The reactivation of NEOWISE

A. Mainzer[1], J. Bauer[1], R. Cutri[2], T. Grav[3], J. Masiero[1], C. Nugent[1], S. Sonnett[1], R. Stevenson[1], and E. Wright[4]

[1]Jet Propulsion Laboratory
[2]Infrared Processing and Analysis Center, California Institute of Technology
[3]Planetary Science Institute
[4]UCLA

The Wide-field Infrared Survey Explorer (WISE) spacecraft has recently been reactivated and resumed surveying the sky at infrared wavelengths in December 2013. Now known as NEOWISE, the mission's scientific objectives are to detect and characterize the physical properties of near-Earth objects (NEOs) and other minor planets. Using passively cooled optics and detectors, the mission surveys the sky at 3.4 and 4.6 microns. NEOWISE is presently detecting roughly 0.5–1 NEO per day in its single-frame exposures. Over the course of its three year survey, ∼700 NEOs will be detected in individual exposures, and a total of ∼2000 will be detected in comoving image stacks. Radiometric diameters derived from 3.4 and 4.6 micron photometry are generally accurate to ±25 %. The NEOWISE project will therefore provide diameters and albedos for ∼20 % of the known NEO population. These wavelengths can also be used to set constraints on the abundance of CO and CO_2 in comets, as well as particle size distributions of cometary dust.

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References: Mainzer et al. 2014 (submitted).