of isha prayer time. Although the sun was above the horizon in the third photo, the environment was tranquil and it was cold, thus we had to put on our coats on top of our short-sleeved shirts. During white nights, the night veils over the **duha** of the sun like a tulle curtain so that human beings and animals can rest.

### 3-Karahat Times (When Offering the Prayers is not Forbidden but Reprehensible)

According to a famous narration, the Messenger of Allah (pbuh) forbade to pray or bury the dead when the sun begins to rise until it has fully risen, when the sun is at its zenith at midday till it passes over the meridian, and when the sun draws near to setting till it fully sets[29]. Worshippers of the Sun were used to prostrating to it at these times. These times are called “karahat times” in Islam. ‘Karahat’ means ‘dislike, unwillingness’. Offering the prayers during these times is not forbidden if one did not perform until then, but offering optional (nafl) prayers is reprehensible during these periods. Below is a verse which forbids prostrating to celestial bodies:

وَمِنْ آيَاتِهِ اللَّيْلُ وَالنَّهَارُ وَالشَّمْسُ وَالْقَمَرُ لَا تَسْجُدُوا لِلشَّمْسِ وَلَا لِلْقَمَرِ وَاسْجُدُوا لِلَّهِ الَّذِي خَلَقَهُنَّ إِن كُنتُمْ إِيَّاهُ تَعْبُدُونَ

“The night, the day, the sun, and the moon are of His signs. Do not prostrate to the sun or to the moon, but prostrate to God Who has created them if you shall serve only Him.” (Fussilat 41:37)

Prostration, ‘sajda = سجد’, is kneeling down and humbling yourself [30]. ‘Sajda’ before the Sun can be performed by lying the forehead on the ground, as well as by bending or bowing. During the times of **karahat** at sunrise and sunset, the height of the Sun above the horizon would be less than the length of one spear, which is approximately 5° [31]. To detect this height,

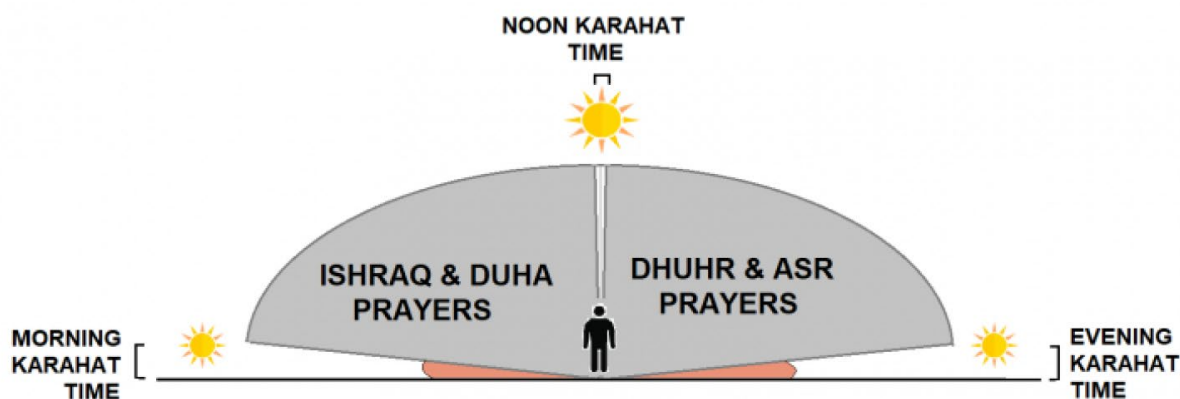
one can touch his chin to his chest and look at the horizon. If the sun cannot be observed at this position, the **karahat** time is out during the sunrise, and it is not yet due during the sunset. Since this criterion is not an arcdegree, its duration may change depending on the coordinates and the season. On 20th March and 22nd September, it decreases to a minimum of 20 minutes at the Equator, never less.

A person who had to delay the Asr prayer until the **karahat** time can offer it until sunset. Nabi Muhammad (pbuh) said: “Whoever catches up with one Rak’ah of ‘Asr prayer before the sun sets, or catches up with one Rak’ah of Fajr before the sun rises, has caught it” [32]. This hadith is a judgment inferred from the following verse:

فاصْبِرْ عَلَىٰ مَا يَقُولُونَ وَسَبِّحْ بِحَمْدِ رَبِّكَ قَبْلَ طُلُوعِ الشَّمْسِ وَقَبْلَ الْغُرُوبِ

“Persevere whatever they say! Exalt your Master before the sunrise and the sunset for He does everything perfectly.” (Qaf 50:39)

In this case, the meaning of the evening **karahat** time is that, delaying the Asr prayer until that time is a disliked (makruh) act.



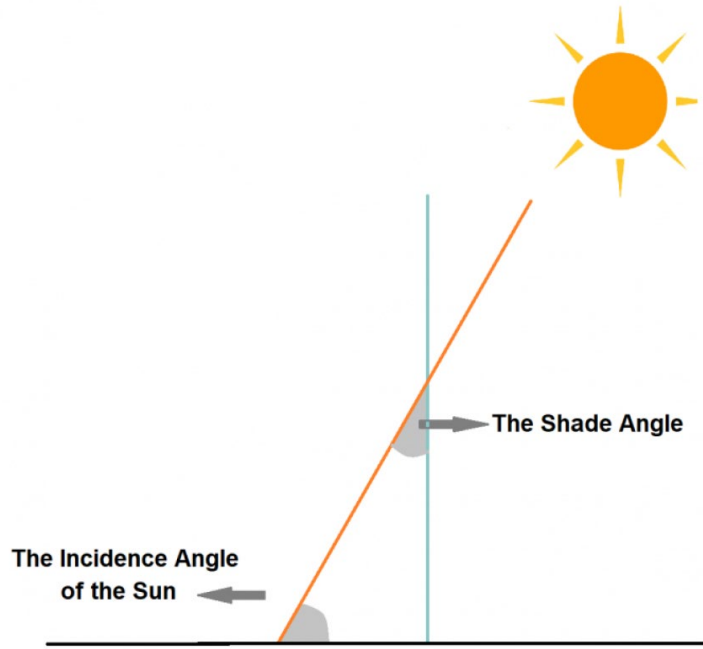
While the sun crosses the top meridian, it is at the highest point of the day. The angular diameter of the Sun is 32 arcminutes. When we consider the criterion that the westward declination of the sun should be observed by the naked eye, we can conclude that the **karahat** time at noon is approximately 1 arc degree, which is 4 minutes.

#### 4-Fay Zawal (فى الزوال)

The shadow that is formed during the sun's meridian crossing and refers to the zenith distance is called '**fay zawal**'. The sum of the shade angle and the incidence angle of sun rays always equals to 90 degrees. The verses below invite us to ponder over the shadow:

ألم تر إلى ربك كيف مد الظل ولو شاء لجعله ساكنًا ثم جعلنا الشمس عليه دليلاً. ثم قبضناه إلینا قبضًا بيسيرًا. وهو الذي جعل لكم الليل لباسًا والنوم سباتًا وجعل النهار نشورًا

*“Have you not considered how your Master extends the shadow? Had He preferred otherwise, He could have made it stationary. Then He made the sun an indication of it. He draws the shade toward Him gradually<sup>[33]</sup>. It is He Who made the night a covering for you and the sleep a repose and made the daytime for spreading across (the earth).” (Al-Furqan 25:45-47)*



The “*extension of the shadow*” occurs when the duration of the night extends. The expression “*He draws the shade toward Him gradually*” expresses the shortening of the shadow. “*The sun being an indication of the shadow*” expresses that the shadow must be calculated according to the Sun.

Another verse is:

ألم تر أن الله يُولِّجُ الليل في النهار ويُولِّجُ النهار في الليل وسخر الشمس والقمر كل يجري إلى أجلٍ مُسمى وأن الله بما تعملون خبيرٌ

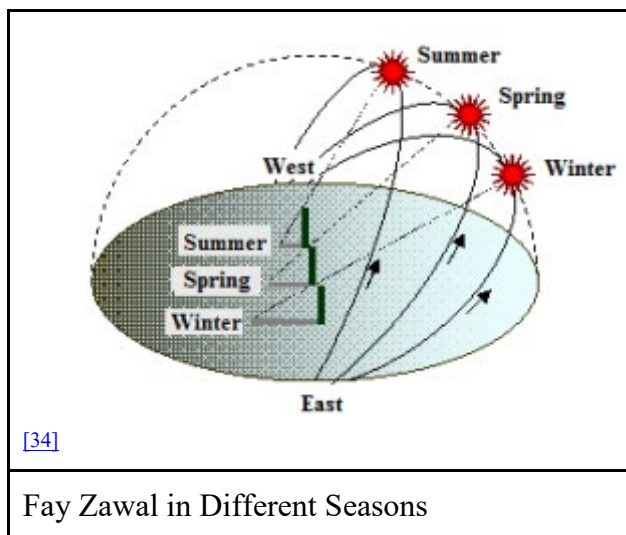
*“Do you not consider that God causes the night to fit into the daytime and He causes the daytime to fit into the night. He has commissioned the Sun and the Moon. All of them float until an appointed term. God is aware of the real face of whatever you do.” (Luqman 31:29)*

*‘The night and the daytime fitting into one another’* expresses that one of them lengthens as the other one shortens.

*‘The Sun and the Moon being commissioned’* states that the calculation must be made according to them.

‘All of them float until an appointed term’ expresses that the night, the daytime, the Sun and the Moon run along their orbits in certain periods and these periods are fixed.

The angle of fay zawal is the incidence angle of the Sun while it crosses the meridian. It denotes the angle between the Sun and the Earth that tilts like a cradle.



As mentioned earlier, on 20th March and 22nd September, the numeric value of fay zawal equals the local latitude, everywhere on the Earth.

In conventional regions, the daytime can be defined as the period between sunrise and sunset. In regions where the sun does not rise or set or rises for a short while, or during the white nights, the daytime should be defined as the period when the **duha** of the sun emerges.

### 5- Customary Daytime (Nahar Urfi)

In the Arabic language, the daytime is the period between sunrise and sunset<sup>[35]</sup>. Since the Qur’an was sent down in Arabic, this is the meaning assigned to the words ‘nahar = النهار’ mentioned in the Qur’an. The Almighty God decrees:

وَمَا أَرْسَلْنَا مِنْ رَّسُولٍ إِلَّا بِلِسَانٍ قَوْمِهِ لِيُبَيِّنَ لَهُمْ

“We sent every messenger in the language of his people to manifest (the verses) for them.” (Ibrahim 14:4)

Since this is a universal religion deemed to be practiced in all parts of the world and for all times, the matter was not left to the Arabic language. Definitions of the daytime and the night in the Qur’an are valid everywhere on the earth and at all times. Relevant verses are below:

والشمس وضحاها . والقمر إذا تلاها . والنهار إذا جلاها . والليل إذا يغشاها .

“By the sun and its duha, by the moon when it follows it (either the sun or its duha), by the daytime when it displays it (either the sun or its duha), by the night when it veils it (either the sun or its duha)” (al-Shams 91:1-4)

According to the Arabic grammar rules, the pronoun ‘it = ها’ in these verses may refer to both the sun and the duha. If we consider the pronoun to be referring to ‘the sun’, the translation becomes:

*“By the sun and its duha, by the moon when it follows the sun, by the daytime when it displays the sun, by the night when it veils the sun” (al-Shams 91:1-4)*

If we translate the verses with the pronoun “it=ها” referring to ‘the duha’, the verses read:

*“By the sun and its duha, by the moon when it follows the duha, by the daytime when it displays the duha, by the night when it veils the duha” (al-Shams 91:1-4)*

According to the verses, the daytime is the period when duha emerges. In the region where the Quran was sent down in the Arabian peninsula, duha emerges along with the Sun, and therefore the definition of the daytime according to people of that region was the period between sunrise and sunset. In fact, the essential element of the daytime is **duha**. It is daytime if duha exists, and it is night if duha does not exist.

## 6- Daytime Defined by the Sharia (Nahar Shari)

In Islamic tradition, a term called ‘nahar shari’, which does not exist in the Qur’an or in the Example of Prophet Muhammad (pbuh), exists. According to it, ‘nahar shari’ is the time period between dawn and sunset[36]. This definition is wrong according to the Qur’an since duha cannot exist during the morning twilight. New terms which were fabricated without basing on any evidence during the course of time create a barrier in front of understanding the religion correctly. Such a term is unacceptable.

## E- MANAZIL (CRITERIA OF COMING DOWN)

The singular form of the Arabic word ‘manazil = منازل’ is manzil[37], which means; time of coming down, place of coming down, and coming down. In terminology in Physics, these are called incidence time, incidence angle and incidence. We will shortly use the word ‘phases’ instead of ‘manazil’ in this article, although this translation would be deficient.

The almighty God decrees:

هُوَ الَّذِي جَعَلَ الشَّمْسُ ضِيَاءً وَالْقَمَرَ نُورًا وَقَدَرَهُ مَنَازِلَ لِتَعْلَمُوا عَدَدَ السِّنِينَ وَالْحِسَابَ مَا خَلَقَ اللَّهُ ذَلِكَ إِلَّا بِالْحَقِّ يُفَصِّلُ  
الآيَاتِ لِقَوْمٍ يَعْلَمُونَ

*“It is He Who has made the Sun **dhiya** and the Moon **noor**. He has measured it out by phases (manazil) so that you may know the count of years and the calculation. God has created it in a way to show the truth. He explains these verses in detail for a group of people who know.” (Jonah 10:5)*

The pronoun ‘it = hu = هـ’ in the expression “*He has measured it out by phases (manazil)*” may refer both to ‘noor’ and ‘dhiya’. Then, according to the verse, the phases (manazil) of both *dhiya* and *noor* are measured out. This means that the incidence angles and incidence times of both the sun rays and the moonlights are measured out.






