

**[초SS-05] Lunar Limb Profiles
Predicted from the Lunar Topographic Data of Kaguya and LRO**

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Lunar limb profiles are needed for analyses of lunar occultations and solar eclipses. The lunar limb profile data by C.B. Watts (1963) have been used for such analyses, but it has been found that there are many kinds of errors in the data by Watts, which seriously affected the results obtained from the analyses of the observations. Recently very precise lunar topographic data were obtained by the Japanese lunar explorer Kaguya and NASA's Lunar Reconnaissance Orbiter. I obtained lunar limb profiles for any lunar librations from them. I will show how well the lunar limb profiles fit to observed ones from lunar grazing occultations. By combining the accurate lunar limb profiles with observations of lunar occultations we can detect errors in the Hipparcos stellar reference frame. By analyzing Baily's beads timing observations of past total and annular solar eclipses using the accurate lunar limb profiles we will be able to detect solar diameter variations.

**[중SS-06] Emission Intensities of Ro-vibrational Bands of
Hydrocarbons in the Auroral Regions of Jupiter**

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We have investigated excitation processes of the 3-micron bands of CH₄, C₂H₂, and C₂H₆ over the auroral regions of Jupiter including particle bombardments, Joule heating, scattering of solar radiation, and possible chemiluminescence. We also considered possible LTE or Non-LTE conditions of these processes. We constructed particle precipitation models including H₂, He, H, and the hydrocarbon molecules for the atmosphere of the auroral regions. We present preliminary results from these models, and comparisons of the model results with spectroscopic observations in the 3 micron wavelength range of Jupiter.