

# The Problem With The MOONSIGHTING



**Agitated by the fiasco of having 2 days of Eid for the last decade or so Max Fazel was prompted to join the Islamic Crescent Observation Project (icop) run by the Jordanian Astronomy Society; whose members comprise of Muslim scientists and astronomers from all over the world – and came up with the answer.**

**T**he crescent moon is sought in the twilight western sky soon after sunset in all Islamic countries to mark the start of the Islamic month. The fact that it is sought "soon after sunset" gives a clue that the new crescent (not new Moon!) must be close to the sun's position in the sky and therefore must be low on the horizon – it has never been a problem with naked eye sightings – for then the age of the crescent would have to be definitely in double digit hours. The problem does not even lie with using telescopes to look for an ultra thin hairline width sized crescent (the record of youngest sighting with a telescope is also in double digit hours 12.33 hrs!).

The problem actually is very simple, it lies with those people (and authorities) who look for the new crescent when it is not even formed as yet, however, they are aware that the new moon has been born but they can not distinguish the difference between birth and crescent, or rather, they choose not to.

There are always two dates for the start of Ramadan (or other Islamic months), nothing wrong with that in itself considering that at any one time there are two solar dates presiding over the globe! However, you can never have two solar (or lunar) dates for the same locality, e.g. today is Thursday 6th Oct at 12:30pm in UK and at this very moment it is Friday 7th Oct in Fiji. Similarly, you cannot have the same Lunar date over the entire globe as the moons position varies from month to month; therefore, it is a scientific fact that at any one time there will always be 2 solar dates over the entire globe.

But getting the date correct is a must if we are to follow the Prophets example and hadith; ie; the month begins with the sighting of the new moon. Time is sacred – that's why we have prescribed prayer times, set days for Festivals etc, Eid, Hajj, and Lailatul Qadr.

If we were to get the start of an Islamic month wrong – then we inevitably end up doing a religious act on the wrong lunar date! Eg it is haraam to fast on 30th Shaban! (as I will prove the Saudis have done this year).



***The scientific/astronomical facts about the Moon – Earth system:***

- (1) The birth of the moon (conjunction) is a well known (pre-calculated) scientific fact and its time can easily be found from month to month. This is the instance that the Moon crosses an imaginary line joining the centre of the Earth to the centre of the Sun. However, due to the inclination of the Moon to the Earth, the Moon crosses this line from zero to 5 degrees away. If it was at zero degrees and the Moon was at the right distance from the Earth then we get a Solar Eclipse.<sup>1</sup>
- (2) When the Moon starts moving away from this line, gradually more and more light from the Sun will hit the surface of the Moon (producing a crescent). The Moon moves ~1 degree every 2 hours.
- (3) The minimum angle of separation of the Moon from the Sun (called Elongation) is 7-8 degrees, for the crescent (hilaal) to become visible, that is to say that if the elongation is <7 degrees then no light from the Moon will reach the Earth (due to the Danjon<sup>2</sup> effect). It doesn't take a particle physicist to work out that at 7 degrees the Moon would have moved away from the Sun in ~14 hours. So it is not surprising that any Observatory observation records you care to examine will always report sightings where the age was >13 hours! (even with a telescope). If you don't believe me go ahead check it out!<sup>3</sup> That is why the world record for youngest crescent sighting is ~12.3 hours with a telescope and ~15 hours for naked eye! However, it is important to remember that crescent width is not linear with moon age – ie, a 15 hour crescent seen in one month may not be visible in another due to many factors like elongation, altitude, lag time etc.
- (4) It is also a scientific fact that if any location reports a sighting of a new crescent then all locations to the West of that location, on the same latitude, would be able to see the crescent. Not only that, but places to the west of the location would see the crescent more easily since it would be higher and thicker (greater age) in the sky.
- (5) Another important parameter is the altitude of the Moon, it is no use claiming that the crescent was seen if the scientific data shows that the moon had set (below horizon) at that location at the time of sighting.
- (6) A very important factor is atmospheric extinction – this is when the new crescent sets close to or after the sunset time and due to the brightness of the Western sky just after sunset, it is very difficult or impossible to discern this light from the light from a new crescent, which may still be above horizon, ie the crescent can not be seen. That is why the lag time – the time between sunset and moonset needs to be sufficient to

allow for darkening of the skies after magrib – usually >30 minutes is needed. (Just as you need a darkening of the sky for the stars to become slowly visible after Sunset). The world record for the minimum lag time for a crescent that was seen by telescope is around 30 mins!<sup>3,4</sup>

