



In the Name of Allah, the Most Beneficent, the Most Merciful

WHY NOT CONSIDER *RU'YATUL BIL 'ILM*: A Report from the Center for Islamic Studies, Indonesia¹

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Introduction

We have been following the controversy and the debate over ISNA's decision on August 13, 2006 regarding using the astronomical calculation to replace the *moon sighting* method in marking the beginning of our holy month of Ramadan. In Jakarta, Indonesia, we have to face similar problems annually when it comes to the decision to start and to end the holy month of Ramadan and Dhulhijjah. Indonesian Muslims have long been experiencing the split between the proponents of astronomical calculation on the one end, and moon sighting on the other. Fortunately though, the split has not created any disharmony in our religious affairs nor in our daily social lives in spite of the fact that this has been going on for, as far as we can recall, more than 40 years. Most traditional Muslim brothers and sisters normally follow the moon-sighting method supported by the largest Muslim organization (Nahdatul Ulama with as many as 30 million members) in the country, whilst the second largest Muslim organization (Muhammadiyah with approximately 23 million members) is the main proponent of astronomical calculation method (*hisab*). The government's stance is normally in favor of the moon-sighting as most of those within the Department of Religious Affairs who have the final say in determining official fatwa on the beginning and end of Ramadan are Nahdatul Ulama's scholars, although some scholars from Muhammadiyah are also in the committee (obviously with second majority).

Difference without harming spiritual harmony

Our religious and spiritual activities, e.g. mosque activities, Islamic teachings and discussion and so forth support the astronomical calculation method although we are not Muhammadiyah members. During the Eid-ul Fitri celebrations on October 23, 2006 the government stick to its decision to complete 30 days fasting as hilal was not visible on the sunset of October 22. However, it was very encouraging for the proponent of astronomical calculation that the stronghold of Nahdatul Ulama (NU) in the province of East Java officially announced (for the first time ever) to follow astronomical calculation and perform Eid-ul Fitr prayer on October 23 as crescent apparently visible in the island of

¹ This paper reflects the summary of a research work conducted by the Center for Islamic Studies, Indonesia. The work itself is in the final stage of completion entitled: *Compromising Ru'yah and Hisab*.

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Madura, the northern part of the province. Luckily, in celebrating Eid-ul Adha prayer both astronomical calculation and moon-sighters mutually agreed to have it on Sunday, December 31, 2006. The problems occurred however, when we had to observe *Arafah fasting* prior to the Eid as Saudi Arabia announced the wuquf to fall on Friday, December 29. Again we split; some Muslim brothers and sisters in Indonesia observed the *Arafah fasting* on Friday, while the rest did it on Saturday the day after, although we all went for Eid prayer on Sunday. Wallahu 'Alam, Allah Knows Best.

Having been experiencing delicate situation for over forty years, we can imagine that the ISNA's decision is difficult indeed, both for ISNA and the ummah, Muslim brothers and sisters in North America. We fully understand that ISNA's decision was issued after years of research and involvement in the practice of moon sighting when it joined the effort of the *Committee For Crescent Observation (CFCO)* in 1994 (therefore after 12-13 years of practicing and research!). The CFCO itself was set up in 1970's following the news of moon-sighting received from Middle East were against the basic rules of moon's physical observation. Some prominent ulemas, Muslim scientists (Astronomers, Mathematicians), and trained hilal observers are also involved at CFCO³.

Islamic Laws

We firmly believe that there is no Muslim who will contest that our sources of Islamic Laws are four listed in order:

1. The Holy Qur'an.
2. The Sunnah, which comprises the words, deeds, and acknowledgments of the Prophet Muhammad (pbuh), as transmitted through reliable sources;
3. The Ijmaa' of ummah (consensus of the legal Muslim scholars);
4. Qiyas (analogical reasoning as an effort to extract an opinion based on Islamic Law in the absence of definitive proofs).

