

Temples and Sanctuaries of the Cucuteni-Trypillian Culture from the Territory of Ukraine and Moldova Based on the Results of the Latest Geomagnetic Researches

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How to cite this paper: .Zavaliy, O (2023). Temples and Sanctuaries of the Cucuteni-Trypillian Culture from the Territory of Ukraine and Moldova Based on the Results of the Latest Geomagnetic Researches. *Advances in Historical Studies*, 12, 138-162. <https://doi.org/10.4236/ahs.2023.124011>

Received: September 22, 2023

Accepted: November 26, 2023

Published: November 29, 2023

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Abstract

The article presents the results of a large-scale geomagnetic survey of the Cucuteni-Trypillian settlements. The survey reveals that the structure of the settlements is characterized by the presence of distinctive structures (“mega-structures”) located at typical sites of different settlements. In 2012, based on the results of a preliminary geomagnetic survey, archaeological excavations of one of these structures near the village of Nebelivka (Ukraine) revealed a temple structure. This structure is now recognized as one of the oldest temple structures on the European continent. The Nebelivka Temple (4000-3900 BC) was the scientific name given to this object. The Nebelivka Temple Complex, according to the geomagnetic surveys on the ground, has a fairly clear set of spatial landmarks and has a kind of cultural standard by which the sacred complexes of the ancient agriculturalists were constructed. It can be said that since the violation of this condition would destroy the whole sacred order, the very presence of the temple in its place makes it sacred and what it is. Discovering such sacred patterns, even without archaeological research, can pave the way to discovering the sacred structures of the Cucuteni-Trypillian community. It should be added that the ancient sanctuaries of the European culture were built based on the place and its observance. The author reveals the meaning of the sacred structures of Cucuteni-Trypillia in the context of the spatial orientation on the ground in the last part of the article. It becomes clear that at a certain point in space and time, where a sense of divine order in the universe was guaranteed, the ancient temples were organized in the appropriate sacred order.

Keywords

Trypillia Culture, Cucuteni-Trypillia Culture, Ukraine, Moldova, Eneolithic, Temple, Religious Cosmology, Prehistoric Religion, Geomagnetic Survey

1. Introduction

An organized religious culture was bequeathed to its descendants by the Cucuteni-Trypillian culture, which existed from 5500 to 2750 BC on the territory of modern Ukraine, Moldavia and Romania. This unique spiritual heritage was formed thanks to the oldest forms of organized ritual actions of the ancient agriculturalists. During these ritual actions, entire proto-cities and settlements were immersed in the element of fire, falling under the sacred cycle of renewal known to the ancient society. This would have been the destruction of the old world and the creation of a new one.

With this fiery ritual of renewal the ancestral antiquity, which was mostly made of clay, was baked into stone, hiding over the years under the thickness of fertile black soil along with all the grandeur and genuineness of sacred life, which became known only more than a century ago with the discovery of the first Cucuteni-Trypillian sites. The territory of Central Europe began to reveal priceless treasures of its inner hidden, previously unknown and unappreciated when it became extremely necessary as if the root of the world civilization was fixed. Cucuteni-Trypillian has developed from a purely pottery culture into a spiritual, deeply philosophical culture. It cannot be stereotypically understood by the religious standards of modern civilization.

The oldest forms of temple sanctuaries, which were discovered only in the 70s of the 20th century, were preserved in the ancient lands of modern Ukraine and Moldova. In the 70s, the Ukrainian archaeologist T. Movsha collected for the first time evidence of sanctuaries of the Trypillian period (Movsha, 1971: pp. 201-205), but at that time it seemed to be insufficiently substantiated evidence and exaggeration of the importance of ancient agriculturalists.

The proof of the existence of religious buildings among the Trypillians was the discovery of a sanctuary in the settlement of Konovka in the Chernivtsi region (Ukraine). Among ordinary dwellings, its dimensions of 6 × 19 meters immediately stood out. The building is oriented along the east-west axis of the world with a certain amount of deviation. There were two separate rooms in the sanctuary or temple. At the zero point, four clay altars with religious objects were found. There were no heating devices in the room, such as stoves. This is the basis for the interpretation of this building as a sacred structure (Videiko, 2015: pp. 226-227), as opposed to a domestic one. As early as in the 90s of the XX century the Trypillian sanctuaries from the territory of Ukraine were discovered and studied in the settlements of Soloncheny I (Movsha, 1955: p. 9), Stina (Makarevich, 1960b: p. 24, 28), Volodymyrivka (Yakubenko, 1990: pp. 92-102),

Sabatynivka (Makarevich, 1960a: p. 291), Shkarivka (Burdo, 2005: p. 70), Oleksandrivka (Burdo & Videiko, 2007: p. 101). In the settlement of Polyvaniv Yar, a building was discovered, the interior details and contents of which indicate that a place of worship existed (Popova, 1990: p. 66). Researchers have identified buildings that could have belonged to various forms of social and religious centers in the Klishchiv, Maidanetske and Kolomyia settlements (*Encyclopedia of Trypillia Civilization*, 2004: p. 365). The latest news about a Trypillian Temple found near the village of Kopachiv, Obukhivskyi district, Kyiv region (Ukraine) was reported by the Ukrainian archaeologist M. Videiko (obukhiv.info, 2017).

R. Alaiba discusses the possible presence of sanctuaries and temples associated with pottery workshops on the territory of Ukraine, taking into account the presence of altars in them, as well as inventory-related mainly to the production of ceramics, for example, from Trostyanchyk, Vesely Kut, Shkarivka, Varveruka VIII. Even the production of inventory can be connected with mythology. Each of the primary elements plays a decisive role in its realization (Kovacs, 2016: p. 306).

Gradually, an interdisciplinary discussion of the oldest organized religious culture of ancient European society emerged in the European and later in the world scientific community. It becomes clear that the construction of religious complexes was aimed at organizing and conducting ritual actions and required the separation of a social stratum from the population that would fulfill this cultural need. All of this began to change the perception of the spirituality of the Cucuteni-Trypillian ethno-cultural community and the level of its development.

The most recent break in the discovery and study of ancient proto-cities and settlements was a technological leap in the possibilities of field magnetic archaeological survey: a new incredible world of settlement plans with concentric rings of houses around central squares, residential areas with a network of complex streets, the remains of ceramic and metallurgical complexes, public and religious “megastructures” (a term coined by the archaeologists M. Videiko and D. Chepmen, a purely archaeological term). A clear organization of living space and a clearly structured building concept were revealed by the magnetic surveys of the proto-cities.

The magnetic survey revealed a large number of structures that were characterized by their non-standard size. They stood out on the ground and had a clear spatial organization. This canonicity of “megastructures” on the settlement plan could indicate a certain tradition of their construction. They were usually located along the east-west axis, mostly on elevated ground near rivers, and had a noticeable separation from the general plan. These are the remains of large public buildings, possibly temples, according to archaeological research. Until 2020 more than 110 such “megastructures” were recorded by magnetic surveys (Videiko, 2020: pp. 230-238).

For the first time in the history of archaeological research, based on the results of the preliminary magnetic survey in 2012, a Trypillian structure was discov-

ered near the village of Nebelivka, Kirovohrad region (Ukraine). It became the largest in the area of the Cucuteni-Trypillian cultural complex (1200 m²) and one of the oldest temple structures on the European continent (4000-3900 BC) (Videiko, 2015: pp. 231-233). Under the pressure of these facts, the international scientific community of archaeology in 2015 at the II Shanghai World Archaeological Congress included this discovery in the top ten in the world (*The Tripillia Mega-Sites Project*, 2019).

Thus, the possibilities of the preliminary ground magnetic survey showed a high accuracy of the interpretation of the Cucuteni-Trypillian structures and paved the methodological way for the next search sites for possible temple complexes on the ground. These sites will be covered in the current study.