***So what happened this year 2005?***

Well to understand this we need to go back to the start of Shaban. On 3rd September there was the birth of the Moon of Shaban, this occurred at 21:46 local time in Mecca, Sunset was at 18:35 in Mecca, i.e. the Moon was born after the Sunset.

Moonset was 18:35 (old Moon of Rajab – not new!!) and sunset was also 18:35

The moon age was -3 (minus) hours to new!  
The Elongation was ~3 degrees

The moon altitude was below horizon < 1 degree!!  
Yet – despite the above data – the Saudi authorities declared that the new crescent for Shaban was seen even before the Moon was born! Furthermore, no other country West of Saudi reported seeing the crescent later that day, no observatory reported seeing the crescent even with a telescope!

By Sunday 2nd October the Saudis announced that it is 29th Shaban and that the people should try to observe the crescent on Sunday evening even though the new

***“So according to the Saudis, 4th Sept was 1st Shaban – proven to be 100% wrong by the above facts (1st Shaban should be 5th Sept for most of the world according to calculation etc and actual sighting).”***

moon was not to be born for another 19 hours or so – ie, the next day.

But the new moon for October was only born on Monday 3rd Oct, i.e. born the next day. Yet the Saudi looked for the new moon of Ramadan on 2nd Oct!



obviously they did not see no crescent so the next day (Monday 3rd) becomes 30th Shaban for them (29th Shaban in truth) – so now by default the Saudis on the evening of 3rd Oct will not even have to look for the Moon and the next day will automatically be 1st Ramadan as they announced – this is clearly wrong!

There was also a Total Annular Eclipse across Africa (and partial eclipse in Saudi) on Monday 3rd Oct, which is another reason to support that the moon would not be visible later that day. The moon age in Saudi on Monday 3rd Oct was ~ 4 hours. Elongation is ~1.6 degrees. Lag time is only 3 minutes.

Therefore no moon can be seen Monday evening and the next day Tuesday should be the true 30 Shaban and 1st Ramadan will be Wednesday 5 Oct 2005 for the whole world.

Yet despite all this scientific factual knowledge the Saudis claimed the new crescent was seen and wrongly started Ramadan on Tuesday 4 Oct. In fact, nowhere in the world was it possible to see the crescent on Monday evening – in USA the ISNA (Islamic Society for North America) issued a statement to declare that Ramadan will start on Wednesday 5 Oct for USA due to the

crescent not being sighted on Monday evening! The reality of the situation is very clear: those who claim they do not go by calculation and follow the

prophet's sunna by observing the moon are in fact doing the very opposite. They consistently go by the new moon conjunction dates and claim impossible moon sightings that defy scientific criteria for moon sighting. Their claims of seeing a new crescent every month is usually well below the world record for youngest crescent sighting, not just as a one off, but almost every month! and they do this without any optical aids.

Imagine an athlete that every time he runs a 100m race can either break the world record or repeatedly do it in 10 seconds or less! and he does it without his trainers on (to complete the analogy of naked eye

and telescope sightings).

Yet those that use authentic moon sighting criteria to negate false and impossible sightings are actually following the sunna because any positive moon sighting claims can be supported by such scientific data. Further evidence can be provided if interested. Maqsood Fazel (email : maxfazel@hotmail.co.uk) **Emul**

*“The big question is: do you want to start Ramadan (or any other month) based on Allah’s command (actual sighting of a crescent) or start based on what the Saudis tell you.”*

#### References:

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2. NAO Technical Note No 69 A Method for Predicting the First Sighting of the New Crescent Moon by BD Yallop (1997).

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4. Lunar Crescent Visibility – LE Doggett & BE Schaefer (1994) ICARUS 107, 388-403 and [www.icoproject.org](http://www.icoproject.org) website.