

# Prediction of the Start of Month of Ramadhan 1432 Hejriah

The Calculations are done for the Longitude and Latitude of Makkah AlMukarramah Area and the times are for the Local Time of Saudi Arabia (GMT+3)

Makkah Al-Mukarramah: Latitude = 21.45 ° N , Longitude = 39.82 ° E

According to UmmUIQura Calendar { 30 Shaaban 1432 Hejriah , 31 July 2011 }  
 { 01 Ramadhan 1432 Hejriah , 01 August 2011 }

New Moon of Month of Ramadhan occurs on Saturday 30 July 2011 at 9:41 p.m.

Day	(2011) Date	Sun Rise	Moon Rise	Sun Set	Moon Set	Moon altitude & azimuth at sunset	According to:	
							UmmUIQura	Prediction
Sat	30 / 7	5:52	5:20	19:02	18:41	-5.1 ° , 288 °	29 Shaaban	28 Shaaban
Sun	31 / 7	5:53	6:21	19:01	19:26	5.0 ° , 279 °	30 Shaaban	29 Shaaban
Mon	1 / 8	5:53	7:23	19:01	20:09	14.7 ° , 270 °	01 Ramadhan	01 Ramadhan

According to the astronomical calculations, the birth of the new moon (conjunction) occurs at about two hours and forty minutes after the sunset on Saturday 30 July 2011 and the moon sets before the sun by about twenty minutes on that evening in Makkah AlMukkaramah, therefore and according to calculations and possibility of actual sighting, it is impossible to sight the moon on that evening due to its absence (It is about 5° below the horizon) and the conjunction (new moon) occurs after the sunset as indicated in the above table.

But on the evening (just after the sunset) of Sunday 31 July 2011, which should be the 30th of Shaaban 1432 H according to UmmUIQura Calendar, it may be possible to sight the crescent, but with some difficulties, with increasing chance toward the southwest regions of the Kingdom by using optical aids (The crescent may be sighted with naked eyes in Mexico, Central and South Americas, and Southern part of Africa). On Sunday just after sunset, the age of the moon in Makkah AlMukkaramah will be about 21 hours and twenty minutes, it is about 5° above the horizon, its visible part (phase) is about 1.2 % of the full moon, its elongation with the Sun is about 12 degrees, and it stays about 25 minutes above the horizon. Therefore, according to astronomical calculations and possibility of actual sighting of the crescent, Inn-Shaa-Allah, Monday 1 August 2011 is predicated to be the first day of the month of Ramadhan 1432 H, and Allah has the knowledge (wAllahuAllam).

Note that birth of the "visible" crescent happens after the new moon (conjunction) which may not exceed half a day or it may extend to a day or more depending on the Moon location relative to the Sun, duration of its presence above the horizon, its luminosity (phase), crescent width, and of course the atmospheric condition just after sunset. Adding to that, the physical, psychological, health conditions, eye sensitivity and its speed of adaptation to light and accumulated experience of the person doing the sighting should be considered as important factors.

**For crescent sighting in Makkah Al-Mukarramah on Sunday evening:** Provided that the sky is dark and clear, free of clouds, dust, and humidity, then just after the sunset the altitude of the moon above the horizon will be about 5 ° , its elongation with the Sun is about 12.1 ° , it is about 10.7 ° to left (south) of the setting Sun (9.3 ° right of West direction), and the shape of the crescent moon will be slightly tilted to the right as shown in the figure.



The above prediction is based on astronomical formulas, calculations, theoretical and statistical possibility of sighting the crescent which may be used for the purpose of a general guidance for crescent sighting. One should go with the method of actual sighting of the crescent, the method which, our Prophet Mohammad SallallahuAlihiWassallam (ﷺ) guided and ordered us to observe and follow, and Allah has the knowledge.

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