

Studying the variability of the surface brightness of the Earthshine

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Lunar photometric observations are regularly taken from Big Bear Solar Observatory. The aim of these observations is to obtain the brightness ratio between the dark and bright side of the lunar disk, and to derive estimates of the Earth's albedo. Here, using the whole illuminated crescent of the Moon as our standard star, we have calibrated in flux these extensive lunar database to derive the astronomical surface brightness of the dark side of the Moon (the earthshine) and its variability with lunar phase. These surface brightness information is derived with selenographical resolution, and can be used to calibrate sporadic impact flashes on the Moon, including the impact of the SMART-1 spacecraft.