[SO21] Near-Earth Object Survey Simulations: Prospects for Achieving NASA'S Spaceguard Goal

Hong-Kyu Moon[1,2,3], Yong-Ik Byun[2], S. N. Raymond[4], and T. Spahr[5]
[1] *Korea Astronomy and Space Science Institute, Korea*
[2] *Dept. of Astronomy, Institute of Earth · Atmosphere · Astronomy, Yonsei University, Korea*
[3] *Research School of Astronomy and Astrophysics, Mount Stromlo Observatory, Australia*
[4] *Laboratory for Atmospheric and Space Physics, University of Colorado*
[5] *Smithsonian Astrophysical Observatory*

We present a Near Earth Object (NEO) survey simulator which incorporates theoretical model population of 4668 NEOs (Bottke et al. 2002) and strategies of past and on-going search programs. The simulator makes remarkably good reproductions for not only the total number but also (a, e, i, H) distributions of the actual survey results as of December 2005. An extended experiment provides excellent predictions of discovery statistics of NEOs (H<18) reported to the Minor Planet Center in 2006. It evidences that the simulator is a plausible approximation of reality. Our code estimates that, with Bottke's model population and present survey capacity, the Spaceguard Goal will not be achieved by the end of 2008. Yet, as much as 10% of kilometer-class objects (H<17.75) are expected to remain unexplored after 10-year operation of all major NEO survey facility. Our simulation suggests that the current population model requires substantial revisions in order to reconcile with (a, e, i, H) distributions of the catalogued objects as of present epoch. We anticipate that modifications of the NEO population model will inevitably change the time to 90% completion of kilometer-class NEOs.

[SO22] 태양 관측 시스템 내부 온도 변화에 관한 연구

김일훈, 이청우, 김갑성
경희대학교 우주과학과

현재 학과에서 운용중인 태양 관측 시스템의 온도 변화를 측정하였다. 경희대학교 태양 관측 시스템은 6인치 F/15 굴절 망원경, H-alpha 필터(Bandwidth : <0.7Å), 그리고 1K CCD 카메라로 구성되어 있다. Digital 온도 센서를 이용하여 H-alpha 필터를 통과한 태양광의 온도와, 망원경의 경통 내부, 그리고 CCD 카메라의 초점면에서의 온도를 측정하고, 8인치 F/10 반사 망원경으로 경통을 교체하고 같은 측정을 반복 하여 망원경 구경에 따른 온도 변화를 확인 하였다. 확인된 온도 변화는 향후 대구경 태양 망원경 개발의 기초 자료로 활용될 것이다.