Phaistos Disk: Minoan aide-memoir for Saros Eclipse Period

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In the Old Palace Period (2000-1700BC) of Minoan Crete, three locations were dominant: Knossos (near Heraklion), Malia (now a north coast resort) and Phaistos (central southern agricultural plain of Messara). Phaistos is especially known for a small clay disk retrieved.

> *The disk is about 15 cm (5.9 in) in diameter and covered on both sides with a spiral of stamped symbols. Its purpose and meaning, and even its original geographical place of manufacture, remain disputed, making it one of the most famous mysteries of archaeology. This unique object is now on display at the archaeological museum of Heraklion.*

Wikipedia gives a helpful resume of theories considering what the spirals of grouped symbols might mean, of two types, linguistic and logographic. Linguistic theories look for a text and logographic look for meanings such as an astronomic meaning. I will provide the latter, as another demonstration of the utility of the number 222 as one less than 223, the number of lunar months making up the Saros period of 18 solar years and 11 days (after which an almost identical eclipse recurs). Of the few eclipse periods, the Saros is the definitive one, because similar eclipses belong to the recurrence of the same actual orbital conditions of sun and moon. The difficulty in predicting Saros events is a problem of counting numbers something simple (the lunar months) which is a natural integer and does not require too many to be counted, when numeracy might be a problem for ancient cultures.

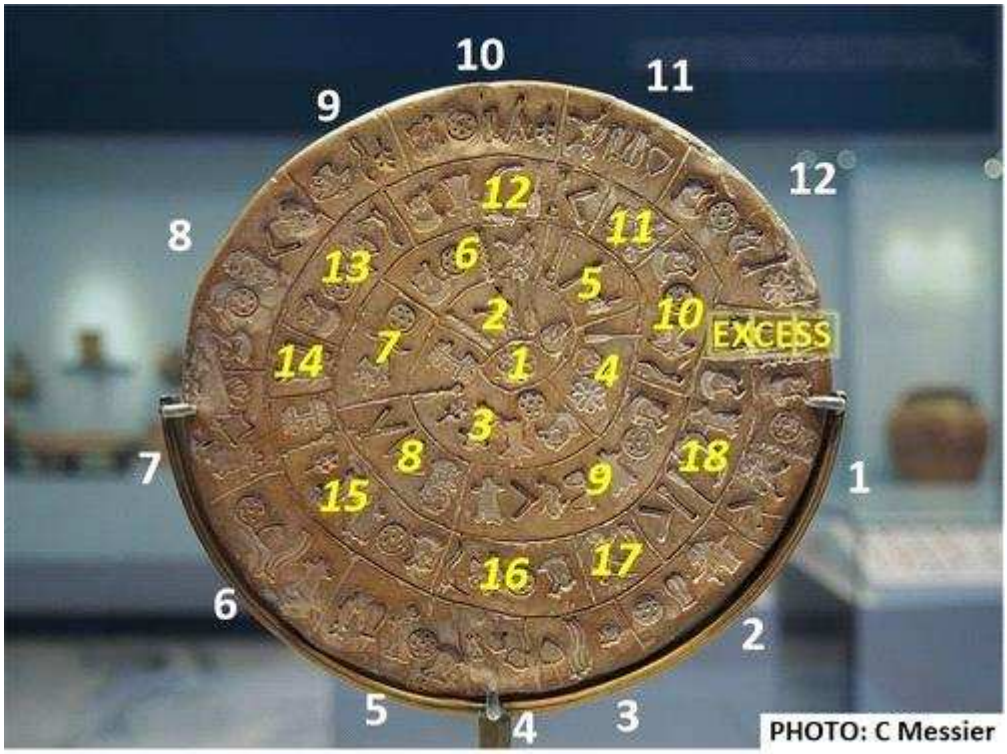
In 2009, Wolfgang Reczko interpreted the disk:

> The author suggests that the disk side A containing a petal in the center box shows astronomical eclipse information, which belong to a complete Saros cycle beginning −1377 and valid for the Phaistos Palace location only.

His summary of the disk is useful and he is also tying the disk to specific eclipse data. The outer disk on both faces has twelve groups of symbols with a small excess which could be remarking on the 0.368 (7/19ths) of a lunar month after twelve whole lunar months.

Rectzko then points to the spiral on both sides having eighteen blocks of symbols and these inner spirals with 18 divisions he interpreted as solar years so that the small boxes linking these to the rim

are the 11 days excess over eighteen years of the Saros period.



I believe that, whilst the Saros is involved, its was not as 18 solar years but rather as 18 Saturnian years** (of 364 days) known to be associated with the matriarchal world documented in Greek myth. The 364 day year equals twelve and one third lunar months and this is shown on the rim as twelve boxes and a small box symbolising one third of a lunar month. Eighteen times twelve and one third lunar months equals 222 lunar months, one exact month before the Saros period completes (as already stated, to manifest an almost identical eclipse to the eclipse witnessed at the beginning).

** these years are called Saturnian because the Saturn synod divides by the seven day week, as 54 weeks whilst 364 days is 52 weeks. The Disk of Chronos makes this clearer, if you read my 2004 article.

Thus eighteen times around the circumference leaves just the small box of one lunar month before the eclipse, to reach the rim of the disk. Since eclipses occur when the sun, moon and earth are in alignment, a solar eclipse at new moon or a lunar eclipse at full moon, this made counting months the best time-keeping method and the prime number 223, of lunar months for the Saros period, could be reduced by factorising the number one less than 223; 222, itself the product of 6 and 37.

Thirty seven is the number of lunar months in three solar years, if and when the solar year is taken to be 364 days. I have found evidence at stone L9 in Gavrinis that the 37 lunar months in three solar years was used as a counter sometime around 4000-3500 BC. This early use of 37 lunar months has not previously been connected with the Saturnian year as being twelve and one third of a lunar month, one third of thirty seven.

A form of numeracy appears to be possible within the form of the Phaistos Disk, teaching its possessor a lesson in how to predict Saros eclipses. One merely needs six counters worth 37, three counters worth 12 and twelve counters worth one, lunar months. The process is

1. count twelve months of the lunar year with markers worth one
2. count lunar years with the markers worth twelve
3. after three lunar year are counted, wait a further month
4. count using a counter worth 37, and start again at step 1.
5. count to six counters worth 37, wait a further month.
6. The Saros Period has been counted, so start again at step 1 with no counters.
   The Phaistos Disk is not a calendrical counting device but it defines a scribal procedure. If counts were to be kept than the above counting method would have to be replicated for each Saros eclipse series in which there was an interest.

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