

## RESEARCH PAPER

# Rock of Eternity: The Megalith of Pallikonda

Pradipta Banerjee\*

The south Indian megalithic age exhibits a wonderful range of sepulchral and non sepulchral stone monuments erected possibly within 1100 BC–300 AD. However, building megalithic graves fell into disuse post-1000 AD for yet unknown reasons. The state of Tamil Nadu, southern India, hosts a large number of such megalithic sites and one monument, in particular, erected in the small *panchayat* town of Pallikonda, demands special attention. The site harbors a large, non-sepulchral stone arrangement comprising a large capstone balanced on three boulders. The entire structure lies at the foot of the large Pallikonda hill and overlooks the fertile basin of the Palar river. The capstone is oriented in the north-south axis, with a double projection that points towards north-west. Spatial analysis of the site reveals several unique features of the megalith. The structure is positioned strategically, so that a straight line drawn from the tip of the hill and passing through the north-west projection of the cap stone points towards the confluence of rivers Palar and Koundanyanadi, and on further extrapolation, to the summer solstice sunset. It is positioned at a point separating the arable from the non-arable lands. The capstone of the structure is dotted with cupules, some of which form distinct sightlines. Most of the sightlines match with the Iron age rising and setting azimuths of the stars Vega, Capella, Cassiopeia and Deneb. The study concludes that unique characteristics of the Pallikonda megalith mark it as a geographical, territorial and most possibly, as an astronomical marker.

## Introduction

Megaliths denote a socio-religious and socio-economic mode of burying or commemorating the dead in a grave with or without lithic appendages and has been practiced by most ancient cultures. The presence of megaliths in a number of countries throughout the world has led to the conclusion that megalithic culture is a world tradition (Varghese 2011). The age of a megalithic site can be estimated by radiocarbon dating of ash, comparative studies of painted black and red ware found near the sites, inscribed shards, punch marked coins and presence of other datable historical monuments nearby. Based on such evidence it has been inferred that megalithism as a burial custom appeared in the 'age of iron' in south India and continued in the subsequent 'early historic' period (Sundara 1975). The duration of the south Indian Iron Age was placed between 1100 BC, when iron artifacts first appeared in the Hallur settlement, and the last centuries BC, when the early historic period emerged with its written sources (Morti 1994). It is in this time period that the maximum megaliths of south India were hoisted. However, post 1000 AD, the popularity of megalith erection ceased (Sudyka 2011).

Megaliths in India, in general, are divided into two classes: Sepulchral, which represents a proper burial

and Non-sepulchral, which is commemorative in nature (Moorti 1994).

The sepulchral megaliths are used to store the remains of the dead in a variety of forms and are sub-classified into primary and secondary burials. Primary burials contain a complete skeleton with some additional material as homage to the dead for the dead to use in afterlife. Secondary burials contain the remains of the dead, essentially the bones or ashes, which are buried in the ground and a stone structure built either on top or surrounding the point (Moorti 1994).

The majority of non-sepulchral megaliths can be sub-classified into dolmens, port-holed dolmens, menhirs, stone alignments and avenues. They constitute stones embedded in the ground in a straight line or in complex and elaborate alignments which can possibly be directed towards some specific direction. They may also serve as territorial markers in the pastoral lands, visible at their significant localities in the landscape, and focal points along pathways in order to protect resources of each community (Moorti 1994, Darsana 1998).

However, positioning a burial in either category merely on the basis of external appearance leads to discrepancy as remains of burial have been discovered below menhirs, which are generally thought to be non-sepulchral and some stone circles, known to be sepulchral, have been found to be devoid of any evidence of burial (Thakuria and Mohanty 2014).

The megalithic spatial zone of South India encompasses four regions: 1) Tamil Nadu, 2) the Malabar Coast, 3) Mysore and Kongu Nadu (the Coimbatore and Salem districts), and

\* Assistant Professor, Department of Basic and Applied Sciences, Dayananda Sagar University, Bangalore-560078, Karnataka, India  
roon17779@gmail.com

4) Telangana (and portions of Maharashtra). Tamil Nadu with an area of 130,058 km<sup>2</sup> exhibits 607 known megalithic sites, out of which 423 are burials, 13 are habitation and 27 are habitation-cum-burial. Majority of these sites have been discovered in Kanchipuram, Tiruvallur and Pudukottai (Rajan et al 2009).