## 1-The Measured Out Phases (Manazil) of the Moon

The Sun always appears as an aggregate of light, but the appearance of the Moon changes constantly. The relevant verse is below:

وَالشَّمْسُ تَجْرِي لِمُسْتَقَرٍّ لَهَا ذَلِكَ تَقْدِيرُ الْعَزِيزِ الْعَلِيمِ . وَالْقَمَرَ قَدَرْنَا مَنَازِلَ حَتَّىٰ عَادَ كَالْعُرْجُونِ الْقَدِيمِ .

“The sun runs along the orbit determined for it. That is the measure set by The Superior, The All-Knowing. As for the moon, We have measured it out by phases until it turns into a withered date-stalk.” (Ya-Sin 36:38-39)

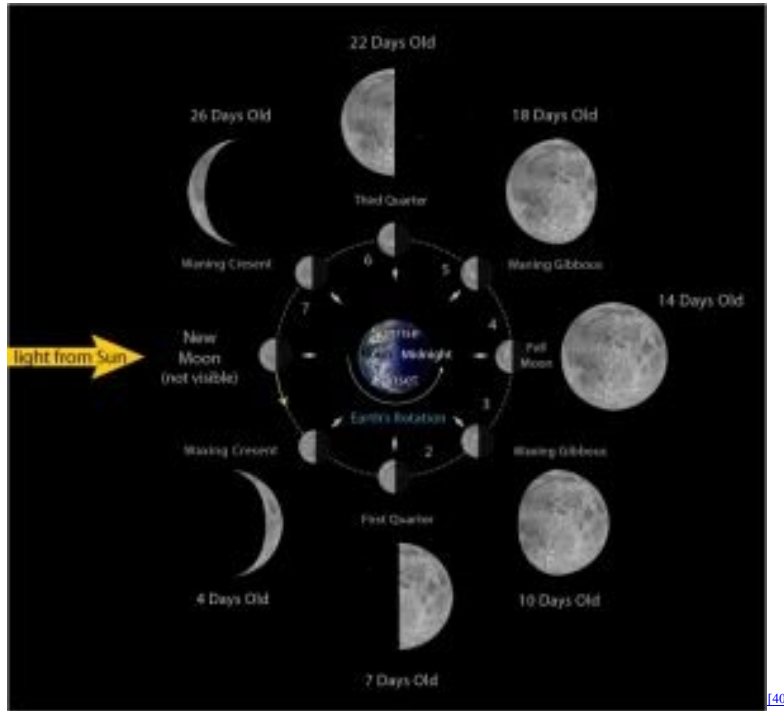
		
Dhiya striking the Moon <sup>[38]</sup>	Crescent <sup>[39]</sup>	The lower part of a date-stalk

One side of the Moon faces the Sun. We see the Moon partially depending on the angle between us and the sun-facing side of the Moon. The appearance which is observed as a crescent at the first phase turns into another crescent at the end of the month- a crescent which looks like a “withered date-stalk”.

In verse Jonah 10:5, when we regard the pronoun ‘it = hu = هُ’ as referring to the moonlight in the expression “He has measured *it* out by phases (manazil)”, the verse reads:

“It is He Who has made the Sun **dhiya** and the Moon **noor**. He has measured the **noor** out by phases (manazil) so that you may know the count of years and the calculation. God has created it in a way to show the truth. He explains these verses in detail for a group of people who know.” (Jonah 10:5)

We can see the Moon in correspondence with the light (noor) reflecting from it. The incidence angle of the Moon’s **noor** changes by the position of the Moon.



As seen in the diagram, we cannot see the illuminated part of the Moon when it is aligned with the Sun and the Earth. We can see it as waxing crescent, first quarter, full moon, last quarter and waning crescent as the angle between us and the sun-facing side of the moon changes. We do the calculation accordingly. The Almighty God decrees:

فَالِقَ الْإِصْبَاحِ وَجَعَلَ اللَّيْلَ سَكَنًا وَالشَّمْسَ وَالْقَمَرَ حِسَابًا ذَلِكَ تَقْدِيرَ الْعَزِيزِ الْعَلِيمِ

*“[He is] the One who cleaves the morning twilight; and He has made the night (time) for repose, and the sun and the moon (move) according to a calculation. These are the criteria established by the Superior, the All-Knowing.” (Al-An’am 6:96)*

الشَّمْسُ وَالْقَمَرُ بِحُسْبَانٍ

*“The sun and the moon (move) according to a (particular) calculation.” (Rahman 55:5)*

Since *“God has explained these verses in detail for a group of people who know”*, the criteria regarding the prayer times cannot be determined without such a team. The verses about the Moon clearly state that prayer times must be established through calculation<sup>[41]</sup>. But during the time of Prophet Muhammad (pbuh), in the region he lived, there wasn’t an expert knowledgeable group who could determine those criteria and calculate the prayer times.

Therefore, he said:

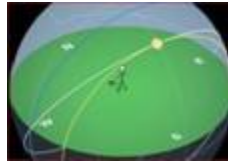
“إِنَّا أُمَّةٌ أُمِّيَّةٌ لَا نَكْتُبُ وَلَا نَحْسِبُ...” “إِذَا رَأَيْتُمُ الْهَلَالَ فَصُومُوا وَإِذَا رَأَيْتُمُوهُ فَأَفْطَرُوا فَإِنْ غَمَّ عَلَيْكُمْ فَصُومُوا ثَلَاثِينَ يَوْمًا.”

*“We are an illiterate nation; we neither write nor know accounts.<sup>[42]</sup> Whenever you sight the new moon (of the month of Ramadan) observe fast, and when you sight it (the new moon of Shawwal) break it, and if the sky is cloudy for you, then observe fast for thirty days.<sup>[43]</sup>” (Bukhari, Sawm 13)*

In contrast to those times, in this day and age, there are sufficient means and enough knowledgeable experts in various fields who can create a lunar calendar. Therefore, there is no need to sight the moon to detect the beginning or end of a lunar month.

## 2- The Measured Out Phases (Manazil) of the Sun

The measured out *manazil* of the Sun are the incidence angles of the *dhiya* from the Sun that are measured out by God. Divisions of a day are determined based on the meridian crossing of the sun's *dhiya*. As we will discuss further in the section "Times of Obligatory Prayers", the first obligatory prayer of the day is the dhuhr prayer whose time begins as soon as the Sun crosses the meridian. The angle between the Sun and the meridian during sunrise and sunset is 90°. Sahar and suhoor time begins when the Sun's angular distance from the meridian decreases to 108° in the morning, and isha time ends when it increases to 108°. Fajr prayer time begins when the Sun's angular distance from the meridian decreases to 99° in the morning, and maghrib prayer time ends when it increases to 99°. The period between the end of isha and sahar is the midst of the night. In this period, the *dhiya* of the sun, i.e., the rays that heat the earth, does not exist. Therefore, it is the coldest time of the night. During white nights, the illumination from the sun in the midst of the night is like the illumination from the moon during a full moon. It illuminates but does not heat.



Since the world is like a cradle, sunrise and sunset positions change every day, and the sun rays become perpendicular to the horizon only twice a year. Therefore, the degrees mentioned above would correspond to variant values when converted to minutes.

While the sun is above the horizon, the length of shadow facilitates detecting the incidence angle. The Almighty God has drawn great attention to shadows and said:

ألم تر إلى ربك كيف مد الظل ولو شاء لجعله ساكنًا ثم جعلنا الشمس عليه دليلاً . ثم قبضناه إنينا قبضًا يسيرًا . وهو الذي جعل لكم الليل لباسًا والنوم سباتًا وجعل النهار نُشورًا .

*“Have you not considered how your Master extends the shadow? Had He preferred otherwise, He could have made it stationary. Then He made the sun an indication of it. He draws the shade toward Him<sup>ﷻ</sup> (and shortens) gradually. It is He Who made the night a covering for you and the sleep a repose and made the daytime for spreading across (the earth).” (Al-Furqan 25:45-47)*

Going back to verse Jonah 10:5, when we regard the pronoun ‘it = hu = هُ’ as referring to the *dhiya* in the expression *“He has measured it out by phases (manazil)”*, the verse reads:

*“It is He Who has made the Sun **dhiya** and the Moon **noor**. He has measured the **dhiya** out by phases (manazil) so that you may know the count of years and the calculation. God has created it in a way to show the truth. He explains these verses in detail for a group of people who know.” (Jonah 10:5)*

Divisions of a day come into existence in correspondence with the Sun's incidence angles.

## a- The Beginning and End of the Day

The day begins with the emergence of duha and lasts until its next emergence the next day. The Almighty God decrees:

لَا الشَّمْسُ يَنْبَغِي لَهَا أَنْ تُدْرِكَ الْقَمَرَ وَلَا اللَّيْلُ سَابِقُ النَّهَارِ وَكُلٌّ فِي فَلَكٍ يَسْبَحُونَ

*“It is not for the sun to overtake the moon, nor does the night outpace the daytime. They each float in an orbit.” (Ya-Sin 36:40)*

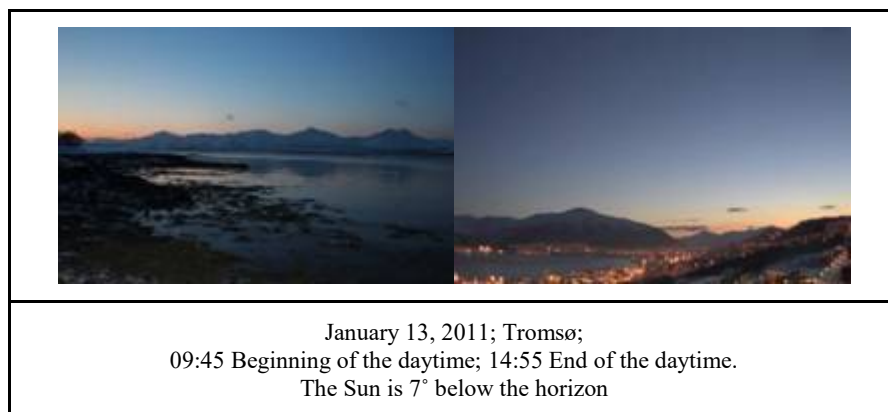
Therefore, the first prayer of the day is duhr prayer and the last one is fajr prayer. The fajr prayer is offered in the last division of the night. Further information about fajr prayer will be given in the following sections.

## b- The Beginning and End of the Daytime

In the places where the sun rises and sets along with the duha, the daytime begins when the angle between the observation station and the upper border of the sun becomes more than 0°. If there is a barrier between the observer and the sun, then one should wait until the illumination that first emerges in the east to reach the west.

In the polar regions where the sun does not rise or set along with the duha in the summer, the daytime begins when the duha emerges and ends when it disappears. The emergence of the duha can be discerned by the termination of tranquility/stillness of the night and the change in temperature. At the end of the daytime, the opposite process is observed. The duha disappears, tranquility/stillness begins and temperature decreases. The term ‘duha’ was studied above, in the section ‘The Indicator of the Daytime’.

In polar regions, on the days when the sun does not rise, the beginning and end of the day can be discerned by observing the lights, as well as observing the duha. When the light emerging in the east reaches the west, the daytime begins<sup>445</sup>. In the evening, maghrib time begins along with the darkness.



Further details will be provided in the section ‘Times of Prayer and Fasting’.

## A- THE BALANCE (MIZAN) (الميزان)

Mizan is derived from the root ‘wezn = وزن’. Wezn means, to determine the measure of something, and ‘mizan = الميزان’ means ‘equilibrium’ or ‘balance’. ‘To equilibrate = muwazana’ is also derived from the same root<sup>146</sup>. The Almighty God decrees:

لَقَدْ أَرْسَلْنَا رُسُلَنَا بِالْبَيِّنَاتِ وَأَنْزَلْنَا مَعَهُمُ الْكِتَابَ وَالْمِيزَانَ لِيُقِيمُوا النَّاسَ بِالْقِسْطِ ...

*“Indeed, We sent Our Messengers with the clear signs, and We sent down with them the Book and the Balance so that mankind might maintain fairness (in all conduct).” (Al-Hadid 57:25)*

والسَّمَاءَ رَفَعَهَا وَوَضَعَ الْمِيزَانَ . أَلَّا تَطْغَوْا فِي الْمِيزَانِ . وَأَقِيمُوا الْوَزْنَ بِالْقِسْطِ وَلَا تُخْسِرُوا الْمِيزَانَ.

*“And the sky, He raised it up, and set the Balance, so that you do not transgress in the Balance. So, make measurement precisely, and do not ruin the balance.” (Rahman 55:7-9)*

The Almighty God has designated the night and the daytime according to the requirements in nature. So, He has set a certain balance. Those who create calendars must make the relevant measurements precisely; so that they do not ruin that balance.

The fundamental indication to be followed is manazil (phases) while making a calendar conforming to the balance. The initial step is calculating the fay zawal, which is the length of the shadow that is formed during the sun’s meridian crossing and gives the zenith distance. Fay zawal was explained above.

Let us see the balance between night and day.

