

NEW! On this very auspicious day of Ramadan, we are very glad to release the country specific [Hijri calendar 1442](http://localhost:8080/makkahcalendar_new/en/hijri-calendar-1442/) (http://localhost:8080/makkahcalendar_new/en/hijri-calendar-1442/) as well as the [Islamic Calendar 2021](http://localhost:8080/makkahcalendar_new/en/islamic-calendar-2021/) (http://localhost:8080/makkahcalendar_new/en/islamic-calendar-2021/) in Gregorian format for the year 2021.

An examination of important Islamic dates fixed by the Saudi Arabian Authorities

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I. Introduction

As is well known, for any given place, the new Islamic month begins when the young crescent moon is visible in the evening sky. Traditionally, the sighting is approved by the community if it is reported by two reliable witnesses.

What is true in general is of course true for the holy city of Makkah. The calendar of Makkah (./hijri-calendar-1439/) is particularly important because of the annual pilgrimage of Hajj, centred on this town. This pilgrimage draws millions of people from almost every country in the world. Thus it is particularly incumbent on the Saudi Arabian authorities to fix an accurate date each year for Hajj. Because of the place Makkah occupies in the conscience of every pious Muslim, it is equally important to fix accurately the two other major feast days of Islam: the beginning and end of the fasting month of Ramadan.

In our project of establishing an accurate scientific islamic calendar (./islamic-calendar-2018/) for Makkah based on the calculated and predicted visibility of the new moon, we have enlarged upon the notion of visibility in Makkah around the sunset that follows the birth of the new moon. Invisible at conjunction, the crescent cannot be seen until at least ten hours after this recurrent monthly event. However, instead of trying to spot the crescent in Makkah around sunset, it is perfectly legitimate to allow oneself more time and take into consideration the whole interval of time between sunset and the early morning prayer (*fajr*) (./prayer-times.php) on the following day.

In practice, we examine the status of the visibility of the crescent to the west of Makkah if there is no visibility in Makkah itself. If anywhere, on land, the crescent becomes visible before fajr in Makkah, we postulate this visibility as acquired in Makkah itself. We call this concept the concept of **extended visibility**.

For each new moon, if no sighting is possible in Makkah itself, we predict the sighting to the west of this locality on the basis of calculated and plotted *visibility curves*. These curves have been established by Syed Khalid Shaukat. The reader will find examples of these curves on Mr. Shaukat's site www.moonsighting.com (http://www.moonsighting.com) or on our site Makkah Islamic Calendar (http://www.makkahcalendar.org/). On the basis of the predicted visibility of the crescent we have commissioned photographs from reliable observatories or individual astronomers in the USA, Canada, Argentina and so on. A remarkable series of young crescent photographs exists in the photo gallery (photoGallery.php) of our site. These photographs are a clear proof of the accuracy of our visibility curves.

The reader will find an extensive development of what is said above in the introduction (islamiccalendar.php) to our site as well as in its FAQ section (faqMakkahCalendar.php). The more technically minded reader will find in the Announcements section of our site the reference to an Islamic Calendar Article (islamicCalendarArticle1.php) recently published in a well known international scientific journal called Selenology Today.

II. The official calendar used by the Saudi Arabian Authorities [The Umm al-Qura calendar]

Known as the Umm al-Qura calendar the Saudi Arabian Authorities uses the following criteria for determining the beginning of the Islamic month. These criteria apply since the Islamic year 1423 :

If on the 29th day of the lunar month the following two conditions are satisfied, then the next day is the first day of the new lunar month:

1. The geocentric conjunction occurs before sunset
2. The moon sets after the sun

Otherwise, the current month will last 30 days.

It is obvious that the actual sighting of the young crescent is not taken into account. Many discrepancies have been reported about the beginning of the lunar month under these circumstances. Even if the conjunction is shortly before sunset, with no possibility of viewing the crescent on that particular evening, the month will be declared as over, contrary to Islamic law.

