

Comparative Analysis of the Nebelivka Temple Complex of the Trypillia Culture and the Structures of the Artificial Mound of Tell Qaramel in Syria

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Abstract

This article presents a comparative analysis of the Nebelivka temple complex of the Trypillia culture (4000-3900 BCE) and the structures of the artificial mound of Tell Qaramel (circa 9130-8800 BCE) located in present-day Syria. Despite the geographical distance and chronological disparity between the sites, the monuments exhibit significant parallels in architecture, symbolism, and presumed ritual practices.

The study identifies shared features such as astronomical orientation of the structures in relation to solar cycles, the understanding and ritual use of lunar cycles, the use of red coloration in interiors, the cult of the wild aurochs, practices of "fire purification," and complex symbolic systems. Particular attention is given to the analysis of artifacts that indicate calendrical observations and bear an identical symbolic code: consisting of three interwoven lines forming four rhomboid structures.

The identified parallels suggest the possible existence of shared cosmological archetypes or complex cultural interactions between early agrarian societies of the Near East and Europe. The findings of the study confirm that the religious beliefs of these cultures were based on systematic astronomical observations, characterized by a sophisticated symbolic language, and reflected a complex understanding of the interconnection between cosmic phenomena and terrestrial processes. This allows for a renewed appreciation of their contribution to the development of humanity's fundamental worldview systems.

Keywords: Neolithic, Chalcolithic, Ukraine, Syria, Tell Qaramel, Nebelivka Temple, Trypillia culture

1. Introduction

A comparative analysis of cultic archaeological sites from the Neolithic-Chalcolithic period is a vital tool for understanding the cultural, religious, and social processes that shaped early agrarian and pre-agrarian societies of the Near East and Europe. This approach makes it possible to trace not only the material development of ancient civilizations but also the evolution of their worldview systems.

This study examines two key cultic monuments: the Nebelivka temple complex of the Trypillia culture, located in present-day Ukraine, and the artificial mound of Tell Qaramel in northern present-day Syria, dating to the Pre-Pottery Neolithic period. Despite the significant geographical distance and chronological disparity between these sites, they exhibit a number of common features in sacred architecture, hypothetical ritual practices, and symbolic systems. This points to the possibility of complex cultural connections or the universality of certain religious concepts among early societies. The research aims to identify and interpret these parallels, offering a meaningful step toward a deeper understanding of the spiritual life of ancient Eurasian communities.

The Nebelivka temple complex, dated to 4000-3900 BCE (Zavali, 2024d, p. 872), stands as one of the most prominent examples of sacred architecture of the Trypillia culture and the European Chalcolithic (Copper-Stone Age). It reflects a sophisticated cosmological system and well-developed ritual practices. In contrast, Tell Qaramel, which emerged in the 11th-10th millennium BCE (Tell Qaramel, 2019), is considered one of the probable cultic centers of the Fertile Crescent and likely played a significant role in the spiritual life of early agrarian communities or those on the threshold of transitioning to a productive economy. The comparison of these sites allows for the identification of both universal and culturally specific aspects of Neolithic-Chalcolithic religious beliefs.

The architectural features of both sites reflect their cultic specificity: the circular structures of Tell Qaramel are likely associated with astronomical observations and a cyclical perception of time, while the two-story temple at Nebelivka with its complex layout and rich symbolism demonstrates a developed cosmological system (conceptions of the sacred structure of the world and the place of humans within it) with a clearly defined hierarchy of sacred space, which in certain aspects resonates with that of Tell Qaramel.

The study pays particular attention to characteristics such as the use of red coloration in interiors, the cult of the aurochs, "fire purification" practices, and lunar symbolism. These elements, along with similarities in symbolic codes, most notably the depiction of three interwoven lines forming rhomboid structures, point to a profound connection between the cosmological concepts of these cultures. The analysis not only deepens our understanding of the individual sites but also emphasizes the universality of human spiritual experience as expressed through the religious practices of early agrarian and pre-agrarian societies.

The aim of this study is to identify parallels between the Nebelivka temple and the structures

of the artificial mound at Tell Qaramel, to reconstruct the religious worldview underlying their function, and to test the hypothesis of shared cosmological archetypes. To this end, archaeological materials, architectural plans, and the spatial organization of the structures have been analyzed, with a semiotic interpretation of symbolic systems applied. Particular attention is given to examining the orientation of the structures in relation to solar and lunar cycles, as well as to interpreting numerical and astral codes found in ritual artifacts.

The research also seeks to move beyond simplified interpretations of prehistoric religious expressions by establishing a scientifically grounded perspective on the complexity of these religious systems and their significance for ancient communities.

The relevance of this study lies in the need for a deeper understanding of Neolithic-Chalcolithic cultural connections between the ancient civilizations of Asia and Europe, as well as the identification of universal religious beliefs among early agrarian and pre-agrarian societies. The author initiated this line of inquiry in works such as: "Hypothetical Modeling of the Ritual Practices of the Trypillians in the Context of the Construction of the Nebelivka Temple" (Zavalii, 2021b), "From Göbekli Tepe to the Nebelivka Temple: A Comparative Analysis of the Structural Components of the Oldest Temple Complexes in Asia and Europe" (Zavalii, 2024d), "Comparative Analysis of the "H"-shaped Symbol from Göbekli Tepe and the Ritual "Binocular-shaped" Ceramics of the Trypillia Culture in Light of Ancient Farmers' Cosmological Beliefs" (Zavalii, 2024c), "Cosmological Aspects of the Stelae of Göbekli Tepe and Their Parallels with the Religious Symbolism of the Trypillia Culture" (Zavalii, 2025).

The development of this line of research offers a new perspective on the pathways of cultural diffusion and the formation of archetypal religious concepts and symbols in ancient Eurasian societies. Such studies are of significant importance not only for archaeology and the history of religion but also for understanding the broader patterns of human civilization's development.

The research methodology is based on an interdisciplinary approach that integrates methods from religious studies, cultural anthropology, archaeoastronomy, and comparative analysis. At its core lies a comparative study of the architectural features, symbolic systems, and artifacts from two archaeological complexes: the Nebelivka temple of the Trypillia culture and the artificial mound at Tell Qaramel.

Data collection was carried out through the analysis of published archaeological reports, architectural plans, photographic materials, and artifact descriptions from both sites. For Nebelivka, the primary sources were the results of fieldwork conducted by the British-Ukrainian archaeological expedition (2012-2014). In the case of Tell Qaramel, archival reports from the Polish-Syrian expedition led by R. Mazurowski (1999-2011) were used.

The analysis of spatial organization involved geometric reconstruction based on architectural plans, photographic documentation, and correlations with astronomical orientations (such as solstices and equinoxes) as well as cardinal directions. Artifacts were examined from a

semiotic perspective, with attention to numerical encoding and comparison with analogous items from other cultures. Archaic symbolic structures – such as the motif of "three interwoven lines" or the duality of bucrania (stylized representations of bull skulls with sacred or symbolic significance in many ancient cultures) – were analyzed in the context of cosmogonic beliefs and archetypal models.

Thus, the integration of field archaeological data with cultural, religious, and archaeoastronomical analysis has made it possible to identify significant parallels between the studied sites, indicating a possible cultural connection or convergent development of cosmological beliefs in early agrarian and pre-agrarian societies.

Despite the comprehensive nature of the methodology, the study has certain limitations. Limited access to the full body of field materials – particularly from Tell Qaramel – and the relatively small quantity of available data may affect the completeness of the comparative analysis. Furthermore, the examination of hypothetical ritual practices and symbolic structures is grounded in religious-philosophical interpretations, which are not always verifiable through archaeological evidence. Similarities in motifs across cultures do not necessarily indicate direct connections; they may instead result from parallel development or the cognitive universality of symbolic imagery.

Ultimately, the reconstruction of symbolic codes and religious concepts is based on hypothetical interpretations that, while supported by cross-cultural parallels and semiotic analysis, leave room for alternative readings and call for further research incorporating a broader range of sources.

The practical significance of the obtained results lies in their potential application for further research in the field of the archaeology of religion, the study of cultural connections between ancient civilizations, and the understanding of universal aspects of the religious worldview of early agrarian societies, as well as societies transitioning toward productive economies.

Future research prospects include expanding the geographical scope of the comparative analysis and incorporating new sources and methodologies. This will enable a deeper understanding of the global processes involved in the emergence of the first civilizations and the formation of fundamental worldview systems elements of which can still be traced in the cultural memory of contemporary Eurasian peoples.

2. Tell Qaramel: General Information

The structures of the artificial mound located in present-day Syria began to take shape around the 11th millennium BCE (Białowarczuk, 2017, p. 579). However, according to other estimates, Tell Qaramel is dated approximately to 9130-8800 BCE (The daily journalist, 2013).

