caused by their spins, irregular shapes and companions. Thus, in principle, the spin state and shape model of a single object or, a combined model of spins, shapes and mutual orbit of a multiple components can be constructed from the analysis of light curves obtained from the time-series photometry. Using ground- and space-based facilities, a number of time-series photometric observations of asteroids have been conducted to find the possible causes of their light variations. Nonetheless, only about 2% of the known asteroids have been confirmed for their rotation periods. Therefore, a follow-on systematic photometric survey of asteroids is essential.

We started an asteroid light curve survey for this purpose using Korea Microlensing Telescope Network (KMTNet) during 199 nights between the second half of 2019 and the first half of 2020. We monitored within a 2° x 14° region of the sky per each night with 25 min cadences. In order to observe as many asteroids as possible with a single exposure, we mostly focus on the ecliptic plane. In our survey, 25,925 asteroids were observed and about 8,000 of them were confirmed for their rotation periods. In addition, using KMTNet's 24-hour continuous monitoring, we collected many composite light curves of slow rotating asteroids that were rarely obtained with previous observations.

In this presentation, we will introduce the typical light curves of asteroids obtained from our survey and present a statistical analysis of spin states and shapes of the asteroids from this study.

[구 SS-10] Asteroid Taxonomic Classification in Photometry

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Multi-band photometry provides an advantage in being able to perform taxonomic classification analysis on a large number of asteroids in a much shorter period of time than spectroscopy. We observed main-belt asteroids using Korea Microlensing Telescope Network (KMTNet) in CTIO during the summer seasons in the southern hemisphere, mostly in December 2015, 2016 and 2017 with two visible photometric systems, SDSS (g, r, i, and z), and Johnson-Cousins (B, V, R, and I). Targets were selected for the asteroids which had already been classified based on Bus-Binzel taxonomy (Bus & Binzel, 2002) and DeMeo taxonomy (DeMeo et al. 2009).

Not only the targets but also numerous serendipitously observed asteroids were identified. In summary, 6817 and 5456 known objects, including 307 and 233 already classified asteroids were observed with SDSS and Johnson-Cousins systems, respectively. Using principal component analysis, the three major asteroid complexes and a class, S-, C-, and X-complexes and V class are found to be well separated in the principal component plane (spectral slope and 1 micron absorption depth) with both filter systems. We will present and discuss the results of our newly proposed three-dimensional color taxonomy for asteroids using the whole dataset (Roh et al., to be submitted).

우주론/암흑물질

[구 CD-01] Interpretation of the EDGES observation in light of Planck 2018 Legacy Data

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The Experiment to Detect the Global EoR Signature (EDGES) has probed the status of the early Universe through the global 21cm observation. The claimed (brightness temperature) of ~ 500 mK absorption dip at z~17 against the continuum background cannot be explained in the standard LambdaCDM framework. In the meantime, the Planck 2018 Legacy Data, especially the E-mode polarization power spectrum, puts rather strong constraints on the high-redshift reionization process. We show how these two observational contraints can be accomodated in a series of reionization scenarios, with a special focus on the strongly self-regulated reionization by first stars.

[구 CD-02] ``There's no Place like Home: The Sejong Suite"

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I will present the Sejong Suite, an extensive collection of state-of-the-art high-resolution cosmological hydrodynamical simulations spanning a variety of cosmological and astrophysical parameters, primarily developed for modeling the