

Records and Research Progress of Earth’s Orbital Parameters
in Precambrian Strata

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Abstract: The Precambrian (4.6 Ga ~ 541 Ma) occupies about 90% of the earth’s development history. During this period, the atmospheric composition, ocean redox conditions, global climate, and life evolution process all changed to a great extent, laying the foundation for the current earth system. Earth orbit parameters are important indicators to describe the evolution of the earth system, and are of great significance to the study of the solar—earth system, the earth—moon system, and the evolution of the earth itself. In recent years, scholars have successfully identified many reliable earth orbit parameters in the 2650 ~ 550 Ma strata on a global scale. This article summarizes the Earth’s orbital parameters of the Precambrian and analyzes the influence of the extraterrestrial dynamic system and the deep-earth dynamic system on the Earth’s orbital parameters. Based on the major geological events of the Precambrian, it further elaborates the influence of the Earth’s orbital parameters on the surface environmental impact.

Keywords: Precambrian; earth’s orbital parameters; extraterrestrial dynamics; deep earth dynamics; earth’s surface environment

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