

REALISTIC SURVEY SIMULATIONS FOR KILOMETER CLASS NEAR EARTH OBJECTS

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We developed an NEO survey simulator to explore if contemporary survey capacity can satisfy the immediate goal of finding 90% of kilometer-sized NEOs by 2008. The simulated surveys incorporate theoretical population of 4668 NEOs (Bottke et al., 2002) and strategies of major search programs. We established a set of synthesized survey parameters and observational strategies of historical and present-day search programs. We find that the simulator reproduces excellent predictions for discovery statistics, with a plausible estimates of (a, e, i, H) distributions. Our extended simulations for future suggest that NASA's Spaceguard Goal will be accomplished somewhat later between 2010 and 2011. However, we discovered that as much as 10% of kilometer-class objects would remain unexplored even after 10-year operation using all existing facility. The orbital characteristics and observational circumstances concerning those "hardest-to-find" NEOs will be discussed.