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Reconstructing History Through Geometry: The Bosnian Pyramid of Love as a Spatial and Cultural Node in the Bosnian Valley of the Pyramids

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Geometric relationships in the Bosnian Valley of the Pyramids point to a structured spatial system centered on the Bosnian Pyramid of Love. Its position between the Bosnian Pyramid of the Sun and the Bosnian Pyramid of the Moon is not only intermediate but also functionally significant. Linear alignments, angular relationships close to 60 °, and a Fibonacci-based spatial framework all converge at this location. Equinoctial observations provide the clearest evidence of repeated interaction. On both 21 March and 23 September, the shadow of the Bosnian Pyramid of Love covers the western slope of the Bosnian Pyramid of the Moon, while the Bosnian Pyramid of the Sun projects a complementary shadow along the same east-west axis. The same configuration appears twice per year, without deviation. Such repetition distinguishes this landscape from many archaeological sites where single alignments dominate. Here, multiple geometric and solar relationships operate together, forming a coherent system rather than isolated correspondences. Within a cultural and archaeological context, the Bosnian Pyramid of Love can be interpreted as a central node that links geometry, orientation, and seasonal observation. Its position suggests a role extending beyond morphology, potentially functioning as a reference point within a broader spatial and symbolic framework.

Keywords: cultural history, historical landscape analysis, Bosnian Pyramid of Love, archaeological interpretation, geometry, archaeoastronomy, equinox alignment, solar shadow interactions, geometric relationships, landscape organization, Bosnian Valley of the Pyramids

Introduction

Relationships between monuments and solar movement are widely documented in archaeological research. In most cases, these relationships are expressed through single alignments, typically marking solstices or equinoxes along a defined axis (Aveni, 2001; Ruggles, 2015). Such alignments are well known from sites in Egypt, Mesoamerica, and prehistoric Europe, where architectural orientation reflects calendrical or symbolic functions (Magli, 2013; Šprajc, 2018). The dominant model remains relatively simple: one structure, one direction, one moment in the solar cycle.

The Bosnian Valley of the Pyramids, located near Visoko in Bosnia and Herzegovina, presents a more complex spatial configuration. The landscape includes several prominent features commonly referred to as the Bosnian Pyramid of the Sun, the Bosnian Pyramid of the Moon, the Bosnian Pyramid of Love, the Bosnian Pyramid of the Dragon, and the Temple of Mother Earth. A high-resolution LiDAR digital elevation model

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(Figure 1) shows that these features form a coherent cluster rather than isolated landforms, suggesting a structured arrangement within the valley.

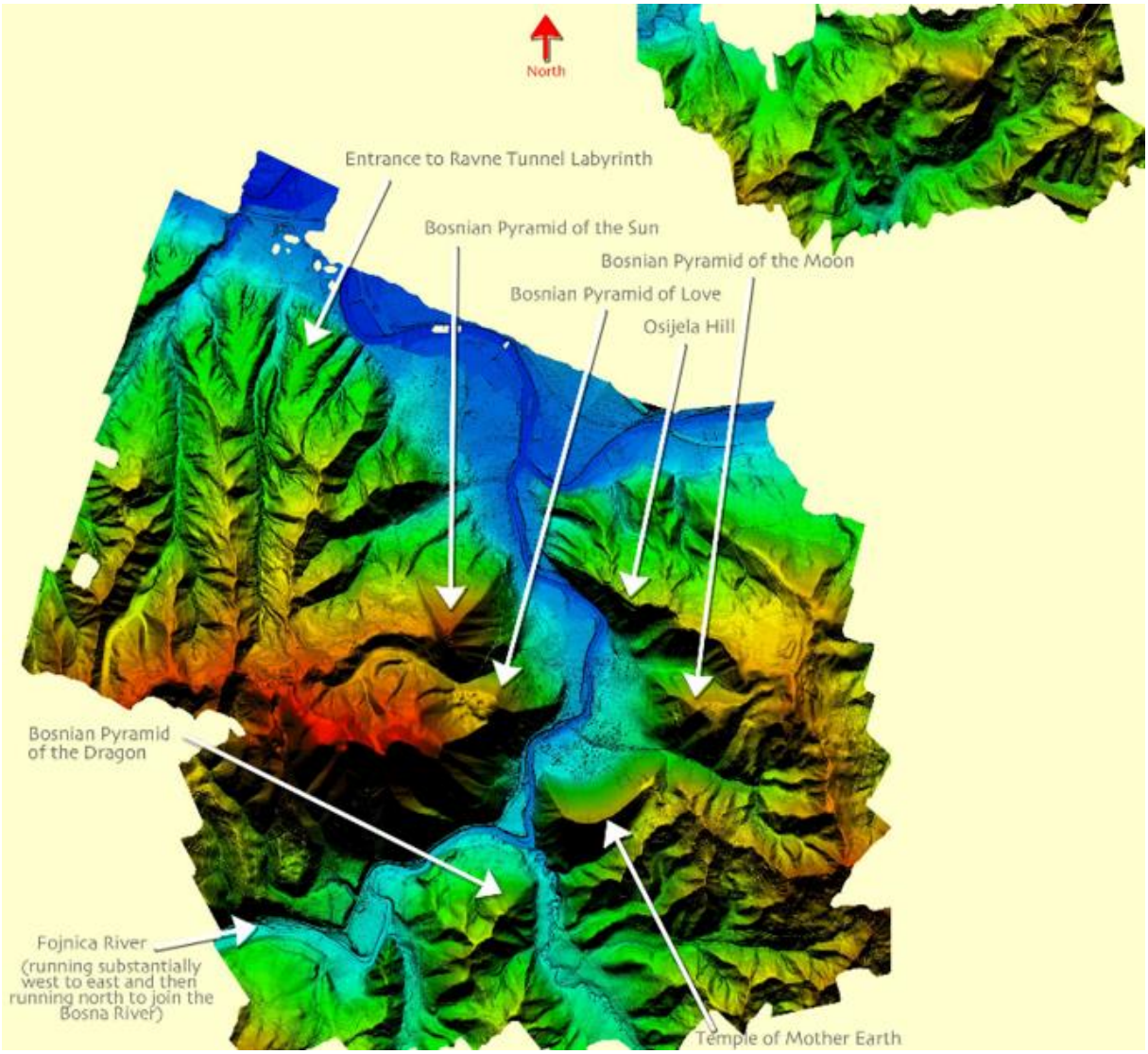

Figure 1. High-resolution LiDAR digital elevation model of the Bosnian Valley of the Pyramids showing the spatial distribution of the Bosnian Pyramid of the Sun, the Bosnian Pyramid of the Moon, the Bosnian Pyramid of Love, the Bosnian Pyramid of the Dragon, and the Temple of Mother Earth. The Bosnian Pyramid of Love occupies a central position within the valley, situated between the Sun and Moon pyramids and connected to broader alignment and geometric relationships. The configuration illustrates a structured landscape in which prominent features form an interconnected spatial system rather than isolated geomorphological elements.

