

P101a **The Stellar Spectroscopic Variabilities Investigated with the AKARI Near-infrared Catalogs of the Large Magellanic Cloud**

Jin Zhang, Takashi Onaka, Itsuki Sakon (The University of Tokyo), Fumihiko Usui (Kobe University), Takashi Shimonishi, Yoshifusa Ita (Tohoku University)

Since the Large Magellanic Cloud is one of the nearest star-forming galaxies ($d \sim 50$ kpc), we are able to observe individual stars in it. Based on the Large-area Survey of the LMC with the Infrared Camera on board AKARI in Phase 1&2, a point source catalog (Ita et al. 2008; Kato et al. 2012) and a near-infrared spectroscopic catalog (Shimonishi et al. 2013) have been released to the public. We performed the data reduction of the AKARI Phase 3 near-infrared spectroscopy (2 - 5.5 μm with prism) of the LMC, which covers almost the same area as in Phase 1&2 (~ 10 deg²). A new spectroscopic catalog that includes ~ 350 contamination free (~ 200 new) sources and ~ 1200 not heavily contaminated (~ 700 new) sources has been created.

We compare the N3 fluxes calculated from long exposures and short exposures to investigate the saturation. For checking the reliability of the new catalog, the spectroscopic fluxes and the photometric fluxes are compared. 10 YSOs are found with the Phase 3 spectra. 7 of them have been observed with the prism spectroscopy in Phase 1&2. More than 20 carbon stars are selected by matching the spectroscopic catalogs. The time intervals between Phase 1&2 observations and the corresponding Phase 3 ones are more than 200 days, which allow to investigate the spectroscopic variabilities of YSOs and carbon stars. We will report the details of the current version of the Phase 3 spectroscopic catalog as well as some of the results so far obtained.