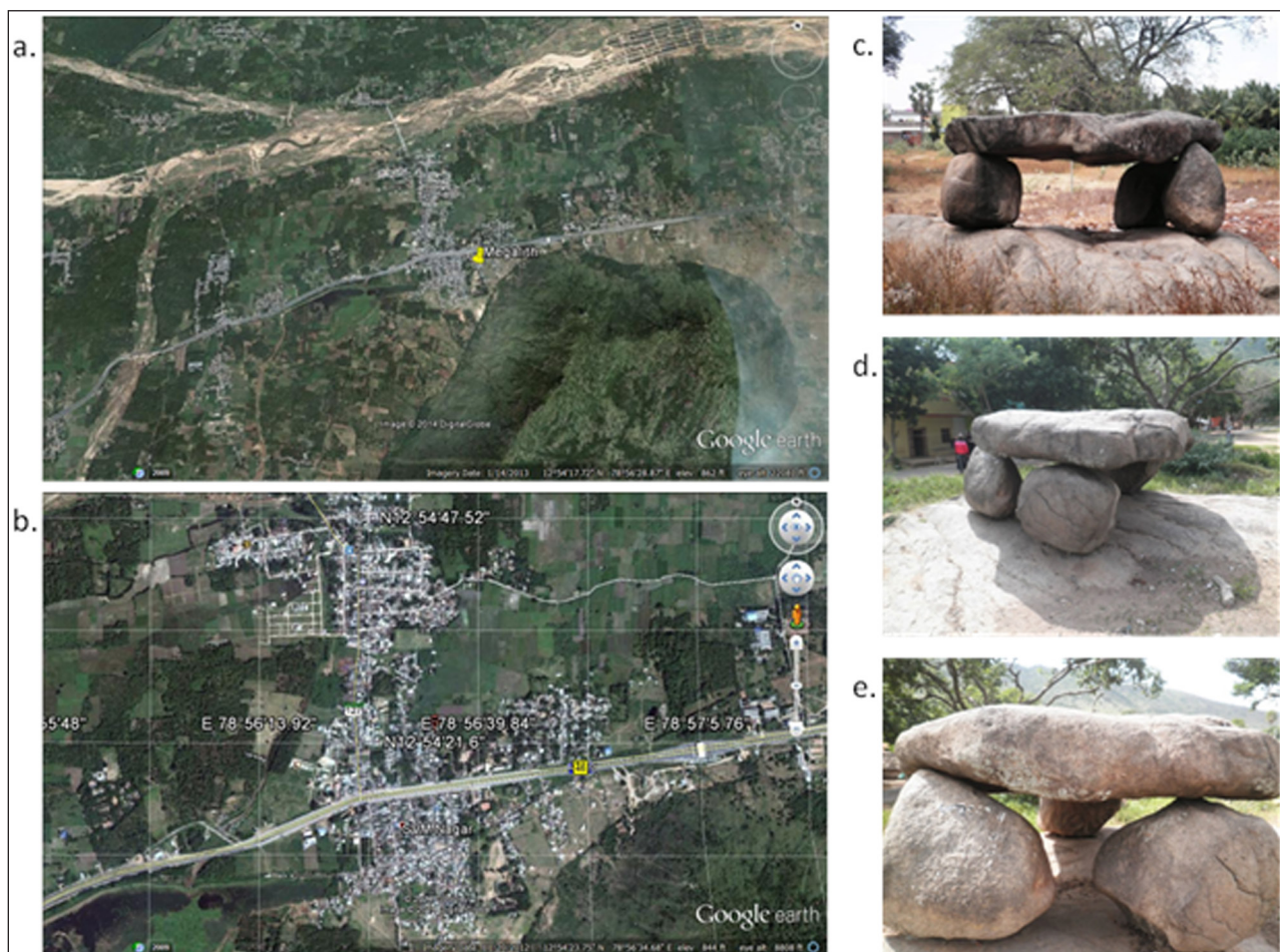
Dolmens are a type of megalith formed by stone slabs or boulders arranged according to a square or rectangular plan. The whole construction remains uncovered by the ground and is topped by a capstone or in some cases covered with a heap of cairn. Various types of burials such as sarcophagi or urns have been reported to be covered by dolmens (Rao 1996).

This article deals with the spatial analysis of a rare and unique megalithic site in Pallikonda, a seldom-heard small town in Tamil Nadu.

### The town of Pallikonda

Pallikonda is a *panchayat* town in Vellore district in the Indian state of Tamil Nadu. It lies 23 km west of Vellore city and is spread across both sides of the national highway NH46. As of 2001 census, Pallikonda registered a population of 20,678. The settlement areas lie between

the latitudes N12°54'47.52" and N12°53'55.68" and between the longitudes E78°56'13.92" and E78°57'5.76" as depicted in **Figure 1a**. Pallikonda experiences low rainfall during January to July, with the average rainfall increasing to 8 cm in June–August finally reaching 18–20 cm during October–November. The town, spread over an average area of 1.872 km<sup>2</sup> is capped by the Palar river in the north and a hill in the south. The silt-rich basin of Palar provides the means needed for agriculture, which is the primary occupation of the inhabitants. Its nearness to Vellore implies that a good majority of the people also travels to city for work. The Pallikonda hill is a twin peaked large hill with a maximum height of 650 m (western peak) and spread over a huge area of 14.7 km<sup>2</sup>. The megalithic site lies in the southern part of the town, about 172m south of NH46 at the latitude N12°54'11.14" and longitude E78°56'41.94" (**Figure 1b**). It comprises of a rough circular capstone balanced on three roundish boulders, which in turn stand upright on a large bed rock (**Figure 1c, d & e**). A passing mention of the presence of a large megalith in this town has been made by Colonel Concreve in the Madras Journal of Literature and Science published in 1845 (Concreve 1845). The Pallikonda megalith also finds



**Figure 1:** **a.** Pallikonda is a panchayat town in Vellore district at the banks of the Palar river. The position of the megalith is marked by the pin. The image is from Google Earth. **b.** The town of Pallikonda, spread out on both sides of National Highway 46. Image courtesy of Google Earth. **c.** The megalith seen from east. It lies along a north-south axis. **d.** The megalith seen from north-west. The bi-lobed projection juts out at ~47° to the north-south axis. **e.** The megalith seen from north with the Pallikonda hill is visible in the background.

a mention in the book 'Rude stone Monuments in all countries; their age and uses' (Fergusson 1872). However, a detailed report with photographs and an in-depth analysis of this amazing monument is lacking.

### Spatial analysis of the site

Spatial analysis includes identifying the architectural grammar of a megalithic site. By combining the information obtained through detailed study of the landscape, the monument orientation with respect to its surroundings and general visibility, conclusions have been drawn about the possible use and significance of the megalith.

### Landscape and environment

This includes defining the landscape on which the monument stands, its orientation *vis-a-vis* other prominent landscape features like hills and water-bodies in its vicinity and the soil type of the region. The monument lies at the base of Pallikonda hill, on a slightly raised stone base, overlooking the Palar basin. The geography of the area is unique. As seen in **Figure 1a & b**, north-west of the site, the Palar river breaks into two tributaries, Agaram and Kondanyanadi. The Palar-Kondanyanadi confluence occurs at a position specified by latitude 12°55'5.48"N and 12°55'1.40"N and longitude 78°55'55.66"E and 78°55'38.72"E. The Palar-Agaram confluence occurs at a site marked by the latitudes 12°54'34.96"N and 12°54'34.95"N, and the longitudes 78°54'55.99"E and 78°55'8.69"E.

The location of the site is about 1.8 km south of the Palar river and about 249 m north-west from the present Pallikonda hill boundary. The monument lies within the fringes of the village, on the tip of a large field adjacent to a North-South road. The NH46 makes a 10° angle to the latitude N12°54' and so its distance varies with where the measurement is carried out. The distance of 172 m is calculated with respect to a point on NH46 directly north of the site (N12°54'17.32"). The Palar-Kondanyanadi and the Palar-Agaram confluences lie at a distance of 2.3 km and 3.2 km from the site respectively.

