A practical photoclinometry on digital image analysis

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A practical photoclinometry is introduced. Photoclinometry is a technique of topographical survey in the planetary science. Brightness is controlled by the topographical slope and the positioning among Sun, the target, and observer. On Mars atmospheric scattering and absorption also controls detected brightness. Symmetric landforms such as impact crater and wrinkle ridge have been surveyed because it is easy to revise integration of such errors. This study tries to survey asymmetric landforms based on a kind of in situ calibration. Subtraction of detected brightness between adjoining pixels is normalized by a subtract between flat surface and true shadow. This technique can be also applied to other than Mars if the sensor shows linear response.

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