THE NEOLITHIC SHRINE AT PARŢA

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Abstract

The Neolithic shrine at Parta belongs to the Banat culture from the period of middle-late Neolithic age. Its size was 11.6×6 m. The shrine was divided in two rooms by a wall. On the dividing wall there was a round window-like opening about 35 cm in diameter. The shrine had a circular opening — about of 30 cm — on the western wall too. This room was the place where the people brought their offerings. The eastern room was the most sacred place, a sanctuary where only the priest was allowed. There stood twin Bull-idols forming a divine couple of the Bull God and the Great Mother Goddess facing east. From the astronomical point of view we prove that at winter solstice sunset the sunlight illuminated a hand-loom in the NW corner of the shrine. In spring and autumn the sunlight entered the hole in the dividing wall and fell on the socle of the Bull-idols. During summer solstice sunset the Sun illuminated the place on the altar table where the grain offerings were brought. The vernal point was in the constellation Taurus in that time.

1 Description of the Shrine

The small settlement of Parţa (Parác) is located 15 km SW of Timişoara (Temesvár), which is — according to specialists — one of the first historic locations to have been explored in the Banat district (see the map at the end of the volume).

The first excavations were rather haphazard. The first findings came to light unexpectedly during the construction of the dikes on the river Timiş. Systematic excavations were started in 1931 by Joachim Miloja. The discovery of extensive complexes made it necessary to enlarge the area under exploration, so that the multilayer dwellings, sheds, and a number of man-made holes could be properly examined. The examination of the central building and the shrine was completed in the summer of 1985. A replica (on a smaller scale) of the shrine and of the other edifices, uncovered during the excavation, was built and is now exhibited in the Banat Museum (Lazarovici, 1985).

The Parţa shrine belongs to the 'Banat' culture of the middle-late Neolithic (4600–4200 BC). It is contemporaneous with the sites of the Vinca B1-B2 and Szakálhát cultures in the Mid-Balkans and in the Great Hungarian Plain, respectively. The Parţa shrine was erected at the midpoint of the NS axis of the ancient settlement. The first stage of the shrine was built as an oblong edifice of 12.5 m long and 7 m wide, oriented in the WE direction.

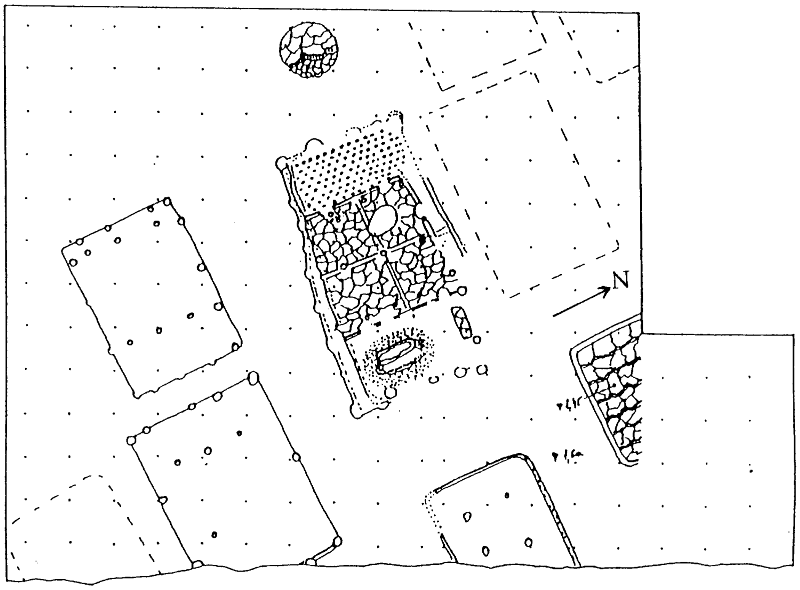

Figure 1: **Central part of the settlement at Parţa (after Lazarovici, 1989, p. 157)**

