The Megaliths of Peninsular India and Their Possible Connection with Astronomy

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Abstract: This research sums up the status of understanding about the prehistoric megaliths of peninsular India and explores the possibility that some of them were used to observe celestial cycles. Though archaeologists believe that the Indian megaliths were the product of Iron Age cultures (1200 BC—500 BC), recent research suggests that megalith building could have begun as early as 2000 BC, in the Neolithic. Though the first Indian megalith was reported way back in 1823 and subsequently nearly 3000 megalithic sites have been recorded, there is no detailed understanding about the cultures that produced them especially of the knowledge systems possessed by their builders. A large fraction of the Indian megaliths are sepulchral or memorial but there exist certain megalith types that defy a complete understanding of their purpose. We have studied nearly 40 megalithic sites comprising of nearly every category of megalith types encountered in the subcontinent and show that at least one type-the stone alignment, makes a strong case that they incorporated deliberate sightlines to the rising and setting point of the Sun on the longest and shortest days. The possibility that at least some of these stone alignments were sepulchral adds another dimension to the enigma and we conclude by conjecturing of the importance of astronomy to the cultures that authored these monuments.

Keywords: archaeoastronomy, South Indian megaliths, menhirs, stone alignments

1 INTRODUCTION

In India megaliths are found in many regions, but the largest concentrations occur in southern India, with isolated pockets in other regions-notably Vidarbha, Jharkhand, Kumaon etc. (Note[1]) South Indian megaliths are attributed to the Iron Age in peninsular India (Notes [2],[3]), roughly 1500 BC onwards, though megalith construction continued into the early centuries of the Common Era. In fact, some tribes in the north eastern states

of India still practice megalithism, though it is not known whether this practice is culturally contiguous from prehistoric times. However, the chronology of Indian megaliths is still a matter far from settled (Note[4]) and recent work by Morrison proposes that megalith construction may have begun as early as in 2500 BC (Note[5]), placing it in the middle of the South Indian Neolithic. However, it cannot be denied that the practice of erecting megalithic monuments was widespread and gained popularity in the Iron Age (Note[6]).

2 MEGALITH TYPES IN INDIA

Megaliths in India assume a wide variety in form-stone circles being the most widespread form, with dolmens, dolmenoid cists, cist burials, menhirs and stone alignments also commonly found (Notes [1],[2]) as shown in Figure 1.

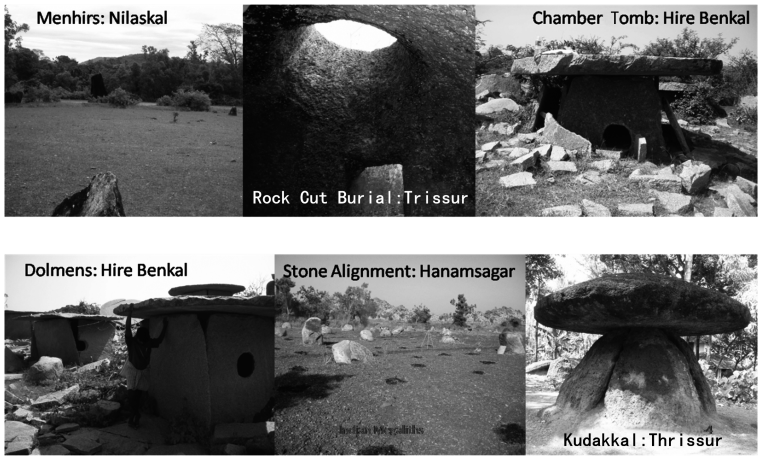

Figure 1 A variety of forms characterise Indian megaliths

Some forms are widespread, like the stone circle, while others-like the kudakkals of Kerala, are endemic to a region. Forms are dictated to some extent by the materials available in a region, but there is a unity in the underlying concepts throughout the range of distribution (Notes [7],[8]).

