

## Prediction of the Start of Month of Muharram 1431 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 + 3.0)

Makkah Al-Mukarramah: Latitude = 21.43 ° N , Longitude = 39.82 ° E

Prediction: [ (30 Zul-Hejjah 1430 Hejriah, 17 December 2009) ]  
 [ (01 Muharram 1431 Hejriah, 18 December 2009) ]

New Moon of Muharram Occurs on Wednesday 16 December 2009 at 3:03p.m.

Day	(2009) Date	Sun Rise	Moon Rise	Sun Set	Moon Set	Moon altitude & azimuth at sunset	According to:	
							UmmUIQura	Prediction
Wed.	16 / 12	6:51	6:43	17:42	17:38	Below the horizon	29 Zul- Hejjah	29 Zul- Hejjah
Thu.	17 / 12	6:51	7:33	17:42	18:32	9.1 ° , 239 °	30 Zul- Hejjah	30 Zul- Hejjah
Fri.	18 / 12	6:52	8:19	17:43	19:25	19.5 ° , 235 °	01 Muharram	01 Muharram

According to the astronomical calculations, the birth of the new moon (conjunction) occurs about two hours and thirty nine minutes before the sunset on Wednesday 16 December 2009 in Makkah AlMukkaramah and the moon sets about four minutes before the sunset, therefore and according to the calculations and actual sighting, it is impossible to sight the moon on that evening due to its absence (It is about 1° below the horizon) as indicated in the above table. But on the evening (just after the sunset) of Thursday 17 December 2009, which should be the 30<sup>th</sup> of Zul-Hejjah 1430 H, it may be possible to sight the crescent with increasing chance toward the southwest regions of the Kingdom. The age of the moon at that moment will be about 27 hours, stays about 50 minutes above the horizon, and its visible part is about 1.2 % of the full moon.

For crescent sighting: provided that the sky is clear and free of clouds and dust, one should face approximately toward southwest at the sunset where the altitude of the moon above the horizon will be about 9°, it will be about 6 degrees to the left (south) of the setting sun (31° south of west), Its elongation about 12°, and the shape of the crescent moon will be slightly tilted to the left as shown in the figure.



Accordingly, previous calculation and possibility of actual sighting indicate that the first day of Muharram may be (In-Shaa-Allah) on Friday 18 December 2009 as shown in the above table.

The above prediction is based on astronomical formulas and calculations and may be used for the purpose of a general guidance and one should go with the method of actual sighting of the moon, 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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