GLASS SPHERULES FROM DUBCI (CROATIA) – POSSIBLE EVIDENCE OF A LOWER PLEISTOCENE IMPACT. Lj. Marjanac1 and T. Marjanac2. 1Institute of Quaternary paleontology and geology, CASA, Ante Kovačiča 5, 10000 Zagreb, Croatia. E-mail: ljerka@hazu.hr. 2Department of geology, Faculty of Science, University of Zagreb, Horvatovac 102a, 10000 Zagreb.

Dubci site is an outcrop of Lower Pleistocene (Cromerian) deposits exposed in a road cut on the saddle between the mountains Omiška Dinara and Biokovo, 404 m a.s.l.. The road cut exposed a cross section through a paleocave buried with coarse clastic sediments in alternation with paleosols. The age of determined on the basis of fossil fauna found in bone breccias [1].

More recent sedimentological investigation of the geosite on refreshed cross-sections performed after road reconstruction, reyielded new data [2]. Three sedimentary units were recognized: 1 – paleocave infill unit that consists of in situ massive stalagmite covered with coarse-grained stratified cave deposit and clay, 2 – lacustrine unit that consists of stratified fine gravel and laminated sand, silt and clay, 3 – alluvial unit that consists of an older sequence (debris-flow sediments) and a younger sequence (stratified breccias in alternation with paleosols).

Sediments of the lacustrine unit 2 and the alluvial unit 3 contain particles which may be of impact origin and therefore an evidence of a Lower Pleistocene impact, but of unknown location and no relation to a known impact, so far. These particles are transparent glass spherules, vesicular glass, high temperature bipyramid quartz crystals (β-quartz), microtectites, black glass shards and carbonaceous lava-like shards.

The debris-flow sediment contains well preserved (empty) tests of modern planktonic foraminifers and microscopic fish bones which may have been implanted by a tsunami surge.

Glass spherules and some mineral grains, found in sand fraction (sieve 0.90mm), were analyzed by SEM coupled with EDAX in the electron microscopy lab of the Geological Department of the Faculty of Science in Zagreb. Further analyses are in process.