MAGNETIC FIELD STRENGTH LIMITS IN A PROTOPLANETARY DISK FROM MULTI-WAVELENGTH ZEEMAN OBSERVATIONS

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Magnetic fields likely play a critical role in the accretion of material from protoplanetary disks onto protostars by providing a mechanism of angular momentum transport, particularly through magnetic disk winds. Constraining magnetic field strengths in protoplanetary disks is therefore necessary to test theories of magnetically-driven accretion. Zeeman splitting observations offer a way to directly measure or set upper limits on magnetic field strengths. We present the results of Zeeman splitting observations of several hyperfine lines of the CN(2-1) and CN(1-0) transitions in the Class II protoplanetary disk V4046 Sgr. We also present observations of the linear continuum dust polarization in this source and discuss their implications for the disk's dust population.