W. Brack, G. Troll, H. Köhler und D. Müller-Sohnius
Mineralogisch-Petrographisches Institut der Universität
Theresienstraße 41, D - 8000 München 2

Geochronological investigations in the "Altkristallin" of Eastern Tyrol

In the area of Lake Wangenitz (12°43'E; 47°56'N) Rb-Sr isotopic age determinations from orthogneisses and paragneisses were carried out. Moreover, the Rb- and Sr-isotopes of two amphibolite samples and one eclogite sample were measured.

The obtained data give an isochrone for orthogneisses as well as for paragneisses indicating an age of 440 ± 13 (2σ) m.y. (Ordovician/Silurian). This is interpreted as an age of homogenization caused a "caledonian" metamorphism. The strontium initial isotope ratio is 0.7102 ± 0.0008 (2σ).

Two mineral isochrons (apatite-potassium feldspar - biotite and apatite - potassium feldspar - muscovite, respectively) yield an age of 79 ± 4 m.y. for biotite and of 79 ± 5 m.y. for muscovite in the area of Lake Wangenitz. Further muscovite ages from the Schobergruppe have also values of about 80 m.y.. These ages are considered to be cooling ages of a Cretaceous metamorphism.

Close to the margin of "Altkristallin" along to the zone of Kals - Matrei a muscovite age of ca. 44 m.y. was measured and is interpreted as a mixed age.