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Problems of intrusive magmatism in Saur region of Eastern Kazakhstan

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Saur region tectonically located in two structures of Zharma-Saur structural formational zone – in North Saur unit and Voronzov-South-Saur subzone. There are 4 complexes in Saur region [1, 2]:

1. Saur gabbro-granodiorite-tonalite complex (C₁). Formation of the complex took place in 4 phases: I - gabbro-diorites; II - granodiorites; III - tonalites; IV - dikes. The complex contains granite-porphyrries, tonalite-porphyrries, diorite porphyries, diabase porphyries.

2. Intrusive formation of kensayskaya volcano-plutonic association (C₂₋₃) confined to the volcanics and intrusions of kensayskaya suite. Formation took place in 2 phases: I - diorites, gabbrodiorites, microdiorites, monzodiorites; II - dacite and trahidatsite porphyries.

3. Manrasky granite-granosyenite complex (C₃): I – granites, adamellites, granosyenites; II - dike phase - granosyenite porphyries.

4. Lower-Middle Permian gabbro-diabase complex (P₁₋₂): I – microgabbro, gabbrodiabases; II - dike - basaltic porphyries, diabases.

Copper-porphyry type deposits of gold-molybdenum-copper ore formation associated with the Saur (C₁) and at least the Kenyan (C₂₋₃) complex. Basalt-andesite clastic formation (C_{1t1-v1}) is enclosing and includes lava, breccias of lava, basaltic andesites, basalts interbedded with sandstones and siltstones.

Saur region has been poorly explored geologically. It is needed to solve a number of questions for argumentative and correct characteristics of intrusive complexes and their metallogenic features:

1. Refine the age of allocated intrusive complexes using the latest methods of isotopic analysis.
2. Determine the size of each of the complex, especially, of saur one and kensayskiy one, and establish the validity of the designation of a massif to a specific complex.
3. Study the relationship between dike-vein zones and separate massifs, and between each other and the host stratigraphic units, which age is paleontological justified. Determine the affiliation of dyke formations to one or another complex.
4. Refine genetic connections of ore mineralization with magmatic complexes. [3]

References:

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