The foremost legal ground for saum (fasts) during Ramadan is revealed by Allah SWT in:

شَهْرُ رَمَضَانَ الَّذِي أُنزِلَ فِيهِ الْقُرْآنُ هُدًى لِّلنَّاسِ وَبَيِّنَاتٍ مِّنَ الْهُدَىٰ وَالْفُرْقَانِ فَمَن شَهِدَ مِنْكُمُ الشَّهْرَ فَلْيَصُمْهُ وَمَن كَانَ مَرِيضًا أَوْ عَلَىٰ سَفَرٍ فَعِدَّةٌ مِّنْ أَيَّامٍ أُخَرَ يُرِيدُ اللَّهُ بِكُمُ الْيُسْرَ وَلَا يُرِيدُ بِكُمُ الْعُسْرَ وَلِتُكْمِلُوا الْعِدَّةَ وَلِتُكَبِّرُوا اللَّهَ عَلَىٰ مَا هَدَاكُمْ وَلَعَلَّكُمْ تَشْكُرُونَ

Ramadan is the (month) in which was sent down the Qur'an, a guidance for mankind, also clear (proofs) for guidance and judgment (between right and wrong). So every one of you who is present (at his home) during that month, he must observe saum (fasts), and whoever is ill, or on a journey, the prescribed period (should be made up) from other days. Allah intends ease for you; He does not want to make things difficult for you. (He wants you) to complete the prescribed period, and to glorify Him in that He has guided you; so that you may be grateful to Him. (HQ, Al-Baqara: 185)

The above ayah only reveals the broad idea of the prescribed fasting during the month of Ramadan, without detailing as to when the Muslims have to start the saum. The detail is however revealed in the next verse of the same surah:

³ See Reydan (reference 6).

أَجَلَ لَكُمْ لَيْلَةَ الصِّيَامِ الرَّفَثُ إِلَى نِسَائِكُمْ هُنَّ لِبَاسٍ لَكُمْ وَأَنْتُمْ لِبَاسٍ لَهُنَّ عَلِمَ اللَّهُ أَنَّكُمْ كُنْتُمْ تَخْتَانُونَ أَنْفُسَكُمْ فَتَابَ عَلَيْكُمْ وَعَفَا عَنْكُمْ فَالآنَ بَاشِرُوهُنَّ وَابْتَغُوا مَا كَتَبَ اللَّهُ لَكُمْ وَكُلُوا وَاشْرَبُوا حَتَّى يَتَبَيَّنَ لَكُمُ الْخَيْطُ الْأَبْيَضُ مِنَ الْخَيْطِ الْأَسْوَدِ مِنَ الْفَجْرِ ثُمَّ أَتُمُوا الصِّيَامَ إِلَى اللَّيْلِ وَلَا تُبَاشِرُوهُنَّ وَأَنْتُمْ عَاكِفُونَ فِي الْمَسَاجِدِ تِلْكَ حُدُودُ اللَّهِ فَلَا تَقْرُبُوهَا كَذَلِكَ يُبَيِّنُ اللَّهُ آيَاتِهِ لِلنَّاسِ لَعَلَّهُمْ يَتَّقُونَ

It is made lawful to you to go unto your wives on the night of the fast. They are apparel for you and you are the same for them. Allah is aware that you were deceiving yourselves in this respect and He has turned in mercy toward you and forgave you. So now be in contact with them and seek what Allah has ordained for you, and eat and drink until the white thread becomes distinct to you from the black thread of the dawn, then complete the fast till night, and have no contact with them while you are in your devotion in the mosques. These are the limits imposed by Allah, so approach them not. Thus does Allah make clear His ayah for men that they may guard (against evil) (HQ, Al-Baqara: 187).

In the debate on the dispute of astronomical calculation method versus moon sighting, many Muslim brothers and sisters always referred to prophetic sayings (hadith) which too, give the details as to when to start and to end the holy Ramadan, they are quoted:

لَا تَصُومُوا حَتَّى تَرَوْا الْهِلَالَ ، وَلَا تُفْطِرُوا حَتَّى تَرَوْهُ .

Do not fast till you see the new moon, and do not break fast till you see it” (Saheeh Muslim)

٦٧١ - عَنِ ابْنِ عُمَرَ قَالَ : سَمِعْتُ رَسُولَ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ يَقُولُ (إِذَا رَأَيْتُمُوهُ فَصُومُوا وَإِذَا رَأَيْتُمُوهُ فَافْطِرُوا ، فَإِنْ غَمَّ عَلَيْكُمْ فَاقْدُرُوا لَهُ) . مَتَّفِقٌ عَلَيْهِ .