### Megalith type and structure

The rocks used are of the granitite-gneiss type, the most common type of rock used in Tamil Nadu. The capstone is circular with projections pointing towards the north and south, two minor projections pointing east and west with a double projection arm pointing north-west. The capstone is 365.7 cm in diameter, 76.2 cm in thickness and its width varies with the position measured. It is riddled with cupules of various diameters and the cupules are concentrated mostly towards the eastern and the southern sides. The capstone is supported by three large stones, captioned D1, D2 and D3. D1 is circular in shape with an average 235.7 cm diameter and lies at the foot of the capstone. D2 is triangular in shape with a peak at 252 cm. However, the highest point of D2 is placed in a crevice of the capstone, thereby maintaining stability. D3 is mostly square in shape, with an average length of 245.3 cm. The entire set up has been constructed on a large bed rock having a visible average length and width of 3 and 3.8 m respectively.

### Monument orientation in space

The site lies at a unique position where the Palar basin ends and the land contour starts climbing up towards the peak of the Pallikonda Hill (**Figure 2a**). As seen in **Figure 2b**, the "head" of the capstone points exactly northwards and the north-west double projection of the capstone points towards the Palar-Kondanyanadi confluence. Moreover, the capstone orientation also reflects an even larger symmetry; an imaginary line drawn from the tip of the hill through the site following the north-west arm points to the site of Palar-Kondanyanadi confluence. The **Figure 2c** depicts this unusual non-planar sightline. If one stands just next to the north-west projection of the capstone, then the person's back will match with the hilltop and the person's front will face towards the confluence. Such precision hardly seems coincidental.

However, the symmetry does not stop here. The extended line meets the horizon at ~50°W, which lies 19° away from the setting azimuth of summer solstice sun, 69°W (**Figure 3a & b**). The orientation is possibly intentional. Pallikonda experiences rainfall only after the summer solstice. The average precipitation keeps on increasing from July to September and it peaks in the months of October–November as the sun sets in a south-west direction. The approach of the setting azimuth of the summer solstice sun towards the line joining the peak, megalith north-west projection, and the confluence of rivers possibly worked as a celestial marker denoting the end of dry season.

### Visibility

#### Viewshed Analysis

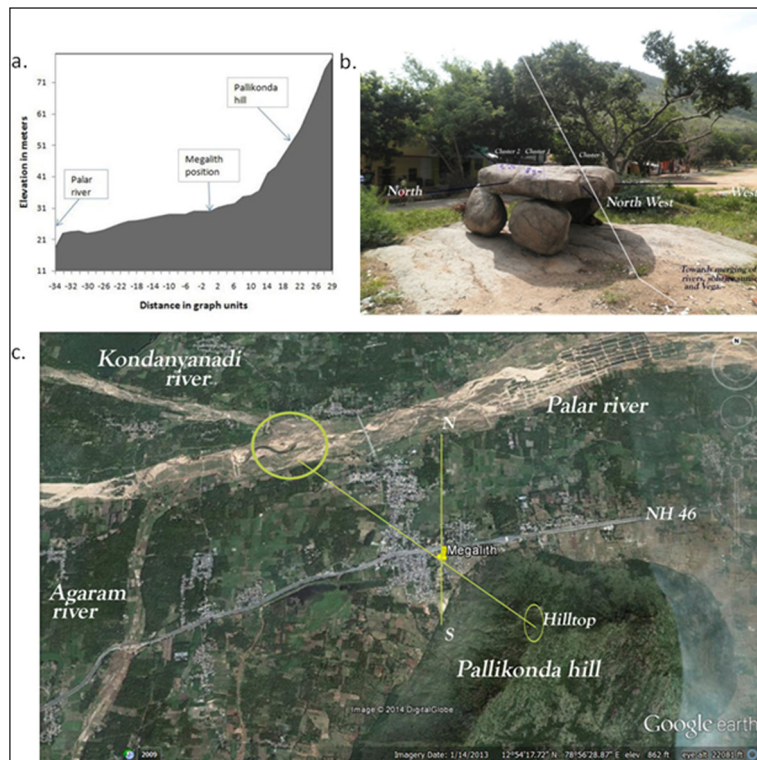
Viewshed implies a 360° view of the landscape with the site as the center. The viewshed has been recorded on a graph paper with the site as the center and supplemented with notes based on visual observations and cross references using Google Earth. The location of the site inside the village implies that at present, visibility is quite low. Standing on the bedrock, facing south, one gets an excellent view of the Pallikonda hill and the dirt route to climb the top of the western peak (**Figure 4a**). The western view is blocked first by the houses, followed by the gradually rising slope of the hill. Modern buildings and vegetation disrupt the northern view. However, it would be safe to assume that if the houses and the vegetation were neglected, one would be able to see the NH46 and the agricultural ground of Palar basin.

#### Reverse viewshed

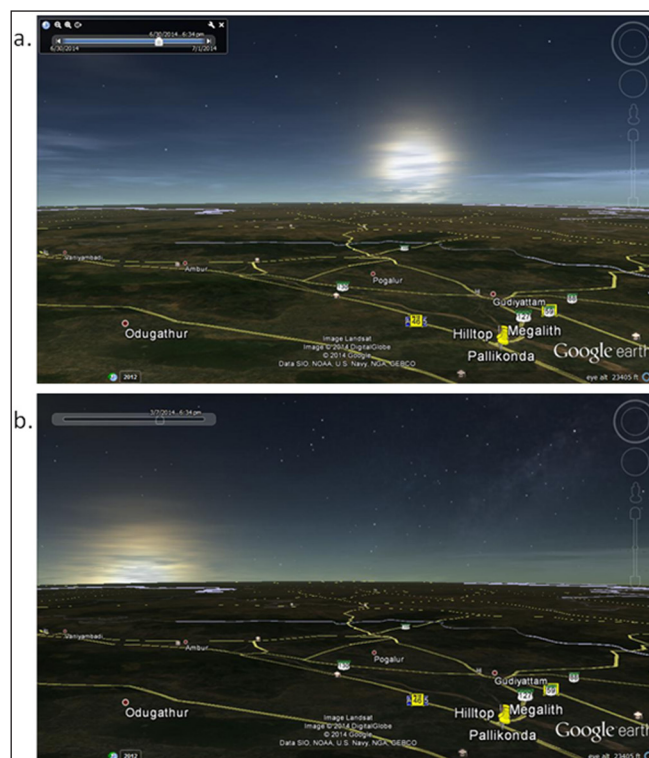
The position of a monument in the landscape is determined both by what it does or does not overlook along with the extent of visibility of the monument. The reverse viewshed was recorded by walking in the four cardinal directions with the site as center and making observations at every ten meters, or when a significant feature was encountered. This was done until the monument went out of visibility or till when further access to the landscape was made impossible due to reasons cited above.