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Important Link

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- Imam Malik

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III. The Hajj pilgrimage and the feast days as fixed by the Saudi Arabian authorities

Intrigued and worried about the accuracy of the major Islamic dates fixed by the Saudi Arabian authorities, we asked Syed Khalid Shaukat to carry out an expertise. Acting upon our request, he was kind enough to prepare three tables covering the span of 32 Hegirian years from 1400 to 1431. These tables concern:

1. The beginning of Dhu'l Hijja (the 9th of this month is the date of Wukuf Arafat and the 10th is the date of Hajj)
2. The beginning of Ramadan
3. Eid Al-Fitr (1st of Shawwal)

Each table provides the following information:

1. First column: the Hegirian year (./hijri-calendar-1439/)
2. Second column: the Gregorian date fixed by Saudi Arabia
3. Third column: Date of birth of the new moon in Makkah
4. Fourth column: Time of birth of the new moon in local Makkah time
5. Fifth and sixth columns: the status of the visibility of the moon according to calculated visibility curves (./visibilityCurves.php) (green or blue visibility zones only) *on the day before the official date fixed by Saudi Arabia*. The fifth column gives the status of visibility in Makkah itself, whereas the sixth column gives the status of visibility to the west of Makkah before fajr in Makkah.

Following are the tables prepared by Syed Khalid Shaukat.

1st Of Dhul-Hijjah

Hegirian Year	Greogorian date fixed by Saudi Arabia dd/mm/yyyy (DDD)	Date of Birth Of New Moon [Makkah]	New Moon Birth Time [Makkah]	Status of Moon visibility according to the Visibility Curves for day before this date	
				Green or Blue in Makkah	Green or Blue West of Makkah
1400	10-Oct-1980 (Fri)	9-Oct-1980 (Thu)	05:50	No	Yes
1401	29-Sep-1981 (Tue)	28-Sep-1981 (Mon)	07:07	No	Yes
1402	18-Sep-1982 (Sat)	17-Sep-1982 (Fri)	15:09	No	No
1403	8-Sep-1983 (Thu)	7-Sep-1983 (Wed)	05:35	No	Yes
1404	27-Aug-1984 (Mon)	26-Aug-1984 (Sun)	22:25	No	No
1405	17-Aug-1985 (Sat)	16-Aug-1985 (Fri)	13:05	No	No
1406	6-Aug-1986 (Wed)	5-Aug-1986 (Tue)	21:36	No	No
1407	27-Jul-1987 (Mon)	25-Jul-1987 (Sat)	23:38	No	Yes
1408	15-Jul-1988 (Fri)	14-Jul-1988 (Thu)	00:54	No	Yes
1409	4-Jul-1989 (Tue)	3-Jul-1989 (Mon)	08:00	No	Yes
1410	23-Jun-1990 (Sat)	22-Jun-1990 (Fri)	21:56	No	No
1411	13-Jun-1991 (Thu)	12-Jun-1991 (Wed)	15:07	No	No
1412	2-Jun-1992 (Tue)	1-Jun-1992 (Mon)	06:58	No	Yes
1413	22-May-1993 (Sat)	21-May-1993 (Fri)	17:08	No	No
1414	11-May-1994 (Wed)	10-May-1994 (Tue)	20:08	No	No
1415	30-Apr-1995 (Sun)	29-Apr-1995 (Sat)	20:37	No	No
1416	19-Apr-1996 (Fri)	18-Apr-1996 (Thu)	01:50	No	Yes
1417	8-Apr-1997 (Tue)	7-Apr-1997 (Mon)	14:03	No	No
1418	29-Mar-1998 (Sun)	28-Mar-1998 (Sat)	06:15	No	Yes
1419	18-Mar-1999 (Thu)	17-Mar-1999 (Wed)	21:49	No	No
1420	7-Mar-2000 (Tue)	6-Mar-2000 (Mon)	08:18	No	Yes
1421	24-Feb-2001 (Sat)	23-Feb-2001 (Fri)	11:22	No	No
1422	13-Feb-2002 (Wed)	12-Feb-2002 (Tue)	10:42	No	No
1423	2-Feb-2003 (Sun)	1-Feb-2003 (Sat)	13:49	No	No
1424	23-Jan-2004 (Fri)	22-Jan-2004 (Thu)	00:06	No	Yes
1425	11-Jan-2005 (Tue)	10-Jan-2005 (Mon)	15:04	No	Yes
1426	1-Jan-2006 (Sun)	31-Dec-2005 (Sat)	06:13	No	Yes
1427	21-Dec-2006 (Thu)	20-Dec-2006 (Wed)	17:02	No	No
1428	10-Dec-2007 (Mon)	9-Dec-2007 (Sun)	20:41	No	No
1429	28-Nov-2008 (Fri)	27-Nov-2008 (Thu)	19:56	No	No
1430	18-Nov-2009 (Wed)	16-Nov-2009 (Mon)	22:15	No	Yes

