

Near-Infrared Photometry of Near Earth Asteroid (1566) Icarus and 2007 MK6

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Rotation period of Near Earth Asteroid (1566) Icarus is estimated to be 2.2726 hours (Warner, 2015). Since Icarus' rotation rate is just below the threshold for breakup via centrifugal force, breakup of Icarus might have occurred in the near past. Ohtsuka et al. (2007) found a dynamical relationship between Icarus and 2007 MK6, and proposed that 2007 MK6 is likely a family member of Icarus. To examine the Icarus' breakup hypothesis, we observed Icarus and 2007 MK6 at Nishi-Harima Astronomical Observatory with the Nishiharima Infrared Camera (NIC) which is a near infrared simultaneous three-band (J, H, and Ks) camera.

The observation of Icarus was done between 2015 June 18 and 21, and the observation of 2007 MK6 was done between 2016 June 15 and 18. For a flux calibration, we also observed nearby stars of spectral type G2V, and their magnitude were derived from the 2MASS database. The Icarus' breakup hypothesis was tested by a comparison of near infrared colors of Icarus and 2007 MK6.

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