



## The Carnuntum case – an earthquake catastrophe around 350 A.D.?

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Carnuntum was a Roman legionary camp established to protect the Pannonian limes and is the most important and the best researched Roman site in Austria. Under Trajan (98-117 A.D.) Carnuntum became the residence of the governor of the province of Pannonia superior. The site is located close to Petronell and Bad Deutsch-Altenburg in Lower Austria, about 40 kilometers east of Vienna, at the riverbank of the Danube.

In 1989 Kandler introduced the hypothesis of a possible earthquake catastrophe in Carnuntum. He stated, that for the middle of the fourth century A.D. archaeological evidence shows that the area was severely affected by a damaging event, which destroyed buildings. These were found in various areas of the Roman city of Carnuntum (Kandler, 1989; Decker et al, 2006).

In the following years numerous authors of different disciplines dealt with the probability of an earthquake around 350 A.D. in the area of Carnuntum.

Decker et al. (2006) concluded in their study that this earthquake seems to be the largest event documented so far, which can be related to the Vienna Basin fault system. Furthermore they stated that the interpretation of the Carnuntum earthquake scenario is therefore regarded a valuable supplement to the time window covered by earthquake catalogues, even though the data only provides an isolated point on the time line. The authors interpreted the damages in Carnuntum as the result of an earthquake in the middle of the fourth century A.D. In their opinion the most probable scenario is an earthquake, with a local intensity of 9°EMS-98, which hit the Roman town. They supposed a segment of the Vienna Basin strike-slip fault system as the most likely source of the earthquake, which passes 8 km NW of Carnuntum.

In the present paper the state of the art will be investigated which means to show the chronology of the earthquake hypothesis as a first attempt. The comparison of the pros and cons will initially bring transparency into the ongoing argumentation.

In a further step contemporary sources will be investigated and interpreted source-critically. Future archaeological excavations should additionally enlighten the question whether or not an earthquake occurred around 350 A.D. in Carnuntum.

The evidence of a damaging earthquake in this area would have major consequences for the seismic hazard assessment of the area, last but not least to Austria's capital Vienna.

Literature, selected: M. Kandler, Eine Erdbebenkatastrophe in Carnuntum? *Acta Arch. Acad. Scien. Hungaricae* 41, 1989, 313–336.

K. Decker, G. Gangl, M. Kandler, The earthquake of Carnuntum in the 4th century AD – archaeologic results, seismologic scenario and seismo-tectonic implications for the Vienna Basin Fault, Austria. *J. of Seismology* 10, 2006, 479–495.