

Prediction of the End of Month of Ramadhan & the Start of Month of Shawwal 1431 H

The Calculations are done for the Longitude and Latitude of
Makkah AlMukarramah Area and the times are for Local Time of Saudi Arabia

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

[(30 Ramadhan 1431 Hejriah, 9 September 2010)]

Prediction

[(01 Shawwal 1431 Hejriah, 10 September 2010)]

New Moon of Shawwal occurs on Wednesday 8 September 2010 at 1:31 p.m.

Day	(2010) Date	Sun Rise	Moon Rise	Sun Set	Moon Set	Moon altitude & azimuth at sunset	According to:	
							UmmUIQura	Prediction
Wed	8 / 9	6:05	5:50	18:31	18:21	Below the horizon	29 Ramadhan	29 Ramadhan
Thu	9 / 9	6:06	6:54	18:30	19:04	6.9 ° , 260.1 °	30 Ramadhan	30 Ramadhan
Fri	10 / 9	6:06	7:58	18:29	19:48	16.3 ° , 249.1 °	01 Shawwal	01 Shawwal

According to the astronomical calculations, the birth of the new moon (conjunction) occurs at 1:31 p.m. on Wednesday 8 September 2010, whereas the moon sets on that day before the sun by about ten minutes in Makkah AlMukkaramah, therefore and according to astronomical calculations and actual sighting, it is predicated to be impossible to sight the crescent moon on that evening due to its absence (It is below the horizon) as indicated in the above table. On the evening (just after the sunset) of Thursday 9 September 2010, the probability is that the crescent could be sighted specially by using optical aids and the sighting improves as we go further to the southwest of Saudi Arabia *. In Makkah AlMukkaramah and its vicinity, the age of the moon will be about 29 hours, it stays about 34 minutes, it is about 6.9 ° above the horizon, its elongation with the Sun is about 17.5 ° , and its visible part (phase) is about 2.44 %. Therefore, according to the astronomical calculations and possibility of sighting, Inn-Shaa-Allah, Friday 10 September 2010 is **predicated** to be the first day of the month of Shawwal 1431 H (First day of Eid AlFitr AlMubark), and Allah has the knowledge (wAllahuAllam).

Note that birth of the "visible" crescent moon 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. Usually the contract is very small between the color and brightness of the crescent and the sky, which adds difficulty to observation.

For crescent sighting, provided that the sky is dark, clear, free of clouds, dust, and humidity: just after the sunset on Thursday 9 September 2010, the altitude of the moon above the horizon will be about 6.9 ° , its elongation with the sun is about 17.5 ° , it will be about 15.8 ° to the left (south) of the setting sun (Sun's azimuth will be 275.9 ° , where West direction is 270 °), and the shape of the crescent moon will be slightly tilted to the left as shown in the figure.

* The crescent can not be sighted on Thursday evening from Rusia, Canada, and North Europe.

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 SallAllhuAlihiWassallam (ﷺ) guided and ordered us to observe and follow, and Allah has the knowledge.

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