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Petrogenesis and implications of the young Chang'e-5 lunar basalts

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China’s Chang’e-5 mission brought back lunar basalts from the northern Ocean Procellarum in December, 2020. The basalts were dated to ~2.0 Ga, which is much younger than the previously reported basalts from Apollo, Luna and meteorite collections. Thus, the petrogenesis of these young basalts has attracted a lot of attention and many researchers have conducted petrographic, geochemical and experimental studies to interpret their petrogenesis. However, to date, at least four models have been proposed to explain the source depths, source compositions and magmatic processes. These different models have led to different implications for our understanding of the chemical and thermal evolution of the Moon. In this conference, I will report the current models for the petrogenesis of Chang’e-5 basalts and discuss the most likely model by summarizing the reported geochemical and isotopic data and our new Ti isotopic data.