An oblique aerial view (Figure 2) further illustrates differences in elevation and visibility between the main features. The Bosnian Pyramid of Love occupies a central and visually prominent position between the Sun and Moon pyramids. This positioning is not only geometric but also perceptual. Intervisibility between features is clear, and line-of-sight relationships remain consistent across the central part of the valley. From an archaeological and anthropological perspective, such visibility can influence how landscapes are experienced and organized.

Figure 2. Oblique aerial view of the Bosnian Valley of the Pyramids with principal monuments indicated, including the Bosnian Pyramid of the Sun, Moon, Love, Dragon, and the Temple of Mother Earth. The image illustrates relative elevation, spatial distribution, and intervisibility among the main features. The Bosnian Pyramid of Love is positioned between the Sun and Moon pyramids and occupies a visually prominent location within the valley. Such visibility relationships are relevant in archaeological and anthropological contexts, where line-of-sight, elevation, and visual dominance contribute to the organization and perception of cultural landscapes.

Terrain models provide additional insight. A LiDAR-derived visualization (Figure 3) shows the Bosnian Pyramid of Love situated between the Bosnian Pyramid of the Sun and the Temple of Mother Earth, reinforcing its intermediate role within the landscape. A ground-level view (Figure 4) confirms that, despite vegetation cover, the structure's form and elevation remain clearly distinguishable. Together, these observations define the Bosnian Pyramid of Love as both a spatial and visual reference point.

To examine these relationships quantitatively, a dataset of summit coordinates was established (Table 1). These coordinates serve as the basis for calculating distances, azimuths, and geometric relationships among the principal features. The resulting framework allows for systematic evaluation of alignment patterns and spatial organization.

The selection of summit points used in this analysis provides a consistent reference for all subsequent geometric projections. Within this framework, several geometric relationships become apparent. A linear alignment connects the Temple of Mother Earth, the Bosnian Pyramid of Love, the Bosnian Pyramid of the Sun, and the entrance to the Ravne tunnel complex (Figures 5-6). The Bosnian Pyramid of Love lies along this axis, linking multiple features across the valley.

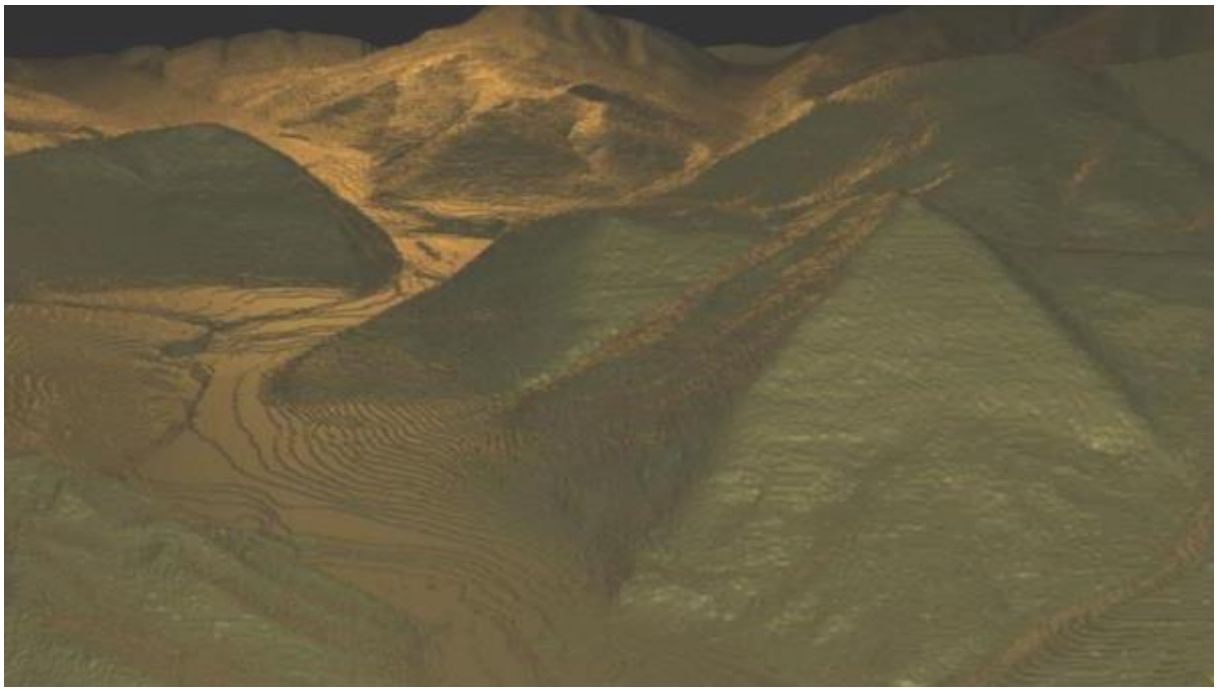

Figure 3. LiDAR-derived terrain model showing the Bosnian Pyramid of the Sun (right), the Bosnian Pyramid of Love (center), and the Temple of Mother Earth (left). The visualization highlights slope geometry, relative elevation, and the spatial positioning of the Bosnian Pyramid of Love between major features. This intermediate position reinforces its role within alignment and geometric relationships observed across the valley. From a cultural landscape perspective, such spatial arrangements may structure movement, orientation, and visual engagement within the terrain.

Figure 4. Photograph of the Bosnian Pyramid of Love (Visoko, Bosnia and Herzegovina), showing its present-day appearance covered by vegetation. The image illustrates overall form, slope geometry, and its integration within the surrounding landscape. Despite vegetation cover, the structure remains visually prominent and clearly distinguishable in relation to nearby terrain features. Such characteristics are relevant in archaeological and cultural landscape studies, where prominent landforms may participate in broader spatial and geometric relationships.