Recent geomagnetic surveys of the general settlement plans have revealed a number of non-standard buildings that fit the “template” of the Nebelivka Temple. The fact that the excavated temple near the village of Nebelivka is not a peculiarity, but one of the first “open standards” by which to determine the next possible sites for the search of spiritual sanctuaries in Central Europe, is demonstrated by such clear spatial features as orientation to the east-west axis, larger size compared to standard residential buildings, isolation on the settlement plan, and a tendency to place these structures on elevated ground and usually near water bodies.

This study has been carried out within the framework of the modern study of religions and with an interdisciplinary approach to research. For the study of archaic cultures that did not leave behind manuscripts understandable to contemporaries, the combination of the achievements of modern archaeology and religious studies is becoming a prerequisite. An important source of research is the actual geomagnetic surveys of the proto-cities and settlements of Cucuteni-Trypillia. They reveal the ancient consciousness of the people who, under the influence of the concepts and ideas about the world of that time, planned and created complex buildings on the ground. Thus, the study of archaic religion as a cultural phenomenon of the ancient world is facilitated by the achievements of modern archaeology.

Geomagnetic surveys published in scientific papers were used by the author of the article: M. Videiko, A. Chernov “Maidanetske: Using GPR. The new experimental geophysical survey”; R. Ohlrau, V. Rud. “Testing Trypillian site development via geomagnetic survey. New “mega-structures” and plans of smaller sites”; M. Videiko “Trypillia culture sites at Dnipro region: geomagnetic surveys”; V. Rud, R. Hofmann, V. Kosakivskiy, O. Zaitseva, J. Müller “Trypillia Megasites West of the River Southern Buh: Preliminary Results of Bilyi Kamin Site Investigation in 2018”; J. Chapman, M. Videiko, B. Gaydarska, N. Burdo, D. Hale “Architectural differentiation on a Trypillia mega-site: preliminary report on the excavation of a mega-structure at Nebelivka, Ukraine”; V. Rud, R. Hofmann, V. Kosakivskiy, O. Zaitseva, J. Müller “Bilyi Kamin: Site Structure of the Biggest Trypillia Culture Settlement of the Southern Buh—Dnister Interfluvium”;

M. Nebbia, B. Gaydarska, A. Millard and J. Chapman “The making of chalcolithic assembly places: Trypillia megasites as materialized consensus among equal strangers?”; R. Hofmann, J. Müller, L. Shatilo, M. Videiko, R. Ohlrau, V. Rud, N. Burdo, M. Dal Corso, S. Dreibrodt, W. Kirleis “Governing Tripolye: Integrative architecture in Tripolye settlements”; F.-A. Tencariu, R. Brunchi, S. Terna, A. Drob, M.-C. Ciobanu, A. Vornicu-Terna, C. Brasoveanu, D. Adumitroaiei “Understanding technological innovations through experiment. Construction and testing of Chalcolithic pottery kilns”; S. Musteață et al. “Non-Invasive Archaeology in the Republic of Moldova—An Example of Multidisciplinary Approach and International Partnership”; J. Chapman, M. Videiko, D. Hale, B. Gaydarska, N. Burdo, K. Rassmann, C. Mischka, J. Müller, A. Korvin-Piotrovski and V. Kruts “The Second Phase of the Trypillia Mega-Site Methodological Revolution: A New Research Agenda”; “Beyond excavation: geophysics, aerial photography and the use of drones in Eastern and Southeastern European archaeology”. Proceedings of the international colloquium: 5-8 December 2016; Journal of rescue archaeology. Acta archaeologiae conservativae. Vol. 2. The National Academy of Sciences of Ukraine, 2016.

2. Nebelivka, Ukraine (Approximately 4000-3900 BC, 275 Ha)

The temple in the proto-city of Nebelivka was discovered by archaeological science (**Figure 1, Figure 2**). It is located in the eastern part of the inner ring of buildings, in the area where the settlement development along the east-west axis seems to have been cut off. The excavation of the temple revealed a clear dependence on the planning and development of the settlement of Nebelivka to the temple complex itself. At the highest point of the settlement, the temple stood on a high promontory formed by the deep valleys of the Nebel River and an unnamed stream. This made it possible for the temple to be seen from a distance of many kilometers. With the central entrance of the temple facing the rising sun, this entire spiritual “megastructure” is oriented in an east-west direction. The building consists of two rooms (40 × 20 m and 20 × 20 m) and an adjacent courtyard.

During the archaeological research of the Nebelivka Temple, quite several temple inventory and interior features were discovered, which are of great interest for religious studies.

Monumental religious objects that marked the religious space occupied the premises of the Nebelivka Temple Complex. Seven fire altars, a clay podium with a set of religious utensils, ritual grain grinders, a ceramic table, ceremonial cups, and more were found among the building remains (Zavalii, 2021b: pp. 87-110) (**Figure 3**).

It is worth mentioning a special discovery of the Nebelivka Temple: the remains of a ceramic disk with a group of chips attached to it. This discovery is called the Nebelivka Disk (Zavalii, 2021c: pp. 103-116) in the scientific world.

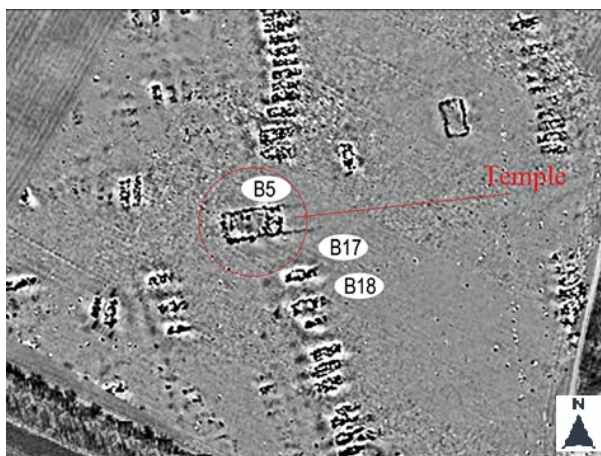


Figure 1. A magnetogram of a part of the Trypillian proto-city of Nebelivka with the temple that was discovered in 2012 (Videiko & Burdo, 2015: p. 313).

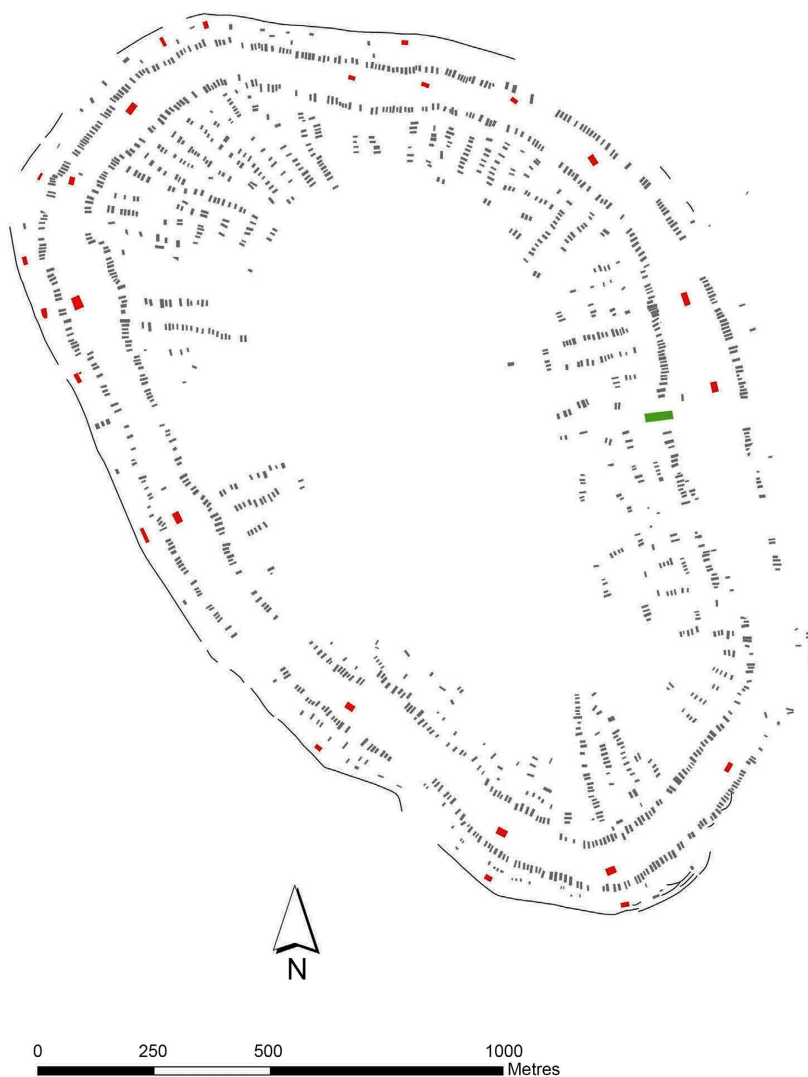


Figure 2. A magnetogram of the entire Trypillian proto-city of Nebelivka. The Nebelivka temple is highlighted in green (Nebbia et al., 2018: p. 4).

