Setting - Chronology I

Setting-Chronologie I.

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Abstract

Ancient and mediaeval European cultures referred to something, which based on our current knowledge is a magnetic phenomenon, that occurred solely by directions by the names of trinitas, triskell, triskelion, triskele or triphus, which we shall refer to as magnetic trinitas in our analysis. The indications of direction of this phenomenon were attributed a privileged role at the setting of the major axes of ceremonial squares and buildings from as early as the Stone Age. According to our hypothesis, the practice of orientation to to one of the magnetic trinitas directions with no compass used can be reconstructed. The rules of the correlation between the directions of magnetic trinitas and the characteristics of the geomagnetic field measured by current instruments can be deciphered. Furthermore, taking the orientation of sacral buildings as a basis, we will be able to decode the trinitas-directions characteristic at the time of setting, as well as the dates of establishment of the buildings. A setting chronology may be established, comprising the archeological and cultural-historical dating based upon the orientation of sacral buildings and concurrent archeomagnetic data.

Keywords: magnetic trinitas, magnetic transmission, magnetic dating

Trinitas Directions and Vectors

For thousands of years, it was believed by many cultures that the perceivable world was influenced by an invisible world penetrating it. There exists an invisible phenomenon which maintains a connection between Earth and the heavens, affecting our entire life on Earth (Burley, 2012; Furlong, 2007; Shaltout – Belmonte, 2005). The presence of this mysterious phenomenon was indicated by the spontaneous movement of the shamans' and priests' arms holding ceremonial requisites, when - similar to migrating birds circling in the sky before leaving for a remote destination - they would make their nerves receptive to geomagnetism by ceremonial movements. During the slow movement that seemed like a dance, they mostly held sticks shaped like animal heads (or other objects as well) in front of them.The indications of direction of the invisible world perceived through the nerves of the body were assigned a special role in the course of setting the major axes of ceremonial buildings and squares of the Stone Age, the Antiquity and the Middle Ages. European cultures referred to this phenomenon marked by directions by the names of *trinitas, triskell, triskelion, triskele, triphus or menorah*, named magnetic trinitas in our text.

In the context of our current knowledge of physics, those observing these directions perceived magnetic induction vector triads. The earth positions of these triads may have been recorded relative to the occurrences of celestial light, in comparison to the course of the Sun and the Moon and other known planets proceeding along a

specific course, as metronome phenomena. Although these regularly changing celestial light phenomena were not used to determine the orientation of buildings, they did provide a celestial pattern to the mythic tales about the movement of the trinitas directions.

The Islam, which started to gain ground in the Middle Ages, broke with the order of orientation to set directions of the previous thousands of years, and then, following the abolition by the Council of the constraint for orientation, and by the use of compasses, the setting of the orientation of Christian churches based on the perception of magnetic trinitas was forgotten.

According to our hypothesis, the practice dating back thousands of years of orientation to magnetism with no compass, and orientation to one branch of the magnetic trinitas can be reconstructed. In addition, using the orientation of sacral buildings, we are able to decode past trinitas-directions, as well as the dates of establishment of the buildings. A setting chronology may be established, comprising the archeological and cultural-historical dating based upon the orientation of sacral buildings and concurrent archeomagnetic data. Also, the re-recognitions pertaining to human perception of magnetism may give significant momentum to research focusing on how magnetic fields affect spiritual and transcendental life phenomena.

1. Orientation to Magnetism in Eras before the Invention of the Compass

1.1. Spatial Structure of the Flexibly Stable Magnetic Field

The means to display magnetic impulses functioning along the spatial direction lines of a geometric lattice design are provided by *trinitas*, *triskele*, *triskelion* figures, and by the life trees and world trees of shamanistic cultures, and by three-pointed plant figures and other fork-shaped forms held by ancient deities.

Supported by a series of facts, we claim that ancient and mediaeval sacral buildings were oriented based on geomagnetic phenomena in the course of ceremonies aimed at the setting of directions that did not require knowledge of the compass and could be used in all possible directions of orientation. Our current knowledge of physics and statics, certain perception-oriented tests and a multitude of ancient portrayals of ceremonies helped us create an image about the practice of orientation that is the evidence of “getting in tune with” an invisible lattice phenomenon that

could have been a shaper and retainer of spiritual-transcendental processes, even creating hierarchical buildings of different cultures.

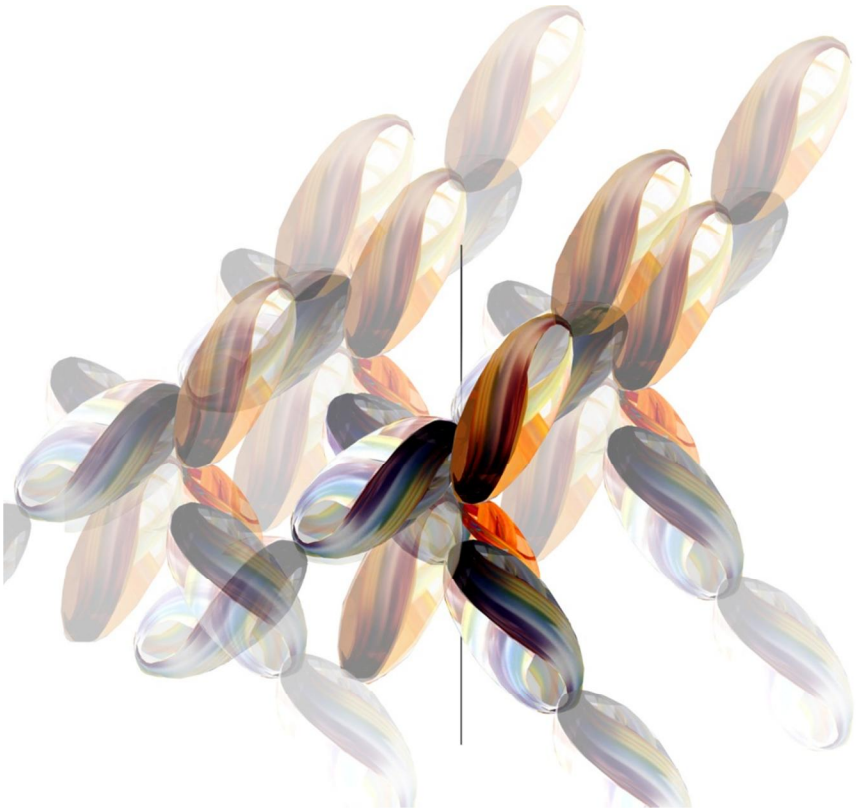


Figure 1: Magnetic wave structure model flexibly stable in space and time (Kőszeghy, 2006)

At the beginning of our inquiries, we indicate that in contrast with the currently accepted magnetic field model running approximately in parallel, curved by imaginary fibers around and into the Earth, we assumed a wave-structure shape flexibly stable in space and time whose minimum shape may be a spatial lattice structure organized by fibers and strings running along at least three directions. According to our observations, in the direction of the lattice fibers and strings intercrossing over one another there is a multitude of magnetic forces and moment vectors functioning. By their superposition they are able to create the magnetic intensity vector pointing towards the geomagnetic interior of the Earth whose direction and magnitude is measured by our compasses and magnetic zero balances.

Currently we are only able to read the vector-size of this magnetic intensity vector by way of our instruments. In this data, the characteristics of magnetic strings, trinitas directions and changes of direction running in three directions are hidden “in fusion”. The only real trinitas vectors intercrossing over each other at a distance of 24-27 cm are added up combined in a single point, in one intensity vector functioning as a

vector sum, referring on our instruments to the unbalanced turn momentum of the pair of vectors substituting the vector of the three trinitas branches combined together.[yyy]

yyy The three branches of the trinitas structure deviate from the regular uniform direction arrangement of three times 120 degrees, and there is a minor asymmetry shown.
The asymmetry of the basic trinitas structure of the magnetic field surrounding the rotating Earth is being formed as a result of the Sun's impact and the electric phenomena of the interior of the Earth and of the ionosphere. The sustainer and holder in check of moderate asymmetries also characteristic of the shapes of living resources resembles the connecting lattice fiber stabilizing the parallelogram grid lattice, functioning in the direction of the shorter diagonal, whose function is to restrain or to maintain the twisting of the Earth's magnetic field. This is to be perceived at the branching of plants, flower petals, leaves and the human face. Nor can we deny crystals of identical chirality the "option" for their own magnetic fields to be distorted to a minor extent only but in each case, by way of contact with external fields (including adjacent ones identical to them). Geometric distortions may be created in atomic shapes and even more so in molecule shapes.
As the randomness of twisting - witnessing the twisting repeated on a billion occasions of billions of living organisms - is impossible, it may be assumed that the interior magnetic structure of the form being organized is provided an impulse sustaining an arrangement close to symmetry from the micro-resonant of the exterior magnetic tissue.

The small deviations in size of lattice geometry generate significant size deviations of the trinitas vectors, represented by cubic decrease/increase. As a result of these size deviations, resultant vectors are created that are recognized by us as the inclination and declination of the magnetic north direction. The geomagnetic characteristics, attributable to a specific spot, of the magnetic field surrounding the Earth are coded into the basic lattice geometric characteristics.

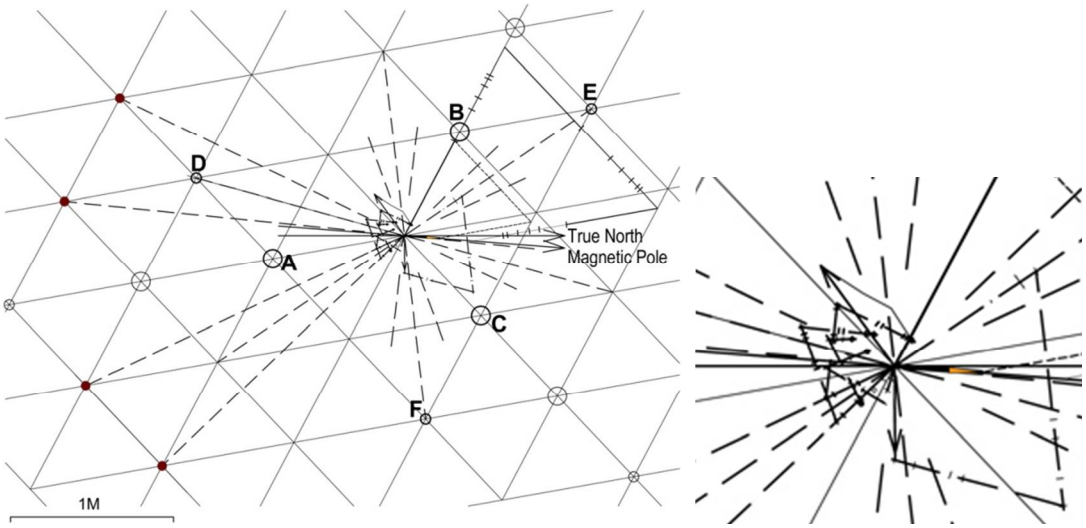


Figure 2: Basic, primary trinitas structure up to A, B, C crossings, along with additional crossings closely ranging after them, and some additional connections from the multitude of connections to crossings located in diverse directions. The multitude of vectors after A, B, C, connected to more remote crossings comprises a vector of identical size and direction with the resultant magnetic declaration vector of the A, B, C trinitas vectors. The latter one is zeroed out by the effects provided from other directions.

