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Understanding Blazar Variability through Kepler PAOLO DI LORENZO, DANIEL SILANO, PAUL WIITA, The College of New Jersey, ANN WEHRLE, Space Science Institute, STEPHEN UNWIN, NASA/JPL — Our Kepler program has monitored optical emission from four blazars over the past two years. We currently have 7 quarters of long cadence (30 min) and one or two quarters of short cadence (1 min) data for each AGN. These lengthy, nearly continuous, data sets provide a unique resource for studying the nature of radio loud quasar variability. Any periodicity or quasi-periodicity in these light curves might indicate a bright feature, or hot spot, in the accretion disk or a helical structure in the relativistic jet. The standard pipeline for reducing Kepler data is designed for searching for planetary transits and removes real blazar variability, while the raw data contain numerous instrumental effects. Carefully decotrended data provide the best true light curves. We have calculated power spectral densities and Lomb-Scargle periodograms for these decontrended blazar light curves. We have not yet seen any large flares or identifiable periods in the data and so the variations we do see are most likely due to turbulence in the jet.

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