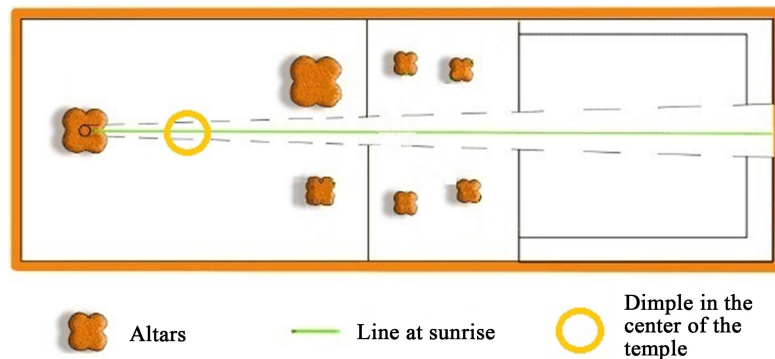


Figure 3. The floor plan of the Nebelivka Temple, according to the level of the first floor (Hofmann et al., 2019: p. 34).

In the very center of the ritual hall of the Nebelivka Temple a conditional pit/depression with the remains of red paint was discovered (Videiko & Burdo, 2015: p. 326). During the functioning of the structure, it was first formed in a ritual form—as indicated by the red ochre—and then filled up to the level of the floor (Videiko & Burdo, 2015: p. 326). This gives rise to a discussion about the main or central symbol of the Nebelivka Temple Complex, which was arranged in such a way as to emphasize the depth of the compositional center point in the temple. In his work “Reconstruction of the sacred significance of the interior of the Nebelivka Temple and its main symbol” the author argues that the probable central temple symbol was the “religious tree” (“tree of life”, “world tree”, etc.), which was quite common in archaic cults. Here it is also worth quoting the research of M. Eliade, who considered it necessary to take into account the fact that the placement of “worldview pillars” in the center of settlements carried the idea of the “Tree of Life” or the “Celestial Axis of the World” (Eliade, 1994). The pits themselves and the deposits in them, especially those of sanctuaries, have their origins in beliefs about the revitalization of buildings through the establishment of a connection with a patron deity (Kovacs, 2016: p. 239). The echoes of the “sacred tree” in the space of the temple altar and the temple itself partially found their later manifestations in the cultures of the world in rebuilding altars with the image of trees (Figure 4) (Gunn et al., 2002: p. 238).

The basic phenomenon of the interior of the Nebelivka Temple was that the whole structure was clearly adjusted to the spatial point of sunrise at the equinox. This probably ensured the entry of sunlight into the temple on the most solemn days of the year. It is also worth mentioning that the Nebelivka Temple was built in such a way that the temple “sun corridor” in the middle of the building was narrowed from the courtyard of the temple to the central ritual hall (Figure 3). Probably in this way the creators of the structure were able to concentrate the rays of the sun on the main temple symbol on the sacred days of the year. This will help us to understand more and more how the temples of the Cucuteni-Trypillian culture functioned and the main “patterns” of locating the temples.

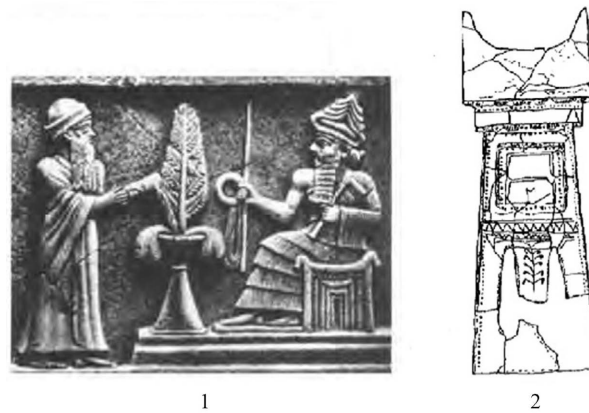


Figure 4. 1. A priest acts at the altar of God and Goddess. Part of the Ur-Nammu stele (Two Years); 2. Horn-shaped altar of the Aegean culture in combination with the image of the “Sacred Tree”.

Thus, based on the spatial “templates” of the Nebelivka Temple, it is possible to hypothetically identify the following probable ancient temple shrines and sanctuaries in Central Europe using magnetic surveys of the Cucuteni-Trypillian settlements.

3. Moshuriv, Ukraine (Approximately 4000 BC, 10 Ha)

The settlement is located near the village of Moshuriv, Talnivskiyi district, Cherkasy region (Ukraine) (Figure 5). It is situated on a slope formed by a stream valley in the south and a shallow ravine in the east. It is interesting to note that this small settlement follows the same planning principles as the other large Trypillian proto-cities. The “megastructure” discovered in the settlement, marked with a ring on the magnetogram, is located in the same place as other similar structures in the Cucuteni-Trypillian settlements. It is located in the eastern part of the settlement and it was built along the east-west axis of the world, it is situated on a hill and next to the river.

4. Talne-3, Ukraine (Approximately 4000-3900 BC)

The Trypillian settlement of Talne-3 is located on a high plateau to the east of a tributary of the Hirskiyi Tikych River and to the southeast of the modern city of Talne in the Cherkasy region of Ukraine (Figure 6). Despite its small size, Talne-3 follows the principle of circular development. It is similar to “mega-settlements” (an archaeological definition of giant settlements). With only one ring of buildings, the organization of the space provided a key place in the center. The center was built with large structures. They are specially marked on the plan. They are larger than conventional residential buildings and are oriented to the world’s east-west axis. The approach to these buildings is also from the east. This is a sign to pay attention to these structures that have ceased to function in the ritual of fire renewal. Perhaps, after the end of their sacred cycle of existence, the structures were built sequentially.

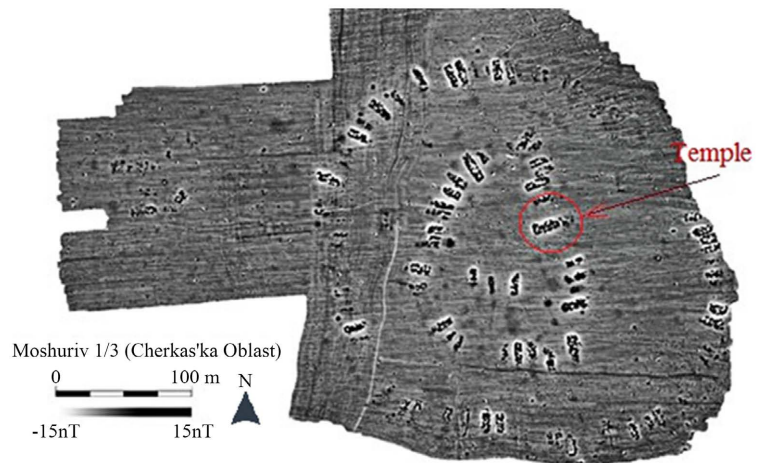


Figure 5. Magnetogram of the Trypillian settlement of Moshuriv with a possible temple marker (Mischka & Preoteasa, 2019: p. 99).