A sacred area was cordoned off by a 50–60 cm high wall, made from a mixture of clay, straw and sand, reinforced with sticks and saplings. The altar table was placed in this area. The sacred area can be further subdivided:

1. An entrance of 60 cm.

2. A portable fireplace next to the entrance, standing on three or four wooden legs.

3. A 50 cm by 60 cm pedestal for the bust of the idol.

4. Space for storing the ashes of the 'burnt offering'.

5. A 40 cm wide and 60–80 cm long box (on the left side of the entrance).

Analysis of our findings led us to the formulation of the following hypothesis:

The person (priest?), carrying the sacrificial offerings, entered the sacred area through the entrance (1) and went to the sacrificial table. The offerings were burned on the portable fireplace (2). The remaining ashes of the burnt offering were placed either behind the fireplace (4), or behind the idol (3), on the right side of the entrance. Those offerings that were not burned were placed in the long box (5), to the left of the entrance and the portable fireplace. The walls of the edifice were reinforced by wooden poles, placed about 1.4–1.6 m from each other.

During the second stage, after removing the remains of the 'first stage shrine', a new shrine of somewhat smaller dimensions was erected (Shrine 2). The reason for the rebuilding of the shrine is not known, but it is probable that it had to do with damages due to a fire (Lazarovici, Maxim, 1992).

Before building the second shrine, a substantial statue (or idol) was erected on a clay pedestal, made from sandy soil, coated by a layer of wet yellow clay. The 'twin statues', constructed of a mixture of clay and chaff (straw) were placed on top of the pedestal, while at its sides some trays were installed (Figure 2), presumably to hold the incoming gifts and offerings. After drying out, the double idol and its pedestal were hardened by fire. After this the wooden parts of the shrine, the altar-table, the partitions, and the roof of the shrine were installed.

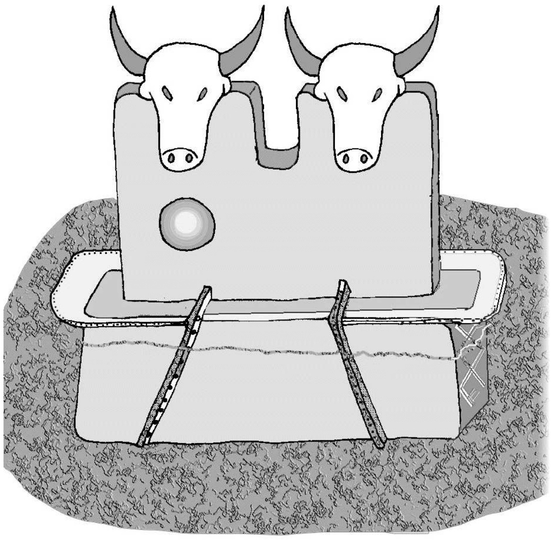

Figure 2: **The double idol. Representation of the Great Mother Goddess and the Bull God. It is 175 cm high (reconstructed)**

The new shrine is 11.6 m long and 6 m wide. The longer axis is aligned with the WE direction. The partition screen separating Sectors **a** and **b** (Figure 3), constructed by weaving saplings between vertical poles, was placed on the altar's fireplace. Some of the poles were stuck in the ground, some were fixed to the roof structure. This screen had a hole of 30 cm, which was plastered with clay. It is assumed that when the shrine was set on fire, the heat of combustion 'fired' this material, so all that was left behind was a fire-hardened clay disk.

Towards the end of its use, the hole in the partition screen was filled in.

The altar table was situated in the middle of the room. It was about 20–30 cm high (measured from the floor). It was evenly bisected by the partition screen, so about 2.5 m of it was found in each area.

