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Proposal Information for 2009B-0256

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Title: Near Earth Object Follow-up

Abstract: Near Earth Objects (principally asteroids) selected from the Minor Planet Center's NEO Confirmation Page (NEOCP) will be observed using the KPNO 2.1-m telescope for astrometric follow-up. Post-discovery astrometric follow-up observations are required to extend the orbital arc so that the orbit can be computed, the object can be recovered in subsequent apparitions, it can be classified as a Potentially Hazardous Asteroid (PHA) or not, and its likelihood of impacting the Earth can be assessed. Since approximately 2005, the network of (primarily) amateur astronomers performing this critical service has faced growing difficulty in observing the objects posted to the NEOCP. Due to the success of the several asteroid surveys in discovering most of the brighter NEOs, new discoveries are now much fainter, often $V > 21$. There are insufficient numbers of professionals, including the surveys themselves, interested in or capable of performing the needed follow-up. Since inception of the NEOCP in 1996, approximately 18% of all items posted on the page have remained unconfirmed, and unconfirmed rates have risen over time as objects on the Confirmation Page have grown fainter. We propose to fill this gap by performing follow-up astrometry of the fainter or more interesting objects listed on the NEOCP on the dates our time is scheduled, if we are granted time. In the unlikely event that there are insufficient objects on the NEOCP for the dates we are allocated, we will obtain light curves for one or more asteroids in need of photometry, with emphasis on NEOs. We will also observe other targets of special interest. This proposal was awarded three nights in Semester 2008B. Two and one-half of the nights were rained out, and the other half night was all but clouded out.

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