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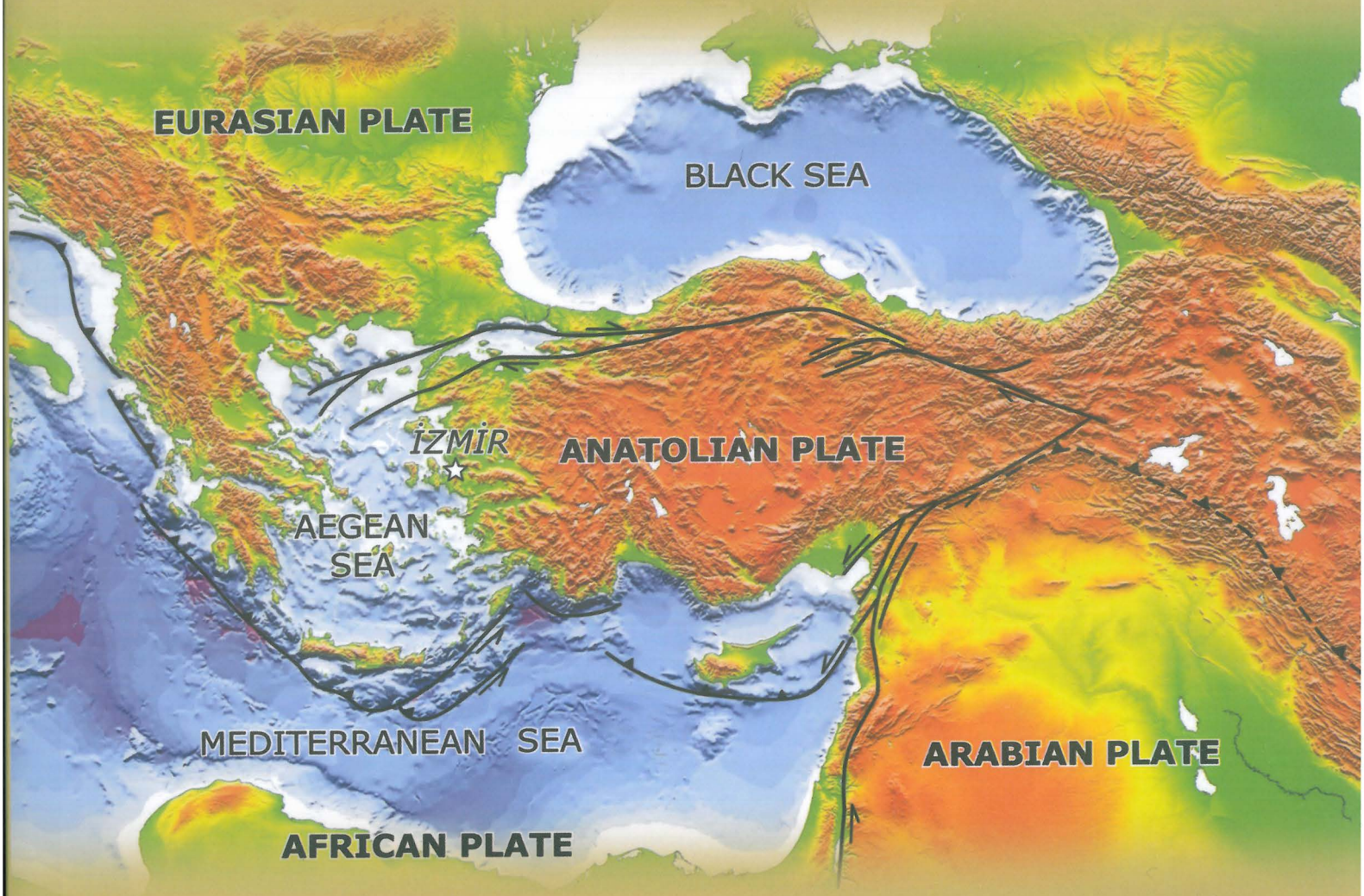

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ABSTRACTS

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Settlement walls of Çukuriçi Höyük - What stones could tell about prehistoric craftsman

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Çukuriçi Höyük is a tell site southeast of the ancient city of Ephesos. Excavations works at Çukuriçi Höyük at Western Anatolian coast have discovered a settlement that has been inhabited at least from the early 7th to the 3rd millennium BC. Since 2006 complex building structures of early 3rd millennium have been discovered and attributed to two phases of settlement (CuHö IV and CuHö III). These building structures, especially settlement walls, have raised several geoarchaeological questions: (1) What kind of rock types have been used for the buildings? (2) What is the source of these rocks? (3) Have these stones been quarried or randomly collected? (4) Does the composition of building stones and their origin change with different phases of the settlement?

Geological characterization and statistical identification of the distribution of rock types were the main techniques to generate a database to work with. More than 2400 building stones from settlement walls were counted and characterized through macroscopic visual analysis.

Craftsmen in Çukuriçi Höyük used 14 different rock types to construct the walls of the settlement. These rock types are three types of marble, grey-coloured mica schist, quartz-rich mica schist, vein quartz, serpentinite, schistose serpentinite, amphibolite, reddish meta-quartzite and two types of augen gneiss which varies in size of quartz minerals, beige dense gneiss were also included. Cavernous, whitish to beige, medium to coarse crystalline marble and grey-coloured mica schist were the primary building stones in both settlement phases accounting for 57,5 % during CuHö III and for 53,5 % during CuHö IV. Vein quartz (8 %), quartz-rich mica schist (13 %) and augen gneiss (5-7 %) were less commonly used for construction of the walls. Very rarely (<5 %) whitish, coarse-crystalline marble, dark-grey micaceous marble, gneiss, amphibolite, quartzite, serpentinite, and schistose serpentinite have been used. All stones show a sub-angular to moderately rounded shape, and limited size (maximum diameter 70-80 cm). The marble is partially cavernous and minor parts of the other rocks types are oxidized and weathered.

The rock types used as building stones crops out within the vicinity (3-4 km) of the settlement, and are in agreement with the local geology. The extensive use of mica schist and marble implies two possibilities: (1) These kinds of rocks were deliberately used due to their good physical properties in the construction of walls. (2) The pattern of use reflects the size or amount of natural outcrops for each rock unit. Presently, there is no evidence that any of the rocks were quarried. It seems that the building stones during the investigated phases of the settlement were collected from the surface, from eluvial debris, or from nearby creeks and rivers. Such an origin is suggested by the sub angular to well-rounded shapes, which are the result of eluvial and/or fluvial transport. The partially cavernous marble documents the influence of dissolution from surface weathering.

Result shows that the use of the rock building material has not been changed significantly in the investigated settlement phases. Further investigation is needed especially in older parts of the tell site to study if there was a significant change in building material.

Keywords: building stones, Çukuriçi Höyük, prehistoric settlement, Western Anatolia