Evaluation of chronological measurement method of geological units by collapsed crater on the Moon

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The age of the moon is an important clue in understanding the former state of igneous activity of the moon. To explore the time course of the scale and the eruption of the magma leads to pursue the internal evolution of the moon. Generally, exploring crater size frequency distribution is used to determine the model ages of lunar geological units. However, this age determination is susceptible to the influence of secondary craters, and an error is likely to occur in the measured age. Therefore, by using another age determination, it is necessary to confirm whether the measurement age by the age determination that is free from influence of the secondary crater should be investigated. The way based on the status of crater collapse is another expected method for age determination of lunar geological units. In order to establish this method, it is needed to investigate the correlation between the age of the geological units and a parameter value expressed by F which is corresponding to the total amount of impacted objects disrupting the craters. Since the F value is a numerical value determined by the most collapsed crater in a geological unit, it does not include the effects of secondary craters probably occurring after the formation of the oldest most collapsed craters. Here, we explore the correlation relationship between the F values and the model ages based on crater size frequency distribution for several lunar geological units, and discuss the possibility of the way based on crater collapse as an age determination of lunar geological units.

Keywords: chronology, lunar craters, status of crater collapse

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