[구SF-04] Near-IR Polarimetry of Star-Forming Regions around 30 Doradus

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We present wide-field near-IR imaging polarimetry of 30 Doradus, using the InfraRed Survey Facility(IRSF) 1.4 m telescope at the South African Astronomical Observatory. We obtained polarimetry data in J, H, and Ks bands using the JHKs-simultaneous imaging polarimeter SIRPOL. 30 Doradus is located in the Large Magellanic Cloud(LMC) and it is the most active starburst region known in the Local group of galaxies. 30 Doradus is one of the best field to examine the behavior of the interstellar medium and star-formation mechanism under different conditions.

We will investigate the structure of magnetic field in 30 Doradus region.

[구SF-05] Thermal and Hydrostatic Structure of the Protoplanetary Nebula : Influences of Wind Strengths, Nebular Mass Distributions, and Stellar Wind Velocity Laws

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The structures of the protoplanetary nebula have been examined under various conditions of the stellar wind and the mass distribution of the nebula by assuming that the nebula is steady and geometrically thick.

T Tauri stars commonly accompany with disks as well as the stellar wind. Therefore, the nebula around T Tauri stars should be influenced by the stellar wind.

The results are summarized as follows ; The height of the geometrical surface of the nebula is suppressed by the dynamical pressure of the wind but depends very weakly on the wind strength. The surface becomes higher slightly when the wind strength becomes weaker. Furthermore, the dependency of the nebular height on the mass distribution of the nebula is also weak. As a natural result of the above, the temperature distribution in the nebula is insensitive to the wind strength and the mass distribution of the nebula, too. Thus, we can conclude that the temperature and geometrical surface height of the nebula under the stellar wind does not depend on neither the wind properties nor the mass distribution of nebula.