

‘My Life is like the Summer Rose’  
Maurizio Tosi e l’Archeologia  
come modo di vivere

Papers in honour of Maurizio Tosi for his  
70th birthday

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# SURVEYS ABOUT THE ORIENTATIONS OF THE ALLEGED *MENHIRS* OF CONTRADA SERRAGLIO ON PANTELLERIA ISLAND (TRAPANI – ITALY)

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## INTRODUCTION

In the summer of 2009, on specific invitation of Prof. Maurizio Tosi<sup>2</sup>, I carried out the measurement<sup>3</sup> of the astronomical alignments of the standing stones found in Contrada Serraglio, in the south-east of Pantelleria island.

The area next to the Contrada was subject to secondary volcanism, locally called ‘Favare’, with a substantial presence of small geysers from which hot steam emerges. It is also possible that the area may have had in the past a symbolic value and been used for ritual purposes.

The *menhirs* were already reported and mapped by Prof. Sebastiano Tusa (2009), who - in addition to surface investigations revealing only materials of Classical period - reported the presence of at least fourteen stones. At present part of the stones are not on-site, but it is possible to see only ten of them, some of which collapsed. The destruction of the stones is most likely due to the excavations to prepare terraces in the area.

To facilitate the measurement procedures, consecutive numbers have been assigned to each *menhir*, that it was possible to measure, with the exception of two stones, called “door stones” to the north and ‘door stones’ to the south (Fig. 1).

Not knowing the time of the placement of the stones, nor the beginning of the use of the site, the present study did not examine any stellar alignment, possibly subtended by *menhirs*, but only those of Sun and Moon, whose points of rise and set have shifted only a little over the centuries.

## STONE NO. 1

Due to the convoluted shape of the stone (Fig. 2), the direction of the central axis was determined by taking measurements of the two outer sides and making a mathematical average between them.

<sup>1</sup> ([www.archaeoastronomy.it](http://www.archaeoastronomy.it) ; [info@archaeoastronomy.it](mailto:info@archaeoastronomy.it)).

<sup>2</sup> I would like to thank: Prof. Maurizio Tosi for allowing me to carry out this study; Prof. Maurizio Cattani for the logistical support given on the island; Dr. Elena Salvo for her assistance during the measurements; Dr. Daniela Merletto for the text revision.

<sup>3</sup> The measures were taken using the following tools: spherical surveyor’s cross with direct reading of 5’ centesimal; gravity inclinometer with direct reading of 1° degree; radio-controlled clock; prismatic compass with direct reading of 1° and direct estimate of 0,5°.

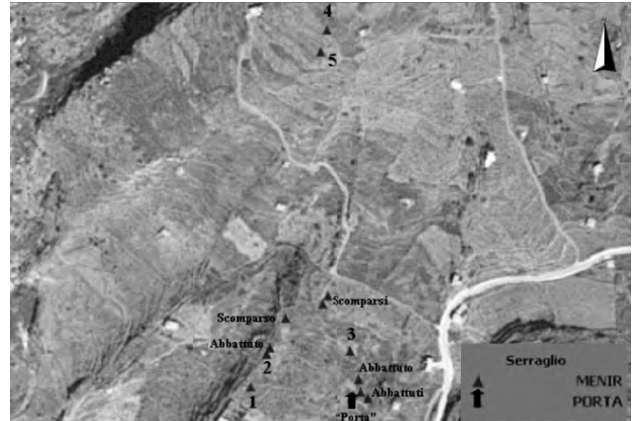


Fig. 1. Processed image indicating the demolished stones and the numbers assigned (elaborated from Tusa 2009: fig. 8).



Fig. 2. The stone no. 1.

The result shows that the central axis is oriented almost exactly north-south, with the azimuths of  $2^{\circ}27'$   $\Leftrightarrow$   $182^{\circ}27'$ .

## STONE NO. 2

The stone 2 (Figs. 3-4) was investigated in all four cardinal directions, with the following results:

- $196^{\circ}38' \Leftrightarrow 16^{\circ}38'$ , value tending vaguely towards the cardinal axis north-south;



- $283^{\circ}59' \Leftrightarrow 103^{\circ}59'$ ; the declination toward azimuth  $283^{\circ}$  is  $17^{\circ}45'$ ; this value approaches, with a minimum gap, the position of the moonset at the superior intermediate station<sup>4</sup>. No particular position toward the opposite direction.

The stone seems also to point the small top of Mount "Fossa del Russo" (Fig. 4). We will find out later in this paper further alignments towards this mountain.



Fig. 3. The stone no. 2 photographed along the north-south axis.