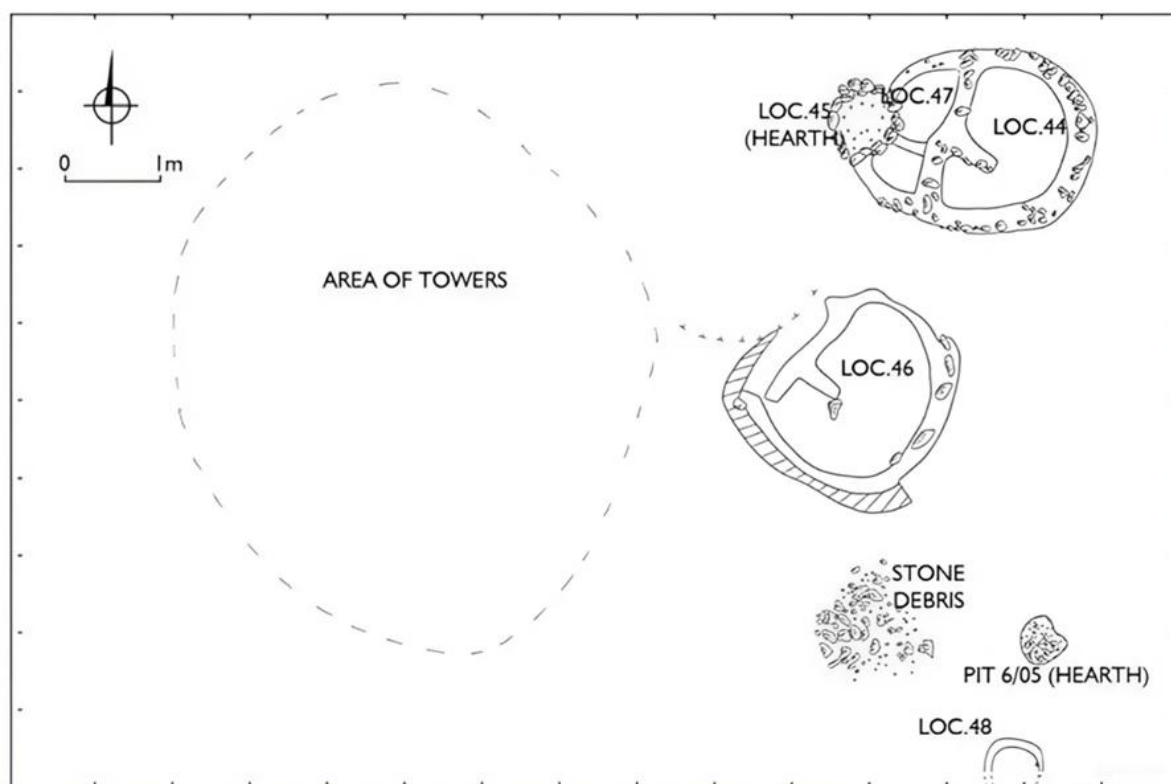


Figure 1. Layout of the circular towers of Tell Qaramel aligned with the cardinal directions (Drawing M. Biatowarczuk (with B. Paprocki - top)) (Mazurowski, 2005, p. 490)

Tell Qaramel is located in northern modern-day Syria, approximately 25 km north of Aleppo, 65 km south of the Taurus Mountains, and about 175 km from Göbekli Tepe (Ancient Architects, 2024). It is important to highlight that this ancient site was inhabited around the same time as Göbekli Tepe. This fact suggests possible cultural connections between the two sites and a potential mutual influence between the communities that occupied these regions.

Research at Tell Qaramel began in the late 1970s, revealing evidence of settlement dating back to the Pre-Pottery Neolithic period (Early Neolithic stage). In 1999, the site became the focus of detailed study by a joint Polish-Syrian team led by archaeologist R.F. Mazurowski of the University of Warsaw and Dr. Y. Kanjou of the Aleppo Museum (The daily journalist, 2013). Excavations were halted in 2011 due to military conflict in Syria. According to some estimates, only about 1.5% of the archaeological site has been excavated to date (Mazurowski, et al., 2012).

The fact that only a very small portion of the Tell Qaramel site has been excavated is, on the one hand, a significant loss for science. On the other hand, it highlights the immense potential of this site for future research. Even the limited amount of published archaeological material has considerably expanded our understanding of the cultural landscape of the Fertile Crescent and provides valuable insight into the origins of early agrarian religion, which later became a dominant element in the Trypillia proto-civilization.

A definitive interpretation of the Tell Qaramel mound has yet to be established due to the

limited scope of excavations and the complexity of interpreting the available data. However, based on archaeological findings and comparative analysis with other Neolithic sites in the region, some researchers suggest that this location may have served as a gathering place and a center for conducting religious rituals (Tell Qaramel, 2018).

Thus, it can be hypothetically assumed that Tell Qaramel played a role in the social and spiritual life of ancient communities in the region, possibly fulfilling functions similar to those attributed to Göbekli Tepe and other early Neolithic cultic centers in the so-called "Fertile Crescent." This hypothesis regarding the spiritual significance of Tell Qaramel emphasizes the importance of comparative analysis with other early agrarian sacred complexes. In particular, it is essential to conduct a comparison with the Nebelivka temple complex in present-day Ukraine, which exhibits certain ideological parallels with Tell Qaramel.

As noted by archaeologist R. Mazurowski, who led the excavations at the site, the inhabitants of Tell Qaramel clearly valued art, as evidenced by artifacts and decorations that show parallels with sites in the Taurus Mountains region and the Middle Euphrates area. This likely indicates a similar if not the same ideology (religion) that was cultivated across vast territories of early Neolithic civilization, despite significant differences in material culture, architecture, spatial organization, and economy (Mazurowski, 2005, p. 498). "Research at Tell Qaramel allows us to revise many long-standing assumptions about the Near East and the transmission of this cultural model to Europe," adds Professor R. Mazurowski.

3. Nebelivka Temple Complex: General Information

The Nebelivka temple, or Nebelivka temple complex (4000-3900 BCE), is the largest cultic structure of the Cucuteni-Trypillia cultural complex (measuring 1,200 m² and the largest temple of Chalcolithic Europe (On the Eastern Frontier of Old Europe, p. 7; Videiko, 2015, p. 231-233; Cucuteni and ancient Europe, 2016, p. 70). To date, it remains the most extensive and architecturally advanced temple complex of Chalcolithic Europe, representing a distinct type of religious structure while simultaneously embodying the broader phenomenon of ancient religion.

The Nebelivka temple complex was first identified in 2009 through magnetic survey techniques conducted in the field. The exceptionally large dimensions of the structure (60 x 20 meters) immediately drew the attention of archaeologists. During a seven-week summer excavation season in 2012, a joint British-Ukrainian expedition carried out the excavation of this "megastructure" (as it is defined archaeologically). As a result, the actual archaeological uncovering of Tell Qaramel and the Nebelivka temple occurred approximately a decade apart.

The Nebelivka temple is a large two-story structure situated at the highest point of the plateau within the Trypillia settlement. This elevated position on a hill made the temple visible from several kilometers away. The hill offers a sweeping view of the eastern horizon. At the base of the hill, on the eastern side, once flowed a substantial river, now known as the Nebel.

The temple was located on a plaza measuring 90 × 60 meters (5,400 m²). Access to the plaza was possible both from within the settlement and from outside its boundaries. Archaeologists concluded that the structure was deliberately built in a way that determined the spatial

organization of this part of the settlement (Videiko & Burdo, 2015, p. 312). Its relative isolation, elevated position, and architectural distinction likely contributed to the sacralization of this religious structure.

On the elevated Nebelivka hill, the first organized agriculturalists of what is now Ukraine constructed a tripartite temple divided into three worldview zones. It consisted of a main ritual hall, a sanctuary located in front of the ritual hall entrance, and a temple courtyard adjoining the sanctuary. This complex architectural ensemble as a whole constitutes the Nebelivka religious temple complex ("Figure 2").



Figure 2. Aerial view of the excavations of the Nebelivka Temple Complex (Sci News, 2014)

On the first floor of the complex were seven fire altars, divided between halls in a 3-to-4 ratio. There was also a central depression designed to house the temple's main religious symbol, a clay podium with a set of ritual vessels, ceremonial grain grinders for processing cereals, a ceramic table, a ceremonial set of small cups, and other ritual objects.

The western part of the building the main ritual hall was a monumental columned chamber with a circular balcony along the perimeter at the second-floor level and a partially open roof space. The eastern part of the structure the sanctuary was the most architecturally structured, featuring a series of partitions and remnants of thresholds that indicated the presence of five or six rooms distributed across two floors.

The western and eastern parts of the building were connected by a "solar corridor," which allowed sunlight to pass through to the center of the ritual hall on the days of the solar equinoxes (Zavaliy, 2020a, p. 75). Thus, the main ritual hall and the sanctuary of the temple interior began with an arched or circular structure through which sunlight would enter on specific days of the year.

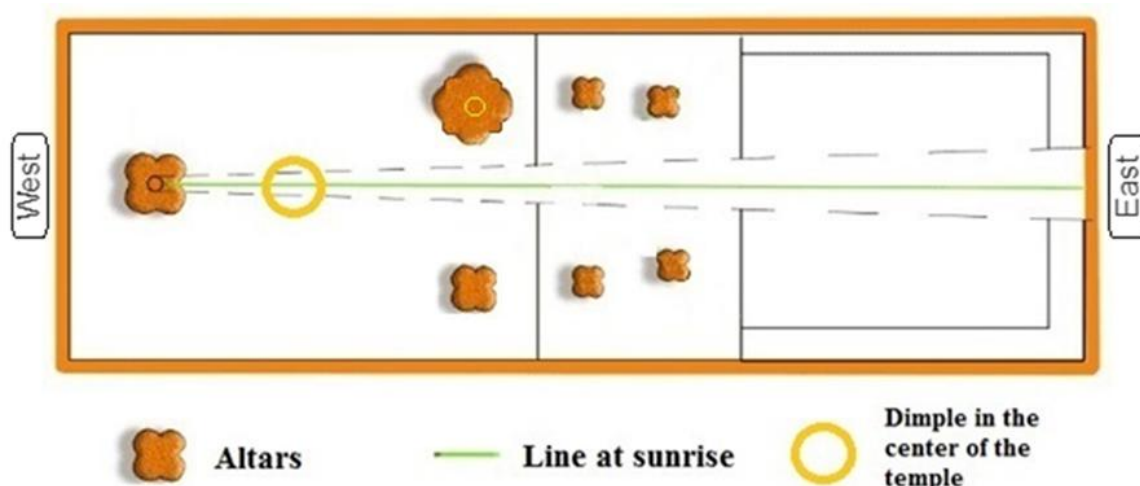


Figure 3. The floor plan of the Nebelivka Temple, according to the level of the first floor (Zavalii, 2024c, p. 876)

Within the temple and in its immediate vicinity, a substantial number of artifacts have been discovered that reflect clear religious concepts and suggest hypothetical rituals that took place there. These findings point to a coherent understanding of the relationship prehistoric people had with the sacred realm and offer insights into their religious beliefs.

Archaeological evidence indicates that the Nebelivka temple functioned as a center of religious life for the community and served as a site of pilgrimage within the region (Zavalii, 2020b, p. 7).

