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New carbon isotope data on the Precambrian-Cambrian interval of the Tommotian stage hypostratotype - Isit' Section (Lena River, Siberian Platform)

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Tommotian Stage (~ Cambrian Stage 2 of the ISC-2015) is the basal stage of the Cambrian system in the Russian Stratigraphic Standard. The stage is composed of 3 assemblage biozones, from bottom to top: *Nochoroicyathus sunnaginicus, Dokidocyathus regularis, D. lenaicus* [1]. Stratotypes of the stage, its lower boundary and of the *N. sunnaginicus* Zone are placed in the Dvortsy section, Aldan River, Siberian Platform. The section expose deposits of Yudoma Fm, Pestrotsvet and Tumuldur Fm. The stage base is drawn at the level of the first appearance of species of *N. sunnaginicus* Zone at 0.3 m below the contact of Yudoma and Pestrotsvet fms. $\delta^{13}C$ data for the section were published earlier [2, 3]. Isit' section is situated on the right bank of Lena River, 326 km NW from the Dvortsy section. It is the hypostratotype of the Tommotian Stage, and stratotype of *D. regularis* and *D. lenaicus* zones [1]. Up from the water level the section expose deposits of Tolba Fm (grey limestones and dolostones, 2.5 m), unexposed interval (9 m), Pestrotsvet Fm (mostly red-colored clayish limestones, 87 m), Nokhoroy Fm (light-colored limestones and dolostones, 45 m), and Churan Fm (light-colored limestones and dolostones, ~100 m). To complete the faunal characteristic of the unexposed part of the section, two boreholes were drilled in Bydyangaya Creek (5 km E from main section) in 1983 (depth 286 m) and 2006 (depth 16.8 m). According to the biostratigraphic data got from the boreholes [1], the Tommotian base is in the uppermost Tolba Fm, 2.4 m below its contact with Pestrotsvet Fm. Carbon isotope data for the main section was published earlier [2, 3], the data from the borehole is published here for the first time. 30 rock carbonates sampled with ~0.5 m interval from the 16.8 m deep borehole were analysed using standard technique [e.g., 4, 5] with a Finnigan Delta V Plus mass spectrometer equipped with Thermo Finnigan GasBench II. $\delta^{18}O$ values from these samples display oscillations between -9.5 and -5.0 ‰, with a trend of gradual upward increasing. $\delta^{13}C$ curve has very peculiar pattern. In the upper Precambrian (Nemakit-Daldynian) part of Tolba Fm (13.4-16.8 m) it oscillates from +0.5 to +1.5 ‰. In the topmost Tolba Fm already within the basal part of *N. sunnaginicus* Zone (13.4-11.0 m) $\delta^{13}C$ gradually decreases from +1.5 to 0 ‰. Starting from the base of Pestrotsvet Fm a sharp negative excursion up to -2.5 ‰ is observed. The rest part of the *N. sunnaginicus* Zone (11.0-0 m) is characterized by oscillations within -3.0 to -2.0 ‰. This prominent negative excursion just above the base of the Tommotian Stage known as SHICE [6] is a well recognizable signature of a number of sections, e.g. on Aldan [2, 3] (S of Siberian Platform), Bol'shaya Kuonamka [4] (N of Siberian Platform), Sukharikha [5] (W of Siberian Platform) rivers. Almost identical $\delta^{13}C$ curve pattern of Nemakit-Daldynian – Tommotian boundary interval in these regions proves that the so-called Sub-Pestrotsvet gap (usually but wrongly understood as Sub-Tommotian) can not be fixed neither by biostratigraphic [7] nor by chemostratigraphic tools as well. Thus, this unconformity, corresponding to the sequence boundary at the Pestrotsvet Fm base, is negligible.

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