It is the lattice geometric characteristics that provide the direction characteristics accessible and interpretable for human perception of magnetism. By looking out from one crossing point towards the closest crossings, the vector sizes of the basic primary trinitas structure will appear. Cumulated as a vector phenomenon, they point towards the direction of geomagnetic declination and inclination. The most dense line of lattice crossings is lined up after these three primary trinitas vectors - the basic trinitas structure - along their axial directions. This multitude of crossings is cumulated in a single resultant vector of identical direction and size, as the resultant vector of the basic trinitas structure. However, this resultant vector created after the primary trinitas vectors is zeroed out by the sum total of the intensity vectors arising within the multitude of the other directions. Thus the interplay of the vectors of the primary trinitas structure will provide the entire scope of the geomagnetic data measured by our compasses.

The basic trinitas structures are aligned over and next to one another along billions of vertical axes, and they create impulse processes running diagonally.

For thousands of years, the direction of axis of sacral buildings was one of the directions highlighted subject to cultic aspects of the trinitas structure. The role of shaping directions was played by the corner-zone indicating passages to the other world of heaven rotating above the Earth before the age of Christianity, and in the first thousand years of Christianity by the requirement of orientation towards the East. The principle that once restricted the choice of direction, now provides a clue to understanding the choice of trinitas directions in past millennia.

Assistance as to the change of direction as to time of the trinitas vectors is provided by the series of sacral buildings whose date of creation is known, and also their archeomagnetic features are defined. (Abrahamson, 1991; Aveni - Romano,2000; Boutsikas, 2007; Böhnel – Garza, 2002; Caroll, 1979; Downey, 2010; Furlong, 2007; Fuson,1969; Hoare-Sweet, 2000; Charvátová et al, 2009; Korte et al. 2005; Kovacheva, 1998; Liritzis - Vassiliou, 2006; Meisegeier, 2011; Ridderstad, 2009;

Ruiz et al., 2000; Salt, 2010; Sparavigna, 2012; Shaltout,- Belmonte, 2005; Zananiri et al. 2007)

Based on the sharply delimited dates of establishment of part of the round churches and early nave-and-aisle churches of the Carpathian basin, and the data of the quick and almost linear changes in magnetic declination characteristic of the almost three hundred years of their creation, we were able to formulate a transmission rule prevailing between trinitas changes of direction and geomagnetic change of declination. (G. Molnár, 1972; Kozák, 1976/77; 1984; Marosi, 1974; Simon, 2011; Dékány, 1983; Bagyuj, 1983; Guzsik,1975; Keszthelyi – Keszthelyiné Sragner, 2011) The correlations displayed in this circular diagram may also be assigned a role in the research process focusing on to what extent the orientation to magnetic trinitas directions was present in sacral buildings located in regions outside of Europe.

By taking the form of setting chronology, the examinations aimed at orientation may provide new impulses not only to archeological or art history related research, but also to the remodeling of transcendental-spiritual activities.

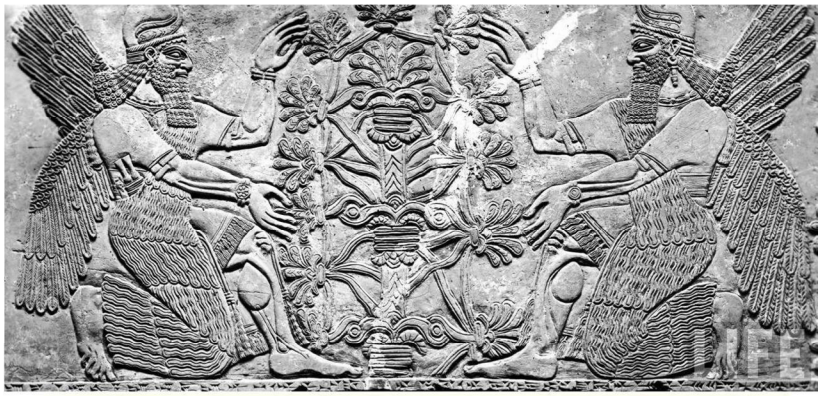


Figure 3: Deities with Wings at the Sacral Tree. Marble tablet, Nimrud, 865-800 B.C.

Figure 4: Assyrian Sacral Tree, stone relief, Nimrud, North-West Palace, 865-860 B.C.

1.2. Specification of the Age of Sacral Buildings based on their Orientation

Basic Findings

We attempt to provide a description of the indirect relationship between the orientation of cultic buildings and the geomagnetic features of the date of their creation. We hereby outline a correlation that applies in the case of all orientation directions. We shall summarize our main conclusions to be explained in detail in a few points.

1. Many ancient cults considered the multitude of magnetic impulses now recognizable as a magnetic phenomenon to be the invisible ancestor of the visible world, from which the sacral trinity of *trinitas, triskele, triskelion* arises. Pictorial and textual descriptions of millennia refer to this magnetic phenomenon still in existence today. The examination of the orientation of several hundred sacral buildings confirms the assumption that magnetic directions and vectors were determinants of the orientation direction of cultic buildings within the scope of many cults. Our compasses signal the magnetic vectoral directions pointing towards the geographic north direction in which, when summarized, the three primary magnetic trinitas vectors, the actual source of magnetic directions detectable by compass, still remain hidden, just like in a formula inseparably merged.

2. The resultant (summation) vectors of the trinitas vectors are identical with the vectors of the magnetic declination and inclination directions that are of identical age as them (with the directions of the incline to the side and in downward direction of the magnetic pole). The direction of the magnetic pole and the vector of intensity are comprised of three vectors acting in three directions. As compared to the change of direction of the magnetic pole, the change of simultaneous trinitas directions appears with multiple directional deviations. The regularity effective between two simultaneous changes of direction of different extent can be integrated into a transmission rule and displayed by way of a transmission circular diagram. The variable values of transmission and the functioning of the diagram, and the system-like presentation of the connection between the direction of axis of sacral buildings and the geomagnetic features characteristic of the date of creation are demonstrated by way of examples.

The correlation is based upon well-known data as transmission bridge base components. Ancient and mediaeval sacral buildings were oriented towards one or at the most two trinitas directions (apse and entrance of round churches). Among the structures of the late Stone Age earth and stone structures, there are some where all three directions appear. But these are exactly the ones where we do not have exact date coordinates available as to their establishment.

3. The change of the magnetic north direction is accompanied by a change of direction of 5 to 8 times of the trinitas directions and vectors. As any trinitas direction leaves the directional zone preferred by each cult after an alteration of declination by 8-10 degrees, the components of adjacent or opposite direction must offer the setting direction. The different preferences as to direction of different cults delimited the directions that could have a role aimed at the setting of directions for sacral buildings, but also for the orientation of graves. There can be identical orientation directions appearing in the case of several different declinations. That this should be attributed to geomagnetism, was unknown to those performing settings many years ago. In such regard, the reconstruction of the date of setting must undergo archeological dating. Different cults gave preference to different routes leading to the other world. As long as the altars of ceremonies were located under the open sky, the orientation of sacral buildings was determined by other aspects than in the case where ceremonies were transferred to take place in the inside space of buildings.

4. The varying declination data of the times preceding the use of compasses are based upon paleomagnetic and archeomagnetic data presented subject to uncertain dating. By following a more accurate dating, the data of finds classified over one another by one-hundred-year intervals, showing different declination values can be taken thread by thread. In this case, the declination data reconstructed based on the orientation of sacral buildings may be attributed a significant role. The setting chronology based upon the orientation of sacral buildings may prove its grounds.

5. In addition to the reconstruction of ancient practices, today's experiments aimed at the detection of the trinitas' tripartite directionality also help us to understand the direction-dependant irregularity of the changes of trinitas directions also prevailing today. They may be of assistance in the development of instruments that are suitable for the separate detection of fiber-like magnetic strands. They may confirm the experience that what is sensed by the iron of the magnetic compass as a magnetic direction is not and cannot be sensed by bees or us humans.
It may be assumed that the human spiritual and transcendental world, but also all living organisms are bearing and operating a sectioned, "fibrillar" magnetic field structure. In the course of the revelation of the functioning of these wave structures, new options for shaping our thoughts will also emerge.

6. Without clarifying the relation between the first setting and the secondary structures, data of orientation cannot be interpreted. We have to refrain from the examination of data regarding directions of Egyptian, Assyrian-Babylonian, Greek, Roman, Byzantine and French mediaeval sacral buildings as long as the establishments in the case of which the previous facilities under them are not uncovered, including their characteristics as to directions cannot be removed, and of those which most certainly do not have such "sub-structures" in place.(Pantazis–Lambrou–Nikolitsas–Papathanassiou–Iliodromitis, 2008), (Sparavigna, 2012), (Furlong, 2007).

2. Magnetic Trinitas

The trinitas vector triad that can be determined relative to any crossing is aligned

with the directions offered by the lattice structure that points towards the three closest points of crossing. The differences in distances lead to the cubic differences of interactions. It seems that the local characteristics of global magnetic phenomena are represented by the interaction between closest lattice intercrossings and purely local features of geometry of space. Within the scope of this examination, we only raise this in the form of a question: is the multitude of spatial fibers presented by characteristics of lattice geometry generated by magnetic phenomena, or other kinds of carrier structures of physical nature suitable for magnetic phenomena?

In our experience, we have observed that the basic characteristics of magnetic declination and inclination can be derived from an internal relation established by three lattice crossings closest to one observed crossing of the lattice structure. More remote crossings are most densely aligned in the direction behind the three closest lattice crossings. Overall, similar trinitas vector forces are created up to an endless distance in theory, and up to the 6th or 7th crossing in practice, as the trinitas vectors built up by the three closest crossings. In comparison to the resultant intensity vector of the basic trinitas triad, a double intensity of magnetic-field strength will emerge in the three trinitas directions. And if we consolidate all of the field strength intensities making their effect in a direction other than this triad, then the resultant field strength vector will be located in the same axial direction, but its resultant direction will point in the opposite direction. The size of the resultant vector is identical to the resultant strength of the three primary trinitas vectors, but it is also identical to the resultant force consolidated from the crossings after the three primary trinitas vectors. Thus, as a final result, the strengths outside of the clearance of the trinitas strengths between the closest crossings will neutralize one another.

