P06a Near-infrared imaging polarimetry of the silhouette young stellar object M17-SO1

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Magnetic fields are thought to play an important role in the process of star formation, especially in the generation of jets/outflows. As magnetic fields reveal themselves by polarising radiation, we have obtained near-infrared imaging polarimetry measurements of the silhouette young stellar object M17-SO1.

This object represents an excellent opportunity for this type of study - the silhouette appearance ensures that the dominant mechanism producing the polarisation is dichroic absorption, thereby greatly simplifying the interpretation of the results, and its geometry (edge-on) and size ($\sim 8 \times 3$ arcsec^2, or $\sim 10000 \times 4000$ au^2 at 1.3 kpc) observed even from a moderate-sized telescope enables us to separate different magnetic field components, and therefore to uncover the link between the large-scale ambient magnetic field and the small-scale field within the circumstellar envelope.

Preliminary results from these observations are presented and possible implications for jet/outflow generation mechanisms are briefly discussed.