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The resolved magnetic fields of the quiescent cloud GRSMC 45.60+0.30

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Marchwinski *et al.* (2012) mapped the magnetic field strength across the quiescent cloud GRSMC 45.60+0.30 (shown in Figure 1 subtending 40x10 pc at a distance of 1.88 kpc) with the Chandrasekhar-Fermi method (CF; Chandrasekhar & Fermi 1953) using near-infrared starlight polarimetry from the Galactic Plane Infrared Polarization Survey (Clemens *et al.* 2012a,b) and gas properties from the Galactic Ring Survey (Jackson *et al.* 2006). The large-scale magnetic field is oriented parallel to the gas-traced 'spine' of the cloud. Seven 'magnetic cores' with high magnetic field strength were identified and are coincident with peaks in the gas column density. Calculation of the mass-to-flux ratio (Crutcher 1999) shows that these cores are exclusively magnetically subcritical and that magnetostatic pressure can support them against gravitational collapse.

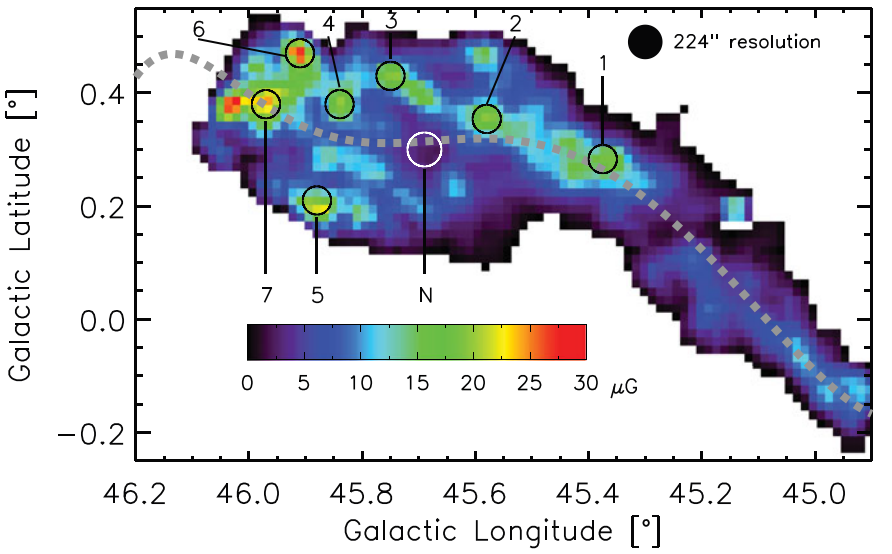

Figure 1. Resolved magnetic field strength across the face of GRSMC 45.60+0.30. The grey dashed line traces the spine of the cloud. Seven magnetic cores are numbered and a region where the CF method breaks down (N) has been identified.

References

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