The Pallikonda monument currently rests on a location with less visibility. At ground level, the monument can





**Figure 2:** a. Elevation of the ground from Palar basin to the base of hill following the longitude E78°57'. 1 unit in the graph equals 46 m. The position of the megalith is at 0, 30.8 coordinates. Data obtained from Geological Society of India, Bangalore, Karnataka. b. Alignment of the Pallikonda hill top, seen through the vegetation, with the north-western double projection, which lies at ~47° from the north-south axis. c. An imaginary line passing through the hill top and the megalith north-western arm points to the Palar-Kondanyanadi confluence. Picture courtesy of Google Earth.



**Figure 3:** a. Sun set after June solstice. The line joining the hilltop, megalith arm and the Palar-Kondanyanadi confluence can be extended into the horizon at an azimuth ~20° away from summer solstice sun set. Nearness of the setting sun to the extended line possibly indicates the day of summer solstice and the end of dry season. b. Sun set after winter solstice. The setting sun is 68° (115-47°) away from the extended line. Both pictures courtesy of Google Earth. The position of the megalith and the hilltop are designated through the pins.

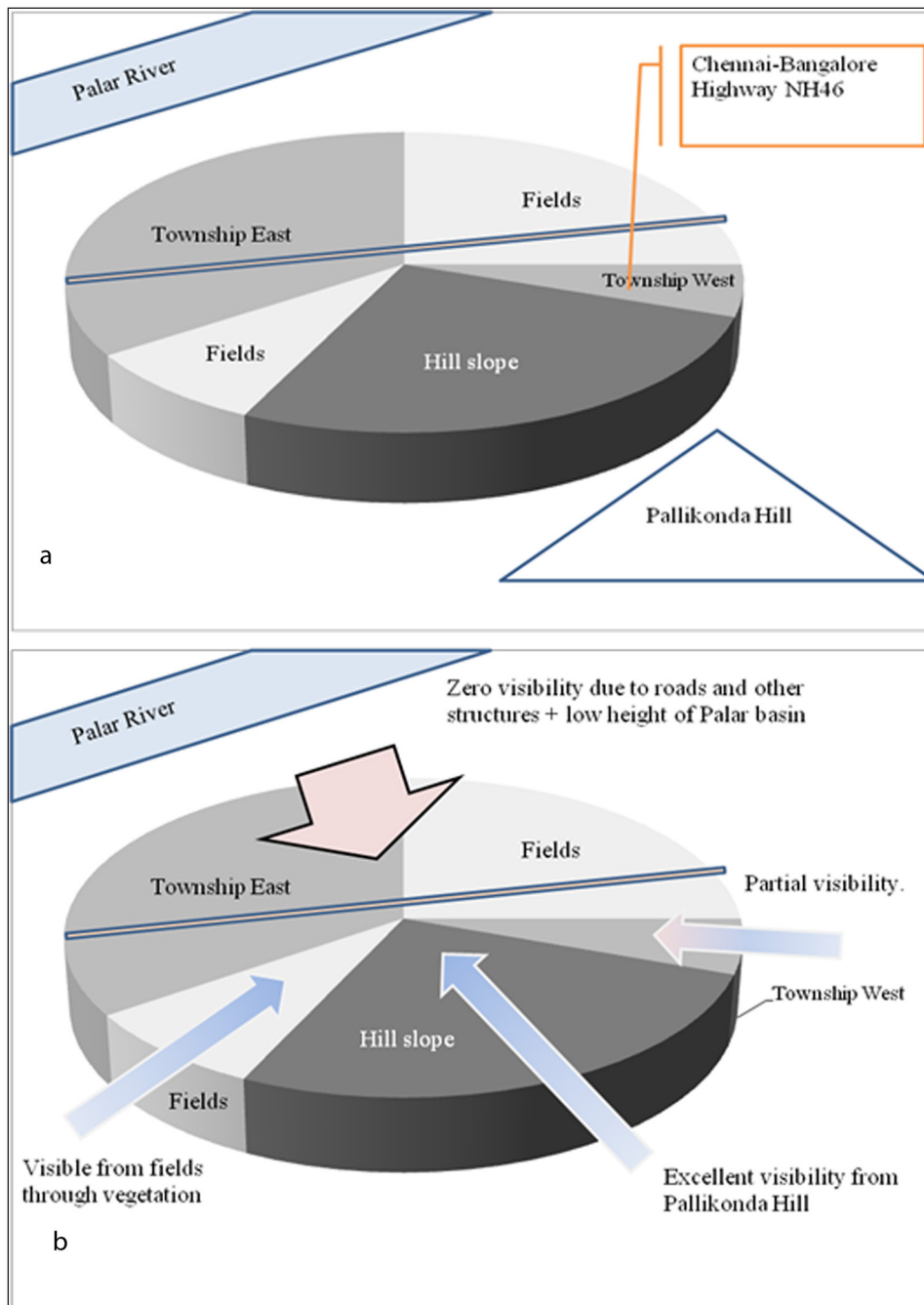
be viewed from 30–45 m away under present conditions (except in the east due to houses). However, overall visibility of the monument depends on the slope of the land in all directions. The terrain mapping displays a gradual sloping of the land upwards from the Palar river bed towards the site. The relatively flat rise of the land allows a lower visibility range than would be the case were the monuments located on any of the neighboring hilltops (**Figure 4b**).

Following the same longitude, the hill starts sloping drastically upwards after 500 m. However, in a parallel longitude in the east, the hill starts sloping upwards even before the site's location and visibility was found to be excellent only from that vantage point.

**Significance of location**

The location of a settlement is generally conditioned by the availability of resources, especially water, minerals and arable land. A settlement reflects, on a larger scale, the division of resources and on a smaller scale, the relationship of the megalith-erectors to the geographical features of the area.<sup>3</sup> In general, population density of megalithic sites remain maximum at two types of locations, one, near river basin and another near the foot of a hill or hillock.

