

MINERALOGICAL, GEOCHEMICAL AND GEOLOGICAL DATA FOR THE INTERPRETATION OF THE CRATER BASE STRUCTURE OF THE COMPLEX TERNY ASTROBLEME (KRIVROY ROG, UKRAINE). A. A. Valter, Malysenko Str., 3, apt. 449.

The deeply eroded ($H \geq 0.8$ km) Terny astrobleme was formed in the rocks of the Krivoy Rog iron formation and related banded Lower Proterozoic metamorphic rocks and granitoids [1-4].

The present-day diameter of the structure is estimated to be 8 km, but the original one might be twice as large. The diameter of the eroded central uplift is about 2.5 km. In the exploration and production of ores the sinking of quarries (to 350 m deep), mines (to 1 km deep), and boreholes were performed within the astrobleme.

The K-Ar age determination of glass impactites gave the value of 280 ± 10 Ma.

The observations in the mines show that monoclinally -occurrence rocks were crashed into blocks and overturned "to be pulled up" into the uplift area. As the depth exceeds 1 km the occurrence approach the normal value.

Numerous bodies of fine fragmented breccia which separate large blocks of rocks have a preferred orientation which corresponds to the tectonic plan of the region. Thus the evidence of the breccia zones formation along the weakest and strained planes of the massif is received.

The ferrogynous glassy impactites near the center of the uplift are formed by the melting of ferrogynous quartzites, shists and iron ores. The most impactite bodies are of complicated origin: the shock metamorphism, rock crushing and mixing of fragments varying in shock alteration,

and finally, secondary heating by the gaseous fluids. In these impactites the condensation of the Fe-Cr-Ni - phase with the composition approaching the eutectic one was found. The geochemical traces of the "meteorite explosion cloud" were observed down to the deepest level of the glassy impactite occurrence (850 m): 2.4 ppb of Ir (x 60 enrichment) and 86 ppm of Ni ((x 40 enrichment) and ratio $Ni/Co=12$ and $Ir/Au=2$).

The veins of alkaline silicate impactites of the Western Part of the uplift occur in the microgneisses shists of similar composition. These impactites exhibited no significant meteorite material contamination. The presence of impact diamond grains found in these veins shows that the impulse pressure is achieved sufficient for silicate melting in the shock wave or the rarefaction wave.

The models of impactite formation and mass dynamics in the crater base are proposed.

Owing to a good exposure and the specific composition of the target rocks the Terny astrobleme can be used as a standard in the studies of large meteorite crater bases.

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