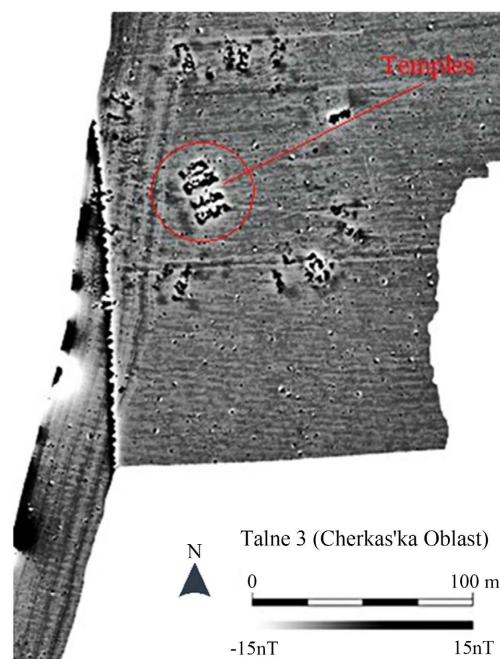


Figure 6. A magnetogram of the Trypillian settlement of Talne-3, shows a group of probable sanctuaries in the center of the buildings (Mischka & Preoteasa, 2019: p. 100).

The absence of anomalies that would indicate possible pottery and metallurgical furnaces at the Talne-3 settlement is another interesting fact. This can be interpreted as meaning that small settlements depended on large proto-cities to survive. For example, the giant Trypillian settlements of Talianky and Maidanetske existed at the same time only 10 - 12 km away from Talne-3. They could have supplied the satellite settlements with raw materials. Therefore, the resistance on the world stage to the recognition of the vast Trypillian settlements as the oldest “cities” simply because they do not appear to have signs of social or economic diversity and did not have a rural periphery (Kohl, 2002: pp. 153-155)

like Shumer should be reconsidered.

5. Smahliievi Bereha, Ukraine (Approximately 4000 BC)

The Trypillian settlement of Smahliievi Berehy, also known as Moshuriv 2, is located on the western tributary of the Talnianka River, south of the present-day Moshuriv in the Talnivskyi district of Cherkasy region (Figure 7). The cluster of residential buildings is organized in a large concentric circle with a prominent “megastructure” that falls under the ideology of the location of “temple complexes”: it is located in the eastern part of the settlement, oriented on the east-west axis, has increased size and access to water from the eastern part of the settlement.

6. Viitivka, Ukraine (Approximately 3900-3500/3400 BC, 50 Ha)

The Trypillian settlement in the Bershadskyi district of Vinnytsia region is located northwest of the modern Ukrainian village of Viitivka (Figure 8). It is situated on a high plateau north of a tributary of the Dokhna River. It is four kilometers south of the Southern Bug River. The difference in height between the plateau and the valley in this part of the territory is 12 meters. The settlement is planned in two ovals with radial streets. The streets follow the line of the probable temple in the eastern part of the settlement. This location coincides with the location of the open temple of Trypillia in Nebelivka.

A unique case for Trypillia was recorded at Viitivka. Two more buildings were built on the sides of the probable temple but of smaller size. They form a certain integral complex together with the depressions and anomalies around these buildings, which are clearly visible on the magnetogram. It is possible that this complex, as in the case of Nebelivka, had a special sacred character (Rud, 2008: p. 78) and was a center of pilgrimage for the ancient villages in the surrounding area.

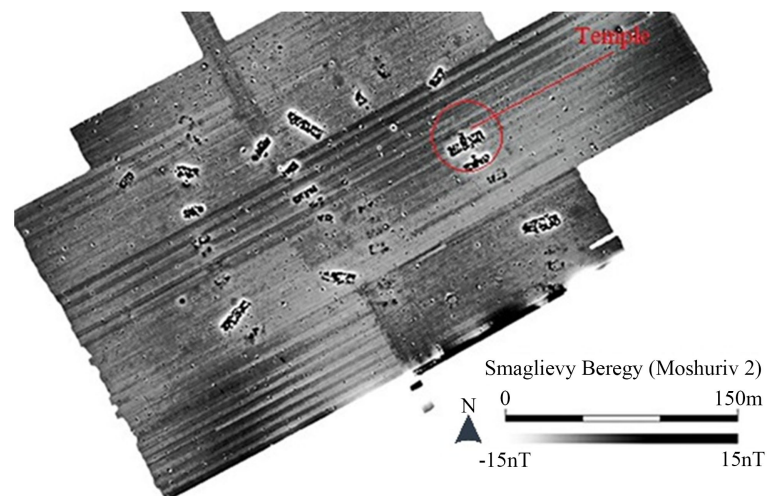


Figure 7. A magnetogram of the Trypillian settlement of Smahliievi Bereha with a possible temple (Mischka & Preoteasa, 2019: p. 104).

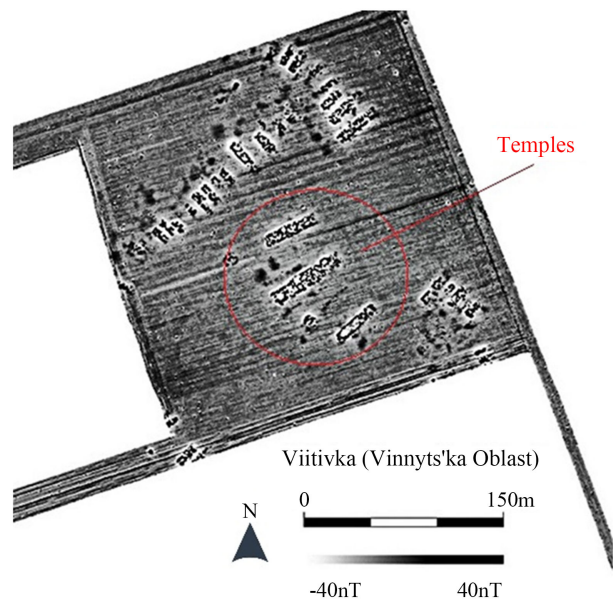


Figure 8. A magnetogram of the Trypillian settlement of Viitivka with a possible temple (Mischka & Preoteasa, 2019: p. 112).

7. Hlybochok, Ukraine (Approximately 4200-3900 BC, about 200 Ha)

The Trypillian settlement is located near the present-day Ukrainian village of Hlybochok, in the Talnivskiyi district of Cherkasy region (Figure 9). It is situated north of the Hirs'kyi Tikych River. The settlement is traditionally laid out in concentric circles. There is a visible break in the radial streets opposite probably sacred structures. These structures are located on an area of 0.7 hectares. They are accompanied by lateral pits or groups of pits. Interestingly, two of the structures have distinct magnetic anomalies, suggesting a two-chambered building. Let's take a closer look at them in Figure 10.

Because it was at Nebelivka that archaeologists, according to a preliminary magnetic survey, excavated a two-room/two-chamber temple with an adjacent courtyard (Figure 1), we can see a clear structural correspondence between the two "megastructures" and the Nebelivka Temple. Another indication that the temples from two different sites look similar are their sizes. The author has noted a certain dependency that may be related to sacred numerical values and units used to measure length in the Trypillian calculations. It is not known which units of measurement the Trypillians used. However, if we look at the dimensions of the Nebelivka Temple and similar two-part structures from the Hlybochok settlement, they can be expressed as one to three. Let's compare: Nebelivka Temple—60 × 20 m; "megastructures" from Hlybochok—30 × 10 m and 21 × 8.5 m. It should be noted that the general dimensions of Trypillian dwellings are about 4.5 - 5 m by 12, 13 m, which also falls within the probable ratio of 1 to 3. It seems that in the calculations of the Trypillians, such dimensionality should also be associated with certain sacred numerical values and units of

length measurement. This is already an indication of a certain numerical sacralization of the Trypillian structures for various purposes. It is clear that in the projection onto human creative activity, all this should resemble and serve as a reflection of the universe and the universe itself.