When the shrine suffered damage, the wall was also pushed in and its broken pieces have fallen on top of the ruins of the statue. On the east-wall, north of the axis, in front of the statue, there was a large window and an entrance. The inside of this window was guarded by two columns, which had, at the height of the statues, representations of bull-heads placed upon them (Figure 4). There were some interesting lines drawn in the clay. The area between these lines was painted red. There was also a 'bulge' between the

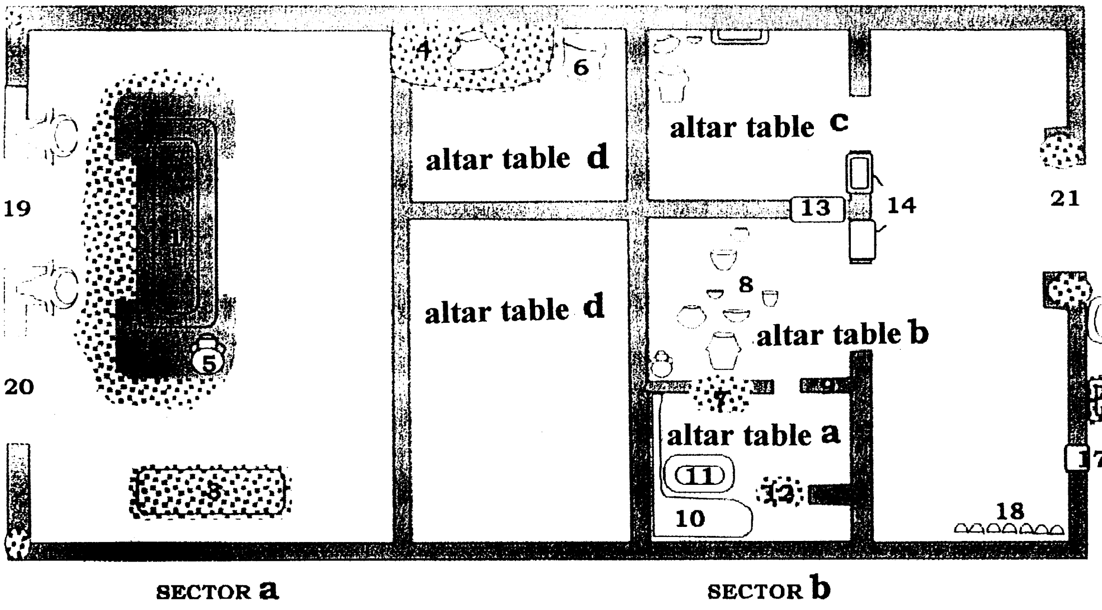

Figure 3: **Plan of the second shrine. 1: the double idol; 2: pedestal; 3: adobe trough; 4: portable fireplace; 5: amphora; 6: great cup; 7: taurian skulls; 8: vessel; 9: mounting for the taurian skull; 10: cassette; 11: 'man-faced vessel'; 12: mounting for the taurian skull; 13: taurian skulls; 14: mounting for the taurian skull; 15: hand-mill (mortar); 16: adobe cup; 17: Sun–Moon couple; 18: vertical loom; 19: window; 20: eastern entrance; 21: western entrance**

bull's horns (Figure 5), presumably a symbolic representation of the Sun and the Moon (Lazarovici, 1989).

The eastern room contained the coupled representations of — presumably — the Great Mother Goddess and the Bull God. This is the most important part of the shrine. It is 175 cm high. Its distance is 1 m, 1.3 m and 3.05 m from the east, south and north walls respectively. The uppermost part of this statue was formed by a double idol with two heads and their shoulders (see Fig. 2). Our assumption is that the shrine was raided by a hostile group. It is assumed that the shrine may have been occupied through violent action, during which its structure and furnishings were damaged, and the heads of the attached statues were taken as trophies. This could account for their missing. The altar table, upon which the intended gifts and offerings were deposited, was placed at the back of the central statue. The portable fireplace, on which the selected offerings were burned, was placed on the altar-table and fixed to the south wall. Near the northern wall, on the right side of the statue, there was an adobe trough for the other gifts and offerings.

