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Astronomical method used for the Cernica necropolis

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Abstract

Archaeoastronomy is the discipline for the investigation of celestial phenomena looking from the ancestor's viewpoint (how they understood and used celestial phenomena and what role the sky played in their cultures). Archaeoastronomy is applying different methods from archaeology, anthropology, astronomy, statistics, and probability to determine the ancient civilizations' preoccupations. Because these methods are miscellaneous and use data from different sources, the collecting and processing of these data takes a long period. In this article we present a mathematical method to study the astronomical orientation of the skeletons from the Neolithic necropolis (4400 BC) Cernica (near Bucharest). Using the mathematical method we can determine the solstice points for necropolis, and working with the azimuth data of the skeletons from Cernica we obtain that 92 % of skeletons have east-west alignments. The skeletons compared from the inside of the solar arc to the skeletons from the outside of the solar arc we were lead to the conclusion that the Neolithic community in the neighbourhood of Cernica Lake observed, knew and used the apparent motion of the Sun, and they belong to an ancient civilization with a solar cult.

KEYWORDS: ARHAEOASTRONOMY, MATHEMATICAL METHOD, NECROPOLIS, ALIGNMENT