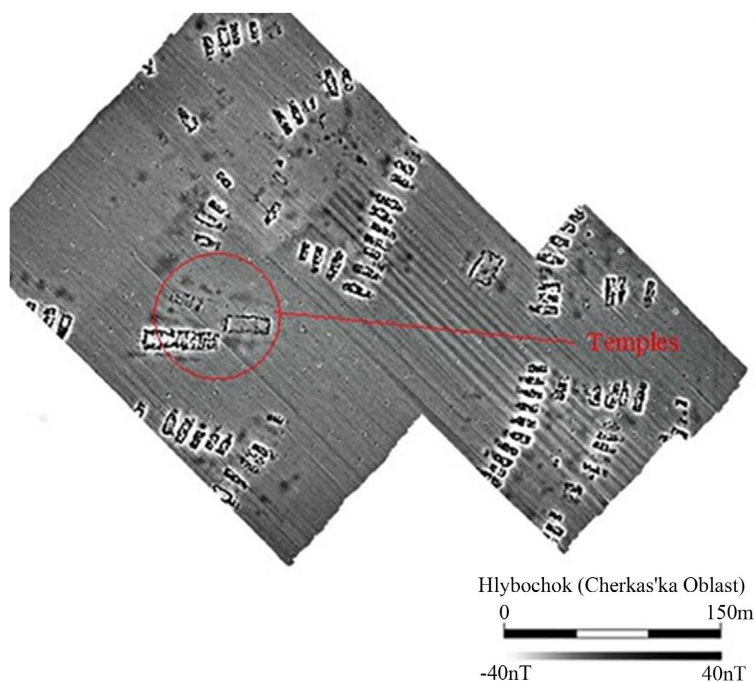


Figure 9. The Trypillian settlement of Hlybochok is an ensemble of “mega-structures” (Mischka & Preoteasa, 2019: p. 106).

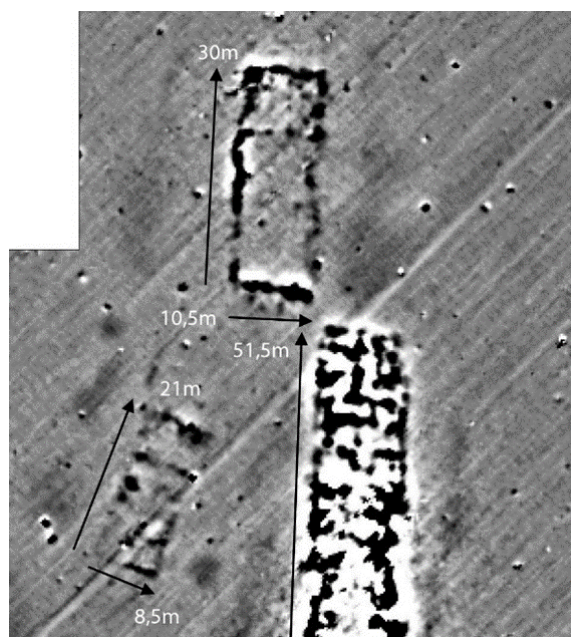


Figure 10. Probable Trypillian temples at the Hlybochok settlement in different phases of their existence (Mischka & Preoteasa, 2019: p. 109).

During a large-scale cyclical renewal ritual, the entire ensemble of “mega-structures” at the Trypillian settlement of Hlybochok seems to have been burned at different times. This may be an indication of the different stages of function of each of the buildings.

8. Dobrovody, Ukraine (Approximately 3800-3700 BC, 259 Ha)

On the western edge of the modern Ukrainian village of Dobrovody is an ancient Trypillian settlement (**Figure 11**). The site is located west of a small river. The geomagnetic survey showed that the settlement was circular in shape. Part of it was surrounded by a protective wall. The site has a standard central square with no buildings and is located at an altitude of 180-210 m. A complete magnetic survey of the settlement is not possible today. The modern village cemetery encroaches on the ancient area. Nevertheless, even a fraction of the footage has revealed a “megastructure” that can be considered a temple according to all the “Trypillian canons” (isolation on the plan, elevation, proximity to water, orientation to the east-west axis). The apparent circular anomaly in the western part of the alleged temple is also interesting. This is the place where the largest temple altar was found in Nebelivka.

9. Trostianchyk, Ukraine (Approximately 4200/4100 BC, 4 Ha)

West of the modern Ukrainian village of Trostianchyk in the Trostianetskyi district of Vinnytsia region is the Trypillian settlement of Trostianchyk (**Figure 12**). It occupies the cape of a plateau formed by the Nedotika River channel. It is 3.2 km west of the confluence with the Southern Bug River. There are steep slopes descending to the river to the south and southeast of the settlement. Today the inclination of the slopes ranges from 30 to 50 degrees in different areas. The modern geomagnetic survey covered an area of 4.2 ha. It included most of the settlement area as well as areas outside the settlement. The entire settlement was surrounded by two parallel lines of anomalies. The lines were 1.5 - 2 m wide. It has been suggested that these are the remains of a palisade or symbolic fence. The palisade surrounded the entire settlement in a circle. At the Nebelivka settlement (*Nebbia et al., 2018*) a similar discovery was made. The settlement is circular, with a clearly defined central square. In front of it, the anomalies of two large buildings (175 m² and 195 m²) are visible (*The Institute of Archaeology of the National Academy of Science of Ukraine, 2018: p. 12*). Located in the heart of the settlement, one of them was oriented east-northeast, which falls within the established markers along which sacred Cucuteni-Trypillian complexes were built. Moreover, the approach to the structure from the eastern part of the settlement was unbuilt. The structure itself measures 23.4 × 7.5 m, which falls within the author’s discovery of a certain numerical sacralization of Trypillian structures according to the formula 1 to 3. Such spatial markers allow us to provisionally classify this “megastructure” as a probable temple in the Trypillian settlement of Trostianchyk (**Figure 13**).

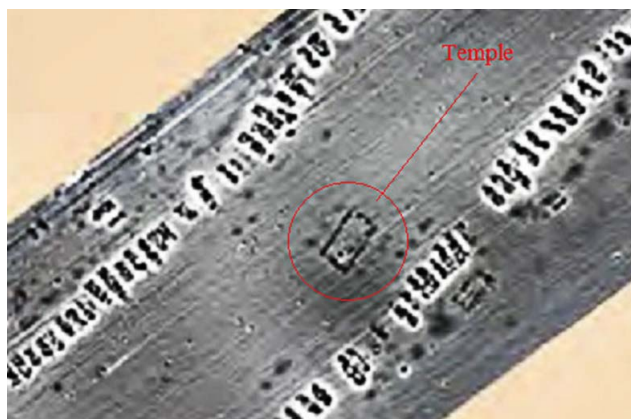


Figure 11. Magnetogram of a part of the Trypillian settlement of Dobrovody with a possible temple highlighted on the plan (Chapman et al., 2014: p. 388).

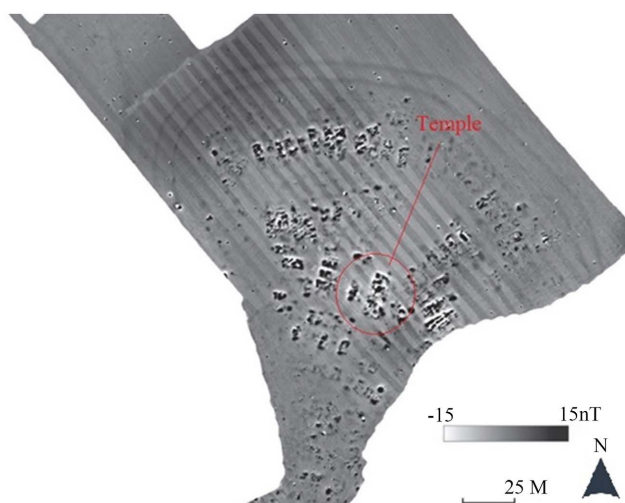


Figure 12. Magnetogram of a part of the Trypillian settlement near the village of Trostianchyk (Rud et al., 2016: p. 71).