4. Comparative Analysis of Spatial Organization, Interior Elements, Hypothetical Rituals, and Artifacts of the Examined Complexes

4.1 Solar and Astronomical Alignments

One of the most significant findings of our study is the discovery of archaeological remains of circular towers at Tell Qaramel. These towers were constructed sequentially, and varied in size and structural features.

The largest tower had a diameter of approximately 7.5 meters. It was built using stone masonry bonded with clay mortar, and its walls were about 2.25 meters thick. A smaller tower measured 5 meters in diameter, with wall thickness around 1 meter. Another structure also had a 5-meter diameter, but its walls were only 0.5 meters thick—half as thick as the previous one. The remains of this tower were partially destroyed during the construction of a later structure.

The smallest circular structure was located in the southeastern part of the complex and likely functioned within the same ideological framework and time period as the two larger towers.

In the archaeological report by Polish archaeologist R. Mazurowski, we find a sketch of the described structures on-site. This graphic reconstruction serves as an important supplement to the textual description, as it visually illustrates the appearance and spatial arrangement of the

earliest towers at Tell Qaramel (Figure 1).

From the provided material, the spatial distribution of the circular towers that were likely functioning simultaneously within the Tell Qaramel site becomes clearly evident. The largest structure (marked on the plan as LOC.44) was situated in the northeastern part of the complex. The medium-sized tower (LOC.46) was positioned along the east-west axis and occupied a central location between the largest and smallest structures. The smallest structure (marked as LOC.48) was located in the southeastern sector of the site.

The orientation of the towers at Tell Qaramel likely held not only functional but also symbolic significance. All of the towers at this historic site may have been associated with the cult solar annual cycle. The largest tower in the northeastern part of the complex may correspond to the sunrise during the summer solstice. The central tower, aligned along the east-west axis, likely served as an astronomical marker for the equinoxes, while the smallest tower in the southeastern sector may have been associated with the winter solstice.

This hypothesis is supported by parallels with the Nebelivka temple Complex, where the three altars of the main ritual hall also exhibit a clear spatial organization linked to cosmological interpretations of the solar year. The sizes of the structures in both complexes strongly emphasize the symbolic representation of the sun's energetic power during different times of the year. The largest tower or altar corresponds to the summer solstice, while the smallest structures in the southeastern sectors symbolize the period of minimal solar energy in winter.

This suggests an important religious model in which early societies integrated celestial observations into their sacred architectural designs. They used buildings not only as ritual complexes but also as instruments for tracking celestial movements and marking significant points in the solar calendar. This architectural astronomy likely played a crucial role in religious rites and seasonal ceremonies at both sites.

4.2 The Symbolism of the Color Red

A notable feature of the artificial mound in present-day Syria is that some of its structures were constructed or organized using red-colored clay. In particular, the floors were of a darker red hue than the walls (Mazurowski, 2005, p. 487). All the stone masonry of certain structures was laid on a base of red clay (Ancient Architects, 2024). Probable ritual pits discovered at the site were also filled with red clay (Mazurowski, 2005, p. 485).

Other sacred sites of the Pre-Pottery Neolithic period in the Near East are also known to have been intentionally painted red during their use. For instance, in the eastern part of Amman (Jordan), the ancient settlement of Ain Ghazal was excavated. Archaeologists concluded that there were two main types of architectural structures at Ain Ghazal: residential buildings and religious structures. In the latter, red pigment was found on walls and floors, which may indicate painted decorations used for religious purposes (Mardon, et. al., 2021, p. 22).

Archaeologist K. Schmidt reports on a structure from the Neolithic Near Eastern settlement of Çayönü (located in present-day southeastern Turkey), where a mosaic-covered floor

decorated in red with white stripes was discovered (Schmidt, 2011, p. 73).

It is significant that similar interior elements are also found in the Nebelivka temple located in present-day Ukraine. Research into the features of the Nebelivka complex revealed an interior structure painted in an intense red color. The seven Nebelivka altars were also painted red, and remains of red pigment were discovered in the central temple depression of the main ritual hall (Videiko & Burdo, 2015, p. 326). Among the remains of ritual ceramics, four red-colored pithoi were found (Zavalii, 2021c, p. 93).

The distinctive use of red in the temple decoration of the Trypillia culture is further supported by the discovery of a fragment of a ceramic model of a temple from the Nebelivka settlement, found near the main temple complex (Figure 4).

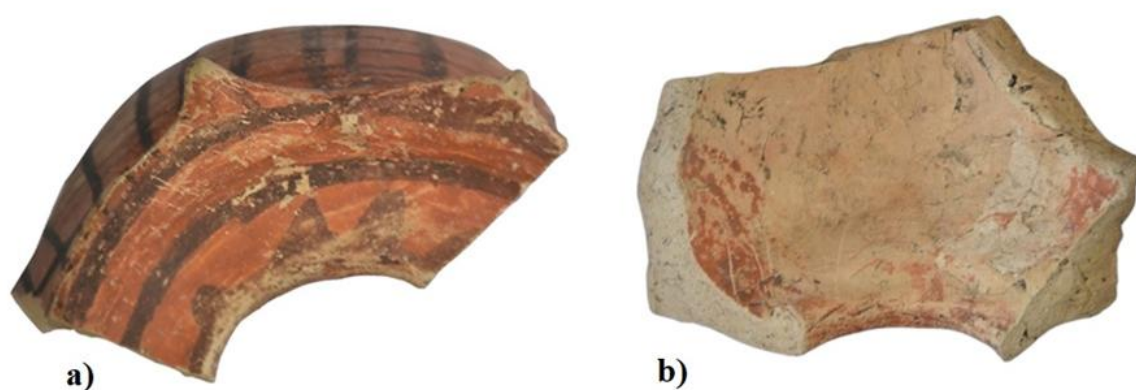


Figure 4. Fragment of a ceramic temple model from the Nebelivka settlement (Chapman et al., 2018): a) exterior view; b) interior view

This find provides comprehensive insight into temple concepts that existed within the settlement. On the preserved part of the temple model, it is clearly visible that the interior was painted red. The presence of red pigment on the model corresponds with the actual appearance of the Nebelivka temple, which featured a similar color scheme.

Other ceramic temple models from the oecumene of the Trypillia world also reflect a comparable concept. At least two cases are known in which the modeled side interior walls and the walls in front of the symbolic entrance to the temple retained traces of red pigment (Encyclopedia, 2004a, p. 348, 349). This further emphasizes the significance of the color red in the organization of ritual space in ancient early agrarian structures.

Agrarian thought attributed special importance to color as an energetic essence, which enabled early cultural development to form an abstract understanding of color as a universal property, independent of specific objects or phenomena. The perception of color as an energetic phenomenon became a defining feature of consciousness that significantly influenced construction principles, symbolic encoding, and the conduct of ritual practices in the prehistoric era.

The use of the color red in ancient sacred complexes across Asia and Europe held several

important meanings that reflected the deep cultural, religious, and cosmological beliefs of early societies. Painting temples and sanctuaries, or incorporating red materials into their structures, served as a way to create a sacred, protected space. This space was traditionally associated with the maternal principle – the womb of Mother Earth symbolizing fertility, birth, and rebirth.

Red was also linked to processes of transformation in various materials and substances, particularly those influenced by the sun and fire – the red elements. Thus, red could symbolize spiritual transformation or divine creativity. This idea of transformation extended to concepts of life and death, reincarnation, and transitions between different realms of the cosmos.

Furthermore, the use of red may have had astronomical significance, connecting temple complexes to specific celestial phenomena such as sunrises, lunar culminations, or the appearance of red planets. This reinforced the connection between earthly rituals and cosmic order, creating a sense of unity with the forces of the universe.

Red is capable of eliciting strong emotions and elevating the emotional state during rituals, creating a powerful psychological environment for religious practices and spiritual experiences. This could facilitate the attainment of altered states of consciousness necessary for communicating with divine forces, natural powers, or ancestors, as well as for receiving mystical revelations.

Thus, in both of the ancient complexes examined, the color red served as a multifaceted symbol that unified the physical, spiritual, cosmological, and social dimensions of early human life, establishing a powerful visual, emotional-psychological, and symbolic center for religious practices.

4.3 The Cult of the Aurochs

At Tell Qaramel, evidence of an archaic ritual was found associated with the cult of the wild aurochs. In one of the circular ritual pits, the remains of an entire skeleton of a bison or aurochs were discovered, which had evidently been burned at the site (Tell Qaramel, 2006). A similar phenomenon is observed in the settlements of the Trypillia proto-civilization, particularly on the Nebelivka plateau near the temple structure.

In Trypillia culture, ritual pits played a significant role in cult practices. Archaeological findings indicate that such pits often contained ceramic vessels, tools, broken artifacts, and occasionally animal remains. Notably, during the 2013 excavations at the giant Trypillia settlement of Maidanetske (Cherkasy region, Ukraine), archaeologists uncovered a large circular ritual pit lined with cult pottery. At the center of this pit were found the skulls of two aurochs. Archaeological analysis indicated that the ritual site had been meticulously prepared in accordance with a prescribed ceremonial order. The pit was first fired, and then a layer of potter's clay was evenly applied over the glowing coals. Only after completing these sacred actions was the composition completed with the placement of the two aurochs skulls and a ring of arranged pots (Zavaliy, 2021a) (Figure 5).



Figure 5. Aurochs remains at Trypillia settlements used in hypothetical ritual practices: a) Skulls of two aurochs from a ritual pit at the Maidanetske settlement; b) Remains of an aurochs skull from the Nebelivka settlement, discovered near the temple structure (Chapman, et al., 2018)

At the early Trypillia settlement of Bernashivka, a similar ritual practice was identified: two aurochs skulls were found at the edge of a concentration of archaeological remains indicating ritual activity (Figure 6, b). Archaeologists agreed that such a rite was likely performed during the abandonment of houses—more precisely, of the entire settlement—by the Trypillians (Encyclopedia, 2004b, p. 17).

