counterparts of telluric CH_4 absorptions if proper Doppler shifts betwen Earth and these planetary objects are provided. We are also expecting low-resolution (R~300) infrared spectra of Jupiter from the upcoming observations by JUNO's infrared 2-5 μm spectrograph during the encounter with Jupiter approximately starting from July 4, 2016. Although the spectral resolution is not enough to resolve the 3-μm P, Q, R branch lines of CH4, the gross envelopes of the P, Q, R branches should yield information on rotational temperatures. The rotational temperatures are useful because theycan be regarded as local temperatures, as discussed by Kim et al. (2014). Since the 3-μm CH_4 emission is mostly formed at micro-bar pressure levels, the derived rotational temperatures represent the local temperatures near the hompause of Jupiter. We discuss possible sciences from the derived homopause temperatures in the auroral and non-auroral regions of Jupiter.

[구 SS-16] An interpretation of potential catastrophic collision at P/2010 A2

Yoonyoung Kim[1], Masateru Ishiguro[1], Tatsuhiro Michikami[2], Akiko M. Nakamura[3]
[1]Seoul National University, [2]Kinki University, [3]Kobe University

Solar System has evolved with numerous collisions among asteroids. Ancient catastrophic collisions of large parent bodies led the formation of asteroid families and relevant dustband structures up to the present day, and it would be interesting to address a question – "what happens if an asteroid collides with another asteroid?" Recent discoveries of "active asteroids" in the main-belt have attracted interest for their potential to witness a catastrophic collision in the current Solar System. So far, however, there is no direct evidence for catastrophic collision on active asteroids while several objects have been confirmed for other mechanisms (e.g., 596 Scheila for impact cratering, P/2013 R3 and P/2013 P5 for rotational breakup). The most potential candidate for catastrophic collision could be a sub-km active asteroid P/2010 A2, which is still controversial on its driving mechanism, but if confirmed, would have made P/2010 A2 the unique example of catastrophic collision on the current main asteroid belt. In this presentation, we revisit all of archival data of P/2010 A2 in a combination with our own observation using Subaru/Suprime-Cam on 2011 June, where we have a great benefit of a large orbital coverage. We found a grain size dependence of dust ejection velocity from P/2010 A2 (a power-law size distribution with an index of k~ -1/10), which is favorable to a catastrophic disruption scenario in agreement with laboratory impact experiments. At this conference, we plan to provide our understanding of the morphology of P/2010 A2 through a perspective of catastrophic collision.

성간물질

[구 IM-01] MIRIS Paschen-α Galactic Plane Survey: Comparison with the H II region catalog in Cepheus region

Il-Joong Kim[1], Jeonghyun Pyo[1], Woong-Seob Jeong[1], Won-Kee Park[1], Min Gyu Kim[1,2], Dukhang Lee[1], Bongkon Moon[1], Sung-Joon Park[1], Youngsik Park[1], Dae-Hee Lee[1], Wonyong Han[1]
[1]Korea Astronomy and Space Science Institute
[2]Seoul National University

MIRIS Paschen-α (Paα) Galactic Plane Survey (MIPAPS) presents the first whole Galactic plane (with the width of $-3^\circ < b < +3^\circ$) map for the Paα emission line. Many of Paα features were detected more brightly than the previous observed Hα features, and they coincide well with dense cloud regions. This means that newly detected Paα blobs can indicate massive star forming regions (H II regions) screened by foreground clouds around Galactic plane. Anderson et al. (2014) presented the most complete Galactic H II region catalog based on WISE 12 and 22 um data. Of the cataloged sources, only ~20% have measured radio recombination line (RRL) or Hα emission, and the rest are still candidate H II regions. At first, we compare the MIPAPS results with Anderson's H II region catalog for the Cepheus region (Galactic longitude from $+96^\circ$ to 116°). From this, we will investigate how much MIPAPS can supplement the catalog, and show MIPAPS scientific potential. After that, we plan to extend this work to the whole plane, and finally catalog MIRIS Paα blob sources for the whole Galactic plane.

[구 IM-02] A comparison study of approximate and Monte Carlo radiative transfer methods for late type galaxy models

Dukhang Lee[1,2], Maarten Baes[3], Kwang-il Seon[1,2]
[1]Korea Astronomy and Space Science Institute (KASI), Republic of Korea,