Ibnu Umar (ra), reported Allah’s Messenger (pbuh) as saying: ”When you see it⁴ then you must observe saum, and when you see it, then break your fast; but if it is overcast, then calculate for it. (Saheeh Muslim)

Obviously, Allah uses different words when expressing the meeting of His ummah with the month of Ramadan (شَهْد) and when He ordered the Messenger (pbuh) to give the details of the timing to start and end the saum by using words tara (تَرَوْ) and raaytum (رَأَيْتُمْ) upon the sighting of hilal (crescent) at the sunset. Another word of similar importance in the quoted hadith is faqduru that has the same root as word qaddara (قَدَّرَ) which simply means to calculate, to measure, or to decide. The dispute arises in interpreting whether or not we have to sight the hilal physically.

The proponents of moon-sighting firmly believe that the words tara (تَرَوْ) and raaytum (رَأَيْتُمْ) in the above-quoted hadiths are something to do with the act of seeing the hilal physically. Some Muslim scholars even decline any use of modern instrument (such as binoculars, the telescope and so forth) in lieu of direct eye sighting, claiming that this is the message from Allah for those who live in the remote area for whom such technology is

⁴ Hilal

unreachable⁵. However, we immediately sense inconsistency in this matter. If being universal really matters irrespective of human achievement in science and technology, we then have to stick with Allah's guidance upon the commencement of saum in the above verse: *until the white thread becomes distinct to you from the black thread of the dawn*. Apparently, we are now using modern instrument (clock, wristwatch and so forth) as a representation of advanced *mathematical calculation* and the advent of human technological achievements.

In the mean time, the proponents of mathematical and astronomical calculation (*hisab*) believe that the act of seeing in the above hadiths is not necessarily physically as with the advent of modern astronomy, the position of any celestial body can accurately be calculated and monitored at any time from anywhere in the globe. In so doing, the words *tara* (تَرَوْ) and *raaytum* (رَأَيْتُمْ) simply mean to calculate it or *to see it by means of knowledge*, and hence the word *qaddara* (قَدَّرَ) emphasizes the option of mathematical calculation.

Statistics of word ro'a in the Qur'an

Differences are something that we are not capable of avoiding to exist in our worldly life. They have always existed from the beginning of the creation of humankind and will continue to exist until the last day. What we have to avoid is these difference from creating fracture within the brotherhood of Islam. We firmly believe that every difference has a solution and the solution for Islamic differences is found in none other than the Qur'an and the practices of His final Messenger, Muhammad (pbuh). We have to remember that Allah has instructed:

يَا أَيُّهَا الَّذِينَ آمَنُوا أَطِيعُوا اللَّهَ وَأَطِيعُوا الرَّسُولَ وَأُولِي الْأَمْرِ مِنْكُمْ فَإِن تَنَازَعْتُمْ فِي شَيْءٍ فَرُدُّوهُ إِلَى اللَّهِ وَالرَّسُولِ
 إِن كُنْتُمْ تُؤْمِنُونَ بِاللَّهِ وَالْيَوْمِ الْآخِرِ ذَلِكَ خَيْرٌ وَأَحْسَنُ تَأْوِيلًا

O you who believe! obey Allah and obey the Messenger and those in authority from among you. If you dispute over anything, then refer it to Allah and the Messenger, if you believe in Allah and the last day. This is better and very good in the end. (HQ, An-Nisa: 59)

If we refer to the hadith to mark the beginning of holy month of Ramadan we quoted before, we immediately recognize the *key words* in these two hadiths and many more of the same spirit. They are: *tarawu al-hilalu*, *tarauhu*, *raaytumuhu* and also *faqduru lahu*. Let us, as instructed by Allah in His holy verse quoted above, refer to the holy Qur'an and analyze these words.

The word *ro'a*, although originally means *to see visually*⁶ (*ru'yatul bil fi'l*), apparently appears more frequently with the meaning of *seeing with cognition*⁷ (*ru'yatul bil 'ilm*) in the holy

⁵ See Memon (reference 5)

⁶ Visual: adj. of gained by seeing - Longman Dictionary of Contemporary English, 1991, p. 1176.

⁷ Cognition: the act or experience of knowing, including consciousness of things and judgment about them - Longman Dictionary of Contemporary English, 1991, p. 189.