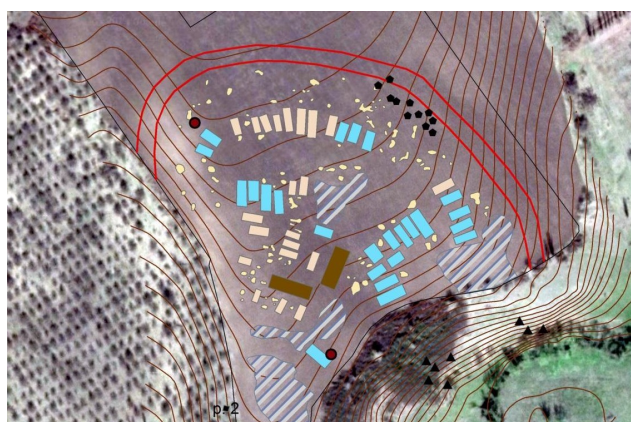


Figure 13. The topographic base and Google satellite image of the Trypillian settlement near the village of Trostianchyk are superimposed on the interpretation of the geomagnetic survey (Rud et al., 2016: p. 73).

10. Maidanetske, Ukraine (Approximately 3600-3500 BC, 250 Ha)

Trypillian proto-city is located on the northern outskirts of Maidanetske village, Talnivskiyi district, Cherkasy region, west of Talianka River (Figure 14, Figure 15). Located in the interfluvium of the Southern Bug and Dniipro rivers, it is one of the largest proto-cities of the Trypillian culture. It is situated on a high plateau of black earth. The general plan of the buildings was arranged in a circle by the ancient agriculturalists. This is the unshakable cultural standard of the Trypillians in large areas from small to huge settlements.

Magnetic surveys at the Trypillian proto-city of Maidanetske revealed several giant buildings. Some researchers have interpreted these as “megastructures” or “temples” (Kirylenko, 2018: p. 3) (Figure 16).

11. Talianki, Ukraine (Approximately 3850-3700 BC, 450 Ha)

Talianki is the largest proto-city in the cultural complex of the Cucuteni-Trypillian region (Figure 17). This giant, together with Maidanetske and Dobrovody, is included in the list of the largest cities in the history of humanity of the entire ancient world at a certain point in history—List of the largest cities in history (Wikipedia, n.d.-b). For example, Dvurichchia with the cities of Yeana and Uruk with an area of 125 hectares was the center of the Sumerian state, which was formed by the merger of several settlements (Lednev, 2012: p. 8). It is only a quarter of the Trypillian proto-city of Talianka. According to research carried out in 2014, the number of people who lived on the territory of Talianki at the same time was between 15,600 and 21,000 (Müller, Rassmann, & Videiko, 2016: p. 347).

The ancient proto-city is built on a cliff between the Talianka River and a small strait and consists of oval concentric rows of buildings connected to each other, with a center that is free of buildings. Buildings that can clearly be classified as special purpose or public assembly buildings were found in a portion of the geomagnetic space surveyed. From the published data we can now speak of a special “megastructure” in the southern part of the proto-city. It is separated from the main building and has a visible gap in the layout of the residential buildings along the axis of the “megastructure” itself (Figure 18).

12. Bilyi Kamin, Ukraine (Approximately 3900-3800 BC, 100 Ha)

The Trypillian settlement of Bilyi Kamin is located in the southeastern part of the Vinnytsia region (Figure 19). It is 35 km away from the Ukrainian-Moldovan border. According to the magnetic surveys, this huge settlement is located on an area of 100 hectares. Its topographic position is characteristic of “mega-settlements” (an archaeological definition of huge settlements). It is located on a picturesque headland between two rivers. The ancient giant settlement has a classic circular residential layout with concentric corridors and an undeveloped center.

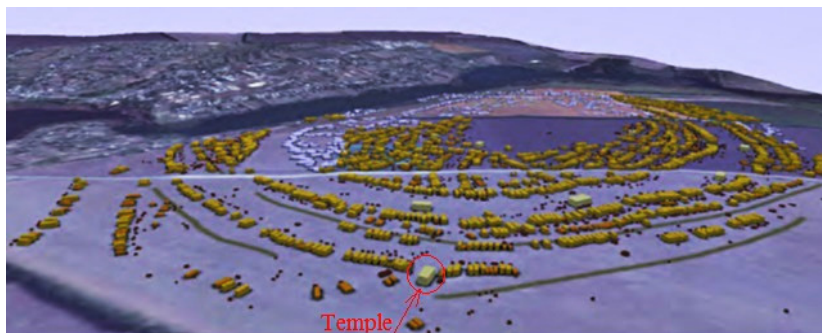


Figure 14. Graphic reconstruction of the Trypillian proto-city of Maidanetske (3D model), with the possible temple highlighted on the plan (Wikipedia, n.d.-a).



Figure 15. Graphic reconstruction of the Trypillian proto-city of Maidanetske (Wikipedia, n.d.-c).

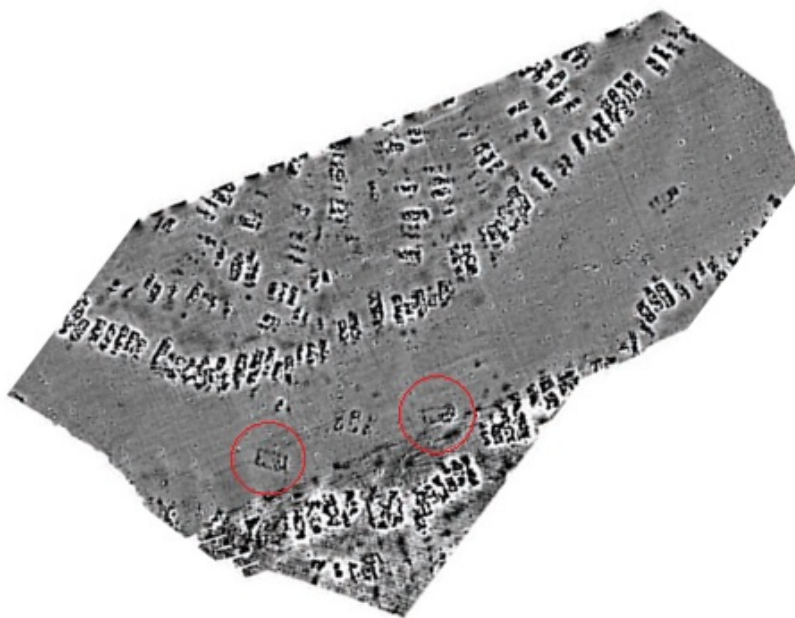


Figure 16. Part of the geomagnetic survey of the proto-city of Maidanetske with the “megastructures” on the plan, which are tentatively attributed to temple buildings (Mischka & Preoteasa, 2019: p. 119).



Figure 17. Graphic reconstruction of the Trypillian proto-city of Talianki (Wikipedia, 2013).

