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# “OBSERVED” CONSTELLATIONS FROM THE PARȚA NEOLITHIC SANCTUARY

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**Rezumat.** Cercetările în domeniul interdisciplinar de arheoastronomie au dezvăluit că sanctuarul neolitic de la Parța a fost orientat pe baza considerentelor astronomice. Cultul solar este evident în acest sanctuar, prin urmărirea razei de lumină ce pătrunde în Sanctuar pe parcursul unui an. Oare Luna, o stea, sau o constelație ar fi putut să fie atât de importante pentru orientarea pe direcția răsărit–apus? Vom analiza constelațiile care puteau fi văzute din incinta sanctuarului prin deschizătura Soare–Lună și gaura din peretele despărțitor.

**Cuvinte cheie:** arheoastronomie, Parța, neolitic, sanctuar, orientare.

## 1. Introduction

The Neolithic Sanctuary from Parța is a 6000 year old shrine, the entire structure being reconstructed inside the Banat Museum from Timișoara, Romania. As we have mentioned in earlier publications<sup>1</sup> the Parța Neolithic Sanctuary was astronomically aligned. The lengthwise axis of the sanctuary (rectangle form, 11.6 × 6 m) had an E–W orientation, and consequently the crosswise axis had an N–S orientation (**Fig. 1**).

The sanctuary<sup>2</sup> from Parța had two entrances, at east and west. On the western wall left to the entrance was a 35 cm circular opening. Next to the circular hole an 8 cm thick clay relief was stuck on the wall, maybe forming a representation of the Sun-Moon couple. Just below this symbol an adobe cup, and further down, towards the south, a rimmed hand-mill was also stuck on the wall. On the eastern wall at right was the entrance, a niche both sides with busts in which there was a bull’s head, bull-headed columns. There was a bulge between the bull’s horns, which can be a representation of the Sun or another sky object (star, Venus, Moon etc.).

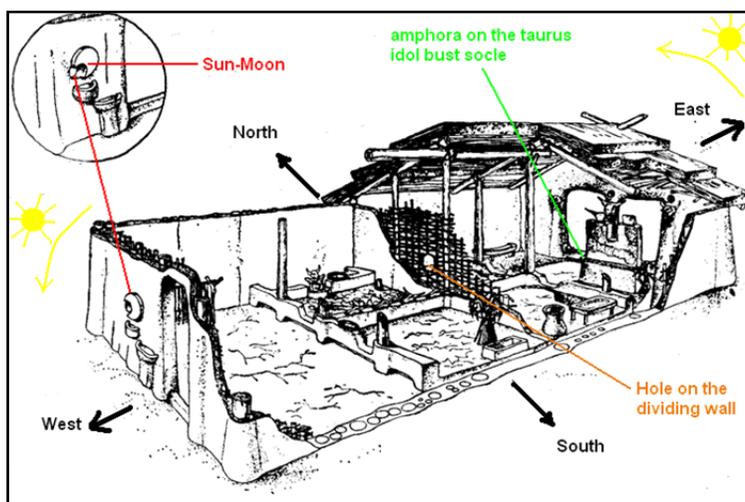
The altar table was situated in the middle of the sanctuary, and it was divided in two (east and west part) by a partition screen (dividing-wall). In the eastern room was the double monumental statue representing the Great Mother Goddess and the Bull

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<sup>1</sup> Lazarovici *et alii*, 2002; Szücs-Csillik, Maxim, 2013; *Idem*, 2015b; *Idem*, 2016; Szücs-Csillik *et alii*, 2016.

<sup>2</sup> Lazarovici, 1982; *Idem*, 1989; Lazarovici *et alii*, 1985; Lazarovici *et alii*, 2001; Maxim, 1995.

God<sup>3</sup>, and in the western room were the offerings deposited by the community members. On the dividing-wall there was a round window-like opening about 30 cm in diameter, which at the end of its use was filled in.



**Fig. 1. Parța Shrine with daily orientation.**

Around one year the sunlight of springtime's or autumn's sunset entered in sanctuary on the western wall Sun-Moon couple opening, illuminated the hole on the dividing-wall, and the light-path ended on the idol pair pedestal, presumably illuminated an amphora<sup>4</sup> with sacred meaning. At the winter solstice<sup>5</sup> the light of the setting Sun touches the shrine's NW corner inside, illuminating the hand-loom. At the summer solstice the sunset's light touches on part of the dividing-wall and later illuminates the southern half of the area, where the vessel filled with corn was stored.

