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The number of meter-sized near Earth asteroids as estimated from lunar crater data

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ABSTRACT

We are using data from the Lunar Reconnaissance Orbiter (LRO) of new detections of recent small (<10 m) craters on the moon (Oberst et al. 2013) to estimate the present number of meter-sized near Earth asteroids (NEAs). We compare this estimate of the very small NEA population to extrapolations from recent Spitzer (Trilling et al. 2013) and WISE (Mainzer et al. 2011) measurements. Although the number of new small lunar craters is small (as only a small portion of the LRO data has been analyzed), this new technique will give the best current estimate of the number of meter-sized NEAs and hence the NEA size distribution down to small sizes. We will discuss the implications for planetary protection and impact timescales.