

**CRESCENT OBSERVATION  
&  
THE VISIBILITY OF THE HILAAL**

**PAPER PRESENTED BY**

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## **CRESCENT OBSERVATION**

### **DEFINITION OF THE WORD CRESCENT**

For the purposes of this paper both ‘HILAAL’ and “CRESCENT” transmit an identical definition.

The **Hilaal** is best defined as the first sightable reflected sunlight that is seen as crescent-shaped on the lunar surface following the hidden phase of the moon and observed on the western horizon after sunset at the end of the 29<sup>th</sup> day of the correctly marked lunar month.

### **WHY IS IT NECESSARY FOR A MUSLIM TO OBSERVE THE CRESCENT ?**

[A]

### **THE COMMAND AND LAW OF THE ALMIGHTY ALLAH**

The Almighty Allah has commanded that the sighting of the Hilaal establishes the beginning of each and every one of the annual twelve lunar months.



**Sura At-Taubah / Ayah 36**



**Verily, the number of months with Allâh is twelve months (in a year), so was it ordained by Allâh on the Day when He created the heavens and the**

***earth***; of them four are Sacred, (i.e. the 1st, the 7th, the 11th and the 12th months of the Islâmic calendar). That is the right religion, so wrong not yourselves therein, and fight against the Mushrikûn (polytheists, pagans, idolaters, disbelievers in the Oneness of Allâh) collectively, as they fight against you collectively. But know that Allâh is with those who are Al-Muttaqûn (the pious - see V.2:2).

### 1.1

It has been Divinely Ordained that there are 12 months in a year.



### Sura Al-Baqara / Ayah 189

﴿يَسْأَلُونَكَ عَنِ الْأَهِلَّةِ قُلْ هِيَ مَوَاقِيتُ لِلنَّاسِ وَالْحَجِّ وَلَيْسَ الْبِرُّ بِأَنْ  
 تَأْتُوا الْبُيُوتَ مِنْ ظُهُورِهَا وَلَكِنَّ الْبِرَّ مَنِ اتَّقَىٰ وَأْتُوا الْبُيُوتَ مِنْ  
 أَبْوَابِهَا وَأَتَّقُوا اللَّهَ لَعَلَّكُمْ تُفْلِحُونَ ﴿١٨٩﴾

*They ask you (O Muhammad SAW) about the Hilaals.*

***State: These are signs to mark fixed periods of time for mankind and for the pilgrimage.***

*It is not Al-Birr (piety, righteousness, etc.) that you enter the houses from the back but Al-Birr (is the quality of the one) who fears Allâh. So enter houses through their proper doors, and fear Allâh that you may be successful.*

### 1.2

It has been Divinely Ordained that the Hilaal is the sign that ushers in each new month

### 1.3

The months are lunar months because the Hilaal is the marker that begins the month

1.4

The Hilaal based lunar months are to be utilized by all of mankind

1.5

The Hilaal based lunar month is to be utilized for the Hajj

1.6

The proverb '*do not enter houses from the back but through the proper doors*' in context and as a continuation of the statement in Ayah 189 of Sura Baqara indicates that the Almighty Allah only recognizes the month that is established by a compulsory Hilaal sighting.

[B]

### **THE ESTABLISHMENT OF SACRED TIME**

One of the most significant and important yet badly overlooked and sadly neglected concepts of the Sharidh is the concept of Sacred Time. The whole notion of the consecration, sanctity, and holiness of selected times is such an important dimension that it pervades virtually every area of a Muslim's life. Since it is such a permanent and omnipresent feature of our spiritual landscape, it practically escapes our interest.

What is meant by Sacred Time ? It simply means that certain selected time-periods are consecrated by the Almighty Allah and benefit from a superior status in relation to ordinary time.

We are well aware that the Hilaal sets the sacred time of the month, and that the apparent rise and set of the sun and the stars provides the daily time-keeping information for the observance of the fard Salaah and certain other forms of Ibadah.

As Muslims we are constantly inspired, motivated and even coerced to perform certain Ibadah in specific times. The performance of the said Ibadah

within meticulously prescribed time – periods has always been an integral part of a Muslim’s devotional routine.

The performance of these forms of Ibadah consists not only in the execution of the act, but also of the execution of that act in its prescribed time slot. If an act of the aforesaid Ibadah is not enacted within its prescribed time slot it would not be regarded as Ada (complete). If the said Ibadah is performed after its duly prescribed time it is Qada (delayed).

The Ibadah cannot under any circumstances be deliberately observed before its due time period – this results in a flagrant disobedience to Allah’s Law and can be considered in the category of a sin. Such an enactment renders that particular Ibadah as null and void and without any merit whatsoever.

In Islam, the prerogative to sanctify and consecrate time belongs exclusively to the Almighty Allah. He has the sole right to invest selected time periods with superior merit and value. No human being has been given this aforementioned right. We, as Muslims, never had and will never have the right to consecrate time.

