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NEO Characterization Results

OBSERVATION OF POSSIBLE BREAKUP NEAR-EARTH ASTEROIDS

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ABSTRACT

Research on asteroid family enables us to understand evolution of small bodies in the solar system. Asteroid families ,for example (3200)Phaethon and 2005 UD, are common in the main belt region while searching asteroid families among Near-Earth Asteroid (NEAs) has been under debate because orbits of NEAs can be easily disturbed by frequent planetary encounters. Ohtsuka, et al. (2007) suggested that orbit of two NEAs, (1566) Icarus (D=1.5 km, Sq-type) and 2007 MK₆(D=0.37km), were identical and a possible breakup family member. Both asteroids made a close encounter with the Earth in 2015 and 2016, respectively. Spectroscopy and photometric observations were conducted in this research. Spectroscopic observation of Icarus and 2007Mk₆ were carried out using the 4.3 m Discovery Channel Telescope at Lowell observatory at Happy Jack in Arizona, USA. On the other photometric observation of these asteroids was observed by using the 1.1m Hall Telescope and 1.8m Perkins reflector at Anderson Mesa in Arizona, USA. operating by Lowell observatory. Surface heterogeneity as a function of rotational lightcurve will be discussed.
