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Ancient and recent seismodeformations in the epicentral zone of 27 September 2003 Chuya earthquake (M=7.5).

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Analysis of morphotectonic characteristics (top and base surfaces) and features of glaciation relief of Altai mountain country (orogenic belt of South Siberia) reveals uplifting axial part within the country. The maximal amplitude of uplift occurred between Middle and Late Pleistocene. Northern border of this zone was formed by ranges and intermontane depressions of central and SE parts of Russian Altai.

Tectonic activity of uplifted part in Pleistocene- Holocene is confirmed by 27 September 2003 Chuya earthquake (M=7.5), occurred along the boundary between North- and South-Chuya ranges and systems of Kurai and Chuya intermontane depressions. The traces of paleoseismic events within SE Altai (Rogozhin, Platonova, 2002) and directly in the epicentral zone of September 2003 Chuya earthquake further support the suggestion about tectonic activity of the uplifted axial part. Rock-falls, landslides, ditches and micrograbens are abundant in the region. Their seismic genesis is determined by the concentration of these relief forms, their coincidence with boundaries of morphostuctures and by the size of accumulative bodies.

According to these criteria the outcrop of Neogene-Pleistocene sediments base section on the left flank of Chagan valley can be classified as seismic induced. Up to 4 stages during the Late Pleistocene – Holocene can be identified in the morphology of this outcrop. Total volume of accumulative mass is about $3{,}6\tilde{o}10^{-2}$ km^3. The detachment wall (up to 200 m in height), consisting of several joined detachment walls, stretches out up to 4.5 km. This multi-stage rock-fall-landslide belongs to frontal boundary of forberg in structure of South-Chuya ridge, which is marked by recent and ancient rock-falls in adjacent Taldura and Elangash valleys.

This outcrop was formed either directly during earthquake by collapse of valley slope along the seismogravital cracks or by their later collapse. Appearance of series of the along-slope cracks (up to 1 km in length and 1.5 m in wide) formed during September 2003 Chuya earthquake can be the reason of subsequent rock-falls and landslides and increasing of extension of the present outcrop in Chagan valley. Rock-fall (with total volume 0.25-0.5õ10^{-2} km^3 and area 0.85 km^2) occurred along the similar seismogravital crack in the Taldura valley in the September 2003. Moraine, fluvioglacial and glacial- lacustrine sediments of Chagan section preserved the traces of the earlier (the Middle Pleistocene) seismic induced deformations (rock-falls, seismites) confirming the high seismic activity of SE parts of Russian Altai.

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