[C]

### **THE SAUDI CALENDRIAL SYSTEM**

Why should one mention and discuss the Saudi lunar dating system ?  
The reason is simple – the Saudi lunar dating system affects each and every Muslim that inhabits this planet earth.

The rites and the rituals of the Hajj can only be observed and performed in the Holy Places in and surrounding the Holy City of Makkah Mukarramah. Each pilgrim is compelled by Divine Law to conduct the Hajj at a specific Holy locality in a definite pre-prescribed and Divinely Ordained time-period.

This definite time-period of the days of the Hajj can only be marked according to a Hilaal sighting based lunar month.

On the one hand we have the directives from the Almighty Allah and the endorsement from His Messenger [PBUH] on how best to establish sacred

time, and on the other hand we have certain Muslims deciding in terms of their own scientific procedures on how to establish Allah's sacred time !

Let us examine the Saudi lunar calendar over the past five years and its resultant marking of the beginning of the Hajj months of Dhul Hijjah :-

May I make it quite clear that when I use the term 'Saudi authority' I am referring to a handful of individuals and not to the majority of my Muslim brothers and sisters who live in Saudi Arabia and for whom I have the greatest admiration and respect.

Furthermore my observations are not in any manner, whatsoever, a sign of disrespect or aggression against any of the delegates present here today. There is certainly no personal animosity and I prematurely apologise if any offence is deemed to have been caused.

### 1419 A.H.

Official Saudi broadcasts and the Saudi newspaper Al-Jazirah (19/03/1999) stated that according to several witnesses from different locations in Saudi Arabia and according to the Umm-ul Qura calendar the month of Dhul Hijjah will begin at Maghrib on Wednesday (17/03/1999).

One assumes from the phrase "according to several witnesses" that there was a positive sighting of the Hilaal.

According to various sighting criteria, parameters and guidelines, the moon was in the hidden phase and any sighting report has to be dismissed as being a false claim.

Using the coordinates of Makkah Mukarramah the following ephemeris data is available as at sunset on Wednesday 17/03/1999 :-

Apparent sunset	18h30
Instant of conjunction	21h49 on Wednesday, 17/03/1999
Lunar-age	minus 3 hours 19 minutes
Moon altitude	minus 3.285° (below the horizon)
Azimuth	minus 2.890°

Elongation	3.984°
Moonset	18h18
Duration	minus 2 minutes
Summation	IMPOSSIBLE TO SIGHT THE HILAAL

The question arises – what motivated the Saudi authority to declare the beginning of Dhul Hijjah contrary to and in direct opposition of Quranic injunction ?

### 1420 A.H.

The Saudi authority declared that the Hajj month of Dhul Hijjah will begin on Monday (07/03/2000) as a result of the previous month of Dhul Qada having completed 30 days.

Using the coordinates of Makkah Mukarramah the following ephemeris data is available as at sunset on Saturday (05 February 2000) which was claimed to be the beginning of Dhul Qada :-

Apparent sunset	18h12
Instant of conjunction	16h05 on Saturday, 05 February 2000
Lunar-age	2 hours 7 minutes
Moon altitude	minus 0.261° (below the horizon)
Azimuth	1.303°
Elongation	1.303°
Moonset	18h12
Duration	0 minutes
Summation	IMPOSSIBLE TO SIGHT THE HILAAL

Taking into consideration the Saudi beginning of the month of Dhul Hijjah the claim that the month of Dhul Qada was of a 30-day duration can be dismissed as fraudulent.

Using the coordinates of Makkah Mukarramah the following ephemeris data is available as at sunset on Monday (06/03/2000) :-

Apparent sunset	18h27
Instant of conjunction	08h18 on Monday, 06/03/2000
Lunar-age	10 hours 9 minutes

Moon altitude	2.851°
Azimuth	minus 3.730°
Elongation	5.681°
Moonset	18h46
Duration	19 minutes
Summation	IMPOSSIBLE TO SIGHT THE HILAAL

Once again the question arises – what motivated the Saudi authority to declare the beginning of Dhul Hijjah contrary to and in direct opposition of Quranic injunction ?

#### 1421 A.H.

The official statement issued by the Supreme Court of Saudi Arabia indicated that the month of Dhul Hijjah will begin at Maghrib on Saturday (23 February 2001) in accordance with the Umm-ul Qura calendar as a result of the previous month of Dhul Qada having completed 30 days.

Dhul Qada is alleged to have begun at Maghrib on Wednesday, 24 January 2001.