In the region of Europe, along the 47th degree parallel, the magnetic trinitas components intercrossing over one another at a height distance of ca. 25 cm and reoccurring every 75 cm may be sensed at greater intervals towards the equator and at increasingly narrow horizontal intervals towards the north. Real trinitas branch directions run diagonally in space towards the adjacent crossings located 75 cm above and below them, and also towards the “neighbors” thereof. Human nerve fibers, just like those of animals, are affected by magnetic phenomena functioning in

these angular trinitas directions, and they are actually present in space. There is no such effect in function in the direction of the magnetic inclination indicated by a compass or a magnetometer. (Baker, 1989; *Carrubba* S, Frilot C 2nd, Chesson AL Jr, Marino AA. 2007.) Based on the directions of sacral buildings, archeomagnetic declination and datings, circular diagrams may present the correlation existing between the change of direction of magnetic declination and the turn of the trinitas of an extent 5 to 8 times greater than that.

For the determination of indirect connection by transference, and as such of the correlation regarding transmission, fixed points were provided by the sacral buildings set at a known date prior to 1300 A.D. and by the archeomagnetic data thereof. We took into account that the data bridges between the fixed points are more solid and they offer more accurate transmission data in periods where magnetic declination changes quickly and almost evenly. (Márton, 2010)

In the region of Europe, the spatial magnetic string fibers entwining the Earth and intertwined over one another are rarer in the vicinity of the directions located closer to the degrees parallel of the Earth, whereas north eastern-south western fibers are lined in a more dense arrangement. The intercrossings over one another of the trinitas components to be observed along the three fibers, strings of different directions - trinitas vectors to be characterized by directions and intensity - are lined up arranged to the multitude of axes perpendicular to the surface of the Earth. The variable density of the fibers is related to the rotation of the Earth, the spatial arrangement of the components and the size thereof to be characterized by vectors. (North, 1996)

The magnetic lattice around the Earth is not rectangular, but of the shape of a parallelogram, due to being twisted. A stable lattice is primarily comprised by the component running in the direction of the shorter diagonal of the parallelogram.

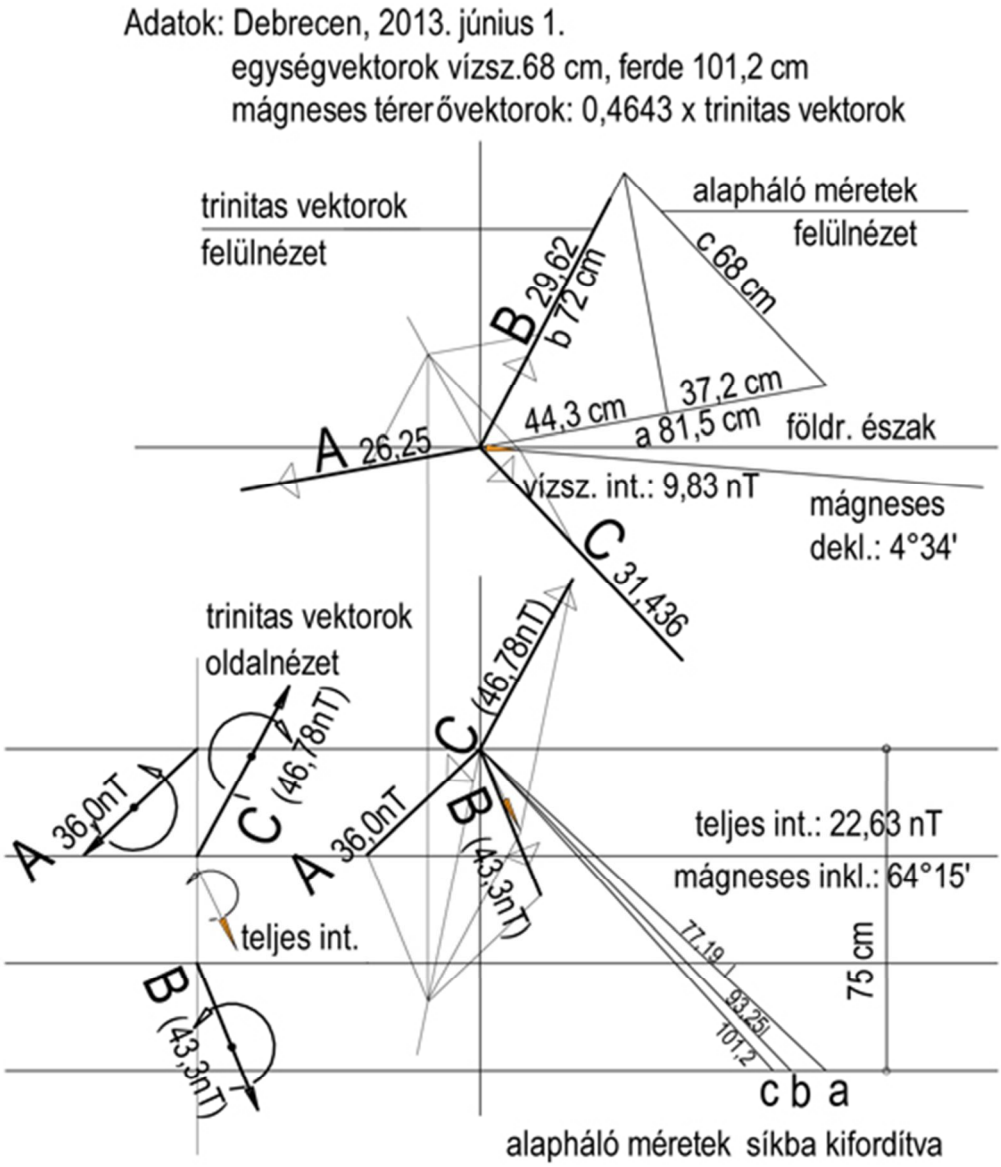
By moving away from the north-south poles of the Earth, the intensity of the magnetic field decreases, the “mesh size” of the lattice increases, and at the same time the extent of twisting decreases. In such cases, both diagonals of the lattice forming the parallelogram are assigned a function to stabilize the lattice. The magnetic declination in the western direction is less strong than in the zones near the north. Despite this, the significantly distorted parallelogram shapes are formed

by the magnetic field components turning towards the western direction. In the region of Southern-Europe, approaching the equator, the diagonals of the parallelogram can be perceived by almost identical strength, forming quaternity shapes.

2.1. The Interrelation between Magnetic Trinitas Directions and Vector Sizes and Geomagnetic Data - An Example from Debrecen

We based our example on lattice dimensions and the lattice distances of spatial crossings determined at a Debrecen location by multiple measurements.

The length of the unit vector was provided by the smallest lattice distance, and the cubic strength reduction ratios were also based upon this data. Strength dimensions were provided by vector lengths. The magnetic trinitas fibers intercrossing over one another keep distances of about 25 cm by their twisting moments over each other. The vector sizes can be attributed to an area covering one third of the six triangle shapes of the basic lattice, and the resultant intensity vectors are of corresponding sizes. Source of trinitas intensity vectors calculated in proportion to the current declination and inclination data are as follows: www. NGDC Metadata Interactive Service NGDC Geomagnetic Calculators, Geomagnetic data and model Online Calculators. In the field, the accuracy of direction measurement was within 0.5 degrees, however, regarding the determination of the distance between the crossings we were unable to undertake measurements by an accuracy of within 1.5 cm, as the impulse perceived at the crossing points only appeared by ca. 4 cm “cluster” shapes. The accuracy of measurement can be achieved by an increase of the number of crossing spots.



1. Figure: Top-side view and end-view of magnetic trinitas vectors in Debrecen, June 2013

Adatok: Debrecen, 2013. június 1.	Data: Debrecen, 1 June 2013
egységvektorok vízsz. 68 cm, ferde 101,2 cm	unit vectors horiz. 68 cm, angular 101.2 cm
mágneses térerővektorok: 0,4643 x trinitas vektorok	magnetic field strength vectors: 0.4643 x trinitas vectors
trinitas vektorok felülnézet	trinitas vectors top-side view
alapháló méretek felülnézet	basic lattice dimensions top-side view
földr. észak	geogr. north
vízsz. int.: 9,83 nT	horiz. int.: 9.83 nT
mágneses dekl.: 4°34‘	magnetic decl.: 4°34‘
trinitas vektorok oldalnézet	trinitas vectors end-view
teljes int.	total int.
teljes int.: 22,63 nT	total int.: 22.63 nT
mágneses inkl.:	magnetic incl.:
alapháló méretek síkba kifordítva	basic lattice dimensions linearly inverted

sign of lattice	*lattice section horizontal /vertical cm*	*lattice section horizontal length/angular length cm horizontal unit length: 68 cm / angular unit length: 101.2 cm*	*angular length- ratios as compared to unit lengths*	*cubic change of angular length*	*vector sign*	*size of intensity vector (cm) based on angular unit length / horizontal unit length for lattice area of 0.4643m2*	*based on value of geometric data projected to trinitas area 0.4643 x unit length calculated vector 1000 nT*
a	*81.5/75*	*81.5/110.76*	*0.9137*	*0.7628*	*A*	*56.79/77.19*	*26.25/36.0*
b	*72/75*	*72/104*	*0.9731*	*0.9214*	*B*	*64.55/93.25*	*29.62/43.3*
c	*68/75*	*68/101.5*	*1*	*1*	*C*	*68/-101.2*	*31.436/-46.78*
					A+B+C		*Rdecl. 9.83 e.nT Rincl. 22.63 e.nT*
ax	*163/75*	*163/179.4*	*0.564*	*0.1795*	*Ax*	*16.43/18.65*	
bx	*144/75*	*144/162.36*	*0.6233*	*0.242*	*Bx*	*21.76/24.49*	
cx	*136/75*	*136/155.31*	*0.6516*	*0.2767*	*Cx*	*24.51/-28.04*	
ax,..					*Ax,...*		
bx,..					*Bx,...*		
cx,..					*Cx,...*		
					Ax,..+Bx,.. +Cx,...		*Rdecl. 9.83 e.nT Rincl. 23.63 e.nT*
d	*132/75*	*132/153*	*0.666*	*0.296*	*D*	*26.0/30.19*	
e	*138/75*	*138/155*	*0.658*	*0.285*	*E*	*25.88/29.07*	
f	*112/75*	*112/134*	*0.7612*	*0.441*	*F*	*37.59/-44.98*	
d,...					*D,...*		
e,...					*E,...*		
f,...					*F,...*		
					D,..+E,.. +F,..		*Rdecl. -9.83e.nT Rincl. -22.63 e.nT*
					Total vectors		*Rdecl. 9.83 e.nT Rincl. 22.63 e.nT*