The majority of settlement sites that have been found on the banks of major rivers or on their major tributaries lie within a distance of 20 km from the water line. The maximum concentration of sites in river valleys



**Figure 4:** a. 360° viewshed of the site. Visibility is excellent till 35 m in the west. The east view is blocked by houses and vegetation. b. Reverse viewshed. Visibility is excellent from south.

and basins has been reported in areas with black or red sandy-loamy soil. The distribution pattern of these sites also coincides with high rainfall zones where the average annual precipitation is 60–150 cm. Both the factors point to a common conclusion that megalith builders knew farming and were constructing the megaliths near their farming lands. In this respect, the megaliths were possibly used as arable soil markers (Settar and Korisettar 2002). Alternately, megalithic sites have also been found on the slopes of the hills or on elevated grounds that are not suitable for irrigation. Unproductive foothills, rocky and gravelly lands were used for the location of their graves and the plains were reserved for agricultural purposes. These graves could also serve as directional markers and were most possibly, religious in nature (Rajan and Karai 2000). Admirably, the Pallikonda site matches both location preferences. It lies at an average distance of 2 km from the Palar river and also rests at the foot of a large hill. In effect, the megalith rests on the thin imaginary line dividing the Palar agricultural basin from the barren rocky, steeply rising Pallinkonda hill.

The name of the town by itself does not provide any clue to the presence of megaliths. The word pallikonda is Tamil in origin, indicating a “palli” – village or school near a “konda” – mountain. However, the word by itself is associated with the reclining form of Vishnu, the preserver of the Hindu trinity, in the form of “Pallikonda Perumal”. This is due to the similarity of the words “konda” and the Sanskrit word, “kundli”, which indicates the coiled snake upon which Vishnu reclines. The etiologies of the words are lost in antiquity and are difficult to trace. True to its name, the town hosts a 12<sup>th</sup> century temple, in which the residing God, Vishnu, is called as “Pallikonda Perumal”.

To summarize, the site is difficult to date, due to the absence of nearby megalithic sites, inscriptions or any other artifacts. Moreover, the presence of a growing village possibly rules out the prospect of digging in nearby areas.

### Significance of the cupules

Cupules are prevalent throughout megalithic sites of the world, spanning a large time period from lower Paleolithic to the 20<sup>th</sup> century. Their functions may range from being purely decorative in nature to ritualistic (Bednarik 2008). There have been reports that some, if not all of these cupules can possibly serve as some kind of celestial markers. Humanity has always been fascinated with cyclical movement of the sun against the background of extremely slow moving stars. It would not be unusual for the ancients to make an attempt to record astronomical observations by etching them onto a permanent medium (Rao 1993, Vahia and Yadav 2011).

The cupules found on the capstone of the Pallikonda megalith exhibit a variety of sizes and depths. The diameter of the cupules ranges from 5 to 0.6 cm with shallow to deeply carved cupules. The marks can be grouped into several clusters; cluster 1 and 2 on the northern side, cluster 3 spread over the eastern half, cluster 4 near the southern end and cluster 5 concentrated on the western half. The

cupules are arranged in a variety of squares and triangles and have been carved such that some natural crevices also fall in line with the direction they point. Among the six clusters present, clusters 1, 2 and 3 demand special attention because of the interesting pattern they create on stone.

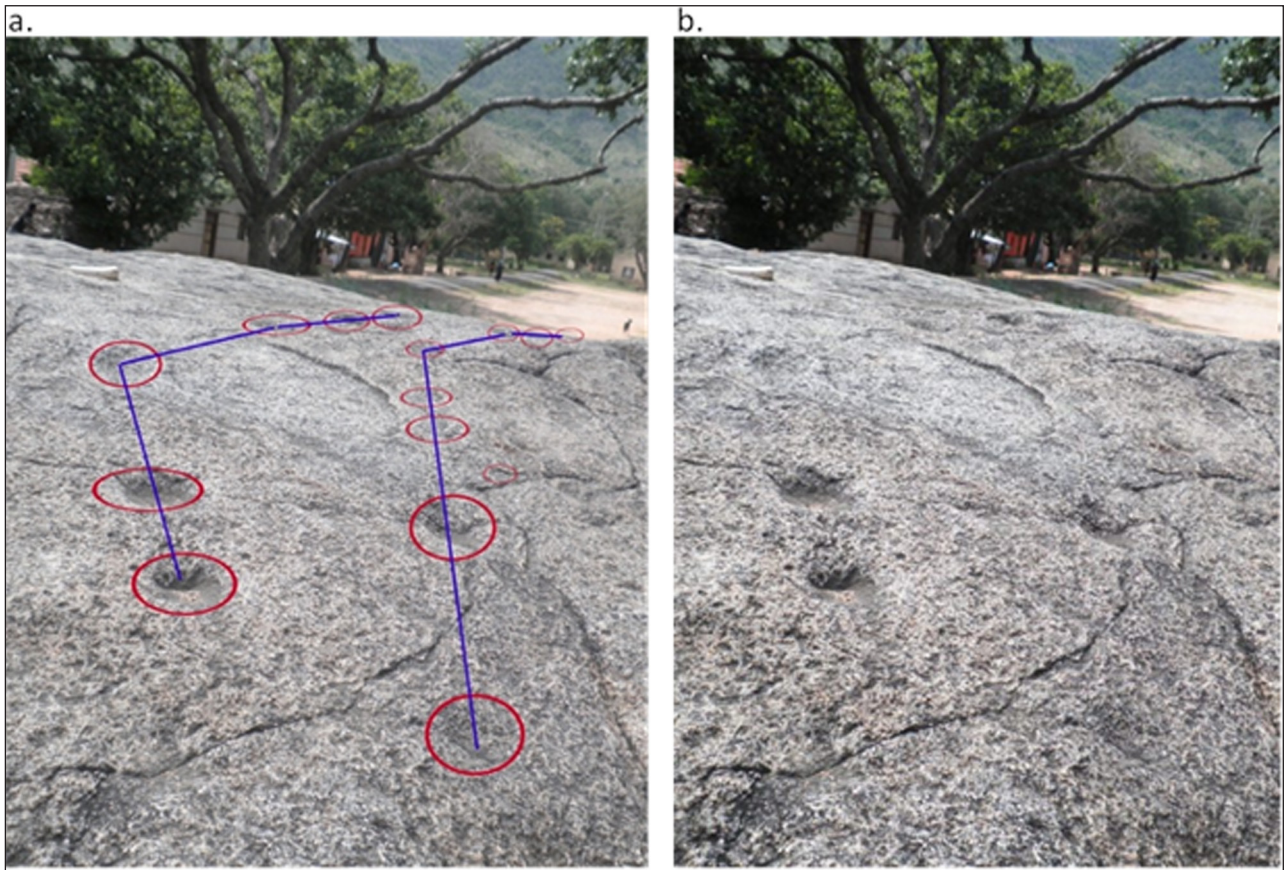
Clusters 1 and 2 lay on opposing sides of the north south axis. Cluster 1 contains 14 recognizable cupules which are arranged in two arrow shaped formats with the sharp ends pointing north. The angle made by the two lines was measured to be 235° (**Figure 5a & b**). Cluster 2 contains 7 recognizable cupules arranged in a rectangular fashion (**Figure 6**). A line joining the cupules A1, A2 and A3 can be extended forward and backward to meet two natural crevices, designated A0' and A4'. Similarly, the line joining cupules C1, C2 and C3 can be extended backwards to join C4', another natural crevice. Both A0'A4' and C1C4' are parallel to each other and point towards northwest, approximately towards 47°W, which means they are parallel to the north-west projection of the capstone (~47°W).