Qur'an. The word changes according to its context to become *tara* (تَرَ - you see or you realize/understand), or *nara* (نَرَى - we see or we realize/understand) or *yara* (يَرَى - he/she sees or he/she realizes/understands). This word and its derivatives apparently appear in 183 verses of the holy Qur'an, out of which there are 143 verses (78.14%) the word (and its derivatives) carries the meaning of *cognitive seeing* (*ru'yatul bil 'ilm*)⁸. Only the remaining 40 verses (21.86%) carry the original meaning of *seeing visually* (*ru'yatul bil fi'l*). Should we be interested in the number of chapters instead, then *ru'yatul bil 'ilm* is contained in 61 chapters (67.78%), whilst *ru'yatul bil fi'l* is contained in 29 chapters (32.22%). From this proportion alone, we immediately sense the clear message from the Omniscient Allah SWT that He actually wants us to make use of our intellectual capacity as human rather than just our capability of *seeing*. Table-1 and Table-2 respectively show verses that contain the word *ro'a* when it means *seeing visually* and *cognitive seeing*. Moreover, a great deal of verses to contain word *ro'a* in Table-2 carries the meaning of seeing the unseen (*ghaib*). There is no doubt that this kind of *act of seeing* is of highest level as it is related to faith, and cannot be included into seeing physically⁹.

#	Chapter #	Chapter Name	Ayat
1	2	Al-Baqara	55, 144
2	3	Ali-Imran	13, 143
3	7	Al-Araf	27, 143, 146
4	8	Al-Anfal	48
5	9	At-Taubah	26, 40
6	10	Yunus	54
7	12	Yusuf	4, 31
8	13	Ar-Rad	2
9	19	Maryam	26
10	20	Taha	107
11	24	An-Noor	40
12	25	Al-Furqan	40
13	26	Ash-Shuara	61, 218
14	27	An-Naml	40
15	31	Luqman	10

#	Chapter #	Chapter Name	Ayat
16	33	Al-Ahzab	9
17	37	As-Saaffat	55
18	46	Al-Ahqaf	24
19	53	An-Najm	11, 13
20	54	Al-Qamar	2
21	63	Al-Munafiqoon	4, 5
22	68	Al-Qalam	26
23	69	Al-Haaqqa	8
24	76	Al-Insan	19, 20
25	81	At-Takwir	23
26	83	Al-Mutaffifin	32
27	90	Al-Balad	7
28	102	At-Takathur	6, 7
29	107	Al-Maun	6

Table 1: Verses to contain the word *ro'a* when it means *ru'yatul bil fi'l*

#	Chapter #	Chapter Name	Ayat
1	2	Al-Baqara	165, 243, 246, 258
2	3	Ali-Imran	23
3	4	An-Nisa	44, 49, 51, 60, 61, 77
4	5	Al-Maeda	83
5	6	Al-Anaam	6, 25, 27, 30, 40, 46, 47, 68, 93
6	7	Al-Araf	148

#	Chapter #	Chapter Name	Ayat
32	35	Fatir	8, 27, 40
33	36	Ya-Seen	31, 71, 77
34	37	Saaffat	14, 102
35	39	Az-Zumar	21, 38, 58, 60
36	40	Ghafir	69, 84, 85
37	41	Fussilat	15, 39, 52

⁸ This paper does not intend to claim that the inventory is complete. It might have missed some verses unintentionally, but it is believed that it will not change the proportion significantly let alone dramatically.

⁹ In the Day of Resurrection, the way we see is believed to be different from what we do now - Wallahu 'Alam.

7	8	Al-Anfal	50
8	9	At-Taubah	126
9	10	Yunus	50, 59, 88, 97
10	11	Hud	28, 63, 88
11	12	Yusuf	35, 59
12	13	Ar-Rad	41
13	14	Ibrahim	19, 24, 28
14	16	An-Nahl	48, 79
15	17	Al-Isra	62, 99
16	18	Al-Kahfi	63
17	19	Maryam	75, 77, 83
18	20	Taha	89, 92
19	21	Al-Anbiya	30, 44
20	22	Al-Hajj	2, 18, 63, 65
21	24	An-Noor	41, 43
22	25	Al-Furqan	22, 41, 42, 43, 45
23	26	Ash-Shuara	7, 75, 201, 205, 225
24	27	An-Naml	86
25	28	Al-Qasas	71, 72,
26	29	Al-Ankabut	19, 67
27	30	Ar-Room	37
28	31	Luqman	20, 29, 31
29	32	As-Sajda	12, 27
30	33	Al-Ahzab	19
31	34	Saba	9, 31, 33, 51

