

images. These images were taken on 2005 November 12 during the close approach to the asteroid. As a result, we found the surface exposure timescales of these boulders are an order of 106 years. In this meeting, we will introduce our data analysis technique and evaluate the consistency among previous research for a better understanding of the evolution of this near-Earth asteroid.

References

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[ㄱ SS-07] DEEP-South: 2nd phase of observations for small Solar System bodies

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DEEP-South (DEep Ecliptic Patrol of the Southern Sky) team will start the 2nd phase of KMTNet observation in Oct 2020. The DEEP-South observation mainly consists of three survey modes: (1) Activity survey (AS) that aims at finding active phenomena of small Solar System bodies. (2) Light curve survey (LS) targets to discover and characterize light variations of asteroids. And (3) Deep drilling survey (DS) focuses on the objects beyond the orbit of Jupiter (Centaurus and trans-Neptunian objects) as well as near Earth asteroids. For asteroid family (AF) studies and target of opportunity (TO) observations for urgent photometric follow-up, targeted mode will also be used.

DEEP-South team is awarded 7.0% of the telescope time at each site every year from Oct 2020 to Sep 2023 in the 2nd phase of KMTNet

operation which corresponds to about 75 full nights a year for the network. In this presentation, we will introduce our survey strategy and observation plan.

[ㄱ SS-08] ISudden brightness enhancements on main-belt objects

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Dust ejection activities have been discovered from a few tens of asteroids since the first confirmation in 2006. Those objects are known as active asteroids. They provide good observational chances to study ongoing phenomena in the solar system such as sublimation of icy volatiles, mutual collisions among asteroids, rotational disintegrations, thermal fatigue, etc. Although dust ejection mechanisms of individual cases have been investigated through observations, the frequencies of the events and their connection to the overall evolutionary budget of the solar system have not yet been studied thoroughly, mainly because previous studies were based on serendipitous discoveries without any systematic surveys of these objects. In this work, we made wide-field monitoring observations of asteroids using Korea Microlensing Telescope Network (KMTNet) during the 2018/2019 winter season. Among 3,644 asteroids in the field-of-view, we detected nine candidates of brightness enhancements which we suspect as possible activities. It is still possible that some of those brightness increases have caused by long-term rotations. However, our observed frequency and brightness enhancements size-frequency distribution agrees with the expectations from impacts with decimeter sized objects, when the main belt objects size-frequency distribution observed down to decameter sized bodies are extrapolated to decimeter size.

[ㄱ SS-09] DEEP-South: Asteroid Light-Curve Survey Using KMTNet

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Variations in the brightness of asteroids are