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Magnetic fields on the brightest stars in the sky - the cool star BRITEpol sample

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Magnetic fields on cool stars are driven by a dynamo process, with these fields having implications on the star's evolution as well as the habitability of any orbiting exoplanets. In this presentation I show the results of the cool star sample of the BRITEpol survey, a survey of the magnetic fields of almost every cool star in the sky brighter than V = 4.0. This amounts to observations of over 270 cool stars of spectral type mid-M to mid-F and all luminosity classes. From these observations in circularly polarised light (Stokes V) we make a measurement of the magnetic field on the visible surface of each star, and look for trends with various stellar parameters. Preliminary results show that we have detected magnetic fields in approximately 27 percent of our sample. As expected the rate of magnetic field detection shows a slight increase with chromospheric activity, but perhaps paradoxically, the detection rate appears to decrease for stars with potentially high rotation rates. The rate in magnetic field detection also appears to drop for stars hotter than ~5000 K, as well as a potential dip in the detection rate for giant stars.

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