
CO & H₂ absorption line observation toward the Carina nebula

신종호¹, 선광일², 민경욱¹

¹한국과학기술원 물리학과

²한국천문연구원

We analyze CO and H₂ absorption lines of the molecular cloud toward the Carina Nebula. We use IUE(INES) & HST-STIS data to analyze the A-X v=0-2 absorption band of CO, while FUSE spectra are used to analyze the v=0-4 vibrational band in the Lyman series of H₂. The column densities of CO and H₂ varies in the vicinity of N(CO)~10-13 cm⁻² and N(H₂)~10-19 cm⁻², respectively, and the resultant CO-to-H₂ abundance ratio is about 10⁻⁶. We investigate the variation of the abundance ratio according to the relative position of the target stars to morphology the molecular cloud in the Carina Nebula. Also, the radiational and the cloud formational environment of the molecular cloud are inferred from the H₂ column density of each rotational level.