### 1- The Balance Between the Night and the Day

Both night and day are divided into three sections. Two of those divisions contain obligatory (fard) prayers but one division does not, both during the night and day.

#### a-Divisions of the Daytime

The daytime is divided into two sections by the Sun’s meridian crossing, soon after which the time for dhuhr prayer begins. The dhuhr prayer is the first prayer of the whole day, as well as of the daytime. After that, the time for the second prayer begins, which is asr. Further details about the prayer times will be given below.

MORNING TO NOON	DHUHR PRAYER	ASR PRAYER
DAYTIME		

As can be seen, there is no obligatory prayer in the first division of the daytime, but there are two obligatory prayers in the second half of the daytime. These prayers divide the second half into two. In all three of these divisions, optional (nafilah) prayers are recommended. The relevant verse is:

فاصْبِرْ عَلَىٰ مَا يَقُولُونَ وَسَبِّحْ بِحَمْدِ رَبِّكَ قَبْلَ طُلُوعِ الشَّمْسِ وَقَبْلَ غُرُوبِهَا وَمِنْ آنَاءِ اللَّيْلِ فَسَبِّحْ وَأَطْرَافَ النَّهَارِ لَعَلَّكَ تَرْضَىٰ  
*“Persevere whatever they may say! Exalt your Master before the sunrise and the sunset and at times of the night for He does everything perfectly. Exalt also in the divisions of the daytime, so that you may be pleased.”* (Taha 20:130)

The expression we translate as “*the divisions of the daytime*” is “أَطْرَافَ النَّهَارِ = atraf an-nahar”. The word ‘أَطْرَافَ = atraf’ in this noun phrase is the plural form of ‘طرف = taraf’ which means ‘each of the divisions of an entity’<sup>[97]</sup>. In Arabic, plural form denotes at least three entities. Therefore, the daytime must have at least three divisions.

In this verse, the command is given using the verb “sabbih (سَبِّحْ) = exalt”. This command refers to offering optional prayers when it is given in correspondence to time periods. Therefore, according to the verse, optional (nafl) prayers can be offered in three divisions of the daytime. These are duha, dhuhr and asr prayer times.

The expression “آنَاءِ اللَّيْلِ = aanai al-layl” that we translate as “times of the night” includes the word ‘aanai = آنَاءِ’ which is the plural form of the word ‘aan = آن’. ‘Aan’ means a ‘time period’.

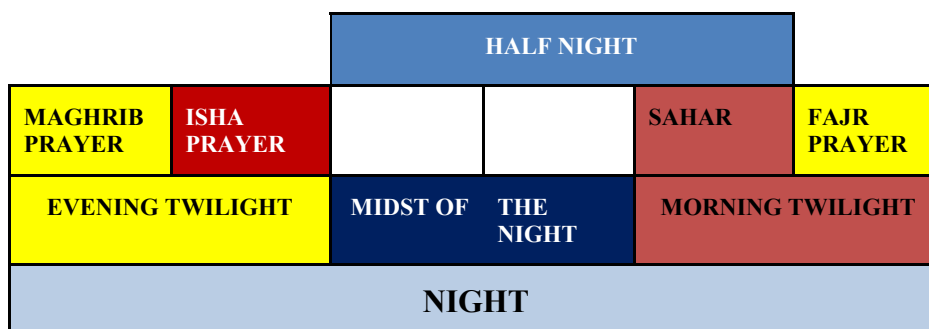
We thus understand that there are at least three time periods to offer optional prayers at night. It is obvious that the prayers mentioned in this verse are not obligatory prayers because the verse ends in: “*so that you may be pleased*”.

The length of the daytime period until noon is equal to the length of the daytime period from noon to evening, except for minor differences.

## 2-Divisions of the Night

The night is divided into three parts as the evening twilight, the midst of the night, and morning twilight. As will be seen later on in this article, maghrib and isha prayers are offered in the evening twilight. The fajr prayer is offered in the second half of morning twilight which is the period of true dawn – fajr as-sadiq.

There is no obligatory prayer in the midst of the night and in the first division of morning twilight which is sahar time. This part, which constitutes the one and a half divisions of the night out of three, is called “half night = nisf al-layl = نصف الليل”.



The following verse, which was sent down in Mecca, decrees Nabi Muhammad (pbuh) to wake up at half night and read the Qur'an:

يَا أَيُّهَا الْمُرْمَلُ . فَمِ اللَّيْلِ إِلَّا قَلِيلًا . نِصْفَهُ أَوْ انْقُصْ مِنْهُ قَلِيلًا . أَوْ زِدْ عَلَيْهِ وَرَتِّلِ الْقُرْآنَ تَرْتِيلًا . إِنَّا سَأَلْنَا عَلَيْكَ فَأَوْلًا تَقِيًّا

*“O you who withdraws into himself! Rise at night, except for a little (part of it). Arise for the half of it, or a little less, or a little more, and read the Qur'an slowly and distinctly. Soon shall We cast upon you a heavy duty.”* (Muzzammil 73:1-5)

By the verse below which was sent down in Macca, Nabi Muhammad (pbuh) was commanded to wake up at night and perform tahajjud prayer:

وَمِنَ اللَّيْلِ فَتَهَجَّدْ بِهِ نَافِلَةً لَّكَ عَسَىٰ أَنْ يَبْعَثَكَ رَبُّكَ مَقَامًا مَّحْمُودًا

*“And wake up for prayer in a part of the night as an additional duty for you. It may be that your Master will raise you to a place of praise and glory.”* (Al-Isra 17:79)

According to the verse below, the part that is called “half night” is longer than the rest of the night:

وَادْكُرْ اسْمَ رَبِّكَ بُكْرَةً وَأَصِيلًا . وَمِنَ اللَّيْلِ فَاسْجُدْ لَهُ وَسَبِّحْهُ لَيْلًا طَوِيلًا

*“Keep the name of your Master on your mind through day and night. And during a part of the night prostrate to Him, and exalt Him during the long part of the night.”* (Insan 76:25-26)

The word ‘لَيْلًا=laylan = at night’ in this Arabic sentence is an adverb of time, and the word ‘طَوِيلًا= tawiylan = long’ is the adjective of that adverb. This is why we translate it as “during the long part of the night”. According to the verse below, the main long part of the night is the midst of the night:

إِنَّ رَبَّكَ يَعْلَمُ أَنَّكَ تَقُومُ أَدْنَىٰ مِنْ ثُلُثِي اللَّيْلِ وَنِصْفَهُ وَثُلُثَهُ وَطَائِفَةٌ مِّنَ الَّذِينَ مَعَكَ وَاللَّهُ يُعَدِّرُ اللَّيْلَ وَالنَّهَارَ...

*“Indeed, your Master knows that you rise almost two-thirds of the night or half of it or a third of it, and [so do] a group of those with you. And it is God Who sets the measure of the night and the daytime.”* (Muzzammil 73:20)

The shortest period here is the midst of the night which lasts for one-third of it. The command “qum = قُمْ = rise” is normally given to a person who is lying down. That means the verses listed here state that the Prophet (nabi) Muhammad (pbuh) and some believers slept after the prayer of isha and got up in the midst of the night. Accordingly, it is narrated that Prophet Muhammad used to complete the tahajjud prayer until sahar time <sup>488</sup>. Aisha (r.a) said: *“When he was with me, he used to sleep at sahar time<sup>489</sup>”*.

The following two verses also verify this inference:

كَانُوا قَلِيلًا مِّنَ اللَّيْلِ مَا يَهْجَعُونَ . وَبِالْأَسْحَارِ هُمْ يَسْتَغْفِرُونَ

*“They (the muttaqi, who protect themselves from doing wrong) sleep very little at night. They ask for forgiveness at times of sahar.”* (Zhariyat 51:17-18)

وَمِنَ اللَّيْلِ فَسَبِّحْهُ وَإِدْبَارَ النُّجُومِ

*“Exalt Him during a part of the night and when stars retreat.”* (Tur 52:49)

The time when stars retreat is the time they start to disappear, and it is the sahar time. We, therefore, understand that both of these verses emphasize the midst of the night. The time of sahar is not a short period. Then, Prophet Muhammad (pbuh) might have asked for forgiveness in a division of it and slept during the rest of it.

All this data reveals that the midst of the night is longer than the other two divisions of the night. The Almighty God, Who has established the criteria of the night and the day<sup>150</sup>, has set the balance as such. He has forbidden us from transgressing in the balance and removed the condition that nights should be dark. This is why we have to observe this balance while creating a calendar.

When viewed from this aspect, we see the fact that white nights are observed beginning with 46° latitude on. Otherwise, the midst of the night would be shorter than the other two divisions of the night on 21st June, thus tipping the balance. To show this, we share the following values which have been detected using local time, on 21st June, at 46° latitude:

### **The Evening Twilight**

Sunset: 19:49

The end of isha time (the Sun is at -18°): 22:39

The length of evening twilight: 170 minutes

### **Midst of the Night**

The beginning of the midst of the night: 22:39

The beginning of Sahar time (the Sun is at -18° again): 01:26

The length of the midst of the night: 167 minutes.

### **The Morning Twilight**

The beginning of Sahar time (the Sun is at -18° again): 01:26

Sunrise: 04:15

The length of morning twilight: 169 minutes.

As seen above, at 46° latitude, the midst of the night would fall shorter than the other two divisions of the night if sighting the sun was adopted as the criterion.

On 21st June at 45° latitude, however, the balance is still preserved. To be able to make a comparison, we also share the values detected on 21st June at 45° latitude:

### **The Evening Twilight**

Sunset: 19:45

The end of isha time (the Sun is at -18°): 22:24

The length of evening twilight: 159 minutes

### **The Midst of the Night**

The beginning of the midst of the night: 22:24

The beginning of Sahar time (the Sun is at -18° again): 01:40

The length of the midst of the night: 196 minutes.



## The Morning Twilight

The beginning of Sahar time (the Sun is at  $-18^\circ$  again): 01:40

Sunrise: 04:19

The length of morning twilight: 149 minutes.

While creating a calendar, if we do not consider the fact that white nights are observed from  $46^\circ$  latitude on in the summer, we happen to transgress in the balance and violate the following decree of God:

والسما رفعها ووضع الميزان . ألا تطغوا في الميزان . وأقيموا الوزن بالقسط ولا تخسروا الميزان .

*“And the sky, He raised it up, and set the Balance, so that you do not transgress in the Balance. So, make measurement precisely, and do not ruin the balance.” (Rahman 55:7-9)*






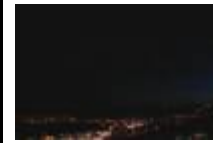
That means, the shortest night is observed at 45 degrees latitude in the summer. The sun sets at 19:45 (local time) and isha time begins at 20:48. The fajr prayer time begins at 03:16. A Muslim who performs the isha prayer until 21:15 and sleeps thereafter can sleep at least for six hours. If this person has slept during the daytime<sup>[51]</sup> too, waking up for tahajjud prayer and starting to fast after the suhoor meal at Sahar time would not be difficult at all.

On 21st June, nights begin to extend from 45degrees latitude onward. This is in line with the very old characteristic phenomenon, “*when things get to their extreme, they turn into their opposite*”<sup>[52]</sup>. The extension takes place through the addition of white nights. From 45 degrees on, we have to recognize the nights with the sun.

In the summer, by means of the symmetry that persists from 21st March to 23rd September, the criteria for prayer times in the northern hemisphere from 45th latitude to the pole would be the equivalent of the criteria from 45th latitude to the Equator. So, creating the calendar for sunny nights gets easy.



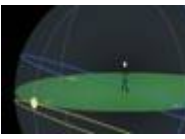
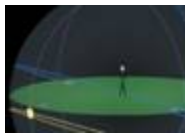
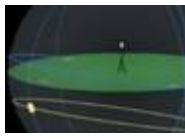
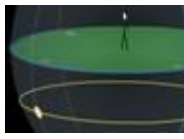
The same principles are followed for the southern hemisphere between 23rd September and 21st March.

The criteria to be implemented in the winter are different in these regions. This is because the daytime has to be “causing visibility = mubsir = مبصر” although the indicator of the night has been erased in accordance with the verse 12 of Surah al-Isra. Therefore, in the winter, at locations where the sun does not rise or rises for a short while, the only criterion is the illumination. In such places, it is as if the sun is behind a mountain. The east and the west are close to each other in a way they are nowhere else. To consider the sun as “risen”, one must wait for the illumination in the east to reach the western horizon.

					
Fajr 8:40; -8,5°	Sunrise 9:20; -6,1°	Dhuhr 12:00; -1,4°	Asr 13:58; -3,4°	Maghrib 14:56; -6°	Isha 15:38; -8,5°

These photos were captured from a video dated 01.01.2011 on the website of Tromsø University [\[53\]](#). In the winter, from 45th latitude on, the angle between the sun and the observer constantly decreases whereas the fay zawal increases. As we approach the pole, the positions of sunrise go further down the horizon at each latitude. On the solstice, when fay zawal increases to 90 degrees at 66°33' latitude, the Sun becomes invisible. On that day, the zenith distance is 113°27' at the pole.