Using the coordinates of Makkah Mukarramah the following ephemeris data is available as at sunset on Wednesday (24 January 2001) :-

Apparent sunset	18h06
Instant of conjunction	16h08 on Wednesday, 24 January 2001.
Lunar-age	2 hours
Moon altitude	minus 0.499° (below the horizon)
Azimuth	minus 1.919°
Elongation	1.942°
Moonset	18h04
Duration	minus 2 minutes
Summation	IMPOSSIBLE TO SIGHT THE HILAAL

Once again a fraudulent claim is being made to the effect that the month of Dhul Qada comprised of 30 days.

Dhul Hijjah began at Maghrib on Saturday (23 February 2001).



Using the coordinates of Makkah Mukarramah the following ephemeris data is available as at sunset on Saturday (23 February 2001) :-

Apparent sunset	18h23
Instant of conjunction	11h23 on Saturday, 23 February 2001
Lunar-age	7 hours
Moon altitude	1.755°
Azimuth	minus 4.139°
Elongation	4.729°
Moonset	18h33
Duration	10 minutes
Summation	IMPOSSIBLE TO SIGHT THE HILAAL

Another big question mark !

#### 1422 A.H.

The Supreme Court of Saudi Arabia declared in their notification no. 0104 - inter alia, that –

*“the beginning of the month Dhul Hijjah of the year 1422 A.H. has been proved by the testimony of a number of upright witnesses in different locations to be the night of Wednesday, corresponding with the (day) 13 of February 2002 C.E. Because of that the Standing at Arafah will be on Thursday 9 Dhul Hijjah corresponding with the (day) 21 of the month February 2002 C.E.”*

There seems to be a problem with the mathematical skills of the Supreme Court.

How is it possible for the 21 February 2002 to be 9 days after the 14 February 2002 ? The count is surely only 8 days !

Another enormous question mark !

1423 A.H.

The Al-Riyadh newspaper of 30/01/2003 printed the official Saudi statement which declared an uncertainty as to the beginning of the month of Dhul Qada and requested the people to look for the Dhul Hijjah Hilaal on Saturday, 01 February 2003.

The Saudi Press Agency then carried an official Saudi statement which said that Sunday night (02/02/2003) ushered in the 1<sup>st</sup> Dhul Hijjah 1423 A.H. and continued to inform that the 9<sup>th</sup> day would be on 10/02/2003, and that Eid-ul Adha would be observed on 11/02/2003.

There seems to be a regular continuation of the poor arithmetical skills of the Supreme Court.

How is it possible to make such blatant calculation errors ?

The 9<sup>th</sup> day is surely on the 11/02/2003, and the 10<sup>th</sup> day on 12/02/2003 !

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One factor is abundantly clear – each of the above detailed days of the beginning of the Hajj months of Dhul Hijjah has been orchestrated and manipulated to be perfectly aligned to the so-called ‘civil’ Umm-ul Qura calendar.

[D]

**ADVERSE EFFECTS OF THE UMM-UL QURA CALENDAR ON THE GLOBAL MUSLIM COMMUNITY**

1

There is no doubt that the Umm-ul Qura calendar is the only official calendar in Saudi Arabia.

False sighting claims and erroneous mathematics are used to bolster, reinforce and augment the Umm-ul Qura calendar.

This calendar is not based on Hilaal sighting and therefore cannot be termed an Islamic calendar.

2

The Umm-ul Qura calendar has usurped the month names that have been associated with the true Islamic lunar calendar since antiquity and this results in confusion.

3

The Shariah does not make provision for a separate civil calendar.

4

The Umm-ul Qura calendar system of double dating the days and years according to a lunar date and a solar zodiacal date also leads to confusion. One notices that the National day is dated according to the solar zodiac with a corresponding Gregorian date.

5

As this is the official Saudi calendar all 'religious' days are usually observed a full day before their Divinely prescribed sacred time-periods. And the millions of annual pilgrims to the Holy Land and Muslims throughout the world who adhere to this calendar are being deprived of reaping the just rewards of their Ibadah.

6

Communities spread around the globe are disunited on when to celebrate or not to celebrate the days of Eid – to coin a phrase “Two Eid or not Two Eid”.

7

The Umm-ul Qura calendar begins and ends Ramadaan on the incorrect day. This has dire consequences for Muslims who follow this calendar because on the correct last day of Ramadaan the calendar establishes the day of Eid. And on a day when it is a sin to eat, people are feasting.

## **THE VISIBILITY OF THE HILAAL**

The prediction of the first visibility of the Hilaal remains an issue surrounded by uncertainty.

1

### **THE MOON ORBIT**

In Cape Town, South Africa, Hilaal sighting has continued on an uninterrupted regular monthly basis for over 300 years. Scientific data was only accessed in the 1960's. On various occasions it has been established that the scientific data is unreliable. Astronomers from the local observatory plot a field of vision that is totally different to the field of vision of experienced Hilaal observers.

The present key source of scientific data is the United States Naval Observatory at the Pentagon in Washington. It is an indictment on Muslims that we do not have our own sources of scientific information in respect of the lunar cycle and its various phases ?

