[포IM-07] The correlation between H2 absorption, CO emission and H2 FUV fluorescent emission in the Orion Eridanus Superbubble

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I present the H2 fluorescent emission map around 1608A in the Orion Eridanus Superbubble taken from the FIMS at the long wavelength channel. In order to compare this emission map to the H2 absorption features, we also analyzed the FUSE data which archived from the 3 B type stars. Emission intensity is estimated by Gaussian fitting while the H2 absorption is fitted by Voigt profile fits of Fitzpatrick & Spitzer (1997). Although I have tried to find CO absorption liens of the 34 B type stars in the OES region observed by IUE, CO absorption liens are too week to detect. However, I compare H2 emission map with the Magnani Blitz Mundy clouds, which is known to trace the CO clouds. As a result, we found relevant correlation between CO clouds and H2 emission map.

[포IM-08] The Chemical Abundance of the Halo Planetary Nebula DdDm 1

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The Galactic halo planetary nebulae, probably evolved from a very low mass progenitors, e.g. 0.8-1 $M_{\odot}$, are characterized by low metallicity relative to the disk members. To obtain accurate chemical abundances and physical conditions of DdDm 1 which is Galactic halo planetary nebulae, we secured the emission line spectra in the 3600 Å to 7500 Å using the Subaru High Dispersion Spectrograph (HDS). We also analyzed the Hubble Telescope Faint Object Spectrograph data in the 1200 Å to 6730 Å. The diagnostic results indicate that the electron temperatures are ~13500K. We derived abundance based on ionic concentration of permitted & forbidden lines and photionization model. Comparing the ionic concentrations from forbidden lines to recombination lines, there exists the abundance discrepancy between them. We tested 3 models which might explain the abundance discrepancy: high density components in the nebula; temperature fluctuation; and hydrogen deficient cold components. DdDm 1 shows the low carbon abundance which is much smaller than other PNe. According to Beers & Christlieb (2005), DdDm 1 corresponds to metal poor stars, [Fe/H] < -1. The progenitor of DdDm 1 is probably born in extremely carbon-poor environment and it has experienced only the first dredge-up if its initial mass is about 0.8 $M_{\odot}$.