Fig. 4. The stone no. 2 photographed along the east-west axis. In the background the small top of 'Fossa del Russo'.

### ALIGNMENT OF THE TWO 'DOOR STONES' WITH THE STONE NO. 3

The alignment of the stones mentioned (Fig. 5) tends towards the direction of  $196^{\circ}21' \Leftrightarrow 16^{\circ}21'$ . This value is only slightly different from the orientation of the stone 2.

<sup>4</sup> For station (or moonstice) maximum and minimum of the Moon means the extreme variations reached by the star every eighteen years or equal, respectively, to  $\pm 28^{\circ}35'21,45''$  J2000.0.



Fig. 5. The alignment of the stone 3 with the two 'door stones'.

### 'DOOR STONE' TO THE NORTH

The azimuths of the slit of the stone (Fig. 6) that, towards the west, seems to point to the 'Fossa del Russo', are:  $276^{\circ}12' \Leftrightarrow 96^{\circ}12'$ .



Fig. 6. The 'door stone' to the north.

The declinations subtended by the two directions are, respectively,  $9^{\circ}57'$  and  $2^{\circ}23'$ .

This last declination is close, with a difference of about  $2^{\circ}$ , at that of the rise of the Sun at the equinoxes ( $0^{\circ}$ ).

### 'DOOR STONE' TO THE SOUTH

The axis of the *menhir*, seen from the front (Fig. 7), points in the directions  $121^{\circ} \Leftrightarrow 301^{\circ}$ .

The declination afferent to  $121^{\circ}$ , equal to  $-17^{\circ}51'$ , is close to that of the Moon rising to the lower intermediate station, while in the opposite direction is  $30^{\circ}52'$ , which could be close to the declination assumed by the Moon at its maximum station<sup>5</sup>.

<sup>5</sup> For station (or moonstice) maximum and minimum of the Moon, shall mean the its extreme declinations reached every eighteen years, equal, respectively, at  $\pm 28^{\circ}35'21,45''$  J2000.0.



Fig. 7. The 'door stone' to the south.

However an error of about  $2^{\circ}30'$ , considering also the very irregular shape of the stone, leaves some doubts about this last orientation.

#### ALIGNMENT OF THE TWO "DOOR STONES"

The direction formed by the two "door stones" has an azimuth of  $211^{\circ}43'$  and, in the opposite,  $31^{\circ}43'$ , which is out of any position assumed by the Sun or by the Moon during their arising.

#### STONE NO. 4

The stone seems accurately leveled at its top and seems to steer its axis, as already noted above, towards the top of the "Fossa del Russo" (Fig. 8).



Fig. 8. The stone no. 4.

However, the measurement has returned an azimuth, tending to the east-west direction, of  $260^{\circ}16' \Leftrightarrow 80^{\circ}16'$ , with respective declinations of  $-5^{\circ}12'$  and  $7^{\circ}24'$ , outside special astronomical positions.

#### STONE NO. 5

The standing stone (Fig. 9) has an azimuth of  $196^{\circ}13'$  and  $16^{\circ}13'$  and points towards the sea horizon.



Fig. 9. The stone no. 5 surrounded by dense Mediterranean shrubs.

Once again the directions  $196^{\circ} \Leftrightarrow 16^{\circ}$  are repeated, as already found in the stone no. 2 and in the alignment of the stone 3 with the two "door stones".

#### CONCLUSIONS

In order to ascertain the date of the erection of the stones, it is deemed absolutely necessary to investigate archaeologically the bases of the individual stones, looking for the digging pit as well as the surrounding area for diagnostic elements.

This type of in-depth investigation, in addition, may help to demonstrate the intentionality of the identified alignments.

The main results are:

- a) the axis of the *menhir* no. 1 almost oriented exactly north-south;
- b) the central axis towards west of the stone no. 2, underlying, albeit with a minimum gap, the position assumed by the Moon fading at its upper middle station; a phenomenon that is repeated approximately every 9 years;
- c) the 'door stone' to the south pointing - although not exactly - towards the point of the rising of the Moon at its lower intermediate station and - at the opposite - at the Moonset during the uppermost station;
- d) the 'door stone' to the north, which has an orientation towards the rising of the Sun around the equinoxes.

The azimuths  $196^\circ \Leftrightarrow 16^\circ$ , repeated three times, on the other hand are rather enigmatic, since in such positions neither the Sun nor the Moon rise or set.

Another recurring orientation, this time of orographic type, it is towards the summit of the "Fossa del Russo".

Therefore, it should be necessary to verify if the Sun or the Moon, disappearing at certain times of the year behind the aforesaid hilltop, can give life to some scenographical light effects.

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