In order to correctly plot a field of vision the necessary correct moon orbit data should be readily available. This is another area for Muslim investigation.

2

### **BIRTH OF THE MOON**

The so-called 'birth of the moon' or instant of geocentric conjunction appears to be of a high priority in determining when the first visibility of the Hilaal may occur. We have found that a lunar-age guideline is immaterial because we have sighted 17 hour moons and at other times under similar conditions we were unable sight 35 hour moons.

Perhaps this has something to do with the dynamics of measurement. An initial measurement that does not utilize an infinite number of units will

contain an inherent error, and protracted over a period of time this error becomes compounded.

There is also the argument for the use of topocentric instead of geometric measurements.

The solar eclipse of 4 December 2002 entered the African continent at Angola as a partial eclipse and became total over the Kruger National Park in South Africa. It continued as total until it reached central Australia and then reverted to partial. The United States Naval Observatory time for the instant of geocentric conjunction was given as 09h36 local solar mean time whereas total eclipse began at 08h18 ! One then has to query the accepted definition of geocentric conjunction.

Then there is the notion that the instant of conjunction is simultaneous throughout the world and the times given are universal time which has to be converted into local solar mean time within the boundaries of the universal time zones.

How accurate are these times ?

Universal time zones are a geopolitical arrangement and contains inherent flaws.

3

### **MOON PHASES**

Concerning the moon phases, the Almighty Allah makes the following statement :-



#### **Sura YâSîn / Ayah 39**



*And the moon, We have measured for it mansions (to traverse) till it returns like the old dried curved date stalk.*

We are told that the moon returns in the form of a crescent. ‘Returns’ is best defined as coming back to the starting or original point. So therefore is it not wise to establish the sightable Hilaal as the initial and first phase of the moon ?

Perhaps we should also research the Manazils through which the moon traverses and ascertain its various phases in these celestial areas.

Then there is the question of the last sightable waning crescent followed by a hidden moon phase until the appearance of the Hilaal ! It may be important to institute a scientific investigation into the exact time-length of the hidden moon period !

The Holy Prophet Muhammad [PBUH], the Messenger of Allah, stated :-



Sahih Bukhari / 003.027.011  
Narrated by Ibn Umar

*“When you see the Hilaal, start fasting; and when you see the Hilaal, stop fasting – and if it is hidden then regard the month of Ramadaan as of 30 days.”*



Sahih Bukhari / 003.031.130  
Narrated by Abdullah bin Umar

*“Do not fast until you see the Hilaal and do not give up fasting until you see the Hilaal, but if you cannot see it then act on estimation.”*



Sahih Bukhari / 003.031.133  
Narrated by Abu Huraira

*Start fasting on seeing the Hilaal of Ramadaan and give up fasting on seeing the Hilaal of Shawwaal, but if you cannot see it, complete 30 days of Shabaan”.*

The Holy Prophet [PBUH] makes direct reference to a hidden moon and intimates that the moon cannot be seen in its hidden time-period.

### **THE HOLY PROPHET [PBUH] ILLITERATE OR BRILLIANT ?**

It is necessary here to examine the knowledge and intellectual status of our great leader, the Holy Prophet [PBUH]. The Qur'anic phrase "*Un-Nabi ul-Ummi*" is predicative of the Holy Prophet's [PBUH] mission and not of his person. Divine Revelation was followed by Divine knowledge in order that the Holy Prophet [PBUH] became empowered to deal with any query concerning any point of Revelation including scientific matters.

### **SUGGESTIONS AND OBSERVATIONS**

1

It is a matter of urgency that we workshop, from an Islamic perspective, the various criteria, parameters and guidelines on Hilaal visibility (The science of Hilaal sighting) and the moon orbit and its various phases. We need to bypass western sources and recall information and statistics from our very own rich scientific past.

In this regard I formally suggest the venue of Cape Town, South Africa for a formal workshop at which the attendance should comprise of both scientist / astronomers and ulama who possess the required related knowledge and expertise.

2

Since the advent of Dr Monzur Ahmed's MoonCalc program we have found this to be an excellent tool in pre-calculating local lunar calendars with an almost zero error rating.

## CONCLUSION

1

The Saudi lunar calendrical system has to immediately conform to Shari'ah criteria.

2

I thank all of you for your kind attention.

3

May the Almighty Allah Bless you and your families.  
May the Almighty Allah guide us along the Right Path.

4

The Muslims of South Africa feel the hurt and pain of the Muslims in Iraq and the Muslims in Palestine. All of us are one nation – one Ummah. We have no artificial boundaries – there is no nationalism – there are no sects – there is no tribalism – there is no racialism. All of us are equal.  
An injury to one is an injury to all.

Shukrun

Wassalaamu-Alaykum