3 THE STONE ALIGNMENT

Stone alignments are arrangements of a large number of stones in certain patterns on the landscape, though arrangements with no discernible pattern are also known to occur. Some authors refer to these monuments as "avenue". We shall use the term "stone alignment" in this paper. The well known stone alignments of India are from northern Karnataka and Andhra Pradesh, mentioned by Allchin (1956). The most well-known among these are the alignments at Vibhitihalli and Hanamsagar in northern Karnataka. Vibhutihalli has a well-preserved alignment and Hanamsagar has the most extensive

alignment consisting of more than 2500 individual stones or menhirs. Sundara (1975) has likened the stone alignment at Hanamsagar to the famous alignments at Carnac, Brittany. This class of alignments consist of stones arranged in a grid or staggered grid, usually aligned to the cardinal directions. Our surveys at Vibhutihalli have shown that the alignments are quite loose, with only the "best fit" line through a line of boulders aligning up with the cardinal directions (Note[8]). The individual menhirs of the alignment at Vibhutihalli consist of undressed field boulders, most probably rolled down from a hill west of the site and manoeuvred into place (Notes [8],[9]). The layout of the stone alignment at Hanamsagar has been stated as a staggered grid (Notes [9]—[11]), however, our observations from a hill to the west of the alignment seems to show the rows of boulders curving like concentric arcs in the distance (Note[8]). It is suggested that this unprotected monument be surveyed at the earliest, especially in the face of ongoing disturbances at the site. A view of the alignment at Hanamsagar is shown in Figure 2.

Figure 2 A view of the alignment at Hanamsagar

4 THE STONE ALIGNMENTS OF SOUTHERN KARNATAKA

Stone alignments are not known in Southern Karnataka (Note[1]). However, "menhir sites"—sites with menhirs arranged in no discernible pattern have been reported (Notes[2],[12],[13]). The sites at Nilaskal, Byse, Hergal and Mumbaru have been mentioned by Sundara (Note [13]). They have been perceived as menhirs arranged with no apparent pattern. We have studied these sites and found that they consist of menhirs of various sizes arranged in a specific pattern. The individual menhirs are either quarried slabs or natural boulders of elongated cross section. Invariably, their long axes of cross-section have been aligned in a north-south direction. We have studied all the sites mentioned above and done detailed surveys at Nilaskal and Byse. During our explorations in the area, we have also discovered a hitherto unreported site of similar characteristics at Aaraga Gate (Note[14]). We shall discuss our findings at Nilaskal and Byse below.

5 THE MEGALITHIC SITE AT BYSE

Byse (13° 49′ 45″ N, 75° 00′ 43″ E) is a small village 15 km south of south-west of the town of Hosanagara in Southern Karnataka. The megalithic site is in a clearing oriented roughly north-south, near the village (Figure 3). 26 menhirs are standing or fallen, with

the stumps of 4 more observed recently. The menhirs are in the northern part of the clearing and consist of many natural boulders of elongated cross section and a few quarried slabs. The site is more or less flat with a clear view to the low hills that constitute the horizon all around. Sundara reports that a hurried excavation of a few cist burials in the neighbourhood yielded pottery and human bones (Note[13]), but no iron implements. We have found that the entire clearing is populated by several prehistoric cairn burials establishing the sepulchral nature of the site (Note[8]). There are also two tombs of the late medieval period sporting hero stones in the southern portion of the site suggesting that the sepulchral nature of the site was known to these people of the Keladi Nayaka dynasty who re-used the site.

