

Heraion: Megalithic Origins of Greek Temple Design

24 September 2016 11:20



Roman copy of a Greek 5th century Hera of the "Barberini Hera" type, from the Museo Chiaramonti From <https://en.wikipedia.org/wiki/Hera>

by Richard D Heath
www.richardheath.info
© 2016 Richard Heath

This is a draft pdf of an article first posted on NumberSciences.org in the hope of attracting discussion on Academia.org. Please message me if you wish to be included in the discussion board, which boards are not yet readable publically.

As Greece began to develop the notion of a Polis (or people), temple design went from using small dedicated buildings to creating, in the first Heraion, on Samos, the first Hecatompedos or hundred footer, whose walled room's only entrance faced east [Herwit 1989]. Its axis was 14 degrees south of east, an angle familiar as that of the diagonal of a four-square rectangle, whose diagonal stands in relation to the four-square base as being the solar year relative to the lunar year. At the western end we believe there stood a statue of Hera, wife of Zeus, after whom the monument is named. Herwit's excellent *The Art and Culture of Early Greece 1100-480 B.C.* shows the monument's early evolution with a plan indicating the most likely metrology for the monument was of 100 common Egyptian feet of 48/49 feet (0.9788) which gives 36 megalithic yards of 2.72 feet along the axis. The diagonal is then 37.1 megalithic yards long so that these two lengths show exactly the sort of count found at the [Le Manio Quadrilateral in southern Brittany](#). This is summarised in the diagram below:



WIKIPEDIA CC Attribution: Tomisti

An interpretation by Richard Heath of
for www.NumberSciences.org
September 2016

The Heraion of Samos

37°40'19"N 26°53'08"E

Late 8th Century BC

COUNTING LUNAR
MONTHS OVER FOUR
YEARS USING
MEGALITHIC YARDS

adapted from
fig 33 of The Art and Culture
of Ancient Greece by Jeffrey
Herwit CORNELL: 1985
(& fig 39 of H Walter 1976)

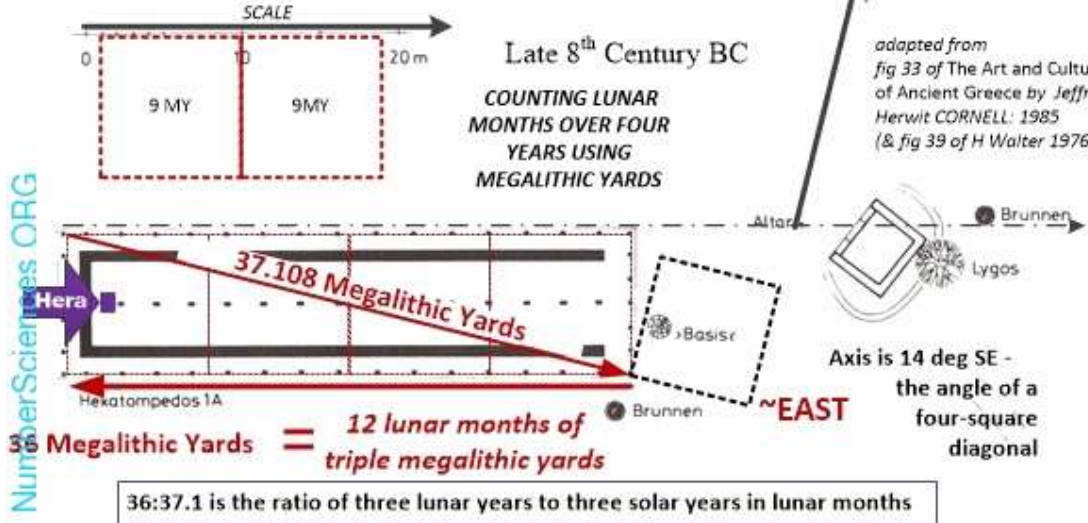


Figure 1 The Interpretation of the Cella of the Peristyle Heraion

The early monument had no columns and in mid-8th century, the outer "wooden columns were added on stone bases around the long room"; Herwit believes this was probably the earliest tentative use of the portico idea but that its lack of utility (being neither structurally necessary nor functionally significant) indicates that it was found aesthetically helpful: "It elaborated, dignified and identified the goddess's house, and from now on the peristyle would clearly and immediately distinguish divine architecture from human" (Herwit p76). From it the notion of the Cella or inner chamber developed, seen in Athena's Parthenon.

