

Prediction of the Start of Month of Shawwal 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

Prediction: [(30 Ramadhan 1432 Hejriah, 30 August 2011)]
 [(01 Shawwal 1432 Hejriah, 31 August 2011)]

New Moon of Month of Ramadhan occurs on Monday 29 August 2010 at 6:04 a.m.

Day	(2011) Date	Sun Rise	Moon Rise	Sun Set	Moon Set	Moon altitude & azimuth at sunset	According to:	
							UmmUIQura	Prediction
Mon	29 / 8	6:03	6:05	18:41	18:45	1.34 ° , 272 °	29 Ramadhan	29 Ramadhan
Tue	30 / 8	6:03	7:08	18:40	19:28	11.2 ° , 262 °	01 Ramadhan	30 Ramadhan
Wed	31 / 8	6:03	8:11	18:39	20:12	20.8 ° , 251 °	02 Shawwal	01 Shawwal

According to the astronomical calculations, the birth of the new moon (conjunction) occurs at about six o'clock on the morning of Monday 29 August 2011 and the moon sets after the sun by about four minutes on that evening in Makkah AlMukkaramah, therefore and according to calculations and possibility of actual sighting, it is predicated not to be possible to sight the crescent moon on that evening due to its very low altitude (less than 1.5 degrees) as indicated in the above table adding to that, its tiny visible part (phase, Illumination) only 0.6% of the full moon and extremely thin crescent which is less than the resolution of human eyes, but there is a better chance with some difficulties to observe it from South Africa by using optical devices only and even there is a higher possibility to sighted from South America. But on the evening (just after the sunset) of Tuesday 30 August 2011, the crescent can be sighted easily with naked eyes, where the age of the moon will be about 37 hours, it stays about 48 minutes, it is about 11 ° above the horizon, its elongation with the Sun is about 22 °, and its visible part (phase) is about 3.6% of full moon. Therefore, according to astronomical calculations and possibility of actual sighting of the crescent, Inn-Shaa-Allah, Wednesday 31 August 2011 is predicated to be the first day of the month of Shawwal 1432 H. But according to the conventional civil Hejriah calendare which does not require actual sighting, Tuesday 30 August is the first day of shawwal, 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, dust, and humidity: just after the sunset, the altitude of the moon above the horizon will be about 11 °, its elongation with the sun is about 22 °, it is about 19 ° to left (south) of the setting sun (8.4 ° left of West direction), and the shape of the crescent moon will be tilted to the right 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.

One should be very careful and sure not to mistakenly see a shape that looks like a fuzzy thin crescent due to the presence of planet Venus about three degrees above the Sun. Adding to that high humidity and temperature in the summer season with suspended aerosols in the air cause scattering of the light and collaboration with other atmospheric effects may lead to false impression of seeing crescent.