

# ABOUT SOME NEOLITHIC CONSTELLATIONS

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**Rezumat.** În acest articol prezentăm câteva grupuri de stele strălucitoare, care au fost observate regulat de către oamenii din neolitic din emisfera nordică, latitudinea medie. Ei au păstrat cunoștințele lor pentru succesori sub formă de simboluri și semne (scris pictografic). Studiul nostru clarifică interpretarea unor simboluri.

**Cuvinte cheie:** Constelații antice, simboluri, neolitic, stele, arheoastronomie.

## 1. Introduction

The ancient people of the Neolithic used symbols and signs. They were probably fascinated, throughout the year, by the clear and starry night skies, and imagined their desires amongst the stars. Imagination has always been recognized as an important ability of the human soul. Observing the regularity and cyclicity of the sky, they got the idea of similarity: as above, so below. Macrocosm and microcosm, the correspondence between the Earth and the Sky. The ancient ways of thinking in which people represented existence sought to define a unity between themselves and the world in which they lived.

Early cultures identified some celestial objects with gods and spirits. They connected these celestial objects with phenomena too, such as rain, seasons etc. The first astronomers were ancient priests-astronomers, who perceived celestial objects and events to be signs of the divine<sup>1</sup>. Ancient astronomical alignments probably satisfied astronomical, religious, and social functions. Ancient calendars set by observations of the Sun and Moon were important for agricultural societies, in which the harvest depended on planting at the correct time of year<sup>2</sup>.

Signs and symbols composed the first pictographic script of the ancient people, their primary form of communication. Among these symbols and signs we can find some connected with sky (i.e. Sun, Moon, stars, group of stars etc.).

In the present article we shall give details regarding some studied Neolithic constellations. Firstly, we must emphasize that under the term “Neolithic constellations”

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<sup>1</sup> Krupp, 2003; Nilsson, 1920.

<sup>2</sup> Szücs-Csillik, Comșa, 2017.

we understand those groups of stars, which were discovered on Neolithic findings. These Neolithic constellations are part of the 48 ancient constellations, as different from the 88 modern constellations<sup>3</sup>. They are simply the Neolithic people's imagination and interpretation<sup>4</sup>. As we know, the origins for the earliest constellations go back to the prehistory (**Fig. 1**).



**Fig. 1. a. The Divine Bull God and Goddess from Parța sanctuary<sup>5</sup> (Taurus symbol the sign of the bucrania<sup>6</sup>); b. The vessel with two holes from the deer house Parța (Cassiopeia symbol, M or W signs)<sup>7</sup>.**

In our opinion, the Neolithic constellations include the following modern constellation families<sup>8</sup>:

- Ursa major family<sup>9</sup> (Ursa Major, Ursa Minor - Draco, Bootes, Corona Borealis);
- Perseus family<sup>10</sup> (Cassiopeia, Cepheus, Perseus - Andromeda - Pegasus, Auriga);
- Hercules family<sup>11</sup> (Hercules; Aquila, Lyra, Cygnus, Serpens);
- Orion family<sup>12</sup> (Orion, Canis Major, Canis Minor);
- Zodiac<sup>13</sup> (ex.: Leo, Virgo, Scorpius, Sagittarius, Pisces, Taurus, Gemini, Cancer).

<sup>3</sup> Delporte, 1930; Brown, 1899; Burl, 1981; Roggers, 1998; Hughes, 2005; Kelley, Milone, 2011.

<sup>4</sup> Rappenglück, 1996.

<sup>5</sup> Szücs-Csillik, Maxim, 2017b; Szücs-Csillik, Maxim, 2015.

<sup>6</sup> Lazarovici, Lazarovici, 2015.

<sup>7</sup> Lazarovici, Drașoveanu, Maxim, 2001.

<sup>8</sup> Constellation families are collections of constellations with common characteristics, such as a similar place on the celestial sphere, common historical origin, common mythological line; Menzel, 1975.

<sup>9</sup> Contain northern constellations in the vicinity of Ursa Major.

<sup>10</sup> Comprise several constellations associated with the Perseus myth.

<sup>11</sup> The group of constellations connected mainly by their region on the celestial sphere.

<sup>12</sup> Opposite side of the sky from the Hercules Family.

We know that in the mid-latitudes there are four seasons that encompass three months each: Winter, Spring, Summer, and Fall. Due to these seasons the mid-latitude was an optimal place to be settled in the Neolithic. The mid-latitude's locations would benefit from ideal equinox<sup>14</sup> and solstice<sup>15</sup> variation, which in the Neolithic was marked<sup>16</sup>. We note that different locations on the globe see different parts of the celestial sphere<sup>17</sup>. Therefore, the mid-latitude European continent, besides being a beautiful and interesting part of the world, is also a region of interest for archaeo-astronomers<sup>18</sup>.