The main preoccupation of these ancient people was the agriculture, and the light illuminated in every season the most important symbol: in winter the hand-loom, which represent the weaving; in summer the corn, associated with grain harvest; in spring and autumn the bull's head offerings and in a period the Great Mother Goddess and the Bull God's pedestal with amphora (sacred liquid). Spring and autumn were the seasons for sowing, process of gathering (harvest) and other outdoor works, during which a sacred fluids stored in the amphora. Spring-autumn, grains, bull's horn and the statue represents fertility, power and fecundity. The Great Mother Goddess<sup>6</sup> and her partner the Great Bull in the Parța shrine represent the Divine Bulls. The ancient tribe from Parța venerated the Divine Bull God and Goddess.

We mention that in the earlier period of the sanctuary there were no buildings around the shrine, therefore there was nothing to obstruct the sunlight from illuminating

<sup>3</sup> Lazarovici *et alii*, 1994.

<sup>4</sup> Szücs-Csillik, Maxim, 2015b.

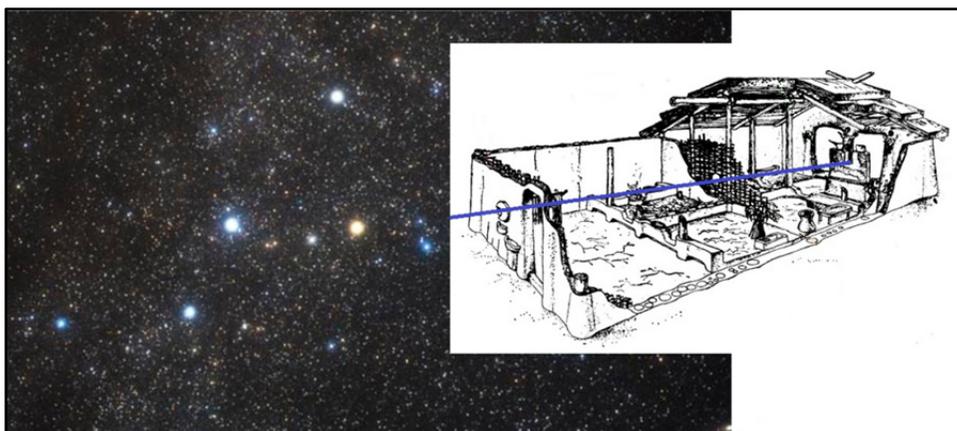
<sup>5</sup> Szücs-Csillik *et alii*, 2016.

<sup>6</sup> Gimbutas, 1989.

the shrine. The western horizon of the sanctuary is low. Later the acces of direct sun-light was somehow prevented, and the opening on the dividing-wall was closed.

## 2. Neolithic skywatchers

In this article we will change the point of view, and instead to study the Sun-light-path in Sanctuary, we will investigate the opposite direction, namely what someone



**Fig. 2. Parța Shrine with nightly orientation.**

may notice on the night sky looking from the statue in the eastern part of the Sanctuary through the dividing-wall opening and the Sun–Moon hole at the same time (**Fig. 2**). We know the holes and pedestral parameters in Sanctuary. 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. The distance from the floor is 1.35 m, 1 m and 0.9 m, respectively<sup>7</sup>. The altar table is about 2.5 m from the dividing-wall in both rooms. The pedestal is about 2 m from the altar table in the eastern room.

Over calculations we can realize that the holes direction is about 10 degree from west (**Fig. 3**), at 280 azimuthal degree, and through the holes the observer can see about 20 degree altitude angle from the pedestal. We grouped the possible observed constellations through the holes according to the four seasons and using the *Stellarium* 0.12.0 free software at 5400 BC.