1st Of Ramadan

Hegirian Year	Greogorian date fixed by Saudi Arabia dd/mm/yyyy (DDD)	Date of Birth Of New Moon [Makkah]	New Moon Birth Time [Makkah]	Status of Moon visibility according to the Visibility Curves for day before this date	
				Green or Blue in Makkah	Green or Blue West of Makkah
1400	13-Jul-1980 (Sun)	12-Jul-1980 (Sat)	09:47	No	No
1401	2-Jul-1981 (Thu)	1-Jul-1981 (Wed)	22:05	No	No
1402	22-Jun-1982 (Tue)	21-Jun-1982 (Mon)	14:52	No	No
1403	11-Jun-1983 (Sat)	11-Jun-1983 (Sat)	07:37	No	No
1404	30-May-1984 (Wed)	30-May-1984 (Wed)	19:48	No	No
1405	20-May-1985 (Mon)	20-May-1985 (Mon)	00:41	No	No
1406	8-May-1986 (Thu)	9-May-1986 (Fri)	01:10	No	No
1407	28-Apr-1987 (Tue)	28-Apr-1987 (Tue)	04:35	No	No
1408	17-Apr-1988 (Sun)	16-Apr-1988 (Sat)	15:01	No	No
1409	6-Apr-1989 (Thu)	6-Apr-1989 (Thu)	06:34	No	No
1410	27-Mar-1990 (Tue)	26-Mar-1990 (Mon)	22:49	No	No
1411	17-Mar-1991 (Sun)	16-Mar-1991 (Sat)	11:11	No	Yes
1412	5-Mar-1992 (Thu)	4-Mar-1992 (Wed)	16:23	No	No
1413	22-Feb-1993 (Mon)	21-Feb-1993 (Sun)	16:06	No	No
1414	11-Feb-1994 (Fri)	10-Feb-1994 (Thu)	17:31	No	No
1415	31-Jan-1995 (Tue)	31-Jan-1995 (Tue)	01:49	No	No
1416	21-Jan-1996 (Sun)	20-Jan-1996 (Sat)	15:51	No	No
1417	10-Jan-1997 (Fri)	9-Jan-1997 (Thu)	07:27	No	Yes
1418	30-Dec-1997 (Tue)	29-Dec-1997 (Mon)	19:58	No	No
1419	19-Dec-1998 (Sat)	19-Dec-1998 (Sat)	01:43	No	No
1420	9-Dec-1999 (Thu)	8-Dec-1999 (Wed)	01:33	No	Yes
1421	27-Nov-2000 (Mon)	26-Nov-2000 (Sun)	02:12	No	Yes
1422	16-Nov-2001 (Fri)	15-Nov-2001 (Thu)	09:41	No	Yes
1423	6-Nov-2002 (Wed)	4-Nov-2002 (Mon)	23:36	No	Yes
1424	27-Oct-2003 (Mon)	25-Oct-2003 (Sat)	15:51	No	Yes
1425	15-Oct-2004 (Fri)	14-Oct-2004 (Thu)	05:49	No	Yes
1426	4-Oct-2005 (Tue)	3-Oct-2005 (Mon)	13:29	No	No
1427	23-Sep-2006 (Sat)	22-Sep-2006 (Fri)	14:46	No	No
1428	13-Sep-2007 (Thu)	11-Sep-2007 (Tue)	15:45	No	Yes
1429	1-Sep-2008 (Mon)	30-Aug-2008 (Sat)	22:59	No	Yes
1430	22-Aug-2009 (Sat)	20-Aug-2009 (Thu)	13:03	No	Yes
1431	11-Aug-2010 (Wed)	10-Aug-2010 (Tue)	06:09	No	Yes

