

AN AGIT KHANGAY ASTROBLEME IN WESTERN MONGOLIA

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In this report we present results from the first detailed structural and substantial studies from a transect made 60 km southwest of Uliastay city across the Agit Khangay mountain massif. An Agit Khangay astrobleme is at the northern edge of the Zavkhan tectonic zone. This structure was discovered in 1997 by examination of aerial photographs and confirmed two years later by field work that identified meteoritic iron minerals and impact glass at the site. The astrobleme's diameter is about 5.1 km, and it is surrounded by a raised rim. A structure has features characteristic of impact craters. The surroundings of the crater are made up of Upper Paleozoic magmatic assemblages, overlain by Quaternary alluvial deposits in places. The crater rim consists of a dissected ring of hill, mountain chains, reaching a height of about 450-500 m above the recent alluvial fan level.

Most panned samples and hand specimens contain pyrope, almandine, rutile, kamacite, taenite, khangait (tektite glass), titanite, ilmenite, coesite, colorless alpha and beta quartz, gold and chrome spinel. The shock effects include the presence of coesite and pseudotachylite in samples of granites and abundant vesicular and flowstructured quartz glass. The shattered granite shows shock metamorphism in the form of shock melting, pseudotachylite, planar features, cleavage in quartz, and near-shatter-coning.