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The Sedimentary-Tectonic of Basins on North Slope of the Mount Qomolangma in Phanerozoic, Tibet

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The north slope of the mount Qomolangma area is a main compose of Tethyan ocean belong to Himalayan orogen intermediate between the northern India plate and Yarlungzangbo river plate junction. There are basic unharmed marine strata about 14000m in thickness about 50 million years during Ordovician to Paleogene of Phanerozoic. It is a good area for studying the formation and evolution of Tethyan ocean. After the detailed study of 1:250000 regional geological surveying and key section investigation and outcrop on north slope of the mount Qomolangma in Phanerozoic to Neogene of Tibet, combining with the data of predecessors, The detailed study of the depositional system and facies in the basin, and discerned marine depositional system, continental system and paralic depositional system, and residual -talus depositional system, glacier depositional system, alluvial-pluvial depositional system, fluvial depositional system, lake depositional system, chemical depositional system, delta depositional system, unbarrier coast-perezone depositional system, barrier coast depositional system, carbonate tableland depositional system, carbonate gentle slope depositional system, fragmental shelf depositional system, suabyssal-abyssal depositional system etc. and some sedimentary facies and many subfacies. Using sequence stratigraphy theory, By a systematic study of depositional system and facies, depositional cycle, sequence boundary signatures, paleosequences stacking pattern and system composition in north slope of the mount Qomolangma in Phanerozoic to Neogene of Tibet, divided into 1 meso-sequence, six I sequences,

sixteen II sequences, 141 III sequences (each averaged time interval is about 3.6 Ma). We have established its sequence framework by sequence boundary and maximum marine-flooding surface is marker bed of isochronous stratigraphic correlation and sedimentary sequence isochronous stratigraphic correlation unit. Based on the characteristics of the sedimentary basin stratigraphic sequence, depositional system and sedimentary facies, the evolution of the sedimentary-tectonic basin may be subdivided mainly into six stages for the north slope of the mount Qomolangma in Phanerozoic, Tibet. (1) The steady epicontinental sea stage from Ordovician to Devonian; (2) The continental rift basin stage from Carboniferous to Permian; (3) The passive continental margin basin stage from Triassic to Jurassic; (4) The early stage of foreland flysch basin stage from the early-middle Cretaceous; (5) The later period of foreland molasse basin stage from the later Cretaceous to Paleocene; (6) The orogenic uplift period of fault basin stage from Eocene to Quaternary. A systematic study indicates that the sedimentary model of the development of the basin in the study area reflects the conversion of epicontinental sea basin into a rift basin on the continental margin, a passive continental margin basin, a foreland basin and a fault basin.

Key words: Phanerozoic; sedimentary features; sedimentary-tectonic evolution; north slope of the mount Qomolangma area; the Tibet of China

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