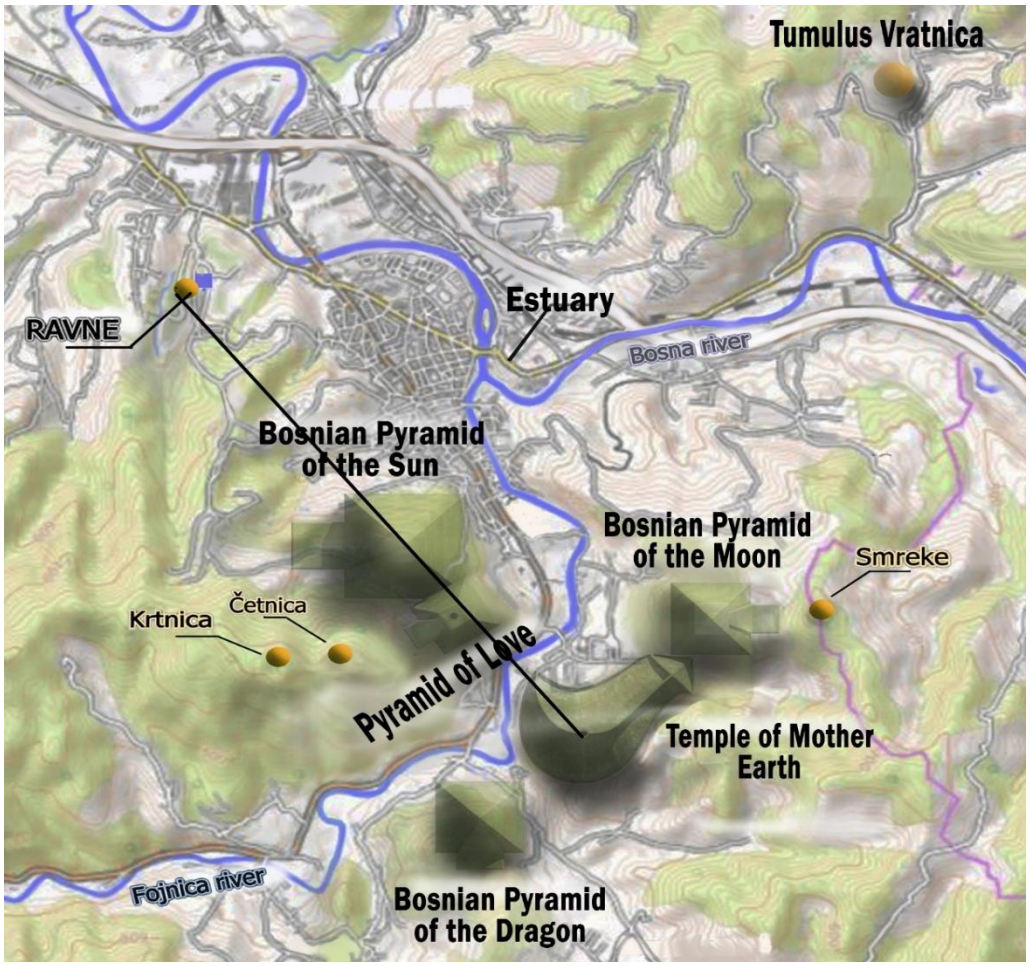

Figure 5. Plan-view projection illustrating a linear alignment connecting the Temple of Mother Earth, the Bosnian Pyramid of Love, the Bosnian Pyramid of the Sun, and the entrance to the Ravne tunnel complex. The Bosnian Pyramid of Love occupies an intermediate position along this axis, linking major features across the valley. Such linear relationships form part of the broader spatial organization and provide a basis for evaluating non-random alignment patterns within the landscape.

Table 1

Coordinates and Elevations of Principal Monuments

Location	Latitude	Longitude	Y Gauss-Kruger	X Gauss-Kruger	Absolute elevation
Bosnian Pyramid of the Sun	43 °58''36'' N	18 °10'35'' E	6,514,549.010	4,870,258.900	764.856
Temple of Mother Earth	43 °57'51'' N	18 °11'24'' E	6,515,656.180	4,868,887.120	659.695
Tumulus in Vratnica	44 °00'28'' N	18 °12'56'' E	6,517,695.090	4,873,744.790	506.710
Bosnian Pyramid of the Moon	43 °58'20'' N	18 °12'03'' E	6,516,518.910	4,869,793.150	666.060
Tunnel Ravne Entrance	43 °59'44'' N	18 °09'39'' E	6,513,311.590	4,872,362.840	496.650
Bosnian Pyramid of Love	43 °58'21'' N	18 °10'51'' E	6,514,934.430	4,869,818.840	668.310
Bosnian Pyramid of Dragon	43 °57'29'' N	18 °10'56'' E	6,515,038.980	4,868,199.190	595.530

Note. Coordinate dataset of analyzed summit locations, including geographic coordinates (latitude and longitude), projected Gauss-Krüger coordinates, and absolute elevations for principal features within the Bosnian Valley of the Pyramids. This dataset defines the fixed spatial framework used in the analysis and provides the basis for evaluating distances, azimuths, and interrelationships between monuments. In an archaeological context, such spatial data support the examination of structured landscape organization and the identification of non-random spatial patterning.

