Structural History of the Sedimentary Cover of the North Karakorum Terrane in the Upper Hunza Valley (Pakistan)

POSTER

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The Karakorum terrane belongs to the peri-Gondwanian blocks rifted from Gondwana during Permian and accreted along the southern Eurasian margin before collision with the Indian plate. The Karakorum block is located between two mayor suture zones: the Shyok Suture Zone to the South and the Rushan-Pshart suture to the North.
The Karakorum microplate includes a thick sedimentary cover, which is mainly Paleozoic in the western termination and Permian to Cretaceous in the central and eastern area. In the Hunza valley the cover consists of a thick pile of poorly metamorphic Permian-Cretaceous sediments cropping out north of the Karakorum Axial Batholith (KAB).
The sedimentary cover of the North Karakorum terrain is composed of three main structural units: the Guhjal, Sost and Misgar Units characterized by different stratigraphic and tectonic evolution. Folds and thrust surfaces generally trend E-W in the Sost and Misgar Units, whereas they are clearly NW-SE in the Guhjal Unit.
Several deformational events have been recognized on the basis of structural and geological analyses. A "mid-Cretaceous event" is testified by the folded succession cropping out below the Cretaceous Tupop and Darband Formations in the Sost Unit. Mid-Cretaceous granodioritic intrusives, some of which have been dated at about 100 MA, crossing previously formed schistosity, have been observed in the region. Important post-Cretaceous thrusting is testified by the deformation of the Cretaceous sediments and also by stacking of Eocene intrusives in the Yashkuk area. North vergent tectonic transport seems to be followed in time by south vergent thrust motion. Complex strike-slip faults are successively active, and are due to the prosecution of indentation phenomena between India and Eurasia. Metamorphic conditions range between very low and low grade which is reached in the deepest part of the Ghujal Unit. Andalusite is generally widespread around the intrusives, indicating low pressure conditions,
Field work was carried out in during two field seasons (1991-1992), leading to the preparation of a preliminary geological map which is presented in the poster section. Three main geological transects from the KAB to the Misgar Unit have been reconstructed: 1) from Shimshal village to the Khunjerab pass through the Boesam and Chapchingal Pir, 2) along the Hunza and nearby valleys (Shikarjerab, Abgarch and Khudabad valleys) and along the Yaskuk glacier and the western part of the Chapursan valley.

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