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Proposal Information for 2011B-0019

PI: Mark Trueblood, NOAO, mtrueblood@noao.edu

Address: NOAO System Technology Center, 950 N. Cherry Ave., Tucson, AZ 85719, United States

CoI: Robert Crawford, Rincon Ranch Observatory

CoI: Larry Lebofsky, Planetary Science Institute

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 2011B. 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 several VI and PHA recovery candidates. Among the 117 NEOs (excluding small objects) for which the NEODyS system estimates a non-zero risk of Earth impact, all but 26 are unobservable using conventional (non-survey) telescopes. 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.

National Optical Astronomy Observatory, 950 North Cherry Avenue, P.O. Box 26732, Tucson, Arizona 85726, Phone: (520) 318-8000, Fax: (520) 318-8360

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noaoprop-help@noao.edu