

Traditional rites and their celestial alignments in parts of south-eastern Nigeria

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Abstract. Preliminary investigations at two archaeological sites in south-eastern Nigeria are presented. These sites are the ancient stone circle in Ikom and the crescent shape of an ancient iron slag heap at Lejja, Nsukka. Here, we discuss the celestial alignments of these objects, and other traditional rites in this part of Nigeria, that seem to suggest some possible astronomical connections.

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1. Introduction

Nigeria’s archaeoastronomy and ethnoastronomy is as diverse as her over 300 ethnic groups. Most of the ethnic groups have astronomy-rich cultures and practices. The sky entities (Sun, Moon and the Stars) are seen to manifest natural and supernatural powers and this inspires reverence and fear. Many creative expressions here, as in other ancient cultures, therefore depict these sky entities, revealing that cosmic nature is intimately integrated into the lives and experiences of ancient Nigerians. In this work, we discuss traditional rites and their celestial alignments in two archaeological sites in southeastern Nigeria—the iron slag heap located at Otobo-Dunoka, Lejja, on the outskirts of Nsukka, Enugu State and the stone circle at Emangebe village, in the Nnam clan area of Central Cross River State.

2. The Ikom stone circle

In the Bakor language, these stones are known as *Akwanshi*—which is interpreted variously as ‘dead person in the ground’ or ‘ancestor in the ground’. This is interesting, because the *Akwanshi* are definitely not tombstones. There is a strict ritual prohibition against burying people within the stone circles. So far, 27 stone circles have been found and recorded within a roughly 350 km² area in Cross River State, Nigeria. Some of these are shown in Figs 1 & 2. The stone circles are believed to be about 2000 years old.

These Stones have a pictographic script suspected to be *Nsibidi*, which is found on many of the *Akwanshi*—especially at Emangebe. (*Nsibidi* is closely associated with a



Figure 1. A portion of the stone circle at Emangebe which consists of 13 principal monuments and a number of lesser (uncarved) stones.



Figure 2. Showing the front of the first Paramount Ruler in the stone circle at Emangebe.

much-feared secret society called Ekpe, which is active among the people of Akwa Ibom and Cross River State.) Consequently, it is extremely difficult to extract information from interview subjects about these symbols. However, we believe that some of them may have astronomical significance (as shown in Figs 3–5).

There is every likelihood that there is a deliberate alignment of the *Akwanshi* as seen in Fig. 6. The Sun's azimuth is only at this region twice a year, around the March and September equinoxes. The 'deliberate alignment' hypothesis is strongly re-enforced by the cosmology of the Bakor, for whom both the Sun and the cardinal point East are sacred. There is, therefore, some possibility that the stone circle at Emangebe is actually an astronomical calendar, designed to predict seasonal changes.

Figure 3. Concentric squares on the Akwanshi, each one carved with concave sides and no two squares touching each other.



Figure 4. Concentric circles, which could represent the Sun or even a supernova.



Figure 5. The carving on one of the Akwanshi (shown here) possibly denotes a major astronomical event.





Figure 6. Exposure taken from behind the First Paramount Ruler or King (the principal monument) in a 13-stone circular array at Emangebe. The photograph was taken at sunrise on March 21, 2009—a day after the equinox.

Although they seem to share the same general features, each stone, like the human fingerprint, is unique—different from every other stone in its design and execution. The geometric images on the monoliths suggest that their makers possessed more than a basic knowledge of mathematics, not only because they are geometric, but also because of the obvious implication that there were computations and numbers on the layout of the stones. The Bakor revere odd numbers ('3', '5', '7', '9', '11' and '13') and '7' is especially important, particularly among the Nselle clan of Ikom. The geometric inscriptions are unique in their complexity of design and interpretation. The origin, the artists, what they used in making the inscriptions, the meaning of the inscriptions, and their ability to survive centuries are among many things that continue to baffle scientists and other researchers on these sites. Hopefully, answers may be found to some of these intriguing features in the near future.

Nowhere is the superb artistry and craftsmanship of the ancient carvers more evident than in the execution of the delicate designs and in the sophisticated symmetry of these petroglyphs. One of them (Fig. 3) is an extremely complex study in concentric squares, each one carved with concave sides and no two squares touching (these intricate designs were carved into basalt rock!). Most importantly, the geniuses that did this carving did not have access to modern sculptors' tools.

3. Lejja iron slag

At *Otobo-Dunoka*, Lejja, stands a mysterious site with a large clusters of iron slag (Fig. 7). These sites are linked to ancient iron smelting technology. The diameters of these slag blocks range between 31 and 56cm with heights ranging from 22 to 36cm (Eze-Uzomaka 2009, 2010). Reliable dates are of around 200 BC and few to be further checked are of 1400 to 2000 BC. The samples dated were obtained from charcoal from the iron smelting site forming part of the astronomical site (Chami *et al.* 2011).



Figure 7. A massive concentration of iron slag blocks at *Otobo-Dunoka* showing the crescent-shaped heap of slag with the *Oshuru* at the centre.



Figure 8. The *Eze Mkpume* being pointed out.



Figure 9. The *Eze-mkpume* together with *Oshuru* (the heap of slag blocks located at about the centre of the crescent-shaped structure) and the tall *Omaba* (masked spirit) house have a perfect alignment with the East-West axis.



Figure 10. Part of the village square showing some of the important monuments like the *omaba* house, the different arrangements of iron slag blocks and one of the village shrines (*Odegwoo* (standing at the foreground)).

The arrangement of some of the iron slag blocks here is quite interesting. In Fig. 7, we see the crescent shaped heap of slag with the *Oshuru* at the centre denoting a possible connection with heavenly entities (it could be denoting a crescent moon with a star or planet). One of the slag blocks of the crescent shaped structure is known as the *eze-mkpume* ('Chief' or 'principal' slag). This *eze-mkpume* (being pointed out in Fig. 8) together with *Oshuru* (the heap of slag blocks located at about the centre of the crescent-shaped structure) and the tall *Omaba* (masked spirit) house (shown in Fig. 9) has been observed to have a perfect alignment with the East-West axis. In village assemblies, the *Eze* (traditional ruler of) Lejja sits on *eze-mkpume* facing East. The natives argue that the efficacy and potency of the monuments are propelled by energy from the rising Sun and it is this logic that informed their orientation.

Odegwoo (the tall village shrine, at the centre of the village Square, shown in Fig. 10) is shaped like a pyramid and must be worshiped by two people at a time, with the priests sitting towards the North and South sides of the shrine. *Odegwoo* is associated with fertility and the logic of the shrine being positioned at the centre of the square and its worshippers sitting at the north and south sides is linked with the process of procreation. The reasoning is that all reproductive organs are at the centre of the human body and that it takes two people of opposite sex to procreate. And the north-south orientation is based on the local philosophy that the 'ingredients' needed for procreation are very fragile and should not be exposed to the radiant heat from the Sun (on the East-West axis).

4. Conclusions

Preliminary investigations at the ancient stone circle in Ikom and the crescent shape of an ancient iron slag heap at Lejja, Nsukka seem to suggest some possible astronomical connections. We hope to be able to unravel, in near future, some mysteries of these two archaeological sites dating back to over 2000 BP.

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References

- Chami, F., Eze-Uzomaka P. I., Mangut, J., & Bakinde, C. 2011, *Studies in the African Past* 9, 63.
 Eze-Uzomaka, P. I. 2009, *Studies in the African Past* 7, 41.
 Eze-Uzomaka, P. I. 2010, *Studies in the African Past* 8, 178.