Eid Al Fitr (1st of Shawwal)

Hegirian Year	Geogorian date fixed by Saudi Arabia dd/mm/yyyy (DDD)	Date of Birth Of New Moon [Makkah]	New Moon Birth Time [Makkah]	Status of Moon visibility according to the Visibility Curves for day before this date	
				Green or Blue in Makkah	Green or Blue West of Makkah
1400	11-Aug-1980 (Mon)	10-Aug-1980 (Sun)	22:10	No	No
1401	1-Aug-1981 (Sat)	31-Jul-1981 (Fri)	06:53	No	Yes
1402	21-Jul-1982 (Wed)	20-Jul-1982 (Tue)	21:57	No	No
1403	11-Jul-1983 (Mon)	10-Jul-1983 (Sun)	15:18	No	No
1404	29-Jun-1984 (Fri)	29-Jun-1984 (Fri)	06:18	No	No
1405	18-Jun-1985 (Tue)	18-Jun-1985 (Tue)	14:58	No	No
1406	7-Jun-1986 (Sat)	7-Jun-1986 (Sat)	17:01	No	No
1407	28-May-1987 (Thu)	27-May-1987 (Wed)	18:14	No	No
1408	16-May-1988 (Mon)	16-May-1988 (Mon)	01:11	No	No
1409	6-May-1989 (Sat)	5-May-1989 (Fri)	14:47	No	No
1410	26-Apr-1990 (Thu)	25-Apr-1990 (Wed)	07:28	No	Yes
1411	15-Apr-1991 (Mon)	14-Apr-1991 (Sun)	22:39	No	No
1412	4-Apr-1992 (Sat)	3-Apr-1992 (Fri)	08:02	No	Yes
1413	24-Mar-1993 (Wed)	23-Mar-1993 (Tue)	10:15	No	No
1414	13-Mar-1994 (Sun)	12-Mar-1994 (Sat)	10:06	No	No
1415	2-Mar-1995 (Thu)	1-Mar-1995 (Wed)	14:49	No	No
1416	19-Feb-1996 (Mon)	19-Feb-1996 (Mon)	02:31	No	No
1417	8-Feb-1997 (Sat)	7-Feb-1997 (Fri)	18:07	No	No
1418	29-Jan-1998 (Thu)	28-Jan-1998 (Wed)	09:02	No	Yes
1419	18-Jan-1999 (Mon)	17-Jan-1999 (Sun)	18:47	No	No
1420	7-Jan-2000 (Fri)	6-Jan-2000 (Thu)	21:15	No	No
1421	27-Dec-2000 (Wed)	25-Dec-2000 (Mon)	20:23	No	Yes
1422	16-Dec-2001 (Sun)	14-Dec-2001 (Fri)	23:48	No	Yes
1423	5-Dec-2002 (Thu)	4-Dec-2002 (Wed)	10:35	No	Yes
1424	25-Nov-2003 (Tue)	24-Nov-2003 (Mon)	02:00	No	Yes
1425	13-Nov-2004 (Sat)	12-Nov-2004 (Fri)	17:28	No	No
1426	3-Nov-2005 (Thu)	2-Nov-2005 (Wed)	04:26	No	Yes
1427	23-Oct-2006 (Mon)	22-Oct-2006 (Sun)	08:15	No	Yes
1428	12-Oct-2007 (Fri)	11-Oct-2007 (Thu)	08:02	No	Yes
1429	30-Sep-2008 (Tue)	29-Sep-2008 (Mon)	11:13	No	No
1430	20-Sep-2009 (Sun)	18-Sep-2009 (Fri)	21:45	No	Yes
1431	10-Sep-2010 (Fri)	8-Sep-2010 (Wed)	13:31	No	No

The results of this expertise are disturbing and we would like to present them to the reader for comment.

IV. The beginning of Dhu'l-Hijja

As mentioned above, the tenth of this month determines the date of the Hajj pilgrimage. Our calendar for Makkah allows an accurate prediction of this date for decades. But what do we notice in the official dates fixed by the Saudi Arabian authorities as they figure in column 2 of the Dhu'l-Hijja table? The beginning of Dhu'l-Hijja would be valid if the crescent was visible on the previous evening, either at Makkah itself or to the west of Makkah before fajr in this town.

