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Proposal Information for 2012B-0057

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Title: Long Term Follow-up of Near Earth Objects

Abstract: Recently-discovered Near Earth Objects (NEOs) will be observed using the KPNO 2.1-m telescope to add astrometric observations at arcs as long as 50-80 days from discovery. These extended arcs place strong constraints on the orbital solution and can greatly reduce the ephemeris uncertainty at the next recovery opportunity. Many recently-discovered NEOs will be observable in the range $21 < V < 23$ on any night during 2012B. We will place the highest priority on Virtual Impactors (VIs) and on Potentially Hazardous Asteroids (PHAs) where long arcs can be created. We will also attempt to recover VI and PHA candidates on a 2- night run. Among the 120 NEOs (excluding small objects) for which the NEODyS system estimates a non-zero risk of Earth impact, all but 25 are classified as "Lost" until rediscovered by the surveys. By creating extended arcs, we will reduce the number of VIs and PHAs that accumulate large errors, thereby enabling future recovery efforts and advancing the assessment of impact risk.

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