[PL07] Titan's Molecules and Haze Investigated with Optical and Near-IR Spectra

H. Seo[1], S.J. Kim[1], C. Sim[1], J. Kim[1], A. Jung[1],
T. Geballe[2], R. Courtin[3], and L. Brown[4]
[1]*Kyung Hee University*
[2]*Gemini Observatory*
[3]*Observatoire de Paris, Meudon*
[4]*Jet Propulsion Laboratory*

We have obtained optical and near-IR spectra using an optical echelle spectrograph (BOES) on the 1.8-m telescope at Bohyunsan Observatory, and using NIRSPEC at Keck II, respectively. In the 6500 - 9000 A range, CH_4 absorptions dominate the gross spectral features. Between 2.86 and 3.10 microns, strong CH_3D lines have been detected in absorption; and these CH_3D lines are useful to investigate stratospheric and tropospheric haze opacities in this wavelength range. We constructed synthetic spectra for the visible and infrared ranges including CH_4 and CH_3D lines, and haze layers. Preliminary results on the derived opacities of the haze layers in the visible and infrared ranges will be presented.