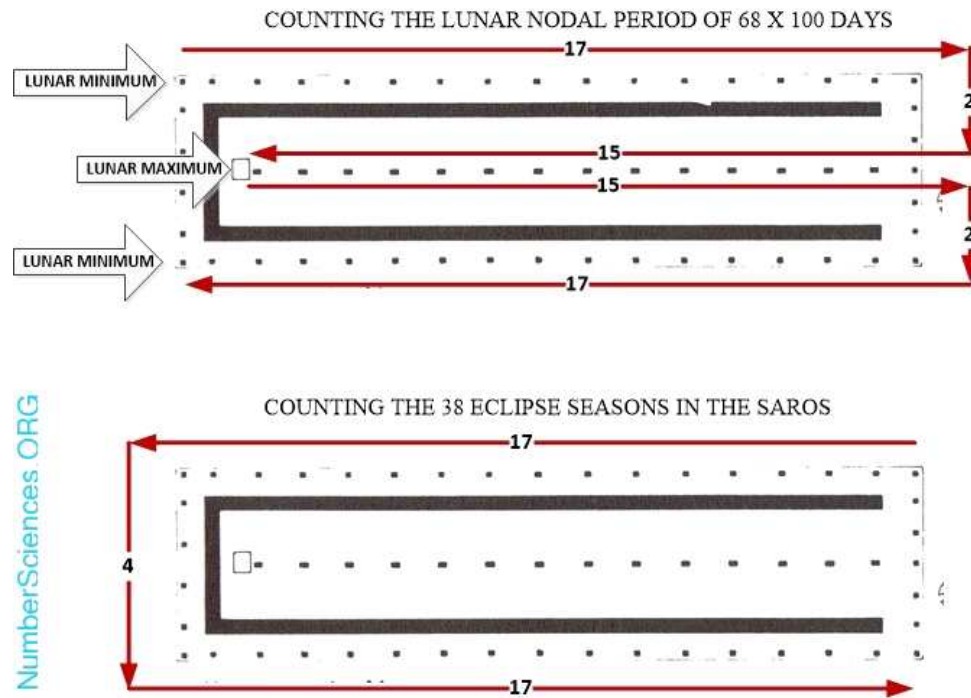


Figure 2 The possible use of the peristyle to count long astronomical periods*

However, in looking at the composition of the pillars (added to the central ones already required to suspend the roof) it is possible to use them to count two significant astronomical numbers: 68, the moon's nodal period divided by 100 days and 38, the number of eclipse seasons in the Saros eclipse period. If Hera was associated with the moon then her nodal period would pass 68 columns, each gap representing 100 days and Hera might represent the lunar maximum (or minimum) standstill. If only the north, west and south pillar were counted as eclipse seasons, then these outer columns would represent the Saros of 19 eclipse years of 346.62 days and the monument would at least symbolise the moon's marriage to Jupiter, but could have been used (with other means of counting days and lunar months) to provide a high-end counting function, not merely aesthetic in character but able to synchronise the ritual calendar with the planetary time periods. For a general background see [Wikipedia](http://en.wikipedia.org)

Analysis

Since the Heraion is the first peristyle temple we know of, it must represent why sacred rooms were elongated to form the characteristic Cella for the god, a hundred-footer, surrounded soon after by wooden columns to form the peristyle necessitating an expansion of the platform, initially with stone footings. The first Heraion cella, if identical with the one presented by Walters, would have been a five square as below.