38	42	Ash-Shura	44
39	45	Al-Jathia	23
40	46	Al-Ahqaf	4, 10, 33, 35
41	47	Muhammad	20
42	48	Al-Fath	29
43	52	Ar-Tur	44
44	53	An-Najim	19, 33, 35
45	56	Al-Waqia	58, 63, 68, 71
46	57	Al-Hadid	12
47	58	Al-Mujadila	7, 8, 14
48	59	Al-Hashr	11, 21
49	62	Al-Jumua	11
50	67	Al-Mulk	3, 19, 27, 28, 30
51	70	Al-Maarij	6
52	71	Nooh	15
53	72	Al-Jinn	24
54	76	Al-Insan	13
55	79	An-Naziat	36, 46
56	89	Al-Fajr	6
57	96	Al-Alaq	7, 9, 11, 13, 14
58	99	Al-Zalzala	7, 8
59	105	Al-Fil	1
60	107	Al-Maun	1
61	110	An-Nasr	2

Table 2: Verses to contain the word ro'a when it means *ru'yatul bil 'ilm*

Sharia to support calculation

Allah has instructed us to make use of our utmost intellectual capacity to think deeply about all signs in His ayah (essentially the whole universe He has created for humankind):

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

It is He Who made the sun a shining thing and the moon as a light and measured out its (their) stages, that you might know the number of years and the reckoning (of time). Allah did not create this but in truth. He explains the Ayah (lessons, revelations) in detail for people who have knowledge. (HQ, Yunus: 5).

The above verse embraces all two key words we are disputing blatantly so far. It simply says that the hilal's position may be calculated, and this is in compliance with Allah's command so that we know the reckoning of time. Of paramount importance is that Allah wants us to make use of our utmost intellectual capacity as human beings. These two words are *waqaddarahu* (وَقَدَّرَهُ) that simply means *and measured out* (this is exactly the same word as that is used in the above quoted hadith), and *hisab* (الْحِسَابَ) that simply means *the reckoning (of time)*. Further than that, these two words are enhanced within the same verse to show that Allah explains His ayah (signs, proofs, revelation, guidance, etc) for *people who*

have knowledge (*لَقَوْمٍ يَعْلَمُونَ*). It is very obvious, the above verse is trying to say that Allah loves His servants who have knowledge, those who think deeply to know the number of years and the reckoning of time with the help of whatever exists in the whole universe that has been created for us so that we keep learning how Great He is. Subhan Allahu . . . Allahu Akbar. Isn't it really showing how Allah has put us in a very honorable position? So why should we keep disputing every time whilst we are ignoring Allah's command to think, contemplate and analyze the greatness of Allah through whatever exist in the whole universe He has created for us? Therefore, *seeing* is not supposed to be just *physically*, but *think deeply and thoroughly*.

Human error in moon sighting

In statistics we learned what we consider as errors that comprises of *gross*, *systematic*, and *random errors*. Human error is prone to end up with gross error (blunder) whose magnitude is unpredictable. In any decision making system such error should be avoided whatever it costs! Such error may come from wrong reading the number 25 instead of 52, for example. Or someone reads 500 grams when the scale reads only 50 grams. This type of error is typical human error especially when he/she is under strong psychological pressure and very strict time constraint. This is what happens to many moon sighters. Their psychological burden is huge as they have to shoulder spiritual consequences within very limited time of only 15-60 minutes as the hilal soon sets to follow the sun¹⁰. Binary type of decision (on or off, black or white, right or wrong, visible or invisible) always reserves full of serious error of this kind. If we are consistent in seeking the pleasures of Allah, why should we then so obvious in risking our faith to something that is very prone to gross error like this? In the mean time, the classical problems with moon sighting are as follows:

- Weather and atmospheric condition of the Earth (cloud, fog, haze, pollution, etc);
- Crescent altitudes. ISNA concludes that the crescent altitude must be in the order of 12 degrees in order to be visible;
- Distance between the Moon and the Sun (if it is too close, the twilight is still too bright so that it is practically almost impossible to see the crescent);
- Quality of observer's eyes;
- Quality of optical instrument;
- Psychological condition of the observer (within time constraint of 15-60 minutes!);
- Cost.

