DUST POLARIZATION IN THREE PROTOSTELLAR DISKS

RACHEL E. HARRISON, Astronomy, University of Illinois at Urbana-Champaign, Urbana, IL, United States; LESLIE LOONEY, ROBERT J HARRIS, Department of Astronomy, University of Illinois at Urbana-Champaign, Urbana, IL, USA; ZHI-YUN LI, Department of Astronomy, The University of Virginia, Charlottesville, VA, USA; IAN STEPHENS, Radio and Geoastronomy Division, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA, USA; WOOJIN KWON, Radio Astronomy, Korea Astronomy and Space Science Institute, Daejeon, Republic of Korea.

We present 1.3 mm ALMA dust polarization observations of three T Tauri stars: DG Tauri, DL Tauri, and LkCA 15. All three sources show some degree of polarization at a resolution of 0.5". DL Tauri shows a polarization morphology that is consistent with polarization produced by dust scattering. DG Tauri and LkCa 15 have polarization morphologies that may be produced by dust grain alignment with the disk's radiation field and/or magnetic field. Dust grains can serve as a site for chemical reactions in protostellar disks. Observations of dust polarization can constrain the distribution and properties of dust within the disk, which would provide insight into the chemical evolution of protostellar disks.