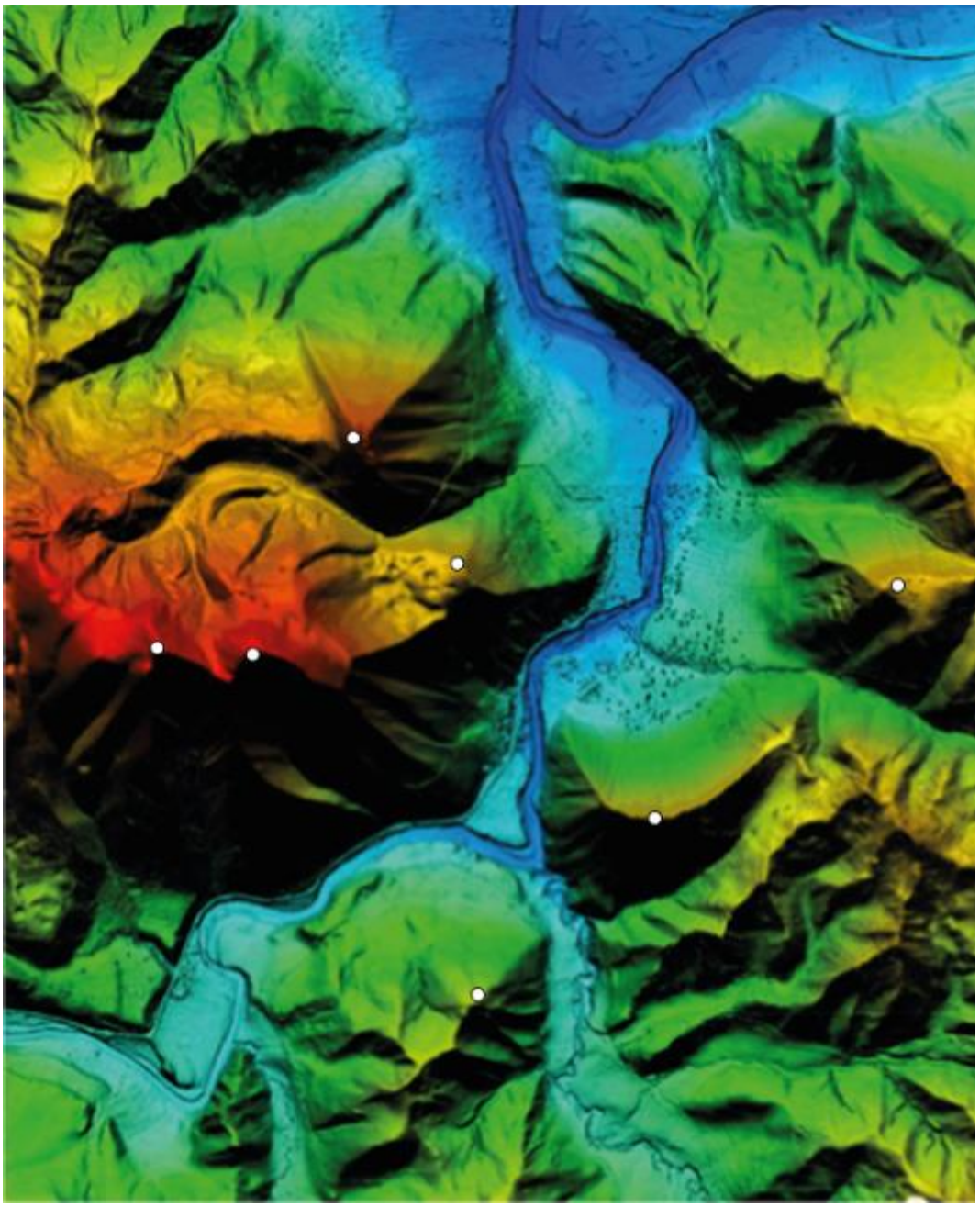

Figure 6. LiDAR-derived terrain model showing the locations of identified summit points used in the analysis (white markers). These points correspond to the peaks of the principal features, including the Bosnian Pyramid of the Sun, Moon, Love, and associated structures. The dataset defines the spatial reference framework for subsequent geometric analysis and supports the evaluation of interrelationships between monuments within the valley.

Beyond linear relationships, more complex configurations can be observed. A Fibonacci-based spiral projection, anchored at the Bosnian Pyramid of Love, intersects several major features, including the Bosnian Pyramids of the Sun, Mother Earth, and the Dragon (Figure 7). While such patterns require cautious interpretation, their recurrence suggests that the Bosnian Pyramid of Love functions as a central reference point within a broader geometric framework.