Table 1: Schematic summary chart of lattice sizes and vector values Debrecen, 1 June 2013

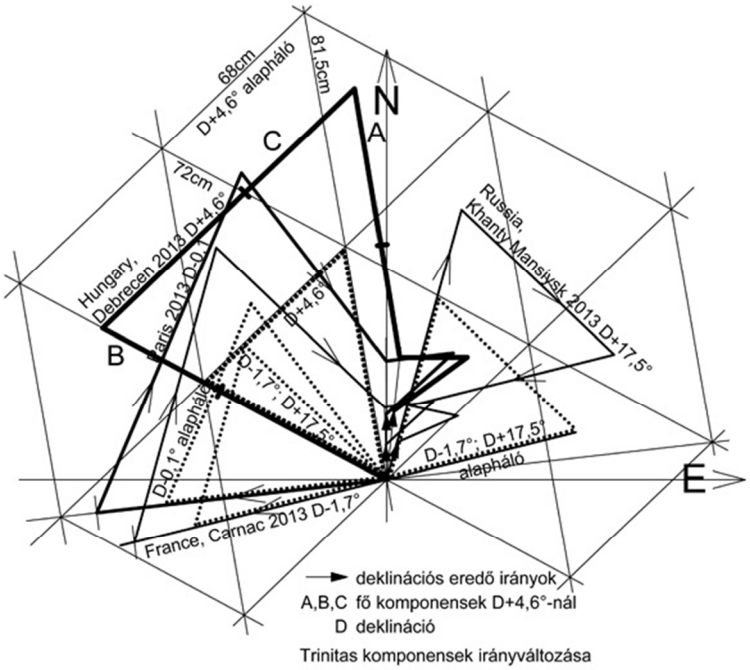


Figure 6: declination directions and trinitas vectors comprising those, including their lattice directions (indicated by dot lines) at identical dates (June 2013) but different geographic regions. It is visible that the trinitas directions of Paris and of Khanty-Mansiysk, Russia are identical, but due to the different inclination directions the declination values vary to a great extent. The angle of the vectors demonstrates the collective effect of the resultant vector of the D, E, F vectors contained in the Debrecen summary table, and of the resultant vector of all the additional vectors of a direction other than A, B, C. They zero out the effect of the crossings aligned after the A, B, C trinitas vector triad, duplicating the size of the declination vector.

D+4,6° alapháló
D-0,1° alapháló
D-1,7; D+17,5°

D+4.6° basic lattice
D-0.1° basic lattice
D-1.7; D+17.5°

Deklinációs eredő irányok
A, B, C fő komponensek D+4,6°-nál
D deklináció
Trinitas komponensek irányváltozása

Resultant declination directions
A, B, C main components at D+4.6°
D declination
Change of direction of trinitas components

2.2. The Triskelion

In the Celtic mythology, the primary autogenous energy, as the most divine being, that makes its effect to three different directions and permanently changes those directions was symbolized by the triskelion shape. Similarly to the trinitas equation, it was thought to be a manifestation of creative power, and since it is considered to be present everywhere and anywhere, it should be there within an arm's reach from us. These are triple spiral forms that were carved into rocks thousands of years ago and were taken on by the Celts; the creative triunity is symbolized by the Greek triskelion shape as three bent human legs, depicted in a naturalized form, later on in the Sicilian triskele shape it was taken even further, the three legs grow out of a female head. The trinity that bears and creates all living things is alluded to by the imagery of three merging women and triple-headed mother statues. The triphus appeared as the Greek archaic age in a somewhat differentiated form, but with similar associated meanings, and it was more than just a ritual device, it was also a sacrifice. The Jewish menorah and the Scythian triplets of birds are unique embodiments of triplets.

Figure 7: Scythian sacral triunity 5th century B.C.

2.3. Tree of Life Trinitas with Northern and Eastern Tips

The plaited tree imageries that became increasingly widespread after the Antiquity, the rope-tree of the Celts and the Germans and the Hungarian every-tree and world-tree imageries all refer to the multiple branching of the trinitas directions. We can see in the Assyrian embossments that attempts were made to create truly detailed imaging of this notion. At the edges of a trinitas sequence, they implied a structure that continued in space. The hand position of the winged demons surrounding the tree evokes the perceptive moves made during the rites.

As a result of the ecclesiastical opinions expediting the eastern orientation of Christian sacral places, the eastern branch of the trinitas' tripartite directionality was given a dominant role. The tip of the *trinitas tree of life* was turned eastward. Accordingly, the other two branches of the trinitas were found to be closer to the northern and southern poles, adjacent to the eastern branch.

In the earlier millennia, the prominent role given to the northern direction presented the same limitation on the choice of sacral directions, as did later on the eastern-dominated principle.

During the centuries around the start of chronology, the prominence of the northern direction was still prevalent. The tree of life was a special *rope-tree*, *the tree of the northern direction*. The axis of the sacral buildings was set by the trinitas branch turning to the direction of the stars seen in the vicinity of the sky's centre of motion (in effect, the earth's axis of rotation). In the millennia when the northern direction was given dominance, in terms of the triunity imageries, the Great Earth Mother (Coatlique's debated interpretation) might have been seen as the uncreated deity of existence before the beginning and after the end. Directions and factors implied its existence. (Parpola, 2005) In ancient Egypt, the progenitor's first twin creatures were Seth, who became "possessor" of all energy in the northern zone of the Earth, and Horus, deity of the southern zone, and he was *Horus* of the triformity of directions, of the *triangle* poising among the elementary energies running toward three directions. We can understand these temporal and spatial dimensions with our sensual and spiritual percipience through the unity of the earthly and the celestial, these two interrelated zones of existence.

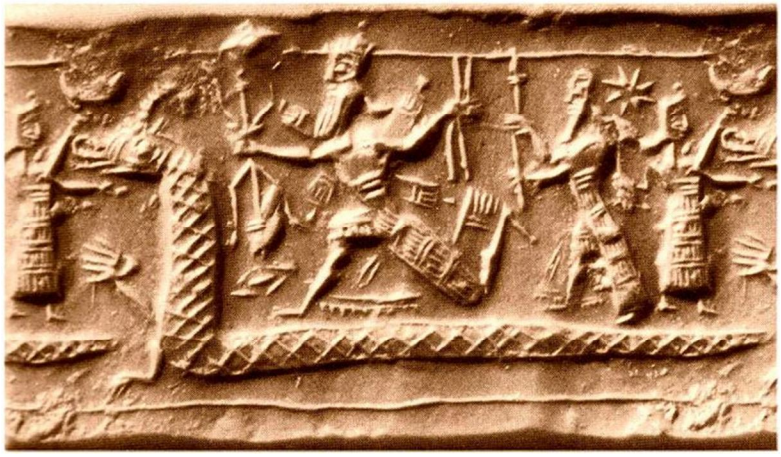


Figure 8: Tiamat, deity of the Mesopotamian religions before the uncreated and unshaped world. Today, the vectors of the immeasurably extensive phenomenon unbound by differentiated forms would be associated with the angular grid of the magnetic trinitas directions.

3. 9-11th Century Rotundas in the Carpathian Basin

Of the above mentioned examples on the correlation of magnetic trinitas phenomenon and geomagnetic characteristics, Chapter 3 pays special attention to rotundas in the Carpathian Basin, where the eastern-dominated principal prevails, and makes references to the possibility of the development of a trinitas chronology.

Chapters 4-8 of Part II of the Setting-Chronology mention further European and non-European examples. A few words about those chapters:

4. Late-Roman Sacral Buildings in Pannonia

The archeomagnetic data found in Hungary (Márton, 2010) provided further sources to explore that orientation by trinitas directions was still prevalent at the time when changes in the orientation of direction started to appear in the last centuries of the Roman province of Pannonia.

5. In the case of Ancient Greek sacral structures that mostly survived as ruins after having been used as foundations of secondary structures and subjected to rebuilding, it was observed that the changes in the orientation of directions were associated with the changes of the different cults. (Boutsikas, 2007, 2010)

6. The orientation of Crete's sacral buildings and central spaces became an unavoidable issue as a result of a provocative study establishing the fact that orientation was performed in the Antiquity by using compasses. (Downey, 2010) We made a short detour to the orientation of cultic stone structures in Malta. In the cases of the structures in question, the use of a compass was absolutely impossible.

A particular effect of the eastern orientation was established in relation to the orientation of early rotundas in Hungary, it was the "dual utilization" of trinitas directions, in other words the multi-layer double-headed axe orientation-model outlined by the trinitas directions. In Cretan culture, the zone of the northern pole was dominant; this generated the trinitas time labyrinth print, which took the form of a labrys, double-headed axe shape.

7. Trinitas data found in remote continents. Orientation of Chinese pyramids and Central-American sacral buildings.

Czech researchers (Klokočník, Kosteleckỳ, Vítek (2004); Charvátová, Klokocnik, Kolnas, Kostelecky (2009) wrote a study assuming the use of compass in relation to the orientation of medieval Chinese earth pyramids, pictures of which are currently only available on the internet, and the same assumption was made in relation to the pyramid structures found in Central-America. Similarly to the researcher of the orientation methods found in Crete, they also assumed a direct relation between the orientation and the magnetic declination directions set by a compass. It was time to refute these ideas, before this faulty theory becomes as popular as the Sun-based orientation became earlier.

It is really difficult to understand how it was possible to overlook the thousands of years old practice called geomancy in Europe and the somewhat differently construed feng shui in China, which is actually based on the careful perception of trinitas directions.

8. Rotundas from the Stone Age and Bronze Age

Sacral directions of the stone circles in England and Goseck in Germany

3.1. Correlations between Orientation Directions [xxx] and Trinitas Vectors

On the basis of the repertory of sacral buildings set in the last centuries of the 1st millennium in the Carpathian Basin, it was possible to assert the correlation between the direction decided in the setting procedure and the directional characteristics of the parallel magnetic field. (Keszthelyi-K.Sragner, 2012) We assumed that the building-axes' directions set in former times were directly related to the magnetic trinitas vector developing the direction of the magnetic declination. However, they are not directly related to the magnetic declination directions.