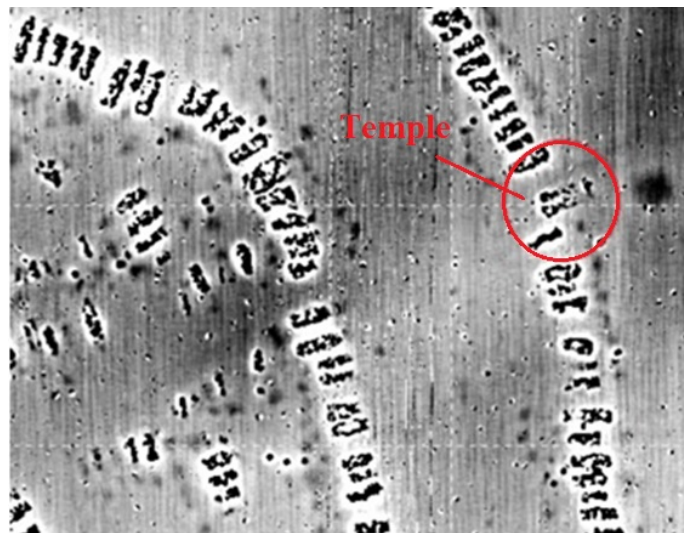


Figure 18. Part of the geomagnetic survey of the proto-city of Talianki with the marking of a possible temple (Wikipedia, 2013: p. 94, 97).

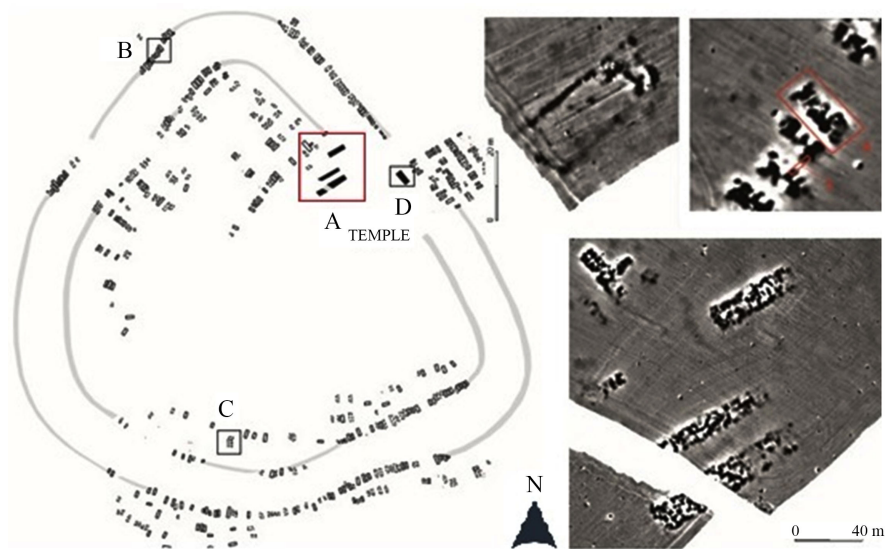


Figure 19. A magnetogram of the Trypillian settlement of Bilyi Kamin with a highlight of the most probable buildings of the temple (Rud et al., 2019: p. 367).

In the eastern part of the settlement of Bilyi Kamin, on a particularly elevated place, near a steep slope adjacent to the river, there is a rectangular square (420 × 150 meters). It contains the three largest buildings in the entire settlement. In such a location, these structures dominated the entire area. They were visible for several kilometers and were clearly monumental in nature. The length of the structures ranged from 36 to 64 meters and the width from 8 to 11.5 meters, according to the magnetic survey. The buildings are oriented to the northeast. Along the same conditional line in the development of the settlement, a conditional gap or corridor was organized, similar to what we observe in other Cucuteni-Trypillian settlements in relation to temple buildings. The magnetic surveys show an obvious two-chamber or two-room layout of the buildings, and the central entrances to the buildings were designed from the eastern part. Prior to their final excavation all of these spatial markers reveal “megastructures” or temple buildings.

It is important to note that the staggered position of the “megastructures” / “temple complexes” at the Bilyi Kamin settlement may indicate that they were not built at the same time. Rather they represent a sequential development in time. This may be related to the Trypillian sacred cycle, which occurred approximately every 60 - 70 years, after which the ritual of fiery renewal was performed. Thus, the temple reborn in the element of fire appeared again and again. In the case of the settlement of Bilyi Kamin, it seems to have appeared three times. Given that the Trypillian settlement itself existed for 200 years, the three temples appearing every 60 - 70 years are quite consistent with the cycle of the settlement’s existence. It is important that in the Trypillian world we find a similar system of probable “temple buildings” in the Hlybochok settlement (**Figure 9, Figure 10**).

13. Petreny, Moldova (Approximately 4000 BC, 100 Ha)

The Cucuteni-Trypillian settlement of Petreny is located on a plateau in the vicinity of the modern village of Petreny in the Bieltskyi district of the Republic of Moldova (**Figure 20**). The settlement is located near the Kubolta River. The Kubolta River borders the eastern part of the “mega-site”. Here the geomagnetic survey has confirmed the features, which are remarkable in their standards in relation to the settlements from the territory of Ukraine. This settlement is planned in at least three concentric circles with a residential area in between and a standard free center. In the middle of these circles, there is a huge building. This building was designed along the east-west axis of the world. It is clearly separated from the eastern part of the settlement by a gap in the development of the probable temple complex. As in the case of the Nebelivka Temple, and judging by geomagnetic surveys of buildings in the Trypillian settlements of Hlybochok, Talianky and Maidanetske, the building consisted of two rooms, with the smaller room on the eastern side of the world. All of the above arguments indicate that the “megastructure” from the settlement of Petreny can, for the time being, claim to be a Cucuteni-Trypillian temple complex from the territory of modern Moldova. Nowadays, a significant part of the Petreny settlement is occupied by vineyards. It has been destroyed by plowing.

14. Stolnicheni, Moldova (First Half of the 4th Millennium BC, 30 Ha)

The Cucuteni-Trypillian settlement of Stolnicheni is located in the north of the Republic of Moldova (Figure 21). It is 40 km from the state border with Ukraine. The whole territory of the settlement and the surrounding areas were covered by a modern geomagnetic survey of 30 hectares. The organization and probably the design of the settlement in ancient times was such that radial streets with buildings radiating from a conditional center in a circle. In the settlement of Petreny we can observe an identical spatial arrangement. It is a reminder of the philosophical utopia of Tommaso Campanella's City of the Sun in 1602.

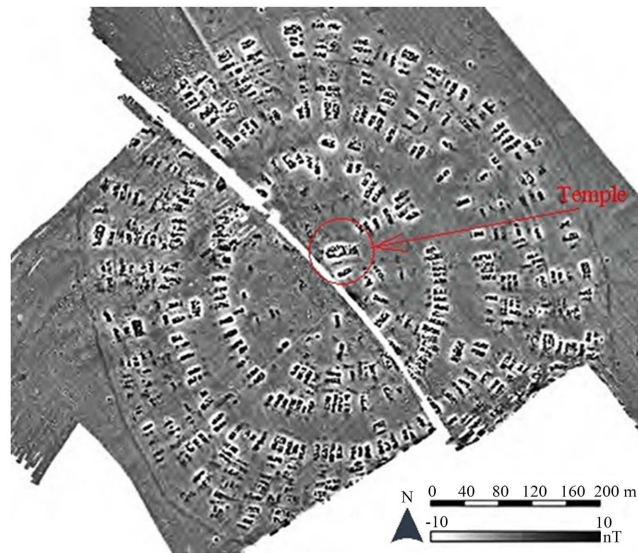


Figure 20. Magnetogram of the Cucuteni-Trypillian settlement near the village of Petreny (Moldova) with a possible temple in the center of the settlement (Musteață et al., 2017: p. 17).