The western cluster has 22 cupules arranged in a rectangular fashion with 5 incompletely fashioned cupules at 17 cm away from the rectangle (**Figure 7**). The cupules G, F, N & L make up a line GL which points exactly to the north. In a similar fashion, the cupules C, T, I & S depict a straight line termed CS which lies perpendicular to the GL line and depict an east west axis. The cupules A, B, C, D, E & F lie in a straight line and makes a 102° angle with the line FR connecting the cupules F and R. The line GL divides this right angle into two halves of 51° each. The line LH and DB also meet at 102° and an imaginary line drawn through cupules T and K2 dissect this into 51°. The lines AF, LH (cupules L, K, J & H) and MQ (cupules M, L, N, O, P & Q) are roughly parallel to each other and point towards 51–52°W. The parallel lines AW (cupules A, L, M & W), CV (cupules C, J, O, U & V), DP2 (D, P, P1, P2) and FR also point towards 51°E.

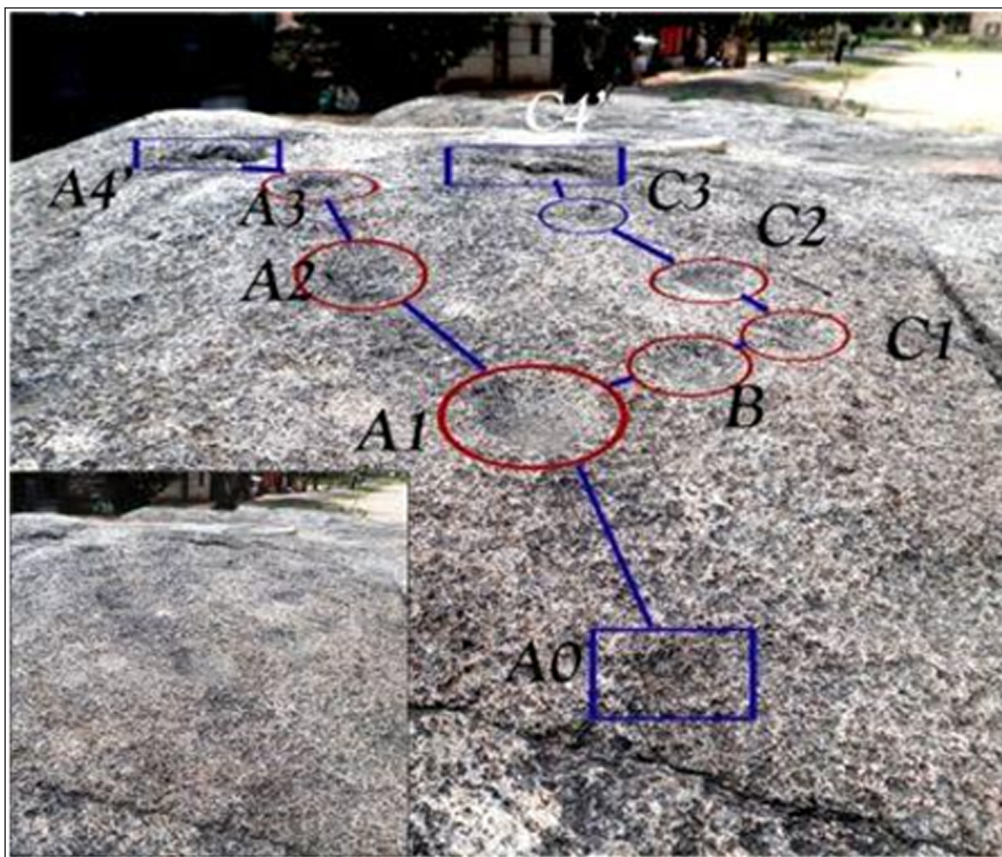
The eastern cluster comprises of 61 cupules arranged in 11 partially parallel lines lying in an east-west direction. The southern cluster cupules are distinctively smaller than others and are arranged in a triangular layout. Because of the huge density of points, it is difficult to calculate whether they create sightlines to some celestial incident or they have a random arrangement.

Even if one considers the fact that these cupules do indeed point to some celestial object, it is difficult to predict for certain as to what the objects could be since the megalith cannot be dated and the stars change their rising and setting azimuths. The only characteristic common to most of the connecting lines is that they point towards the azimuths 48–54°E and W. An approximate identity of the celestial objects at those azimuths can be made based on star positions during the Iron Age of south India, which ranges from 1100 BC–300 AD. The constellation Cassiopeia display a rising and setting azimuth of 44–47°E and W around the time period 500 BC to AD 10. Deneb and Capella appears at azimuths 49–52° in between 1500 BC to AD 1000. Vega rises and sets at 51–53° azimuths consistently for a large period of 1000 BC to AD 1500. However,