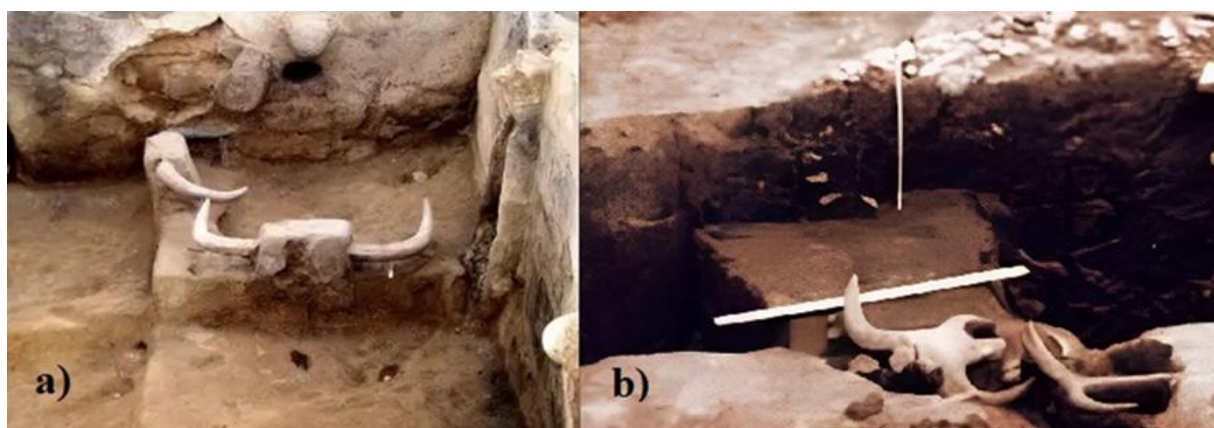


Figure 6. Cultic remains of paired bucrania at early agrarian settlements: a) Paired bucrania from the Neolithic settlement of Çatalhöyük (modern-day Turkey) (World history encyclopedia, 2021); b) Paired aurochs skulls from the Trypillia settlement of Bernashivka (modern-day Ukraine) (Encyclopedia, 2004b, p. 17)

It is worth emphasizing that similar manifestations are known from other early agrarian Neolithic settlements, which may have shared a common ideological foundation. Particularly striking are the finds from the Neolithic site of Çatalhöyük, where numerous bucrania were discovered and used in cultic practices. At Çatalhöyük, the paired placement of bucrania was documented (Figure 6, a), indicating a special sacred symbolism of duality in rituals associated with the aurochs cult.

In the oecumene of the Nebelivka temple complex, remains of wild aurochs were also found, which were likely part of the ritual system. In the same area, circular ritual pits and ceramic artifacts depicting both paired and singular bucrania were uncovered.



Figure 7. Artifacts with bucrania from the Trypillia culture: (left) fragments of vessels with bucranium imagery found at the Nebelivka temple site (Chapman, et al., 2018); (right) cult objects with paired bucrania from the Museum Fund of Ukraine (Turcanu, & Bejenaru, 2015, p. 236, 238)



Figure 8. Cult artifacts of the Trypillia culture featuring paired bucrania (from the Museum Fund of Ukraine) (The Religion of Trypillia, 2021)

The presented artifacts and their fragments demonstrate the deep integration of the aurochs-bull symbol into the religious practices of ancient agrarian communities. These material testimonies, along with the discoveries of ritual pits containing animal remains (particularly in pairs), indicate that this cult was a complex and well-developed element of religious practice both within the studied sacred complexes and in early agrarian culture more

broadly.

The discovered archaeological materials attest to the existence of a complex cult of the aurochs, which was often intertwined with the cult of the circle.

Research into the Trypillia religious complex has revealed a profound connection between the symbol of the wild aurochs and the celestial star cluster now known as the Taurus constellation (Astrological age, 2018). Of particular significance is the fact that around 6,000 years ago (approximately 4000-2000 BCE), the astrological "Age of Taurus" began, which chronologically coincided with the flourishing period of the Trypillia culture.

Astronomical observations confirm that this star cluster, visually resembling the powerful horns of an aurochs had a well-defined annual cycle during its zodiacal era. After the spring equinox, it would appear in the eastern sky, and by the autumn equinox, it completed its visible path in the west. During the following half of the year, in the autumn-winter period, the "Heavenly Aurochs" remained invisible to observers.

This astronomical mechanism, known in science as precession, may explain the symbolic duality of paired aurochs skulls found in ritual complexes: one skull likely represented the spring-summer cycle, while the other symbolized the autumn-winter cycle. In this context, the circular form itself could serve as a metaphor for the complete annual cycle.

Notably, similar cosmological concepts are reflected in ancient Indian tradition: in the Rigveda, a sacred bull is mentioned who encompasses the entire universe in two strides, a clear parallel to the idea of the yearly circle and the duality of the celestial cycle.

In the case of single bucrania adorning identical Trypillia circular ritual vessels, it can be assumed that they symbolized a specific phase of the annual cycle, possibly the appearance or disappearance of the Taurus constellation in the sky. This variation in symbolic expression was likely identified in both cases with the progression of the annual calendrical cycle.

Particular attention should be given to the artifact presented in Figure 7, where the paired depiction of aurochs within a circular structure is framed by a kind of stellar motif encircling the scene. This suggests that ancient agricultural communities consciously combined the symbolism of the aurochs with astral themes (images and symbols associated with the stars, reflecting religious or calendrical beliefs). The cross-shaped signs arranged around the upper edge of the vessel likely represent stars surrounding the Taurus constellation in the night sky. This combination of bucrania with star symbolism supports the hypothesis that the aurochs cult was closely linked to astronomical observations and calendrical cycles.

In light of this evidence, it can be assumed that the cult of the aurochs was part of a broader agrarian fertility cult. The aurochs, as a symbol of strength and vital force, was associated with the renewal of nature and the fertility of fields. Its cyclical appearance in the sky served as a natural calendar for planning agricultural activities during the corresponding zodiacal age.

Similar cultic practices related to the aurochs are clearly documented at Tell Qaramel, indicating the antiquity and widespread nature of this cult within early agrarian and

pre-agrarian cultures. These findings suggest an evolution of the aurochs cult from one rooted in hunting practices to a complex symbolic system connected with astronomical observation. Among early farmers, the aurochs continued to be revered as a powerful game animal, but with the advancement of agriculture, its cult gradually transformed into one imbued with astral symbolism.

The evidence of the aurochs cult found in the contexts of abandoning old and founding new Trypillia settlements may point to a cosmo-centric worldview (the belief that the human being is an element of a harmonious universe governed by the rhythms of nature and the cosmos) among ancient agriculturalists, in which celestial cycles were projected onto earthly life.

Thus, the cult of the aurochs was part of a complex belief system that organically combined archaic hunting traditions, agrarian ritual practices, and astronomical knowledge. This religious tradition underwent an evolutionary transformation from the simple veneration of the aurochs as a powerful animal to the development of a sophisticated astral cult. Of particular importance was the symbolism of paired bucrania (bull skull symbols) and circular structures, which likely reflected the duality of the annual cycle (division into two halves of the year) and the cosmological views of ancient farming communities.

4.4 The Cult of Fire

One of the key discoveries made during the excavations at Tell Qaramel was the layer of scorched earth, mixed with ash and charcoal, found beneath the foundations of the towers (Mazurowski, 2005, p. 487). This suggests that the area was deliberately prepared with fire prior to the construction of these structures.

Similar practices of "fire purification" of space are well documented in other ancient sacred complexes, particularly at the Nebelivka temple complex and the settlement in which it was located (Chapman, & Gaydarska, 2019, p. 6-7, 17-18). The burning of the ground before construction likely held deep sacred significance, forming part of an archaic ritual symbolizing the purification of the site in preparation for the erection of future sacred buildings.

In ancient cultures, fire was often associated with transformation and new beginnings, and such "fiery" practices may have represented the transition from profane to sacred space. This tradition of "purifying fire" at the initial stage of construction emerges as one of the shared elements evident at both Tell Qaramel and the Nebelivka complex, highlighting the sophistication and intentional organization of these ancient sites.

It is also known that the existing structures at Tell Qaramel were later destroyed by a powerful fire, as evidenced by a significant layer of charcoal found inside and around the towers (The daily journalist, 2013). New circular stone structures were subsequently erected over the ruins of the earlier buildings.

The available evidence suggests that the area may have been deliberately covered with timber and set ablaze. Similar rituals of intentional destruction have been well studied in the context

of the Nebelivka temple and Trypillia settlements more broadly. This phenomenon of "burned houses" is a distinctive feature of certain Neolithic and Chalcolithic cultures of Southeastern Europe (Stevanović, 1997, p. 334-395). In Trypillia culture, this practice was carried out for more than two and a half millennia (Videiko, 2005, p. 131).

Archaeologists interpret such practices as part of a complex ritual cycle related to the renewal of settlements, the life cycles of communities, and possibly cosmological beliefs.

Through a comparative analysis of the hypothetical ritual involved in constructing the Nebelivka temple and the construction of the Temple of Ningirsu (also known as the Temple of E-ninnu), built under the guidance of the religious leader and ruler of the Sumerian city of Lagash Ruler Gudea (circa 2125 BCE (Gudea cylinders, 2010)) it has been established that in both cases a special fire ritual was performed to prepare the ground for temple construction.

From the inscriptions on Gudea's clay cylinders, which contain a detailed account of the temple's construction, we find the following passage (we draw on translations of cuneiform texts by the Soviet Sumerologist V. Afanasieva (Afanasieva, 1997, p. 8, 235-242)):

"He purified the holy city and encircled it with fires...

He took clay from the purest place;

In that pure place, he made bricks and placed them in molds.

He performed the rites in all their grandeur:

he purified the temple's foundation, surrounded it with fires,

and anointed the platform with aromatic oil" (Zavalii, 2021b, p. 194).

Interestingly, in both traditions, the fire ritual was closely linked to the subsequent construction process: land purified by fire became the foundation for a new structure. It is possible that the ancient inhabitants of Tell Qaramel also held similar beliefs about fire as a means of sacred genesis and the cyclical renewal of sacred space. These parallels may point to cultural connections or to shared ritual concepts that existed in ancient Europe and the Near East.