[xxx] Orientation direction has the following meaning in our study: a direction set by orientation, the meaning of set direction is: a direction indicated by the setting procedure.

In the case of the reconstruction, rebuilding of sacral buildings of the same cult, the walls of the structures were erected in the same direction over the new foundations built next to the existing or former foundations. The magnetic field direction that had changed in the meantime was usually different from the direction of the former walls. Consequently, the old-new direction of secondary structures did not fit to any direction of the magnetic trinitas prevalent at the time of the construction; neither did it have indirect relations to the declination value relevant at the time of the construction work.

3.2. Orientation and Time of Setting of Early Rotundas in the Carpathian Basin

3.2.1. Effect of the Eastward-principle Limiting the Scope of Setting Directions on the Selection of Trinitas Directions

In Christian Europe, the directions of sacral buildings were most often set in the zone between sunrises and sunsets by taking into account the ecclesiastical intention to apply eastward orientation. In the centuries before the invention of the compass, the axial directions of ritual places could have been aligned with the perpetual east direction, which is 90 degrees from the easily set geographical south direction. Were those people familiar with the compass, they could have oriented themselves to the “magnetic east” that is perpendicular to the magnetic pole.

Along the east-dominated principle, they oriented their churches to a hundred different directions southward and northward from the east direction. There were no ecclesiastical guidelines as to what the underlying purpose of the selection of the directions should be in the zone demarcated by sunrises and sunsets, or beyond. Countless explanations were developed in relation to the selected directions in the past few centuries; however, their applicability was equally questionable.The same applies to the latest explanation as well, according to which some sacral places were directly oriented to the magnetic north direction, typically in those centuries, where the archeological artifacts do not support the assumption that compass was used for the building works.

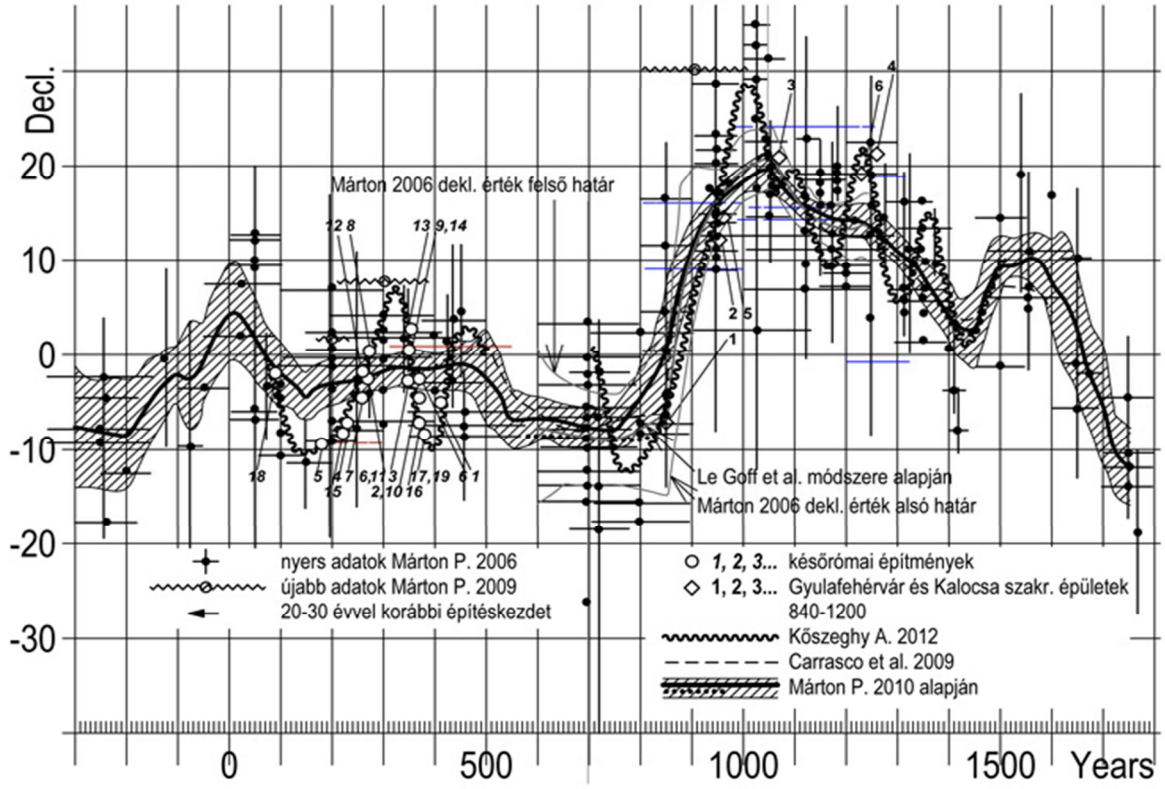


Figure 9: Archeomagnetic data and curves in Hungary

The "A. Kőszeghy 2012" curve was developed by staying within the age determination line of P. Márton's unprocessed data (2010) and by separating the artifact data listed above one another. It attempts to capture the declination fluctuations, which were reflected by the trinitas directions through the changes in the orientation of directions.

Márton 2006 dekl. érték felső határ	Márton 2006 decl. value upper limit
nyers adatok Márton P. 2006	raw data Márton P. 2006
újabb adatok Márton P. 2006	recent data Márton P. 2006
20-30 évvel korábbi építéskezdet	start of construction of 20-30 years earlier
Le Goff et al. módszere alapján	based on method by Le Goff et al.
Márton 2006 dekl. érték alsó határ	Márton 2006 decl. value lower limit
későrómai építmények	late Roman buildings
Gyulafehérvár és Kalocsa szakr. épületek 840-1200	Gyulafehérvár and Kalocsa sacral buildings 840-1200
Kőszeghy A. 2012	Kőszeghy A. 2012
Carrasco et al. 2009	Carrasco et al. 2009
Márton P. 2010 alapján	Based on Márton P. 2010

3.2.2. Trinitas Labyrinths

The phenomenon – in today's interpretation a magnetic field component triformity, magnetic field vector triformity and in our text magnetic trinitas - provoking involuntary movements of the arms and perceived as three-way force provided a possibility to those performing the rituals to select directions. The trinitas directions changed along the alteration of the declination directions, but the rotation of their angle was 5-8 times faster.

The directional changes of the three branches of the trinitas traced out three

labyrinth figures.

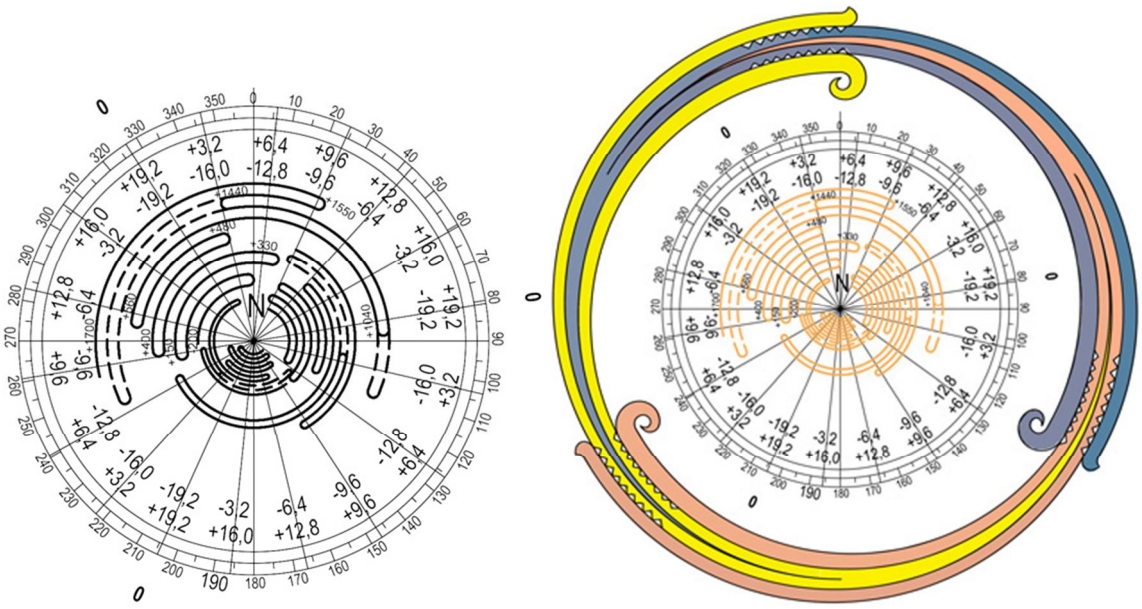


Figure 10: Time labyrinths of trinitas directions between 100 and 1700
Basic program: Magnetic transmission diagram in the Carpathian Basin, (Kőszeghy, 2013)
During the course of the changes in the direction of Central European trinitas branches between 100 and 1700, the labyrinth lines tracing the changes of the trinitas directions follow one another – an allusion to the time-serpent/dragon biting his own tail.

3.2.3. Uroboros-crosstalks: Time-serpent biting his own tail, the time-labyrinth

During the changes of trinitas directions, the directions of the three trinitas branches slide into one another. Even a single trinitas branch would be able to make a full circle, had the magnetic declination been greater than forty-five or fifty degrees. However, the image of the serpent biting his own tail becomes clearly prominent in the case of the change of the trinitas directions, even if there is only a slight change in the magnetic declination. The three trinitas branches are the manifestations of the single whole trinitas serpent-like “creature”, the same trinitas time-serpent from three different aspects.

It is evident if the principle of eastward-orientation is applied that any trinitas branch plays a role in the determination of direction until maximum 35-40 degree deviations from the east-west direction, and then its role is taken over by the ulterior trinitas branch until the next deviation of similar extent. Then comes another change, thus, all the orientations of sacral buildings representing a realistic declination value may

be demonstrated. Within the framework of eastward orientation, with the use of trinitas directions projected from the eastern and western zones, there is one available trinitas branch yielding a setting direction, irrespective of the magnetic declination direction.

The medieval application of the eastward principle to the two-way extension of trinitas directions thus led to the development of six orientation zones.