The western entrance was shifted to the south of the WE axis. Sunlight was allowed to enter the shrine through a 35 cm circular opening on the western wall, between the entrance and the NW corner. Next to the circular hole an 8 cm thick clay relief — representing the Moon — was stuck on the wall, thus forming a representation of the Sun–Moon couple. This combined symbol is assumed to have been about 1.35 m above the floor level. Just below this symbol an adobe cup, and further down, towards the south, a rimmed hand-mill was also stuck on the wall. This triad — the Sun–Moon symbol, the cup and the hand-mill — formed a complex depicting a culture based on grinding (plant processing) and sacrificing to the Sun and the Moon, which were the symbols of the deities

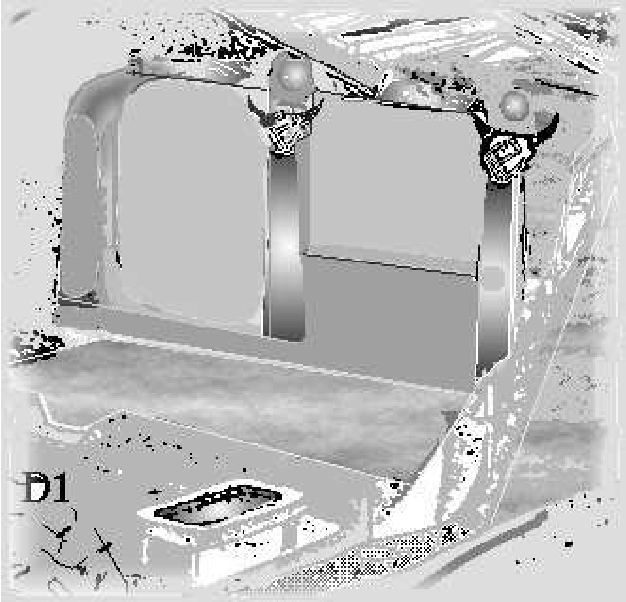

Figure 4: **The eastern entrance and the window with the bull-headed columns**

of fertility and procreation.

Near the northern wall, in the NW corner, two indentations were found in the floor of the sanctuary. Between these holes, there were 7 conical weights of clay (7 is a symbolic number of manifold meanings), used in the operation of vertical looms, and several clay balls, arranged in a pyramidal pattern and presumably used for hunting as slingshot-projectiles (Lazarovici, Maxim 1993).

We should like to mention a few of the artifacts, which, in our opinion, may have special importance:

- The amphora, found in Sector **a**, near the midpoint of the statue's back. The amphora was filled with food or liquids, which were used during the ceremonies.
- The 'Fish-tray', found also in Sector **a**, on the altar table. It is shaped as a fish. Such trays were used for frying food such as bacon, eggs or fish.
- A 'Man-faced vessel' containing bones of severed limbs, whose origin (human or animal) could not be determined.

Outside the shrine, about 4–5 m west of the entrance, there was an outside fireplace, which was three times restored. Apparently it was for the night-watchmen, who guarded the shrine, to sit around and keep warm during the night.

2 Astronomical Aspects of the Parţa Shrine

During the reconstruction of the shrine we tested various ideas. One of them was to examine the path of sunlight inside the shrine. We made our observation on the 23 September, 1982, at and around sunset, when the sunlight penetrated the shrine through the Sun–Moon opening on the shrine's western wall. This light illuminated the central

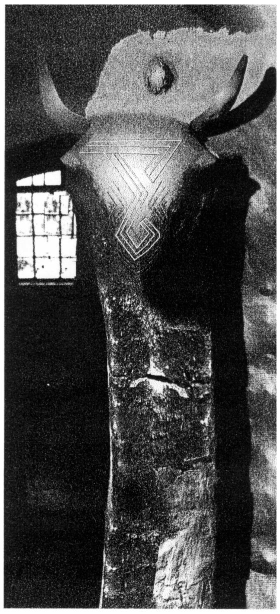

Figure 5: **Bull-head with a bulge between its horns**

area of the statue's back, approximately at the point where the amphora was found. (For the observation we used a cardboard disk of circular shape, stuck on a wooden stick. This represented the Sun–Moon opening.) At this time we observed that at sunset the sunlight (in our case the shade) fell on the division of the statue, touching on the floor, the bust, the fireplace and the man-faced vessel. We have also found the amphora in this area. We assume that it was kept on the statue's pedestal, and it was used to store the sacred liquids used for sprinkling on the freshly sown crops or for similar ceremonial ends. We also noticed during our observations, that that due to the finite thickness of the wall, the spot formed by the entering the interior has assumed different shapes.