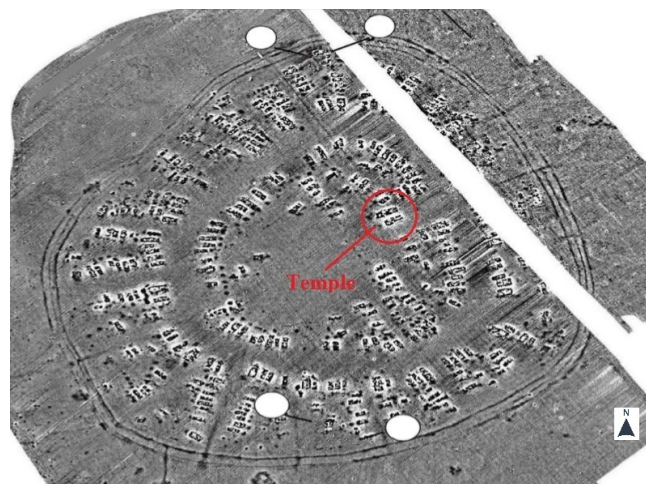


Figure 21. Magnetogram of the Cucuteni-Trypillian settlement near the village of Stolnicheni with a possible temple in the center of the settlement (Tencariu et al., 2021: p. 389).

In the eastern part of the settlement, geomagnetic surveys revealed two “megastructures” oriented to the northeast, with a clear corridor inside the building. This corridor was exactly along the conditional line of sunrise at the time of the vernal equinox. The existence of such a spatial reference point allowed us to tentatively attribute these structures to the sacred objects of the Cucuteni-Trypillian community.

15. The Importance of the Sacred Buildings of Cucuteni-Trypilia

As a rule, the temples and sanctuaries of the Cucuteni-Trypilian community were located in the eastern parts of large settlements and in the center of small ones with an east orientation. This was due to the religious beliefs of the population in the ancient times. It has been proved that one of the main features of the building was its astronomical purpose, which required an appropriate arrangement, according to the archaeological excavations of the Nebelivka Temple. The building provided a “sun corridor” along the entire axis of the structure with the spatial east-west axis (**Figure 3**). This corridor realized the entry of sunlight into the main ritual hall of the temple during the “sacred time” of the annual equinoxes (Zavalii, 2021a). The understanding of this religious and functional purpose of the sacred building explains the phenomenon that the radial streets of the settlements along the longitudinal east-west axis of the world are interrupted with an orientation to the sacred buildings. The geomagnetic images published in this paper study this quite well. The observation of annual astronomical phenomena, combined with the cosmological and religious ideas of the Eneolithic farmers, was ensured by this feature of the layout of the territory adjacent to the sacred buildings of the archaic community.

It is worthy of note that this ancient function of the church is still being specifically reproduced in modern religious buildings. Orthodox churches are oriented to the points of the compass. The entrances to the buildings are from the eastern part of the church, and the altars face east. Catholic churches face west with their altars and apses facing east. This also repeats the patterns of archaic temple building along the east-west axis. In the Masonic Temple the eastern wall shows the sun with the moon, and the sacred delta (an equilateral triangle in the rays of glory with an all-seeing eye in the middle), as well as the initials of the phrase “To the Glory of the Great Architect of the Universe” (Maramoraco, 2015).

Most significant in revealing the ancient “solar mystery” to the modern world, however, were the Franciscan mission churches that developed in Mexico City between 1769 and 1823 to convert Native Americans to Catholicism. The Spanish friars documented the local cosmology, Native American beliefs, and the places where they used to worship. The construction of the Christian buildings on the local soil is the re-creation of the main sanctity of the indigenous faith of the local population. Thus, at dawn on December 21-25 (the winter solstice) a ray of sunlight enters each of these churches and brightly illuminates an important religious object: an altar, a crucifix or a statue of the saint (**Figure 22**) (Ruben, 2017).



Figure 22. The 2007 midwinter solstice illumination of the main altar tabernacle of Old Mission San Juan Bautista, California. USA (Ruben G. Mendoza/Ancient Editions, CC BY-ND).

Today, the descendants of the Indians and parishioners gather at the “places of illumination” to honor the solar mystery on the holiest days of the Catholic liturgy, Christmas. They celebrate the great holiday with songs, chants and drums.

The significance of the sacred structures of Cucuteni-Trypillia, the ancient religious cosmology and the colonial history of Christian missions is best illustrated by this example. It reveals that six millennia earlier, in the heart of ancient Europe, temple complexes and sanctuaries similarly honored the birth of their cosmological and religious symbol of rebirth, where modern people kneel before a richly decorated golden statue of the cross born in the sunlight of the winter solstice. A religious tree was born in the ancient temple at the time of the vernal equinox, according to the research on the territory of modern Ukraine dedicated to the Nebelivka Temple (Zavalii, 2021b). The World Tree with its first buds marked the birth of hope and the coming of salvation to the world in the light of the sun and the altars of fire.

16. Conclusion

Taking into account the results of the latest geomagnetic and archaeological research presented in this paper, we can conclude that a characteristic feature of the Cucuteni-Trypillian settlements and proto-cities was a central layout. The houses were arranged in a circle with a certain deviation according to the probable worldview standard, and the orientation of the households was clearly directed towards the center. Small settlements usually had a temple or sanctuary in the center. In proto-cities, temples were located in the eastern part of the settlement. They were visible representations of the human connection to the divine forces and centers of the religious life of the ancient agriculturalists.

All of the sacred structures of the Cucuteni-Trypillian culture which are under consideration in this paper date back to six thousand years ago, with a slight deviation up or down in time. This makes them, together with the discovered Nebelivka Temple, the oldest on the European continent (and possibly on the Eurasian continent).

It turns out that the temple complexes, temples and sanctuaries were located in places of special beauty, near rivers, on elevations or slopes. They dominated the built space and served as symbolic points where cosmic and natural landmarks converged. The importance of the buildings as focal points for the whole village is indicated by their monumental position in the landscape. Such structures in the ancient world clearly show the importance of a certain social institution because of their central position on the ground. It is also obvious that the decisive factor for the effective organization of such social institutions was the organization of separate groups of people—the organization of priests or priestesses. They organized the spiritual life of the community.

Spatial ring patterns that are unique in world culture and have no analogs in ancient cultures have been revealed by comparative analysis of geomagnetic images of Cucuteni-Trypillian settlements. According to the same principle as the giants, smaller settlements were formed. This suggests an organized system of non-verbal communication in the planning of living space. Genuine architecture acts as a signifier. It creates a hidden meaning. An obvious copy of archaic ideas about the structure of the universe is the concentration of buildings in a circle with their orientation towards the center of the settlement. Here one can feel man entering the sensual depths of the Nature-Cosmos. It is the Cosmos that functions in the sacred societies as a structure for the organization of the social and the material. It contains basic copies of the actions of the ancient farmers of the past. The Sphere of Heavenly Circular Repetition is nothing more than a smaller model of the agricultural settlements, the temple is a touch of its interior, and the great ritual of burning the entire settlement is the end of the cycle of cosmic rotation. Just as the settlements were built in a circle, so the cosmos moves. Thus, the Cucuteni-Trypillian felt himself in a reduced space, connected to the “Cosmic Force” on which all living things depended.

The investigated sanctuaries and temples of Cucuteni-Trypillia mark the beginning of the era of cult construction of sacred buildings in Europe (ca. 4200-3500 B.C.). Today, it represents a cultural and historical phenomenon of global significance. At the same time, the Nebelivka Temple, which was opened in Ukraine in 2012, is the most developed temple complex of Eneolithic Europe. It is a separate religious building that fully manifests the phenomenon of the Trypillian religion.

It is also clear that individuals were responsible for spiritual and material functions in the community, but the society with a system of signs of rough social separation with repressive governance was still far from being a society with a system of signs of rough social separation. Therefore, Cucuteni-Trypillia, without leaving any traces of violence, reveals a peaceful existence in the heart of

Old Europe. It should be perceived as the “Golden Millennium” or the era of the “Golden Age” (as defined by ancient literature), which was marked by the sacred temple symbol of the World Tree. At the same time, it is a living historical phenomenon, an independent historical phenomenon of the European people, which has its own integral spiritual face. Therefore, it is necessary to once again emphasize the need to mobilize for the revival and popularization of one of the world’s oldest religions and to consider the Ukrainian, Moldovan, Romanian (Cucuteni-Trypillian areas of distribution) and European heritage and spirituality in general as a phenomenon of global significance.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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