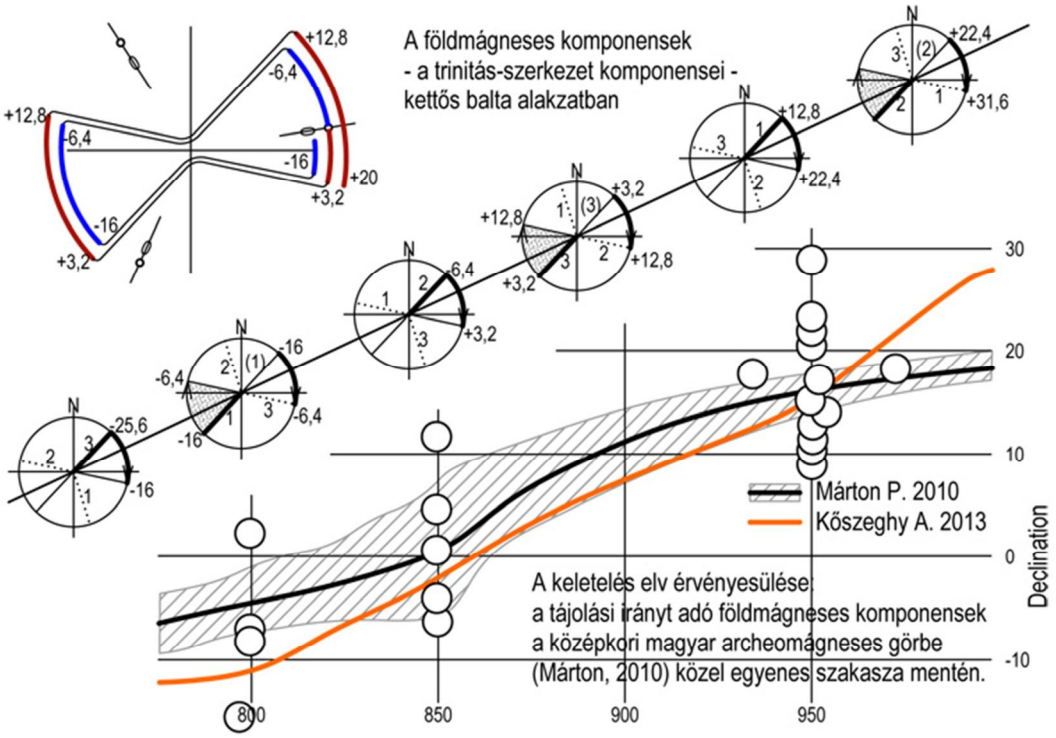


Figure 11: Direction setting movement of the trinitas branches of sacral buildings in the eastward zone. The changes in the trinitas direction entailed by the changes in the magnetic declination and the trinitas branches selected for the application of the eastward principle are indicated with thick lines and curves.

A földmágneses komponensek – a trinitás-szerkezet komponensei – kettős balta alakzatban
A keletkezés elv érvényesülése a tájolási irányt adó földmágneses komponensek a középkori magyar archeomágneses görbe (Márton, 2010) közel egyenes szakasza mentén.

Geomagnetic components – components of the trinitas structure – positioned in double-headed axe shape
Application of the eastward principle, geomagnetic components determining orientation direction along the almost straight section of the medieval archeomagnetic curve of Hungary (Márton, 2010).

3.3. Trinitas orientation directions by the application of the eastward principle demonstrated by the sacral buildings found in Kalocsa and Gyulafehérvár (Alba Iulia)

(Bagyuj,1983)

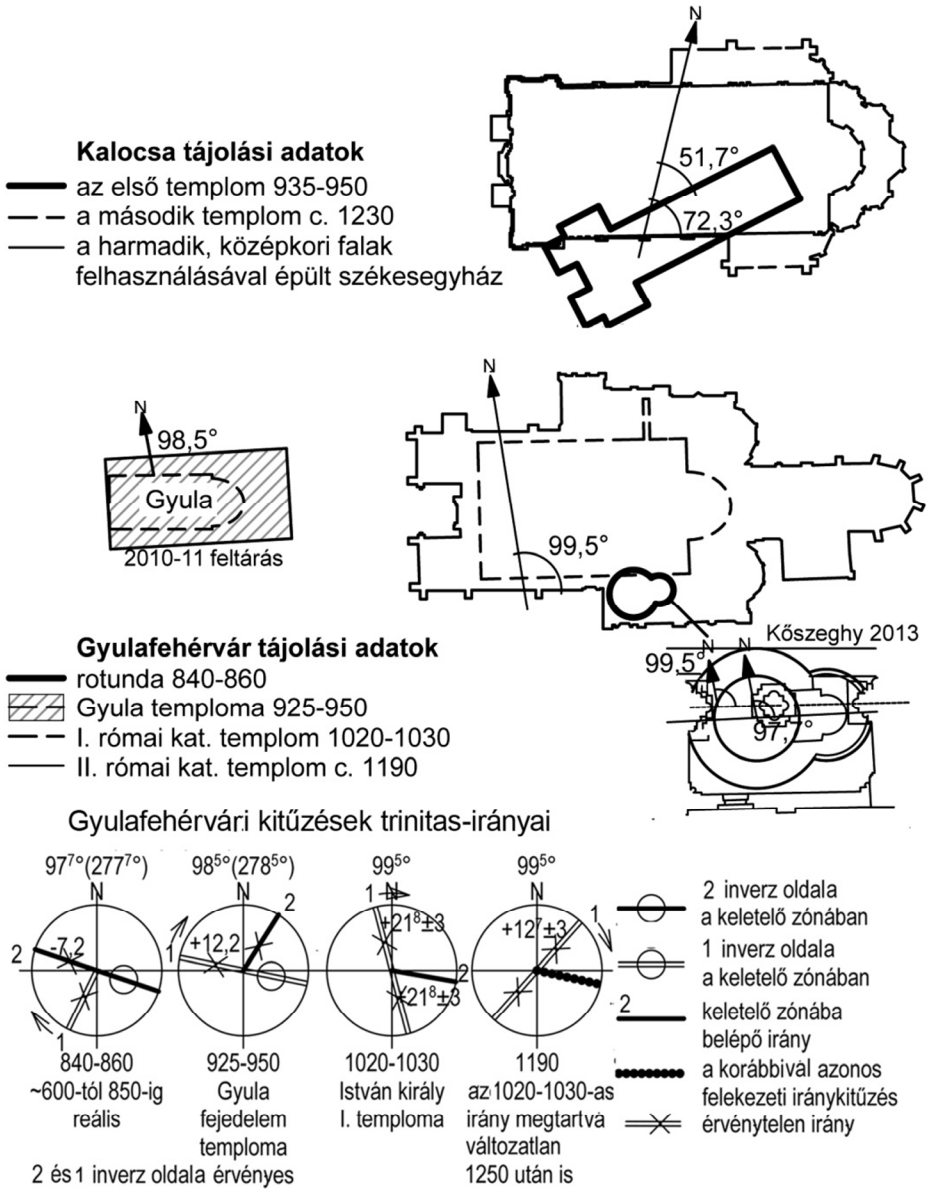


Figure 12: Orientation data and construction dates from Kalocsa and Gyulafehérvár

Kalocsa tájolási adatok
az első templom 935-950
a második templom c. 1230
a harmadik, középkori falak felhasználásával épült székesegyház
2010-11 feltárás
Gyulafehérvári tájolási adatok
rotunda 840-860
Gyula temploma 925-950

Orientation data from Kalocsa
the first church from 935-950
the second church from around 1230
the third basilica built on foundations of the medieval walls
excavation in 2010-11
orientation data from Gyulafehérvár
rotunda 840-860
Gyula's church from 925-950

I. római kat. templom 1020-1030	1st Roman Catholic church from 1020-1030
II. római kat. templom c. 1190	2nd Roman Catholic church from around 1190
Gyulafehérvári kitűzések trinitás-irányai	Trinitas directions of settings in Gyulafehérvár
840-860 ~600-tól 850-ig reális	840-860 realistic from ~600 to 850
925-950 Gyula fejedelem temploma	925-950 Suzerain Gyula's church
2 és 1 inverz oldala érvényes	2 and 1 inverse sides are valid
1020-1030 István király I. temploma	1020-1030 1st church of King Stephen
1190 az 1020-1030-as irány megtartva változatlan 1250 után is	1190, the direction prevalent in 1020-1030 maintained, unchanged even after 1250
2 inverz oldala a keletelő zónában	2 inverse sides in the eastward zone
1 inverz oldala a keletelő zónában	1 inverse side in the eastward zone
keletelő zónába belépő irány	direction entering into the eastward zone
a korábbival azonos felekezeti iránykitűzés	denominational setting identical to the earlier setting
érvénytelen irány	invalid direction

During the centuries of the Antiquity and of the Middle Ages, when new sacral buildings were built upon the ruins of cultic spots built by others, the sacrality of the old places was often dissolved by the setting of a new trinitas direction. This is quite obvious from the selection of the directions of the old and the new basilica in Kalocsa, Hungary. Presumably the former structure was not built by the leaders of a Roman Catholic community; correspondingly, the direction of the new building is significantly different from that of the older building. These changes in directions reflecting the changes of cultures may be of help to put the origins of these sacral buildings in chronological order.

Another example cited here, is the series of churches in Gyulafehérvár. The one and a half century of changing cultures characterized by demolitions and rebuilding were followed by apparently hardly any changes in orientation. The changes in the magnetic field resulted in significant changes of direction in terms of the trinitas components that the trinitas direction of the new settings unintentionally almost identically covered the old ones, in other words, the time-serpent of the trinitas directions bit his own tail.

Serial no.	Series of churches in Gyulafehérvár and Kalocsa 800-1300, Structures in the Pilis region 1100-1300	Orientation of building against the north direction, degree	Declination from the end-side entrance (with cursive writing: inverse orientation, from the apse to the entrance)		Date of setting
Gyulafehérvár/Alba Iulia St Michael Catholic Church and its history					
1	Rotunda	97.7	~~*12.0*~~	*-7.2*	*around 840-860, around 1015: was torn down*
2	Orthodox-type church of Gyula	98.5	*12.2*	~~*-7.0*~~	*around 925-950 around 1015: was torn down*
3	Location of the first Roman Catholic church	99.5	21.8	~~+2.6~~	around 1020-1030

	(its location within and below the second one)				
4	Second Roman Catholic church (continued after the Tatarian invasion of Hungary and after a major fire)	99.5	in former direction	indifferent	around 1190- following the previous orientation
	Kalocsa, basilica and its history				
5	First church	51.7	14.4	~~-4.8~~	around 935-950
6	The building of the second Roman Catholic church was presumably completed after the Tatarian invasion	72.3	18.0	~~-1.2~~	around 1230- 1602: was burnt down
7	Third Roman Catholic church, baroque-style reconstruction	72.3	built upon the old building	indifferent	Rebuilding in the baroque era by maintaining the existing direction

Table 2:The age determination of the series of churches was performed on the basis of an archeomagnetic curve developed on the basis of raw archeomagnetic, orientational and magnetic transmission data.
The multitude of declination values of the archeomagnetic curves, broken down to time periods of a hundred years and represented along a vertical line can be separated in time by primarily taking into account the age uncertainty indicated by a horizontal line, and secondarily by considering the uncertainty of the declination value indicated by a vertical line. Logically speaking, by the use of curves incorporating the extreme values of raw data, the significant projections and constrictions may be demonstrated.