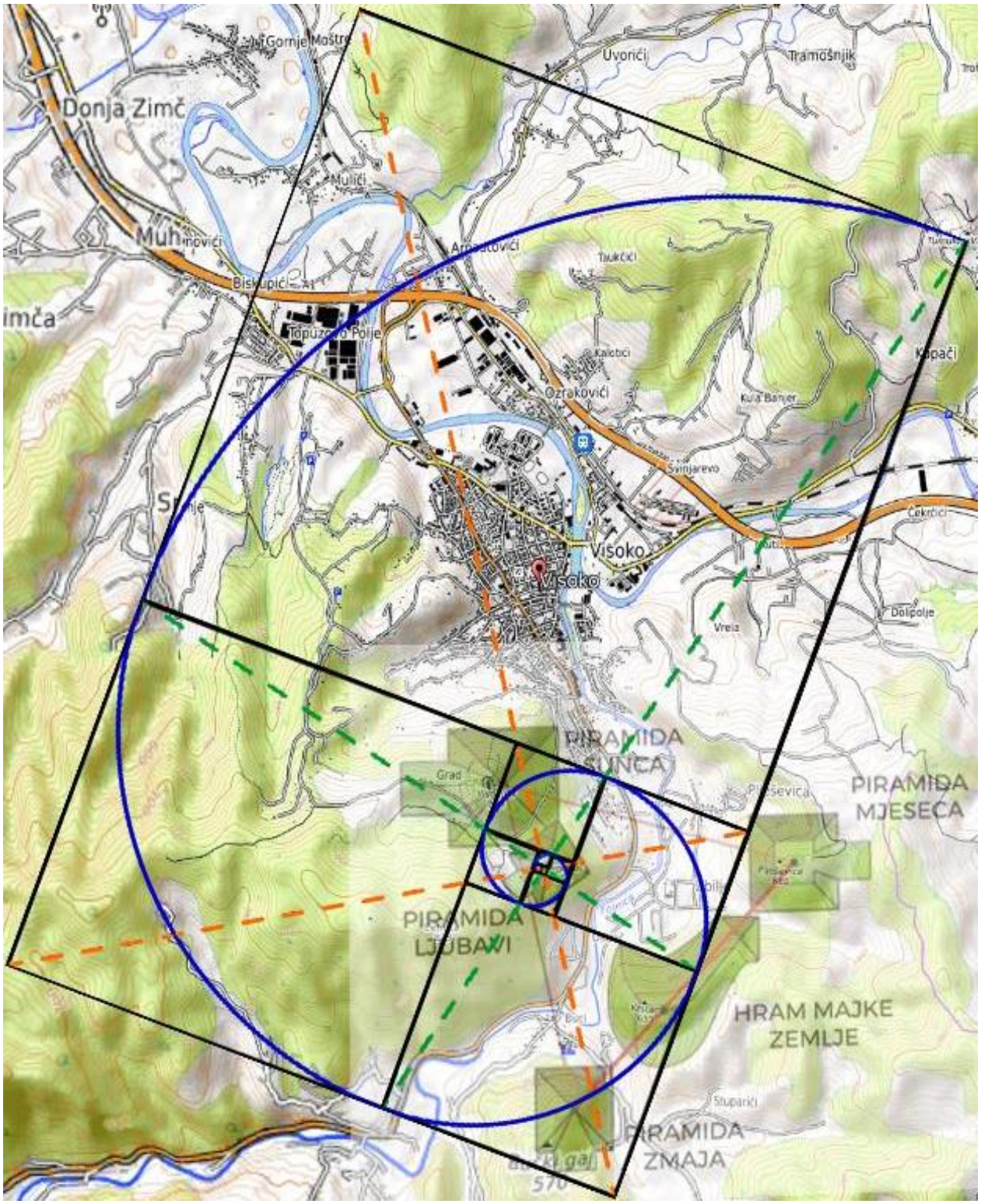

Figure 7. Fibonacci spiral projection with its origin positioned at the summit of the Bosnian Pyramid of Love. The spiral intersects the locations of the Bosnian Pyramid of the Sun, the Temple of Mother Earth, the Bosnian Pyramid of the Dragon, and the tumulus in Vratnica. This configuration illustrates a broader geometric framework in which the Bosnian Pyramid of Love functions as a central reference point within the spatial organization of the valley.

Angular relationships further support this interpretation. A comparison between terrain-based geometry and a schematic angular model (Figure 8) indicates an approximate 60 ° orientation relative to cardinal directions. The Bosnian Pyramid of Love is positioned within this angular system, linking cardinal and oblique axes. This relationship introduces an additional level of structure that extends beyond simple linear alignment.

The clearest functional interaction is observed in relation to solar movement. Photographic documentation from the summit of the Bosnian Pyramid of the Sun (Figure 9a, 9b) shows that, at both equinoxes, the shadow extends toward the Bosnian Pyramid of the Moon while the Bosnian Pyramid of Love simultaneously casts a shadow that covers its western slope. This configuration occurs on both 21 March and 23 September, with no observable variation. The repetition of this event suggests a stable relationship between monument position and solar geometry.

Taken together, these observations indicate that the Bosnian Valley of the Pyramids is not defined by a single alignment. Instead, multiple geometric and solar relationships operate simultaneously within the same landscape. The Bosnian Pyramid of Love emerges as a central element within this system, linking geometry, orientation, and seasonal interaction.

The aim of this paper is to examine the role of the Bosnian Pyramid of Love within this framework. Rather than focusing on a single alignment, the analysis considers how linear, angular, and solar relationships combine to form a structured landscape. In doing so, the paper explores whether such configurations can be interpreted within a broader cultural and archaeological context, where spatial organization reflects not only geometry but also the perception and use of the landscape over time.

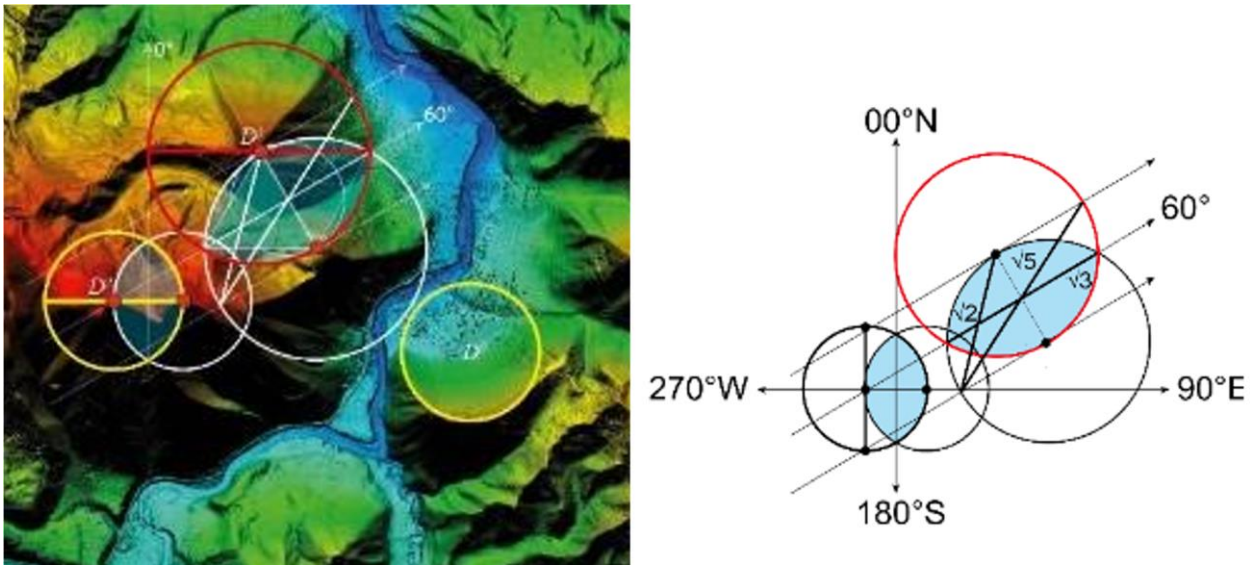

Figure 8. Geometric relationships illustrating angular organization within the Bosnian Valley of the Pyramids. Left: LiDAR-derived terrain model showing angular connections between principal features centered on the Bosnian Pyramid of Love. Right: schematic representation of the observed angular system relative to cardinal directions, highlighting the approximate 60° orientation. The correspondence between terrain-based geometry and abstract angular structure supports the interpretation of a consistent directional framework within the spatial organization of the valley.