### The Northern Hemisphere on 20th December

					
LAT 45; Incidence: 21°33' ; F. zawal 63°27'	LAT 55; Incidence: 11°33' F. zawal 73°27'	LAT 66.33; Incidence:0° F. zawal 90°	LAT 70; Incidence: N/A Zenith Dist. 93°27'	LAT 80; Incidence:N/A Zenith Dist. 103°27'	LAT:89; Incidence:N/A Zenith Dist. 112°27'

Since the poles constitute (mathematical) singularities, a calendar cannot be created regarding them. At the 89-degree latitude which is 111 km behind the pole, the length of the daytime becomes the shortest of all. At noon, the Sun passes from 22°27' below the horizon. The angular distance between the east and the west decreases to 1°.

The positions of sunrise and sunset veer parallel to the horizon from 45th latitude on. Therefore, one must add 4 minutes to the sunrise and subtract 4 minutes from the sunset for each latitude. That means at every latitude, the daytime would last 8 minutes shorter than the previous latitude. At latitude 89, on 20th December, the sun happens to have risen at 10:36 (local time) and set at 13:19. The length of the daytime is then 2 hours 43 minutes.

The main question to be answered here is the following: How can we observe the lights of the Sun as it is 22.5 degrees below the horizon at the pole on 21st December, while it would be pitch dark anywhere else as the sun is 18 degrees below the horizon?

To answer this question, we went on two journeys to the polar region at the beginning of January. On the first journey, we went to Tromsø that is located at 70-degree latitude. On the second journey, we first went to Tromsø and then to Svalbard that is at 78-degrees latitude. We observed that the daytime does occur when the sun is below the horizon. We found out that the environment in the polar region is like a mountain in front of the sun. The atmosphere has a distinct structure there.

This response brought along the second question: Why does not the sun emit the indicator of the daytime to the polar region throughout the day, although it is parallel to the horizon all day long?

The answer to this question lies in the fact that the daytime and the night have been created as discrete entities. We explained this under the title “D- THE NIGHT AND THE DAYTIME” in correspondence with the verse al-Ahzaab 21:33. When the daytime comes to the fore, it transforms the sunrays into illumination, but this doesn’t occur when the night comes to the fore.

## B- THE TROPIC OF SALAT

We have mentioned that the Sun is left out of the calculation beginning with  $\pm 45$ -degrees latitude on and also the fact that in the winter, not the sun but the illumination coming from the sun is the criterion for prayer times calculation. Therefore, from the viewpoint of prayer times, calling the  $\pm 45$  degree latitudes as “the tropic of salat” will be convenient. The earth thus would be divided into two zones: Either sides of the Equator and the polar regions beginning with 45-degree latitude.

In the first zone, that is, the middle part of the earth, daytimes are sunny and nights are dark. In the second zone, that is, at the two extremes of the earth, nights are partially or completely sunny in the summer, and daytimes are lacking the sun partially or completely in the winter.

## II. TIMES OF OBLIGATORY PRAYERS

Prayer times have been explained in detail in the Qur’an. There are two verses which begin with the command “offer the prayer”:

وَأَقِمِ الصَّلَاةَ طَرَفَيْ النَّهَارِ وَزُلْفًا مِنَ اللَّيْلِ إِنَّ الْحَسَنَاتِ يُذْهِبُنَّ السَّيِّئَاتِ ذَلِكَ ذَكَرَى لِلذَّاكِرِينَ

*“Offer the prayer in two parts of the daytime and at the zulf of the night. Surely, good works drive away evil works. This is the sound information for those who use their knowledge.”*  
(Hud 11:114)

أَقِمِ الصَّلَاةَ لِدُلُوكِ الشَّمْسِ إِلَى غَسَقِ اللَّيْلِ وَقُرْآنَ الْفَجْرِ إِنَّ قُرْآنَ الْفَجْرِ كَانَ مَشْهُودًا

*“Establish the prayer from the dolook of the sun till the ghasaq of the night, and at quran of the fajr. Quran of the fajr is visible to the eye.”* (Isra 17:78)

These are verses which explain one another. Other verses which help us understand these are below:

وَمِنَ اللَّيْلِ فَتَهَجَّدْ بِهِ نَافِلَةً لَكَ عَسَىٰ أَنْ يَبْعَثَكَ رَبُّكَ مَقَامًا مَّحْمُودًا

*“Wake up for prayer in some part of the night as an additional obligation for you: It may be that your Master will raise you to a station of praise and glory!”* (Al-Isra 17:79)

وَأذْكُرْ اسْمَ رَبِّكَ بُكْرَةً وَأَصِيلًا . وَمِنَ اللَّيْلِ فَاسْجُدْ لَهُ وَسَبِّحْهُ لَيْلًا طَوِيلًا

“Keep the name of your Master on your mind through day and night. And during a part of the night prostrate to Him, and exalt Him (offer tahajjud prayer) during the long part of the night.” <sup>154</sup> (Insan 76:25-26)

وَمِنَ اللَّيْلِ فَسَبِّحْهُ وَإِدْبَارَ النُّجُومِ

“Glorify Him at a part of the night and as the stars fade away.” (Tur 52:49)

We will explain the times of prayer in the light of these verses and other verses which include the details of these verses.

## A- TWO DIVISIONS OF THE DAYTIME

In the Arabic language, the daytime is the period between sunrise and sunset<sup>155</sup>. At the zones where the sun does not rise above or does not set below the horizon or rises and sets in a short time, the daytime is the period when the duha of the sun emerges.

In Arabic, each of the parts or divisions of an entity is called ‘taraf = طرف’<sup>156</sup>. According to the verse below, the daytime has at least three divisions:

فَاصْبِرْ عَلَىٰ مَا يَقُولُونَ وَسَبِّحْ بِحَمْدِ رَبِّكَ قَبْلَ طُلُوعِ الشَّمْسِ وَقَبْلَ غُرُوبِهَا وَمِنْ آنَاءِ اللَّيْلِ فَسَبِّحْ وَأَطْرَافَ النَّهَارِ لَعَلَّكَ تَرْضَىٰ

“Persevere whatever they may say! Exalt your Master before the sunrise and the sunset and at times of the night for He does everything perfectly. Exalt also in the divisions of the daytime, so that you may be pleased.” (Taha 20:130)

The expression we translate as “the divisions” is “أطراف = atraf”. The word ‘أطراف = atraf’ in this noun phrase is the plural form of ‘taraf = طرف’. In Arabic, plural form denotes at least three entities. Therefore, the daytime must have at least three divisions. These are morning, noon and afternoon named in all languages. The expression “so that you may be pleased” in the verse points out that this verse encourages optional (nafilah) prayers at these divisions. Such an expression cannot exist in verses related to obligatory prayers. These optional prayers are the prayer of duha in the morning and the optional prayers that may be offered before/after the dhuhr and before the asr prayer.

## 1- The First Division of the Daytime (Time for Dhuhr Prayer)

The first of the divisions mentioned in the verse “*Offer the prayer in two parts of the daytime*” has been explained in detail by the following phrase in the other verse:

“*Establish the prayer from the dolook of the sun...*”

‘Dolook = دلوك’ means, to incline and bow. The dolook of the Sun is its westward declination from its zenith<sup>[57]</sup>. The shadows that are formed inclining toward the west until then, will begin to incline toward the east.

The Sun that sets seems as if it is declining toward behind the horizon. Therefore, the dolook of the sun was also interpreted as “sunset” by some scholars<sup>[58]</sup>. Although this denotation conforms to the literal meaning, it violates the balance among verses and the self-integrity of the Qur’an. The following narration from Anas b. Malik, who had served Prophet Muhammad for ten years in Medina, precludes another meaning:

كان النبي يصلى الظهر عند دلوك الشمس

*Nabi (Muhammad) was offering the dhuhr prayer during the dolook of the sun...*<sup>[59]</sup>

The word “the sun” is mentioned only in one verse al-Isra 17:78 regarding the obligatory (fard) prayers. The westward declination of the sun from its zenith occurs when the sun crosses the meridian of our location. The crossing of the meridian can be observed easily and everywhere in every season. Therefore, it is the outset of the calculation. From this aspect, it is also significant that the dhuhr prayer is mentioned as the first prayer of the day in verses and hadeeth (narrations from Prophet Muhammad).

## 2-The Second Division of the Daytime (Time for Asr Prayer)

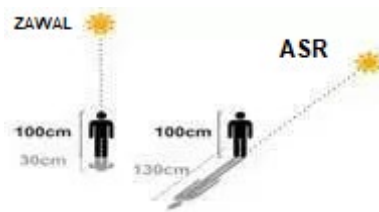
If the first division of the daytime with an obligatory prayer is noon, the second division has to be the afternoon. The Messenger of God Muhammad (pbuh) said:

“*Gabriel led me twice in [five] prayers, in the vicinity of the Bayt Allah (Ka’bah). On the first day, He prayed the Dhuhr prayer with me when the sun had passed the meridian to the extent of the thong of a sandal; he prayed the Asr prayer with me when the shadow of everything was as long as itself... On the second day, he prayed the Dhuhr prayer with me when his shadow was as long as himself; he prayed the Asr prayer with me when his shadow was twice as long as himself... Then turning to me he said: ‘Muhammad, this is the time observed by the prophets before you, and the prescribed time (for each prayer) is anywhere between these two times’.*”<sup>[60]</sup>

Abu Hurairah (pbuh) narrated that the Messenger of God (pbuh) said:

“... *Whoever could get one rak’a of the Asr prayer before sunset, he has got the (‘Asr) prayer.*”<sup>[61]</sup>

The shadow which is formed during the sun's meridian crossing is called 'the shadow of zawal (fay zawal)'. The Asr prayer time begins when the shadow length after subtracting the fay zawal is equal to the length of the object.



The height of the man in the figure is 100 cm. The length of the shadow at zawal time is 30cm. Then, the time for Asr prayer begins when the shadow length becomes 130 cm.

## B- ZULAF (TWILIGHTS) OF THE NIGHT

In Arabic, the night is defined as the time period between sunset and sunrise<sup>[62]</sup>. In the regions where the sun does not rise or rises and sets in a short while and where white nights are observed, the night is the time period when the duha of the sun disappears.

'Zulfa = زلفة<sup>[63]</sup>' means 'nearness'. The 'zulaf of the night' are the divisions of the night that are nearer the daytime, which are morning and evening twilights. There are five types of twilight that differ depending on the degree of illumination:

1. **Civil Twilight:** The most luminous time period after sunset and before sunrise when even the brightest stars cannot be observed. The angular distance of the sun from the horizon is less than  $6^\circ$  at this time. In the morning, this period is called "time of isfar". Gabriel had offered the fajr prayer at this time on the second day mentioned in the narration<sup>[64]</sup>.

In the evening, offering the maghrib prayer within this period is the most virtuous act as of prayer time. Messenger Muhammad (pbuh) said:

*"Hurry up and perform the maghrib prayer before the stars rise<sup>[65]</sup>."*

2. **The True Fajr (Fajr as-Sadiq)** or the beginning of the isha prayer: The period when the sun is  $9^\circ$  below the horizon.

3. **Observation Twilight:** It begins when the sun is  $10^\circ$  below the horizon. Since the horizon may be observed as a sharply defined line and the navigational stars may be seen at this time, it is the best observation time for seamen. At civil twilight, the horizon can be observed but the stars cannot be. At nautical twilight, navigational stars can be clearly seen but the horizon cannot. Seamen need to see them both for a healthy observation. The difference between this twilight and the previous one is the fact that the white and black streaks are not yet clearly defined in the morning and that the clarity is lost in the evening.

4. **Nautical Twilight:** The period when the distance of the sun to the horizon is less than  $12^\circ$ . If the sun is  $12^\circ$  below the horizon, the horizon cannot be defined and it is so dark that observation cannot be made.<sup>[66]</sup>

**5. Astronomical Twilight:** The time period before the sunrise or after the sunset when the sun is closer to the horizon than  $18^\circ$ . If the distance between the sun and the horizon increases to  $18^\circ$ , the twilight ends. The midst and the darkest period of the night begins. At this time, even dim stars can be observed. Astronomers, therefore, observe the stars within this period.

These values depend on the incidence angle of the sun.



[67]

From the aspect of prayer times, the count of twilights is four. God has decreed: “*Establish the prayer at the zulaf (twilights) of the night*“. In Arabic, the word zulaf is in the plural form and refers to three entities at least. Then, we must offer the prayer during three of these twilights. These obligatory prayers are maghrib, isha and fajr prayers. The time of Sahar is also a twilight but there is not an obligatory prayer to be observed then.

In the summer, in the north of the 45-degree latitude, the twilight is either the period when people start to feel the dhiya of the sun or the period when its effects diminish and gradually disappear.

### 1-The Twilights of Evening

The twilight of evening, that is called ‘isha = العشاء’ or ‘shafaq’, is divided in two divisions. ‘The first isha = العشاء الأولى’ is the time for maghrib prayer. It is also called the ‘shafaq’ because it colors the horizon in red [68]. The redness that wraps the western horizon condenses into the form of a band. When the white band at the top, the red band in the middle, and the black band at the bottom are clearly defined, the end of maghrib prayer time comes. When the sun goes  $9^\circ$  below the horizon, the time for maghrib prayer ends.