The results of this experiment were verified from the astronomical point of view. We know that the points of sunrise and sunset today differ from those seen around 4200 BC, due to the precession of the equinoctial point. The points of sunrise — and sunset — describe an arc during the year, which is limited by the points observable at the winter and summer solstices.

As a first step, we calculated the azimuth of the Sun (the angles are measured from the North, towards the East) at the latitude of Parţa ($\varphi = 45°45'$) for the summer (A_1) and winter (A_2) solstices.

For the calculations we used the formula:

$$\cos A = \frac{\sin \delta}{\cos \varphi} \tag{1}$$

Where: $\delta =$ Sun's declination; $\varphi =$ the geographical latitude of Parţa; $A =$ the azimuth (in this case the height h of the Sun measured from the horizon $= 0$).

It is well known that during one year δ changes between the limits of $+\varepsilon$ and $-\varepsilon$, where ε is the angle enclosed by the Equator and the Ecliptic.

Wittmann (1979) used the following formula to calculate the angle ε:

$$\varepsilon = \varepsilon_0 + \varepsilon_1 \sin \varepsilon_2 (T + \varepsilon_3). \tag{2}$$

Where

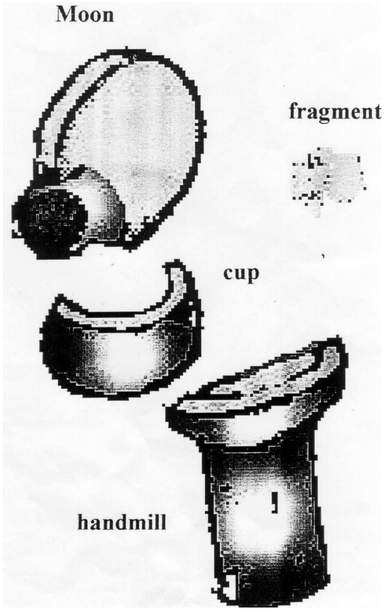

Figure 6: **The Sun–Moon symbol and the artifacts stuck on the western wall**

$\varepsilon_0 = 23\overset{\circ}{.}496932 \pm 0\overset{\circ}{.}0012;$
$\varepsilon_1 = -0\overset{\circ}{.}860 \pm 0\overset{\circ}{.}005;$
$\varepsilon_2 = (0\overset{\circ}{.}87777 \pm 0\overset{\circ}{.}0963)/\text{century} = 0.01532 \pm 0.0009\ \text{rad/century};$
$\varepsilon_3 = 3.4 \pm 0.1$ century.

If we substitute the extreme values $\delta = +\varepsilon$ or $\delta = -\varepsilon$ into Equ. (1), then the Winter and Summer points will be obtained. We know that the angle ε varies with time. Following the example of A. Vince (Vince, 1998) and further C. Cornide et al. (1992), we will also utilise Wittmann's theory.

$$T = \frac{\mathrm{JD} - 2415020}{36525}.$$

Where T is calculated for the epoch of 1900.0 and measured in Julian Centuries (36525 days). For the Parţa shrine we obtain JD = 187373 (4200 BC). From this it follows that

$$T = -61; \quad \varepsilon_{4200\ \mathrm{BC}} = 24\overset{\circ}{.}16.$$

It is sufficient accuracy for our problem. This result has been verified using a BASIC program (Sinnott, 1984).

The substitution of $\delta = \pm\varepsilon_{4200\ \mathrm{BC}}$ yields us the azimuths of sunrise and sunset for the winter and summer solstices.

