

[☞IM-15] Star formation history in the bubble nebula NGC 7635

Beomdu Lim¹, Hwankyung Sung¹, J. Serena Kim²

¹ *Department of Astronomy and Space Science, Sejong University, Seoul, Korea*

² *Steward Observatory, University of Arizona, 933N. Cherry Ave, Tucson, AZ 85721-0065, USA*

We present here *UBVI* and $H\alpha$ photometric results of stellar sources in the bubble nebula NGC 7635. The early type members are selected from the photometric membership criteria. $H\alpha$ photometry allows us to detect 11 pre-main sequence candidates with $H\alpha$ emission. In addition, we performed PSF photometry for the Spitzer IRAC and MIPS 24μ m images from archive (program ID 20726, PI: J. Hester) in order to search for the young stellar objects (YSOs). Total 19 sources are classified as YSOs (7 class I, 11 class II, and 1 transitional disk candidates) in the color-color diagrams according to the classification scheme of Gutermuth et al. Among them, 7 YSOs have counterparts in optical photometric data. These stars can be divided into two groups at given color indices. It implies that there occurred the star formation events more than twice. We would like to discuss the star formation history in the bubble nebula using the results from SED fitter (Robitaille et al.), color composite image from IRAC bands, and spatial distribution of early type stars and YSOs.

[☞IM-16] The study of LISM using the high resolution spectra of the early types stars in the five open clusters.

Keun-Hong Park¹, Sang-Gak Lee¹, Won-Seok Kang², Tae Seog Yoon³

¹*Dept. of Physics and Astronomy, Seoul National University*

²*School of Space Research, Kyung Hee University*

³*Dept. of Astronomy & Atmospheric Sciences, Kyungpook National University*

This study is aim to understand the distribution and the property of LISM (local interstellar medium) using the high resolution spectra of the 26 early type stars in the five open clusters (IC 4665, Stephenson 1, Collinder 359, Roslund 5 and Collinder 70). These spectra have been observed by BOES in Bohyunsan observatory from 2009 November to 2011 February, of which resolution is 45,000. We used IRAF for the data reduction (Bias subtraction, Flat-field division, and wavelength calibration) and DECH for the deriving the equivalent widths of 4 interstellar lines - Ca II K (3934Å), Na I D (5890, 5896Å) and K I (7698Å) and the column densities of those elements in LISM toward the clusters. The results of this study provide clues for better understanding of the LISM toward these clusters.