	
<p>End of Maghrib prayer; black, red and white bands are clearly distinguished</p>	<p>The beginning of Isha prayer time; bands begin to merge</p>

‘The second isha = العشاء الأخيرة’ is the time for isha prayer. Isha prayer time begins when the black, red and white bands begin to merge. This period is called ‘the second shafaq’ due to the red layer of light that lasts until the end of isha prayer time. When the redness disappears and the stars with dim lights begin to appear, the time for isha prayer ends. Thus, the first third of the night comes to end, and ‘the midst of the night = الليلوسط’ begins. The Messenger Muhammad said:

*“Gabriel led me twice in [five] prayers, in the vicinity of the Bayt Allah (Ka’bah). On the first day, ...he prayed the maghrib prayer with me when one who is fasting breaks the fast; he prayed the isha prayer with me when the twilight (shafaq) had ended... On the second day, ...he prayed the maghrib prayer at the time when one who is fasting breaks the fast; he prayed the isha prayer with me when about a third of the night had passed... Then turning to me he said: ‘Muhammad, this is the time observed by the prophets before you, and the prescribed time (for each prayer) is anywhere between these two times’.”<sup>[69]</sup>*

### **a-Time for Maghrib Prayer**

In conventional regions, the evening begins by the sunset. When the black, red and white bands of light are clearly defined on the western horizon and clusters of stars appear, it becomes evident that the end of maghrib prayer time approaches. Nabi Muhammad (pbuh) said:

*“My community (ummah) will continue to adhere to the Fitrah so long as they do not delay the Maghrib until the stars have constellated<sup>[70]</sup>.”*

The maghrib prayer should be offered during the civil twilight. Rafi b. Khadij reported: *“We used to observe the evening prayer with the Messenger of Allah (pbuh) and then one of us would go away and he could see the (distant) place where his arrow would fall<sup>[71]</sup>.”*

The matter will be understood more clearly if we mention that the average distance an arrow travels is around 600 meters.



## **b- Time for Isha Prayer**

The isha prayer time begins when the white band on the western horizon merges into the red band and the darkness. Regarding the end of isha prayer time the Almighty God said:

*“Establish the prayer... till the ghasaq of the night.”* (al-Isra 17:78)

In the regions where white nights are observed, a particular change in temperature and lights is felt at the end of isha prayer time. People who make observations for an extended course can discern this.

‘Ghasaq = غسق’ is the time when the second shafaq disappears and darkness condenses<sup>[72]</sup>. In the meantime, the sun would go 18° below the horizon, the scene on the western horizon would be no different than on other directions, the weather would get fairly cold and the midst of the night would begin.

Had the time for isha prayer not ended before the midst of the night, going back to home from the mosque after the isha prayer would be too hard in a place where the streets are not enlightened with artificial lights. Abdullah b. Umar reported: *“We remained one night waiting for the Messenger of Allah (pbuh) to offer the Isha prayer. He came out to us when one-third of the night had passed or even after it. We did not know whether anything kept him occupied or there was some other matter. When he came out, he said: ‘Are you waiting for this prayer? Were it not that it would impose a burden on my people, I would normally pray with them at this time.’ He then gave orders to the mu’adhdhin and he declared that the time of the prayer had come<sup>[73]</sup>”*

*“When you pray Maghrib, its time is until the extensiveness of shafaq (twilight) has disappeared. When you pray ‘Isha, its time is until half of the night has passed<sup>[74]</sup>”.*

The original meaning of the word ghasaq is ‘coldness’. At this time, animals move along to their nests and rest both in conventional and polar regions. This denotation of the word ‘ghasaq’ allows us to determine the isha prayer time during white nights too.

## **2-The Twilights of Morning**

The twilights of morning emerge between the midst of the night and the sunrise. It is called ‘fajr’ in Arabic. ‘Fajr = الفجر’, is the morning light which is the redness of the sun in the dark of the night<sup>[75]</sup>. Considering that the redness in the evening is called ‘shafaq’, we can see that there is no difference between the twilights of evening and morning except for the naming. The twilight of the morning is divided into two as ‘the first fajr = الاول الفجر’ and ‘the second fajr = الفجر الثاني’. The first fajr is called ‘the Sahar time’. The second fajr is described in the verse al-Isra 17:78 as ‘**quran** of the fajr’.

### **a- The Sahar Time (Fajr al-Kazhib – The False Dawn)**

Sahar is the period between the midst of the night and the true dawn (fajr as-sadiq). The word ‘sahar’ is literally defined as ‘the whiteness ascending over the blackness’<sup>[76]</sup> and ‘merging of the darkness at the end of the night into the illumination of the daytime’<sup>[77]</sup>. In the beginning, a slight illumination emerges over the horizon<sup>[78]</sup>, and then the illumination spreads extending downwards. This period bears the signs of both the night and the daytime<sup>[79]</sup>. It is the time for suhoor meal (early breakfast). Muhammad, the messenger of God said:

“كلوا واشربوا ولا يهيدنكم السّاطع المصعد، فكلوا واشربوا حتّى يعترض لكم الأحمر“

“Eat and drink, let not the brightness ascending vertically prevent you<sup>[80]</sup>. Eat and drink until the redness spreads horizontally according to you<sup>[81]</sup>.”



Sunlights illuminate the top of the horizon at Sahar time. As the incidence angle of sun rays decreases, the illumination extends downward.

During the Great Pilgrimage (Hijrat), Nabi Muhammad (pbuh) had stayed in Cave Sawr together with Abu Bakr for three nights. This place is 5 km away from Mecca and it is on the Mount Sawr whose elevation is 728 mt. Abdullah, the son of Abu Bakr, had stayed with them at night, and then returned to Mecca without anyone noticing him in the twilight of Sahar time, and he got some news. The narration in Bukhari is as the following:

“Abdullah bin Abu Bakr, who was a young intelligent man, used to stay with them at night and leave at Sahar time so that in the morning, he would be with the Quraish at Mecca as if he had spent the night among them. If he heard of any plot contrived by the Quraish against the Prophet and Abu Bakr, he would understand it and (return to) inform them of it when it became dark. ‘Amir bin Fuhaira, the freed slave of Abu Bakr used to graze a flock of milch sheep for them and he used to take those sheep to them after some time had passed the beginning of Isha prayer time. They would sleep soundly till ‘Amir bin Fuhaira awakened the sheep in the morning twilight. Abdullah used to do that in each of those three nights.<sup>[82]</sup>”

A location that is next to Suleymaniye Mosque in Istanbul. The city lights do not affect the sight at all.



The end of Shar time. Different colored streaks are not yet clear.



The true dawn (fajr as-sadiq): white, red and black streaks are clearly distinguished.

## **b- Quran of the Fajr (Time for Fajr Prayer)**

The following verse informs us of the third prayer that must be performed in the twilight:

*“Establish the prayer... also at **quran** of the fajr. **Quran** of the fajr is visible to the eye (mashhood).”* (al-Isra 17:78)

Fajr is the twilight of the morning. The word ‘quran = قُرْآن’ is derived from one of the masdars of verb ‘qaraa = قرأ’. Its masdar is either “‘qur’ = الْقُرْء” or “‘qar’ = الْقَرْء”. The meaning of those masdars is “to gather”<sup>[83]</sup>. Since “reading” is an act of “gathering the words together to understand the meaning”, the meaning “reading” is also attributed to the word “‘quran = قُرْآن’”. The final Book sent down by God is also called “the Qur’an” because it gathers 114 chapters together. In our context, though, the only things that are gathered during the fajr (true dawn) are lights. Therefore, ‘*quran of the fajr*’ mentioned in the verse means ‘gathering of lights at the dawn’. The word ‘mashhood’ means ‘visible to the eye’<sup>[84]</sup>. The verse below explains how the lights at the dawn are seen by the eye:

وكلوا واشربوا حتى تبينوا كمال الخيط الأبيض من الخيط الأسود من الفجر ثم أتموا الصيام إلى الليل

*“Eat and drink, until the white streak (of light) in the direction of dawn (redness) is clearly distinguishable from the black streak (of land in that direction) for you. Then, complete the fast till nightfall.”* (al-Baqarah 2:187)

The meal mentioned in the verse is the suhoor, and the person who will observe the dawn is the person who eats that meal. Since the suhoor meal is eaten in houses, the lights mentioned in the verse must be clearly visible from the windows of houses.

According to these verses and hadeeth, three rises and three sets are observed every day. Those who set are the Sun, the first shafaq, and the second shafaq. Those who rise are the false dawn (fajr al-kazhib), the true dawn (fajr as-sadiq), and the Sun. Fajr al-kazhib is the beginning of Sahar time and suhoor. The density and colors of sunlight on the horizon at the beginning of fajr al-kazhib are identical to those at the end of isha time. Similarly, the view we will see at the end of fajr al-kazhib is identical to the view at the beginning of isha time. The fajr prayer must be offered upon the second rise, that is, the true dawn called fajr as-sadiq<sup>[85]</sup>.

## **C- THE MIDST OF THE NIGHT – Wasat al- layl (وسط الليل)**

The period between the end of isha and Sahar time is the midst of the night. In the places where artificial lights are not used, people go to their houses and animals move along to their nests at this time. As mentioned above, the midst of the night is the longest period of the night.

## D- HALF NIGHT – Nisf al-layl (نصف الليل)

The evening twilight and the morning twilight constitute the two divisions of the night. The midst of the night is the third division. When Sahar time is added on it, we find the half of three divisions, that is, one and a half divisions of the night. Therefore, this period, which includes the midst of the night and the Sahar time, is called ‘half night = نصف الليل’. The verse relevant to this time is the following:

وَمِنَ اللَّيْلِ فَسَبِّحْهُ وَإِدْبَارَ النُّجُومِ

“Exalt Him at a part of the night and as the stars fade away.” (Tur 52:49)

We understand by the following verse that the expression “at a part of the night ...” is meant to be the midst of the night:

“Wake up for prayer in some part of the night as an additional obligation for you: It may be that your Master will raise you to a station of praise and glory!” (Al-Isra 17:79)

Abdullah b. Amr b. As reported that Nabi Muhammad (pbuh) said:

أَحَبُّ الصَّلَاةِ إِلَى اللَّهِ صَلَاةُ دَاوُدَ عَلَيْهِ السَّلَامُ، وَأَحَبُّ الصِّيَامِ إِلَى اللَّهِ صِيَامُ دَاوُدَ، وَكَانَ يَنَامُ نِصْفَ اللَّيْلِ وَيَقُومُ ثَلَاثَةَ، وَيَنَامُ سُدُسَهُ، وَيَصُومُ يَوْمًا، وَيَفْطِرُ يَوْمًا

“The most beloved prayer to Allah is the prayer of Dawud, peace be upon him, and the most beloved fasting to Allah is the fast of Dawud, peace be upon him. He used to sleep half the night, rise for one-third of it (in the midst of the night), and sleep for one-sixth of it (at Sahar time). He used to fast one day and not the next<sup>[186]</sup>.”

The verses which clearly manifest that Nabi Muhammad (pbuh) used to rise and stay up during half of the night are below:

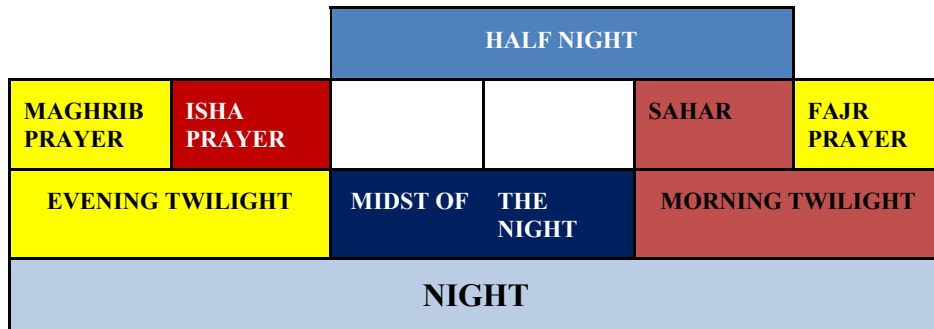
يَا أَيُّهَا الْمَرْمِلُ . فَمِ اللَّيْلِ إِلَّا قَلِيلًا . نِصْفَهُ أَوْ انْقُصْ مِنْهُ قَلِيلًا . أَوْ زِدْ عَلَيْهِ وَرَتِّلِ الْقُرْآنَ تَرْتِيلًا . إِنَّا سَأَلْنَاكَ قَوْلًا نَقِيًّا .  
إِنَّ نَاشِئَةَ اللَّيْلِ هِيَ أَشَدُّ وَطْءًا وَأَقْوَمُ قِيًّا . إِنَّ لَكَ فِي النَّهَارِ سَبْحًا طَوِيلًا . وَادْكُرْ اسْمَ رَبِّكَ وَتَبَتَّلْ إِلَيْهِ تَبْتِيلًا . رَبُّ الْمَشْرِقِ  
وَالْمَغْرِبِ لَا إِلَهَ إِلَّا هُوَ فَاتَّخِذْهُ وَكِيلًا . وَاصْبِرْ عَلَى مَا يَقُولُونَ وَاهْجُرْهُمْ هَجْرًا جَمِيلًا .