## 2. Some Neolithic constellations

At the beginning of the year 2018, dr. Lazarovici, during his research on ancient symbols and signs, asked dr. Szücs-Csillik to investigate some symbols engraved inside of a Spondylus shell from Serbia (about 5500 BC) in relation with the sky chart.



Comparing the star map with these signs and symbols (**Fig. 2**), Szücs-Csillik realized that the symbols and signs correspond to some Neolithic constellations<sup>19</sup>.

Over the course of centuries stars appear to preserve approximately fixed positions with respect to each other<sup>20</sup>. They form the same constellations over historical time (ancient constellations). Cultures all over the world and throughout time have made representations of the same star groups. These representations depend on the various cultures' beliefs<sup>21</sup>.

The Neolithic woman's Spondylus shell<sup>22</sup> from Serbia presents some interesting points

**Fig. 2. Photograph from Spondylus shell with engraved symbols by Frances Stevens of image in Lost World<sup>23</sup>.**

<sup>13</sup> Constellations on the apparent path of the Sun through the year.

<sup>14</sup> At equinoxes, in late March and late September, the Sun's path follows the celestial equator, it rises directly east and sets directly west.

<sup>15</sup> The summer solstice is the longest day of the year, the winter solstice is the shortest day of the year, with the fewest hours of daylight.

<sup>16</sup> Lazarovici *et alii*, 2002.

<sup>17</sup> Ruggles, Cotte, 2010.

<sup>18</sup> see manuscripts from Barlai, 2010, p. 9-11.

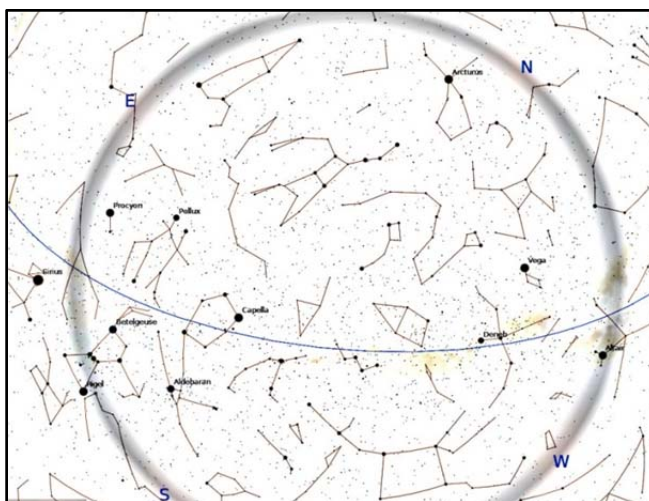
<sup>19</sup> Szücs-Csillik *et alii*, 2018.

<sup>20</sup> Wittmann, 1979; Szücs-Csillik *et alii*, 2010.

<sup>21</sup> Lazarovici, 2000a; Lazarovici, 2000b; Lazarovici, 2003; Lazarovici, 2009; Lippincott *et alii*, 2003; Lazarovici C.-M., 2009.

<sup>22</sup> Serghei KARMANSKI published in 1977 an article about four uncovered graves in Mostonga (geographical latitude: 45.50° N, longitude: 19.25° E, altitude: 82 m), where on a female skeleton's chest was found a Spondylus shell (dating period *Karanovo III*); Karmanski, 1977.

and lines, signs, symbols<sup>24</sup> which seem to have been inspired by a similar Neolithic night sky.



**Fig. 3. The sky chart with the galactical plane line (modeled with Stellarium astronomy software package, 5500 BC).**

The Perseus family can be observed near the thick band<sup>25</sup> as a few consecutive points. Under the thick band we identified points as stars from constellations *Perseus*, *Andromeda* (maybe with *Andromeda galaxy*), *Pegasus*; on the thick line we found the *Cassiopeia* constellation; above the thick line between the blurred points we found the *Cepheus* constellation (**Fig. 3**). We note, that *Cassiopeia* is a throne - a special place, *Pegasus* and *Andromeda* are the trough according to Romanian mytho-astronomy<sup>26</sup>.

The *Auriga* constellation<sup>27</sup> from the Perseus family can be recognized as a spot above the left hole. The *Capella* star is near the galactic anti-center. Near *Capella* is a very bright region on the *Milky Way*, and around *Deneb*<sup>28</sup> is another bright region. For this reason we believe that the thick band between the two holes on the Spondylus shell could represent the *Spring Milky Way* (**Fig. 3**).

The *Ursa Major* family is near to the center of the Spondylus shell. On the horseshoe natural shape (inside of a Spondylus shell) we observed traces from *Ursa Major*. Inside the horseshoe shape are blurred points and curved lines from *Draco* and *Ursa Minor* constellations. Outside the horseshoe on the right we identified *Corona Borealis*, *Bootes* constellations. As stated in Romanian mytho-astronomy<sup>29</sup>, *Bootes* is a

<sup>23</sup> Anthony, Chi, 2009; Séfériadès, 2009, p. 189.