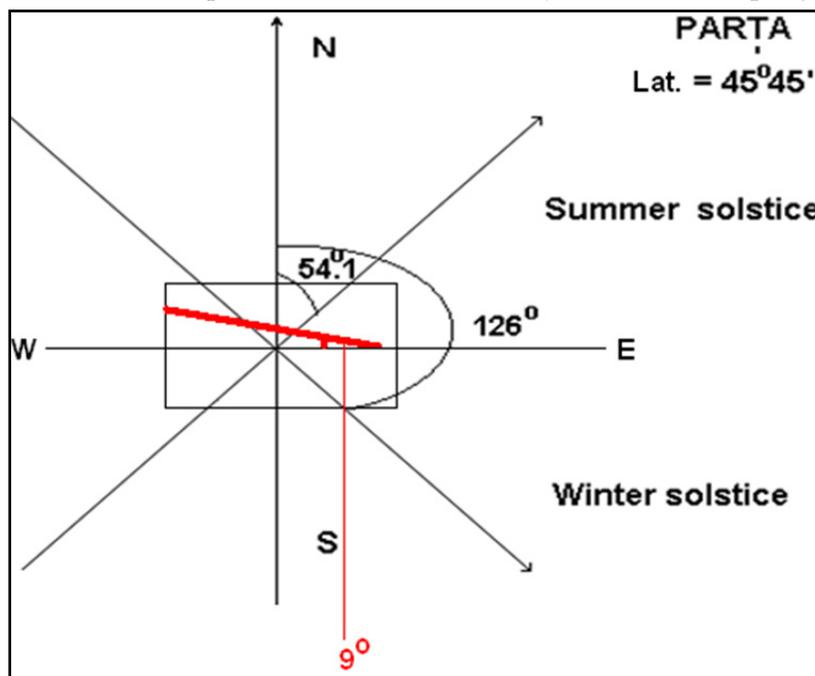
In spring time we can see the following constellations at 280 azimuthal degree from evening until morning: *Perseus* (Per), *Auriga* (Aur), *Gemini* (Gem), *Leo* (Leo), *Virgo* (Vir), *Libra* (Lib), *Serpens* (Ser), *Scorpius* (Sco). In summer time we can catch *Virgo* (Vir), *Libra* (Lib), *Serpens* (Ser), *Ophiuchus* (Oph), *Cygnus* (Cyg), *Aquila* (Aql), *Delphinus* (Del) constellations. In autumn one can observe *Ophiuchus* (Oph), *Serpens* (Ser), *Cygnus* (Cyg), *Aquila* (Aql), *Delphinus* (Del), *Cassiopeia* (Cas, circumpolar), *Perseus* (Per) constellations. In winter one can detect the *Delphinus* (Del), *Cassiopeia* (Cas, circumpolar), *Perseus* (Per), *Auriga* (Aur), *Gemini* (Gem) and *Leo* (Leo) constellations. These constellations will repeate cyclical every year.

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<sup>7</sup> Csillik *et alii*, 2001.

Observing through the round holes of sanctuary it is possible that the shrine was aligned with bright stars, such as *Castor* and *Pollux* (Gem), *Capella* (Aur), *Regulus* (Leo), *Antares* (Sco), *Altair* (Aql), or star constellations instead of the Sun.

Beside the Sun and the stars, the Moon also has been listed as a possible target for alignment<sup>8</sup>. For example, Gemini constellation<sup>9</sup> stays in view in the spring evening



**Fig. 3. The Solar Arc about 72 degree between solstices and the solar path (red) over the holes in Parța Sanctuary.**

sky. Gemini's two brightest stars – Castor and Pollux – can be identified after sunset. These two stars are noticeable for being bright and close together on the sky's dome. The Sun enters in Gemini constellation around the summer solstice, so the Gemini constellation can not be seen in summer in the Northern Hemisphere. The Gemini and Taurus constellations<sup>10</sup> are important in Neolithic time, when the sanctuary was constructed, because in this period the vernal point was in these constellations, and the most important part of the shrine, the twin bull-idol a symbolic representation of the bull and the pair (couple)<sup>11</sup>.

On the wall of the Parța Sanctuary were founded inscriptions in red colours. V-sign and Zig-Zags on the walls can be some imagined constellations too (perhaps the Serpens or Ophiuchus constellation part, or the Cassiopeia constellation).

<sup>8</sup> Szücs-Csillik, Maxim, 2015b.

<sup>9</sup> Drössler, 1986.

<sup>10</sup> Hartner, 1965.

<sup>11</sup> Lazarovici, 2004; Lazarovici, Lazarovici, 2006.

### **3. Conclusions**

We can assume that the Sun was seen as a life giver with a divine status. Certainly, the fact that such perfect arrangement were made around the sunset of the summer or midwinter Sun shows that the ancients from Parța placed great importance upon documenting the passing of the seasons. For agricultural or hunter-gatherer people was crucial knowing the right time to plant crops, to breed animals or when to catch fish. This fact could be a matter of life and death.

Changing the perspective, the angle of view, in the orientation direction we can give a larger view in the culture of the Neolithic people from Parța. These ancient people were a very good sky-observers, because they knew the Sun apparent movement on the sky using to illuminate the different sacred objects, and they have good knowledge about the night sky practising the observed sky objects to predict some events used in husbandry, agriculture<sup>12</sup>.

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<sup>12</sup> Szücs-Csillik, Maxim, 2015a.

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