“O you who withdraws into himself! Rise at night, except for a little (part of it). Rise for the half of it, or a little less, or a little more, and read the Qur’an slowly and distinctly. Soon shall We cast upon you a heavy duty. Surely, the atmosphere of the night is more effective and it sharpens words. In the daytime, you have lengthy works. Keep the attribute of your Master in your mind and devote yourself to Him. He is the Master of the east and the west. There is no deity but Him. Adopt Him as the Disposer of your Affairs. Persevere whatever (other) people may say and go away from them nicely.” (Muzzammil 73:1-10)

إِنَّ رَبَّكَ يَعْلَمُ أَنَّكَ تَقُومُ أَدْنَىٰ مِنْ ثُلُثَيِ اللَّيْلِ وَنِصْفَهُ وَثُلُثَهُ وَطَائِفَةٌ مِّنَ الَّذِينَ مَعَكَ وَاللَّهُ يُدِيرُ اللَّيْلَ وَالنَّهَارَ عَلِيمٌ أَن لَّنْ نَّحْصُوهُ فَتَابَ عَلَيْكُمْ فَاقْرَءُوا مَا تَيَسَّرَ مِنَ الْقُرْآنِ عَلِيمٌ أَن سَيَلِّقُنَّ مِّنْكُمْ مَّرْضَىٰ وَآخَرُونَ يَضْرِبُونَ فِي الْأَرْضِ يَبْتَغُونَ مِن فَضْلِ اللَّهِ وَآخَرُونَ يُقَاتِلُونَ فِي سَبِيلِ اللَّهِ فَاقْرَءُوا مَا تَيَسَّرَ مِنْهُ وَأَقِيمُوا الصَّلَاةَ وَآتُوا الزَّكَاةَ وَأَقْرِضُوا اللَّهَ قَرْضًا حَسَنًا وَمَا تُقَدِّمُوا لِأَنفُسِكُمْ مِن خَيْرٍ نَّحْدُوهُ عِنْدَ اللَّهِ هُوَ خَيْرٌ وَأَعْظَمُ أَجْرًا وَاسْتَغْفِرُوا لِلَّذِينَ هُمْ بِغَفْوَرٍ رَّحِيمٌ.

“Indeed, your Master knows, that you rise for **almost two-thirds of the night or half of it or a third of it**, and so do a group of those with you. It is God Who establishes the criteria of the night and the daytime. He has known that you [Muslims] will not be able to fully achieve it and has turned to you in forgiveness, so read the Qur'an whenever it is feasible for you. He has known that there will be among you those who are sick and others traveling throughout the land seeking of the favors of God and others fighting for the cause of God. So read whenever <sup>[82]</sup> is feasible to read from It, and establish the prayer and give the zakah and loan God a goodly loan. And whatever good you put forward for yourselves, you will find with God which is better and greater in reward. And seek forgiveness of God. God is Forgiving and Merciful. (Muzzammil 73:20)

Since the command “rise = qum = قم” is given to a person who lies down, the verses reveal that Nabi Muhammad (pbuh) used to sleep after offering the isha prayer and get up at night. It is reported that he used to complete the witr prayer until the Sahar time every night<sup>[88]</sup>. Aisha (r.a.) reported: “He always slept at Sahar when he was with me”<sup>[89]</sup>



When the time for fajr prayer is added up to half of the night, we find the **two-thirds of the night**. Since Nabi Muhammad (pbuh) would have slept at the beginning of the half night, he would have stayed up for a period which lasts for **almost two-thirds of the night**. Some of the Muslims had also followed him.

When they reached Medinah, their workload had increased and the continuation of this labor had become difficult. The verse Muzzammil 73:20 was then sent down and decreed that they could read the Qur'an at any time they found feasible<sup>[90]</sup>. This verse also imposes upon all Muslims the duty of reading the Qur'an at a feasible time of the day in a way that they can comprehend what they read. In Arab tradition, sleeping at noon is widespread. We can conclude that having a rest at that time can be feasible. Indeed, in the verse al-Noor 24:58 this sleep is mentioned. Since the midst of the night is time for sleep and rest, it is not allowed to enter anyone's room without permission after the isha prayer time and before the fajr prayer.

The Almighty God decrees:

*“Oh you who believe! Those who are in your guardianship, as well as those from among you who have not yet attained to puberty, should ask permission from you (before intruding upon your privacy) **before the prayer of fajr**, and whenever you lay aside your garments **in the middle of the daytime**, and **after the prayer of isha**. These are the three occasions on which you may be naked. Beyond these (occasions), neither you nor they will incur any sin if they move (freely) about you, attending to one another. In this way God makes clear for you His messages: for God is all-knowing, wise!” (Noor 24:58)*

It is worth noticing in this verse that the periods **after the isha prayer** and **before the fajr prayer** are distinct time periods. This verse shows that the isha prayer time ends by the midst of the night and there is not an obligatory prayer upon us between the isha and fajr prayer times.

*“A man came to the Prophet (p.b.u.h.) asking him about the times of prayer, and he did not answer him... He told Bilal to say the Iqamah for Dhuhr when the sun had passed its zenith and a person would say: ‘It is the middle of the day,’ but he (the Prophet (p.b.u.h.)) knew better. Then he told him to say the Iqamah for Asr when the sun was still high... Then the next day he delayed Dhuhr until it was nearly the time of Asr compared to the day before. Then he delayed Asr, to a time such that when he finished, one would say: ‘The sun has turned red.’ ... Then he said: ‘The time (for prayer) is between these times.’ <sup>191</sup>”*

### III. FASTING TIMES

Fasting is observed during certain times of the day. The following is decreed about fasting:

وكلوا واشربوا حتى يتبين لكم الخيط الأبيض من الخيط الأسود من الفجر ثم أتموا الصيام إلى الليل

*“Eat and drink, until the white streak (of light) in the direction of dawn (redness) is clearly distinguishable from the black streak (of land in that direction) for you. Then, complete the fast till nightfall.” (al-Baqarah 2:187)*

The fajr prayer time is described in this verse. Suhoor meal is eaten at the time of Sahar. Fasting begins by the fajr prayer time and it is broken by maghrib prayer time. The verse decrees, *“complete the fast till nightfall”*. Night falls when the sun sets, the duha disappears and the environment becomes still.

## CONCLUSION

As a conclusion, from the aspect of daily prayer times, the earth is divided into four slices each of which consists of 45-degree latitudes. These slices are two sides of the Equator and two polar regions.

We have mentioned that the Sun, in the summer, is left out of the calculation criteria beginning with  $\pm 45$ -degrees latitude on and also the fact that in the winter, not the sun but the illumination coming from the sun is the criterion for calculation of prayer times. Therefore, from the viewpoint of prayer times, calling the  $\pm 45$  degree latitudes as “the tropic of salat” will be convenient.

We are all responsible for both compliance with the rules set by the Creator and maintenance of the balance. If the conclusions we have reached above are implemented, there will not be any problems left anywhere and anytime on earth to determine the prayer and fasting times.

Based on all the information given in this article and through the efforts of our valuable physicist, mathematician and astronomer colleagues, we have created a calendar which can calculate the prayer times for every single coordinate on the Earth. The criteria for making the calculation remains the same for a certain prayer of the day regardless of the latitude.

While we have devised the prayer and fasting time calendar for your convenience, we encourage every Muslim to comprehend the criteria deduced from the Qur’an and outlined here. This means that you observe the horizon and feel the breeze, chill or heat in the air, listen to the birds, dogs and watch the behavior of other creatures yourself at the prayer times calculated for your location. Follow the link to reach the Suleymaniye Calendar:

<http://suleymaniyeCalendar.com> (Redirects to <https://suleymaniyeTakvimi.com/?d=en>)

You are kindly encouraged to share your observation results and comments with us:

[\[email protected\]](#)

It would be appropriate to complete the article with the following verse:

وجاهدوا في الله حق جهاده هو اجتنابكم وما جعل عليكم في الدين من حرج ملة ابيكم ابراهيم هو سماكم المسلمين من قبل وفي هذا ليكون الرسول شهيداً عليكم وتكونوا شهداء على الناس فأقيموا الصلاة وآتوا الزكاة واعتصموا بالله هو مولاكم  
فنعيم المولى ونعم النصير

*“And strive for God in a manner worthy of that striving. He has chosen you and has not placed upon you in the religion any difficulty. (It is) the religion of your father, Abraham. He has named you Muslims both previously and right now, so this Messenger may be an example<sup>921</sup> for you and you may act as examples for mankind. Establish the prayer and give the zakat, and hold firmly to God. He is your intimate guardian. What a splendid Guardian, and what a splendid Supporter!” (Al-Hajj 22:78)*

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[1] Note that the phrase “establish” is preferred for translation rather than “offer/perform”. This is because, the Arabic word root “قوم” of “establish”, as well as the root “صلو” of “prayer” both include the meanings “to continue, to persevere”.

[2] “Dhikr = ذكر” is “sound information acquired by pondering over a matter while considering that matter in association with all other elements relevant to it”, “to keep such information in mind ready to use”, and “to call that information to mind and enunciate it” are called dhikr (Raghib al-Isfahani, Mufradat al-Fazl al-Quran, art. ذكر and عرف). Nature consists of the signs that God has created, and the Quran consists of the signs that He has sent down. Sound information obtained from either of them is *dhikr*. Humankind feels contented only if he/she lives his/her life in line with the principles learned from this type of information (ar-Ra’d 13:28). God the Almighty also uses the word “dhikr” to refer both to the Books He has sent down, and to the information acquired through these Books and the created signs (the universe) (see Al-e Imran 3:7, al-Anbiya 21:24).

[3] The word “quran” derives from the verbal noun (masdar) of the word “qaraa = قرأ” whose root meaning is “to gather, to aggregate” (Jamal al-din Muhammad ibn Muqrim Ibn Manzur (630-711), Lisan al-Arab, Beirut n.d., art. قرأ). It is used as a noun having the meaning “maqru = مقروء”, which can be translated as “aggregation” or “set”. The word “quran = قرآن” is also attributed the meaning “reading” since “reading” is an act of “gathering the words together to understand the meaning”. In this verse, however, the word “quran” is closer to its root meaning because the only “gathering” that occurs at dawn is the aggregation of diverse-colored lights at the eastern horizon. This incident is called “quran of the fajr”.

[4] The word ‘مَشْهُود = mashhood’ translated as ‘visible to the eye’ has the following meanings in the dictionaries:

مَشْهُود: happening before a large audience; well-attended

مَشْهُود (اسم): مُشَاهَد (https://www.almaany.com/en/dict/ar-en/%D9%85%D9%8E%D8%B4%D9%92%D9%87%D9%8F%D9%88%D8%AF/)

The aggregation of different colored lights during the daybreak is an incident that can be clearly seen by a large audience who want to observe it. Neither city lights nor other obstacles would interfere with the visibility of this aggregation of lights at dawn. The word ‘mashhood’ also precludes the possibility that ‘true dawn’ (fajr as-sadiq) is an astronomical incident. Had it been so, only a small group of experts would be able to observe it.

[5] Zamakhshari, Kashshaaf, V: IV, p. 675

وَسَبِّحْهُ لَيْلًا طَوِيلًا وَتَهَجِّدْ لَهُ هَزِيحًا طَوِيلًا مِنَ اللَّيْلِ وَ فِي الصَّحَاحِ: مَضَى هَزِيحٌ مِنَ اللَّيْلِ، أَي: طَائِفَةٌ

The instances of the word 'sabbih = سَبِّحْ' where they are used in correspondence with a certain time refer to nafl (optional) prayers.

[6] Fitrah = فطرت is the body of laws and principles that apply to all beings. The natural mental and emotional principles that are intrinsically known by every creature, including human beings, are part of fitrah. According to the Qur’an, the body of rules and principles of the religion constitute the fitrah: “Set your face directly to this religion, to the fitrah established by God. He has created humankind in accordance with it. There is nothing to replace that which God has created. That is the upright religion, but most people do not know.” (ar-Rum 30:30)

[7] <http://www.solarantalya.com/wp-content/uploads/2012/06/gunes.jpg>

[8] White night: a summer night in high latitudes when it is not fully dark. (dictionary.com)

[9] The literal translation of the verse is “I swear by the sun and its duha!” The expressions beginning with such a swear in the Qur’an are used to draw attention to the importance of mentioned entities. (See Ibn Qayyim al-Jawziyya, at-Tibyan fi Aqşam al-Qur’an- Muqaddimah)

[10] Abu Mansur Muhammad ibn Ahmad al-Azhari (d. 370 h.), Tahzib al-Lugha, Tahqiq, Muhammad ibn Awd Mur’ib, Beirut 2001.

[11] Raghib al-Isfahani, Mufradat al-Faz al-Qur’an, Tahqiq by Safwan Adnan Dawoodi, Damascus and Beirut 1412/1992.

[12] <https://www.wordreference.com/definition/night>



### [13] Mufradat

النور: الضوء المنتشر الذي يعين على الإبصار،

[14] The word “Rabb = رب” can be translated correctly as “owner”. A homeowner is called “rabb ad-daar” (Arabic Lit.), whereas an owner of some capital is called “rabb al-maal”. The word rabb also includes the meanings “who brings up” and “who teaches”. In our opinion, when all these denotations are considered, the best translation for “rabb” in English would be “master”.

[15] *Itifat*, meaning literally “turning to one side,” is an art in Arabic literature. One of the obvious stylistic features of this art is the use of grammatical shifts from one personal pronoun to another unexpectedly (e.g. third to second and then to the first person, or first to second and then to the third person) to emphasize the expression. Sometimes, the tenses of the consecutive sentences may be changed from continuous tense to the future or from future tense to past, etc. Sometimes, the subject of the sentence may shift from singular to plural to express the majesty (e.g. using *We* instead of *I*). These are approved as rhetorical practices in Arabic, similar to practices in some European literature. Every language has its own styles of expression. This practice of Arabic may confuse the English reader. Therefore, at many of its incidents, expressions have been translated into English by disregarding this literal art.

