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New absolute chronology of Caspian Sea Late Quaternary basins obtained from luminescence dating

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The stratigraphy and palaeogeography of the Northern Eurasian Pleistocene is recorded in Caspian Sea sediments. They contain a unique record of major regional and continental phenomena (e.g. glacial-interglacial cycles of the Russian plain, the Caucasus and Central Asia, and links to the oceans during marine high-stands), as well as of global climate change. To fully understand this record there is an urgent need for an accurate numerically-based chronology for the marine history. During the Late Quaternary dramatic changes in relative sea-level are known to have occurred in the Caspian Sea. However, all previous attempts at resolving the uncertainty associated with the timing of these transgressive/regressive events using standard dating methods have produced inconclusive or controversial results. Over the last 5 years series of reference sections of Caspian sea Late Quaternary in Lower Volga valley (Kosika, Raygorod, Chernyy Yar, Srednyaya Akhtuba, Leninsk, Batayevka, Seroglazka, Bykovo, Selitrennoye), Manych Depression (cores from central and eastern parts of the depression), Dagestan coast (Turali section, Darvagchai-zaliv Paleolithic site), Mangyshlak peninsula, Gorgan river valley, Kerch and Taman peninsula (Tuzla and Eltigen sections), Western Turkmenistan (Cheleken peninsula) have been dated using OSL. For the first time we have been able to obtain an unambiguous chronology, dating stages back to 350 ka. By correlating high-resolution luminescence dating results with biostratigraphy (based particularly on the characteristic Caspian Sea *Didacna Eichwald* mollusc) and with existing absolute ages, the existing understanding of the chronology of Caspian Sea transgressions in Late Quaternary has been re-evaluated. Here we the latest results based on more than 200 OSL dates from the main Late Quaternary stratigraphic layers recording the major palaeogeographic events, i.e. the Novocaspian, and Early and Late Khvalynian; the Hyrcanian and Late Khazarian transgressions; and the Atelian, Mangyshlak and Enotaevka regressions.

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