The Newark Octagon

The Moon gives a much older construction date than officially recognised.

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Abstract

In 1982, professors from Earlham College in Richmond, Indiana, discovered that the major axis of the Newark Octogon aligned with the maximum northern moon rise which happens once every 18.6 years. This was seen to be precise to one-half of a degree, making coincidence seem impossible. It was stated that this makes the Newark Earthworks twice as precise as the lunar observatory at Stonehenge and leads Wikipedia to announce that *“The primary purpose of the Octagon earthwork was believed to have been scientific.”*
If such was the case, one can imagine that these prehistoric scientists would have orientated the site according to a visual reference point, a position where they could see this special moonrise. This is in fact not the case as the Moon would **never** have risen precisely along the Newark Octogon’s major axis if it had been built between 100 CE and 500 CE, as is officially accepted. Aligning things exactly is not very difficult, especially over long distances. This study shows that if this site is really orientated to the maximum northern moonrise, it must be at least 2000 years older than currently believed.

Keywords : Newark Octogon, neolithic, ancient astronomy, 18.6 year Moon cycle.

It has been said that the Newark octagon shows a definite sightline towards the maximum northern moonrise with a precision which is accurate to half a degree. This calculation uses the official date for the construction of monument, around 100 AD.
The observation would have been made from a mound situated in the southwest part of the observation circle. From this mound a sight line links the centre of the observation circle to the centre of the Octagon, passing along the centre of the causeway that links the two, and when extended goes through a gap to the northeast of the Octagon. This is a total distance of 880 meters (961 yards).This line is at an angle of 51.78 degrees from North or 38.22 degrees from East.
(figure 1).

Figure 1. The observation circle and Newark octagon with a sight line coming from the observation mound.

Now, the problem with the Major Moon observation theory as propounded is that the inaccuracy of half a degree means that the incredibly precise sight line **never actually pointed to the moonrise** as the sight line angle is half a degree **greater** from east than the maximum position of the Moon in 100 AD.
Had their monument been approximate, then the angle from East would have been slightly **smaller** than the real lunar maximum, showing that they had not been able to observe the precise lunar maximum. But here the angle from East is **greater** and so they would never have been able to observe the moon rise along the major axis of the monument.
Is this really a feasible suggestion?
As we can see from the earth mounds themselves, the builders used a very high degree of precision in their geometrical organisation. This is a much more difficult thing to do than aligning points to a moonrise position.
It would be interesting to see what date gives the exact angular measurement for the major moon rise at the Newark octagon.
The land slopes slightly downhill from the observation point, situated at an altitude of 273 m, until we come to a hilly area whose highest summit is at 343 m and is at a distance of 7950 m from the observation point. (figure 2)

Figure 2. The altitude angle of major moonrise scene from the observation point. *The diagram is exaggerated to facilitate understanding.* (profile Google Earth)

The altitude angle for the major moonrise can easily be calculated to be 0.50 degrees.
So with the altitude angle and the exact angle of the observation sightline we can calculate the precise date for this observation.

We must decide what position of the moon was observed. As the light emitted by a moonrise on the distant horizon is much fainter than a sunrise and as the moon can have different phases, I would suggest that the moon position for the observation is when the moon is sitting on the horizon. If we were to take the centre of the Moon on the horizon as our reference point, then if the moon rise was a crescent moon for example it would not be visible. By positioning the bottom of the Moon on the horizon the observation is possible for all phases of the moon. This is very important because the major moonrise is not necessarily a full moon. The exact maximum can happen at any moon phase.
The angle from east of the major moonrise sitting on the horizon is smaller than if we were to take the Moon's centre, for example. This means that we will not **overestimate** the age of the monument.

To calculate the exact date of the precise major moonrise along the 51.78 degree sightline, I have used Victor Reijs's archaeocosmology.org website, shown in figure 3.

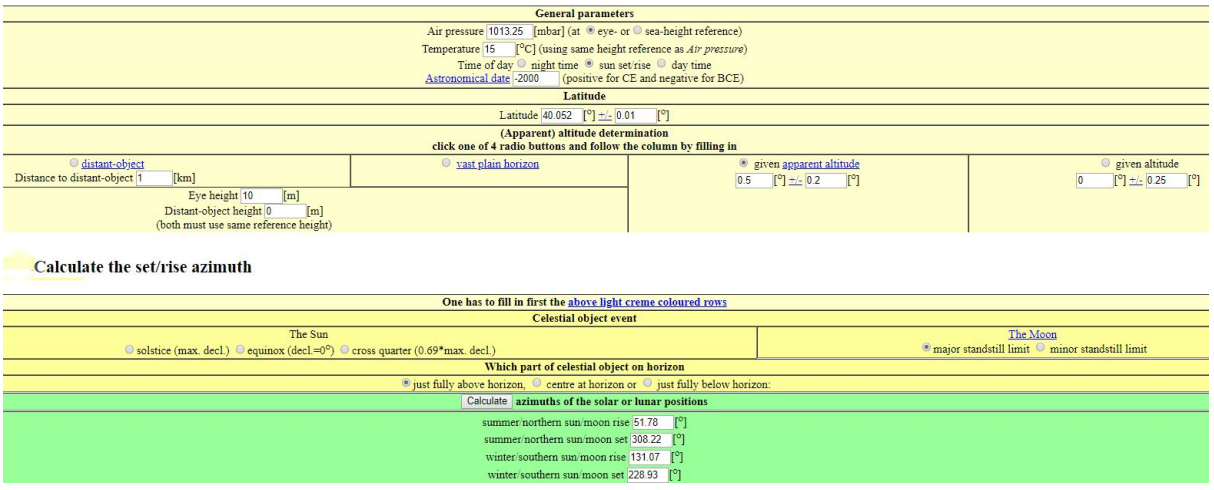

Figure 3. Calculating the exact date using the archaeocosmology tool by Victor Reijs.

The given apparent altitude is 0.5 degrees, the latitude 40.052 degrees and the position of the Moon just fully above the horizon.

The resulting date is 2000 BCE, slightly over 2000 years earlier than the earliest official date for the construction of this monument, 100 to 700 AD. Were we to take the centre of the Moon on the horizon as our reference point, the date would be even earlier.

So if this massive monument in Newark, geometrically constructed with incredible precision, is also considered to be a high precision astronomical construction, then it should be considered to be much older than is presently thought. This, of course, means rethinking the prehistory of the North American continent.
But would the builders really have orientated this massive monument to a point on the horizon where the moon was never visible to them ? I personally doubt this. It makes no sense whatsoever.

When at the beginning of the 20th century Sir Norman Lockyer dated Stonehenge, through astronomical calculations, to 1200 BC, he was the object of mockery as the monument was considered to be much more recent. It is now known to be in fact much older than even he calculated.
Today, our knowledge of changing obliquity is much more precise than in Lockyer's time. As the facts are quite clearly marked out on the ground in Newark, perhaps we should use them as evidence, even if the result does not fit into the present-day view.