The cult of fire at the examined archaeological site in present-day Syria was also expressed through the organization of circular altars, which occupied central positions in most of the circular towers (Mazurowski, 2005, p. 485). In one case, a circular altar was complemented by a stone bench coated with clay, shaped to resemble a crescent moon (The daily journalist, 2013). Access paths, likely intended for individuals authorized to ignite and tend the sacred fire, led to the altars. Additional circular altars enclosed by stone fences were placed in the spaces between structures. The placement of these extra circular altars in stone enclosures expanded the sacred space beyond the boundaries of the main cultic buildings.

The circular altar complex discovered at Tell Qaramel, featuring crescent-shaped elements, represents an important ideogram with parallels in other ancient cultures. This symbolism reveals deep cultural connections with the Trypillia culture, particularly with the Nebelivka

temple, where the circle and crescent appear together as part of a unified symbolic composition on cult objects. Notably, identical symbols have also been identified at Göbekli Tepe (Figure 9).



Figure 9. The symbol of the circle with a crescent at Göbekli Tepe, shown alongside corresponding symbols from the Trypillia civilization. The featured fragments of Trypillia pottery were uncovered in the cultural layer near the Nebelivka temple complex (Chapman, et al., 2018). The illustrated Trypillia vessel was excavated at the Trypillia settlement of Hrebeni (Encyclopedia of Tripillian Civilization, 2004a, p. 132)

The ideogram of the circle with the crescent, in combination with the cult of fire documented through the archaeological materials at Tell Qaramel, allows for an expanded and enriched interpretation of this symbolic expression. The circle, as a solar sign, is organically connected to the metaphor of fire most vividly observed at sunrise and sunset, when the sun takes on a reddish hue and visually resembles a flame.

Within this symbolic complex, the crescent can be interpreted as a representation of the moon, forming a dualistic pair with the sun and completing a full cosmogonic cycle.

It is important to highlight the parallel between these findings and the ritual practices of the Trypillia proto-civilization, where circular altars were also used in fire rituals alongside cross-shaped and rectangular altars. This religious phenomenon is examined in the author's scholarly work "Trypillian Altars as a Religious Phenomenon of the Ancient World" (Zavaliy, 2024a).

The archaeological materials from Tell Qaramel add a crucial geographical and chronological context to understanding the evolution of the "circle with crescent" ideogram. Circular altars with crescent elements, positioned within cultic structures, indicate the practical implementation of this symbolism in ritual architecture where fire served as a mediator between the earthly and celestial realms. This connection between architecture, fire rituals, and astral symbolism forms a cohesive picture of the religious worldview of ancient societies.

4.5 Comparative Analysis of Selected Artifacts

The archaeological materials discovered at Tell Qaramel provide substantial evidence that supports the existence of a similar symbolic system within the examined complexes. The cultic objects found at the site testify to a developed symbolic language that first emerged during the Pre-Pottery Neolithic and remained consistent through the Pottery Neolithic/Chalcolithic periods.

At Tell Qaramel, stone plaques were uncovered bearing complex symbolic compositions, which, in the author's view, exhibit patterns of archaic coding related to lunar calendar cycles. These findings, dated approximately to the 11th-10th millennia BCE, represent some of the earliest known attempts by humans to systematically record and track time based on the phases of the moon (Figure 10).

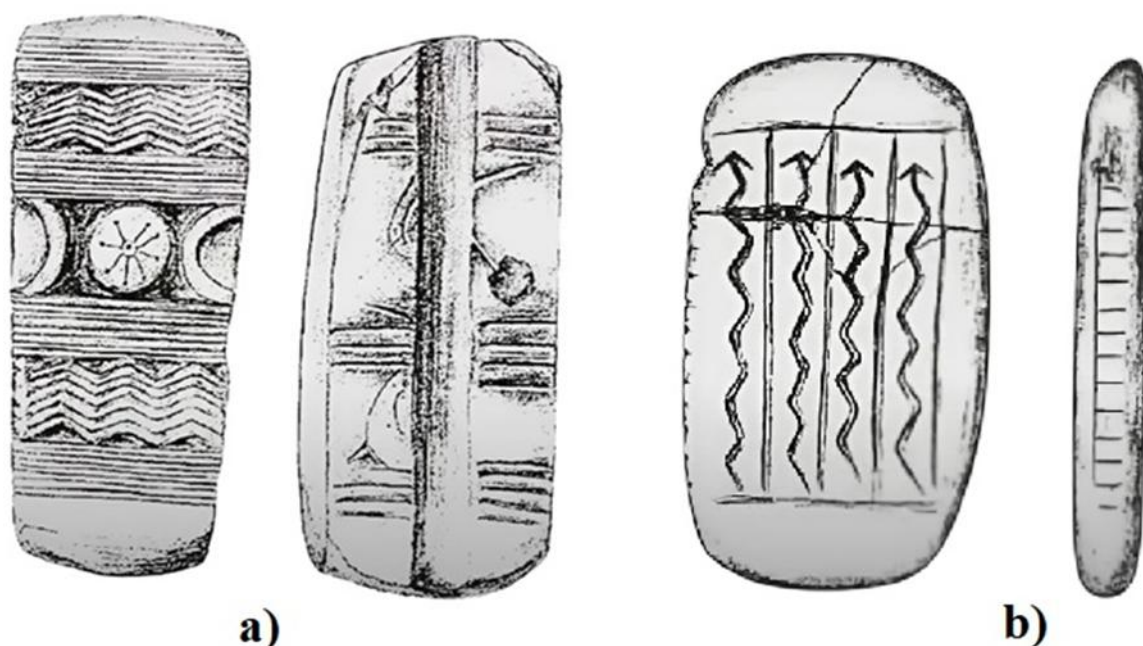


Figure 10. Stone Plaques from Tell Qaramel (Usacheva, 2020, p. 9): a) A stone plaque featuring depictions of twelve wavy serpents combined with symbols of a circle, crescents, and lines; b) A stone plaque with depictions of four serpents and fourteen or fifteen lateral notches

The presented stone plaque with serpent imagery, a circle, and two crescents (Figure 10, a) likely reflects a concept of cyclical time in its the lunar progression throughout the year. A distinctive feature of the composition is the twelve serpent bodies, evenly divided along both sides of the plaque. This iconography closely corresponds to the twelve periods of the lunar year. This concept is further emphasized by a continuous groove on the reverse side of the plaque, dividing the object into two halves. At the same time, the combination of the circle and crescents on the plaque may represent different phases of the moon.

A notable feature of the central circle on this artifact is the presence of eight dots, almost evenly distributed along the circumference. It takes approximately seven to eight days for the

Moon to transition from one quarter to the next, that is, from new moon to first quarter, from first quarter to full moon, from full moon to last quarter, and from last quarter back to new moon. Thus, the eight dots on the central circle may symbolize the numerical marker of these key moments in the transition between lunar phases.

On the reverse side of the plaque, a more simplified composition is observed, which may also be associated with the lunar calendar. This side features four distinct sectors divided by lines, likely symbolizing the four primary phases of the moon. Within some of the sectors, wavy lines are visible, which may represent the dynamic nature of lunar phases and their sequential transformation.

A comparative analysis of both sides of the plaque reveals an intriguing pattern: while one side appears to depict an annual calendrical system (12 serpents), the reverse side may reflect a more detailed tracking of days within a single lunar cycle. This suggests a complex approach by the ancient inhabitants of Tell Qaramel to recording time cycles and demonstrates their deep understanding of astronomical phenomena.

As for the stone plaque in Figure 10. b), featuring four serpents and fourteen or fifteen lateral notches, it may hold a meaning similar to that of the plaque in Figure 10, a) but with a different numerical emphasis on the lunar period. In this case, the four serpents may symbolize the four phases of the moon, while the number of notches corresponds to the number of days in half of the lunar cycle. This figure closely approximates the length of half a synodic month (that is, the interval between the new moon and the full moon). These notches may have been used to track the days from new moon to full moon or vice versa.

Thus, while the depiction in Figure 10, b) is less detailed than that in Figure 10, a), it likely represents different aspects of the same lunar calendar system, with each plaque focusing on a particular element of cyclical time.

It is important to note that both presented plaques demonstrate a deep understanding of astronomical cycles and their significance to the life of an archaic community. They may have served not only as symbolic representations but also as practical tools for tracking time, planning activities, or conducting rituals.

In comparison with the Nebelivka temple complex and its accompanying artifacts, similar symbolic patterns can be identified. Of particular interest are findings of Trypillia relics depicting two crescents alongside rhythmically repeated notches, whose numerical values and accompanying symbols convey meanings that align with the rhythms of the lunar calendar (Figure 11).

