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## **A stronger predecessor to the M 6.2 Petrinja, Croatia earthquake in Antiquity – archaeoseismology of the 4<sup>th</sup> century Siscia event**

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Archaeological excavations of the Roman city of Siscia (Sisak, Croatia) found walls of the city, up to 2 m thick, toppled in the moat. Brick masonry wall segments were found in various orientations: tilted, rotated, twisted, toppled, overturned. Foundations display features of twisting and shearing. There are additional shearing planes within the fallen walls, which allowed the segments to extend during collapse. Much of construction material was robbed in later centuries, so original dimensions are estimates only. Subsoil is alluvial sandy clay. We suggest that a major earthquake damaged the city wall of Siscia. Excited by site effects of loose soil, high peak ground acceleration caused the wall to be sheared off from its foundation, landing it ultimately in the adjacent moat. Rebuilding of the city wall in the late antique period suggests that the first wall collapsed between the beginning of the 3rd and the middle of the 4th century. This earthquake between ~200 AD and ~350 AD is missing from historical catalogues. Both the Antique and the modern earthquakes were of intensity IX. The St. Quirinus site at Siscia is 12 km from the fault which caused the destruction in Petrinja on 29 December 2020, mere 3 km from the fault. We suggest that the Antique earthquake was stronger than the M 6.2 modern event.