

[P02-3] A Near-IR Study of the Active Star-Forming Region W51B

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We present near-infrared *J*, *H*, *Ks* band photometric results of the star-forming region W51B in the Sagittarius arm. Two fields including three compact HII regions G48.9-0.3, G49.0-0.3, and G49.2-0.3 were observed in 2003 June with the Hawaii-II HgCdTe 2K array on the 200-inch Hale telescope. We deduced an extinction law for the direction of W51B with 2MASS system using iterated least-squares fits, and the resultant reddening slope is 2.10. We calculated color excess, due to the interstellar extinction, of the sources detected at least in both *H* and *Ks* bands. The histogram of the number of sources per extinction for each HII region shows a distinct bump compared to those of comparison fields. These over-populated stars might represent the cluster members including the stars exciting the HII regions. The comparison of the A_V map with the ¹³CO map indicates that G48.9-0.3 and G49.0-0.3 are probably located in front of the W51B molecular cloud, but G49.2-0.3 seems to be at the backside of the cloud. We select the cluster members rigorously and discuss the photometric properties of each cluster and the corresponding HII region.

[P02-4] BVI CCD Photometric Study on the Globular Cluster M15

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We carried out wide-field *BVI* CCD photometric observations of the globular cluster M15 (NGC 7078) using the Bohyun Optical Astronomy Observatory 1.8 m telescope equipped with a SITe 2K CCD. We present color-magnitude diagrams (*V* vs. *B-V*, *V* vs. *V-I*, and *V* vs. *B-I*) of M15. We have found asymptotic giant branch (AGB) bump at $V = 15.20 \pm 0.10$ mag. It is found that AGB stars in M15 are distributed at relatively wider color range compared to M3 and M13 and are scattered along the AGB sequence like M13. We have estimated the population ratios R and R_2 for M15 in two cases which we include either only horizontal branch (HB) stars above first blue HB gap or all the HB stars of M15.