In Indonesia, we have data that a moon sighter trainee has to be trained for teens of years to end up with wrong decision when he interpreted a gloomy slit between clouds as crescent. Other trainee who has been practicing moon sighting for decades, end up with joy of seeing hilal but it was up side down? These are very typical human errors that end up with blunder and we have to avoid it, whatever the price is. In the calculation method, blunders insha Allah can be avoided by applying double check calculation. To some extents, systematic error can be eliminated within the calculation system that will be too technical to be discussed in this paper. What remains is random error that cannot be

¹⁰ Hilal altitude of 12° will give the moon-observer approximately 48 minutes before it sets in the western horizon.

removed however versatile our computation system be. Even so, this error is normally within the tolerable magnitude that will not affect the end results too significantly.

Allah's verdict will be thorough, accurate and transparent

Even in the hereafter, Allah the Highest and Omnipotent Judge will not try us with binary type of judgment (right or wrong). Instead He will deliver His verdict very accurately and transparently based on all information that has been collected during our lives as demonstrated in these verses:

وَوُضِعَ الْكِتَابُ فَتَرَى الْمُجْرِمِينَ مُشْفِقِينَ مِمَّا فِيهِ وَيَقُولُونَ يَا وَيْلَتَنَا مَالِ هَذَا الْكِتَابِ لَا يُغَادِرُ صَغِيرَةً وَلَا كَبِيرَةً إِلَّا أَحْصَاهَا وَوَجَدُوا مَا عَمِلُوا حَاضِرًا وَلَا يَظُنُّ رَبُّكَ أَحَدًا

And the Book (one's Record) will be placed (in the right hand for a believer in the Oneness of Allah, and in the left hand for a disbeliever in the Oneness of Allah), and you will see the Mujrimoon (criminals, polytheists, sinners, etc.), fearful of that which is (recorded) therein. They will say: "Woe to us! What sort of Book is this that leaves neither a small thing nor a big thing, but has recorded it with numbers?" And they will find all that they did, placed before them, and your Lord treats no one with injustice. (HQ, Al-Kahf: 49)

الْيَوْمَ نَخْتِمُ عَلَى أَفْوَاهِهِمْ وَتُكَلِّمُنَا أَيْدِيهِمْ وَتَشْهَدُ أَرْجُلُهُمْ بِمَا كَانُوا يَكْسِبُونَ

This Day, We shall seal up their mouths, and their hands will speak to Us, and their legs will bear witness to what they used to earn. (HQ, Ya Seen: 65).

وَمَا كُنْتُمْ تَسْتَتِرُونَ أَنْ يَشْهَدَ عَلَيْكُمْ سَمْعُكُمْ وَلَا أَبْصَارُكُمْ وَلَا جُلُودُكُمْ وَلَكِنْ ظَنَنْتُمْ أَنَّ اللَّهَ لَا يَعْلَمُ كَثِيرًا مِمَّا تَعْمَلُونَ

And you have not been hiding against yourselves, lest your ears, and your eyes, and your skins testify against you, but you thought that Allah knew not much of what you were doing. (HQ, Fussilat: 22).

Who will contest the Most Powerful Allah SWT in the hereafter should He deliver His final verdict without revealing detailed testimonies of our deeds (the good and the bad)? And yet, Allah will not do this because Allah wants to show that His decision will be thorough, transparent, precise, complete, and just. It is therefore obvious that Allah also wants us to use all detailed information when we decide to start or to end the month of Ramadan and Dhulhijjah. In so doing we then have to make use of our utmost intellectual capacity as human beings.

Muslims must be advanced in science and technology

Finally, let us quote a very good challenge revealed by the Omnipotent Allah SWT in Ar-Rahman: 33:

يَا مَعْشَرَ الْجِنِّ وَالْإِنْسِ إِنِ اسْتَطَعْتُمْ أَنْ تَنْفُذُوا مِنْ أَقْطَارِ السَّمَاوَاتِ وَالْأَرْضِ فَانْفُذُوا لَا تَنْفُذُونَ إِلَّا بِسُلْطَانٍ

O assembly of jinn and men! If you have power to penetrate beyond the zones of the heavens and the earth, then pass through. But you will never be able to pass them, except with authority (from Allah)!