So, the azimuth of the sunset point can move in the range limited by 306° (Northernmost position — Summer solstice) and 234° (Southernmost position — Winter Solstice), that is in a symmetrical arc of $71\overset{\circ}{.}8$ around the EW axis.

	Summer Solstice A_1	Winter Solstice A_2
Azimuth – Sunrise	$54\overset{\circ}{.}086$	$125\overset{\circ}{.}914$
Azimuth – Sunset	$305\overset{\circ}{.}914$	$234\overset{\circ}{.}086$

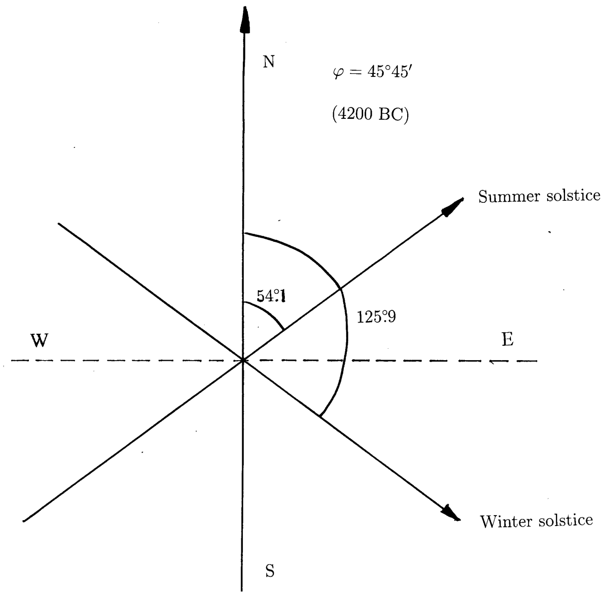

Figure 7: **Orientation of the second shrine. The "solar arc" at the geographic latitude of Parţa**

We can fix the position of various elements of the shrine. The Sun–Moon couple is 1.5 m, the opening on the dividing wall is 2.25 m and the statue with the pedestal is 3.05 m away from the north wall. Their elevation (distance from the floor) is 1.35 m, 1 m and 0.90 m, respectively. Accordingly, at sunset the Sun illuminated the interior of Shrine 2 through the Sun–Moon couple.

Here we want to mention that 'in the beginning' there were no buildings around the shrine, so there was nothing to obstruct the direct sunlight from illuminating the shrine. We can not be sure, but we assume that later on the access of direct sunlight was somehow prevented. This made the hole through the dividing wall redundant, providing a reason for its elimination.. Another reason could have been, that the opening was usually closed and opened only on special occasions.

During one year the sunset describes an arc between 234° (Winter point) to 306° (Summer point). As, looking from the north wall, the path of the sunlight is not parallel with the EW axis, the following sequence can be observed:

- At the Winter solstice the light of the setting sun touches the shrine's NW corner, illuminating the hand-loom (weaving was the winter-occupation of the women).

- In springtime the Sun sets more or less parallel with the shrine's longitudinal axis. So the sunshine can illuminate part of the north wall of the altar and a big enough part of the dividing wall to reach the hole made in it. This way the rear of the statue would be also illuminated. According to some assumptions the amphora — found beneath the statue — was also illuminated (Spring was the time for sowing and other outdoor work, during which a sacred fluids stored in the amphora were most likely to be put to use).

- At the Summer solstice sunset the light touches on part of the dividing wall and later illuminates the southern half of the area, where the vessel filled with corn was

