

[IM-04] Near-IR Polarimetric Study of N159/160 Star-Forming Regions

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We present the result of near-infrared (near-IR) imaging polarimetry of star-forming regions in the Large Magellanic Cloud (LMC). We compiled near-IR photometric and polarimetric data of N159/160 regions. The photometric and polarimetric data were simultaneously obtained in *J*, *H*, and *Ks* bands using SIRPOL, an imaging polarimeter of the InfraRed Survey Facility (IRSF), in 2007 February. We measured Stokes parameters of point-like sources to derive their degree of polarization and polarization position angles. In this poster, we present polarization properties of these star-forming regions. We also discuss the polarization structure in these regions compared with mid-infrared dust emission structure from the Spitzer SAGE survey.

[IM-05] Pulsar observations in mm-wavelengths

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Galactic radio pulsar population is diverse. So far about 2300 radio pulsars are known in the Milky Way, in addition to Large and Small Magellanic Clouds. Radio pulsar observations at a few hundreds MHz up to ~10 GHz have been active and they are proved to be fruitful. Low frequencies are preferred mainly because of the steep ratio spectrum of pulsars. However, developments in pulsar backends (e.g. a wide-band spectrometer) and improved system sensitivities make it possible to observe pulsars at higher frequencies using large, single-dish telescopes up to ~18 GHz. Going forward, mm-wavelength observations is expected to open a new window in pulsar astronomy. In particular, frequencies well above ~15 GHz are pre-requisite to detect pulsars in the Galactic Center where radio pulsed signals are severely scattered by interactions with the interstellar medium. Recent discoveries strongly imply that there are subsets of pulsars with an apparently flat spectrum, such as magnetars. In April 2014, the first pulsar (magnetar) was discovered only 3 arcmin from Sgr A*, PSR J1745-2900. We will present a brief overview on pulsar populations focusing on those observable at high frequencies. We will also discuss prospects of pulsar observations in mm-wavelengths and how we can utilize the Korean VLBI network.