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Analysis of two lunar regions by relative age determination and geological interpretation

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New datings based on a revised lunar impact flux curve that takes into account projectiles in the size range 1 cm - 5 km has been tested on Flamsteed region and tentatively applied at Lichtenberg crater surroundings using an automatic crater counting software. Both these regions are particularly suitable for the adopted counting and age determination methods since they are dominated by young basalts with surfaces characterized by low craters density. In addition absolute radiometric ages of the Apollo 12 samples (about 3.1 Ga), detailed stratigraphy and accurate geological maps are already available for Flamsteed region [1, 2] that consequently represents the best site for validating the counting software and the suggested dating process. By contrast the Lichtenberg crater area is far less studied although it is characterized by the youngest lava flows currently recognized on the Moon [3, 4]. Actually the ejecta of Lichtenber crater, that is one of the youngest of the Moon, are covered by basalt flows. An accurate age determination coupled with a new stratigraphic interpretation of the different geological units on this site can provide important clues about the age of the last volcanic cycles on the Moon giving important constraints to its thermal history.

References

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