This verse started with Allah's call to all genies as well as humankind irrespective whether or not they are Muslim. This call even applies to those who are disbelievers and transgressors, free from primordialistic barrier (religion, ethnicity, or nation). Allah gives a total freedom to all of them (and us) to penetrate beyond the zones of the heavens and the earth, and this is what has been better used by westerners (although they do not have to be aware of such opportunity) who work and think harder in their effort to scrutinizing the wonder of the universe Allah has created for us. In return, generally they are all better off than we are as Muslims, scientifically, technologically, socially, militarily, as well as culturally. In the mean time, we seemed to be too allergic in adopting any technology in such a way that we are now far behind in all aspects of worldly lives. We may argue that the life in the hereafter is far better than what we have in the world now, and this is what we are aiming. Then, why should we are using this internet to communicate after all, if we really do not need the glory in the worldly life as well as in the hereafter. If Islam was so advanced culturally, scientifically and technologically during the 8th - 15th centuries, why should not we be now if we work and think harder?

Finally, the following hadith demonstrates the importance of knowledge for Islam and its development¹¹: Mu'adh ibn Jabal (ra) said that the Messenger of Allah (pbuh) said:

Learn Al-Ilm (knowledge), for learning it is a type of Khashyah (Fear) of Allah, seeking it is an act of worship, studying it is a type of Tasbih (glorifying of Allah) searching for it is a Jihad, teaching it to those who do not know it is a charity and delivering it to those who worthy of it is an act of drawing closer (to Allah). Knowledge is the reference guide to the allowed and the disallowed, a light on the path for the people of Paradise, the companion during the loneliness, the friend during estrangement, the converser during seclusion, the guide in times of ease and times of difficulty, a weapon to use against the enemies and the quality that is valued by friends. Allah elevates some people by knowledge to the rank of leaders in righteousness who are followed, their actions imitated and their opinions referred to. The angels long to attend their gatherings (of learning knowledge) and shade them with their wings. Everything wet or dry, the fish in the sea and its creatures, beasts of pray and cattle that live on land invoke Allah to forgive them (people of knowledge). Verily, this is because the life of the heart against ignorance and the lamps of the eyes against darkness. With knowledge, the slave reaches the rank of righteous and the elevated grades in this life and hereafter. Thinking about knowledge is equivalent to Siyam (Fasting), and studying it is equivalent to Qiyam (praying at night voluntarily). With knowledge, ties of kinship are kept and the allowed and prohibited become distinguished. It is the Imam (Leader) of all actions and all actions follow its lead. Only the happy ones are endowed with knowledge while the miserable ones are deprived of it.

Conclusion

Allah's message revealed through the proportion of the meaning of the keyword *ro'a* contained in Table-1 and Table-2 is very obvious. It simply means that Allah wants us to make use of our utmost intellectual capacity in determining the beginning of a month in a Muslim calendar. The decision over it must be based on thorough, accurate and transparent work as Allah also will deliver His final verdict in the day of resurrection transparently, accurately, thoroughly and justly. Therefore, it is sufficient to conclude that the beginning of the holy month of Ramadan, Shawal, Dhulhijjah and other months must

¹¹ Reference 2, p. 28-29.

be determined by means of science and technology. As astronomical calculation is currently the most advanced technology available, the Muslim calendar must then be calculated based on such calculation. If in the future, moon sighting technique is technologically more reliable and gives more accurate results, then all Muslims should replace the technique correspondingly.

It is now the right time for Muslims all over the world to have its proleptic calendar that can be prepared well in advance based on astronomical calculation. There are computer programs that are available in public domain (e.g. Moon Calculator of Dr. Monzur Ahmed and Accurate Times of Mohammad Odeh – high appreciations to these Muslim brothers) that are very useful for such tasks. We will not be able to create such calendar when we stick to the visibility of hilal to mark the beginning of a Muslim month due to uncertainties with the moon sighting technique. Furthermore, all Muslims should work hand in hand in promoting the use of Muslim Calendar to gradually replace the solar (i.e. Gregorian) calendar for our daily lives. Allah has commanded the Messenger (pbuh) to delete the 13th month of the early pagan Arab luni-solar calendar that linked the calendar with seasonal ceremonies that involved idols (contestants) of Allah. This is the ultimate essence of using a pure lunar calendar for Muslims.

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