The orientation of the rotunda in Gyulafehérvár is inverse, it is oriented from the inside to the entrance, which a typical feature of rotundas of the same age. Its date of construction cannot be the same as the date of the church built by Suzerain Gyula of Transylvania, who had been baptized in Byzantium shortly before that. The slightly more than one-degree difference in the orientation of the buildings implies a fifty year long time difference between the respective dates of their setting.

The exact starting date of the construction of the first Catholic church can be estimated on the basis of the orientation of the hidden ruins of the older building. The starting date of the construction of the second Roman Catholic church was not 1270 as implied previously by the historic records of the large municipal fire; it must have started earlier, in the decades preceding the Tatarian invasion, around 1190 according to the magnetic transmission circular diagram. Had we assumed that the starting date was in 1230, or particularly in 1270, the archeomagnetic curve would be unrealistically steep in the subsequent fifty year long time period, particularly, if the realistic change in the direction of the oncoming dented curve section, which is also seen in the case of other European curve lines, is taken into consideration. (Márton, 2010; Kőszeghy, 2012)

The first element in the series of churches in Kalocsa could certainly not have been a Roman Catholic church. The direction of the declination between the first and the second church, in line with the archeomagnetic curve, implies that the time range of

the starting date of the second reconstruction must have been around 1230. It would be logical to assume that primary reason for the reconstruction was the disastrous Tatarian invasion in 1241, however, the starting date may only be placed in the time range of 1220-30 in the increasing sequence of reconstructions started around the time of the Tatarian invasion that are indicated in the same branch of the archeomagnetic curve. This date is concordant with the date mentioned in the contemporary ecclesiastical correspondence that defines 1229 as the starting year of the construction.

3.4. Rotundas in the Carpathian Basin with well-known orientations and nave-and-aisles sacral buildings with similar construction dates

Basic program: Magnetic Transmission Diagramin the Carpathian Basin

No former or older structures can be found under the thick-walled circular rotundas located in Hungary. Consequently, these might be important representatives of the orientation practice structured on the basis of the triskele-model, a triple magnetic component.

Although the age of archeological artifacts provided with archeomagnetic features is uncertain, the declination values swiftly increasing after the 800s from the geographical north to the north-east direction outline with fair approximation the process, along which declinations had changed and trinitas directions had been selected. It is demonstrated that at the beginning of the 800s, the magnetic north was basically the same as the geographical north, and then a steady and fast process evolved, as a result of which the declination exceeded twenty degrees by the middle of the tenth century.

The direction of the axes of contemporary rotundas and of the earliest nave-and-aisles churches was different. Each one of them was set without the use of a compass, presumably in the near eastern direction of the trinitas magnetic components.

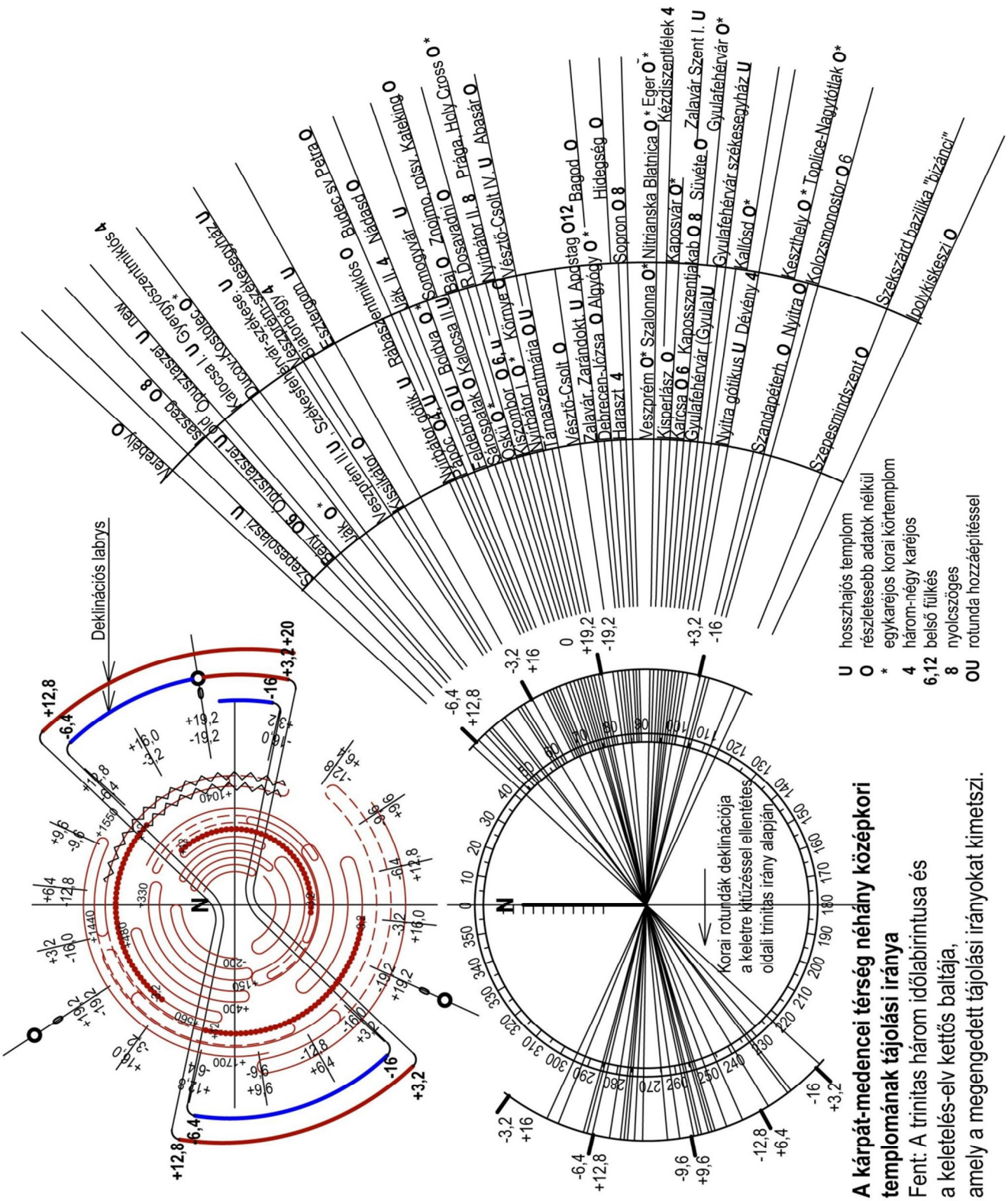


Figure 13

Korai rotundák deklinációja a keletre kitűzéssel ellentétes oldali trinitas irány alapján

Declination of early rotundas on the basis of the direction of the trinitas situated on opposite side to the eastward setting

Deklinációs labrys
A kárpát-medencei térség néhány középkori templomának tájolási iránya
Fent: A trinitas három időlabirintusa és a keletelés-elv kettős baltája, amely a megengedett tájolási irányokat kimetszi.

hosszhajós templom
részletesebb adatok nélkül
egykaréjos korai körtemplom
három-négy karéjos
belső fülkés
nyolcszöges
rotunda hozzáépítéssel

Declination labrys
Orientation directions of some medieval churches located in the Carpathian Basin
Above: The three time labyrinths of the trinitas and the double-headed axe of the eastward principle that engraves the permissible orientation directions

nave-and-aisles church
without providing more detailed data
single-apse early round church
three or four-apsides
with inner bay
octagonal
with rotunda added

The observed duality of trinitas directions cast a totally different light on the date of building of round churches located in the Carpathian Basin. If we assume that the earliest rotundas were built during the 800s, the magnetic components - being in the eastern sphere with higher declination values - would be significantly closer to the north due to the otherwise low declination values, therefore, it could be hardly stated that the rotunda had been oriented eastward.

It is clearly evident that in addition to the European transmission features, the orientation zone associated to the eastern declination values ranging from 6 to 14 degrees is provided by the extension of the western side component. With regard to the foregoing, if the assumption is that the early single-apse round churches were built during the time period of the 850s and 890s on the basis of archeological explorations made by researchers working across the border, this concept is in concord with the starting dates calculated by us. The building period of the early round churches is not related to the time zone when nave-and-aisles churches were constructed after the foundation of the Hungarian state.

Figure 14: Rotunda in Algyógy

Construction dates of 9th-11th century rotundas and nave-and-aisles churches

On the basis of the transmission diagram developed for the Central European region
rot: rotunda, 4 apsides: 4-apsides floor-plan, rec: reconstruction
The age determinations included in internet-based information brochures are indicated next to the name of the sacral structures.
Sources of basic data: Sándor Keszthelyi – Márta Keszthelyiné Sragner:

Orientation of Medieval Churches in Hungary, Országépítő, Annex 2012/1
Dr. Zsolt Németh, Physicist, Farkasovci (Farkasfa); Ádám Maksay, Architect, Cluj-Napoca (Kolozsvár)