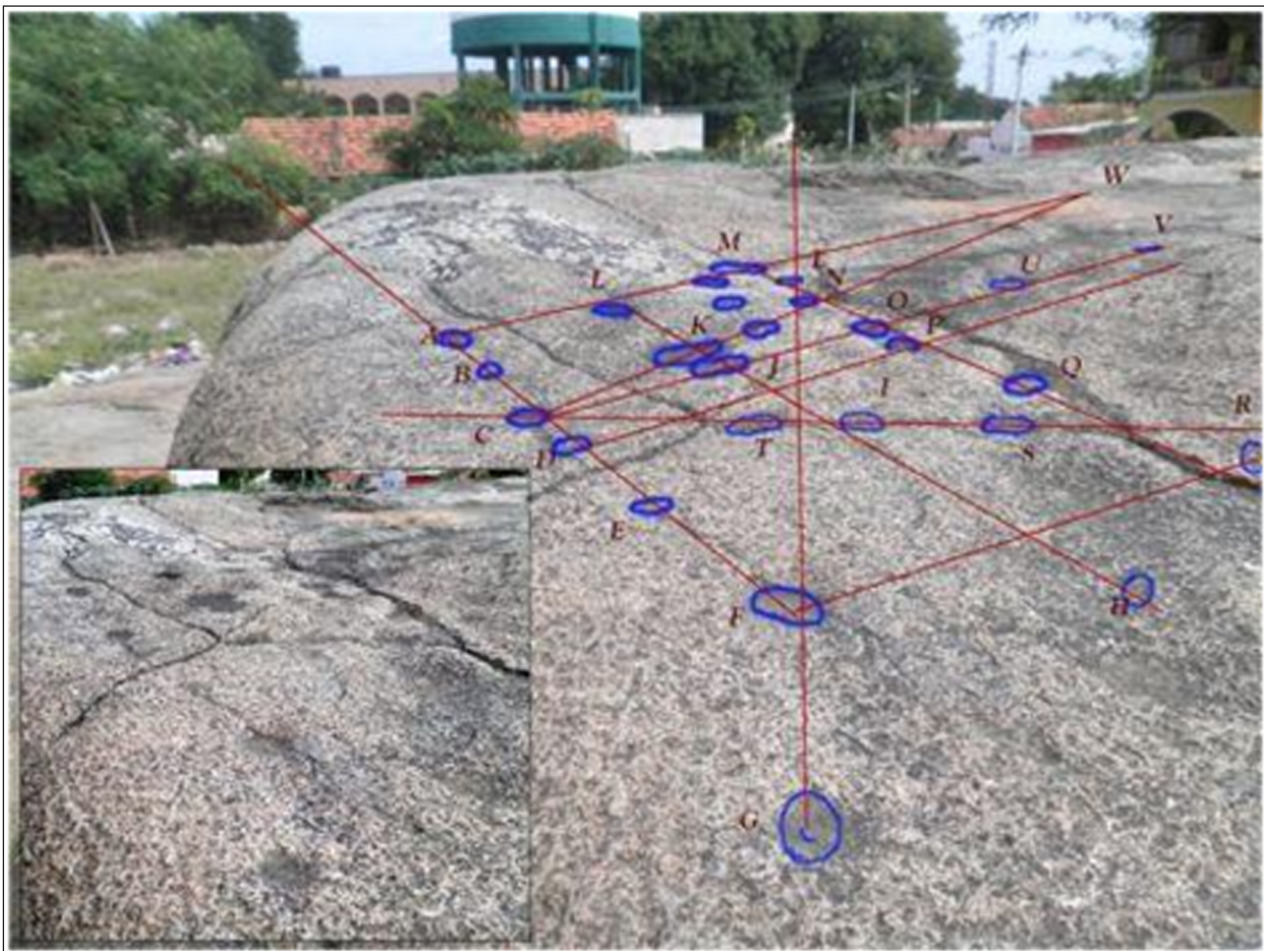


**Figure 5:** a. Cluster one with cupules outlined with ellipses. b. Cluster one without any additional notations.



**Figure 6:** Cluster two, second of the northern clusters, with cupules outlined with ellipses and natural crevices outlined with squares. Inset: cluster 2 without any additional notations.





**Figure 7:** Cluster three or the western cluster with cupules outlined with ellipses. Inset: cluster 3 without any additional notations.

the exact star can be pinpointed only after the age of the megalith and the cupules has been determined accurately. A matter of similar interest that also needs to be investigated is the reason for such astronomical observations to be permanently recorded.

Orientation of megalithic structures towards celestial objects seems to be a world-wide phenomenon. The megaliths at Brahmagiri, Karnataka, India are oriented towards the stars Vega, Capella and  $\beta$ -UMi along with equinoctial and solstice sun movements (Rao 1992). Stone rows at Murardoddi, Andhra Pradesh, India are distinctly aligned to sunrises and sunsets during both the equinoxes and the solstices (Rao et al 2011). Liritzis and Castro (2013) report that the Apollo temple at Delphi is oriented to celestial motions of the constellations Lyra (Vega) and Cygnus (Deneb) with regards to sunrise and sunset. Malville *et al.* (2008) reports a stone circle at Nabta Playa, Egypt with multiple sightlines pointing towards the north, the June solstice sunrise and towards bright stars in the fifth millennium sky.

Out of all the stars that can be viewed in the night sky, why this fascination with Vega, Deneb, and Capella? The answer may lie in the timing of solar equinoxes and solstices during the megalithic age and the astral positions during these celestial incidents.

It has to be remembered that due to precision of equinoxes, star positions keep on changing in a large

26000 year cycle. However, since the Pallikonda megalith would have been erected in the Iron age of south India, star positions and the azimuth angles during that era can be calculated. During the era spanning 500 BC to 1500 AD, the following consistent patterns are noticeable: (i) Vega display a 0 hour angle at the spring equinox sun rise and autumn equinox sun set. At the summer solstice, Vega sets at  $50^{\circ}$ W at dawn and rises at  $52^{\circ}$ E just after the sun set. During winter solstice, it appears at  $50^{\circ}$ E just before dawn. (ii) Cassiopeia sets at  $53^{\circ}$ W azimuth after the autumn equinox sun set and reappears in east at  $53^{\circ}$ E azimuth just before sunrise. It appears in the north at 0–1h angle at winter solstice sun set ( $345^{\circ}$ – $350^{\circ}$  during 500–1500 BC) and June solstice sun rise. (iii) Capella appears in  $42^{\circ}$ W just after spring equinoctial sun set and in the eastern sky at  $54^{\circ}$ E just before summer solstice sunrise. It rises at  $53^{\circ}$ E at autumn equinox sun set and is at  $51^{\circ}$ W during the sun rise. It rises at northeast after the winter solstice sun set. It is to be noted that the star azimuths and hour angles discussed remain roughly the same during the megalithic period. So it is quite probable that the cupule sightlines pointing to these stars could have been used for accurate determination of solstice and equinox and hence, the month and season.

