

## EVOLUTION OF MAGMATISM WITHIN OMOLON-TAIGONOS BLOCK

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Evolution of magmatism within the ancient Omolon cratonal terrane records a long Proterozoic to Pliocene evolution. Knowledge of accurate ages and tectonic settings of magmatism in this "stable block" might help us synchronize and better constrain the evolution of Arctic margins due to its close proximity to the South-Anyui suture. A new generation of geological mapping (quad P-57) as well as new isotopic geochronological and geochemical data reveal the following major magmatic events in the Omolon-Taigonos block: 1) 1.9 Ga augen granite-gneisses with within-plate geochemical signatures suggest a possible plume-related event; 2) Neoproterozoic tholeiitic gabbro and diabase formed during rifting and destruction of Omolon; 3) Silurian (433-425 Ma) syenite and granitic intrusions with low initial Sr ratios reflecting slab-window asthenospheric upwelling; 4) voluminous Late Devonian (375-356 Ma) calc-alkaline subduction-related volcanic and plutonic complexes including the Kedon series; 5) the first documented extension-related monzonites and basaltic picrites of Permian age in the Taigonos block; 6) Berriasian-Valanginian transform continental margin magmatism; 7) 106-80 Ma subduction (early) to extension (late) related extrusive rocks of the Okhotsk-Chukotka volcanic belt; 8) 56-48 Ma extension-related basaltic magmatism (the Kytymyskaya unit) reflecting the onshore manifestation of the final stage of Okhotsk sea formation.