The reader will easily notice from the column 5 of the appropriate table that, **at not a single date between 1400 and 1430**, was the crescent visible at Makkah itself. To the west of Makkah, before fajr in Makkah, the crescent was visible in **14 years out of 31**, which is the span between 1400 and 1430. For the remaining 17 years, the crescent was invisible both in Makkah and to the west of Makkah before the *fajr* prayer next day. Thus, in 17 cases out of 31 – more than half – the Saudi Arabian authorities have fixed a wrong date for the Hajj pilgrimage. We leave the question of the motivation of the authorities as an open question for our readers.

V. The beginning of Ramadan

We have the official Saudi Arabian dates from 1400 to 1431 in the appropriate table, which is for a span of 32 years. The fifth column shows that the crescent was never visible in Makkah itself and the sixth column indicates that it was visible to the west of Makkah – before fajr in Makkah – 12 times out of 32 only. Thus 20 out of the 32 dates fixed for the beginning of Ramadan are erroneous. We leave the conclusion to the reader.

VI. The first of Shawwal or Eid Al'Fitr (end of Ramadan)

The case is similar to that of the beginning of Ramadan. During the 32 years from 1400 to 1431, the crescent was never visible in Makkah whereas it was visible to the west 12 years out of 32. *The years in which the visibility occurred are not necessarily the same as for the beginning of Ramadan (./ramadan-2017/)*. Once again, we find the situation of 20 erroneous dates out of 32.

VII. Particularly flagrant cases

We have shown above that most of the dates fixed by the Saudi Arabian authorities for the major feast days of Islam are not correct since the crescent could not possibly have been *sighted* before sunset in Makkah on the previous day. But what should one say about a situation where the new moon was **not even born** on the sunset of the day prior to the feast day declared? Unfortunately, such cases are frequent as we will show below with a few examples. The month is declared to be begun on day X, but the new moon is born on that day only. Here are a few illustrations. Each time, we invite the reader to refer to the appropriate table.

Beginning of Ramadan

Take the year 1403, for instance. The Saudi Arabian authorities declared the month as begun on 11th June 1983. So the crescent should at least have been present on 10th June evening, before sunset. But what do we notice? *The new moon was born only on 11th June at 7:37 in the morning*. In other words, conjunction occurred after the month began!

During the following year, 1404, the same anomaly is repeated: Ramadan was declared as started on 30th May 1984, but was the crescent present on the 29th? No, it was born on the 30th itself, at 19:48 hours, or 7:48 in the evening. A full day of the fasting month – supposedly begun – had to elapse before conjunction occurred.

It would be tedious to multiply the examples for totally irrelevant dates for the beginning of Ramadan. We invite the reader to check out the same phenomenon for the years 1405, 1406, 1407,1409, 1415 and 1419.

Thus, in 8 years out of the 32 in the table, Ramadan was declared as begun without the new moon even being born. This means 25% of the cases!

The first of Shawwal or Eid Al Fitr (./eid-al-fitr-2017/) (end of Ramadan)

The cases that are particularly troublesome are less than for the beginning of Ramadan, but nonetheless present.

Take 1404, for instance: the end of Ramadan was declared on 28th June 1984. Since the beginning of Ramadan had been declared on 30th May 1984 (see above), 30 days of fasting were completed on the 28th June 1984. So, in a way, the new month had to begin on 29th June 1984. But it so happens that the new moon was born on the 29th June only, at 6:18 in the morning. *Since the beginning of the month was illicit according to Islamic law, the end of the month was illicit as well.*

Instead of multiplying the examples, we invite the reader to check out on the years 1405, 1406, 1408, and 1416. In the case of the years 1405 and 1406, the beginnings of Ramadan were illicit as well.

Thus in 5 years out of 32, or in 16% of the cases, Ramadan was declared as ended before conjunction occurred.

Conclusion

As our calendar for Makkah shows, it is perfectly possible to establish an accurate calendar for this holy town decades in advance, even whilst respecting the Islamic tradition of actually sighting the new crescent. Under these circumstances, is it justified to fix dates arbitrarily, either based on conjunction alone – without sighting – or, often, even before conjunction occurs ?

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