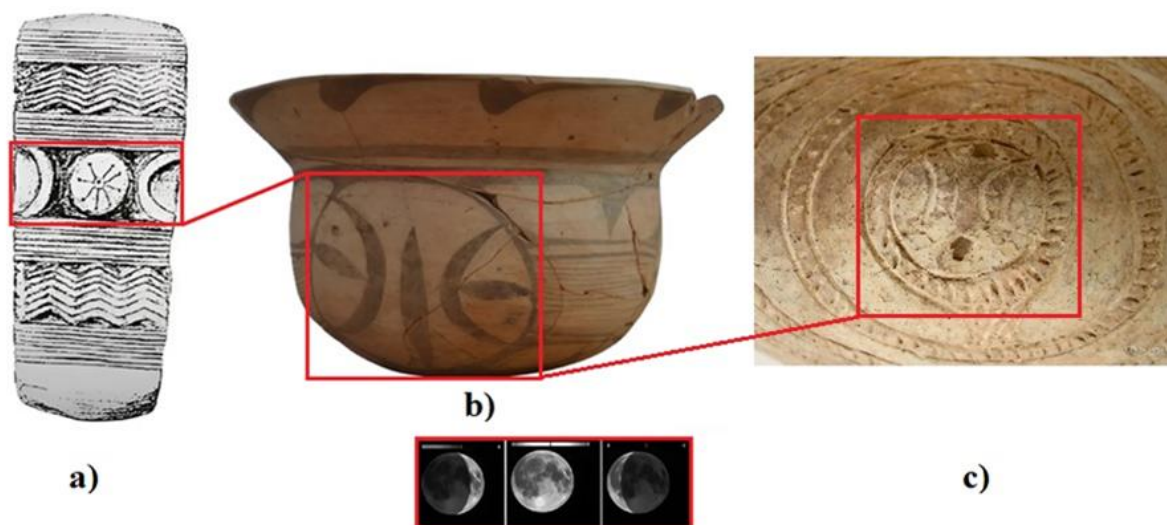


Figure 11. Identical Expressions of Cultic-Lunar Symbolism on a Stone Plaque from Tell Qaramel and Ceramic Forms from Trypillia, Compared with Actual Lunar Phases: a) Stone plaque from Tell Qaramel with a lunar motif (Syria) (Usacheva, 2020, p. 9); b) Trypillian pot lid featuring lunar-numerical symbolism (Zavalii, 2024b, p. 29, 86); c) Motif of doubled moons within a circle on a Trypillian artifact (Videiko, 2005, p. 47)

Figure 11 presents a unique correlation between Trypillian artifacts and the plaque from Tell Qaramel, revealed through similar systems of symbolic and numerical encoding. The central composition of the Trypillian pot lid (Figure 11, b) consists of two crescents placed within a circle and separated by a central groove, closely paralleling the stone plaque from Tell Qaramel, which also features a similar dividing element. The numerical symbolism of the artifact is expressed through eight wavy elements (representing a quarter of the synodic month) along the edge of the lid, and fourteen or fifteen fine lines (half of the synodic month), unifying the entire motif into a coherent conceptual design.

In Figure 11, c, an alternative interpretation of lunar encoding by the Trypillian sages is presented. Here, we see a composition featuring two crescents positioned within a circle adorned with radial notches along its perimeter. Instead of a central groove, this variation includes two visible depressions that symbolically divide the circle into two halves in a similar manner. The radial notches around the circle convey an approximate numerical value corresponding to the full lunar cycle. This composition represents yet another interpretation of lunar symbolism or the phases of the moon, reflecting a cosmological concept of the eternal motion of celestial bodies.

By comparing all three images (Figure 11 a, b, c), a shared cosmological concept emerges, executed in different artistic forms. This demonstrates the flexibility of the symbolic language used by early agricultural societies, which adapted to various material formats while preserving key ideological elements.

A comparative analysis of these artifacts with the Nebelivka temple complex reveals a common cosmological system in which the Moon cult played a central role in shaping sacred space. This expression aligns closely with the architectural design of the Nebelivka temple

itself, where lunar symbolism featuring two horizontal crescent symbols is displayed on the temple's gable ends on both sides of the roof. This symbolic program clearly corresponds to the designs found on most Trypillian temple ceramic miniatures. The façades of these miniatures typically include crescent symbols above the "solar entrance" and on the opposite side at the top of the models (Figure 12).



Figure 12. Closed-Type Trypillian Temple Miniatures from the Museum Fund of Ukraine
(Encyclopedia of Tripillian Civilization, 2004b, p. 327, 336)

It is especially important to emphasize that this duplication of the lunar symbol is not coincidental, but rather reflects profound cosmological beliefs regarding the full phases of the night luminary. The lunar cycle of Earth's satellite begins with a visible crescent (first quarter) and concludes its full cycle with a similarly crescent-shaped form (last quarter), forming a metaphor for beginning and end. Accordingly, the two crescent symbols depicted at the front and rear of Trypillian temple complexes likely embody a holistic cosmological concept, in which the temple serves as a model of the temporal cycle. This same concept is also likely reflected in the artifacts presented above.

It is also worth noting that in the Nebelivka temple, the sanctuary located before the entrance to the main ritual hall symbolized the cult of the Moon and the corresponding part of the cosmos. This was emphasized by the presence of four altars, which corresponded to the four phases of the moon as the primary symbol of the night (Zavaliy, 2024a, p. 276). Evidence suggests that the Moon was regarded as a fundamental element in the creation and operation of the "Temple-Universe." Particularly significant is the fact that the spatial arrangement of the altars within the Nebelivka temple reproduces the macrocosmic order within the microcosm of the sacred structure. The ritual space thus functioned as a kind of observatory in which the cyclicity of lunar phases was inscribed into the sacred geometry of the temple.

It is important to note that the Moon cult among the Trypillians as in many agrarian cultures

was closely linked to the agricultural cycle and the feminine principle, as reflected in numerous anthropomorphic figurines featuring lunar symbolism. The Moon was perceived as a regulator of natural rhythms, ranging from the vegetative cycles of plants to the physiological cycles of humans and animals.

Thus, the lunar symbolism present in both complexes, Tell Qaramel and the Nebelivka temple complex, invites a deeper and more comprehensive analysis of their connection. This affinity is expressed not only through solar-annual culminations but also through lunar cycles. It indicates that these cultures did not rely solely on a solar calendar but also incorporated lunar cycles into their religious and everyday practices.

Another important discovery from Tell Qaramel in our comparative analysis is a stone plaque featuring a distinctive iconographic motif identical not only to artifacts from the Nebelivka settlement and temple but also to those found throughout the Trypillian culture. This motif centers around an abstract design in which the focal point is a complex geometric structure composed of three interwoven curved lines that intersect to form an intricate pattern. The symbol occupies the central position in the composition, indicating its key role in the iconographic narrative (Figure 13).

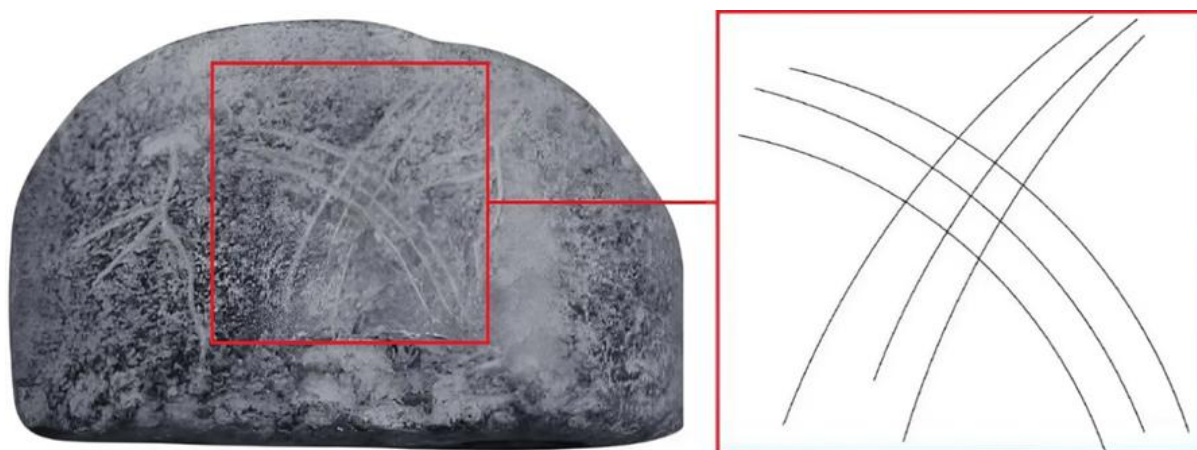


Figure 13. A Stone Plaque from Tell Qaramel with a Highlighted Central Motif (Tell Qaramel, 2023)

At first glance, the central composition presented in Figure 13 evokes a sense of movement and dynamism, which in early agricultural religious concepts may have symbolized the cyclical nature of natural processes or cosmic motion. The intricate interweaving of lines in the image could represent the complexity and multidimensionality of natural processes in their dynamic interconnectedness.

One might think that the spiritual artists of the time encoded the interdependence of the Sun and Moon cults in this way – the two most significant celestial bodies that governed the rhythms of the natural cycle and played a central role in ancient religious beliefs. The three lines may be associated with the three main solar passages over the eastern horizon throughout the year – the solstices and equinoxes – which, through their interweaving and cosmogenic unity, inevitably function together with the four phases of the moon. The

intertwining of the three lines forms a figure with four sectors, which correlates well with the four lunar phases.

To illustrate this concept, it is worth considering the Nebelivka disk – an authentic temple calendar of the Trypillia culture that materially preserves the astronomical knowledge of the Trypillians. The disk depicts a complex system of observations of the Sun's annual movement, where three concentric circles likely represent the three principal trajectories of the celestial body (summer, spring-autumn, and winter), forming the basis for understanding the annual cycle (Figure 14).

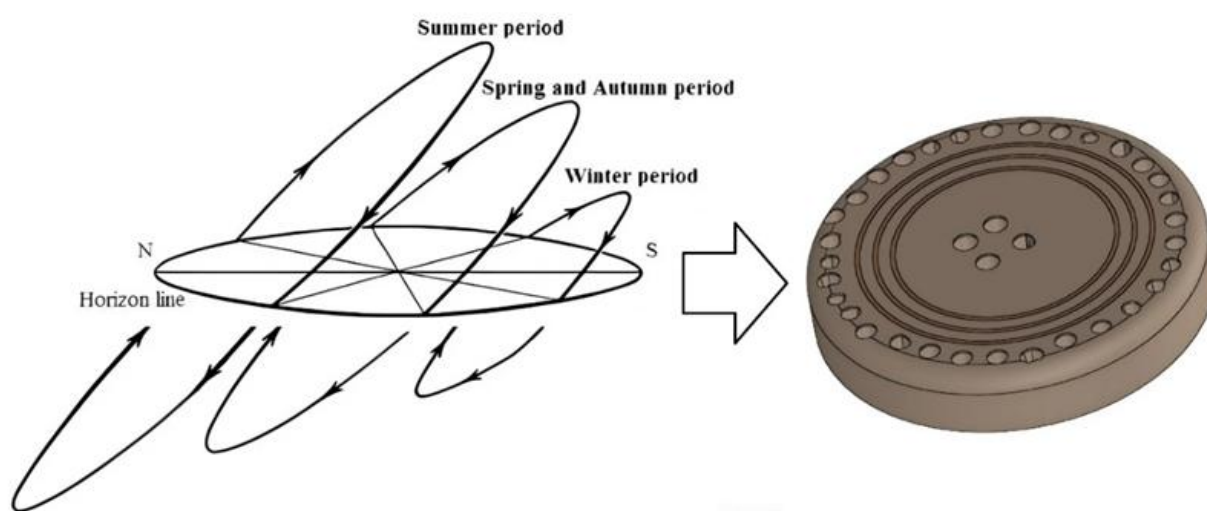


Figure 14. Reflection of the Trypillians' Astronomical Knowledge on the Interconnection of Solar Trajectories within the Annual Cycle in a Temple Calendar

This concept fits harmoniously into the framework of primordial cosmological views, in which the Earth was perceived as the center of the universe. According to this worldview, the Sun moves across the sky along a visible trajectory during daylight hours and, with the onset of darkness, continues its path along an arc invisible to the human eye, forming a closed circular cycle.

