

Prediction of the Start of The Holy Month of Shawwal 1437 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

Umm-UIQura: [(Wednesday 01 Shawwal 1437 Hejriah, 6 July 2016)]

Prediction: [(Wednesday 01 Shawwal 1437 Hejriah, 6 July 2016)]

New Moon of the Month of Ramadhan occurs on Monday 4 July 2016 at 02:02 p.m.

Day	(2016) Date	Sun Set	Moon Set	Moon altitude & azimuth & Sun Azimuth at sunset	According to:	
					UmmUIQura	Prediction
Monday	4 / 7	19:08	19:04	-0.82 ° , 290 ° , 295 °	29 Ramadhan	29 Ramadhan
Tuesday	5 / 7	19:08	19:57	10.1 ° , 284 ° , 295 °	30 Ramadhan	30 Ramadhan
Wednesday	6 / 7	19:08	20:46	21.1 ° , 277 ° , 295 °	01 Shawwal	01 Shawwal

According to the astronomical calculations, the birth of the new moon (conjunction) occurs at about 2:02 pm on the evening of Monday 4 July 2016 and the moon sets about four minutes before the Sun on that evening in Makkah AlMukkaramah (the crescent sets before the Sun almost in all Islamic countries) therefore and according to the astronomical calculations and possibility of actual sighting, the crescent moon cannot be sighted on that evening from all Islamic countries. There is small probability to sight the crescent from West and South of South America using optical devices only.

The crescent may be sighted by naked eyes if the sky is clear on the evening of Tuesday 5 July 2016 (just after the sunset), where the age of the moon will be about 29 hours, it stays about 50 minutes , it is about 10.1 ° above the horizon, its elongation with the Sun is about 15.5 °, and its visible part (phase) is about 2.0 % of the full moon. Therefore, according to the astronomical calculations and possibility of actual sighting of the crescent, Inn-Shaa-Allah, Wednesday 6 July 2016 is predicated to be the first day of the month of Shawwal (Eid AlFitr) 1437 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 on Tuesday evening, provided that the sky is dark and clear, free of clouds, aerosols, dust, and humidity: (just after the sunset) the altitude of the moon above the horizon will be about 10.1 °, its elongation with the sun is about 15.5 °, it is about 11.1 ° to left (south) of the setting sun (about 13.8 ° north of West direction), and the shape of the crescent moon will be tilted to the left as shown in the figure.



The above prediction is based on astronomical formulas and calculations and theoretical possibility of sighting the crescent which may be used for the purpose of a general guidance and 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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