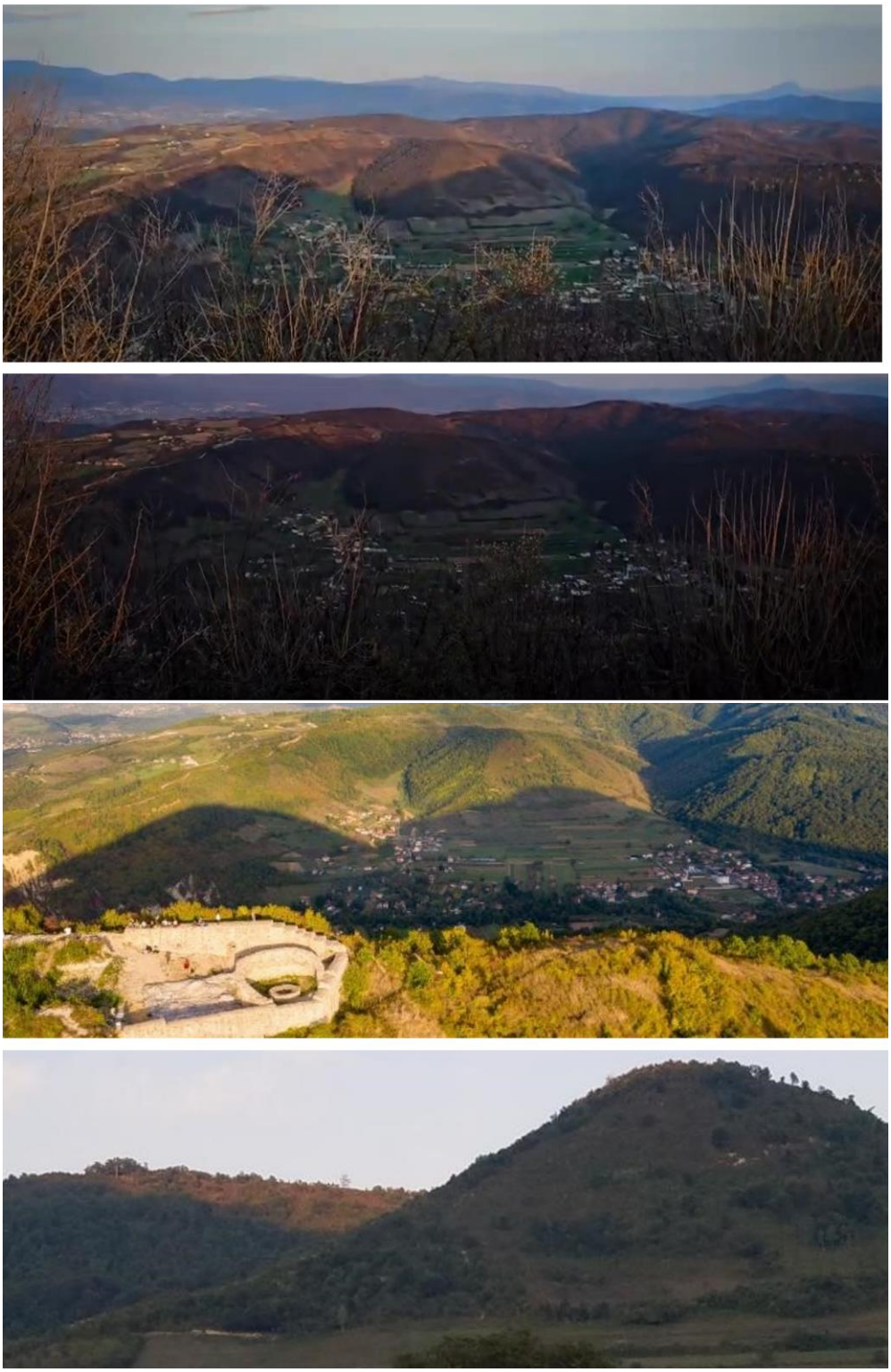

Figure 9. (a) Equinoctial shadow interaction observed on 21 March; (b) corresponding configuration observed on 23 September, both documented from the summit of the Bosnian Pyramid of the Sun. In both cases, the shadow extends toward the Bosnian Pyramid of the Moon, while the Bosnian Pyramid of Love simultaneously casts a shadow that covers the western slope of the Bosnian Pyramid of the Moon. The repetition of this configuration at both equinoxes follows an east-west axis, consistent with solar positioning, and indicates a recurring seasonal interaction within the landscape.

Materials and Methods

The analytical framework applied in this study builds upon previously developed geometric and spatial models of the Bosnian Valley of the Pyramids, particularly those addressing linear alignments, Fibonacci-based relationships, and non-random spatial configurations (Osmanagich, 2025a; 2025b). These earlier studies established a methodological basis for examining monument distributions using both geometric constructions and statistical evaluation.

Study Area and Spatial Dataset

The study area comprises the central sector of the Bosnian Valley of the Pyramids near Visoko, Bosnia, and Herzegovina. The principal features included in the analysis are the Bosnian Pyramid of the Sun, the Bosnian Pyramid of the Moon, the Bosnian Pyramid of Love, the Bosnian Pyramid of the Dragon, the Temple of Mother Earth, the tumulus in Vratnica, and the entrance to the Ravne tunnel complex.

A coordinate dataset of summit locations was compiled using high-resolution LiDAR-derived elevation models and previously established geodetic measurements (Table 1). Geographic coordinates (latitude and longitude), projected Gauss-Krüger coordinates, and absolute elevations were used to define fixed spatial reference points. The use of summit positions ensures consistency in the measurement of distances, azimuths, and geometric relationships.

LiDAR-based terrain models were used to visualize topography and confirm the relative positioning of features (Figures 1, 3, and 6). These models provide a consistent basis for identifying elevation maxima and verifying spatial relationships across the study area.

Spatial measurements are subject to standard geodetic uncertainty associated with LiDAR resolution and coordinate projection; however, relative positional relationships remain consistent within this margin of error.

Geometric Analysis

Geometric relationships between monuments were evaluated using a combination of linear, angular, and non-linear (spiral) models.

Linear alignments were identified through plan-view projections connecting summit coordinates (Figure 5). Azimuths and distances between key features were calculated from projected Gauss-Krüger coordinates (Tables 2-3). These measurements allowed for the identification of directional relationships within the landscape, including axes linking the Bosnian Pyramid of the Sun, the Bosnian Pyramid of Love, and the Temple of Mother Earth.

Table 2

Principal Monument Elevations and Selected Geometric Parameters

Monument	Absolute elevation (m a.s.l.)	Estimated height (m)	Notes
Bosnian Pyramid of the Sun	764.856	≈368	LiDAR-based estimate of original height
Bosnian Pyramid of the Moon	666.060	≈190	Height inferred from shadow geometry
Bosnian Pyramid of Love	668.310	≈269	Summit elevation used as spatial reference
Temple of Mother Earth	659.695	≈260	Included as a reference point in spatial analysis
Bosnian Pyramid of the Dragon	595.530	≈196	Comparative monument

Table 3

Core Inter-Monument Azimuths and Distances Derived From Projected Gauss-Krüger Coordinates

Source → Target	Azimuth (°)	Distance (m)	Interpretive note
Bosnian Pyramid of the Sun → Bosnian Pyramid of the Moon	103.30	2,024.21	Principal Sun-Moon directional axis
Bosnian Pyramid of Love → Bosnian Pyramid of the Moon	90.93	1,584.69	Near east-west alignment associated with equinox conditions
Bosnian Pyramid of the Sun → Bosnian Pyramid of Love	138.79	584.98	Internal geometric relationship
Bosnian Pyramid of the Sun → Temple of Mother Earth	141.09	1,762.84	Secondary reference axis

Angular relationships were examined relative to cardinal directions. A comparison between terrain-based geometry and schematic angular models (Figure 8) was used to evaluate deviations from north-south and east-west orientations. Particular attention was given to angular relationships near 60°, which have been observed in previous analyses of spatial organization within the valley (Osmanagich, 2025c).