This ancient vision of the cosmos is reflected in the mythologies of many ancient cultures, where the solar deity undertakes a journey through the underworld after sunset. In ancient Egyptian mythology, the sun god Ra sailed nightly through the subterranean waters of the Duat, in his boat, reappearing at dawn on the eastern horizon. In Norse mythology, the Sun (goddess Sól) rides through the sky in a chariot drawn by horses, and at night she travels through an underground path through the realm of the dead, Hel, to re-emerge in the east at sunrise.

In Greek mythology, the sun god Helios traverses the heavens daily in a golden chariot. Throughout the day, he crosses the sky from east to west, illuminating the earth with his light. In the evening, reaching the western edge of the world, Helios descends into the ocean, where he boards a massive golden cup-boat. In this vessel, he travels through the night waters along the northern edge of the world.

All these examples vividly demonstrate that, according to archaic beliefs, the Sun does not disappear at night but continues its circular journey, symbolizing the continuity of time, the eternal struggle between light and darkness, and the harmony of the cosmos.

The cyclical movement of the Sun across the horizon establishes a natural four-part division of space – both according to the cardinal directions and the seasons of the agrarian year. The symbolic relationship of "three to four" may also possess additional cosmological significance, rooted in the interaction between lunar and solar cults.

Two sets of triple lines that interact and generate a fourfold division (Figure 13), can be closely associated with the Sun's visible daytime path and its invisible nocturnal journey. At their intersection lies a connection with the lunar expression of the cosmic structure. In this sense, the crossing of these lines would represent not only the Sun's annual journey from equinoxes to solstices – encompassing the fullness of day and night – but would also conceptually produce a unified image of the cosmos in which the Moon's cycles, with their four primary phases, function in harmony with solar trajectories.

Thus, such a crossing of lines may signify the integrated interaction of all celestial cycles, thereby forming a unified system of cosmic rhythms and phases. This would have allowed ancient people to synthesize their observations of the Sun and Moon into a cohesive cosmological model, embodied in a single, multi-layered symbolic image.

The author suggests, this simultaneously simple yet ingenious symbolic code may reflect the ancient thinkers' understanding of the harmonious unity of opposites – Sun and Moon, light and darkness, day and night. The complexity and richness of meanings encoded in this image may indicate the philosophical depth of their worldview.

It is particularly significant that similar symbolic codes recur in the Trypillian and other Neolithic cultures of Europe and Asia – a phenomenon that will be illustrated through selected examples (Figures 15, 16).

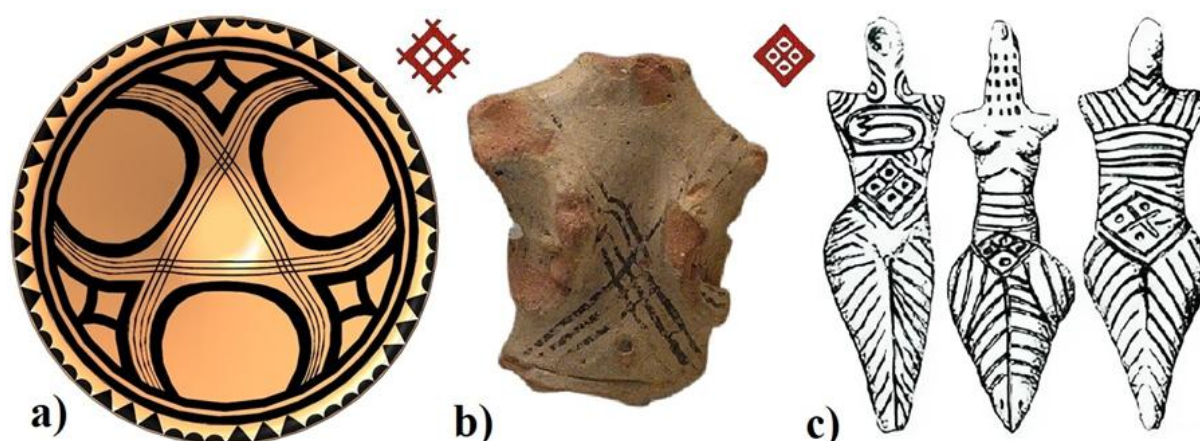


Figure 15. The Symbolic Code of Three Interwoven Lines Forming Rhomboid Symbols, and Individual Rhomboid Motifs from European Eneolithic Artifacts: a) A Trypillian ceramic plate with painted ornamentation from a Ukrainian museum collection (Zavalii, 2024b, p. 15,

79); b) Remains of an anthropomorphic sculpture from the Neolithic settlement in the Franchthi Cave (Greece) (Neolithic figurines, 2020); c) Typical Trypillian female figurines bearing rhomboid symbols (Garfinkel, 2003, p. 329)

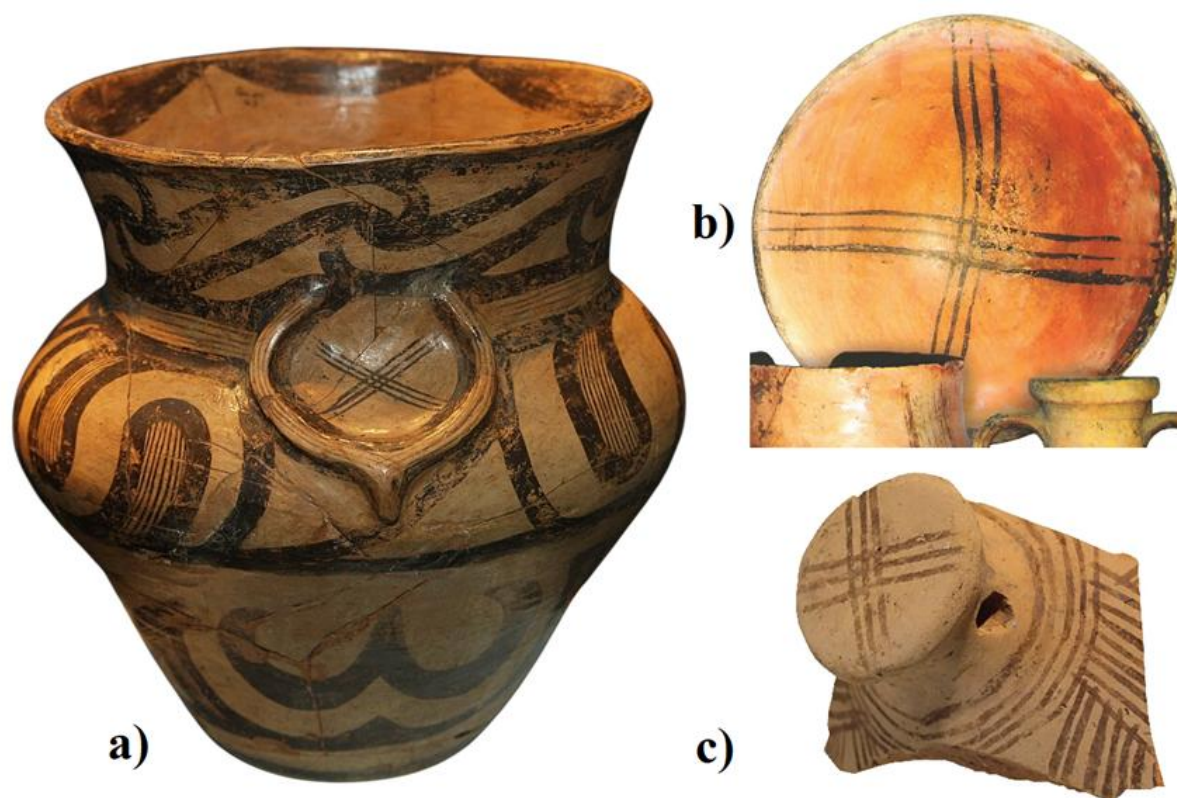


Figure 16. Trypillian Artifacts Reflecting the Concept of Three Interwoven Lines Creating a Four-Part Division at Their Intersection: a) A ritual ceramic vessel displaying a motif of three interwoven lines within a bucranium (Trypillian culture, 2012); b) A Trypillian bowl depicting the "three to four" symbolic motif (Encyclopedia of Tripillian Civilization, 2004a, p. 365); c) A fragment of a Trypillian lid featuring the "three to four" motif (Encyclopedia of Tripillian Civilization, 2004a, p. 187)

In the grottoes and caves of the Kamyana Mohyla sanctuary in the Azov region (modern-day Ukraine, Neolithic/Eneolithic period), similar petroglyphs have been preserved that clearly convey the symbolic code of two groups of triple lines intersecting to form a rhomboid figure divided into four parts (Moiseenko, 2006, p. 75).

Rhomboid symbols divided by lines into four approximately equal parts also appear on ceramic artifacts housed in the Jordan Archaeological Museum in Amman (Arch äologisches Museum). These artifacts represent the Neolithic and later historical periods, indicating the longevity and resilience of this symbolism in the cultures of the Near East.

From the presented material, it becomes evident that both in Tell Qaramel and during the Eneolithic period in what is now Ukraine as well as in other parts of Neolithic Europe and Asia, there existed a specific pictorial tradition involving the interweaving of three lines. The resulting network forms a distinct rhomboid structure divided into four parts ("three to four").

