

A Model of Combination of Geology and Culture: the Mogao Grottoes, Dunhuang Geopark, China

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Dunhuang geopark is located on west of the ancient Silk Road, Dunhuang city, Gansu Province, China. Dunhuang geopark is composed of Yardang Geoarea, Mount Mingshashan and Crescent Moon-shaped Spring Geoarea, Natural Landscape Tourism Area and Cultural Heritage Tourism Area, covering an area of 2067.2 square kilometers. The Mogao Grottoes, a UNESCO World Heritage Site, as the main part of Cultural Heritage Tourism Area, is situated on the cliff in the east of Mount Mingshashan. The Mogao Grottoes is the world famous Buddhist art treasure due to its abundant, largest scale and best preserved murals and sculptures, with its precious historical, artistic and scientific value. The stratum the Mogao Grottoes cut is geologically called Jiuquan Formation, composed of the calcareous and argillaceous sand and gravel layers formed by fluvial and proluvial processes about 77-0.13 million years ago. It is the most feasible layer for caves excavation since its nearly horizontal strata with dense structure, and is named as "Cave Formation". Besides the geological setting, the Mogao Grottoes are affected by the other geological factors, such as cracks, pores, and attitude of strata. According to the Geoparks Management and Action Plan, it is very important to enhance the natural and cultural heritage, especially in which where they meet. The Mogao Grottoes is certainly a model of combination of geology and culture. With the China-proposed Belt and Road Initiative, the World Heritage Site and Geopark will complement each other in the future especially when Global Geoparks update to UNESCO Global Geoparks.