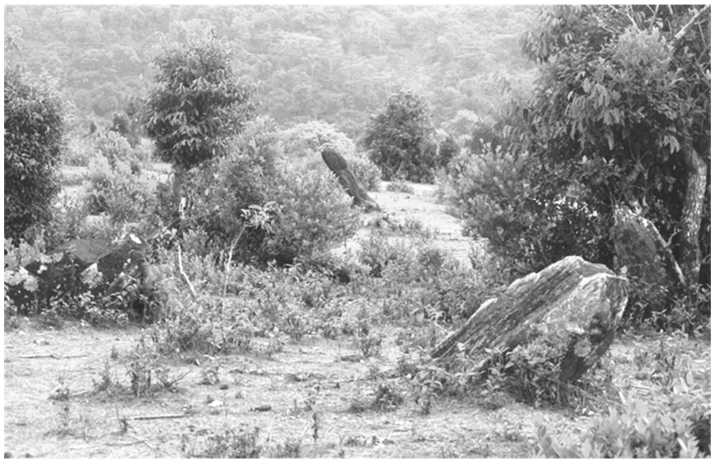

Figure 3 A view of the alignment at Byse

Individual menhirs of the alignment are oriented north south. We have observed several sightlines between pairs of menhirs of the alignment to the points of sunrise and sunset on the longest and shortest days of the year (summer and winter solstice). These sightlines seem deliberate (Figure 4). What is puzzling is the existence of multiple sightlines to the same event on the local horizon. We are currently attempting to scout the area thoroughly for any stumps that might be concealed below the ground or amongst vegetation and check if there are possibilities of the stones having served as a calendrical device.

6 THE MEGALITHIC SITE AT NILASKAL

Nilaskal (13° 46′ 36″ N, 75° 01′ 09″ E; lit. "standing stones" in Kannada) is a village located 24 km by road south west of Hosanagara Town. The megalithic site itself is 8 km away from the historic township of Nagara (Figure 5). Sundara noticed about 20 menhirs at the site (Note[3]), presuming many as missing, and also collected some sherds of Neolithic greyish-ware pottery from a freshly cut road trench that ran through the site. Sundara (1975) mentions that the menhirs of Nilaskal are "erected haphazardly unlike