Non-linear geometric configurations were explored using Fibonacci-based spiral projections (Figure 7). In this approach, the origin of the spiral was positioned at the summit of the Bosnian Pyramid of Love, and intersections with other monuments were evaluated. Similar methods have been applied in earlier studies examining spatial correspondence and geometric patterning (Osmanagich, 2025a).

Solar and Shadow Analysis

Solar interactions were evaluated through a combination of field observation and geometric modeling. Photographic documentation was collected from the summit of the Bosnian Pyramid of the Sun on key dates within the solar cycle, including the spring equinox (21 March) and the autumn equinox (23 September). These observations record the direction and extent of shadows cast by the Bosnian Pyramid of the Sun and the Bosnian Pyramid of Love toward the Bosnian Pyramid of the Moon (Figure 9a, 9b).

Shadow azimuths were estimated using solar position data corresponding to the time of observation. These values were compared with inter-monument azimuths derived from coordinate analysis (Table 3) to evaluate consistency between observed and modeled relationships.

The focus of the present study is on equinoctial conditions, where solar azimuth approaches an east-west orientation. Under these conditions, repeated shadow interactions can be observed, providing a basis for evaluating the relationship between monument positioning and solar movement.

Analytical Approach

The analysis combines descriptive observation with geometric evaluation. Rather than relying on a single alignment or isolated measurement, the approach considers multiple relationships operating within the same spatial framework. Linear, angular, and solar interactions are evaluated together in order to assess whether the observed configuration represents a structured system.

Interpretation is conducted within the context of an archaeological and cultural landscape. The emphasis is placed on identifying recurring spatial relationships and evaluating their potential significance, while avoiding assumptions regarding the origin or construction of individual features.

Results

Spatial Configuration and Monument Positioning

The Bosnian Valley of the Pyramids presents a clustered arrangement of prominent features with clearly defined relative positions. The LiDAR-derived elevation model (Figure 1) shows that the Bosnian Pyramids of

the Sun, the Moon, and Love form a central group within the valley. Additional features, including the Bosnian Pyramid of the Dragon and the Temple of Mother Earth, extend this configuration into a broader spatial network.

An oblique aerial view (Figure 2) confirms that these features are not only spatially related but also visually interconnected. The Bosnian Pyramid of Love occupies a central position between the Sun and Moon pyramids and remains clearly visible from both. Differences in elevation and slope orientation contribute to a landscape in which individual features can be distinguished while still forming a coherent whole.

Terrain-based visualization (Figure 3) further highlights the Bosnian Pyramid of Love's intermediate position. It lies between the Bosnian Pyramid of the Sun and the Temple of Mother Earth, forming a continuous spatial sequence across the valley. A ground-level perspective (Figure 4) confirms that the structure maintains a distinct form despite vegetation cover, with clearly defined slopes and elevation relative to surrounding terrain.

The coordinate dataset (Table 1) provides the basis for quantifying these relationships. Distances and relative positioning derived from this dataset confirm that the Bosnian Pyramid of Love is situated within the central zone of the valley, connecting major features both visually and spatially.

Linear Relationships

A clear linear alignment is observed between the Temple of Mother Earth, the Bosnian Pyramid of Love, the Bosnian Pyramid of the Sun, and the entrance to the Ravne tunnel complex (Figure 5). This alignment extends across the valley and links multiple features along a single directional axis.

The Bosnian Pyramid of Love lies along this line, occupying an intermediate position between the Temple of Mother Earth and the Bosnian Pyramid of the Sun. Measurements derived from projected coordinates (Table 3) show that these features are aligned within a consistent directional range, supporting the presence of a structured linear relationship.

Reference Points and Spatial Framework

The selection of summit points used in the analysis is shown in Figure 6. These points correspond to elevation maxima and provide a consistent reference for all geometric projections. Their distribution reflects the underlying terrain structure and ensures that subsequent analyses are based on comparable spatial markers.

The use of these fixed points allows for the calculation of azimuths and distances between monuments, forming the basis for identifying both linear and angular relationships.

Spiral Configuration

A non-linear geometric relationship is observed through the application of a Fibonacci-based spiral projection (Figure 7). When the origin of the spiral is placed at the summit of the Bosnian Pyramid of Love, the curve intersects the locations of several major features, including the Bosnian Pyramid of the Sun, the Temple of Mother Earth, the Bosnian Pyramid of the Dragon, and the tumulus in Vratnica.

This configuration demonstrates that multiple monuments can be positioned along a continuous geometric path. The Bosnian Pyramid of Love functions as the starting point of this projection, linking the spiral to the central part of the valley.

Angular Relationships

Angular analysis reveals a consistent relationship between monument positions and cardinal directions. The comparison between terrain-based geometry and a schematic angular model (Figure 8) indicates that several connections between features correspond to an angular deviation of approximately 60 °.

The Bosnian Pyramid of Love is positioned within this angular framework, connecting axes that diverge from both north-south and east-west orientations. This relationship complements the linear alignment described earlier and introduces an additional level of geometric organization.

Equinoctial Shadow Interactions

The most consistent observable interaction occurs during equinoctial conditions. Photographic documentation from the summit of the Bosnian Pyramid of the Sun (Figure 9a, 9b) shows that, on both 21 March and 23 September, the shadow extends toward the Bosnian Pyramid of the Moon along an east-west axis.

At the same time, the Bosnian Pyramid of Love casts a shadow that covers the western slope of the Bosnian Pyramid of the Moon. This configuration is repeated at both equinoxes and shows no visible deviation between the two dates.

The alignment of shadows corresponds to the azimuth values derived from coordinate analysis (Table 3), indicating consistency between observed and calculated relationships. The repeated occurrence of this configuration suggests a stable interaction between monument positioning and solar movement.