This graphic code, found in various forms, evidently held significant symbolic meaning for ancient thinkers.

As noted earlier, the religious code of "three to four" may have embodied the understanding of the interdependence between the Sun and the Moon and their cyclical motions that governed the rhythms of the natural year. Particular attention should be paid to Figure 3, which depicts the main ritual hall and sanctuary of the Nebelivka temple, divided by fire altars in the "three to four" ratio – symbolically representing the solar and lunar cults. In the author's view, this may be the origin of the numinous quality of the number seven in later religious systems, where temporal cycles are based on sequences of seven (e.g., the biblical account of the world's creation by God in seven days).

Thus, this seemingly simple yet semantically rich and thoughtfully constructed visual symbol may have concentrated ancient peoples' profound conception of the harmony of celestial bodies.

It is important to emphasize that the sacred number seven was reproduced by the Trypillians in various archaeological artifacts using different symbolic codes. An example of this can be found in an image fragment where the number seven is represented by small depressions forming a sacred composition (Figure 17).



Figure 17. Ritual Trypillian vessel with the composition of the sacred number seven in circles (Videiko, 2005, p. 146)

This artifact demonstrates one of the ways the Trypillians encoded the sacred number seven through non-verbal symbolism. Notably, the two circles closest to the composition with the number seven may convey the idea of cyclical time periods, most commonly associated with lunar and solar timekeeping. Additionally, the sacred number seven serves as the central fundamental unit, uniting different temporal rhythms."

Such an approach to the representation of the sacred number seven reflects the multilayered nature of the Trypillian symbolic system, where the same sacred number could be conveyed through various information carriers – from temple altars to artistic compositions on ritual objects.

In the realm of popular media circulating through the Ukrainian internet, the Trypillian four-part rhomboid symbol – formed by the intersection of lines – has been interpreted as a depiction of a "sown field." According to this view, the symbol supposedly represents a plowed and seeded field, and its placement on the abdomens of Trypillian goddesses (as seen in Figure 15, b, c) symbolizes a grain embryo in the womb (Sown field; Trypillian Culture, 2023; Ambroz, 1965, p. 22). Such interpretations are clearly unscientific, and their popularization leads to an oversimplification of far more complex cultural contexts. Moreover, they ignore critical aspects of early agrarian cosmology and religion.

It is important to emphasize that the four-part rhomboid symbol became a distinct marker on female Trypillian sculptures, traditionally depicted on the maternal abdomen. Its interpretation and symbolic meaning must stem from the nature of feminine essence and the specific location of the symbol. The inner nature of womanhood is harmonized with and closely connected to the lunar cycle. It is evident that the Trypillians observed the similarity between the female biological cycle and the lunar phases, both averaging 28-30 days. Just like the Moon, a woman requires roughly the same span to return to her "initial state." This was of paramount importance in early agrarian society, as the continuation of the family line depended on this cycle.

The historian of religion Mircea Eliade refers to the Moon as a "universal measure," and the time governed and marked by its phases as "living time," because it is always connected to cosmic reality. It is therefore likely that what was depicted on the abdomens of the Trypillian ceramic goddesses was not merely a "sown field" or a "grain embryo," but rather a complex cosmological symbol reflecting the unity of celestial rhythms with the life cycles of women and nature as a whole. This symbol can be interpreted as a visual embodiment of sacred time and space, in which the intersection of three lines forming a four-part structure symbolized a profound connection between lunar phases, female cyclicity, and cosmic order.

This reconstruction corresponds not only to the logic of the symbol's placement on the abdomen of the female figure – linking it to female physiology and the reproductive cycle – but also reflects the Trypillians' profound understanding of the interconnection between humans and the cosmos. Similar associations between the feminine principle, fertility, and the Moon are found in many ancient cultures, which significantly supports the proposed hypothesis. Moreover, this interpretation is grounded in archaeological materials and comparative research, aligning well with the previously discussed symbolic code of three

intersecting lines forming a four-part rhomboid.

It is appropriate to mention a unique artifact from the Trypillian culture, displayed in a museum in the village of Lehedzyne (Cherkasy region, Ukraine). This is the figure of the Mother Goddess (a pregnant woman), within whose abdomen the Trypillians placed miniature balls. X-ray analysis revealed that there are seven such balls inside the artifact (Materials of the First All-Ukrainian Scientific, 2018, p. 56), (Religion of Trypillia, 2023).

In the author's opinion, such an artifact symbolizes the seven lunar cycles of pregnancy and the development of human life within the calendar system of the Trypillians, which divided the year into 10 equal periods (months in a modern sense). This is supported by the research of the authentic temple calendar – the Nebelivka disk (Figure 14). If the period of a woman's pregnancy (280 days) is converted to a calendar with ten months, it aligns exactly with childbirth occurring in the seventh month. However, this symbolism of conception could also be closely intertwined with the aforementioned arguments regarding the cosmogenic significance of the number seven in Trypillian culture.

This interconnectedness of biological and cosmic cycles in the number seven may reflect the Trypillians' profound understanding of the unity between the microcosm and the macrocosm, where human life, development, and birth were sanctified through the sacralization of the cosmological model. Seven periods of human fetal development in the decimal calendar, seven temporal dimensions of the cyclical movements of the sun and moon, and seven days between key moments of the moon's phases – all of these created a holistic order of existence and sanctified the corresponding numerical symbol.

Such synchronization of earthly and celestial processes may indicate that the Trypillian civilization viewed humans not as separate from the cosmos, but as an integral part of a vast cosmic organism. The number seven likely became a kind of key to understanding the universal laws governing both the development of individual life and the nature of the cosmos.

The meaning of this particular symbol allows us to better comprehend the complexity and depth of early agrarian cultures in the Near East and Europe, steering clear of oversimplified interpretations that may appeal to a broad audience but fail to capture the true intricacy of ancient belief systems and symbolic traditions. It also highlights the importance of an interdisciplinary approach in the study of ancient cultures, where archaeological evidence is integrated with symbolic analysis, ethnographic parallels, and a comprehensive understanding of the worldview of early farming societies.

Overall, the comparative analysis of artifacts from Tell Qaramel, the Nebelivka temple, and the Trypillian culture demonstrates that a sophisticated system of symbols existed in prehistoric times a sophisticated system of symbols associated with astronomical observations and cosmological concepts. These formed the foundation of their religious worldview. The similarities among these systems suggest the possibility of shared cultural archetypes or a complex pattern of cultural diffusion among early agrarian communities of the Near East and Europe.

5. Conclusion

A comparative analysis of the Nebelivka temple complex of the Trypillian culture and the structures of the artificial mound at Tell Qaramel reveals significant parallels that suggest a possible cultural connection or a case of convergent development of cosmological concepts in early agrarian and pre-agrarian societies of the Near East and Europe – despite being chronologically and geographically separated.

The study of spatial organization, architectural features, interior elements, and symbolic systems in both complexes has uncovered a number of shared traits that cannot be dismissed as mere coincidence. This is most evident in the astronomical orientation of the structures in relation to solar cycles. The circular towers of Tell Qaramel and the altar system of the Nebelivka temple exhibit a clear spatial alignment with the Sun's positions at key points of the annual cycle. This indicates an advanced level of astronomical knowledge and its integration into the sacred architecture of both cultures.

The symbolism of the color red holds particular significance, appearing in the interiors of both complexes. The use of red clay for floors and walls in Tell Qaramel finds a strong parallel in the red decoration of the Nebelivka temple, further supported by several ceramic temple models from the Trypillian culture. This chromatic semantics is associated with notions of sacred space, transformational processes, and connection to cosmic forces.

The bull cult (the cult of the aurochs), evidenced through the ritual use of bucrania and the discovery of animal remains in specially arranged circular pits, represents another shared element between the two complexes. The astral dimension of this cult – linked to the constellation Taurus, which held particular significance during the height of the Trypillian culture (the zodiacal "Age of Taurus") – reflects a deep understanding and symbolic interpretation of cosmic phenomena within agrarian societies.

Hypothetical ritual practices involving fire also show marked parallels: the fire purification of space prior to construction, the presence of circular fire altars, and the intentional burning of structures as part of a renewal cycle. These practices suggest a profound association between fire and concepts of transformation, purification, and cosmic order.

The analysis of individual artifacts revealed critical parallels in the symbolic systems of both cultures. In particular, the stone plaques from Tell Qaramel exhibit complex calendrical observations related to lunar cycles, which find clear counterparts in Trypillian symbolism. This may point to a widespread understanding of lunar rhythms among Neolithic cultures and provides evidence for the existence of sophisticated timekeeping systems that predated the invention of writing. The consistent use of serpentine motifs, crescent shapes, and systems of numerical notches and markers illustrates how these early societies developed coherent symbolic languages for tracking lunar phases, serving both practical and ritual purposes.

Particularly significant is the identification of an identical symbolic code – "three interwoven lines forming four rhomboid structures" – present in both cultures, which likely represented the interrelationship between solar and lunar cycles within a unified cosmological system.

The conducted research allows us to assert that the religious concepts of the cultures being studied were far more complex and philosophically profound than traditionally assumed. They were based on systematic astronomical observations, possessed a sophisticated symbolic language, and reflected a sophisticated understanding of the interconnection between cosmic phenomena and earthly processes.

The identified parallels between the Nebelivka temple and Tell Qaramel suggest the possible existence of shared cosmological archetypes that emerged during the formation of early agrarian societies, or alternatively, point to complex cultural interactions between the civilizations of the Near East and Europe. This supports existing research on the migration routes of the first farming communities across Western and Eastern Eurasia.

The findings of this study are significant for deepening our understanding of the spiritual culture of early agricultural societies and for overcoming simplified interpretations of prehistoric religious systems. They indicate a high level of abstract thinking, cosmological knowledge, and symbolic encoding of information in ancient cultures, allowing for a renewed appreciation of their contribution to the development of humanity's foundational worldviews.

Further archaeological research at Tell Qaramel and other early settlements in the Near East and Europe may shed additional light on the role of Neolithic communities in the religious history of humankind.

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Not applicable

Informed consent

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Ethics approval

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The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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No additional data are available.

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