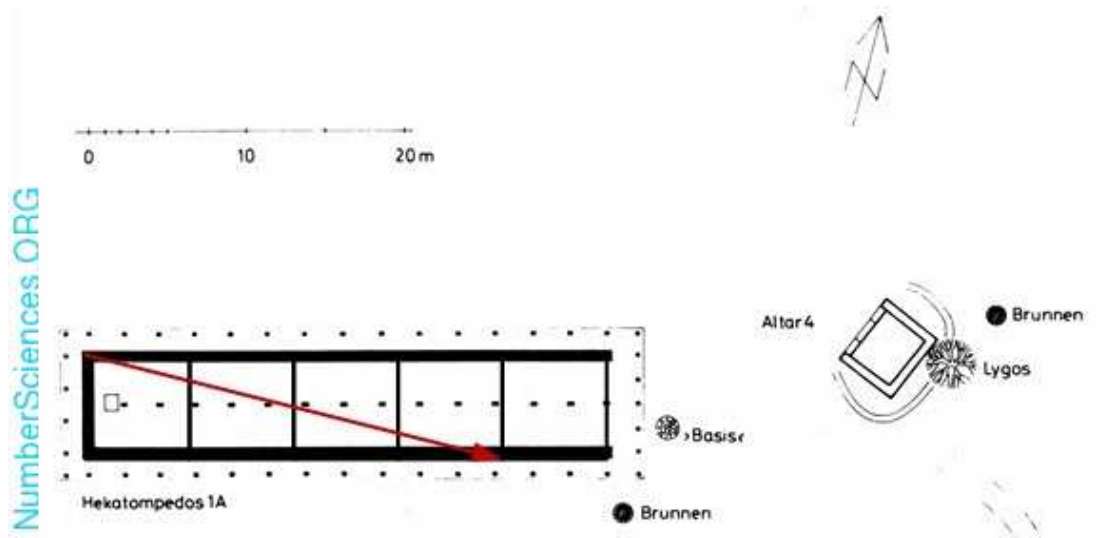


Figure 3 Restoring the four-square nature of the earlier Heraion.*

However the orientation of the site as based upon east along the diagonal of the later Heraion suggests that the initial cella was not so long and would have conformed to the four-square diagonal so that the squares involved would be $\frac{4}{5}$ of the later Heraion's stylobate (platform). Reducing the four-square rectangle by $\frac{4}{5}$ indeed restores this feature in the earlier cella, which was probably therefore $\frac{4}{5}$ the length of the later stylobate.

In that case the four-square design is primary and, it would appear, the stylobate evolved to provide an outer image of the god within which, if gods are astronomical and related to time periods, was the externalisation of the counting of astronomical periods, possibly only as symbolic but also, quite possibly used to count time for the rituals of that god.

We know that in the Dark period of Greece, after the late Bronze Age Collapse, the new tribes (whose names came to describe the musical modal scales) entered mainland Greece and the Aegean Islands from northern Europe, where these geometrical forms of knowledge seem to have originated in the megalithic form of the late Stone Age. Samos is an island associated with the Ionians from which tribe the Homeric tradition largely came and so the forms of knowledge seen in the Heraion could be Ionian. The only real difference between the second Heraion and the Le Manio Quadrilateral (c. 4000 BCE), as regards the portrayal of the interval ratio between the solar and lunar year, is the movement from counting days to counting lunar months, and the units of counting, from inches to megalithic yards[2]. In Le Manio, thirty six stones traverse an accurate 1063 day-inches whilst in the Heraion, these symbolic stones have become thirty six megalithic yards. (These "yards" are actually steps of 2.5 feet and their foot is therefore 2.72 feet divided by 2.5, or 1.1088 feet, technically a standard canonical Saxon foot or the root Saxon foot of 1.1 feet times the standard canonical micro-variation $\frac{126}{125}$ [see John Neal *All Done With Mirrors* 2000] or [look for it here](#)).

A megalithic yard has forty digits of 0.816 inches so that $\frac{4}{5}$ th of a yard is thirty two digits and so; a double foot would have been used to define the earlier cella, with the same thirty six units along its walls, now double feet rather than steps. Such are the powers of astronomy, geometry, and metrology when facing a past culture whose roots could not be guessed at without

understanding their possible number sciences. The cella seems to have evolved from the chambered tombs of the megalithic, aligned in various ways to horizon events marking celestial time, and the peristyle has then merged the role of the cairn or mound surrounding the chambered tomb and the stone circle whose circumference was sometimes used to count time longer time periods.

End Notes

1. *adapted from fig 33 of *The Art and Culture of Ancient Greece* by Jeffrey Herwit. Cornell: CUP 1985. being fig 32 and 39 of H Walter. *Das Heraion von Samos*. Munich, 1976.

2. We know now why counting months in megalithic yards usefully displaced day-inch counting, since this normalised the year's excess, of solar over lunar year, as then being one twelve-inch foot (called English) upon which historical metrology became based. Normalisation happens because the yearly excess is $7/19$ (0.368) lunar months whilst the megalithic yard is $19/7$ (2.718) feet long, so that re-calibrating day-inch counting to counting lunar months using megalithic yards generates a yearly excess of $7/19 \times 19/7$ which cancelling equals 1 foot. This appears to have initiated metrology as we know it, since $19/7$ feet - one foot equals $12/7$ feet, the royal cubit. [For the later British situation Robin Heath, *Sun, Moon and Stonehenge*. Bluestone Press 1998. e.g. 81 and for the transition to that, my own *Sacred Number and the Lords of Time*. Inner Traditions 2014. esp. 128] The excess at the Heraion would be a Saxon yard of 3×1.1088 rather than an English yard.