Discussion

The results indicate that the Bosnian Valley of the Pyramids cannot be explained through a single geometric or astronomical relationship. Instead, multiple spatial patterns are present and operate simultaneously within the same landscape. Linear alignments, angular relationships, and non-linear geometric configurations intersect in a consistent manner, with the Bosnian Pyramid of Love positioned at the center of these interactions.

This differs from the dominant pattern observed at many well-known archaeological sites. In Egypt, alignments are typically expressed along cardinal directions, particularly north-south axes (Belmonte, 2001; Magli, 2013). At sites such as Stonehenge or in Mesoamerican contexts, solar orientations are often tied to specific events, most commonly solstices or equinoxes, along a single observational line (Aveni, 2001; Ruggles, 2015; Šprajc, 2018). These examples demonstrate precision, but they usually rely on one principal alignment or a limited set of directional relationships.

In contrast, the Bosnian Valley of the Pyramids shows a different pattern. Linear connections link multiple monuments across the valley, while angular relationships introduce additional directional structure. The presence of a Fibonacci-based spiral, anchored at the Bosnian Pyramid of Love, adds a non-linear component that connects the same features within a broader geometric framework. These elements do not operate independently. They overlap and reinforce one another.

The role of the Bosnian Pyramid of Love is particularly significant. It appears repeatedly within different types of relationships: as an intermediate point along a linear alignment, as a reference within an angular system, and as the origin of a spiral configuration. This recurrence is not limited to geometry. During equinoctial conditions, the Bosnian Pyramid of Love participates directly in observable solar interactions, casting a shadow that covers the western slope of the Bosnian Pyramid of the Moon. The same configuration is documented on both 21 March and 23 September. The repetition is precise. There is no visible deviation between the two events.

This combination of geometric positioning and repeated solar interaction suggests that the Bosnian Pyramid of Love functions as more than a secondary feature within the landscape. Its placement allows it to connect multiple axes and relationships, both spatial and temporal. In this sense, it can be understood as a central node within the system.

The presence of repeated equinoctial interactions is particularly important. Many archaeological sites emphasize singular events, often marking a specific solar moment. Here, the same configuration occurs twice per year, following an east-west axis consistent with equinoctial solar geometry. This repetition introduces a cyclical dimension. It indicates not only alignment, but recurrence.

At the same time, the geometric relationships extend beyond solar observation. The approximate 60 °angular structure introduces a directional pattern that is not directly tied to cardinal orientation. When combined with linear alignments and spiral configurations, this suggests that the organization of the landscape may involve multiple geometric principles operating together.

Interpretation of these patterns must remain cautious. The present analysis does not address the origin or construction of the individual features. Instead, it focuses on spatial relationships that can be observed and measured. Within this framework, the consistency of the patterns is notable. Linear, angular, and solar relationships all intersect within a relatively confined area of the valley.

Taken together, these observations support the view that the Bosnian Valley of the Pyramids represents a structured spatial system rather than a set of isolated features. The Bosnian Pyramid of Love occupies a central position within this system, linking geometry, orientation, and seasonal interaction. Its role is defined not by a single alignment, but by its participation in multiple, overlapping relationships.

This perspective shifts the interpretation of the site. Instead of focusing on individual alignments, attention is directed toward the interaction between different geometric and solar elements. Such an approach aligns with broader concepts in archaeological and anthropological studies, where landscapes are understood as integrated systems shaped by both physical form and cultural perception.

These patterns may reflect either intentional design or emergent properties of the landscape; distinguishing between these possibilities requires further investigation.

Limitations

This study is based on a combination of spatial analysis, geometric modeling, and field observations. While the results show consistent relationships between monument positions and solar interactions, several limitations should be noted.

The analysis relies on LiDAR-derived elevation models and selected summit points to define spatial relationships. Although these provide a consistent framework, small variations in point selection or terrain interpretation may influence calculated azimuths and distances. The identification of summit positions is based on observable elevation maxima rather than subsurface or structural data.

Solar interactions are documented through photographic observations and modeled shadow projections. While equinoctial configurations show clear repetition, observations are limited to specific dates and weather conditions. Continuous monitoring over multiple annual cycles would provide additional confirmation of seasonal patterns.

The geometric relationships presented, including linear alignments, angular structures, and spiral configurations, are based on measurable spatial data. However, the interpretation of these relationships within a cultural or archaeological context remains open. The study does not address the origin, construction, or chronology of the monuments and therefore does not establish intentionality.

Finally, comparisons with other archaeological sites are limited to general patterns of alignment and orientation. A more detailed comparative analysis across multiple regions would be required to evaluate broader cultural parallels.

Conclusion

The Bosnian Valley of the Pyramids presents a spatial configuration in which multiple geometric and solar relationships occur within the same landscape. Linear alignments, angular structures, and non-linear geometric patterns intersect across the valley, forming a coherent system rather than isolated correspondences.

Within this system, the Bosnian Pyramid of Love occupies a central position. It appears along a primary linear axis, participates in an angular framework defined by approximately 60 ° relationships, and serves as the origin point of a spiral configuration linking several major features. Its role is not limited to geometry. During both equinoxes, it contributes directly to observable solar interactions, casting a shadow that covers the western slope of the Bosnian Pyramid of the Moon. This configuration is repeated on 21 March and 23 September without deviation.

The repetition of equinoctial shadow interactions distinguishes this landscape from sites characterized by single-event alignments. Here, the same relationship occurs twice per year, forming a recurring pattern tied to solar movement. When combined with geometric relationships, this repetition suggests a structured system in which spatial organization and seasonal dynamics are closely linked.

These findings support an interpretation of the Bosnian Valley of the Pyramids as an integrated cultural landscape. The Bosnian Pyramid of Love functions as a spatial and geometric node within this system, connecting multiple relationships across the valley. Rather than representing an isolated feature, it forms part of a broader configuration in which geometry, orientation, and solar interaction operate together.

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Statements

Funding Statement

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Data Availability Statement

The data supporting the findings of this study, including geodetic measurements, LiDAR-derived elevation models, and derived spatial datasets, are available from the corresponding author upon reasonable request.

Conflict of Interest Statement

The author declares no conflict of interest.

Ethical Statement

This study did not involve human participants, animal subjects, or sensitive cultural materials requiring ethical approval. All analyses were conducted using publicly accessible landscape features and non-invasive geospatial data.

Author Contributions

Sam Osmanagich, Ph.D. conceived the study, conducted the analysis, performed the modeling, and wrote the manuscript.

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