

The Early Palaeozoic Extension of the West African Craton Northern Edge (Western Anti-Atlas, Morocco)

Farid Faik¹, Mhamed Alaeddine Belfoul¹, and Mohamed Bouabdelli²

¹ GESCAT laboratory (Laboratoire de Géologie Structurale et de Cartographie Thématique) Department of Geology, Faculty of Science, Ibn Zohr University, Po Box: 8106, Agadir 80000, Morocco

² "GEODE : Terre et Patrimoine" Sarl, BP 7004 Sidi Abbad - 40014 –Marrakech, Morocco

The geological evolution of the Anti-Atlas is widely controlled by the setting and the behaviour of the northern edge of the West-African craton. During terminal Neoproterozoic-basal Paleozoic, the Western Anti-Atlas undergoes an important extension, characterized especially by continental detrital and volcano-detrital deposits that compose the "group of Ouarzazate", followed by carbonated and detrital facies as result of the cambrian transgression.

The terminal Neoproterozoic deposits show important variations in facies as well as in thicknesses that testify grabens and hemigrabens blocks brutal collapses. This detrital sedimentation emphasises also, an important eruptive volcanic activity, where ejectas type show a continental character.

This extensive tectonic persists during the lower and maintained at least, all along the middle Cambrian. It is underlined by several structures mainly such as synsedimentary disturbances (disharmonic levels, slumps, olistoliths...), thickness changes, series variances, as well as basaltic volcanism which is described for the first time in the middle Cambrian of Tata area.

Grabens and hemigrabens blocks breakdown are due to the West-African Craton northern edge dislocation that is occurred since the beginning of the post-Panafrican rifting. This rifting is connected to the opening of the Iapetus Ocean at the end of Neoproterozoic. In terms of plate megatectonic setting, the oceanic spreading is carried out by a coupled migration: Avalon toward the NW trend and Meguma to the North edge of the West-African Craton.

This geodynamic evolution leads to the first stage of postpanafrican extension in the Anti-Atlas, which allowed the wide eocambrian marine invasion.

Key words: Anti-Atlas; block collapses; rifting; basalt; West-African Craton.