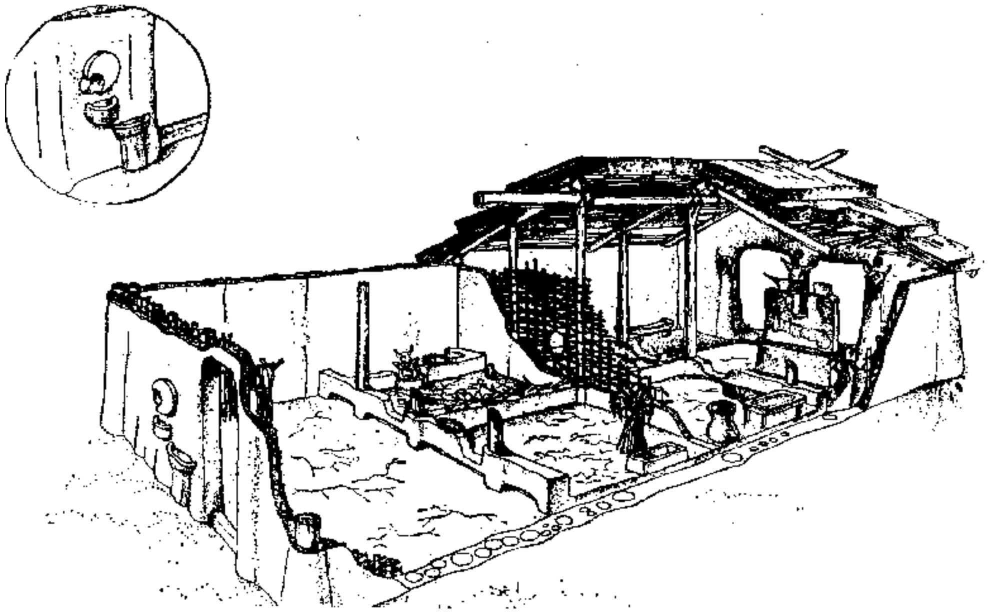

Figure 8: **The view of the shrine from the SW**

stored (association with the time of the grain harvest).

- After this time the sunlight traverses the same path in the opposite direction, with its reach into the interior constantly diminishing. In wintertime only the hand loom is illuminated, as it was at the beginning of he cycle..

3 A Short Comparison of Parţa and the Externstein Shrine

During the examination of the Parţa shrine we noticed many points of similarity between it and the Externstein shrine near Bad Meinberg in Germany, which is regarded by historians as one of the most interesting Neolithic shrine in that country (Schlosser, 1996). The wall of the 'Sacellum' shrine has also got a circular hole in it, whose azimuth was oriented towards the rising Sun at the summer solstice.

The monumental rock-formations at Externstein are shrouded in mystery. They gave home to many civilisations and challenged men's ideas in the fields of historical research, ethnography, archaeology, astronomy, geology, stone masonry, politics and other intellectual pursuits.

We are justified in saying that both shrines were Neolithic of origin and were used for similar — such as religious, political, navigational — ends. Both were oriented by the Sun at the Summer solstice, Parţa at sunset, Externstein at sunrise.

The circular hole built into the shrine's wall is an important feature of both. It represents the sun, as the largest heavenly body visible.

Both shrines have an altar and a designated place for the placement of gifts and offerings. In Parţa it is a cassette, in Externstein a cavity excavated from the floor.

The walls of both shrines carry interesting symbols painted on the wall (Lazarovici, 1986).

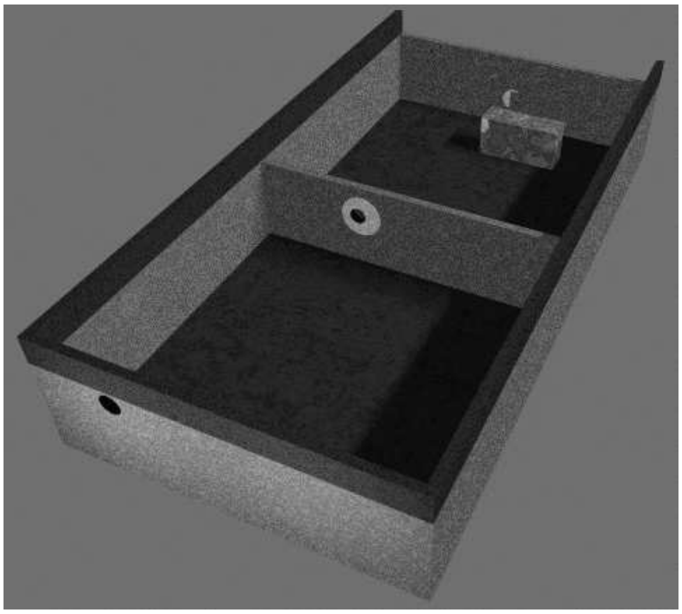

Figure 9: **Computer simulation of the shrine: the sunlight beams through the holes to illuminate the pedestal**