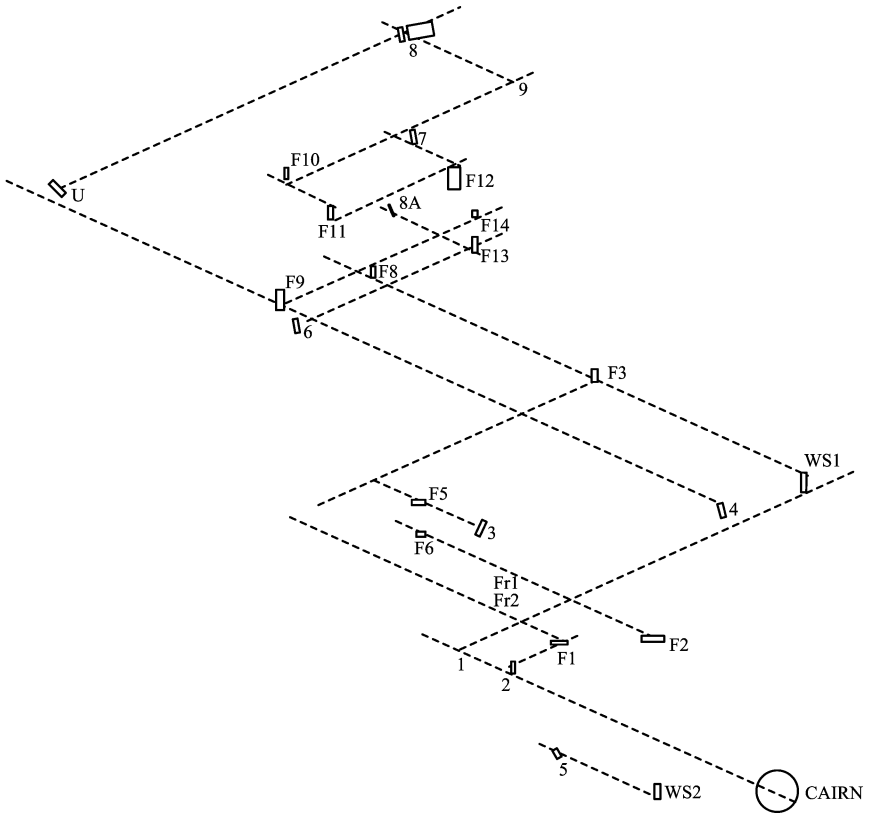

Figure 4 Sightlines to solstices at Byse

those of Vibhutihalli or north Karnataka". (Note[3]) Our investigations have confirmed the presence of at least 100 menhirs at the site, including the broken stumps and remnants of many. Several others seem to have been destroyed in the course of construction of a school and private residences in the northern and eastern part of the site. Nilaskal is a very impressive site, with two of the largest extant menhirs measuring 3 m at the base and nearly 6 m high. The menhirs are distributed on an east-facing slope, thus creating a raised horizon towards west. 26 menhirs are large and well-embedded to suggest that these are still in the original positions as erected.

We have noticed sightlines similar to those at Byse at this site, too (Note[7]). Individual menhirs are oriented north-south and pairs of menhirs frame the rising and setting Sun on both solstices. In particular the framing of the setting Sun is spectacular since the raised horizon to the west allows views which are free of the haze commonly found at the true horizon (Figure 6). There also seems to be intentional notches made on some menhirs to facilitate viewing of the horizon and other menhirs (Figures 7, 8).

Figure 5 The megalithic site at Nilaskal

Figure 6 The winter solstice sunset at Nilaskal

Figure 7 Notch on menhir possibly to facilitate viewing

Figure 8 Notch on menhir showing winter solstice sunset

We have surveyed Nilaskal extensively and have modelled all sightlines for visibility of foresight from backsight and conclude that the sightlines were intentionally set up (Figure 9). Currently, attempts are on to investigate the site thoroughly to determine the positions of missing stones from any fragments or empty sockets, so that a complete picture of the monument as it was when complete can be formed.

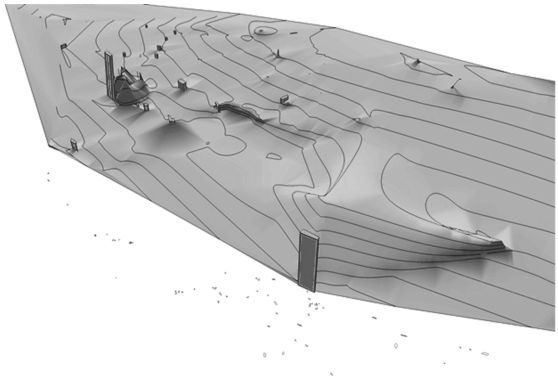

Figure 9 Menhirs on the terrain as surveyed and modelled

7 CONCLUSION

The megalithic sites at Byse and Nilaskal constitute a special subset among stone alignment megaliths in India. Unlike the well-known stone alignments of Northern Karnataka like Vibhutihalli etc., these consist of slabs or boulders with elongated cross section individually oriented north-south and intentionally set up so as to have multiple sightlines to the sunrise and sunset points on the local horizon. Nilaskal is the most evolved of the 5 sites studied and is taken as the type site of the "Nilaskal series" of stone alignment sites. Apart from the sightlines, the following features bolster the astronomical hypothesis at Nilaskal:

- The selection of a site with a gentle slope up to the western horizon where celestial

phenomena can be observed free of possible obstructions and the increased atmospheric extinction that mars observations close to the true horizon.

- The observation that there are no menhirs beyond the highest part of the slope suggests that the menhirs were intended to be viewed against the backdrop of the sky.
- The taller menhirs are located downhill to the east and the shorter ones are on the higher ground to the west.
- There are several menhirs with notches that permit viewing the horizon and other menhirs that seem to be intentional.

This hypothesis can be tested if other similar sites can be found at places with latitudes different enough that the swathe of sunrise and sunset points are markedly different than Nilaskal and Byse. If similar sightlines can be proven for such sites too, it can be concluded that the Sun indeed was the target of the megalith builders. One such site was noticed at Nagbhid in Maharashtra but was destroyed before detailed surveys could be undertaken. Excavations and cultural studies could ascertain the sepulchral or non-sepulchral nature of the sites and could help us understand the possible intention behind these sightlines.

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