[16] <http://www.mynet.com/haber/dunya/39-bin-metreden-dunyaya-atladi-656454-1>

[17] [https://www.youtube.com/watch?v=\\_es8nnnLAI](https://www.youtube.com/watch?v=_es8nnnLAI)

[18] <http://www.haber7.com/foto-galeri/31166-dunyayi-hic-boyle-gordunuz-mu/p2>

[19] The word translated as ‘erase’ in the verse al-Isra 17:12 is ‘mahw = المحو’. The verse states that the indicator of the night has been erased. Although a denotation of the word ‘erase’ is ‘to remove, eliminate’, we know that the night has still got the indicator, ‘being dark’, in conventional regions while it can be partially dark or completely illuminated in polar regions. Then, we must define ‘mahw’ as ‘to erase partially or completely’.

[20] Raghīb al-Isfahānī, (d. 425 h.), Mufradat, art. أي (Tahqiq by Safwan Adnan Dawoodi, Damascus and Beirut 1412/1992)

We mentioned that “ayah = الآية” means, a sign. A sign is an indication (wordreference.com) that signifies the existence or attribute of something. The verses of the Qur’an are indicators of the truth. Miracles of prophets are also called “ayah” in the Qur’an because miracles are indicators of their prophethood.

[21] Below are two narrations from Prophet Muhammad (pbuh) about the ending time of fasting, which corresponds to the beginning of maghrib prayer time:

”إذا أقبل الليل من ههنا وأدبر النهار من ههنا، وغربت الشمس، فقد أظفر الصائم“

”When the night approaches from this side (i.e., the east) and the day withdraws from that side (i.e., the west) and the sun sets, then it is time for a person observing Saum (fasting) to break his fast.” (Bukhari, Saum, 42, Hadith No: 1853; Muslim, Siyam 10, Hadith No:51 ( 1100 ))

It is certain that sunset shall not be sought among the criteria to determine the beginning of nighttime in polar regions although it is mentioned in the hadith. The night's approach from the east and the daylight's withdrawal from the west, however, are essential to be observed.

The second hadith also establishes a direct connection between the night's approach from the east and the fasting-break time, i.e., the beginning of night (layl):

سرنا مع رسول الله صلى الله عليه وسلم وهو صائم فلما غربت الشمس قال لبعض القوم: ”يا فلان انزل فاجدح لنا، فقال: يا رسول الله لو أمسيت؟ قال: ”انزل فاجدح لنا“ قال: ”انزل فاجدح لنا“ قال: فنزل فجدح لهم فشرب رسول الله صلى الله عليه وسلم ثم قال: ”إذا رأيتم الليل قد أقبل من ههنا، فقد أظفر الصائم“ وأشار بيده قبل المشرق.

”We were with the Messenger of God (pbuh) on a journey and he was observing Saum (fasting). When the sun set, he (pbuh) said to a person, ‘Dismount and prepare the barley drink for us.’ Upon this, he replied, ‘O Messenger of God, there is daylight still.’ The Messenger of God (pbuh) said, ‘Get down and prepare barley drink for us.’ He said, ‘But it is still daytime.’ The Messenger of God (pbuh) again said to him, ‘Get down and prepare barely drink for us.’ So he got down and prepared a barley drink meal for them. The Prophet (pbuh) drank of that and then said, ‘When you perceive the night approaching from that side, a person observing Saum

*(fasting) should break the fast.’ And he (pbuh) pointed towards the east with his hand.”* (Riyad as-Salihin, Fadail -Book 9, Hadith no:1237 )

As will be explained further in the article, the density and colors of the sun lights at the beginning of maghrib prayer and end of fajr prayer times are identical, as well as the end of maghrib prayer and beginning of fajr prayer times. This symmetry, which is called mizan (balance), is also observed between isha prayer time and sahar time.

Keeping in mind the hadith that approach of the night from the east signifies the beginning of nighttime (layl), and utilizing the mentioned symmetry, the following result is deduced: **"When the daylight approaches from the west, the daytime begins"**.

[22] Deniz Kuvvetleri Komutanligi – Hidrografi yayını (Turkish Naval Forces Command – Publishings of Hydrography), Nautical Almanac for 1981, Istanbul 1980, p. 257.

[23] See footnote #19

[24] The great scholar of commentary Zamakhshari (d. 538/1144) offers the following three interpretations: The first interpretation:

*“The noun phrases ‘the sign of the night’ and ‘the sign of the daytime’, are like the numbers qualifying the noun (e.g. ‘two nights’). It means ‘We have erased the night which was one ayat and made the daytime, which is also one ayat, illuminating.’ ”* In our opinion, this interpretation does not conform to the text of the verse. God has erased not the night but the indicator of the night. If He had erased the night there would be night no more.

Zamakhshari’s second interpretation is as follows:

*“We have made the two things that illuminate the daytime and the night, namely the sun and the moon, two ayah. Then we have erased the ayah of the night by purging it of illumination and making it dark. Just as we cannot see the things removed from a signboard, nothing can be seen clearly at night.”* In our opinion, this interpretation is also wrong. By saying *“...And We have made the night and the daytime two signs”* Allah informs us that these two are indicators in their own right. Whereas Zamakhshari, by assigning the meaning *“We made the sun and the moon, the two things that illuminate the night and day”*, deprives night and day of being indicators and replaces them with the sun and the moon. Despite the fact that God says that He has erased the sign of the night and made the sign of the daytime being enlightening, Az-Zamakhshari says that the moon has been de-illuminated and made dark. If the moon were to be the indicator of the night, the night would begin by the moon rise and end by the moonset. This is not the case. On the other hand, the moon could not have been de-illuminated and made dark. Because God ordains: *“... placed the moon in the heavens as a reflector of light and the sun as a source of light.”* (Noah 71:16)

Al-Zamakhshari’s third and final interpretation is as follows:

*“The verse could mean ‘we have erased the moon which was the sign of the night’. Since God has not created light for the moon as He had for the sun, the entities cannot be clearly seen in its light. (Mahmud b. Amr b. Ahmad az-Zamakhshari (d. 538/1144.), al-Kashshaaf, Beirut 1407 h. v. II, p. 652.)”* This interpretation is also unacceptable: If the indicator of the night was the moon and the moon was erased, we could not be speaking of the moon. Since God has not created light for the moon but for the sun, the light of the moon cannot be erased. Something can be erased only if it exists.

Ibn Kathir, one of the famous scholars of commentary had made the following interpretation on the matter:

*“Allah has created a sign for the night: an indicator that is associated with it. The indicator is the visibility of the darkness and the moon. He has created an indicator for the daytime which is illumination and the rise of the sun that is the source of that light. In order that they are recognized, He made their lights differentiate from each other.”* (Ismail b. Omar b. Qatheer el-Qureishy (d. 744 h.), Tafseer Al-Qur’an al-azeem, (Tahkik Sami b. Muhammad Salamah) DaruTaibah, 1999/1420, v. V, p. 5.)

This interpretation cannot be accepted either. The verse does not mention that the indicator of the night was differentiated, but says it was erased.

Interpretations of Elmalili Hamdi Yazir can be summarized as the following:

*“If we were to call darkness the indicator of the night, by its removal, the night would have become like daytime. Therefore it is more appropriate to consider the moon as the indicator of the night. So, the moon was previously like the sun; both illuminating and heating. Allah had extinguished it and the moon, as we now know, came into being. (Elmalili Muhammad Hamdi Yazir, Hak Dini Kur’an Dili, Istanbul 1936, v. IV, p. 3169-3170.)”*

This interpretation is also unsubstantiated. How come we claim that there is an indicator of the night and that it is

the moon when the Almighty God says “*We have erased the sign (ayat) of the night*”. If the moon were to be the indicator of the night, it would have to rise by the night and set by the night. The sentence starting with ‘*So, the moon was previously...*’ does not have the slightest relation to the verse.

[25] Jamaluddin Muhammad Bin Mukaram Bin Manzoor (630-711), Lisan al-Arab, art. غطش, Beirut trs.

[26] Al-Khalil ibn Ahmad al-Farahidi (d. 170h.), alAyn, art. ظلم, M. al-Makhzoomi & Ibrahim as-Samiraae, N.D.

[27] Muhammad Murtaza al-Zabidi, Taj al-Arus, art. ظلم, Cairo 1306/1889.

أظلم (النُّعْمُ) : إِذَا (تَلَأَلَا) ، كَالْمَاءِ الرَّقِيقِ، مِنْ شِدَّةِ رِقَّتِهِ،

[28] According to verse 79:29 the night has to be without duha.

[29] وحدثنا يحيى بن يحيى حدثنا عبد الله بن وهب عن موسى بن علي عن أبيه قال سمعت عقبة بن عامر الجهني يقول \* ثلاث ساعات كان رسول الله صلى الله عليه وسلم ينهانا أن نصلي فيهن أو أن نقبر فيهن موتانا حين تطلع الشمس بازغة حتى ترتفع وحين يقوم قائم الظهيرة حتى تميل الشمس وحين تضيف الشمس للغروب حتى تغرب صحيح مسلم – عبد الباقي – (1 / 568)

[30] Mufradat, art. سجد

[31] Ömer Nasuhi Bilmen, Büyük Islam Ilmihali, Mekruh Vakitler, p. 195, par. 404, Istanbul 1986.

[32] al-Nasai, Tartib Abu Guddah, 515.

أخبرنا محمد بن عبد الأعلى قال حدثنا معتمر قال سمعت معمرا عن الزهري عن أبي سلمة عن أبي هريرة عن النبي صلى الله عليه وسلم قال : من أدرك ركعة من صلاة العصر قبل أن تغيب الشمس أو أدرك ركعة من الفجر قبل طلوع الشمس فقد أدرك سنن النسائي – ترقيم أبي غدة – مع أحكام الألباني – (1 / 257)

[33] This translation was made disregarding the literal art of Iltifat. For further details, see footnote #15.

[34] <http://www.safrancegi.com/wp-content/2008/04/image00840.gif>

[35] Mufradat, art. النهر

وهو في الشرع: ما بين طلوع الفجر إلى وقت غروب الشمس، وفي الأصل ما بين طلوع الشمس إلى غروبها.

[36] Akmal al-Din Muhammad Bin Mahmud al-Babarti, d. 786 h. , n.d., s.l, v. III, p. 280.

النَّهَارُ الشَّرْعِيُّ ، وَهُوَ الْيَوْمُ بِالنَّصْرِ وَهُوَ قَوْلُهُ تَعَالَى { وَكُلُوا وَاشْرَبُوا حَتَّىٰ يَبَيِّنَ لَكُمُ الْخَيْطُ الْأَبْيَضُ } الآية

[37] The word ‘manzil’ is ism al-makaan, ism al-zaman, and masdar meemi in Arabic.

[38] [sibelcelikkol.blogspot.com](http://sibelcelikkol.blogspot.com)

[39] [https://encrypted-](https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcR5PvgctyrC26OLZkOLfrMBHaw8LHFfrHIfrMBHaw8LHFfrHI)

[tbn0.gstatic.com/images?q=tbn:ANd9GcR5PvgctyrC26OLZkOLfrMBHaw8LHFfrHIfrMBHaw8LHFfrHI](https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcR5PvgctyrC26OLZkOLfrMBHaw8LHFfrHIfrMBHaw8LHFfrHI)

[40] <https://astro.unl.edu/classaction/images/lunarcycles/lunarcycles.html>

[41] See ar-Rahman 55:5, Ya-Sin 36:39, Jonah 10:5, al-Baqarah 2:189

[42] Muslim, Siyam, 1080 (15)

[43] Muslim, Siyam, 1081 (18-19)

[44] This translation was made disregarding the literal art of Iltifat. For further details, see footnote #15.

[45] See the footnote #21 for further details.

[46] al-Ayn, Mufradat; Isma'il ibn Hammad al-Jawhari, al-Sihah, (Tahqiq: Ahmad Abdulghafur Attar), Beirut 1983; Abu l-Husayn Ahmad bin Faris bin Zakariyya, Mu'jam Maqayis al-Lugha (d. 370 h.), Beirut, n.d.

[47] Lisan al-Arab, art. طرف

والطَّرْف: الناحية من النواحي

[48] Bukhari, Witr 2.

«كُلُّ اللَّيْلِ أُوتِرَ رَسُولُ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ، وَأَنْتَهَى وَثُرُهُ إِلَى السَّحَرِ»

[49] Bukhari, Tahajjud 7.

«مَا أَفَاءَ السَّحَرُ عِنْدِي إِلَّا نَائِمًا» تَغْنِي النَّبِيُّ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ

[50] See al-Muzzammil 73:20

[51] The short midday nap, which is called “qaylulah” in Arabic culture, is mentioned in verse 58 Surah an-Nisa.

[52] It is written in several internet resources that this phenomenon was introduced in West by psychiatrist Carl Jung and called “**Enantiodromia**“. This phenomenon, however, is also known as one of the basic principles of Yin-Yang: “*Yin and Yang can transform into one another*“. Since it is a natural phenomenon, our ancestors might have suggested this idea even before then.

[53] <https://uit.no/startside>

[54] Abu al-Qasim Mahmud ibn Umar ibn Muhammad al-Khwarizmi Al-Zamakhshari (d. 538/1144), al-Kashshaf, Beirut 1407 h., v. IV, p. 675.

طائفة: مضى هزيع من الليل، أى: وَسَبَّخَهُ لَيْلًا طَوِيلًا وتهجد له هزيعا طويلا من الليل و في الصباح  
The word “sabbih = سَبَّحَ” is used in the Qur’an to refer to optional (nafl) prayers.

