properties of the global distribution of the IPD because we can evade the effect of the small scale structures, such as the asteroidal dust bands. The ecliptic poles are frequently visited by the infrared (IR) space telescopes owing to their sun-synchronous orbits or for specific purposes. We collect and analyze the observations toward the ecliptic poles by COBE/DIRBE, AKARI, and MIRIS, covering the wavelengths from about 1 to 25 μm. The observed seasonal variations of the ZL are modeled with a simple IPD cloud model to derive cloud parameters. The parameters are compared with those of the empirical cloud models by Kelsall et al. (1998) and Kondo et al. (2016), and the discrepancies are discussed.

[구 SS-12] A Polarimetric Study of Long-Period Comet C/2013 US10 (Catalina) and Estimation of Its Gas Contamination in Optical and Near-Infrared Wavelengths

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Polarimetric study of light scattering from cometary dust particles can provide us opportunity to decipher their characteristics, such as sizes, structures, compositions of dust grains, etc. Herein, we present the results of our polarimetric study of long-period comet, C/2013 US10 (Catalina), in optical and near-infrared wavelengths which appeared at large phase angle (52.7 degrees) around the mid-December, 2015. We performed polarimetric and spectroscopic observations with HONIR, attached to the 1.5-m telescope at Higashi-Hiroshima Observatory, on UT 2015 December 17−18 and also obtained optical imaging data sets by the Ishigakijima Astronomical Observatory (IAO) and Okayama Astrophysical Observatory (OAO) taken between 2014−2015. By measuring the intensities of gas emission lines with respect to dust continuum and considering transmittance of each filter, we estimated that the percentages of gas contamination are approximately 10 percents in R_C-band and 3 percents in I_C-band. With these results, we derive the degree of linear polarization scattered solely from dust components in the coma. At this presentation, we will compare the phase-angle dependence of the degree of linear polarization with those of previous archive data in a wide coverage of wavelengths from R_C-band to K_S-band. Finally, we are supposed to discuss the spatial variations in polarization within the coma.

[구 SS-13] Dynamical evolution of dust particles: from comets to the inner solar system

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태양계의 행성간 공간에는 수많은 티끌들이 흩어져 있다. 이들의 존재는 유성, 우주 탐사선의 검출기, 황도광 관측 등으로 확인되고 있으나, 이 티끌들의 수명이 길어야 수백만년에 불과하기에 태양계에는 지속적으로 티끌을 공급하는 기원천체가 있어야 한다. 최근의 광학적 (Yang & Ishiguro, 2015), 역학적 연구는 ~90% 이상의 행성간 티끌들이 혜성에서 방출되었을 것이라 추정하기에 이르렀다. 이러한 상황에서, 본 연구에서는 행성간 티끌구름의 구체적 양상을 설명하려는 목적으로 혜성에서 방출된 티끌들이 태양계에서 겪게 되는 역학 진화를 수치 계산을 통하여 추적하였다.

우리는 다양한 혜성 궤도 분포를 골고루 대표할 수 있도록 실제 혜성 중에서 대표 혜성들을 선정하고, 관측에 기반한 티끌 방출 모형을 이용하여 다양한 크기의 가상적 티끌을 이들 혜성에서 방출시켰다. 태양의 복사에 의한 끌림힘, 8개의 행성에 의한 중력 섭동을 고려하며 이 티끌들의 궤도 진화가 추적되었다. 티끌들의 최종 종착지가 살펴졌고, 정상 상태를 가정하고 행성간 티끌구름을 구성하여 실제 관측되는 티끌구름과 비교하였다.

이번 발표에서는 혜성에 의한 티끌공급량과 내행성계의 티끌 유출입량, 내행성계 티끌구름의 크기도수분포, 티끌구름의 궤도 요소 분포, 황도광의 밝기 분포 등이 수치 계산 결과와 비교되어 설명될 것이다.

[구 SS-14] Measuring Homopause Temperatures of Jupiter, Saturn, and Titan via Three-micron Emission Spectra of CH_4

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Current high-resolution IR spectroscopy at ground-based observatories made it possible to observe 3-μm CH_4 emission lines from the atmospheres of Jupiter, Saturn, and Titan through narrow atmospheric windows avoiding the