Table 3: 9th-11th Century Churches in the Carpathian Basin

Number	Object ch: church chapel, rot: rotunda B: basilica att: attachment	Asimuth	Shape	Magn.decl. component	Magn.decl. component	
1	Nagybátony modif. rot.4 lobed	42	4	12.8/-6.4	3.2/-16.0	
2	Isaszeg rot. XIIc., coin: 1070	45.2	O8	13.2/-6.0	3.6/-15.6	1140
3	Zsámbék premontr. ch. 1220-	45-46	U	13.2/-6.0	3.6/-15.6	1220
4	Szer earlier pagan holy place minta:St Gallen 720	53	U	14.8/-4.4	5.0/-14.2	
5	Kalocsa I After 950	51.7	U	14.5/-4.7	4.9/-14.3	940-960
6	Kalocsa II	*72.3*	*U*	17.7/-1.5	8.1/-11.1	1230-
7	Gyergyósztmiklós 4 lobed	c 51	4	14.5/-4.7	4.9/-14.3	
8	Ják I rot.	51	O*	14.5/-4.7	4.9/-14.3	870-890
9	Ják II. rot. Abbey ch. 1214	68.2	O8	17.1/-2.1	7.5/-11.7	
10	Ják, Cathedral c1220-60	68.6	U	17.1/-2.1	7.5/-11.7	1215-1220
11	Bény Bíňa rot. IX.ch. or XII.	cca55	O	15.1/-4.1	5.5/-13.7	875-895
12	Székesfehérvár c. 974?	55.7	4?	15.2/-4.0	5.6/-13.6	1110-1120
13	Székesfehérvár Szt István Basilica 972	65.8	U	16.8/-2.4	7.2/-12.0	940-960
14	Esztergom Szt. István martyred ch. c.975	56.9	U	16.3/-3.1	5.9/-13.3	940-960
16	Esztergom St.Adalbert ch.1001	60.5	U	16.0/-3.2	6.4/-128	1040-1070
17	Biatorbágy modified rot.	57.3	O U	15,6/-3.6	6.0/-13.2	880-905
18	Veszprém I rot. c 1016	89.6	O*	20.6/1.4	11/-8.2	900-925
19	Veszprém II rot. after 1290	57.9	O8	15.6/-3.6	6.0/-13.2	
20	Veszprém székesegyház before 950	56.8	U	16.3/-3.1	5.9/-13.3	940-960
21	Kissikátor	57.9	O	15.6/-3.6	6.0/-13.2	880-905
22	Boldva Benedict. ch. 1175 with modified rotunda	58	OU	15.6/-3.6	6.0/-13.2	880-905
23	Ducóv-Kostolec	c 59	O*	15.8/-3.4	6.2/-13.0	880-905
24	Ópusztaszer old XI. ch.	60.7	U	16.1/-3.1	6.5/-12.7	1050-1090
25	Pavla, Budeč fort, rot. c.900	61.3	O	16.1/-3.1	6.5/-12.7	885-910
26	Somogyvár Early c 900	61.3	U	16.1/-3.1	6.5/-12.7	
27	Somogyvár II. Koppány 1090Benedict. ch	68.9	U	17.3/-1.9	5.1/-14.1	
28	Kisnána rot., attachment XI. th	62.8	O*	16.4/-2.8	6.0/-13.2	885-905
29	Kisnána ch. I Aba Sámuel XI. th.	c 64	OO	16.5/-2.7	5.9/-13.3	
30	Ellésmonostor basilica After 1090	63	U	16.4/-2.8	6.0/-13.2	
31	Apostag basilian ch.	63.7	O12	16.5/-2.7	5.9/-13.3	
33	Levy Hradec St. Kelemen c 900 XVII.th: baroque att.	65	O*	16.6/-2.6	5.8/-13.4	880-900
34	Rábaszentmiklós XI.	66.7	O	17.1/-2.1	7.5/-11.7	
35	Rábasztmiklós XI-XII. th.	67	U	17.1/-2.1	7.5/-11.7	
36	Tihany Bencés t. 1055	68.1	U	17.2/-2.0	5.3/-13.9	
37	Feldebrő apszis-rész	68.7	OU	17.2/-2.0	5.3/-13.9	870-890
39	Boldva	69.4	O*	17.5/-1.7	7.9/-11.3	
40	Garamszentbenedek Abbey 1060	70	U	17.5/-1.7	7.9/-11.3	
41	Velemér	70.9	U	17.7/-1.5	8.1/-11.1	
42	Dömös t XI. th	71.2	U	17.7/-1.5	8.1/-11.1	
43	Pozsony Szt Lőrinc rot.	71	O	17.7/-1.5	8.1/-11.1	890-920
44	Pozsony Szt Lőrinc ch.1230 with modified rotunda	77	OU	18.7/-0.5	9.1/-10.1	
45	Baj	72.6	O	17.9/-1.3	5.1/-14.1	
46	Pannonhalma I XI.th.	75	U	18.4/-0.8	8.8/-10.4	970-990
47	Pannonhalma II XIII.th. or 1220	73	U	17.9/-1.3	8.5/-10.7	1215-1230
48	Sóly 1009	73	U	17.9/-1.3	8.5/-10.7	
49	Sárospatak	73.1	O	17.9/-1.3	8.5/-10.7	
50	Öskü XI. th.	73.9	O	18.0/-1.2	8.6/-10.6	890-920
51	Kiszombor (6 concave) lánccsillag c953 or c1030	75-76	6O	18.4/-0.8	8.8/-10.4	
52	Környe rot. ruin	77.1	O	18.7/-0.5	9.1/-10.1	890-920
53	Nádasd rot. XI.th.	c. 76.2	O	18.7/-0.5	9.1/-10.1	

54	Oroszlány-Vértes-szentkereszt XI. - XIII. th	78	U	18.7/-0.5	9.1/-10.1	
55	Pannonhalma I XI.th.	75	U	18.4/-0.8	8.8/-10.4	
56	Pannonhalma II XIII.th.	73	U	17.9/-1.3	8.5/-10.7	
57	Tarnaszentmária c 960	78.2	OU?	18.7/-0.5	9.1/-10.1	890-920
58	Nyírbátor I rot.	79-80	O*	18.8/-0.4	9.2/-10.0	890-920
59	Nyírbátor early kath. ch.	77.7	U	18.7/-0.5	9.1/-10.1	
60	Nyírbátor late- gothic ch.	77.7	U	18.7/-0.5	9.1/-10.1	
61	Nyírbátor II rot.distorted	77.7	O8	18.7/-0.5	9.1/-10.1	
62	Szombathely, Szt Márton ch c 850.	80	U	18.8/-0.4	9.2/-10.0	
63	Pécsvárad altempl. Earlier ch orientation 999	80	U	18.8/-0.4	9.2/-10.0	
64	Pécsvárad benedict. ch.	75.1	U	18.4/-0.8	8.8/-10.4	
65	Szeben Hermannstadt	81	O	19.2/0	9.6/-9.6	
66	Vésztő-Csolt I	82.2	O	19.3/0.1	9.7/-9.5	900-925
67	Vésztő-Csolt IV c 1180	78.6	U	18.7/-0.5	9.1/-10.1	
68	Nagytótlak Selo c. 1250	83	O*	19.4/-0.2	9.8/-9.6	900-925
69	Bagod Vitenyédszentpál	83.5	O	19.4/-0.2	9.8/-9.6	
70	Tihany bazilita t1055?	84.6	U	19.8/0.6	10.2/-9.0	
71	Gurasada near of Mures river, four-lobe (tetrakoncha) XIII	85	O	19.8/0.6	10.2/-9.0	
72	Eger vár rot.	83.7	O*	19.4/-0.2	9.8/-9.6	
	Eger rot. 2. XIII sz?	88	O	20.4/-1.2	10.7/-8.5	
75	Algyógy Geoagiu rot. XI -XII.th	c 86	O*	19.9/0.7	10.3/-8.9	900-925
76	Debrecen-Józsa	86.3	O	19.9/0.7	10.3/-8.9	
77	Hidegség Győr-Sopron m. XII	87.2	O	20.4/1.2/	10.7/-8.5	
78	Zalavár Récéskúti B. 870.ben már felszentelt t. állt	88	U	20.4/1.2/	10.7/-8.5	c. 850
79	Gyulafehérvár rotunda	95	O*	19.8/0.6/	11.5/-7.7	905-930
80	Gyulafeh. Gyula founded ch.	97	U	21.5/1.3/	10.7/-8.5	
81	Gyulafehérvár ch. bevore the chatedral	97.5	U	21.7/1.5		
82	Sopron after 1100	87.7	O8	20.4/-1.2/	10.7/-8.5	
83	Szalonna rot.	89.3	O	20.6/-1.4/	11.0/-8.2	905-930
84	Szalonna 1280 mod. rot.	98.7	OU	23.9/2.7/ -16.5	12.2/-7.0	
85	Fövenyes Kerekegyháza c.1000	c 90	O*	20.6/1.4/	11.0-/8.2	905-930
86	Kapos(Zselic)szentjakab Kapcany I. 1061	91.5	U	21/1.8/	11.2/-8.0	
87	Kapos(Zselic)szentjakab Kapcany II.Van-e alatta régebbi? 1200-90	94	O8	21.5/2.3/	11.1/-8.1	
88	Abasár Aba S.	91?	O	21/1.8/	11.2/-8.0	
89	Nitrianska Blatnica 850-1000	91-92	O*	21/1.8/	11.2/-8.0	905-930
90	Kaposszentjakab XI. th	92.7	O8	21.2/2.0	11.3/-7.9	
91	Kaposszentjakab Ben. ch. 1061	93.3	U	212/2.0	11.3/-7.9	
92	Kisperlász/Prihradzany	93	O	21.2/2.0	11.3/-7.9	
93	Karcsa after 1180	93.5	O	21.3/2.1	11.4/-7.8	
94	Veszprémvölgy, nunnery	94	U	21.3/2.1	11.4/-7.8	
95	Zalavár, Szent I. kápolna XI.sz. c. 1050	94	U	21.3/2.1	11.4/-7.8	970-990 1050-1080
98	Mórichely Nagykanizsánál 1250	96	U	21.6/2.2 -17	12.1/-7.1	
99	Pusztaszentegyháza *c. 900 KA*	96.2	U	21.6/2.2 -17	12.1/-7.1	
100	Letenye-Csatár X. th.	96.5	U	21.6/2.2 -17	12.1/-7.1	
101	Zalavár, Hadrianus ch, Adorján ch. 850-860	98-99	U	21.8/2.6/ -16.5	12.2/-7.0	845-850
102	Kallósd stone base IX-X th? rec. c. 1265	98.9	O*	21.8/2.6/ -16.5	12.2/-7.0	905-930
103	Nyitra/ Nitra rot. 10th-12th?	104.9	O	227/2.5	13.1/6.1	910-940
104	Nyitra/ Nitra, Cathedral of St Emmeram, Nitra rec. XIV. th.	101.5	U	22.3/2.1/	12.7/-6.5	
105	Ducov IX.-X. th.?	101	O	22.3/2.1/	12.7/-6.5	905-935
106	Sárvár 900 or 1015	101.5	O	22.3/2.1/	12.7/-6.5	
107	Keszthely	103.6	O*	22.5/2.3/	12.8/-6.4	905-935
108	Praha, Holy Cross rot.1000-1120	105.6	O	22.7/2.5/	13.1/6.1	910-940
109	Kolozsmonostor after 1090	108	O	23.1/3.9/	13.5/-5.7	
111	Szepesmindszent	113	O	23.6/4.4/	14.1/-5.1	
112	Szekszárd Baz. 1030 (Gáll Ervin)	113		23.6/4.4/	14.1/-5.1	1000-1030
113	Ipolykiskeszi/Málé Kosihy c 1200	115	O	23.8/4.6/	14.2/-5.0	

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