<sup>24</sup> Chevalier, Gheerbrant, 1996; Eliade, 1991.

<sup>25</sup> The thick band tied the holes on a Spondylus shell.

<sup>26</sup> Maxim, Szücs-Csillik, 2010.

<sup>27</sup> Traditionally, Auriga represent a chariot and its driver.

<sup>28</sup> Deneb from Cygnus constellation is near to the galactic longitude 90°. In Romanian mytho-astronomy, *Cygnus* is a fountain at the crossroads.

<sup>29</sup> Maxim, Szücs-Csillik 2010.

human creature and *Corona Borealis* is a shanty<sup>30</sup>.

The Hercules family build up the left side of the Spondylus shell. Here we found the *Hercules* and *Serpens*<sup>31</sup> constellations under the *Corona Borealis*. The lower right corner (Fig. 2) contain three big paths, which we identified as bright stars from *Lyra*, *Cygnus*, and *Aquila*, namely *Vega*, *Deneb*, *Altair*<sup>32</sup>. *Hercules* is a human creature and *Lyra* is the shepherd with sheep in Romanian mythology.

From Orion family could appear on the Spondylus shell the *Orion* constellation as a spot on the lower left corner, and *Canis Minor* constellation as blurred line at middle left. *Canis Minor* is an imagined animal that can be seen at daybreak according to the Romanian mythology<sup>33</sup>.

Some zodiacal constellations can also be found on the Spondylus shell: *Leo* (from the top at left) - in two-pieces, *Cancer* - as a house standing on posts (according to Karmanski)<sup>34</sup>, *Gemini* - as a small ship with men pulling oars (Karmanski).

On a megalithic stone from Gobustan sundial Observatory<sup>35</sup> near Baku one can see images of boats. Similarly, on Karmanski's Spondylus shell is found the boat on the *Milky Way* (Fig. 3), as in other ancient peoples' imagination. What is remarkable is that in Romanian mytho-astronomy, the *Gemini* constellation is a treasure.

The fish symbols engraved on the Spondylus shell (according to Karmanski<sup>36</sup>) are *Hercules*, *Bootes* and a part of the *Virgo* constellation, which are human creatures in mythology<sup>37</sup>.

The *Cancer* constellation pictogram is very interesting: its representation could contain the nearest open cluster to Earth, *Praesepe*.

We must mention what Jordanes said in *Getica*<sup>38</sup> about Dacian astronomy, from where Romanian mythology was born. Jordanes says about Deceneus that “*he taught the Dacians... by explaining theoretical knowledge he urged them to contemplate the progress of the twelve constellations of the zodiac and the courses of the planets passing through them, and the whole of astronomy. He told them how the disc of the moon waxes or wanes, and showed them how much the fiery globe of the sun exceeds in size our earthly planet. He explained with which names or designations in the arching heavens the three hundred forty-six stars hurtle from their rising to their setting. You might have seen one scanning the position of the heavens and another investigating the nature of plants and bushes. Here stood one who studied the waxing and waning of the moon, while still another investigated solar eclipses and became calmer after having learned the explanation of how those bodies which rush to go toward the east are seized by the*

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<sup>30</sup> Szücs-Csillik, Maxim, 2017a.

<sup>31</sup> Szücs-Csillik, Maxim, 2016a; Szücs-Csillik, Maxim, 2016.

<sup>32</sup> *Summer Triangle* asterism on the sky.

<sup>33</sup> Maxim, Szücs-Csillik, 2003.

<sup>34</sup> Hiller, Nikolov, 2000.

<sup>35</sup> Rustamov, Rustamova, 2015.

<sup>36</sup> Hiller, Nikolov, 2010.

<sup>37</sup> The fish head is imagined as a human head, and it is a bright star, or a group of stars.

<sup>38</sup> Jordanes' best-known work is *Getica*, which was written about AD 551.

*rotation of the heavens and brought back to the west*<sup>39</sup>.

### **3. Conclusion**

Astronomy is the oldest natural science, with origins in the cosmological, mythological, religious, calendrical and other beliefs and practices in prehistory. Observing and following the motions of stars and planets in the sky was used to mark the passing of time, which was essential for agriculture, religious rituals and navigation.

From an astronomical point of view, the mid-latitude was an excellent place for the Neolithic sky-watchers. They connected what they saw on the starry sky with their "small" on Earth, using their imagination and beliefs.

We defined and described some Neolithic constellations identified on a Spondylus shell from Serbia, symbols and signs (pictographic script) that the people from the Neolithic passed on to their successors. Our study clarifies the interpretation of certain symbols.

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<sup>39</sup> Iordanes, *Getica*, XI, 67.

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