

The role of the magnetic field in a translucent molecular cloud

Georgia Panopoulou

California Institute of Technology
1200 E. California Blvd, CA, USA 91125
email: panopg@caltech.edu

Abstract. Translucent molecular clouds represent a vastly underexplored regime of cloud evolution in terms of the effect of the magnetic field. Their pristine nature renders them ideal for investigating the initial properties of the magnetic field, prior to the onset of star formation. Using starlight polarimetry, we map the plane-of-sky magnetic field orientation throughout 10 sq. degrees of the Polaris Flare translucent molecular cloud. We provide the first quantitative estimate of the magnetic field strength in this type of system. By combining our measurements with the high-resolution Herschel dust emission map, we find a preferred alignment between filaments and the observed magnetic field. Our results support the presence of a strong magnetic field in this system ([Panopoulou *et al.* 2016](#)).

Reference

Panopoulou, G., Psaradaki, I., & Tassis, K. 2016, *MNRAS*, 462, 1517