

Prediction of the Start of Month of Muharram 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 + 3.0)

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

Prediction: [(29 Zul-Hejjah 1431 Hejriah, Monday 6 December 2010)]
[(01 Muharram 1432 Hejriah, Tuesday 7 December 2010)]

New Moon of Muharram Occurs on Sunday 5 December 2010 at 8:37 p.m.

Day	(2010) Date	Sun Rise	Moon Rise	Sun Set	Moon Set	Moon altitude & azimuth at sunset	According to:	
							UmmUIQura	Prediction
Sun	5 / 12	6:44	6:17	17:38	17:22	Below the horizon	29 Zul- Hejjah	28 Zul- Hejjah
Mon	6 / 12	6:44	7:16	17:39	18:19	7.4 ° , 240 °	30 Zul- Hejjah	29 Zul- Hejjah
Tue	7 / 12	6:45	8:11	17:39	19:18	18.5 ° , 235 °	01 Muharram	01 Muharram

According to the astronomical calculations, the birth of the new moon (conjunction) occurs about three hours and fifteen minutes after the sunset on Sunday 5 December 2010 in Makkah AlMukkaramah and the moon sets about 16 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 4° below the horizon) and occurrence of the conjunction (new moon) after the sunset as indicated in the above table.

But on the evening (just after the sunset) of Monday 6 December 2010, which should be the 30th of Zul-Hejjah 1431 H according to UmmUIQura Calendar, it may be possible to sight the crescent with increasing chance toward the southwest regions of the Kingdom especially by using optical aids. The age of the moon at that moment will be about 21 hours, stays about 41 minutes above the horizon, its visible part is about 0.9 % of the full moon, and its elongation is about 10 degrees..

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 7.4 degrees, it will be about 6 degrees to the left (south) of the setting sun (30 degrees south of west), Its elongation about 10 degrees, and the shape of the crescent moon will be slightly tilted to the right as shown in the figure.



Accordingly, previous calculation and possibility of actual sighting indicating that the first day of Muharram may be (In-Shaa-Allah) on Tuesday 7 December 2010 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.

Dr. Ali Mohammad Al-Shukri - Physics Department - KFUPM Box # 378
Dhahran 31261 , Saudi Arabia - Phone: 860-3573 or 860-2255 - fax: 860-2293
email: alshukri@kfupm.edu.sa - Homepage: <http://faculty.kfupm.edu.sa/phys/alshukri>