

Near-IR imaging polarimetry of the RCW 106 cloud complex

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Abstract. We have carried out near-IR imaging polarimetry toward RCW 106 with the JHK_s-simultaneous imaging polarimeter SIRPOL mounted on the IRSF 1.4m telescope at SAAO, in March and May, 2017 and January, 2018. We have observed 29 fields and covered mostly the southern part of the giant molecular cloud complex associated with the H_I region RCW 106, which is located at a distance of 3.5 kpc (Moises *et al.* 2011) and is elongated approximately in the north-south direction with a size of $\sim 70 \times 15$ pc. Our preliminary analysis indicates that the magnetic field seems to globally run along the complex elongation, unlike many other elongated clouds that are often reported to have their global elongations perpendicular to the magnetic fields. The RCW 106 complex consists of many small filaments or clumps. Some of such filaments seem to parallel to the magnetic fields, but some others perpendicular. Around the central part of the H_I region RCW 106, the magnetic field appears to be influenced by the expansion of this H_I region. Here, we present our preliminary results by comparing with the archival molecular line and far- to mid-IR data.

Reference

Moises, A. P., Daminieli, A., Figueredo, E., Blum, R. D., Conti, P. S., Barbosa, C. L., *et al.* 2011, *MNRAS*, 411, 705M