[55] Mufradat, art. النهار

[56] Lisan al-Arab, art. طرف

[57] Muhammad ibn Jarir al-Tabari, Jami' al-Bayan fi Tafsir al-Qur'an (Tahqiq: Ahmad Muhammad Shakir), v. XIV, p. 514-516, Beirut 1420/2000.

[58] al-Sihah, Maqayis, Lisan al-Arab, Qamus.

[59] Muhammad ibn Ismail al-Bukhari (d. 256 h.), al- Tarikh al-Kabir, Tahqiq: Mustafa Abdulqadir Ahmad, Beirut 1422 h. 2001 mx; Hadith No; 1948; Diya al-Din al-Maqdisi (d. 643 h.), Tahqiq: Abd al-Malik Ibn Duhaysh, Saudi Arabia, n.d., Hadith no: 1450; Abu Ya'la al-Mawsili (d. 307 h.), Tahqiq: Hussain Salim Asad, Musnad, Damascus – Beirut 1412/1992, Hadith no: 4004.

[60] Sunan Abu Dawud, Salat 393; Tirmidhi, Mawaqit, 1.

[61] وَعَنْ أَبِي هُرَيْرَةَ - رضي الله عنه - أَنَّ رَسُولَ اللَّهِ - صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ - قَالَ: - مَنْ أَدْرَكَ مِنَ الصُّبْحِ رَكْعَةً قَبْلَ أَنْ تَطْلُعَ الشَّمْسُ فَقَدْ - 161- أَدْرَكَ الصُّبْحَ. وَمَنْ أَدْرَكَ رَكْعَةً مِنَ الْعَصْرِ قَبْلَ أَنْ تَغْرُبَ الشَّمْسُ فَقَدْ أَدْرَكَ الْعَصْرَ - مُتَّفَقٌ عَلَيْهِ (1) (1) - صحيح. رواه البخاري (579)، ومسلم (608).

[62] Tabari, Tafsir, v. III, p. 524 onw.

[63]Lisan al-Arab, art. زلف.

الرَّزْفُ والرُّزْفَةُ والرُّزْفَى: القُرْبَةُ والدَّرَجَةُ والمنزلة... والرُّزْفَةُ الطائفة من أول الليل، والجمع رُزْفٌ ورُزْفَاتٌ. ابن سيده: ورُزْفُ الليل: ساعات من أوله

[64]Bukhari, Muslim, Abu Dawood, Nasai, Ahmad b. Hanbal, and Tirmidhi. The text is from Tirmidhi.

حدثنا هنادُ بْنُ السري حدثنا عبدُ الرَّحْمَنِ بْنُ أَبِي الزنادِ عن عبدِ الرَّحْمَنِ بْنِ الْحَارِثِ بْنِ عِيَّاشِ بْنِ أَبِي رَبِيعَةَ عَنْ حَكِيمِ بْنِ حَكِيمٍ وَهُوَ ابْنُ عِبَادِ بْنِ خَنْبِفٍ أَخْبَرَنِي نَافِعُ بْنُ جُبَيْرِ بْنِ مُطْعِمٍ قَالَ أَخْبَرَنِي ابْنُ عَبَّاسٍ أَنَّ النَّبِيَّ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ قَالَ أَمَنِي جِبْرِيلُ عِنْدَ الْبَيْتِ مَرَّتَيْنِ فَصَلَّى الظُّهْرَ فِي الْأُولَى مِنْهُمَا جِئْتُ الْفَيْءَ مِثْلَ الشَّرَاكِ ثُمَّ صَلَّى الْعَصْرَ جِئْتُ كُلَّ شَيْءٍ مِثْلَ ظِلِّهِ ثُمَّ صَلَّى الْمَغْرِبَ جِئْتُ وَجِبْتُ الشَّمْسُ وَأَفْطَرُ الصَّائِمَ ثُمَّ صَلَّى الْعِشَاءَ جِئْتُ غَابَ الشَّفَقُ ثُمَّ صَلَّى الْفَجْرَ جِئْتُ بَرَقَ الْفَجْرُ وَحَزَمَ الطَّعَامُ عَلَى الصَّائِمِ وَصَلَّى الْمَرَّةَ الثَّانِيَةَ الظُّهْرَ جِئْتُ كَانَ ظِلُّ كُلِّ شَيْءٍ مِثْلَهُ لَوْ قَفَّتِ الْعَصْرُ بِالْأَمْسِ ثُمَّ صَلَّى الْعَصْرَ جِئْتُ كَانَ ظِلُّ كُلِّ شَيْءٍ مِثْلَيْهِ ثُمَّ صَلَّى الْمَغْرِبَ لَوْ قَفَّتِ الْأُولَى ثُمَّ صَلَّى الْعِشَاءَ الْأَخْرَى جِئْتُ ذَهَبَ ثُلُثُ اللَّيْلِ ثُمَّ صَلَّى الصُّبْحَ جِئْتُ اسْفَرَّتِ الْأَرْضُ ثُمَّ انْتَفَتِ إِلَيَّ جِبْرِيلُ فَقَالَ يَا مُحَمَّدُ هَذَا وَقْتُ الْأَنْبِيَاءِ مِنْ قَبْلِكَ وَالْوَقْتُ فِيمَا بَيْنَ هَذَيْنِ الْوَقْتَيْنِ

[65]Ahmad b. Hanbal (d. 241 h.), Musnad, Tahqiq: Shuaib al-Arnaut, Adil Murshid, and others; Muassasat al-Risalah 1421h./2001; V: 38, p. 503.

“بادروا بصلاة المغرب قبل طلوع النجم”

[66] Deniz Kuvvetleri Komutanligi – Hidrografi yayını (Turkish Naval Forces Command – Publishings of Hydrography), Nautical Almanac for 1981, Istanbul 1980, p. 257.

[67] Based on image [https://www.yearlightcalendar.com/img/photos/fullsize/1323194161\\_twilight.jpg](https://www.yearlightcalendar.com/img/photos/fullsize/1323194161_twilight.jpg)

[68]Lisan al-Arab, art. شَفَقٌ

[69] See the footnote #56.

[70] Abu Dawood, Salat, 6; Ibn Majah, Salat, 7; Ahmad b. Hanbal, 4/147,4/117, 422

وعن عقبه بن عامر: “أن النبي صلى الله عليه وآله وسلم قال: لا تزال أمتي بخير أو على الفطرة ما لم يؤخروا المغرب حتى تشتبك النجوم” .

[71] Bukhari, Muslim

وعن رافع بن خديج رضي الله عنه قال: كُنَّا نُصَلِّي الْمَغْرِبَ مَعَ رَسُولِ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ فَيُنْصَرَفُ أَحَدُنَا وَإِنَّهُ لَيُبْصِرُ مَوَاقِعَ نَبْلِهِ. متفق عليه.

[72]Zamakhshari, op.cit., v. VII, p. 339.

[73] Abu Dawood, Salat 7; hadith no 420.

[74]

وَوَقَّتِ الْمَغْرِبَ مَا لَمْ يَسْفُطْ نُورُ الشَّفَقِ وَوَقَّتِ الْعِشَاءَ إِلَى نِصْفِ اللَّيْلِ

Muslim, Masajid, Bab 31- Awqat as-Salawat al-Khums, hadith no: 172 ; Nasai, Mawaqit, Bab 15 – Akhir al-waqt al-maghrib, hadith no: 521

[75]Lisan al-Arab, art. فجر

[76] Tahzib al-Lugha

وَالسَّحَرُ وَالسُّحْرَةُ: بياض يغلو السواد،

[77]Mufradat

اختلاط ظلام آخر الليل بضياء النهار،

[78]Isma'il ibn Hammad al-Jawhari (d. 393 h.), al-Sihah, art. سحر (Tahqiq: Ahmad Abdulghafur Attar), Beirut 1407/1987.

وَالسَّحَرُ قَبِيلُ الصُّبْحِ

[79]Qurtubi, al-Jami li Ahkam al-Quran, v. XVII, p. 144, Cairo, 1384/1964.

والسحر: هو ما بين آخر الليل وطلوع الفجر، وهو في كلام العرب اختلاط سواد الليل ببياض أول النهار، لان في هذا الوقت يكون مخايل الليل ومخايل النهار.

[80] The word ‘ al-mas’adu =المصعد ‘ in the hadith is an object (ism al-mafool) of the root ‘ al-al is’adu = ‘ . It means ‘ المرتفع = al- murtafe’ = ascending’ .

[81] Abu Dawood, Waqt al-suhoor, hadith no:2348; Sunan Tirmidhi, Ma jae fi bayan al-fajr, hadith no:705.

[82]Bukhari, Libas 16.

لَجِقَ النَّبِيُّ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ وَأَبُو بَكْرٍ بَعَارٍ فِي جَبَلٍ يُقَالُ لَهُ تَوْرٌ، فَمَكَثَ فِيهِ ثَلَاثَ لَيَالٍ، بَيَّبْتُ عِنْدَهُمَا عَبْدُ اللَّهِ بْنُ أَبِي بَكْرٍ، وَهُوَ غُلَامٌ شَابٌّ لَوْ نَفَتْ، فَيَرَّحَلُ مِنْ عِنْدَهُمَا سَحْرًا، فَيُصْبِحُ مَعَ قُرَيْشٍ بِمَكَّةَ كِبَابِتٍ، فَلَا يَسْمَعُ أَمْرًا يُكَادَانُ بِهِ إِلَّا وَعَاةً، حَتَّى يَأْتِيَهُمَا بِخَبْرٍ ذَلِكَ جِئْتُ بِخَتْلَطِ الطَّلَامِ، وَبَرَّ عَى عَلَيْهِمَا عَامِرُ بْنُ قُهَيْرَةَ مَوْلَى أَبِي بَكْرٍ مَنَحَهُ مِنْ عَنَمٍ، فَيَرِيحُهَا عَلَيْهِمَا جِئْتُ تَذْهَبُ سَاعَةٌ مِنَ الْعِشَاءِ، فَيَبْيِئَانِ فِي رَسْلِهِمَا حَتَّى يَنْتَعِقَ بِهَا عَامِرُ بْنُ قُهَيْرَةَ بِعَلَسٍ، يَفْعَلُ ذَلِكَ كُلُّ لَيْلَةٍ مِنْ تِلْكَ اللَّيَالِي الثَّلَاثِ

[83] Lisan al-Arab, art. قَرَاء

[84]Mufradat

[85] Abu al-Hasan Ali ibn Muhammad al-Mawardi (d. 450 h.) Tahqiq; Ali Muhammad Muawwad, Adil Ahmad Abd al-Mawjud, al-Hawi al-Kabi fi Fiqh al-Imam al-Shafi, Beirut 1419/1999, v. II, p.24.

... وَلَا أَنْ الطَّوَالِغَ ثَلَاثَةَ الْفَجْرِ، وَالشَّمْسُ، وَالْغَوَارِبُ ثَلَاثَةَ الشَّفَقَانِ، وَالشَّمْسُ، فَلَمَّا وَجِبَتْ صَلَاةُ الصُّبْحِ بِالطَّالِعِ الْأَوْسَطِ وَهُوَ الْفَجْرُ الصَّادِقُ اقْتَضَى أَنْ تَجِبَ الْعِشَاءُ بِالْغَارِبِ الْأَوْسَطِ – وَهُوَ الشَّفَقُ الْأَحْمَرُ –

Ahmad b. Ganim b. Salim (d. 1126 h.), al-Fawakih ad-devvânîlârisaleti İbn EbîZeyd el- Kayrevânî (Mâlikî), 1415 h./1995 m. c. I. s. 169.

قَالَ: «الشَّفَقُ الْأَحْمَرُ فَإِذَا غَابَ الشَّفَقُ وَجِبَتْ الصَّلَاةُ» وَأَيْضًا «الْغَوَارِبُ ثَلَاثَةٌ: أَنْوَارُ الشَّمْسِ وَالشَّفَقَانِ، وَالطَّوَالِغُ ثَلَاثَةٌ: الْفَجْرَانِ وَالشَّمْسُ وَالْحُكْمُ لِلْوَسْطِ فِي الطَّوَالِغِ وَالْغَوَارِبِ»

[86] Bukhari, Tahajjud, 7.

[87] In our opinion, the word “ما = that which” in the expression “تَيَسَّرَ مَا = that which is feasible for you” adds the meaning of masdar and time to the verb. Therefore we translate the expression as “*whenever is feasible for you*”.

[88] Bukhari, Witr, 2.

«كُلُّ اللَّيْلِ أَوْتَرَ رَسُولُ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ، وَأَنْتَهَى وَتَرَهُ إِلَى السَّحَرِ»

[89] Bukhari, Tahajjud, 7.

«مَا أَلْفَاهُ السَّحَرُ عِنْدِي إِلَّا نَائِمًا» تَعْنِي النَّبِيَّ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ

[90] Abu Hayyan Muhammad ibn Yusuf, al-Bahr al-Muhit, Tahqiq: Adil Ahmad Abd al-Mawjud and Ali Muhammad Muawwid, Lebanon, 1422/2001, v. VIII, p. 352.

[91] Sunan, Abu Dawood, Salat 178- (614)

[92] The word ‘shaheed = شهيد’, translated as ‘example’ in this verse can be both ism al-fail (subject) and ism al-mafool (object). In this verse, it is an object (ism al-mafool) meaning ‘mashhood’. Mashhood means ‘example’.