Naturally, there are also differences. Parţa was built in a hilly country, and it was constructed out of clay, reinforced with reeds and twines. It was built above ground while Externstein was a collection of holes and caves, dug into solid rock, which made its defence easier.

In Parţa the idol is a statue, representing a cult of the Bulls, in Externstein the idol is a column, rising from the hole in the floor.

At Parţa there was a representation of the moon in form of a clay symbol stuck to the wall next to the circular hole. The cup and hand-loom were placed below this. In Externstein the circular hole is not cut through the shrine's wall, but through the closing wall of an extension to one of the stone galleries, which could be reached by stairs, constructed at a later time. There was also a small table placed below the circular opening.

While Externstein is visited by about half a million people yearly, only a smaller scale replica of Parţa can be seen in the Banat museum.

4 Conclusions

After examining the Parţa shrine, we feel to be in a position to draw some conclusions about the ceremonial activities carried out therein. The bringing of gifts and offerings was already a well-established practice even in these ancient times.

The bringers of goods entered the shrine from the west. The gifts and offerings intended for the Sun or the Moon were transferred from the altar table either into the vessel beneath the Moon-symbol or onto the portable fireplace.

Access from the east side was limited. The entrance was opened up only occasionally in connection with the fertility rites and with learning about the origins of the world. The statue of the bull represented power and fecundity. Presumably they were aware of the fact the equinox was in the constellation Taurus in the time of the building of the sanctuary. It may explain the cult of the Bull. In spring the Sun illuminated the socle of the bull-statue. From this fact one can infer that the people from the shrine of Parţa had a good astronomical knowledge. It stimulated their cultic actions with respect to the solar phenomena.

5 References

Cornide, C. et al., 1992: Orientation Astronomique des Tombes mègalithiques a Couloir au Nord-Ouest de Peninsule Iberique, *Publ. Obs. Astron. Strasbourg, Ser. "Astron. & Sc. Humaines"*, 108

Lazarovici, Gh., Maxim, Z., 1993: Parţa. Despre arhitectura culturii Banatului, *Ibiscum*, **VIII**, 41–62

Lazarovici, Gh., 1985: Probleme de restaurare, conservare si reconstruirea Sanctuarului neolitic de la Parţa, jud. Timiş, *Revista Muzeelor si Monumenteleor*, **XXI/8**, 46–71

Lazarovici, Gh., Maxim, Z., 1992: Parţa und die Architektur der Banater Kultur, *Symp. Settlement patterns*, Verona-Lazise

Lazarovici, Gh., 1989: Das neolitische Heiligtum von Parţa, *Varia Archaeologica Hungarica*, **II**, Budapest

Lazarovici, Gh., 1986: Sanctuarul de la Parţa, *Document recent descoperit si informatii arheologice*, 12–21, Bucureşti

Schlosser, W., 1996: Archaeology and Archaeoastronomy along the Westphalian 'Hellweg', *Proceedings of the 2nd SEAC Conference, Bochum*, Astronomisches Institut der Ruhr-Universität, Bochum

Sinnott, R.W., 1984: Taming our Chaotic Calendar, *Sky & Telescope*, **May**, 454–455

Vince, A., 1998: Astronomical Orientation of Skeletons in the Early Eneolithic Necropolis at Podlokanj, *Publ. Astron. Obs. Belgrade*, No. 60, 230–233

Wittmann, A., 1979: The Obliquity of the Ecliptic, *Astron. Astrophys.*, **73**, 129–131