The stars could also have been used as indicators for the starting of rainy season. Pallikonda, like most of south



India, experiences rainfall mostly during September to December, which coincides with the movement Vega from an hour angle of 18h (~53°E) during June sun set to 5h (~54°W) during December sun set, i.e., rising from the north-eastern skies in summer solstice to rising at the north-western skies during winter solstice. However, it would be prudent not to make any such decision without making a detailed study of the rainfall pattern and the ground water recharging system occurring in the past two thousand years.

To summarize, even though it is difficult to identify the exact role of the Pallikonda cupules, it seems highly probable that at least some of them had been used as devices to predict seasonal changes.

### Significance of the monument

The Pallikonda megalith rests on a large bed rock, implicating its non-sepulchral nature. The placement also appears to be strategic. It rests on the north-west of the Pallikonda hill, with its projections pointed exactly in a north-south fashion and its north-western arm pointing towards the confluence of rivers. In this respect, it produces a miniature and crude but effective representation of the neighboring geography. It rests at a crucial point, at the base of a hill, overlooking an agricultural river basin, thus separating the arid and non-arid lands. And last, but not the least, the cupules engraved on the capstone possibly point to the rising and setting of various celestial objects. All things considered, the monument seems to serve multiple purposes: (i) as a geographical marker, (ii) as a territorial marker and (iii) as an astronomical marker.

However, this magnificent monument is under serious threat. The growing population and urbanization of villages mean an increasing demand for land. Because the monument lies unprotected very near to that of a major highway, there is always the looming danger that it would be removed for construction purposes. The author is of the opinion that the numerous megalithic sites prevalent in the villages and jungles of India scream of a forgotten and neglected past that should be thoroughly studied and carefully preserved.

### Competing Interests

The author declares that they have no competing interests.

### Acknowledgement

The author wishes to thank the residents of Pallikonda for the help they generously provided during work.

### References

- Bednarik, R G** 2008 Cupules. *Rock Art Research*, 25(1): 61–100.
- Congreve, H** 1845 Some observations on a remarkable cromlech near Puulicondah in the Carnatic. In: *The Madras Journal of Literature and Science*, pp. 47–51.
- Darsana, S B** 1998 Megaliths of the Upper Palar Basin, Tamilnadu – a New Perspective. *Man and Environment*, 23(2): 51–64.
- Fergusson, J** 1872 *Rude stone monuments in all countries; their age and uses*. London, J. Murray. Available at: <http://archive.org/details/rudestonemonumen00ferg>.
- Liritzis, I and Castro, B** 2013 Delphi and Cosmivision: Apollo's Absence At the Land of the Hyperboreans and the Time for Consulting the Oracle. *Journal of Astronomical History and Heritage*, 16: 184–206.
- Malville, J M, Schild, R, Wendorf, F and Brenner, R** 2008 Astronomy of Nabta Playa. In: Holbrook, J C, Urama, J O and Medupe, R T (Eds.) *African Cultural Astronomy, Astrophysics and Space Science Proceedings*. Springer Netherlands, pp. 131–143. DOI: [http://dx.doi.org/10.1007/978-1-4020-6639-9\\_11](http://dx.doi.org/10.1007/978-1-4020-6639-9_11)
- Mohanty, R K and Thakuria, T** 2014 History of Ancient India: Vol-III: The Texts, Political History and Administration Till C. 200 B.C. In: Chakrabarti, D and Lal, M (Eds.). Aryan Publisher and Vivekananda Center, New Delhi, pp. 333–378.
- Moorti, U S** 1994 *Megalithic Culture of South India: Socioeconomic Perspectives*. Ganga Kaveri Publishing House.
- Rajan, K and Karai G** 2000 *Archaeology of Palar Basin*. Tamil University.
- Rajan, K, Karai, G, Kumar, V P Y and Selvakumar, S** 2009 *Catalogue of Archaeological Sites in Tamil Nadu*. Heritage India Trust.
- Rao, K P** 1996 *Deccan Megaliths*. Delhi: Sandeep Prakashan.
- Rao, N K** 1993 Astronomical orientations of the megalithic stone circles of Brahmagiri. *Bulletin of Astronomical Society of India*, 21: 67–77.
- Rao, N K, Thakur, P and Mallinathpur, Y** 2011 The Astronomical Significance of 'Nilurallu', The Megalithic Stone Alignment at Muradoddiin Andhra Pradesh, India. *Journal of Astronomical History and Heritage*, 14(3): 211–220.
- Settar, S and Korisettar, R** (eds.) 2002 *Indian Archaeology In Retrospect Volume I Prehistory Archaeology of South Asia*. 1st ed. Daryaganj, New Delhi 110002: Manohar Publishers and Distributors.
- Sudyka, J** 2011 The 'Megalithic' Iron Age Culture in South India – Some General Remarks. *Analecta Archaeologica Ressoviensia*, 5: 359–401.
- Sundara, A** 1975 The early chamber tombs of South India: a study of the iron age megalithic monuments of north Karnataka. University Publishers (India).
- Vahia, M N and Yadav, N** 2011 The Origin and Growth of Astronomy, as Viewed from an Indian Context, Astrophysics and Space Science Proceedings. Springer, New York.
- Varghese, R A** 2011 *Interpreting the Ritual Complex of Nasranikunn A Study of a Megalithic Complex in Central Kerala, South India*. Instituto Politécnico de Tomar – Universidade de Trás-os-Montes e Alto Douro.

**How to cite this article:** Banerjee, P 2016 Rock of Eternity: The Megalith of Pallikonda. *Ancient Asia*, 7: 4, pp.1–10, DOI: <http://dx.doi.org/10.5334/aa.106>

**Published:** 15 April 2016

**Copyright:** © 2016 The Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC-BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. See <http://creativecommons.org/licenses/by/4.0/>.



*Ancient Asia* is a peer-reviewed open access journal published by Ubiquity Press.

**OPEN ACCESS** 