[포ST-07] Post-outburst observation of HBC722 in Pelican nebula

Yuna Yang[1], Won-Kee Park[2], Hyunil Sung[2], Sanggak Lee[1], Tae-Seog Yoon[4], Jeongeun Lee[3], Wonseok Kang[3], Keunhong Park[1], Dong-Hwan Cho[4]
[1]*Department of physics and astronomy, Seoul National University,*
[2]*Korea Astronomy and Space Science Institute,*
[3]*Kyunghee University,* [4]*Kyungpook National University*

HBC722 (also known as LkHa 188-G4 and PTF 10qpf; A. Miller et al., 2011) is one of the FU Orionis-like young stellar objects which outbursted in August 2010 (Semkov et al., 2010). We have been monitoring the post-outburst phase of this object since November 2010 with Korean Astronomy and Space Science Institute Near Infrared Camera System (KASINICS), at Bohyunsan Optical Astronomy Observatory (BOAO). Four filters, J, H, Ks, and H2 band, were used for this observation. We did aperture photometry to find photometric variation. The light curve shows a long period brightness change. After decrease of the brightness, which was reported at the KAS 2011 fall meeting, HBC722 brightens up slowly now. However we cannot confirm any short period variations, previously reported by Green et al (2013), due to large scatters in the obtained light curve.

[포ST-08] Wilson-Bappu Effect: Extended to Surface Gravity

Sunkyung Park[1], Wonseok Kang[1], Jeong-Eun Lee[1], Sang-Gak Lee[2]
[1]*School of Space Research, Kyung Hee University*
[2]*Astronomy Program, Department of Physics and Astronomy, Seoul National University*

Wilson and Bappu found a tight correlation between the stellar absolute visual magnitude (MV) and the width of the Ca II K emission line for late-type stars in 1957. Here, we revisit the Wilson-Bappu relationship (hereafter, WBR) to claim that WBR can be an excellent indicator of stellar surface gravity of late-type stars as well as a distance indicator. We have measured the width (W) of the Ca II K emission line in high resolution spectra of 125 late-type stars, which were obtained with Bohyunsan Optical Echelle Spectrograph (BOES) and adopted from the UVES archive. Based on our measurement of the emission line width (W), we have obtained a WBR of M_V=33.76-18.00logW. In order to extend the WBR to be a surface gravity indicator, the stellar atmospheric parameters such as effective temperature (T_{eff}), surface gravity (log$g$), metallicity ([Fe/H]), and micro-turbulence (ξ_{tur}) have been derived from the self-consistent detailed analysis using the Kurucz stellar atmospheric model and the abundance analysis code, MOOG. Using these stellar parameters and logW, we found that log$g$ = - 5.85 logW + 9.97 logT_{eff}-23.48 for late-type stars.