

Prediction of the End of Month of Ramadhan & the Start of Month of Shawwal 1430 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

[(29 Ramadhan 1430 Hejriah, 19 September 2009)]

Prediction

[(01 Shawwal 1430 Hejriah, 20 September 2009)]

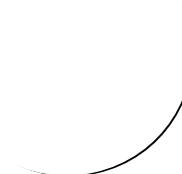
New Moon of Shawwal occurs on Friday 18 September 2009 at 9:45 p.m.

| Day | (2009) Date | Sun Rise | Moon Rise | Sun Set | Moon Set | Moon altitude & azimuth at sunset | According to: | |
|-----|----------------|-------------|--------------|------------|-------------|--------------------------------------|---------------|-------------|
| | | | | | | | UmmUIQura | Prediction |
| Fri | 18 / 9 | 6:08 | 5:33 | 18:21 | 17:58 | Below the horizon | 28 Ramadhan | 28 Ramadhan |
| Sat | 19 / 9 | 6:08 | 6:33 | 18:20 | 18:37 | 3.1 ° , 260.2 ° | 29 Ramadhan | 29 Ramadhan |
| Sun | 20 / 9 | 6:08 | 7:33 | 18:19 | 19:16 | 11.7 ° , 250.1 ° | 01 Shawwal | 01 Shawwal |

According to the astronomical calculations, the birth of the new moon (conjunction) occurs at about 9:45 p.m. on Friday 18 September 2009. The new moon will occur more than three hours after sunset and the moon sets on that day before the sun by about twenty three 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 Saturday 19 September 2009, the probability is that the crescent could be sighted but with extreme difficulty by using optical aids only in the southwest of Saudi Arabia, where the age of the moon will be about 20.6 hours, it stays about 17 minutes, it is about 3.1 ° above the horizon, its elongation with the Sun is about 12 ° , and its visible part (phase) is about 1.17 %. Therefore, according to astronomical calculations, Inn-Shaa-Allah, Sunday 20 September 2009 is **predicated** (with slim possibility) to be the first day of the month of Shawwal 1430 H, 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 contrast 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 Saturday 19 September 2009, the altitude of the moon above the horizon will be about 3.1 ° , its elongation with the sun more than 12 ° , it will be about 11.5 ° to the left (south) of the setting sun (Sun's azimuth will be 271.7 ° , 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 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.

* There is much better and greater chance and possibility of sighting the crescent from middle to the southern parts of Africa and from the whole areas of South and Central America.